LOCAL PLANNING AGENCY
THURSDAY, JANUARY 18, 2024 – 2:00 PM
CITY HALL, AUDITORIUM, 120 108TH AVENUE, TREASURE ISLAND, FL 33706

MEETING NOTICE AND AGENDA

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1. **MEETING CALLED TO ORDER BY PRESIDING OFFICER**
2. **PLEDGE ALLEGIANCE**
3. **CELL PHONE ANNOUNCEMENT**
4. **ROLL CALL**
5. **APPROVAL OF MINUTES**
6. **PRESENTATION OF ITEMS**

6.A

Review LPA Resolution 2024-01 which recommends approval of Ordinance 2024-01, readopting the prior Comprehensive Plan text and map amendments, and recommends that the City Commission transmit the Comprehensive Plan (text and maps) to the state for review.

No changes to the previously adopted Comprehensive Plan are proposed.

LPA Resolution Recommending Approval of Comp Plan 2024 (02658331).pdf
Ordinance 2024-01 Readoption of Comprehensive Plan Amendments (02658345).pdf
Proof of Publication.pdf
2- Elements 1-9 Combined.pdf
3 - Maps 1 - LU-1 - LU-5 Combined.pdf
4 - Maps T-1 -T-10 Combined.pdf
5- Maps - CM-1- and PROS-1 Combined.pdf
6 - Data and Analysis - 1 -6 Combined.pdf
7 - Data and Analysis - 7 Exh A - Strategic Plan Progress Report as of 09-30-2021 Final.pdf
8(a) data and analysis - 8 Exh a Adopted Watershed Management Plan.pdf
8(b) data and analysis - 8 Exh a Adopted Watershed Management Plan.pdf
8(c) data and analysis - 8 Exh a Adopted Watershed Management Plan.pdf
8(d) data and analysis - 8 Exh a Adopted Watershed Management Plan.pdf

8(e) data and analysis - 8 Exh a Adopted Watershed Management Plan-2.pdf
8(f) data and analysis - 8 Exh a Adopted Watershed Management Plan.pdf
9 - Data and Analysis - 9 Exh C - Adopted Master Park Plan.pdf
10 - 2023 0412 City Water Supply Work Plan.pdf
2024-01 City of Treasure Island Business Impact Statement .pdf

7. **LOCAL PLANNING AGENCY ISSUES, COMMENTS, OR DISCUSSION**

8. **REPORTS OF CITY ATTORNEY, STAFF AND BOARD MEMBERS**

9. **NEXT LPA MEETING**
   Scheduled for February 8, 2024 at 6:00 p.m.

10. **PUBLIC COMMENTS**

11. **ADJOURNMENT**

AGENDA ITEM NO. 6.A

Item Cover Page

LOCAL PLANNING AGENCY AGENDA ITEM REPORT

DATE: January 18, 2024

SUBMITTED BY: Maryellen Edwards, Community Development

ITEM TYPE: Resolutions

AGENDA SECTION: PRESENTATION OF ITEMS

SUBJECT:

Review LPA Resolution 2024-01 which recommends approval of Ordinance 2024-01, readopting the prior Comprehensive Plan text and map amendments, and recommends that the City Commission transmit the Comprehensive Plan (text and maps) to the state for review.

No changes to the previously adopted Comprehensive Plan are proposed.

BACKGROUND:

Comprehensive Plans and Land Development Regulations are the fundamental policy tools of municipalities. The current Comprehensive Plan was primarily adopted in 1999, some changes to the Plan have occurred to implement other specific strategies, such as to incorporate the Downtown Special Area Plan into the Future Land Use Element in 2012.

The city notified the state that we would be updating our Comprehensive Plan through an Evaluation and Appraisal (EAR) letter on 10/15/2019. The city subsequently notified the state of the intent to change our Comprehensive Plan through our EAR letter and report, recommended by the LPA on 7/8/21, approved by the City Commission on 8/17/21 and transmitted to the State on 8/18/21.

On 6/16/2022, the LPA held a public hearing on Ordinance 2022-07, the proposed Comprehensive Plan text and map amendments, and found the Comprehensive Plan amendments to be appropriate.

On 8/16/2022, the City Commission held a public hearing on Ordinance 2022-07, and recommended transmittal of the Comprehensive Plan text and map amendments to the state. The city transmitted the Comprehensive Plan to the state on 8/24/2022.

The City Commission held a second public hearing and adopted Ordinance 2022-07 on 4/18/2023.

The State Land Planning Agency posted a copy of the Notice of Intent to find the Amendment to the Comprehensive Plan for the City of Treasure Island IN COMPLIANCE on the Agency's internet website and no petitions or appeals were filed. Ordinance 2022-07, Amendments to the Comprehensive Plan became effective on 6/8/2023.

Subsequently, the legislature passed Senate Bill 250 ("SB 250"), an Act Relating to Natural Emergencies, effective July 1, 2023 which provided that any county or municipality located entirely or partially within 100 miles of where either Hurricane Ian or Hurricane Nicole made landfall was prohibited from proposing or adopting any moratorium on construction, reconstruction, or redevelopment; proposing or adopting more restrictive or burdensome amendments to its comprehensive plan or land development regulations; or proposing or adopting more restrictive or burdensome procedures concerning review, approval, or issuance of a site plan, development permit, or development order, before October 1, 2024, and any such moratorium or restrictive or burdensome comprehensive plan amendment, land development regulation, or procedure will be null and void ab initio. This subsection applied retroactively to September 28, 2022.

Later in 2023 during a special session, the legislature adopted House Bill 1C ("HB 1C"), Disaster Relief effective November 13, 2023, which removed Pinellas County from the prohibited area in SB 250.

As outlined in Ordinance 2024-01, there is some uncertainty as to the effect Senate Bill 250 may have had on the amendments to the Comprehensive Plan adopted through Ordinance 2022-07. Therefore, to remove any uncertainty, the City is formally readopting the amendments to the Comprehensive Plan previously adopted through Ordinance 2022-07 to ensure that all of the provisions of the Amendments to the Comprehensive Plan and in full effect.

POLICY/PURPOSE: To bring the Comprehensive Plan into compliance with State Laws (legally required minimum) and to amend the

Comprehensive Plan Goals, Objectives and Policies based on changes to local conditions and the City's vision for the future.

STRATEGIC PLAN RELEVANCE:

Environmental Sustainability Road Map

Goal 1: Become an environmentally sustainable and resilient community.

Objective 2: Rise above sea-level challenges

Bold Action 1: update seawall and shoreline development codes

Objective 4: Encourage the use of alternative transportation.

Bold Action 5: Assess the feasibility of a bike/scooter share program in conjunction with downtown redevelopment.

Financial and Economic Development Road Map

Goal 1: Foster a vibrant business community

Objective 2: Implement the Economic Development Vision

Bold Action 1: Perform a review of local ordinances and Land Development Regulations

Bold Action 2: Update the City's Comprehensive Plan, local ordinances, and Land Development Regulations

ANALYSIS/DISCUSSION: To review Resolution LPA 2024-01. This resolution, LPA 2024-01, recommends adoption of Ordinance 2024-01 to the City Commission. This Ordinance, if approved by the City Commission would then transmit the previously adopted Comprehensive Plan (text and maps) to the state for review.

FUNDING: N/A

MOTION: I move to (approve/deny) Resolution LPA 2024-01, which recommends adoption of Ordinance 2024-01 to City Commission and transmittal to the state.

ATTACHMENTS:

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Ordinance 2024-01 Readoption of Comprehensive Plan Amendments (02658345).pdf
Proof of Publication.pdf
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3 - Maps 1 - LU-1 - LU-5 Combined.pdf
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2024-01 City of Treasure Island Business Impact Statement .pdf

LPA RESOLUTION NO. 2024-01

A RESOLUTION OF THE LOCAL PLANNING AGENCY OF THE CITY OF TREASURE ISLAND, FLORIDA, RECOMMENDING APPROVAL OF ORDINANCE NO. 2024-01 READOPTING THE PRIOR COMPREHENSIVE PLAN TEXT AND MAPS AMENDMENT WHICH REFLECTED CHANGES IN THE STATE REQUIREMENTS CONSISTENT WITH SEC. 163.3191 FLORIDA STATUTES AND THE CHANGES IN CURRENT CONDITIONS AND COMMUNITY VISION; AMENDED EIGHT EXISTING ELEMENTS INCLUDING FUTURE LAND USE, TRANSPORTATION; HOUSING; INFRASTRUCTURE; COASTAL MANAGEMENT, CONSERVATION AND RESILIENCY; PARKS, RECREATION AND OPEN SPACE; INTERGOVERNMENTAL COORDINATION; CAPITAL IMPROVEMENTS; ADDED ONE NEW ELEMENT, PROPERTY RIGHTS; AMENDED OR UPDATED FOURTEEN MAPS INCLUDING LU-1 - EXISTING LAND USES; LU-2 - FLOOD ZONES, FLOODPLAINS, & CHHA; LU-3 - SOIL ASSOCIATIONS; LU-4 - FUTURE LAND USE MAP; LU-5 - HISTORIC RESOURCES; CM-1 - VEGETATIVE COVER & MARINE RESOURCES; T-1 - EXISTING ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-2 - EXISTING & FUTURE PUBLIC TRANSIT & TRUCK ROUTES; T-3 - EXISTING BICYCLE & SIDEWALK FACILITIES; T-4 - EXISTING & FUTURE HURRICANE EVACUATION ROUTES, T-5 - EXISTING TRAFFIC VOLUMES; T-6 - EXISTING ROADWAY LEVELS OF SERVICE; T-9 - FUTURE TRAFFIC VOLUMES; T-10 - FUTURE ROADWAY LEVELS OF SERVICE; REVISED AND RENAMED ONE MAP, PROS-1 PUBLIC AND RECREATIONAL FACILITIES; REMOVED FOUR MAPS INCLUDING B-1 – BUSINESS DISTRICT; B-2 – JOHN'S PASS REDEVELOPMENT AREA; T-7 – FUTURE ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-8 - FUTURE BICYCLE & SIDEWALK FACILITIES; REMOVED THE DATA AND ANALYSIS FROM THE ADOPTED COMPREHENSIVE PLAN; PROVIDING FOR TRANSMITTAL TO REVIEWING AGENCIES IN ACCORDANCE WITH THE REQUIREMENTS OF LAW; PROVIDING FOR SEVERABILITY, AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, pursuant to Article VIII, Section I(g) of the Constitution of the State of Florida, and the Local Government Comprehensive Planning and Land Development Regulation Act, Sections 163.3161, et seq., Florida Statutes (the "Act"), the City of Treasure Island ("City") is authorized and required to adopt a Comprehensive Plan; and

WHEREAS, City Ordinance No. 96-3, as amended, designated the City's Planning and Zoning Board as the Local Planning Agency for the preparation and recommendation to the City Commission of a comprehensive plan and amendments in accordance with the provisions of the Act; and

WHEREAS, Section 163.3167(2), Florida Statutes, provides that each local government shall maintain a comprehensive plan of the type and in the manner set out in the Act or prepare amendments to its existing comprehensive plan to conform it to the requirements the Act and in the manner set out in the Act; and

WHEREAS, the Treasure Island Local Planning Agency held a Public Hearing with due public notice to receive public comments on readopting the prior amendments to the text and maps of the Comprehensive Plan, and

WHEREAS, the Treasure Island Local Planning Agency reviewed the proposed text and map amendments to the Comprehensive Plan, considered the public testimony received at that Public Hearing and desires to move forward in the readoption process.

NOW, THEREFORE, BE IT RESOLVED BY THE LOCAL PLANNING AGENCY OF THE CITY OF TREASURE ISLAND:

Section 1. The Treasure Island Local Planning Agency hereby recommends the City Commission approve the proposed text and map amendments to the Comprehensive Plan as set forth in Exhibit "A" of Ordinance 2024-01

The foregoing Resolution was offered during Regular Session of the Local Planning Agency of the City of Treasure Island, Florida, sitting on the 18th day of January 2024 by Board Member _____ who moved its adoption; was seconded by Board Member _____ and upon roll call, the vote was:

YEAS:

NAYS:

ABSENT OR ABSTAINING:

_____

ATTEST:

_____

Celine Kidwell, City Clerk

ORDINANCE NO. 2024-01

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF TREASURE ISLAND, FLORIDA READOPTING THE PRIOR COMPREHENSIVE PLAN TEXT AND MAPS AMENDMENT WHICH REFLECTED CHANGES IN THE STATE REQUIREMENTS CONSISTENT WITH SEC. 163.3191 FLORIDA STATUTES AND THE CHANGES IN CURRENT CONDITIONS AND COMMUNITY VISION; AMENDED EIGHT EXISTING ELEMENTS INCLUDING FUTURE LAND USE, TRANSPORTATION; HOUSING; INFRASTRUCTURE; COASTAL MANAGEMENT, CONSERVATION AND RESILIENCY; PARKS, RECREATION AND OPEN SPACE; INTERGOVERNMENTAL COORDINATION; CAPITAL IMPROVEMENTS; ADDED ONE NEW ELEMENT, PROPERTY RIGHTS; AMENDED OR UPDATED FOURTEEN MAPS INCLUDING LU-1 - EXISTING LAND USES; LU-2 - FLOOD ZONES, FLOODPLAINS, & CHHA; LU-3 - SOIL ASSOCIATIONS; LU-4 - FUTURE LAND USE MAP; LU-5 - HISTORIC RESOURCES; CM-1 - VEGETATIVE COVER & MARINE RESOURCES; T-1 - EXISTING ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-2 - EXISTING & FUTURE PUBLIC TRANSIT & TRUCK ROUTES; T-3 - EXISTING BICYCLE & SIDEWALK FACILITIES; T-4 - EXISTING & FUTURE HURRICANE EVACUATION ROUTES, T-5 - EXISTING TRAFFIC VOLUMES; T-6 - EXISTING ROADWAY LEVELS OF SERVICE; T-9 - FUTURE TRAFFIC VOLUMES; T-10 - FUTURE ROADWAY LEVELS OF SERVICE; REVISED AND RENAMED ONE MAP, PROS-1 PUBLIC AND RECREATIONAL FACILITIES; REMOVED FOUR MAPS INCLUDING B-1 – BUSINESS DISTRICT; B-2 – JOHN'S PASS REDEVELOPMENT AREA; T-7 – FUTURE ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-8 - FUTURE BICYCLE & SIDEWALK FACILITIES; REMOVED THE DATA AND ANALYSIS FROM THE ADOPTED COMPREHENSIVE PLAN; PROVIDING FOR TRANSMITTAL TO REVIEWING AGENCIES IN ACCORDANCE WITH THE REQUIREMENTS OF LAW; PROVIDING FOR SEVERABILITY, AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, Chapter 163, Florida Statutes, established the Community Planning Act; the "Act", and

WHEREAS, the City of Treasure Island ("City") has previously enacted its Comprehensive Plan pursuant to the Act, and

WHEREAS, the City completed its Evaluation and Appraisal of its Comprehensive Plan and notified the State that amendments are necessary to reflect changes in state regulations; and

WHEREAS, the Comprehensive Plan text and maps have been amended to reflect the changes in state regulations, and

WHEREAS, the City participated in a visioning process in two meetings with the public in December of 2021 and a joint visioning process between the Local Planning Agency and the City Commission in two public meetings in January of 2022, and

WHEREAS, the Comprehensive Plan text and maps have been updated to reflect this visioning process and the change in local conditions, and

WHEREAS, the City analyzed the relevant and appropriate data and updated its Comprehensive Plan based on such relevant and appropriate data and analysis, and

WHEREAS, the City's Comprehensive Plan is required by law to be consistent with the Countywide Plan Rules; and

WHEREAS, on May 12, 2022, May 19, 2022, June 9, 2022, and June 16, 2022 the Planning and Zoning Board, sitting as the Local Planning Agency, reviewed the Comprehensive Plan text and map Amendments; and

WHEREAS, the Planning and Zoning Board, sitting as the Local Planning Agency found Ordinance 2022-07, the Comprehensive Plan text and map Amendments; consistent with the corresponding Countywide Rules and in character and scale with the Treasure Island community; and

WHEREAS, the Planning and Zoning Board, sitting as the Local Planning Agency, evaluated Ordinance 2022-07, the Comprehensive Plan text and map Amendments; using the following criteria:

a. Evaluating whether the proposed amendments meet the acceptable level of service standards established in the Treasure Island Comprehensive Plan.

b. Determining whether the proposed amendments are in harmony with the general intent of the Treasure Island Comprehensive Plan; and

WHEREAS, on June 16, 2022, the Planning and Zoning Board, sitting as the Local Planning Agency held a public hearing on Ordinance 2022-07, the proposed Comprehensive Plan text and map amendments, considered the information received at that public hearing, reviewed Ordinance 2022-07, and found the Comprehensive Plan text and map amendments to be appropriate, and

WHEREAS, on August 16, 2022, the City Commission held a first reading and public hearing on Ordinance 2022-07, the proposed Comprehensive Plan text and map amendments, considered the information received at the public hearing, reviewed Ordinance 2022-07, and recommended transmittal of the Comprehensive Plan text and map amendments to the State, and

WHEREAS, the City of Treasure Island submitted its proposed Comprehensive Plan text and map amendments for the state's review and consideration on August 24, 2022; and

WHEREAS, the City received its amended ORC report on October 24, 2022, with the only comment being a request from the Southwest Florida Water Management District to update the Ten-Year Water Supply Facility Work Plan; and

WHEREAS, on April 18, 2023, the City Commission held a second reading and public hearing and adopted Ordinance 2022-07, the Comprehensive Plan text and map amendments; and

WHEREAS, on June 8, 2023, the State Land Planning Agency posted a copy of the Notice of Intent to find the Amendment to the Comprehensive Plan for the City of Treasure Island, IN COMPLIANCE on the Agency's internet website and no petitions or appeals were filed; and

WHEREAS, the Ordinance 2022-07, Amendments to the Comprehensive Plan became effective on June 8, 2023; and

WHEREAS, the legislature passed Senate Bill 250 ("SB 250"), an Act Relating to Natural Emergencies, effective July 1, 2023; and

WHEREAS, Section 14(1) of SB 250 provided that any county or municipality located entirely or partially within 100 miles of where either Hurricane Ian or Hurricane Nicole made landfall was prohibited from proposing or adopting any moratorium on construction, reconstruction, or redevelopment; proposing or adopting more restrictive or burdensome amendments to its comprehensive plan or land development regulations; or proposing or adopting more restrictive or burdensome procedures concerning review, approval, or issuance of a site plan, development permit, or development order, before October 1, 2024, and any such moratorium or restrictive or burdensome comprehensive plan amendment, land development regulation, or procedure will be null and void ab initio. This subsection applies retroactively to September 28, 2022; and

WHEREAS, it is believed that the City of Treasure Island is located entirely or partially within 100 miles of where either Hurricane Ian or Hurricane Nicole made landfall and adopted its Amendments to the Comprehensive Plan through Ordinance 2022-07 after September 28, 2022; and

WHEREAS, there has been no determination as to whether the Amendments to the Comprehensive Plan adopted through Ordinance 2022-07 were more restrictive or burdensome; and

WHEREAS, later in 2023 during a special session, the legislature adopted House Bill 1C ("HB 1C"), Disaster Relief effective November 13, 2023, which removed Pinellas County from the prohibited area in SB 250; and

WHEREAS, there is some uncertainty as to the effect SB 250 may have had on the Amendments to the Comprehensive Plan adopted through Ordinance 2022-07; and

WHEREAS, to remove any uncertainty, the City of Treasure Island is formally readopting the Amendments to the Comprehensive Plan previously adopted through Ordinance 2022-07 to ensure that all the provisions of the Amendments to the Comprehensive Plan are in full effect; and

WHEREAS, on January 18, 2024, the Treasure Island Planning and Zoning Board, sitting as the Local Planning Agency held a public hearing with due public notice on Ordinance 2024-01 readopting the Comprehensive Plan text and map amendments, considered the information received at the public hearing and found the Comprehensive text and map amendments to be appropriate; and

WHEREAS, on _____, 2024 and _____, 2024 the City Commission held public hearings on Ordinance 2024-01, readopting the Comprehensive Plan text and map amendments, and has considered the information received at those public hearings and reviewed Ordinance 2024-01, the proposed Comprehensive Plan text and map amendments, and

WHEREAS, the City Commission concurs with the findings and recommendations of the Planning and Zoning Board, sitting as the Local Planning Agency regarding Ordinance 2024-01, the proposed text and map amendments to the Comprehensive Plan, as provided herein and desires to adopt the Comprehensive Plan text and map amendments.

NOW, THEREFORE THE CITY COMMISSION OF THE CITY OF TREASURE ISLAND, FLORIDA DOES ORDAIN:

SECTION 1. The above recitals are true, correct, and incorporated by reference as the finding of the City.

SECTION 2. Pursuant to the provisions of the Community Planning Act, as amended, and pursuant to all applicable provisions of law, the text and maps of the City of Treasure Island's Comprehensive Plan is amended, as found in Exhibit A.

SECTION 3. This amendment shall be transmitted to reviewing agencies in accordance with Sec. 163.3184, Florida Statutes.

SECTION 4. SEVERABILITY. It is declared to be the intent of the City Commission that, if any section, subsection, sentence, clause, phrase, or portion of this Ordinance is for any reason held invalid or unconstitutional by a court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and such holding shall not affect the validity of the remaining portions thereof.

SECTION 5: EFFECTIVE DATE. That the effective date of these amendments shall be 45 days after the State Land Planning Agency determines the amendment package is complete and no timely petition is filed by an affected party. If an affected party petition is filed timely, then these amendments shall become effective on the date the state land planning agency or the Administrative Commissioner enters a final order determining the adopted amendments to be in compliance. No development orders, development plans, or land uses dependent on this plan amendment may be issued or commenced before it has become effective.

LOCAL PLANNING AGENCY PUBLIC HEARING: January 18, 2024, PUBLISHED: January 3, 2024 in the Tampa Bay Times

FIRST READING AND PUBLIC HEARING: _____, PUBLISHED: _____, in the Tampa Bay Times

SECOND READING AND PUBLIC HEARING: _____, PUBLISHED: _____, in the Tampa Bay Times

_____

Tyler Payne, Mayor

ATTEST:

_____

Celine Kidwell , City Clerk

0000323618-01

Tampa Bay Times
Published Daily

STATE OF FLORIDA
COUNTY OF Pinellas, Hillsborough, Pasco, Hernando Citrus } ss

Before the undersigned authority personally appeared **Jill Harrison** who on oath says that he/she is **Legal Advertising Representative** of the **Tampa Bay Times** a daily newspaper printed in St. Petersburg, in Pinellas County, Florida; that the attached copy of advertisement, being a Legal Notice in the matter **RE: ORDINANCE NO. 2024-01** was published in said newspaper by print in the issues of: **1/ 3/24** or by publication on the newspaper's website, if authorized, on

Affiant further says the said **Tampa Bay Times** is a newspaper published in **Pinellas, Hillsborough, Pasco, Hernando Citrus** County, Florida and that the said newspaper has heretofore been continuously published in said **Pinellas, Hillsborough, Pasco, Hernando Citrus** County, Florida each day and has been entered as a second class mail matter at the post office in said **Pinellas, Hillsborough, Pasco, Hernando Citrus** County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he/she neither paid not promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

Signature Affiant

Sworn to and subscribed before me this .**01/03/2024**

Signature of Notary Public

Personally known X or produced identification

Type of identification produced

Notary Public State of Florida
Carol A. Chewning
My Commission HH 377776
Expires 3/23/2027

LEGAL NOTICE

THE CITY OF TREASURE ISLAND, FLORIDA NOTICE OF PUBLIC HEARING READOPTING THE TEXT AND MAP AMENDMENTS OF THE ENTIRE COMPREHENSIVE PLAN

The Local Planning Agency of the City of Treasure Island, Florida will hold a public hearing on the following ordinance.

ORDINANCE NO. 2024-01

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF TREASURE ISLAND, FLORIDA READOPTING THE PRIOR COMPREHENSIVE PLAN TEXT AND MAPS AMENDMENT WHICH REFLECTED CHANGES IN THE STATE REQUIREMENTS CONSISTENT WITH SEC. 163.3191 FLORIDA STATUTES AND THE CHANGES IN CURRENT CONDITIONS AND COMMUNITY VISION; AMENDED EIGHT EXISTING ELEMENTS INCLUDING FUTURE LAND USE, TRANSPORTATION; HOUSING; INFRASTRUCTURE; COASTAL MANAGEMENT, CONSERVATION AND RESILIENCY; PARKS, RECREATION AND OPEN SPACE; INTERGOVERNMENTAL COORDINATION; CAPITAL IMPROVEMENTS; ADDED ONE NEW ELEMENT, PROPERTY RIGHTS; AMENDED OR UPDATED FOURTEEN MAPS INCLUDING LU-1 - EXISTING LAND USES; LU-2 - FLOOD ZONES, FLOODPLAINS, & CHHA; LU-3 - SOIL ASSOCIATIONS; LU-4 - FUTURE LAND USE MAP; LU-5 - HISTORIC RESOURCES; CM-1 - VEGETATIVE COVER & MARINE RESOURCES; T-1 - EXISTING ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-2 - EXISTING & FUTURE PUBLIC TRANSIT & TRUCK ROUTES; T-3 - EXISTING BICYCLE & SIDEWALK FACILITIES; T-4 - EXISTING & FUTURE HURRICANE EVACUATION ROUTES, T-5 - EXISTING TRAFFIC VOLUMES; T-6 - EXISTING ROADWAY LEVELS OF SERVICE; T-9 - FUTURE TRAFFIC VOLUMES; T-10 - FUTURE ROADWAY LEVELS OF SERVICE; REVISED AND RENAMED ONE MAP, PROS-1 PUBLIC AND RECREATIONAL FACILITIES; REMOVED FOUR MAPS INCLUDING B-1 – BUSINESS DISTRICT; B-2 – JOHN'S PASS REDEVELOPMENT AREA; T-7 – FUTURE ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-8 - FUTURE BICYCLE & SIDEWALK FACILITIES; REMOVED THE DATA AND ANALYSIS FROM THE ADOPTED COMPREHENSIVE PLAN; PROVIDING FOR TRANSMITTAL TO REVIEWING AGENCIES IN ACCORDANCE WITH THE REQUIREMENTS OF LAW; PROVIDING FOR SEVERABILITY, AND PROVIDING FOR AN EFFECTIVE DATE.

This ordinance will be considered on first reading and public hearing on Thursday, January 18, 2024 at 2:00 PM, immediately following the Planning and Zoning meeting, in the Treasure Island City Hall Auditorium, 120 108th Avenue, Treasure Island, Florida, 33706.

Interested parties may participate at this hearing and be heard with respect to the proposed ordinance. A copy of the Ordinance is available at the office of the City Clerk, City Hall, between the hours of 8:00 am and 4:30 pm, Monday through Friday.

For any person desiring to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based [F.S. 286.0105]. NOTE: Any transcript shall be requested and made by the individual requesting same at his or her own expense. Therefore, a court reporter may be desired or required accordingly.

Any person with a disability who needs any accommodation in order to participate in this proceeding is entitled to assistance at no cost. Please contact the office of the City Clerk in writing at 120 108th Avenue, Treasure Island, FL, 33706 or by phone at (727) 547-4575 at least two working days prior to the meeting to advise what assistance is needed.

The proposed ordinance is applicable citywide as indicated by the map shown.



1/3/2024 000032361B-31

FUTURE LAND USE ~~ELEMENT~~

~~The purpose of the Future Land Use Element is the designation of future land use patterns as reflected in the goals, objectives, and policies of the local government comprehensive plan elements.~~

~~Rule 9J-5.006, Florida Administrative Code~~

~~I. INTRODUCTION~~

~~In the last twenty years, the population of Florida has almost doubled. This dramatic population growth has placed tremendous pressure on the infrastructure of most cities and counties. Roads have become crowded, natural resources have been threatened, and water and sewer facilities have required increased capacity to keep up with demand. To address these problems, the State of Florida has adopted several growth management policies requiring local governments to establish comprehensive planning programs designed to control and guide future development.~~

~~In 1975, the Florida Legislature adopted the *Local Government Comprehensive Planning Act.* With passage of this act, local governments were expected to begin the growth management process and systematically plan for the needs of future residents. The 1975 legislation strengthened local governments' ability to establish and implement comprehensive planning programs. The Florida Legislature required each local government to document these programs in a comprehensive plan. Once adopted by a local government, all future public and private development was required to be consistent with the adopted plan.~~

~~In 1985, the Florida Legislature reinforced the *Local Government Comprehensive Planning Act* with the adoption of the *Growth Management Act*. To ensure that local governments adhered to the previous requirements set forth in 1975, the Legislature designated the state as the overseer of the process. All comprehensive plans are now required to follow rules established by the Florida Department of Community Affairs and are subject to a compliance review by that department. This element of the comprehensive plan provides the framework of growth management in the City of Treasure Island.~~

~~In May, 1955, the towns of Boca Ciega, Sunset, and Sunshine Beach and the City of Treasure Island, all located on the same land mass, merged to become one local government, the City of Treasure Island. The merger resulted in a population increase from 75 to 6,316 residents.~~

~~Treasure Island is located on a barrier island on the western coast of Pinellas County. Being a barrier island community, the municipality is surrounded by obstacles to territorial expansion. The city is bordered to the north by John's Pass Village and the City of Madeira Beach; on the south by Blind Pass and the City of St. Pete Beach; on the east by Boca Ciega Bay and the City of St. Petersburg; and on the west by the Gulf of Mexico. As a nearly built-out community, Treasure Island has less opportunity for short-range benefit from land use planning than does a younger, growing suburb or municipality. Effective land use planning has its greatest importance in shaping redevelopment and protecting valuable natural resources. Without judicious planning and enforceable constraints, urbanization and development will continue to place excessive stresses on the natural and man-made elements of the city's environment.~~

To create a comprehensive plan that reflects the needs of the city, the social characteristics that define the community must be considered. Using information obtained from the 1980 and 1990 U.S. Census, the following section lists several socio-economic facts regarding Treasure Island. A more detailed comparison between the city's socio-economic characteristics and those of Pinellas County and the State of Florida can be found in Appendix A.

- The population increased during the 1980s to total 7,266 in 1990. Thirty-five percent of the population was between the ages of 15 and 44, as compared to 31.8 percent in 1980. The under 15 age group continued to be the smallest (6 percent) as it was in previous years. Residents age 45 and over increased by 9 percent in the 1980s to total 4,279 in 1990. The population in 1990 was composed of 52 percent female and 48 percent male. The median age increased from 50.8 in 1970 to 52.5 in 1980, but returned to 50.8 in 1990. In 1990, the city remained predominantly white (99 percent).
- The city had a higher percentage of residents over the age of 25 with a high school diploma (85.5 percent) or four or more years of college (27 percent) than the county (78.1 percent and 18.5 percent respectively).
- In 1980, 83 percent of the city's population was born out-of-state and increased to 86 percent by 1990.
- In 1980, 52.3 percent of the number of households earned between $10,000 and $34,999 annually, but this number had decreased to 30 percent by 1990. Forty-seven percent of the population earns $35,000 or more per year. It is important to note that in 1980, 29.1 percent earned less than $9,999 annually, but that statistic was reduced to 14 percent by 1990.
- In 1990, Treasure Island had a per capita income of $26,856, and the median income of $32,051 was greater then that of the county ($26,296) or state ($27,483).
- In 1990, the city had a lower percentage of persons living below the poverty level (4.6 percent) than either the county (6.2 percent) or state (9.1 percent).

II. EXISTING LAND USES

Excluding public rights-of way, Treasure Island encompasses 744 upland acres, as shown in Table 1. The majority of the city is dominated by residential uses, primarily single-family homes. Large- scale multifamily development and commercial uses are found primarily along Gulf Boulevard. These uses, as well as the other types of land use classifications located within the city, are described in the following section. There are no industrial or agricultural uses.

As required by Rule 9J-5.006(1)(a), F.A.C., a map of existing land uses was prepared for Treasure Island by the Pinellas County Property Appraiser's Office (PAO), in cooperation with the Pinellas Planning Council. The basis for *Map LU-2: Existing Land Use Map* is the property use/land type codes used by the PAO, grouped according to the existing land use categories identified in Rule 9J-5.006(1)(a), F.A.C. The information contained on the map is from the most current computer records maintained by the county, supplemented by field inspections. The color code for the map is located in Appendix B.

Table 1
Existing Land Use Acreage, 1996*

Land Use	Acreage	% of
Single-Family	303 acres	41%
Duplex-Triplex/Multifamily	171 acres	23%
Commercial-Office	86 acres	12%
Vacant	15 acres	2%
Public/Semi-Public	10 acres	1%
Recreation/Open Space	33 acres	4%
Conservation/Preservatio	126 acres	17%
Total	**744 acres**	**100%**

* Excludes right-of-way acreage
Source: Pinellas County Property Appraiser's Office, 1996

A. Residential Land Use

The character of the city is residential. Single-family detached housing constitutes the predominant residential type by acreage while multifamily residences are the most predominant residential type by number. Of the 744 acres that comprise the upland portion of the city (excluding rights-of-way), 474 acres or 64 percent are devoted to residential land uses. Single-family homes account for 303 acres while duplex and multifamily units account for 171 acres. As reported by the U.S. Census, Treasure Island contained 5,525 housing units in 1990. Single-family homes accounted for 38 percent, while multifamily homes comprised 62 percent. The existing residential uses in the Treasure Island are concentrated in the following six distinct neighborhoods:

Sunshine Beach (Coney Island): This is an older section of the city located at the northern end of the island adjacent to John's Pass. The area contains a mixture of land uses. The area west of Gulf Boulevard has undergone some redevelopment, with older single-family detached houses, duplex dwellings, and small "mom and pop" motels replaced by multifamily developments and commercial tourist accommodations developed at upwards of 52 dwelling units per acre. Only isolated single-family detached and duplex dwelling units can still be found here. East of Gulf Boulevard is a mixture of single-family detached, duplex, and multifamily dwellings, and commercial tourist accommodations which developed at upwards of 32 dwelling units per acre, the latter located primarily along Gulf Boulevard.

Isle of Capri: This is an exclusively residential area. The eastern portion is an established single- family area with only two vacant lots remaining for development. The western portion is primarily a multifamily area.

Isle of Palms: This area is developed with residential uses and the character of the entire neighborhood is well established. As with Isle of Capri, two distinct development areas exist here. The eastern portion is totally developed in single-family residential uses on finger canals. The western portion is developed with a mixture of single-family, duplex, and multifamily dwellings.

Central Gulf Area: Although this area represents the commercial and tourist center of the city, there are several areas of multifamily residential development located south of the Treasure Island Causeway and east of Gulf Boulevard adjacent to Boca Ciega Bay. The area south of 103rd Avenue to the Blind Pass Bridge contains a mixture of residential types, tourist accommodations, and commercial uses of a varying nature. This southern portion, has, because of its age and density, been subject to recent redevelopment. This redevelopment has been of a commercial nature along Gulf Boulevard and residential in other areas.

Paradise Island: This area is similar to both Isle of Capri and the Isle of Palms, in that it contains two distinct residential areas. The area adjacent to the Treasure Island Causeway contains multifamily development with a few single-family detached dwellings scattered along the Causeway. South of this area are finger fills developed with single-family residential houses. This area also contains public/semi-public and recreation/open space uses.

Sunset Beach: Sunset Beach can be characterized as representing the old Florida beach community. Here can be found undersized lots, beach bungalows, single-family detached houses, duplexes, and multifamily dwellings, containing a mixture of old and new development, interspersed with commercial retail and tourist accommodation establishments. Small lot sizes and intense development have resulted in medium to high density development in most of Sunset Beach. Within Treasure Island, Sunset Beach contains the most significant land use conflicts and redevelopment pressures. These conflicts, found between 97th Avenue and Blind Pass, are the result of the unique character of the area. Because of the age and condition of the existing structures and the small size of residential lots, the trend in this area has been toward wholesale redevelopment, rather than revitalization of the existing land uses.

B. Commercial Land Use

Eighty-six acres, or 12 percent of the city, have a commercial land use designation. As a tourist-oriented community, most commercial activity within Treasure Island is geared towards providing services to visitors. The majority of commercial tourist facilities can be found along Gulf Boulevard, from Blind Pass to John's Pass. The more intense commercial tourist development has taken place west of Gulf Boulevard. Moderate commercial tourist development has been concentrated east of Gulf Boulevard.

The primary commercial "downtown" for the city can be found around the intersection of the Treasure Island Causeway and Gulf Boulevard. Most of the commercial establishments found in this area are aimed at satisfying the needs of the tourist economy. The largest non-tourist commercial center is a strip shopping center located at Gulf Boulevard and 107th Avenue. A small neighborhood commercial area can be found on Gulf Boulevard near the Blind Pass Bridge. The most intense commercial center in the city is a small area located east of Gulf Boulevard at John's Pass which contains a marina, restaurant, and seafood packing plant.

C. Public/Semi-Public Land Use

Ten acres, or one percent of the land area, have been identified as containing public or semi-public uses. The majority of this land is devoted to City Hall, the Public Works Complex, a church, and a fraternal club.

D. Recreation/Open Space Land Use

Treasure Island has designated 33 acres of land as recreation/open space, accounting for 4 percent of all upland area, excluding rights-of-way. The largest facilities include: the Treasure Island Golf, Tennis, and Recreation Center; Treasure Island Park and Community Center; Roselli Park; seven mini-parks; a municipal marina; John's Pass Bridge Catwalk; Treasure Island Beach Facility; and 28 beach access points and parking facilities. In addition to these facilities, Pinellas County and the City of St. Petersburg maintain two recreation areas along Gulf Boulevard, totaling 3.97 acres.

E. Conservation Land Use

As a result of extensive urbanization, much of the natural vegetation on the island has been replaced by ornamental vegetation. Consequently, the natural habitat for avian and terrestrial species has been destroyed. Only scattered, isolated areas of marine vegetation can be found on the upland areas of the community. Due to their small size and location on private property, no attempt was made at calculating their acreage.

The most significant undisturbed habitat is found on two mangrove islands located north of Isle of Capri in Boca Ciega Bay, between the cities of Treasure Island and Madeira Beach. These islands, Elnor Island and Bird Key, total 10.5 acres and represent 1.41 percent of city land area. The islands are owned by the city, and are being preserved due to the ecological assets afforded by such natural systems.

Finally, the largest conservation/preservation areas within Treasure Island are the approximately 115.5 acres of public beaches lining the Gulf of Mexico. These beaches provide passive recreation for thousands of residents, seasonal visitors, and tourists each year, and are a significant economic asset to the city.

F. Vacant/Undeveloped Land

Only fifteen acres of vacant/undeveloped land remain in Treasure Island, accounting for two percent of the total land area. Approximately 6.3 acres are designated as residential, 6.6 acres as mixed use, 1.8 acres as commercial, and 0.18 acres as preservation (see Section VI.).

G. Historic Resources

The Florida Department of State has indicated that a prehistoric archaeological site is listed in the *Florida Master Site File* as being within Treasure Island. As described by the Department, "The site is 8PI4 (John's Pass Mound) which is listed as a Safety Harbor period burial mound now covered with fill." The site is located in a cul-de-sac at the south end of 6th Street East on Isle of Capri.

III. NATURAL RESOURCES

According to Rule 9J-5.006(b), F.A.C., land use maps must illustrate any natural resources that are located within Treasure Island. The following section lists each required natural resource, describes the status and importance of each feature, and identifies on which map the resource is illustrated.

Beginning around 1920, dredge-and-fill development began to permanently alter the coastline of Pinellas County, in order to provide additional waterfront land for commercial and residential real estate. Approximately 25 percent of Boca Ciega Bay has been filled in this manner.

The city is comprised primarily of Made Land soil, and only scattered, isolated remanent marine wetland systems remain in the community. A number of mangroves have reestablished themselves in the rubble and rip-rap fronting the seawalls along Boca Ciega Bay. The urbanized character of the community has displaced most of the indigenous species of wildlife through either direct habitat destruction or ecosystem alteration. The only true natural areas remaining in the city are Elnor Island and Bird Key, which are protected by way of the *Future Land Use Map* (Map LU-4). On other vacant parcels available for future uses, development will occur in accordance with designated uses and in areas which are already ecologically disturbed. Therefore, it is anticipated that future uses will not adversely impact natural resources.

A. Existing and Planned Public Potable Water Wells and Wellhead Protection Areas

Because of the proximity of large bodies of salt water, fresh water storage in the deep aquifer is relatively insignificant in this area. Some shallow wells may supply water for secondary purposes such as irrigation. The sources of potable water for the city are located in northeast Pinellas County, Pasco County, and Hillsborough County. Tampa Bay Water and the Southwest Florida Water Management District have determined the area around Treasure Island has very low to no recharge to the Floridian Aquifer, and therefore no wellhead protection areas are located within the city's jurisdictional boundaries.

B. Beaches and Shores

Treasure Island is a long, narrow, low island, bounded on the north by John's Pass and on the south by Blind Pass, which is about 3.5 miles in length and averages 1,500 feet in width. Natural elevations along the island are generally below eight feet. As a result of several renourishment projects conducted by the Army Corps of Engineers, and the installation of protective structures such as seawalls, Treasure Island and other areas of the Sand Key barrier island have remained relatively intact against erosion.

Boca Ciega Bay lies adjacent to the city on the east. The shoreline is quite extensive due to the number of fill areas and inlets lining the Bay. Generally, the properties abutting Boca Ciega Bay have a residential land use designation and are separated from the water by concrete seawalls.

~~C. Topography~~

~~The city is located on the Treasure Island barrier island, which runs from John's Pass to Blind Pass. Being located on a barrier island, the city falls entirely within the 100-year floodplain and within the Coastal High Hazard Area, as shown on *Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area*. Areas within these designations are typically subject to hurricane flood surge. The elevation of the city varies between sea level and 7.5 feet above mean sea level. At the southern end of the city is an area with an average elevation of 5.5 feet, which frequently experiences flooding during heavy storms and rains. In addition, Flood Insurance Rate Maps have identified a hurricane velocity zone along the west side of Gulf Boulevard. The base flood elevation for the 100-year flood zone was determined to be 12 feet, while the velocity zone was 16 feet. In accordance with the National Flood Insurance Program, all new construction is required to meet minimum floor elevations above the base flood level.~~

~~D. Wetlands~~

~~No expansive wetlands are located within the upland portions of Treasure Island and only scattered, isolated pockets are found on properties that line Boca Ciega Bay. Two islands in the Bay comprise the ten acres of wetland area listed in Table 8. These islands are described in the *Coastal Management and Conservation Element*, and are illustrated on *Map CM-1: Vegetative Cover and Marine Resources*.~~

~~E. Soils~~

~~As shown on *Map LU-3: Soils Associations*, the United States Soil Conservation Service (SCS) has identified the Made Land - Palm Beach as the primary soil type found within Treasure Island. Typically, this association is characterized by nearly level land extensively altered by man created through diking, dredging, and transporting of fill material. The association is found mostly on keys and in coastal areas, and lacks any surface drainage pattern.~~

~~Table 2 identifies all five of the individual soil types within the Made Land-Palm Beach Association that are found in the city. With the exception of coastal beach, these soil types generally do not present a significant limitation on future development and the use of vacant land.~~

~~Table 2~~
~~Soil Types~~

~~Type~~	~~Characteristics~~	~~Location~~	~~Ability to support low buildings*~~
~~Coastal beach~~	~~· Consists of narrow strips of tidewashed sand bordering islands and parts of the mainland · Areas are covered during storms and daily at high tide.~~	~~Along 50 feet of coastline~~	~~Severe~~

	· Beaches range from a few feet to 500 feet in width · Long stretches without vegetation, but sparse salt-tolerant grasses and other plants grow in places. Depth to the water table varies with the tide · Sand is light gray to white and consists of fine quartz particles		
Made land	· Consists of mixed sand, clay, hard rock, shells, and shell fragments that have been transported, reworked, and leveled by earth-moving equipment or of material that has been dredged from the bay and used to fill diked areas	Most vacant land within the city	Varies with soil composition
Palm beach	· Consists nearly level, well-drained shelly sands that have undergone little or no weathering		Slight limitations
St. Lucie, fine sand, shell sub-stratum	· Nearly level soil on low ridges on barrier islands in the western part of the county · Water table at a depth of 40 to 60 inches for six months or more in most years. Within 40 inches for less than 60 days	Much of the vacant land within the city	Varies with soil composition
Tidal swamp	· Water is several inches deep at low tide and one or two feet deep at high tide · Has a thick growth of mangrove trees and a few small patches of salt-tolerant plants. Subject to wave action.	Elnor Island and Bird Key	Very severe limitations

Source: United States Soil Conservation Service (SCS), 1972

* The SCS classifies the ability of a soil type to support the development of foundations of low buildings as follows:

Slight: Limitations are so minor that they can be overcome easily. The soil properties generally are favorable for the specified use, and good performance and low maintenance cost can be expected.

Moderate: Limitations can be overcome by careful planning and design or by special maintenance. The soil properties are moderately favorable for the specified use.

Severe: Limitations are difficult and costly to over-come. They require major soil reclamation, special design, or intensive maintenance because the soils have one or more properties unfavorable for the specified use.

IV. PROJECTED POPULATION

Treasure Island is virtually built-out, with only small parcels of vacant residential land currently available. As such, population projections will remain fairly consistent with the size of the

existing population. Additionally, due to the numerous seasonal residents Treasure Island continues to attract, seasonal projections will be forecasted in the following analysis.

"The success of local government comprehensive planning depends to a great extent on the accuracy of population estimates and projections. The rate of population growth within a community will determine future requirements for housing, transportation, recreation, schools, and other public and private facilities. Local planning agencies, therefore, should attempt to forecast as accurately as possible their projected growth by using the most appropriate techniques and methodologies and by applying their best professional judgement to the analysis of prevailing local conditions."

Department of Community Affairs

Resident Population (otherwise referred to as the permanent population) - Inhabitants counted in the same manner utilized by the United States Bureau of the Census, in the category of total population. Resident population does not include seasonal population.

A. Historical Population Trends

The May, 1955, merger between the towns of Boca Ciega, Sunset, and Sunshine Beach and the city of Treasure Island brought the combined city population from 75 residents to over 3,500. The city experienced rapid growth through the 1960s, which tapered of at the end of the decade. Once again, the city experienced a moderate increase in population during the 1980s, with the completion of several multifamily developments located on the last large vacant sites within the community.

Table 3
Permanent Population Trends, 1950-1990

Year	Population	% Change
1950	75	--
1960	3,506	4,574.7%
1970	6,120	74.6%
1980	6,316	3.2%
1990	7,266	15.0%

Source: U.S. Bureau of the Census, 1950, 1960, 1970, 1980, and 1990

B. 1995 Population Estimates

The 1995 permanent population estimate was obtained from two sources: the Bureau of Economic and Business Research (BEBR) at the University of Florida and the Pinellas County

Planning Department. Historically, these population estimates have differed due to the varying population estimation techniques used by the two agencies. All seasonal population data, including tourist figures, were obtained from the *Pinellas County Population Projections, 1995-2030* report completed by the Pinellas County Planning Department.

1. 1995 Permanent Population

The resident population consists of those people living within the city who consider Treasure Island their usual place of residence. According to U.S. Census data, the permanent population was 7,266 in 1990. This number represents an increase of 950 residents, or fifteen percent, from the 1980 count. BEBR was consulted to obtain population estimates from 1991 to 1995. As shown in Table 4, the population has remained relatively stable. According to BEBR, the permanent population was estimated at 7,357 residents in 1995. Included in Table 4 is the 1995 population estimate created by the Pinellas County Planning Department. Comparatively, the two agencies' 1995 estimation differs by only three persons.

Table 4
Permanent Population Estimates, 1990-1995

Year	Population	% Change
1990	7,266*	--
1991	7,313**	0.64%
1992	7,311**	-0.02%
1993	7,327**	0.22%
1994	7,348**	0.28%
1995	7,357**	0.12%
	7,355†	--

* 1990 U.S. Census
** Estimated by the Bureau of Economic and Business Research, Univ. of Florida
† Estimated by the Pinellas County Planning Department

2. 1995 Seasonal Population

According to Rule 9J-5, F.A.C., the seasonal population includes tourists and other short-term and long-term visitors. As noted in *Pinellas County Population Projections, 1995-2030*, the number of seasonal residents living in permanent housing (excluding tourists) was based on data obtained from the U.S. Bureau of the Census. Pinellas County's tourist data was supplied by the St. Petersburg/Clearwater Area Convention and Visitors Bureau. According to the Pinellas County Planning Department, the 1995 seasonal population living in permanent housing totaled 1,489 persons, while tourists accounted for an additional 4,210 persons.

3. 1995 Total Population

Table 5 combines the estimated permanent population and seasonal population.

Table 5
Total Population, 1995

		Population
Permanent Population		7,355
Seasonal Population	Seasonal Residents	1,489
	Tourists	4,210
Total Population		**13,054**

Source:
Pinellas County Planning Department, 1995

C. Population Projections

Population projection data was obtained from *Pinellas County Population Projections, 1995-2030* report prepared by the Pinellas County Planning Department. In accordance with Rule 9J-5.005(4), F.A.C., two planning time frames are included in the population analysis, "one for at least the first five-year period subsequent to the plan's adoption and one for at least an overall ten-year period." In accordance with these requirements, the planning time frames of 2005 and 2010 were selected.

1. Permanent Population Projection

After reviewing several possible projection methods, the Pinellas County Planning Department (1995) determined that "the Double Exponential Projection Model (DEPM) would best reflect the circumstances and conditions which apply to Pinellas County." This model provides for a deceleration of the rate of growth toward a given population time and ultimate level of build-out, based on the *Countywide Future Land Use Plan*. To operate the model, a beginning point, an intermediate point, and a final maximum level or value must be known. Population counts from the 1980 and 1990 U.S. Census were used to determine the beginning and intermediate data points. The maximum level was based on the amount of vacant land available and the maximum number of units that could be constructed according to the *Countywide Future Land Use Map*.

Treasure Island is a virtually built-out community, with only 13 acres of available vacant land with a residential or mixed use land use designation. As such, Pinellas County has forecasted the population to grow less than one percent between 1995 and 2000. Thereafter, only a handful of new residents are expected to relocate into the city, as shown in Table 6.

Table 6

Permanent Population Projections

Year	Population	% Change
1995	7,355	--
2000	7,404	0.66%
2005	7,432	0.37%
2010	7,448	0.21%
2015	7,457	0.12%
2020	7,463	0.08%
2025	7,466	0.04%
2030	7,467	0.02%

Source: Pinellas County Planning Department, 1995

2. Seasonal Population Projection

Obtaining seasonal population data remains the most difficult aspect of projecting future populations. As noted by DCA (1985), "much of the difficulty lies in the lack of statistical data, by county, relating to seasonal inhabitants....Therefore, the Department will allow more latitude in judging the acceptability of whatever methodology is chosen for estimating and projecting seasonal populations."

Pinellas County also used the DEPM methodology to calculate the projected number of seasonal residents. The methodology involved calculating the number of dwelling units used seasonally and determining the average number of persons per seasonal unit for each planning horizon. First, the 1990 census was consulted to determine the number of seasonal units located within the city. Dwellings where census questionnaire respondents indicated a "usual home elsewhere" were labeled as seasonal units. From the 1990 data, the ratio of seasonal housing units to total housing units was calculated. This ratio was then applied to the total number of expected housing units for all planning time frames, as forecasted by the DEPM. Secondly, a "persons per seasonal unit rate" was applied to convert the projected number of seasonal units into the projected number of seasonal residents. Because the census does not include data on the average number of persons per seasonal unit, the county developed a countywide person per seasonal unit factor. Based on survey results, the county concluded the ratio of 1.79 persons per seasonal unit best characterized the seasonal housing size in Pinellas County. Therefore, the projected number of seasonal residents totaled the number of seasonal units in 2005 and 2010 multiplied by 1.79 persons per seasonal unit. Using this methodology, the seasonal population is expected to remain stable at approximately 1,500 persons between 1995 and 2010 (see Table 7).

Tourist data was supplied by the St. Petersburg/Clearwater Area Convention and Visitors Bureau. It was assumed that the number of hotel, motel, and timeshare units would remain constant throughout the planning time frames, and that the number of visitors using these facilities would remain similar to current counts. However, because the

number of dwelling units occupied by permanent residents is expected to increase, it was assumed that the number of visitors staying with friends or relatives would increase at a corresponding rate. In 1995, the number of tourists visiting Treasure Island was estimated at 4,210 persons, one of the highest rates in Pinellas County. The size of this population is expected to remain virtually unchanged during the next 35 years.

Table 7
Permanent and Seasonal Population Estimates and Projections, 1995-2030

Year	Permanent Population	Seasonal Population		Total Population
		Permanent Housing	Tourist	
1990*	7,266	1,471	---	8,737
1995	7,355	1,489	4,210	13,054
2000	7,404	1,497	4,212	13,114
2005	7,432	1,503	4,214	13,149
2010	7,448	1,506	4,215	13,169
2015	7,457	1,508	4,216	13,181
2020	7,463	1,508	4,216	13,187
2025	7,466	1,510	4,216	13,191
2030	7,467	1,510	4,216	13,193

* U.S. Bureau of the Census, 1990. Tourist figures were unavailable for this year.
Source: Pinellas County Planning Department, 1995

V. PUBLIC FACILITY AND SERVICE ANALYSIS

As outlined in Chapter 163, F.S., adequate public facilities and services must be in place to serve new development concurrent with the impacts of development. In 1993, the *Environmental Land Management Study III Act* revamped concurrency requirements for the State of Florida. The Act mandated that specific facilities and services are subject to concurrency requirements, including transportation, sanitary sewer, potable water, solid waste, and stormwater management. However, before providing public facilities and services for new development, a city must prove that these mechanisms are available for existing land uses. The following section addresses the availability of facilities and services within Treasure Island.

A. Traffic Circulation

There are three minor arterial facilities which serve Treasure Island, including state-controlled Gulf Boulevard and Blind Pass Bridge, and locally-controlled Treasure Island Causeway. In addition, major local roads include West Gulf Boulevard, Capri Boulevard, Paradise Boulevard, 115th Avenue, and Bayshore Drive. In 1995, all roadway segments were operating at the level-

of-service standard (LOS) "D" or better, with the exception of the Blind Pass Bridge, which was operating at LOS "F." This bridge recently underwent reconstruction from a two-lane undivided to a four-lane divided facility. It is anticipated that with the improvements resulting from the reconstruction, Blind Pass Bridge will operate at or better than the LOS "D" standard.

B. Sanitary Sewer

The City of Treasure Island owns and maintains 25 miles of sanitary sewer lines and 11 lift stations located within its municipal boundaries. There are no septic tanks in Treasure Island. All sewage is treated at the Northwest Wastewater Reclamation Facility, which is owned and operated by the City of St. Petersburg Utilities Department. Currently, the Northwest Facility serves 84,725 people, is operating at an average of 64.5 percent of capacity, and maintains a level of service of 152 gallons per capita a day (gpcd). Based on these data, the plant is operating at an acceptable level of service and the facility continues to serve the demand of existing land uses.

C. Solid Waste

The City of Treasure Island collects all refuse generated within its boundaries, with the exception of items left to be recycled. All solid waste is sent to the Pinellas County Refuse-to-Energy Plant, the Bridgeway Acres Sanitary Landfill, or is recycled. According to city collection figures, Treasure Island produced 8,869 tons of solid waste in Fiscal Year 1994/95. Of this amount, 10 percent was recycled and 90 percent was delivered to the Refuse-to-Energy Plant and landfill. With a total population of 13,054, the city generates an estimated 3.72 pound per capita a day (ppcd) of solid waste, with 3.3 ppcd sent to the incinerator or buried in the landfill. Due to the high proportion of seasonal residents included within these estimations, the average generation rate is approximately 50 percent lower than the countywide average. For the last six-year period, the Refuse-to-Energy Plant has been incinerating solid waste at 71 percent of capacity, and the landfill is not expected to reach capacity until 2025. Based on these data, the plant and landfill are operating at an acceptable level of service, and the facilities continue to serve the demands of existing land uses.

D. Storm-water Management

As part of the Pinellas County barrier island system, Treasure Island is subject to the effects of heavy rains, storm surges, and high tides. Currently, the city requires that stormwater management systems be designed to accommodate a 25-year, 24-hour storm event. Until recently, the city has relied heavily on new development and redevelopment to improve existing conditions. Realizing the difficulty in adhering to these requirements and continued flooding problems, the city commissioned Tampa Bay Engineering, Inc. to develop the 1996 *Treasure Island Master Drainage Plan*. The plan brought forth several recommendations to improve the storm-water management system and recommended a series of modifications to existing design requirements. For a further discussion of the storm-water management system, see the *Infrastructure Element*.

E. Potable Water

Pinellas County Utilities System (PCUS) provides potable water to Treasure Island residents and maintains the water distribution system up to individual property lines. Property owners are responsible for lines located on their land. Currently serving 62 percent of the county's population, the PCUS estimates current potable water demand at 125 gallons per capita a day

(gpcd). In 1995, Pinellas County recorded the average daily water demand at 78.9 mgd. Operating at 86 percent of average daily capacity, the PCUS adequately serves existing land uses within the service area with potable water.

F. Natural Groundwater Aquifer Recharge

As explained in the *Infrastructure Element*, the land beneath coastal communities and adjacent mainland areas in southern Pinellas County yields groundwater that is highly mineralized and saline. Therefore, in the area surrounding Treasure Island, groundwater recharge rates are negligible and have very low to no effect on the Floridan Aquifer.

VI. VACANT LAND ANALYSIS

As shown on *Map LU-1: Existing Land Use Map*, Treasure Island offers little area for future growth. Of the 744 developable acres, only 15 acres or 2 percent is vacant/undeveloped. Table 8 lists the number of vacant acres available in the various land use categories. As required by Rule 9J-5, F.A.C., these remaining vacant parcels have been analyzed to determine suitability for development. The analysis indicates that the vacant land exhibits the same natural resources, soils, topography, and historic resources as the remainder of the city.

Table 8
Vacant Land by Future Land Use, 1996

Future Land Use Category	Acreage
Residential Urban	1.13
Residential Medium	5.22
Resort Facilities Medium	2.26
Resort Facilities High	4.43
Commercial General	1.80
Preservation	0.18
Total	**15.02**

Source: Pinellas County Property Appraiser, 1996

VII. LAND NEEDED TO SUPPORT PROJECTED POPULATION

A. Land Required for Total Housing Need

To accommodate the expected amount of future residents, the city must ensure that land is available for future development. The permanent population in 2005 is estimated to be 7,432. According to the Shimberg Center for Affordable Housing, 4,766 units will be needed to accommodate this population, requiring an increase of 280 units from the 1995 inventory. By the year 2010 an additional 70 units will be needed, resulting in a total of 350 units needed within 15 years.

As shown in Table 8, approximately 7.8 acres are available for development within the vacant residential land use categories. In accounting for the development potential associated with these remaining vacant parcels, a maximum of 192 units could be developed based on the allowable density as illustrated on *Map LU-4: Future Land Use Map*. Although such factors as environmental constraints, infrastructure limitations, or changes to land development regulations were not taken into account, this total represents a reasonable approximation of the maximum number of units that can be constructed within the current boundaries of the city.

When developing housing need projections for the years 2005 and 2010, the Shimberg Center for Affordable Housing based their calculations on Treasure Island population projections developed by the Pinellas County Planning Department. In reviewing these projections, the city's permanent population is expected to increase by 77 residents by 2005, and another 16 residents by 2010. Assuming that the expected number of persons per household will remain relatively stable during these planning time frames (2005 and 2010), the city expects the need for additional housing to occur at the same rate as the increase in population. Furthermore, future demand should reflect recent housing construction activity, which was recorded at less than 8 units annually between 1990-1995.

However, the Shimberg Center has forecasted a need for an additional 350 units by 2010, over 250 units more than the city anticipates needing by the year 2010. The city has contacted the Shimberg Center and informed them of the difference. The Shimberg Center has recognized that there are shortcomings in the methodology and is currently trying to remedy discrepancies. Therefore, this element recognizes that the results of the research noted above must be refined in order to truly evaluate Treasure Island's future housing need.

VIII. REDEVELOPMENT

Redevelopment has been taking place on a limited, parcel-by-parcel basis throughout the city, with the heaviest concentration occurring in the Sunset Beach area. Although in the past, local officials had expressed some interest in revitalizing the primary retail-commercial area depicted on *Map B-1: Central Business District*, no actions or recommendations had been taken to stimulate such revitalization. However, as indicated by the adoption of Resolution 97-102, endorsing a "visioning process", designating facilitators for the project, and appointing a steering committee to begin the process, city officials have now taken a proactive position in the revitalization/redevelopment of key areas in the city.

In 2000, the Downtown Central Business District was designated as a Community Development Block Grant (CDBG) area, and the City was the recipient of a $300,000 matching CDBG federal grant for streetscape and pedestrian improvements. A number of businesses also participated in the CDBG building facade grant program.

In 2005, the City of Treasure Island initiated the development of a Downtown Redevelopment Plan, which was adopted in November 2006. During the same time period the Pinellas Planning Council (PPC) adopted new rule changes that require all municipalities to develop a Special Area Plan (SAP) for those areas in which they wish to promote redevelopment. Thus, the City began to initiate the development of a Downtown Special Area Plan upon approval of those changes with the Countywide Plan Rules. This document culminated into the development and

future implementation of a Special Area Plan, which reflects the City's vision for the downtown core.

The purpose of the Downtown Special Area Plan is to bring about and encourage mixed use redevelopment within the downtown core and make this area more compatible to the wishes of the community. Currently, the existing Commercial General Land Use category does not provide the opportunity to promote mixed use development. The amendment of the Future Land Use Element (FLUE) text to include the Planned Redevelopment-Mixed Use (PR-MU) as a land use category will provide support for the designation of the Treasure Island Downtown Core as PR-MU on the Future Land Use Map (FLUM).

Under Pinellas Countywide Plan Rules, Section 2.3.3.8., the purpose of the Planned Redevelopment-Mixed Use Land Use Category " *to depict those areas of the county that are developed with a collection of residential, office, and commercial uses, along corridors, adjacent to neighborhoods or within distinct areas that are interrelated and complementary. This category should facilitate infill and redevelopment of these areas to create a desirable mix of nonresidential and residential uses by promoting aesthetically pleasing, safe environments, and buildings that are compatible with the area's character, uses, and transportation facilities."*

The City intends to adopt new land development regulations to implement the Downtown Special Area Plan by designating a Planned Redevelopment-Mixed Use Land Use Category. The new regulations will establish two subcategories under the PR-MU, as Planned Redevelopment Mixed Use-Core (PR-MU-Core) and Planned Redevelopment Mixed Use-Gulf Boulevard (PR-MU-Gulf Boulevard). These regulations will also define the requirements for mixed use development addressing building placement and configuration, building heights and form, ground floor and upper story uses, parking, and conditions addressing design of ground level facades along streets and public spaces.

Treasure Island is currently revising its community vision statement, which is an important initial step to ensure that desired redevelopment activities occur. This visioning effort has included an emphasis on the need to encourage mixed use development in Treasure Island. Manifesting the spirit of the vision statement within the comprehensive plan with objectives and policies is essential to achieving the City's redevelopment goals.

IX. TRANSFER OF DEVELOPMENT RIGHTS

Transfer of Development Rights is a land use regulatory tool under which development rights can be severed from one parcel of land and sold to another parcel of land under a market transaction. The Comprehensive Plan provides for establishment of a voluntary Transfer of Development Rights (TDR) program as a tool too implement the goals of a redevelopment plan and/or Special Area Plans approved by the City, Pinellas Planning Council and the Countywide Planning Authority. TDR's are often implemented to protect designated environmental, open space, archaeological, historical or architecturally significant sites.

The parcel from which the rights are transferred is then permanently restricted as to future development, and the purchaser of such rights may assign them to a different parcel to gain additional density. Usually, TDR programs designate sending areas from which rights may be transferred and receiving areas to which the rights may be sent.

TDR programs appear to offer many advantages to local governments that want to control land use but also compensate landowners for restrictions on the development potential of their properties. TDR programs can be easier to implement than typical zoning programs; they make development more predictable and use the market to compensate landowners for lost property value. TDR programs are also more permanent than traditional zoning regulations.

X. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Section 163.3177(6)(a), Florida Statutes (F.S.), and Rule 9J-5.006(3), F.A.C., the following represents the future land use goals, objectives, and policies of the City of Treasure Island. The goals are intended to address the establishment of a long-term end towards which the land use programs and activities of the community are ultimately directed. Objectives are measurable actions, while policies are implementation activities, both of which support attainment of the goals.

B. Nonapplicable Items

Based on the findings contained in this element, it has been determined that the following objectives and policies identified in Rule 9J-5.006(3), F.A.C., and Chapter 163, F.S., are not applicable to the City of Treasure Island:

- Rule 9J-5.006(3)(b)2, F.A.C.: Encourage the redevelopment and renewal of blighted areas - There are no such areas within the city.
- Rule 9J-5.006(3)(b)3, F.A.C.: Encourage the elimination or reduction of uses inconsistent with the community's character and future land uses - There are no uses identified within the community.
- Rule 9J-5.006(3)(b)7, F.A.C.: Coordinate with any appropriate resource planning and management plan prepared pursuant to Chapter 380, F.S. - There are no such areas in or near the city.
- Rule 9J-5.006(3)(b)8, F.A.C.: Discourage the proliferation of urban sprawl - Not appropriate to the community due to its developed character, and limited potential for future development.
- Rule 9J-5.006(3)(b)11, F.A.C.: Availability of dredge disposal sites -There are no such sites.
- Rule 9J-5.006(3)(c)6, F.A.C.: Protection of potable water well fields - There are no such areas in the city.
- Rule 9J-5.006(3)(c)8, F.A.C.: Identification, designation, and protection of historically significant properties - There are no such properties within the city.
- Rule 9J-5.006(3)(c)9, F.A.C.: Designated dredge spoil disposal sites - There are no such sites.
- Section 163.3177(6)(a), F.S.: Public School collocation criteria - There are no public school sites in the city currently, nor will there be in the future.

C. Implementation

~~Unless otherwise stated, the implementation of objectives and associated policies contained in Section D shall be through the application of land development regulations.~~

Introduction

The Future Land Use Element is provided to ensure the efficient use of land while achieving a sustainable, climate resilient community and protecting the environment. The goals, objectives, and policies are designed to guide the future general distribution, location, and extent of land uses.

~~**D. Local Goals, Objectives, and Policies**~~

Goal 1:

The City shall ensure that the residential character of the City ~~of Treasure Island~~ is maintained and protected while:

- **Maximizing the potential for economic benefit resulting from the tourist trade and professional services;**
- **Maximizing the quality of life through the enjoyment of natural and man-made resources by citizens and visitors alike; and**
- **Minimizing the threat to health, safety, and welfare posed by hazards, nuisances, incompatible land uses, and environmental changes ~~degradation~~.**

Objective 1.1: Future Land Use Map and Land Use Designations

Ensure that redevelopment and new development occur in planned areas at the appropriate densities and intensities as indicated on, and consistent with the *City of Treasure Island 2040 Future Land Use Map.*

Policy 1.1.1: The City's ~~of Treasure Island~~ *Future Land Use Map* shall be consistent with the Countywide Plan Rules ~~*Rules Concerning the Administration of the Countywide Future Land Use Plan,*~~ as ~~*amended*~~ adopted by Pinellas County ~~Ordinance No. 89-4 effective February 6 1989, and subsequent rule amendments~~.

Policy 1.1.2: The City ~~of Treasure Island hereby~~ adopts those land use categories identified and defined in this policy as those which shall govern residential development within the ~~community~~ City ~~pursuant to Rule 9J-5.006(3)(c)7, Florida Administrative Code~~.

- Residential Urban (RU), density of 0 to 7.5 residential units per acre with a maximum impervious surface ratio of 0.7
- Residential Medium (RM), density of 0 to 15 residential units per acre with a maximum impervious surface ratio of 0.7

Policy 1.1.3: The City ~~of Treasure Island hereby~~ adopts those land use categories identified and defined in this policy as those which shall govern mixed-use development within the City ~~community pursuant to Rule 9J-5.006(3)(c)7, Florida Administrative Code~~.

- Resort Facilities Medium-30 (RFM-30), with a residential density of 0 to 15 units per acre and a tourist accommodation density of 0 to 30 units per acre with a maximum floor area ratio (FAR) of 0.65 and a~~n~~ maximum impervious surface ratio (ISR) of 0.85 with a percentage distribution of 50 to 70 percent residential, ~~30~~ up to 50 percent tourist accommodation, and ~~10~~ up to 20 percent "other."

- Resort Facilities High-50 (RFH-50), with a residential density of 0 to 15 units per acre and a tourist accommodation density of 0 to 50 units per acre with a maximum FAR of 1.2 and a~~n~~ maximum ISR of 0.95 with a percentage distribution of 30 to 60 percent residential, ~~40~~ up to 70 percent tourist accommodation, and ~~5~~ up to 10 percent "other."

- Planned Redevelopment-Mixed Use (PR-MU). The purpose of this category is to depict those areas that are developed with a collection of residential, office, and commercial uses, along corridors, adjacent to neighborhoods or within distinct areas that are interrelated and complimentary. The category should facilitate infill and redevelopment of these areas to create a desirable mix of non-residential and residential uses but promoting aesthetically pleasing, safe environments, and buildings that are compatible with the area's character, uses, and transportation facilities.

  The PR-MU in the Downtown Redevelopment Area will consist of two sub-categories:

  - Planned Redevelopment-Mixed Use-Core (PR-MU-Core), with a residential density of 0 to 24 units per acre and a tourist accommodation density of 0 to 60 units per acre with a maximum floor ratio area (FAR) of 1.00 and a~~n~~ maximum impervious surface ratio area (ISR) of .90.

  - Planned Redevelopment-Mixed Use-Gulf Boulevard (PR-MU-Gulf Blvd), with a residential density of 0 to 15 units per acre and a tourist accommodation density of 0 to 60 units per acre with a maximum FAR of .55 and a~~n~~ maximum ISR of .90.

  Within the PR-MU uses, development standards, density/intensity standards and locational characteristics associated with this category must be set forth in a special area plan.

  - Shall be a minimum of ten (10) acres in size.
  - Must include residential with office, and/or commercial uses, along corridors adjacent to neighborhoods or within distinct areas that are interrelated and complimentary, and
  - Shall be of countywide significance.

The following uses in the PR-MU shall not exceed the respective acreage threshold designated for such uses. Any such use, alone or when added to existing contiguous like uses(s), which exceeds the designated threshold shall require a plan map amendment that shall include such use and contiguous uses:

- Ancillary Non-residential; Transportation/Utility – Shall not exceed a maximum area of three (3) acres.
- Institutional Use (except public educational facilities which are not subject to this threshold) – Shall not exceed a maximum area of five (5) acres). And

Planned Redevelopment shall require a Special Area Plan that must be approved by the City Commission. The Special Area Plan and substantive changes to an approved special area plan shall be subject to review by and approval of the Countywide Planning Authority upon recommendation of the Pinellas Planning Council. While each Special Area Plan shall establish the density, intensity, and mix of permitted uses, the maximum density and intensity permitted in any PR-MU designated area shall be a maximum permanent density of 24 residential units per acre, a tourist dwelling density of 60 units per acre and a maximum floor area ratio of 1.0.

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The Special Area Plan shall include at minimum, information addressing the following:

A. Plan Issues and Objectives.
   - **A.** Existing land use and related characteristics of the area;
   - **B.** Issues to be addressed by the plan;
   - **C.** Plan objectives in relationship to the City's ~~C~~comprehensive ~~P~~plan and PlanPinellas ~~Pinellas by Design~~.

B. Plan Composition.
   1. Permitted uses and any differentiation by location;
   2. Density/intensity standards for permitted uses;
   3. Design guidelines, if any, appropriate to plan;
   4. Affordable housing provisions, if any, appropriate to the plans;
   5. Mixed use provisions, if any, appropriate to the plan;
   6. Special provision for multimodal mobility and circulation, ~~including mass transit,~~ access management, parking, and safety ~~pedestrians, and bicycles~~.
   7. Identification of and reference to land development regulations that implement the plan;
   8. Public and/or private improvements, contributions and/or incentives, if any, appropriate to the plans; and,
   9. The local government's plan approval process.

C. Plan Impacts.
   10. Identification of water, sewer, and storm-water drainage impacts that may be anticipated based on the plan;
   11. Identification of overall system characteristics;

12. An analysis of the difference between these anticipated impacts on the systems as compared to the impacts based on the current Countywide Plan Map designations.

Policy 1.1.4: The City ~~of Treasure Island hereby~~ adopts those land use categories identified and defined in this policy as those which shall govern other development within the City ~~community pursuant to Rule 9J-5.006(3)(c)7, Florida Administrative Code~~.

- Commercial General (CG), with a density of 0 to 22 units per acre for tourist accommodations, a maximum floor area ratio (FAR) of 0.55, and a~~n~~ maximum impervious surface ratio (ISR) of 0.9
- Recreation Open Space, (R/OS), with a maximum FAR of 0.25 and a maximum ISR of 0.6 (special permit required)
- Preservation (P), with a maximum FAR of 0.1 and a maximum ISR of 0.2 (special permit required). The City may define in the land development regulations more restrictive zoning categories, including Conservation and Beachfront as appropriate, to be permitted under the Preservation land use category.
- Institutional (I), with a maximum FAR of 0.55 and a maximum ISR of 0.75
- Transportation/Utility (T/U), with a maximum FAR of 0.55 and a maximum ISR of 0.75

Policy 1.1.5: Land use districts that define specific uses and development densities and intensities implementing these land use designations shall be included within the land development regulations.

~~**Measure:** All redevelopment and new development consistent with the T*reasure Island Comprehensive Plan* and *Future Land Use Map*.~~

Objective 1.2: Land Development Regulations

Future growth and development shall be managed through the implementation and enforcement of the land development regulations as codified in City~~'s of Treasure Island~~ *Land Development Regulations* consistent with the comprehensive plan.

Policy 1.2.1: The land development regulations shall contain provisions which implement guidelines for the administration of those land use categories adopted for the City ~~of Treasure Island~~.

Policy 1.2.2: The land development regulations shall recognize the limitations of development on a barrier island resulting from the effects of the Coastal High Hazard Area, 100-year floodplain, vulnerability to tropical storms, topography, sea-level rise, and soil conditions.

Policy 1.2.3: The land development regulations shall include provisions for the subdivision of land, the use of land, the protection of environmentally sensitive lands, and flood hazard safety.

Policy 1.2.4: The land development regulations shall contain provisions for drainage and stormwater management, open space, safe and convenient on-site traffic flow, parking, and signage.

Policy 1.2.5: The land development regulations shall contain provisions for drainage and storm-water management based on the minimum criteria established by the Southwest Florida Water Management District and other governmental agencies with jurisdictional responsibilities.

Policy 1.2.6: The land development regulations shall contain provisions ensuring that all applications for development approval are subject to site plan review unless exempted in the regulations.

~~**Policy 1.2.7:** The land development regulations shall contain provisions ensuring that all development is consistent with National Flood Insurance Program regulations.~~

Policy 1.2.7~~8~~: The land development regulations shall contain provisions ensuring the compatibility of adjacent land uses and provide for adequate and appropriate buffering.

Policy 1.2.8~~9~~: The land development regulations shall contain provisions ensuring that all development is consistent with those coastal construction regulations adopted and/or amended by the State of Florida, Pinellas County, and other agencies with jurisdictional authority.

Policy 1.2.9~~10~~: The land development regulations shall contain provisions encouraging the use of native ~~vegetation,~~ and Florida Friendly™ landscaping and vegetation while encouraging the removal and prohibiting the planting of exotic and/or invasive species.

Policy 1.2.10~~11~~: The land development regulations shall contain provisions encouraging land development which highlights and protects scenic amenities and ensures public access and minimizes human impacts to the waterfront.

~~**Policy 1.2.12:** The City shall review and appropriately amend the land development regulations to ensure consistency with the adopted community vision statements.~~

Policy 1.2.11~~13~~: New development and redevelopment shall be required to comply fully with the locational and construction regulations of the Federal Emergency Management Agency and the National Flood Insurance Program, as well as those of the ~~c~~City ~~and county~~.

Policy 1.2.12: The land development regulations shall contain provisions that aim to improve resiliency to projected environmental changes.

Policy 1.2.13: The land development regulations shall encourage the use of low impact development measures.

Policy 1.2.14: The land development regulations shall encourage mixed-use development, where appropriate.

~~**Measure:** Implementation of the land development regulations consistent with this comprehensive plan.~~

Objective 1.3: Residential Development

The integrity and quality of life will be maintained in residential neighborhoods.

Policy 1.3.1: All residential lot sizes shall be governed by standards in the land development regulations.

Policy 1.3.2: The City shall, through provisions contained in the land development regulations, encourage a balanced land use mix providing for a variety of housing styles, densities, and open space.

Policy 1.3.3: The City shall encourage opportunities ~~for all citizens~~ to purchase or rent affordable, decent, safe, and sanitary housing ~~which they can afford~~, free from arbitrary discrimination in accordance with Pinellas County's Fair Housing Act. ~~because of race,sex, handicap, ethnic background, marital status, or household composition~~.

Policy 1.3.4: Existing residential land uses shall, through provisions contained in the land development regulations, be protected from the encroachment of incompatible activities.

~~**Policy 1.3.5:** The land development regulations shall contain provisions which encourage the conservation, maintenance, and rehabilitation of existing residential properties land uses~~

Policy 1.3.5~~6~~: The land development regulations shall contain provisions wherein residential land uses are:

- ~~l~~Located and designed to protect life and property from natural and manmade hazards, to the extent possible ~~such as flooding, excessive traffic, subsidence, noxious odors, noise, and deterioration of structures.~~

~~**Policy 1.3.7:** Residential land uses shall, through provisions contained in the land development regulations, be~~ e

- Encouraged in a manner which is compatible with the type and scale of surrounding land uses.

- ~~**Policy 1.3.8:**~~ Required to provide ~~B~~buffering and open space ~~requirements within multifamily residential land uses shall be required,~~ as appropriate, ~~through provisions contained in the land development regulations.~~

~~**Measure:** Implementation of density limits, policies, and land development regulations~~

Objective 1.4: Nonresidential Development

Commercial development shall occur in a planned and orderly fashion.

Policy 1.4.1: In order to minimize incompatibility when residential and mixed use or commercial land uses share a common boundary, the land development regulations shall

contain provisions wherein the installation of buffering, as appropriate, is required when there is a change of use or increase in intensity.

Policy 1.4.2: The land development regulations shall contain provisions wherein commercial land uses are located in a manner which ensures the compatibility with the type and scale of surrounding land uses and where existing or programmed public facilities shall not be overburdened.

Policy 1.4.3: The land development regulations shall contain provisions wherein development of seasonal tourist facilities within the RFM-30 and RFH-50 land use categories are not used as a means to usurp the residential density limitations established by this comprehensive plan.

Policy 1.4.4: Commercial-tourist facilities shall be directed to locations abutting or accessible to the City's water and beach resources, as feasible, consistent with the limitations on such facilities established by the Coastal Management and Conservation Elements.

Policy 1.4.5: The land development regulations shall contain provisions wherein ancillary commercial uses may be incorporated into the RFM-30 and RFH-50 land use categories.

Policy 1.4.6: The City shall, through provisions contained in the land development regulations, ensure that commercial areas are located and designed so as to enhance safety by providing adequate off-street parking and loading areas and by separating pedestrian and vehicular traffic.

Policy 1.4.7: ~~Strip commercial development that compounds traffic and land use conflicts shall be strongly discouraged,~~The City will encourage mixed-use, creative architectural design. Parking regulations in the land development regulations shall ensure adequate levels of parking spaces while encouraging the reduction of pedestrian and vehicular conflicts and enhancing the aesthetics of the pedestrian realm.

~~**Policy 1.4.8:** The City shall continue to recognize the area from 104th Avenue through 108th Avenue, inclusive, as depicted on adopted *Map B-1*, dated April 6, 1998, as the Central Business District of the Community.~~

Policy 1.4.8: The City encourages recreational and commercial working waterfronts, as defined in Florida Statutes, which provide public access, mitigation of hazards, enhanced traditional economy and protection of environmental resources.

~~**Measure:** Commercial development in compliance with the *Future Land Use Map* and *Central Business District Map*.~~

Objective 1.5: Redevelopment

The City ~~of Treasure Island~~ shall encourage redevelopment ~~and ensure~~ that ~~it~~ is compatible with the existing character in order to achieve an orderly and aesthetic mixture of land uses.

Policy 1.5.1: The City shall, through provisions contained in the land development regulations, encourage opportunities for the redevelopment or rehabilitation of existing commercial areas or uses.

Policy 1.5.2: ~~In order t~~ To ~~ensure the continued maintenance of its beach residential character, t~~he City shall, through its ~~provisions contained in~~ the land development regulations, encourage ~~opportunities for the~~ maintenance, rehabilitation ~~and/~~or ~~revitalization~~ reconstruction of existing ~~residential~~ structures, in conformance with Federal, State, County, and City regulations.

Policy 1.5.3: The City shall evaluate and create as appropriate an area plan that encourages the redevelopment of ~~that~~ the area bounded by John's Pass on the north and 127th Avenue on the south on both sides of Gulf Boulevard ~~as depicted on adopted *Map B-2: John's Pass Redevelopment Area*~~.

~~**Policy 1.5.4:** By 2005, the City shall conduct an area study of the Central Business District to explore the possibility of establishing a redevelopment district, pursuant to Chapter 163, Part III, Florida Statutes~~.

~~**Policy 1.5.5:** In order to support redevelopment, the City shall consider utilizing one or more of the Planned Redevelopment districts identified in the Countywide Plan Rules, and shall include the preparation of the required Special Area Plan.~~

Policy 1.5.~~6~~4: In conjunction with the Downtown Special Area Plan, the City shall ~~adopt~~ implement the appropriate mixed use development controls within the ~~framework of the~~ land development regulations ~~for the 20.7 acre FLUM amendment~~ area ~~(CG to PR-MU)~~ to prevent adverse impacts to hurricane evacuation times and to ensure the control of added density. Such controls shall include the following:

- Residential development shall not be allowed unless part of a larger mixed-use project with commercial and/or office uses being located on the lower floors.

- The regulated building height shall be limited to the maximum allowed by the land development code, ~~(60 feet above flood zone requirements)~~ and consistent with the adoption of the Downtown Special Area Plan. Such building height may be variable as allowed by code for architectural features. ~~such as stairwells, elevator shafts, rooftop parking guard rails/walls, mansard roofs for hiding ancillary equipment, and the like.~~ Such features shall not constitute a living level.

Policy 1.5.~~7~~5: New transient development located in Hurricane Evacuation Level A, as identified by the Pinellas County Emergency Management Agency, shall be consistent with the Pinellas Countywide Plan Rules by preparing a legally enforceable mandatory evacuation/closure covenant, stating that the temporary lodging use will be closed as soon as practicable after a hurricane watch (approximately 48 hours in advance of the anticipated onset of tropical storm force winds) is posted for Pinellas County by the National Hurricane Center.

Policy 1.5.~~8~~6: The City ~~of Treasure Island~~ shall adopt elements of the balancing criteria of Forward Pinellas to evaluate City amendments proposed to the Countywide Plan Map within the Coastal High Hazard Area (CHHA):

A. Access to Emergency Shelter Space and Evacuation Routes – The uses associated with the requested amendment will have access to adequate emergency shelter space as well as evacuation routes with adequate capacities and evacuation clearance times.

B. Utilization of Existing and Planned Infrastructure – The requested amendments will result in the utilization of existing infrastructure, as opposed to requiring the expenditure of public funds for the construction of new, unplanned infrastructure with the potential to be damaged by coastal storms.

C. Utilization of Existing Disturbed Areas – The requested amendment will result in the utilization of existing disturbed areas as opposed to natural areas that buffer existing development from coastal storms.

D. Maintenance of Scenic Qualities and Improvement of Public Access to Water – The requested amendment will result in the maintenance of scenic qualities, and the improvement of public access, to the Gulf of Mexico, inland waterways (such as Boca Ciega Bay), and Tampa Bay.

E. Water Dependent Use – The requested amendment is for uses which are water dependent as defined in state statutes.

F. Overall Reduction of Density – The requested amendment would result in an increase in tourist accommodation density on a single parcel, in concert with corollary amendment which shall not result in any increase in permanent density in the surrounding CHHA.

Policy 1.5.7: Future development and redevelopment shall provide a balance of uses that foster a vibrant, viable resilient community and economic development opportunities.

~~**Measure:** Redevelopment in compliance with the *Future Land Use Map.*~~

Objective 1.6: Nonconforming Uses

The City will work with the private sector to reduce the number and/or extent of nonconforming land uses or structures.

Policy 1.6.1: Those commercial and residential activities which were rendered nonconforming with the adoption of this comprehensive plan shall be considered grandfathered, as defined in the land development regulations.

Policy 1.6.2: Buffering of incompatible and/or nonconforming land uses or structures shall be required through provisions contained in the land development regulations.

Policy 1.6.3: Land uses or structures which are either incompatible or inconsistent with this adopted ~~*Future Land Use*~~ comprehensive ~~P~~plan shall be deemed nonconforming.

~~**Measure:** Identification and reduction of the number and/or extent of nonconforming uses or structures~~

Objective 1.7: Natural Resources

Development activities shall ensure the protection of natural resources.

Policy 1.7.1: The City shall ensure, through provisions contained in the land development regulations, that land is developed in a manner which respects necessary ecological functions and suitability for urban development.

Policy 1.7.2: The land development regulations shall ensure that unique and/or irreplaceable natural resources are protected from the adverse effects of development, except in cases of overriding public benefit.

Policy 1.7.3: Development review criteria, as contained in the land development regulations, shall include soil suitability.

Policy 1.7.4: Species of flora and fauna listed ~~in the *Coastal Management and Conservation Element* of this comprehensive plan~~ as endangered, threatened or species of special concern~~, as defined~~ by federal law or Florida Statutes, shall be protected through compliance with appropriate federal and state regulations or provisions contained in the land development regulations.

Policy 1.7.5: Recreational development shall be compatible with the surrounding environment and shall be subject to standards contained in the land development regulations.

Policy 1.7.6: The land development regulations shall encourage the preservation of tree canopies and wetland vegetation.

Policy 1.7.7: Coastal vegetative communities, coastal wildlife habitats, and dune systems shall be protected from the adverse effects of development through provisions contained in the land development regulations.

Policy 1.7.8: The land development regulations shall contain provisions wherein tidal flushing and circulation patterns are not significantly altered by development activities.

Policy 1.7.9: The City shall ensure, through provisions contained in the land development regulations, that natural watercourses are protected in their natural state and exempt from alteration.

Policy 1.7.10: The land development regulations shall contain provisions wherein land use proposals which could potentially increase point-source air and water pollution are not permitted.

~~**Policy 1.7.11:** Dredge and fill activities shall only when necessary, as determined after review and comment by the appropriate governmental agencies and interested citizens, and in a manner least harmful to the surrounding environment.~~

Policy 1.7.11~~12~~: The mangrove island~~s~~ known as Elnor Island ~~and Bird Key~~ shall be protected through provisions contained in the land development regulations.

Policy 1.7.12~~13~~: The City shall coordinate with appropriate agencies ~~in the implementation of the *Tampa Bay S.W.I.M. Plan of 1988,* and its efforts~~ to monitor and improve the water quality of Boca Ciega Bay.

~~**Measure:** Protection of natural resources.~~

Objective 1.8: ~~Concurrency~~ Public Facilities and Development Impacts

All development orders and permits for future development and redevelopment activities shall be issued only if public facilities necessary are available to meet development impacts, inclusive of all applicable ~~the~~ level-of-service standards adopted pursuant to this comprehensive plan ~~are available concurrent with the impacts of the development~~.

Policy 1.8.1: The City ~~of Treasure Island~~ shall ensure that all development and redevelopment taking place within its municipal boundaries do not result in a reduction of the level-of-service requirements established and adopted in its ~~the *Capital Improvements Element* of this~~ comprehensive plan.

Policy 1.8.2: ~~Recognizing the limitations of the potable water supply available to serve this community, the~~ The City shall adopt by reference those provisions of water conservation ordinances that are applicable to Treasure Island which may be adopted by Pinellas County or recommended by the Southwest Florida Water Management District.

Policy 1.8.3: The land development regulations shall contain provisions whereby the development of residential and commercial land is timed and staged in conjunction with provision of supporting community facilities to meet City adopted standards ~~(e.g., streets and utilities)~~. New development and redevelopment may be required to provide for pedestrian or multi-modal facilities adjacent to their property if none currently exists.

~~**Policy 1.8.4:** The City shall work with the appropriate governmental agencies in an attempt to develop regulations granting preference to highway traffic over Intracoastal Waterway traffic.~~

Policy 1.8.4~~5~~: Public facilities and utilities shall be located and designed ~~so as~~ to maximize the efficiency of services provided~~;~~, to ~~minimize~~ balance their cost with resiliency~~;~~, and to minimize their impacts on the natural environment.

~~**Measure:** Maintenance of level-of-service standards.~~

Objective 1.9: Utilities

The City shall ~~continue to~~ ensure, through site plan review, the availability of suitable land for utility facilities necessary to support proposed development.

Policy 1.9.1: The City shall assure that adequate land is available for the maintenance of those public utility facilities provided by the City necessary to support proposed development.

Policy 1.9.2: The City will cooperate with those public utilities providing service to the community to assure that adequate land is available for those facilities.

Policy 1.9.3: The City shall coordinate with utility companies ~~to develop a plan that will call for the burial of~~ in an attempt to have new utility lines buried where feasible.

~~**Measure:** Availability of adequate land and facilities~~.

Objective 1.10: Educational Facilities

The City ~~of Treasure Island~~ shall support efforts that facilitate coordination of planning ~~between the city and the School Board~~ for the location and development of public educational facilities.

Policy 1.10.1: The City ~~of Treasure Island~~ supports public school siting that will provide for adequate provision of facilities for the residents of the City, including any current and/or future interlocal agreements with the Pinellas County School Board. ~~pursuant to Section 235.193, Florida Statutes, through the passage of Resolution 96-77, dated September 24, 1996.~~

Policy 1.10.2: ~~Public e~~Educational facilities ~~of the School Board~~ are either a ~~an allowable~~ permitted or special exception use within the following future land use categories:

- Residential Urban
- Residential Medium
- Planned Redevelopment – Mixed-Use Core
- Planned Redevelopment – Mixed Use Gulf Blvd
- Institutional

~~**Measure:** Land development regulations allowing school sitting in appropriate areas.~~

Objective 1.11: Historic Preservation

The City shall assist property owners in the identification, preservation, and protection of historical and architecturally significant housing, structures, and archaeological sites.

Policy 1.11.1: By providing referral to the appropriate governmental agency(ies), the City shall assist property owners in the identification of historically significant structures and archaeological sites.

Policy 1.11.2: The City shall assist property owners of historically or architecturally significant structures and archaeological sites in applying for and utilizing county, state, and federal assistance programs.

Policy 1.11.3: Through site plan review, the City shall ensure that all development or redevelopment occurring in the area of known historically or architecturally significant structures or archaeological sites is consistent with protection measures recommended by the Florida Department of State.

Policy 1.11.4: The City shall support the efforts of the Treasure Island Historical Society to identify and preserve significant historic resources, and ~~to~~ educate residents and visitors regarding those resources.

~~**Measure:** The identification, preservation, and protection of historically or architecturally significant housing, structures, or archaeological sites.~~

Objective 1.12: Hurricane Evacuation

The City shall strive to reduce the incidence of property damage and loss of human life due to natural disasters through hurricane preparedness planning and implementation.

Policy 1.12.1: The City shall coordinate with Pinellas County to facilitate evacuation notices as ordered by the Board of County Commissioners, or others, as managed by Pinellas County Emergency Management. ~~Hurricane evacuation clearance times shall be maintained or reduced through public education efforts and the suspension of toll collection during ordered evacuations and re-entries.~~

Policy 1.12.2: The City shall implement the City's ~~of Treasure Island's *Emergency Action Guide*~~ *Comprehensive Emergency Management Plan* and the *Pinellas County Emergency Management Plan.*

~~**Measure:** Implementation of a hurricane evacuation plan.~~

Objective 1.13: Private Property Rights

The City shall recognize private property rights pursuant to law. ~~pursuant to Sections 70.001 and 70.51, Florida Statutes~~.

Policy 1.13.1: The City ~~shall, upon need, prepare and adopt procedures to deal with the appeal process as outlined in~~ may establish procedures to govern the conduct of the proceedings authorized by the *Bert J. Harris, Jr. Private Property Rights Protection Act* and the *Florida Land Use and Environmental Dispute Resolution Act*.

~~**Measure:** Preparation and adoption of appeal process procedures.~~

Objective 1.14: **Transfer of Development Rights**.

The City shall consider the creation of a voluntary program for the Transfer of Development Rights to implement the goals of a redevelopment plan and/or Special Area Plans as approved by the City, ~~Pinellas Planning Council~~ and the Countywide Planning Authority.

Policy 1.14.1: Transfer of Development Rights shall be as provided for in the applicable local government ~~C~~comprehensive ~~P~~plan, Special Area Plans, and ~~L~~land ~~D~~development ~~R~~regulations.

Policy 1.14.2: The land use characteristics within any given ~~Citywide~~ Future Land Use Map category shall be consistent with those land use characteristics enumerated for each Countywide Plan Map category, and no Transfer of Development Rights shall be permitted which is inconsistent with the use characteristics of a given Countywide Plan Map category.

Policy 1.14.3: There shall be no transfer of development rights from existing developed property, irrespective of whether or not that property has been developed to the maximum density/intensity permitted under the City's Future Land Use Plan and Countywide Plan Rules, except for preservation or archaeological, historic, environmental, or architectural sites or features.

Policy 1.14.4: Transfer of Development Rights is permitted between all ~~Citywide~~ Future Land Use Map categories except as follows:

- There shall be no transfer to the Recreation/Open Space or Preservation categories.
- There shall be no transfer from the Planned Redevelopment (PR) categories governed by a Special Area Plan to areas outside the Special Area Plan, except as may be provided for in such Special Area Plan. Transfers within a Special Area Plan shall be permitted provided that such transfers are consistent with the provisions of the Special Area Plan.

Policy 1.14.5: The maximum permitted density/intensity of the Countywide Plan Map category for any parcel of land to which rights are transferred shall not exceed twenty (20) percent of the otherwise maximum permitted density/intensity allowed for each respective Countywide Plan Map category applicable to such parcel, except as specifically provided for parcels within an area designated CBD, CRD, or PR on the Countywide Plan Map. Transfer of development rights within these categories shall be in accordance with the terms for transfer of development rights and permitted maximum density/intensity of the approved site area plan.

Policy 1.14.6: Where development rights are transferred from a sending parcel, that property shall only be used in a manner and to the extent specified in the transfer and recording mechanism. Any parcel from which development rights are transferred will be limited to the use and density/intensity that remains after the transfer. In Particular:

- The residual development rights on the sending parcel will be limited to the remnant use and density/intensity available under the City's Future Land Use Map category, and not otherwise transferable.

- Determination of available remnant use and density/intensity for any mixed use, or combination of distinct uses, shall be in accord with the consistency criteria as set forth in ~~Sec. 4.2.3 and 4.2.4 of~~ the Countywide Plan Rules.
- A sending parcel from which all development rights are transferred shall not thereafter be available for use except consistent with the use characteristics and density/intensity standards of the Recreation/Open Space category, except for sending parcels classified as Preservation or required to be classified as Preservation as a function of the transfer, in which case such parcels shall be limited to the use characteristics and density/intensity standards of the Preservation category.
- Neither the use nor density/intensity of a sending parcel shall be double-counted and the transfer of development rights shall not result in any combination of use or density/intensity above that which was otherwise permitted under the applicable Countywide Plan Map category for each the sending and receiving parcels, when taken together.

Policy 1.14.7: Where all development rights have previously been transferred from a sending parcel through a local government approved or Countywide Plan Map approved process, no additional development rights shall be transferable from that sending parcel.

Policy 1.14.8: There shall be no transfer of development rights from or to submerged land, or from outside the coastal high hazard area into the coastal high hazard area.

Policy 1.14.9: The City shall establish a transfer rate of one unit to one unit for the transfer of density from sending areas to receiving areas under the City's Transfer of Development Rights program to avoid adversely affecting the out-of-county clearance time on designated hurricane evacuation routes, and the evacuation time to shelter. ~~This is more restrictive than the Countywide Plan Rules allow for because otherwise the Transfer of Development Rights Program would have the potential to increase density within the Coastal High Hazard Area (CHHA).~~

Policy 1.14.10: Where privately owned property contains vested unit(s) within the Preservation Land Use Category, a transfer rate of one residential unit per vested unit, consistent with the Pinellas Countywide Plan Rules, may be allowed under the Transfer of Development Rights Program.

Policy 1.14.11: Where an entire parcel of property is located in a Preservation or Recreation/Open Space category, and the development rights of such parcel have not been and cannot be transferred, such property shall be permitted a minimum beneficial use subject to the various provisions of these Countywide Plan Rules and the Countywide Plan Map, but private property shall not be taken without due process of law and the payment of just compensation.

Policy 1.14.12: Any project utilizing transfer of development rights shall require the local government having jurisdiction to provide for a recording mechanism, in a form approved by the Countywide Planning Authority, which shall as a minimum, require written evidence of the transfer of development rights in a document to be recorded in the public records with the Clerk of the Circuit Court for Pinellas County~~, and a record copy of same to be filed with the PPC~~.

Objective 1.15: Resiliency Planning

The City will strive to become a leader in sustainable planning practices and support sustainable development, including creating new incentives in the land development regulations.

Policy 1.15.1: The City shall develop building standards that promote the increased use of solar electricity in the community and shall monitor the initiatives of the County and other agencies in the development of renewable energy sources.

Policy 1.15.2: The City shall encourage sustainable, energy-efficient and climate resilient construction practices by:

a) Developing land development regulations that require or incentivize environmental building standards;
b) Encouraging commercial builders to construct or renovate commercial facilities to meet Florida Green Building Coalition, US Green Building Council Leadership in Energy and Environmental Design (LEED), or other acceptable sustainable commercial building standards;
c) Encouraging City personnel to acquire and maintain LEED, Envision, or other green accreditations;
d) Incorporating design specifications that increase resilience to sea level rise and more frequent or intense storm events.
e) Implementing expedited permitting for the installation of renewable energy sources, alternative fuel and electric vehicle charging infrastructure.

Policy 1.15.3: The City shall evaluate risk from climate impacts in the location and design or new infrastructure, as well as the fortification or retrofitting of existing infrastructure.

Policy 1.15.4: The City shall consider the impacts of climate change as an integral part of its policies and practices, including comprehensive planning, building codes, land development regulations, resource management, flood control and stormwater management, coastal management, community development and capital planning.

Policy 1.15.5: The City shall maintain a vulnerability assessment of City-owned facilities and infrastructure to communicate risks associated with climate change and shall utilize this assessment as possible to obtain grant funding to address identified needs.

Policy 1.15.6: The City shall identify, and designate Adaptation Action Areas as provided by Section 163.3164(1), Florida Statutes, and develop policies for adaptation as required for the protection of areas and facilities in the City that are vulnerable to the impacts of rising sea levels and climate change. Areas that may be designated as Adaptation Action Areas in the City include but are not limited to:

a) the Coastal High Hazard Area;
b) the Coastal Storm Area as defined by Pinellas County;
c) areas subject to inundation due to extreme tidal elevations, surge events and/or sea level rise, and;
d) areas expected to experience the greatest extent of flooding in a 100-year flood

event.

Policy 1.15.7: The City shall investigate the availability of grants and other funding sources to implement redevelopment programs and achieve redevelopment goals with a focus to mitigate the adverse impacts of flooding and other disasters. Priority for funding will go to repetitive loss properties. Mitigation may include purchasing repetitive loss properties or an appropriate interest therein.

Policy 1.15.8: The City shall seek alternative funding sources for the construction or reconstruction of public infrastructure for resiliency purposes.

~~**References**~~

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MULTIMODAL TRANSPORTATION ELEMENT

~~*The purpose of the Transportation Element shall be to plan for a multimodal transportation system that places emphasis on public transportation systems.*~~

~~*Rule 9J-5.019(1), Florida Administrative Code*~~

~~I. INTRODUCTION PURPOSE AND FORMAT~~

~~All local government comprehensive plans are required to contain a *Transportation Element*, as indicated in Chapter 163, Florida Statutes (F.S.). , and Rule 9J-5, Florida Administrative Code (F.A.C.), *Minimum Criteria for Review of Local Comprehensive Plans and Determination of Compliance*. The purpose of the *Transportation Element* is to plan for the future multi-modal system. A system that. establish the desired future transportation system within the local government's jurisdiction, and particularly to plan for future motorized and non-motorized traffic movement that places emphasis on public transportation and enhancing the existing network of for pedestrian, bicycle, transit and other modes of transport. systems. Traffic movements are a reflection of land uses, therefore, future land use designations will affect transportation. Improvements must be planned for heavy traffic volume areas in order to ensure less congestion and better circulation in the future.~~

~~This multimodal approach is even more important for densely populated areas such as Pinellas County and the City of Treasure Island. The constraints inherent in expanding the roadway network in the form of escalating right-of-way costs, concerns over neighborhood intrusion, environmental impacts and maintaining quality-of-life contribute to this multifaceted approach to transportation.~~

~~Enhancing quality-of-life experiences for residents and visitors is central to the livable community concept, which has become a theme behind a significant shift in transportation and land use planning on a national and local level. Planning for livable communities and sustainability focuses on land development, building and street design elements that create environments where people want to work, live and play. From a transportation perspective, these environments offer mobility choices such as transit, bicycling and walking as attractive alternatives to driving. These transportation choices also contribute to healthier communities.~~

~~To determine the status of a community's transportation system, a criterion must be established. The criterion which must be utilized, according to Rule 9J-5, F.A.C., is the determination of level of service (LOS). With this information a community can determine if improvements are necessary for its current roadway network, and can develop possible solutions based upon an acceptable standard which it establishes for comparison.~~

~~Rule 9J-5, F.A.C., requires that the *Transportation Element* contain the following information: (1) an inventory of the existing transportation system, including the existing transportation map or map series; (2) an analysis of existing roadway deficiencies within the transportation system; (3) an analysis of projected needs; (4) a listing of goals, objectives, and policies; and (5) the future transportation map or map series. This information is provided in the remainder~~

of the *Transportation Element*, and the map series included with this comprehensive plan.

The Transportation Element provides the overall guidance on how the City of Treasure Island's transportation system should function over the life of the Comprehensive Plan. It describes what the system should look like and what purposes it fulfills. Within the Transportation Element are general guiding policies that address the following areas:

- Multi-modal Transportation
- Parking, Bicycle, and Pedestrian Facilities
- Roadway Network
- Land Use Planning
- Physical Design
- Intergovernmental Coordination
- Land Development Regulations

Transportation-related data and analysis is identified in Volume 1, including needs, issues and opportunities. Specific transportation goals, objectives and policies are identified in Volume 2 of the Transportation Element.

II. INTRODUCTION

This document presents the *Transportation Element* of the *City of Treasure Island Comprehensive Plan*. As indicated in the previous section, the *Transportation Element* reviews the performance of the existing transportation system, as well as the future system. Needs, issues, and opportunities are identified, along with specific goals, objectives, and policies as they relate to the transportation system.

III. INVENTORY OF EXISTING SYSTEM

The inventory of existing systems assists in developing a balanced, equitable, and efficient transportation system that provides a range of transportation choices; reinforces the livability of neighborhoods; supports a strong and diverse economy; reduces air, noise, and water pollution; and lessens reliance on the automobile while maintaining accessibility.

A. Existing Roadway Network

As shown in Table 1 and *Map T-1: 1996 Functional Classification and Number of Lanes*, the city's existing transportation network has remained essentially unchanged since the adoption of the 1989 *Treasure Island Comprehensive Plan*. Minor arterial facilities serving Treasure Island include Gulf Boulevard, John's Pass Bridge, Blind Pass Bridge, and the Treasure Island Causeway, while major local roads include West Gulf Boulevard, Capri Boulevard Blvd. and Paradise Boulevard Blvd., 115th Avenue, and Bayshore Drive.

B. Significant Parking Facilities

Significant parking facilities are defined as public parking facilities with greater than 100 spaces. According to the *Transportation Element* of the *Pinellas County Comprehensive Plan*, no significant parking facilities exist within Treasure Island. There are eleven public parking facilities in the community: Treasure Island Community Center, Gulf Front Park, Sunset Beach Pavilion, St. Petersburg Municipal Beach and seven other smaller public

parking lots throughout the City. Additionally, there is one private for profit lot located near Blind Pass.

C. Port, Airport, Freight Rail Line Facilities

There are no port, airport, or freight rail line facilities within the city. Within the greater Tampa Bay metropolitan area hosts seven airports. This includes three airports located in Pinellas County: Clearwater Executive Airport, Albert Whitted Municipal Airport, and St. Pete Clearwater International Airport. Tampa International Airport is located in western Hillsborough County, within close proximity to Treasure Island, as well as, Peter O' Knight, Vandenberg, and the Plant City Municipal airports. Florida's Strategic Intermodal System (SIS) identifies both St. Pete Clearwater International Airport and Tampa International Airport as designated SIS facilities. The SIS was established to efficiently serve the mobility needs of Florida's residents, businesses and visitors.

D. Intermodal Facilities and Truck Routes

Intermodal facilities are transportation facilities that integrate different forms of carriers to move people and goods, e.g., airports and rail stations. The city has no intermodal facilities. Truck routes have been delineated by Pinellas County through Ordinance #89-54. This ordinance indicates that Gulf Boulevard from John's Pass Bridge to Blind Pass Bridge is an unrestricted truck route. Truck routes within the city are illustrated in Map T-2.

E. Bicycle and Sidewalk Facilities

According to the *Pinellas County Metropolitan Planning Organization (MPO), Bicycle Pedestrian Master Plan Facilities Element,* there are two bicycle facilities within the city. The MPO Bicycle Pedestrian Master Plan shown at left (Figure Tran-1), illustrates existing and proposed bike lanes and community trails. In 2013, the Central Beach Trail, a trail from 104th Avenue to 119th Avenue on the gulf side of Gulf Boulevard west of the hotels was reconstructed.

Some sidewalks are available along Gulf Boulevard, and the major sidewalks are illustrated in *Map T-3.* Many sidewalks also exist along many local streets.

According to the *Pinellas Bikeways Plan* contained in the draft *Pinellas County Transportation Element*, there are no existing bicycle facilities within the city. Some sidewalks are available along Gulf Boulevard, and the major facilities are illustrated (for arterial and collector roadways) in *Map T-3: 1996 Bicycle and Sidewalk Facilities*; however, many sidewalks exist along local streets.

F. Mass Transit

Transit service in the City of Treasure Island is illustrated in *Map T-2*. The major generators and attractors of transit service include the hotels and beaches along the coast. The city contains no transit terminals, transfer stations, or exclusive transit corridors.

The Treasure Island Transit System is a one-bus system with one-hour headways. The route connects with the cities of St. Pete Beach and Madeira Beach. Transit service in Treasure Island is illustrated in *Map T-2: 1996 and 2015 Transit Service and Truck Routes*. The major generators and attractors of transit service include the hotels and beaches along the coast. The city contains no transit terminals, transfer stations, or exclusive transit corridors.

E. Port, Airport, Freight Rail Line Facilities

There are no port, airport, or freight rail line facilities within the city.

F. Intermodal Facilities and Truck Routes

Intermodal facilities are transportation facilities that integrate different forms of carriers to move people and goods, e.g., airports and rail stations. As in 1989, the city has no intermodal facilities. Truck routes have been delineated by Pinellas County through Ordinance #89-54. This ordinance indicates that Gulf Boulevard from John's Pass Bridge to Blind Pass Bridge is an unrestricted truck route. Truck routes within the city are illustrated in *Map T-2: 1996 and 2015 Transit Service and Truck Routes.*

G> Transportation Disadvantaged Population

The Pinellas Suncoast Transit Authority (PSTA) is the current Community Transportation Coordinator (CTC) and is responsible for coordinating transportation disadvantage services within Pinellas County and running the day to day services provided by the TD Program.

Variables that contribute to being Transportation Disadvantaged, include car access and disabilities. Looking at Census 2014, 5-yr. American Community Survey (ACS) estimates, approximately 2.7 percent of the population residing in Pinellas County are physically challenged and below the poverty line. Based on the same ACS estimates, 2.5 percent of Treasure Island residents are both physically challenged and live below the poverty line. This includes anyone that is 18 years of age or older. Overall, in Pinellas County, approximately 3.5 percent of the employed population does not have access to a car; whereas, approximately 3.0 percent of the employed population in Treasure Island does not have access to an automobile

H. Hurricane Evacuation Routes

In 2010, the Tampa Bay Regional Planning Council and Florida Division of Emergency Management had the *Evacuation Transportation Analysis* prepared. This extensive study is the basis for the delineation of evacuation zones and the computation of clear zone response times in Pinellas County, as well as the designation of regional evacuation routes. The evacuation route for the city directs residents (1) across the Treasure Island Causeway; (2) across Blind Pass towards St. Pete Beach and; (3) across Johns Pass toward Madeira Beach. All three routes continue across Tampa Bay via Interstate 275 or U.S. 92 (Gandy Boulevard).

The evacuation routes lying within city limits are illustrated on *Map T-4: 1996 and 2015 Hurricane Evacuation Route*. Evacuation Routes are also shown in the Evacuation Transportation Analysis (Figure ES-2) of the 2015 Evacuation Transportation Analysis Update (Volume 4) of the Statewide Regional Evacuation Study for the Tampa Bay Region.

The Tampa Bay Regional Planning Council prepared the *Tampa Bay Region Hurricane Evacuation Study, Technical Data Report Update* in December of 1992. This extensive study is the basis for the delineation of evacuation zones and the computation of clear zone response times in Pinellas County, as well as the designation of regional evacuation routes. The evacuation route for the city directs residents across the Treasure Island Causeway to Central Avenue and First Avenue South. The First Avenue South corridor is taken to Interstate 275, then across Tampa Bay via Interstate 275 or U.S. 92 (Gandy Boulevard). The

portion of the evacuation route lying within city limits is illustrated on *Map T-4: 1996 and 2015 Hurricane Evacuation Route*.

Table 1
1996 Roadway Inventory and Level of Service

Link ID #	On Street	From	To	# of Lanes	Road Type (1)	Jurisdiction (2)	Functional Classification (3)	LOS Standard (4)	AADT (5)	Peak Volume (6)	Peak Hour Capacity (7)	LOS (8)
12360	Blind Pass Bridge	Bridge (W)	Bridge (E)	2	U	SR	MA	D	16,300	1,483	1,040	F
12400	Gulf Blvd	John's Pass Bridge	Treasure Isle Cswy	4	D	SR	MA	D	20,776	1,891	3,114	C
12410	Gulf Blvd	Treasure Isle Cswy	Blind Pass Bridge	4	U	SR	MA	D	17,800	1,620	2,887	B
12490	Treasure Island Cswy	Bridge	Gulf Blvd	4	D	TI	MA	D	19,312	1,757	2,961	C
12362	W Gulf Blvd (9)	Blind Pass Bridge	77th Ave	2	U	TI	MC	D	2,099	191	990	C
12365	77th Ave (9)	W Gulf Blvd	Bayshore Dr	2	U	TI	MC	D	2,099	191	990	C
12368	Bayshore Dr (9)	77th Ave	W Gulf Blvd	2	U	TI	MC	D	2,099	191	990	C

NOTES:
(1) Road type refers to a road that is either divided (D) or undivided (U).
(2) Jurisdiction refers to whether the link is a state road (SR), county road (CR), or a City of Treasure Island road (TI).
(3) Functional classification refers to whether the link is a minor arterial (MA) or a minor collector (MC).
(4) The adopted level-of-service (LOS) standard for the city.
(5) The average annual daily traffic (AADT) volume on the roadway as reported in the MPO *1997 Level of Service Report.*
(6) Peak hour volume is the estimated one hour volume as computed by multiplying the AADT by the appropriate FDOT K-Factor as described in *Florida's Level of Service Standards and Guidelines Manual for Planning*, August 1995.
(7) Peak hour capacity as reported in the MPO *1997 Level of Service Report* or noted in Note 9.
(8) Level of Service (LOS) is the letter grade from A to F, with A being the best and F being the worst.
(9) Volumes on local roads were estimated using 1986 counts and 1 percent annual growth factor. Reported peak hour capacity and LOS are based on Table F-1, Non-State Roadways, *Florida's Level of Service Standards and Guidelines Manual for Planning*, August 1995.

Table 1
2017 Pinellas County Facility LOS Analysis with Existing Conditions (FY 2016), (PM Peak Hour Directional)

Facility Segment	Juris	Plan Area	Facility Type	Road Type	LOS Std	Length (mi)	Signals Per Mile	LOS Method	AADT	Volume	Physical Capacity	V-Cap	Facility LOS
Gulf Blvd: (W Gulf Blvd to Treasure Island Causeway)	SR	12	SA	4U	D	0.968	2.07	T	17,600	920	1,776	0.518	NA
Gulf Blvd: (Treasure Island Causeway to Madeira Beach	SR	12	SA	4D	D	2.992	1.34	T	26,163	1,367	1,960	0.697	NA

~~Treasure Island Causeway: (Park St. to – Gulf Blvd)~~	~~TI~~	~~11~~	~~SA~~	~~4D~~	~~D~~	~~1.754~~	~~1.71~~	~~T~~	~~19,513~~	~~1,120~~	~~1,764~~	~~0.578~~	~~B~~

~~NOTE: Roadways included in this inventory are monitored Arterials and Collectors as defined in the MPO's Functional Classification map. Level of Service has been calculated using the guidelines of the FDOT Quality Level of Service, FDOT Generalized Tables, FDOT Arterial Plan, and Highway Capacity Manual. The LOS Input values shown on this report do not fully represent values maintained by the database; please do not attempt to use these values to reproduce LOS results. A more complete listing of LOS input values and assumptions are available, if needed request a copy of the LOS Inventory from the MPO Staff.~~
~~Fac Type: "F"=Freeway, "SA"=Signalized Arterial, "SC"=Signalized Collector (Major), "NA"=Non-Signalized Arterial, "NC"=Non-Signalized Collector, "NMC"=Non-Signalized Collector (Major)~~
~~LOS Meth: "H"=Conceptual, "T"=Generalized Tables~~
~~Abbreviations: "Fac" = Facility, "V:Cap" = Volume to Physical Capacity, "Meth" = Methodology, "AADT" = Average Annual Daily Traffic, "Juris" = Jurisdiction~~
~~Def Flag: "1"=V/C Ratio >=.9 and LOS=A, LOS=B, LOS=C or LOS=D "2"=V/C Ratio >=.9 and LOS=E or LOS=F~~
~~Pinellas County MPO~~
~~Utilizing FDOT's 2009 General Tables Produced Using: vTIMAS Database v1.163, Tindale-Oliver and Associates September 10, 2014~~

~~IV. ANALYSIS OF EXISTING DEFICIENCIES~~

~~A. Level-of-Service Methodology~~

~~The methodology used to determine the 1986 roadway level of service was based on the Tampa Bay Regional Planning Council General Highway Peak Hour Capacities. The Pinellas County MPO was consulted for the 1996 levels of service (LOS) for Blind Pass Road, Gulf Boulevard, and the Treasure Island Causeway.~~

~~The MPO computerized database replicates more refined peak hour, peak direction level-of-service calculations from ART-PLAN 3.0, and is consistent with the procedures in the *Highway Capacity Manual*. This procedure was also used for West Gulf Boulevard and Bayshore Drive. However, because volumes were not available from the MPO for these segments and the city has not performed counts on these roads, the 1986 peak hour volume was used as presented in the previously adopted plan. This peak hour volume was increased by one percent per year to account for growth in traffic.~~

~~B. Level of Service~~

~~The city adopted a LOS "D" on all collector and arterial roadways. *Map T-5: 1996 Traffic*~~

Volumes illustrates the 1996 average daily traffic on the road network. These volumes were derived from the MPO *1997 Level-of-Service Report*. *Map T-6: 1996 Level of Service* illustrates the level-of-service conditions which were developed from the MPO *1996 Level-of-Service Analysis*. In 1996, all roadway segments were operating at LOS "D" or better, with the exception of the Blind Pass Bridge, which was operating at LOS "F." Improvements to the bridge were recently completed, improving it from a two-lane undivided to a four-lane divided roadway. The Blind Pass Bridge now operates at or better than the LOS "D" standard.

C. Mode Split and Vehicle Occupancy

Mode split and vehicle occupancy data were not available for Treasure Island.

D. Transit Performance

The Treasure Island Transit System operates a one-bus system within the city at a one-hour headway, with the first trip beginning at 8:15 a.m. and the last one completed by 5:03 p.m. Ridership on this route was 16,250 in 1996. Given the small size of the transit system, little analysis was required to review its performance; however, the system should continue to ensure adequate linkage to PSTA transit service as it currently does at Park Street/Central Avenue and John's Pass Village in Madeira Beach.

E. Transportation Disadvantaged Population

Data regarding the characteristics of the transportation disadvantaged (TD) population in Treasure Island are not available. However, according to the draft *Transportation Element* for Pinellas County, "approximately 13 percent of the County population is estimated to be transportation disadvantaged." The largest concentration of TD population in Pinellas County is in the greater St. Petersburg area.

F. Characteristics of Major Trip Generators and Attractors

As indicated previously, the primary trip generators and attractors are the hotels and beaches along the coast within Treasure Island. As a result, the major generators and attractors involve recreation and/or tourism.

G. Adequacy of Transportation System for Coastal Population Evacuation

The hurricane evacuation route described previously and shown on *Map T-4: 1996 and 2015 Hurricane Evacuation Route* was deemed adequate, as recommended in the 1992 regional hurricane evacuation study.

H. Analysis of Intermodal Deficiencies

Because there are no intermodal facilities, this requirement is not applicable.

V. ANALYSIS OF PROJECTED NEEDS

Pursuant to the requirements of Rule 9J-5, F.A.C., projections were prepared of the future traffic circulation levels of service and system needs based upon the future land use patterns of Pinellas County. These projections serve as a basis for determining the need for new roadway facilities and expansions to support planned development and maintain adopted LOS standards.

Treasure Island is located within an urbanized area and is, therefore, within the Metropolitan

Planning Organization (MPO) jurisdiction. The MPO 2015 traffic assignment was combined with 1990 actual traffic counts to develop smoothed daily traffic volumes on the future network for 2015. The 2015 traffic assignment volumes are a result of the countywide traffic computer modeling process, which is based upon future land use patterns of Pinellas County. Since no major development is planned for this community, and the population is expected to remain relatively constant (as indicated in the *Future Land Use Element* of this plan), it is assumed that many of these future automobile trips will be the result of trips from other parts of Pinellas County, which are included in the traffic modeling process. The forecast of future traffic volumes for Treasure Island is consistent with reasonable expectations for future countywide traffic volumes.

A. Future Roadway Network

Map T-7: 2015 Functional Classification and Number of Lanes and Table 2 illustrate the projected functional classification and number of lanes for the 2015 Network. With the exception of the improvement on Blind Pass Bridge from a two-lane undivided to a four-lane divided roadway, the network is the same. The system continues to include three minor arterials (Gulf Boulevard, Treasure Island Causeway, and Blind Pass Bridge) and three minor collectors (West Gulf Boulevard, 115th Avenue, and Bayshore Drive).

The existing Treasure Island Causeway bridge system has exceeded its design life and is in need of replacement. Interim repairs in excess of $1 million were completed in fiscal year 1998. As stated in the Capital Improvements Program and the Schedule of Capital Improvements found in the *Capital Improvements Element*, design work for a new bridge is scheduled for fiscal year 2000, at an estimated cost of $1 million. At the present time, ownership and maintenance alternatives are being investigated, one of which would turn the bridge over to the State of Florida.

B. Future Significant Parking Facilities

As indicated previously in the existing conditions inventory, no significant parking facilities exist within Treasure Island. Significant parking facilities today and in the future are not possible given the built-out nature of the city.

C. Future Mass Transit

The city anticipates continuing to operate a one-bus system with one-hour headways until such time as expanded transit services are deemed appropriate. Periodic evaluations will be performed to determine the need for additional public transportation. *Map T-2: 1996 and 2015 Transit Service and Truck Routes* illustrates future transit service, which is currently identical to existing transit service. It is also anticipated that the major generators and attractors will continue to include the hotels and beaches along the coast.

D. Bicycle and Sidewalk Facilities

Connecting bicycle lanes along Gulf Boulevard are delineated in the *Pinellas Bikeways Plan*, and local bicycle lanes exist along Paradise Boulevard. Sidewalks will continue to be maintained as they currently exist. The future inventory of major facilities is illustrated in *Map T-8: 2015 Bicycle and Sidewalk Facilities.*

E. Port, Airport, and Freight Rail Line Facilities

There are no existing or planned port, airport, or freight rail line facilities, making this requirement nonapplicable.

F. Intermodal Facilities and Truck Routes

No intermodal facilities exist within the city today, and none are expected by the year 2015. Truck routes have been delineated by Pinellas County through Ordinance #89-54. This ordinance indicates that Gulf Boulevard from John's Pass Bridge to Blind Pass Bridge is an unrestricted truck route. It is anticipated that this will continue to be a truck route in the future, as illustrated in *Map T-2: 1996 and 2015 Transit Service and Truck Routes.*

G. Hurricane Evacuation Routes

The city will continue to direct residents along regional hurricane evacuation routes, which are delineated in the 1992 report update prepared by the Tampa Bay Regional Planning Council. The future hurricane evacuation route for Treasure Island is assumed to be the same as the current route until such time as the region adopts a different route. The portion of the future evacuation route within the city is illustrated in *Map T-4: 1996 and 2015 Hurricane Evacuation Route*, and is the same as the 1996 evacuation route discussed previously.

H. Transportation Concurrency Management and Exception Areas

There are no transportation concurrency management or concurrency exception areas, making this requirement nonapplicable.

I. Projected Roadway Level of Service

The procedure used for analyzing projected system needs was the same method utilized for analyzing the existing roadway deficiencies, assuming a desired LOS "D" at peak hour for all collector and arterial roadways within the city and taking into account the improvements included in the adopted MPO *2015 Cost Feasible Transportation Plan*.

In December 1995, the Pinellas County MPO adopted the *2015 Cost Feasible Transportation Plan*. Those future improvements included in the Plan and located within the city are listed in Table 2. In the future, all roadways are expected to operate within the adopted LOS "D." The improvement from a two-lane divided to a four-lane undivided roadway on the Blind Pass Bridge solves the only existing level-of-service problem.

Table 2
2015 Roadway Inventory and Projected Level of Service

ID	On Street	From	To	# of Lanes	Road Type (1)	Jurisdiction (2)	Functional Classification (3)	LOS Standard (4)	AADT (5)	Peak Volume (6)	Peak Hour Capacity (7)	LOS (8)

12360	Blind Pass Bridge	Bridge (W)	Bridge (E)	4	D	SR	MA	D	24,678	2,246	2,546	D
12400	Gulf Blvd	John's Pass Bridge	Treasure Isle Cswy	4	D	SR	MA	D	24,071	2,190	2,809	D
12410	Gulf Blvd	Treasure Isle Cswy	Blind Pass Bridge	4	U	SR	MA	D	19,724	1,696	3,109	B
12490	Treasure Isle Cswy	Bridge	Gulf Blvd	4	D	TI	MA	D	23,369	2,127	2,961	C
12362	W Gulf Blvd (9)	Blind Pass Bridge	77th Ave	2	U	TI	MC	D	2,561	233	990	C
12365	77th Ave (9)	W Gulf Blvd	Bayshore Dr	2	U	TI	MC	D	2,561	233	990	C
12368	Bayshore Dr (9)	77th Ave	W Gulf Blvd	2	U	TI	MC	D	2,561	233	990	C

NOTES:

(1) Road type refers to a road that is either divided (D) or undivided (U).

(2) Jurisdiction refers to whether the link is a state road (SR), county road (CR), or a City of Treasure Island road (TI).

(3) Functional classification refers to whether the link is a minor arterial (MA) or a minor collector (MC).

(4) The adopted level-of-service (LOS) standard for the city.

(5) The average annual daily traffic (AADT) volume on the roadway as reported in the MPO's *1997 Level of Service Report*.

(6) Peak hour volume is the estimated one hour volume as computed by multiplying the AADT by the appropriate FDOT K-Factor as described in *Florida's Level of Service Standards and Guidelines Manual for Planning*, August 1995.

(7) Peak hour capacity as reported in the MPO *1997 Level of Service Report* or noted in Note 9.

(8) Level of Service (LOS) is the letter grade from A to F, with A being the best and F being the worst.

(9) Volumes on local roads were estimated using 1986 counts and 1 percent annual growth factor. Reported peak hour capacity and LOS are based on Table F-1, Non-State Roadways, *Florida's Level of Service Standards and Guidelines Manual for Planning*, August 1995.

The 2015 projected traffic volumes were derived from the Regional Transportation Analysis Model used in the development of the *2015 Cost Affordable Transportation Plan*. These volumes were adjusted by the MPO based on nationally recognized and accepted methodologies, and are indicated in *Map T-9: 2015 Traffic Volumes*. Volumes for the local roads were taken from 1986 counts provided in the *Transportation Element* of the 1989 comprehensive plan. The 1986 peak hour volumes were increased by 1 percent annually to estimate volumes in 2015. No counts have been performed recently on these local roads, since there is no perception of a level-of-service problem.

Map T-10: 2015 Level of Service indicates the projected level of service of the roads within Treasure Island in the year 2015. All roads are expected to operate at or above the adopted LOS "D" standard.

J. Integration and Coordination

The review of existing and projected conditions for each of the modes available in the city suggests a commitment to the integration and coordination of transportation alternatives. The city is committed to the provision of a safe and efficient transportation network that provides for quality highways, public transportation, goods movement, bicycle facilities, and sidewalks.

VI. ISSUES AND OPPORTUNITIES

Per Rule 9J-5.0053, F.A.C., local governments are to identify the major issues and problems in the community related to development, physical deterioration, and the location of land uses. In addition, the social and economic effects of these issues and problems should be analyzed. Ultimately, this information can be used to form the basis for determining the types of plan amendments that are to be recommended as a result of the planning process.

Issues and opportunities were identified through the review of existing deficiencies and projected needs for the city relating to the transportation system. The following key planning issues were identified, along with required actions.

A. Key Planning Issues and Required Actions

1. Level-of-Service Problem on Blind Pass Bridge: The 1996 level of service on Blind Pass Bridge was "F."

Required Action: This problem is being resolved in the 2015 LOS analysis as a result of the road improvement (new bridge construction) from a two-lane undivided to a four-lane divided roadway that was completed in the summer of 1997.

2. Bicycle and Pedestrian Facilities: The city is built out, and existing right-of-way widths available for road improvements are virtually non-existent. Existing two-lane roads are

generally substandard with respect to the provision of bicycle shoulders and pedestrian facilities.

Required Action: The city has traditionally dealt with bicycle and pedestrian facilities as part of the site plan review process. However, this procedure was never stated or explained in the comprehensive plan. The city will adopt land development regulation amendments to include review of pedestrian and bicycle improvements during the site plan review process and when road improvements are proposed.

3. Treasure Island Causeway Repair and Replacement: The existing Treasure Island Causeway bridge system has exceeded its design life and is in need of replacement. Interim repairs in excess of $1 million were completed in fiscal year 1998. As stated in the Capital Improvements Program and the Schedule of Capital Improvements found in the *Capital Improvements Element*, design work for a new bridge is scheduled for fiscal year 2000, at an estimated cost of $1 million. At the present time, ownership and maintenance alternatives are being investigated, one of which would turn the bridge over to the State of Florida.

Required Action: The various options available to Treasure Island will be investigated and decisions made to ensure the long-term viability of the Causeway bridge system.

4. Roadway Resurfacing: A number of local roads are showing signs of wear, and are in need of resurfacing.

Required Action: The city conducts periodic surveys of its roadway system, and from this information maintains an ongoing Roadway Surface Rehabilitation Plan. The current plan has targeted twenty road segments in need of resurfacing in 1999, including portions of Bayshore Drive, 92nd Avenue, and 94th Avenue. Eight additional segments have been scheduled for resurfacing in 2000, and fourteen in 2001.

VII. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Sections 163.3177(9) and (10), F.S., and Rule 9J-5.019(4)(b), F.A.C., the following represents the *Transportation Element* goals, objectives, and policies of the City of Treasure Island intended to address the establishment of the long-term end toward which transportation programs and activities are ultimately directed in the community (Rule 9J-5.019(4)(a), F.A.C.).

B. Nonapplicable Items

Based on the findings contained in this element, it has been determined that the following objectives and policies identified in Rule 9J-5.019, F.A.C., are not applicable to the City of Treasure Island:

- Rule 9J-5.019(4)(c)3.: Parking facilities - There are no significant parking facilities.
- Rule 9J-5.019(4)(b)4., 8., 14.: Transit terminals, etc. - There are no transit terminals, transfer stations, exclusive public transit corridors, port or airport facilities, or freight rail lines or intermodal facilities.

C. Implementation

Unless otherwise stated, the implementation of objectives and policies contained in Section D shall be through the application of the land development regulations.

GOALS, OBJECTIVES, AND POLICIES

A. Introduction

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Introduction

Pursuant to Section 163.3177(6)(b), Florida Statutes, the following represents the multimodal transportation goals, objectives and policies of the City of Treasure Island. These goals, objectives, and policies are intended to be used to The Multimodal Transportation Element provides direction for the City in the development of a multimodal transportation system network. increases mobility for bicyclists, pedestrians, transit users, and motorists that promotes development patterns that reduces vehicle miles traveled and greenhouse gas emissions .

A. Nonapplicable Items

Based on the findings contained in this element, it has been determined that the following objectives and policies identified in Rule 9J-5.019, F.A.C., are not applicable to the City of Treasure Island:

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B. Implementation

Unless otherwise stated, the implementation of objectives and policies contained in Section D shall be through the application of the land development regulations.

A safe, convenient and efficient motorized and non-motorized transportation system shall be available for all residents and visitors to the city.

Goal

The City will develop and maintain a multimodal transportation network that increases mobility and accessibility through the prioritization of safety and by ensuring transportation choices for all individuals.

Objective 1.1: ~~Level-of-Service Standards~~ Transportation Network

The City shall establish level-of-service (LOS) standards for the roadways in its jurisdiction, and shall ensure, through its construction and development review processes, the maintenance of those standards.

Policy 1.1.1: The operational level of service (LOS) "D" peak hour shall be the standard for all arterial and collector roads within the city, except for Gulf Boulevard. The City adopts the Florida Department of Transportation (FDOT) defined LOS for Gulf Blvd.

Policy 1.1.2: The City shall review all proposed development or redevelopment for consistency with this transportation element and their impacts upon the adopted LOS standards. Development orders and permits shall be issued only when it is documented that such development is consistent with the LOS standards for the affected transportation and public facilities adopted by this comprehensive plan.

Policy 1.1.3: The City shall assess new development or redevelopment an equitable pro rata share of the costs to provide roadway and multimodal improvements to serve the development or redevelopment and shall enforce County-wide Multimodal Impact Fee regulations. ~~countywide transportation impact fee regulations~~.

Policy 1.1.4: The City may coordinate planning efforts with neighboring municipalities, Forward Pinellas and FDOT to establish the appropriate LOS standards and targets for multimodal mobility and network design in the City.

Policy 1.1.5: The City shall update the pavement condition inventory at least every ten years.

Policy 1.1.6: Development and redevelopment projects generating new vehicle trips may be subject to payment of the County-wide Multimodal Impact Fee. Multimodal impact fee revenue shall be utilized to fund multimodal improvements consistent with this comprehensive plan. For the purposes of the City's multimodal program, the multimodal network and associated terms shall be defined as follows:

> "Mobility Management System" is the Pinellas County-wide approach that the City will utilize to assure that development permits are not issued unless the necessary mitigation measures are taken into maintain acceptable multimodal circulation.
>
> "Multimodal" means transportation that considers various modes of transportation including, but not limited to, walking, cycling, automobile, and public transit. Multimodal is nonspecific and encompasses all methods of movement currently used and those which may arise over time.

"Multimodal Impact Fee" means charges assessed against new development or redevelopment which partially or wholly cover the cost of providing mobility improvements to off-set development impacts.

Policy 1.1.7: The City shall manage the impacts of land development projects and encourage improved mobility through application of adopted comprehensive plan policies and the land development regulations through the site plan review process.

Policy 1.1.8: The City shall ensure that new development bears a proportionate share of the cost of capital expenditures necessary to meet mobility needs.

Policy 1.1.9: The City shall consider resilient design guidelines in all transportation and multimodal improvement projects, in recognition of current and projected tidal elevations.

~~Measure: Number of roadways with an acceptable operational level of service~~

Objective 1.2: Land Use Planning and Coordination

Transportation planning shall be coordinated with the *Future Land Use Map* and the ~~Schedule of~~ Capital Improvement Plan.

Policy 1.2.1: The City shall enforce the minimum construction and regulatory requirements for new and existing roadways through land development regulations.

Policy 1.2.2: The City shall review the *Future Land Use Map* when planning roadway construction and improvements to ensure that roadways are designed to serve the needs of the affected land uses.

Policy 1.2.3: Future rights-of-way shall be acquired through negotiation or appropriate legal processes ~~condemnation~~, to the extent that such acquisition is required for planned transportation ~~system~~ network construction or expansion.

Policy 1.2.4: The City shall budget for and undertake projects to sustain the ~~ensure the viability of the~~ Treasure Island Causeway bridge system through it's expected life and plan for the ~~short-term repairs and~~ eventual replacement of the bridges.

Policy 1.2.5: The City shall coordinate underground utility projects and other construction projects to avoid impacts to roads and pavement to the greatest extent possible.

~~Measure: Successful right-of-way protection and road and bridge improvements reviewed for consistency with the *Future Land Use Map* and Schedule of Capital Improvements~~

Objective 1.3: ~~Parking, Bicycle, and~~ Pedestrian, Motorized, and Non-Motorized Vehicle Facilities

The City shall identify the types of m~~M~~otorized and non-motorized vehicles for which to establish parking. ~~vehicle parking and bicycle and pedestrian ways shall be provided.~~

Policy 1.3.I: The City shall enforce parking requirements, including on-site traffic flow, through the land development regulations.

Policy 1.3.2: The City shall consider the provision ~~of bicycle and pedestrian ways in the planning of transportation.~~ non-motorized and pedestrian ways as an interconnected network in the planning of multimodal transportation facilities, as part of the site plan review process.

Policy 1.3.3: ~~Bicycle~~ Non-motorized storage areas at shopping and recreational areas shall be provided, as established in the land development regulations, and required as part of the site plan review process.

Policy 1.3.4: The City shall require development and redevelopment to install crosswalks and ~~sidewalks~~ pedestrian facilities ~~on its roadways with high pedestrian usage~~, as required by land development regulations ~~the site plan review process~~.

Policy 1.3.5: The City shall monitor parking demand and improve parking regulations and facilities, as feasible and as needed. Public and private parking facilities should support alternative modes of transportation as needed.

Policy 1.3.6: The City shall consider a reduction of on-site parking requirements within the land development regulations to encourage multimodal transportation and ride sharing.

Policy 1.3.7: The City may seek public-private partnerships in the development of parking facilities and intermodal centers and encourage off-street parking on parcels serving multiple land-uses.

Policy 1.3.8: The City shall optimize public parking spaces by promoting shared parking programs, wayfinding to parking facilities, and consider the use of Smart Parking Systems (SPS) to identify locations of available parking as feasible.

~~Measure: Development and enforcement of parking, bicycle and sidewalk regulations~~

Objective 1.4: ~~Physical Design~~ Safe and Efficient Transportation Design

The City's transportation network shall emphasize safety, efficiency, and aesthetics.

Policy 1.4.1: The City shall fund the maintenance and landscaping of its local

roadway ~~system~~ network.

~~**Policy 1.4.2:** The City shall enforce the signage requirements along roadways through the land development regulations.~~

Policy 1.4.2~~3~~: The City shall monitor accident reports and yearly crash data for all collector and arterial roads to identify needed safety improvements.

Policy 1.4.34: The City shall control connections or access points of driveways to the roadway ~~system~~ network, through the permit process and land development regulations, and in cooperation with the State of Florida on state roads.

Policy 1.4.4: The City shall consider a new policy to address safety, especially for users with disabilities, the elderly, and children. The City shall work towards achieving Americans with Disabilities Act compliance for all pedestrian facilities.

Policy 1.4.5: The City shall support the mission of Vision Zero, which is a traffic safety policy that takes an ethical approach toward achieving safety for all road users, setting the goal of zero traffic fatalities or severe injuries.

Policy 1.4.6: The City shall work to reduce multimodal conflicts and improve safety to the extent feasible.

~~Measure: Identify and improve high accident locations~~

Objective 1.5: Multimodal Transportation

The City shall encourage the utilization of a multimodal transportation network ~~system~~.

Policy 1.5.1: The City shall evaluate the need for enhanced public transportation and respond as appropriate.

Policy 1.5.2: The City shall ~~continue to~~ establish facilities ~~and~~ that encourage the use of ~~bicycle~~ nonmotorized vehicles, watercraft, and pedestrian ways.

Policy 1.5.3: The City shall review all proposed development and redevelopment site plans for the accommodation of multimodal transportation ~~bicycle, and pedestrian,~~ and the needs of other approved vehicles ~~traffic needs~~ through provisions within the land development regulations.

Policy 1.5.4: The City shall ~~continue to~~ provide access to the transportation disadvantaged ~~on city- owned buses.~~ through partnerships with transit providers.

Policy 1.5.5: The City shall support development of multi-use recreational facilities, including those for pedestrian, motorized and nonmotorized vehicles.

Policy 1.5.6: The City shall support and encourage access to mobility options through the development of alternative modes of transportation by creating flexible options that enable user choices.

~~Measure: Implementation of a multimodal transportation system~~

Objective 1.6: Intergovernmental Coordination

Transportation planning shall be coordinated with the City's comprehensive plan, the Florida Department of Transportation *5-Year Transportation Plan,* the Forward Pinellas ~~County Metropolitan Planning Organization (MPO)~~ *5-Year Transportation Improvement Program (TIP) and Long-Range Transportation Plan,* and plans of neighboring jurisdictions, as applicable.

Policy 1.6.1: The City shall review updated versions of the Florida Department of Transportation *5- Year Transportation Improvement s Program* and the Forward Pinellas ~~County MPO~~ *Long Range Transportation Plan* ~~subsequent to their publication~~ and shall modify this element to be consistent with these plans, if necessary.

Policy 1.6.2: The City shall review for compatibility with this element, the transportation plans and programs of neighboring municipalities and Pinellas County as they may be amended.

Policy 1.6.3: Amendments to this multimodal transportation element shall be supported by an appropriate transportation analysis.

~~Measure: Periodic review of the transportation plans of other government agencies~~

~~**Objective 1.7: Land Development Regulations**~~

~~**Future growth and development shall be managed through the continued implementation and enforcement of land development regulations consistent with this adopted comprehensive plan.**~~

~~**Policy 1.7.1:** Continue to enforce land development regulations, consistent with Section 163.3202(1), Florida Statutes, which addresses the provisions and intent of the objectives and policies contained in this transportation element.~~

~~Measure: Development and implementation of land development regulations~~

Objective 1.7: Treasure Island Connectivity Plan

The City shall support a comprehensive multimodal network that enables local options for transportation mobility and accessibility through the development of a connectivity plan in pursuit of funding opportunities for multimodal infrastructure improvements.

Policy 1.7.1: The City shall maintain a connectivity plan, with the goal to enhance safety and improve multimodal infrastructure and connectivity for residents and businesses.

Policy 1.7.2: The connectivity plan shall be updated at a minimum every ten years.

Policy 1.7.3: The City will evaluate emerging transportation technologies and the impacts these advancements will have on transportation, land use, and the environment.

Policy 1.7.4: The City may seek funding sources through partner agencies to provide funds to implement the projects identified in the connectivity plan.

Policy 1.7.5: For all roadway designs, including for reconstruction, the City shall consider options for motorized and nonmotorized modes of transit.

References

City of Treasure Island,
City of Treasure Island Comprehensive Plan, 1989.
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Tampa Bay Regional Planning Council, Tampa *Bay Region Hurricane Evacuation Study Technical Data Report Update,* 1992.

HOUSING ELEMENT

The purpose of the Housing Element is to provide guidance to local governments to develop appropriate plans and policies to meet identified or projected deficits in the supply of housing for moderate, low, and very low-income households, group homes, foster care facilities, and households with special needs.

Rule 9J-5.010, Florida Administrative Code

I. INTRODUCTION

Treasure Island is a predominately residential community, containing a mixture of seasonal and permanent residents, and is one of the few Pinellas County communities that can boast a neighborhood community atmosphere. As discussed in the *Future Land Use Element*, the city is divided into several distinct neighborhoods, including Sunshine Beach (Coney Island), Isle of Capri, Isle of Palms, Central Gulf Area, Paradise Island, and Sunset Beach. Because the city is virtually built out, there is minimal opportunity for large-scale growth other than through redevelopment.

As detailed throughout this element, a lack of vacant land combined with a high demand for coastal property have escalated housing values within Treasure Island. The median value of an owner-occupied home was $155,400 in 1990, nearly double the countywide median of $79,800. During the same year, the median cost of a rental unit within the city ($500) was also higher than the countywide average ($463). Consequently, most residents who can afford to live in Treasure Island are within the middle to upper income brackets. Affordable housing for very-low income households is virtually nonexistent, and the shortage is expected to continue throughout the 2010 planning horizon.

II. EXISTING CONDITIONS

A. Housing Stock Data

1. Number and Type of Housing Units

According to the U.S. Census Bureau, the city contained 5,525 housing units in 1990. Of these, 3,896 units (70.5 percent) were classified as occupied and 1,629 (29.5 percent) as vacant, as shown in Table 1. Although a vacancy rate of 29.5 percent is considered high, as discussed below, the majority of these "vacant" units are actually held for seasonal, recreational, or occasional use by households with a primary residence elsewhere. By comparison, only 16.9 percent of countywide housing was classified as vacant.

Like many other Florida beach communities, Treasure Island is considered home for thousands of seasonal residents. Generally, these residents have purchased second homes in Florida, live in them during the winter months, and leave them unoccupied during the summer season. However, the U.S. Census Bureau classifies a housing unit as "vacant" if it is not the primary residence of its occupants. The 1990 census noted that of the 1,629 "vacant" units in the city, all but 582 were held for seasonal, recreational, or occasional use.

The true vacancy rate for the city, as shown in Table 2, is thirteen percent.

Table 1
Total Housing Inventory in 1990

	Occupie	% of	Vaca	% of	Total
Treasure	3,896	70.5%	1,629	29.5%	5,525
Pinellas	380,635	83.0%	77,70	16.9%	458,34

Source: U.S. Bureau of the Census, 1990

Table 2
Total Vacant Units in 1990

	Treasure Island	% of Total Units	Pinellas County	% of Total Units
Total Vacant Units	1,629	29.5%	77,706	16.9%
True Vacant Units (Not Held for Seasonal Use)	582	13.0%	34,077	7.4%

Source: U.S. Bureau of the Census, 1990

2. Type of Dwelling Units

Although single-family dwellings occupy more land area, multifamily dwellings account for a larger percentage of the total housing stock. As shown in Table 3, the 1990 housing stock consisted of 37 percent single-family and 62 percent multifamily dwellings. The vast majority of multifamily residences are condominium complexes that line the Gulf of Mexico shoreline. The remaining one percent of the housing inventory consisted of 23 mobile homes (which have since been removed) and other types of dwelling units, including houseboats. Because the city is virtually built out, there is minimal opportunity for further large-scale residential growth other than through redevelopment.

Table 3
Housing Units by Type in 1990

	Treasure Island		Pinellas County	
	# of	% of total	# of	% of
Single-	2,059	37%	239,377	52%
Multifamily	3,410	62%	160,989	35%
Mobile	23	0.4%	53,324	12%

	Treasure Island		Pinellas County	
	# of	% of total	# of	% of
Other*	33	0.6%	4,651	1%
Total	**5,525**	**100%**	**458,341**	**100%**

* Includes campers, vans, and houseboats.
Source: U.S. Bureau of the Census, 1990

3. Housing Units by Tenure

The percentage of owner-occupied housing within Treasure Island is slightly lower than the countywide average. According to the 1990 U.S. Census, of the 3,896 occupied housing units within the city (excluding seasonal units), 2,370 units or 61 percent were owner-occupied. Comparatively, the countywide average was 69 percent. The city percentage may be artificially low because of the large number of seasonal units, which are generally occupied by homeowners, but are not classified as "owner-occupied" by the U.S. Census Bureau.

Table 4
Housing Units by Tenure for Occupied Units in 1990

	Owner-Occupied	% of Total	Renter-Occupied	% of Total	Total
Treasure	2,370	60.8%	1,526	39.2%	**3,896**
Pinellas	263,388	69.2%	117,247	30.8%	**380,635**

Source: U.S. Bureau of the Census, 1990

4. Housing Units by Age

Home construction soared during the 1960s and 1970s, with approximately 3,200 new homes built. Combined with home construction occurring since then, approximately 77 percent of the total housing stock is less than 35 years old (see Table 5). With less than thirteen acres of vacant land available for residential or mixed uses, new housing construction is expected to decline in upcoming years.

Table 5
Age of Housing Stock in 1990

Year Built	Treasure Island		Pinellas County	
	# of Units	% of Total	#of Units	% of Total
1985 to March,	509	9.2%	47,186	10.3%
1980 to 1984	497	9.0%	61,424	13.4%

1970 to 1979	1,695	30.7%	142,970	31.2%
1960 to 1969	1,547	28.0%	87,902	19.2%
1950 to 1959	863	15.6%	77,269	16.9%
1949 or earlier	414	7.5%	41,590	9.1%
Total	**5,525**	**100%**	**458,341**	**100%**

Source: U.S. Bureau of the Census, 1990

5. Value of Owner-Occupied Housing

The median value of an owner-occupied home in Treasure Island almost doubled during the 1980s, reaching $155,400 in 1990. This value is nearly double the countywide median of $79,800 (see Table 6). Within the city, the value of most units ranged from $100,000 to $199,999. Countywide, the majority were valued between $50,000 and $99,999.

Table 6
Owner-Occupied Housing Units by Value Ranges in 1990

	<$50,000	**$50,000 - $99,999**	**$100,000 - $149,000**	**$150,000 - $199,999**	**$200,000 - $299,999**	**>$300,000**	**Median**
Treasure	13	298	346	434	255	70	$155,4
Pinellas	31,056	99,782	26,094	10,643	7,082	3,981	$79,80

Source: U.S. Bureau of the Census, 1990

6. Monthly Cost of Housing

a. Owner-Occupied Mortgaged Units

The U.S. Census Bureau defines the monthly cost of owner-occupied housing to include monthly mortgage payments, real estate taxes, fire hazard and flood insurance, utilities, and fuels. In 1990, the median monthly cost of an owner-occupied *mortgaged* housing unit in the city was $1,078, as shown in Table 7. This value is approximately one and a half times the countywide median cost of $687.

Table 7
Monthly Costs of Owner-Occupied Mortgaged Units in 1990

	<$500	**$500 - $699**	**$700 - $899**	**$900 - $1,249**	**$1,250 -$1,499**	**>$1,500**	**Median**
Treasure	75	85	98	188	134	137	**$1,078**
Pinellas	7,023	21,791	32,380	23,913	18,408	10,754	**$687**

Source: U.S. Bureau of the Census, 1990

b. Owner-Occupied Non-Mortgaged Units

The monthly cost of owner-occupied *non-mortgaged* units within the city was much lower, with a median cost of $276 per month. Similar to mortgaged units, this value is approximately one and a half times the countywide median of $185 (see Table 8).

Table 8
Monthly Costs of Owner-Occupied Non-Mortgaged Units in 1990

	<$150	**$150 - $199**	**$200 - $249**	**$250 - $299**	**$300 - $349**	**>$350**	**Median**
Treasure	58	75	114	162	127	125	**$276**
Pinellas	4,651	15,282	16,087	10,779	6,261	9,334	**$185**

Source: U.S. Bureau of the Census, 1990

c. Renter-Occupied Units

The cost of living in renter-occupied housing, called "gross rent," is considered to include mortgage/rental payments, taxes, insurance, and utilities. In 1990, the median monthly gross rent for a renter-occupied housing unit in Treasure Island was $500, as compared to $463 for the entire county (see Table 9). As suggested by these data, the greater orientation of the rental market in Treasure Island is toward medium to higher rents.

Table 9
Monthly Gross Rent Distribution in 1995

	Treasure Island		**Pinellas County**	
	# of Units	**% of Total**	**# of Units**	**% of Total**
Median	$500	---	$463	---
>$199	17	1.1%	6,132	5.2%
$200-$299	59	3.9%	9,747	8.2%
$300-$399	284	18.6%	21,296	18.0%
$400-$499	367	24.0%	31,806	26.8%
$500-$599	251	16.5%	22,727	19.2%
$600-$699	204	12.4%	11,147	9.4%
$700-$999	200	13.1%	9,109	7.7%

>$1000	69	4.5%	3,067	2.6%
No Cash Rent	75	4.9%	3,518	3.0%
Total Units	**1,526**	**100%**	**118,54**	**100%**

Source: Shimberg Center for Affordable Housing, 1996

7. Housing Cost-to-Income Ratio

According to the Florida Department of Community Affairs, housing that is affordable consumes no more than 30 percent of a household's income, including mortgage or rent payments, taxes, insurance, and utilities. In the following analysis, households living in owner- and renter-occupied housing considered non-affordable were enumerated.

a. Owner-Occupied Units

As shown in Table 10, in 1990 housing costs were considered non-affordable for 18 percent of all owner-occupied households within Treasure Island, compared to 21.5 percent for the county as a whole. In both the city and county, households with annual incomes below $10,000 were the most likely to live in housing considered non-affordable.

Table 10
Percentage of Households Living in Owner-Occupied Housing Considered Non-Affordable in 1990*

	<$10,000	**$10,000 - $19,999**	**$20,000- $34,999**	**$35,000- $49,999**	**>$50,000**	**Total (% of all households for all income levels)**
Treasure	46.7%	31.9%	27.2%	14.6%	7.0%	18.0%
Pinellas	60.3%	36.9%	23.3%	10.3%	5.9%	21.5%

* Housing costing less than 30 percent of a household's gross income is considered affordable.
Source: Shimberg Center for Affordable Housing, 1996

b. Renter-Occupied Units

As shown in Table 11, in 1990 rental housing was considered non-affordable for 43.9 percent of the rental households within Treasure Island, comparable to 44 percent in Pinellas County. In addition, in Treasure Island 100 percent of rental households earning less than $10,000 annually were living in housing considered non-affordable, compared to 88.4 percent of countywide households in the same income range.

Table 11
Percentage of Households Living in Rental Housing Considered Non-Affordable in 1990*

	<$10,000	$10,000 - $19,999	$20,000- $34,999	$35,000- $49,999	>$50,000	Total (% of all households for all income levels)
Treasure	100.0%	68.5%	15.0%	4.5%	3.1%	43.9%
Pinellas	88.4%	69.6%	17.2%	4.0%	1.0%	44.0%

* Housing costing less than 30 percent of a household's gross income is considered affordable.
Source: Shimberg Center for Affordable Housing, 1996

It should be noted that apparent mismatches of housing and income may be linked to the large number of retirees living in Treasure Island, many of whom may have sold homes in other states to finance the purchase or rental of a home in Florida. Because this one-time sale of the home in another state is not reflected in the census definition of income, the homeowner's income would not appear to be large enough to afford the high-priced housing typical of barrier island communities. In addition, many residents purchased homes in the community prior to 1975, before housing prices began to outpace household income and before property values in coastal communities appreciated dramatically.

B. Condition of the Housing Stock

In addition to enumerating housing units, the U.S. Census Bureau publishes data regarding the structural condition of the housing stock. The survey includes the number of dwelling units lacking complete plumbing, complete kitchen facilities, and central heating, and those which are overcrowded. As shown in Table 12, only a small percentage of homes within Treasure Island lack these facilities or are considered overcrowded.

Table 12
Condition of the Housing Stock in 1990

	# Homes Lacking Complete Plumbing*	% of Total	# Homes Lacking Complete Kitchen*	% of Total	# Homes Lacking Heat**	% of Total	# Over-crowded Homes** †	% of Total
Treasure Island	16	0.28%	0	0.0%	71	1.28%	27	0.48%
Pinellas County	976	0.21%	1,945	0.43%	2,004	0.52%	7,784	2.06%

* Calculated for all housing units
** Calculated for owner-occupied housing units
† According to the Shimberg Center, more than 1.01 persons per room is considered an overcrowded dwelling.
Source: U.S. Bureau of the Census, 1990

In 1995, a windshield survey conducted by city staff concluded that no substandard housing exists within Treasure Island. A windshield survey has distinct advantages over door-to-door interviews in that it is relatively expedient and inexpensive, and the surveyor does not intrude upon the privacy of the resident of the property. In addition, it has been found that the appearance of the exterior generally reflects the condition of the interior of the home. The following criteria were used to identify housing conditions in the 1995 windshield survey.

Standard: Good condition. Structurally sound, maintained with no major maintenance needed (possible painting required).

Substandard: Deteriorating condition. Poorly maintained, homes of inadequate original construction of advanced age, exhibiting signs of sagging roof lines, porches, walls or other indicators of structural decay. Possible demolition necessary.

C.Subsidized Renter-Occupied Housing Developments

There are no public housing units located within the corporate limits of Treasure Island.

D.Group Homes

There are no group homes (community residential homes) licensed by the Florida Department of Children and Families within the corporate limits of the city.

E.Mobile Home Parks

The City of Treasure Island land development regulations do not allow mobile homes in the city, in accordance with Federal Emergency Management Agency (FEMA) regulations. Although 23 mobile homes were located in the city during the 1990 U.S. Census, they have since been removed.

F.Historically Significant Housing

No properties are listed in the *National Register of Historic Places* or on the *Florida Master Site File*, and no nomination proposals are currently pending.

G.Housing Construction Activity

As required by Rule 9J-5, F.A.C., the final step in collecting housing supply data is obtaining "an inventory of the housing construction activity affecting changes in the number of housing units within the local government's jurisdiction based on new construction, conversions, mobile home placements, and removals, in number of units for the years since the latest decennial United States Census." Recent housing activity was moderately active, but remained significantly lower than other areas of the county. The majority of new placements since 1990 were single-family homes, accounting for 77 percent of new home construction. As shown in Table 13, all mobile homes located within the city at the John's Pass Trailer Park have been removed.

Table 13
Housing Inventory Update, 1990-1995

	Single-Family	Multifamily	Mobile Home*	Other**	Total

1990 Count	1,719	3,739	23	44	5,525
New Construction	41	12	0	0	53
Demolitions	11	0	23	0	34
1995 Total	**1,749**	**3,751**	**0**	**44**	**5,544**

* Placement represents the change in the number of mobile home tags issued between 1990 and 1995.

** Category includes other types of dwellings, such as houseboats.

Source: City of Treasure Island Building Department, 1996

III. HOUSING ANALYSIS

Chapter 163, Florida Statutes, requires the Department of Community Affairs (DCA) to conduct an affordable housing needs assessment for local jurisdictions. All communities, including Treasure Island, are required to use this data and incorporate it into their comprehensive plan. Under contract with the DCA, the Shimberg Center for Affordable Housing at the University of Florida prepared the *Affordable Housing Needs Assessment Study*, which is the basis for the following housing analysis. All projections developed by the Shimberg Center were based on data collected by the Pinellas County Planning Department.

Households, or occupied housing units, are the fundamental unit used to measure housing demand. With the population expected to increase through all planning horizons, the Shimberg Center projects the number of households to increase by 211 between 1995 and 2010 (see Table 14).

Table 14
Estimated and Projected Number of Households, 1990-2010

Year	# of Households	% Change
1990	3,951	--
1995	3,991	2.33%
2000	4,084	2.32%
2005	4,134	1.22%
2010	4,202	1.64%

Source: Shimberg Center for Affordable Housing, 1996

1. Projected Number of Households by Size

In 1995, one- and two-person households accounted for 83.8 percent of all households in Treasure Island (see Table 15). The Shimberg Center forecasts the number of two-person households to rise by 10 percent between 1995 and 2010. However, the number of all other

sized households, including one-person households, will remain virtually constant.

Table 15
Estimated and Projected Number of Households by Size, 1990-2010

	1990	1995	2000	2005	2010
1 person	1,393	1,413	1,417	1,412	1,413
2	1,908	1,930	1,991	2,049	2,035
3	368	375	394	404	408
4	178	197	199	192	178
5	68	76	83	77	68
Total	**3,915**	**3,991**	**4,084**	**4,134**	**4,202**

Source: Shimberg Center for Affordable Housing, 1996

Table 16
Estimated and Projected Number of Households by Income Range, 1990-2010

Income	1990	% of Total	1995	% of Total	2000	% of Total	2005	% of Total	2010	% of Total
$0-10,000	427	10.9%	412	10.3%	412	10.3%	425	10.2%	436	10.3%
$10,000-15,000	323	8.2%	333	8.3%	335	8.3%	333	8.0%	339	8.0%
$15,000-20,000	383	9.7%	405	10.1%	418	10.1%	418	10.1%	417	9.9%
$20,000-25,000	299	7.6%	299	7.5%	298	7.5%	309	7.4%	328	7.7%
$25,000-30,000	400	10.2%	387	9.7%	386	9.7%	391	9.4%	401	9.5%
$30,000-40,000	559	14.2%	558	14.0%	580	14.0%	600	14.5%	622	14.7%
$40,000-50,000	393	10.0%	411	10.3%	418	10.3%	424	10.2%	443	10.5%
$50,000-60,000	236	6.0%	252	6.3%	260	6.3%	250	6.0%	244	5.7%
$60,000-	216	5.5%	228	5.7%	243	5.7%	245	5.9%	244	5.7%

Income	1990	% of Total	1995	% of Total	2000	% of Total	2005	% of Total	2010	% of Total
75,000										
$75,000-100,000	271	6.9%	276	6.9%	287	6.9%	289	6.9%	293	6.9%
$100-150,000	223	5.6%	231	5.8%	246	5.8%	251	6.0%	253	6.0%
$150,000+	185	4.7%	189	4.7%	199	4.9%	199	4.8%	191	4.5%
Total Population	**3,915**	**100%**	**3,981**	**100%**	**4,082**	**100%**	**4,134**	**100%**	**4,211**	**100%**

Source: Shimberg Center for Affordable Housing, 1996

2. Projected Number of Households by Income Range

As shown in Table 16, the projected number of households in each income range is expected to remain relatively unchanged throughout the planning timeframes. Approximately 35 percent of all households will remain below the $25,000 income range. However, the city population includes a large number of retirees, many of whom have modest annual incomes but are able to finance higher priced homes through accumulated savings.

B. Estimated Housing Demand and Need

The final phase in the needs assessment process is to prepare housing demand and need estimates for 1995 and the projected years of 2000, 2005, and 2010. Housing demand and need is presented by the total number of housing units needed by type, tenure, and value. Furthermore, only units which are considered inhabited by permanent (non-seasonal) residents are considered within this analysis.

As explained in the *Affordable Housing Needs Assessment Methodology Users Guide* prepared by the Shimberg Center, future housing demand is determined by analyzing the relationship between the expected number of households and the anticipated vacancy rate. The following formula is used to calculate future housing demand:

Future housing demand = (future # of households) + (# of vacant units needed to maintain vacancy rate)*

* Future vacancy rate equals the 1990 rate (thirteen percent) calculated by the U.S. Census, excluding seasonal housing.

As detailed in the following analysis, housing demand increases over time, reflecting population growth. However, housing supply numbers are only updated to 1995 counts. Any additional units built between 1995 and 2010 are not considered as part of this analysis. Therefore, it is expected that housing need will be offset by housing construction occurring within those years.

1. Estimated Demand for Housing, 1995

In 1995, the total number of housing units within Treasure Island equaled 5,525, with a total

vacancy rate of 30 percent (see Table 17). Typically, a jurisdiction's vacancy rate averages around 5 percent. However, the high rate is partially explained by the Census Bureau's definition of a "vacant unit", which includes homes where the respondent claimed their usual place of residence as "elsewhere." According to this definition, an estimated 1,047 units were owned and occupied by seasonal residents in 1990.

Table 17
Total Number of Housing Units in 1995

	Number of
Total Housing Units	5,525
Vacant Units	1,629
Vacancy Rate	30%

Source: U.S. Bureau of the Census, 1990

As discussed above, the following analyses are based on housing units intended to be occupied by permanent residents. In 1995, the number of units occupied or intended to be occupied by permanent residents equaled 4,486 (see Table 18). The number of vacant units equaled 582 or thirteen percent, still among the highest vacancy rates in Pinellas County.

Table 18
Total Number of Non-Seasonal Housing Units in 1995

	Number of
Housing Units (Housing	4,486
Vacant Units	582
Vacancy Rate	13%

Source: U.S. Bureau of the Census, 1990

2. Projected Demand and Need, 2000-2010

Projected housing demand is based on the population projections developed by the Pinellas County Planning Department, as discussed in the *Future Land Use Element*. The Shimberg Center forecasts the demand for housing to increase by an average of 23 units annually until the year 2010, resulting in a total need of 350 units. This projected demand includes the number of units necessary to maintain a thirteen percent vacancy rate. Projected need is calculated by subtracting the 1995 housing supply from the projected demand for the years 2000, 2005, and 2010 (see Table 19).

As discussed later within this element, the Shimberg Center need assessment exceeds the expected need anticipated by the city. The Pinellas County Planning Department has produced estimates that more realistically forecast the future housing supply within Treasure Island. According to these estimates, by the year 2010 only 68 units will be needed, as opposed to the 350 units calculated by the Shimberg Center.

Table 19
Estimated and Projected Total Demand and Need for Housing*

	1995	2000	2005	2010
Estimated and Projected Total Households	3,999	4,092	4,146	4,207
Housing Supply	4,486	4,486	4,486	4,486
Projected Demand for Non-Seasonal Housing Units (Includes amount needed to maintain 13 percent vacancy rate)	N/A	4,703	4,766	4,836
Projected Need for Non-Seasonal Housing Units**	**N/A**	**(217)**	**(280)**	**(350)**

* A permanent vacancy rate of thirteen percent was assumed to occur in all projection years. Calculations included only permanent, non-seasonal households.
** Negative numbers indicate a housing supply deficit.
Source: Shimberg Center for Affordable Housing, 1996

3. Projected Demand and Need for Housing by Type

The percentage of multifamily homes located within the city will remain relatively constant at 58 percent of the total housing stock. As shown in Table 20, housing supply deficits are expected for both single-family and multifamily dwellings. However, with supply numbers based on 1995 estimates, housing construction occurring between 1995 and 2010 is expected to satisfy some or all of the anticipated need.

Table 20
Projected Demand and Need for Housing by Type (non-seasonal units)

	1995 Housing Supply	2000	2000 Need	2005	2005 Need	2010	2010 Need
Single	1,880	1,971	91	1,997	117	2,026	146
Multifamily	2,606	2,732	126	2,769	163	2,810	204
Total	**4,486**	**4,703**	**217**	**4,766**	**280**	**4,836**	**350**

Source: Shimberg Center for Affordable Housing, 1996

4. Projected Demand and Need for Housing by Tenure

Assuming a continued strong and stable economic climate, an increase in demand for owner-occupied housing units is expected to occur. Currently, owner-occupied housing comprises 61.8 percent of the housing stock, but is forecasted to total 65.4 percent in 2010 (see Table 21).

Table 21
Projected Demand and Need for Housing by Tenure*

	1995 Housing Supply	2000 Demand	2000 Need	2005 Demand	2005 Need	2010 Demand	2010 Need
Owner-Occupied Housing Units	2,474	2,585	111	2,675	201	2,775	301
Renter-Occupied Housing Units	1,529	1,510	(19)	1,474	(55)	1,435	(94)
Total**	**4,003**	**4,095**	**92**	**4,149**	**146**	**4,210**	**207**

* Calculations are for permanent, non-seasonal households, excludes vacant units.
** Household estimates and projections for "Total Households" are calculated separately. As a result, owner and renter households do not add up to total households. Differences are minor and are attributed to rounding.
Source: Shimberg Center for Affordable Housing, 1996

5. Projected Need for Ownership Housing Units by Value Ranges

According to the Florida Housing Finance Agency, a household can afford a home with a value of no more than 2.11 times its annual income. To calculate existing and future need for affordable ownership housing, households are grouped by income level, and a range of affordability is calculated for each level. For example, a household earning between $20,000 and $25,000 can afford a home valued at 2.11 times its annual income, or between $42,220 and $52,750.

As shown in Table 22, households earning less than $30,000 annually are considered to lack adequate affordable housing. Future shortages also are expected to occur in the $40,000 to $50,000 income bracket. However, the apparent mismatch of incomes and housing values may be linked to the number of retirees residing within the city. In many cases, these residents have sold homes in other states, and have used the proceeds to purchase a home outright or to negotiate a very small mortgage. This one-time sale of the home in another state would not have been reflected in the census definition of income. In addition, many residents purchased homes in the community prior to 1975, when housing prices in coastal communities appreciated dramatically.

Table 22
Projected Need for Ownership Housing Units by Value Ranges*

Household Income Range	Affordable Housing Unit	1995 Surplus/ (Deficit)	2000 Surplus/ (Deficit)	2005 Surplus/ (Deficit)	2010 Surplus/ (Deficit)
$0-5,000	$0-10,550	(26)	(31)	(34)	(36)

$5,000-10,000	$10,550-21,100	(159)	(164)	(171)	(179)
$10,000-15,000	$21,100-31,650	(130)	(130)	(131)	(139)
$15,000-20,000	$31,650-42,200	(90)	(96)	(105)	(114)
$20,000-25,000	$42,220-52,750	(95)	(94)	(103)	(119)
$25,000-30,000	$52,750-63,300	(87)	(99)	(116)	(134)
$30,000-40,000	$63,300-84,400	95	75	58	36
$40,000-50,000	$84,400-105,500	8	0	(18)	(51)
$50,000-60,000	$105,500-126,600	16	11	16	17
$60,000-75,000	$126,600-158,250	109	98	97	98
$75,000+	$158,250+	359	318	307	312
Total Surplus/(Deficit)		**0**	**(112)**	**(200)**	**(309)**

* Negative numbers indicate a deficit.
Source: Shimberg Center for Affordable Housing, 1996

6. Projected Need for Rental Housing Units by Value Ranges

According to the Shimberg Center, a rental payment is considered affordable if the amount is less than 30 percent of the household's monthly income. Similar to the analysis for ownership housing, households are classified according to their income and a range of affordability is calculated. For example, a household earning between $30,000 and $35,000 can afford a rental payment that is 30 percent of the monthly income, or between $750 and $875. As shown in Table 23, those households making less than $10,000 annually lack "affordable" rental housing. However, a surplus of affordable rental units exists for other low to moderate income households earning between $10,000 to $30,000.

Table 23
Projected Need for Rental Housing Units by Value Ranges*

Household Income Range	**Affordable Monthly Rent**	**1995 Surplus/ (Deficit)**	**2000 Surplus / (Deficit)**	**2005 Surplus / (Deficit)**	**2010 Surplus / (Deficit)**

$0-5,000	$0-125	(94)	(85)	(86)	(86)
$5,000-10,000	$125-250	(82)	(81)	(83)	(84)
$10,000-15,000	$250-375	19	17	20	22
$15,000-20,000	$375-500	201	194	203	213
$20,000-25,000	$500-625	177	177	175	172
$25,000-30,000	$625-750	17	30	42	50
$30,000-35,000	$750-875	(21)	(25)	(31)	(35)
$35,000-40,000	$875-1000	(7)	(5)	(2)	2
$40,000+	$1000+	(209)	(210)	(190)	(174)
Total Surplus/(Deficit)		1	12	48	80

* Negative numbers indicate a deficit.
Source: Shimberg Center for Affordable Housing, 1996

7. Need for Housing by Affordability Groups

Chapter 420, State Housing Initiatives Partnership, Florida Statutes, defines various affordability groups according to their annual income level (see Table 24). Although statutory requirements stipulate that "affordability" be based on the median income of a metropolitan statistical area, the Shimberg Center has based their calculations on Pinellas County's median income figure, which was reported at $26,296 in 1990.

Table 24
Income Ranges, Defined

Affordability Group	**Definition**	**Income Range**
Very-low income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 50 percent of the median annual adjusted gross income for households within the metropolitan statistical area... While occupying a rental unit, a very-low income household's annual income may increase to 140 percent of the 50 percent of the median income adjusted for family size.	$13,148 or less
Low income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 80 percent of the median annual adjusted gross income for households within the metropolitan statical area...While occupying a rental unit, a low income household's annual income may increase to 140 percent of the 80 percent of the median income adjusted for family size.	$13,149 - $21,037

Moderate income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 120 percent of the median annual adjusted gross income for households within the metropolitan statistical area... While occupying a rental unit, a moderate income household's annual income may increase to 140 percent of the 120 percent of the median income adjusted for family size.	$21,038 - $31,555

Source: Section 420.9071, State Housing Initiatives Partnership, Florida Statutes.

As shown in Table 25, very-low, low, and moderate income households are not adequately served by the existing and projected ownership housing supply. As a result, affordable housing for those households earning less than median income is virtually non-existent.

Table 25
Supply of Affordable Housing by Affordability Group, Owner-Occupied Housing

Affordability	Income Range	1995	2000	2005	2010
Very-low income	$13,148 or less	(276)	(285)	(295)	(310)
Low income	$13,149 -	(134)	(140)	(150)	(164)
Moderate income	$21,038 -	(152)	(173)	(202)	(236)

* Negative number indicates a deficit of affordable housing
Source: Shimberg Center for Affordable Housing, 1996

With rental payments more in line with countywide averages, a deficit of affordable rental housing exists for only very-low income households. Low income and moderate income households seem to be adequately served by the existing rental housing supply and future supply projections.

Table 26
Supply of Affordable Housing by Affordability Group, Renter-Occupied Units

Affordability	Income Range	1995	2000	2005	2010
Very-low income	$13,148 or less	(138)	(131)	(131)	(130)
Low income	$13,149 -	250	245	255	267
Moderate income	$21,038 -	88	97	103	104

* Negative number indicates a deficit of affordable housing
Source: Shimberg Center for Affordable Housing, 1996

C. Land Required for Total Housing Need

To accommodate the anticipated population of future residents, the city must ensure that land is available for residential development. The permanent population in 2005 is estimated to be 7,432. According to the Shimberg Center, 4,766 units will be needed to accommodate this population, requiring an increase of 280 units from the 1995 inventory. By the year 2010 an

additional 70 units will be needed, resulting in a total of 350 units needed within 15 years.

As discussed in the *Future Land Use Element*, approximately 7.8 acres are available for development within the vacant residential land use categories. A maximum of 192 units could be developed based on the allowable density as designated on *Map LU-4: Future Land Use Map*. Although such factors as environmental constraints, infrastructure limitations, or changes to land development regulations were not taken into account, this total represents a reasonable approximation of the maximum number of units that can be constructed within the current boundaries of the city.

When developing housing need projections for the years 2005 and 2010, the Shimberg Center based its calculations on population projections developed by the Pinellas County Planning Department. According to these projections, the permanent population is expected to increase by 77 residents by 2005 and another 16 residents by 2010. Assuming that the expected number of persons per household will remain relatively stable during these planning time frames (2005 and 2010), the city expects the need for additional housing to occur at the same rate as the increase in population. Furthermore, future demand should reflect recent housing construction activity, which was recorded at less than 8 units annually between 1990-1995.
Although the Shimberg Center has forecasted a need for an additional 350 units by 2010, independent projections made by the Pinellas County Planning Department anticipate a dramatically smaller need of only 68 units. The Shimberg Center has been made aware of this discrepancy, has recognized that there are shortcomings in the methodology, and its in the process of refining its analyses. Therefore, this element recognizes that the Shimberg Center projections may change significantly in the future.

D. Private Sector Provision of Housing

It is expected that future housing need can and will be met by the private sector. However, changes in market conditions, such as an increase in interest rates, may affect the number of homes built by the private sector housing delivery system.

E. The Private Sector Housing Delivery Process

The private sector housing delivery process essentially functions the same throughout the Tampa Bay area. For this reason, the private sector delivery process in this element will be discussed on a region-wide basis.

1. Costs

   Currently, the major costs of housing construction are structure costs (labor and materials), land development costs and other miscellaneous costs including overhead and profit. The distribution of structure costs as a percentage of the total construction cost has dramatically changed over the years. Following World War II, structure costs accounted for more than two-thirds of the total home price in the United States. According to unpublished data from the National Association of Home Builders, by 1982 labor and materials represented only about 45 percent of the cost of building a home. The cost of developing unimproved land has significantly increased since the 1970s. Before construction of home sites may begin, the unimproved land must be cleared, excavated, and utilities installed.

2. Services

   All development within the Treasure Island is provided with public facilities and services. As detailed in the *Infrastructure Element*, Pinellas County is responsible for serving residents

with potable water, and the City of St. Petersburg is responsible for treating sewage at the Northwest Wastewater Reclamation Facility. Treasure Island operates its own solid waste collection system and disposes of the waste at the Pinellas County Refuse-to-Energy Plant.

3. Financing

Financing affects the developer's cost to build a home as well as the purchaser's cost to buy one. The cost associated with home construction finance becomes especially apparent if the house remains vacant for an extended period of time. Construction loans generally float approximately two points above the primary interest rate. As long as a home remains unsold, the construction loan remains outstanding, requiring the builder to pay monthly "carrying costs."

4. Government Regulations

During the last two decades, governmental authority over residential development has greatly expanded in response to heightened concern for the quality of the urban environment. These increases in federal, state and local regulations are partly responsible for the rise in housing costs.

a. Housing Costs and Government Involvement

Various levels of government are involved in the private development process to ensure that public policies and goals are realized. The private housing industry has long recognized the value of having government as an active ally in the production of housing. Direct intervention by governments through the regulatory process has increased in recent years. Depending on the type, size and location of a prospective development in the Tampa Bay Region, a builder or developer is subject to review by a number of local, regional, state, and federal agencies.

The regulatory process is designed to protect the public health and safety, promote the general welfare, and prevent damage to the environment. Regulations ensure that residents are provided with adequate roads, utilities, stormwater drainage, open space, and other amenities. However, these same regulations have led to increased housing costs. A report published by the U.S. Department of Housing and Urban Development (HUD) concluded that "regulation by all levels of government is a major factor in increasing housing costs through both substantive requirements and processing delays." The report concluded that time-consuming and expensive review procedures and lengthy processing may exact a heavy cost to developers, which is usually added on to the price of housing.

b. Regulatory Tools

The following regulatory tools are governmental programs affecting housing costs in the region:

- Environmental Regulations
- Land Development Regulations
- Building Codes

The effect these government programs have on the housing delivery system is discussed below.

Environmental Regulations. In order to preserve the remaining natural resources, various governmental agencies, including the City of Treasure Island, have adopted

regulations to ensure that developers protect the environment. Unfortunately, the administration of environmental regulations can also delay residential construction and increase the cost of housing. Balancing the desirable goal of preserving the environment with the equally important need for moderately priced housing is not easily accomplished.

Land Development Regulations. As required by Chapter 163.3202, F.S., all municipalities within Florida are required to adopt and enforce land development regulations that are consistent with the comprehensive plan. Among other things, the land development regulations ensure that adequate public facilities and services are available, natural resources are protected, and incompatible land uses are separated. Specifically, land development regulations must, at a minimum,

- Regulate the subdivision of land;
- Regulate the use of land and water;
- Provide for the protection of potable water well fields;
- Regulate areas subject to seasonal and periodic flooding and provide for drainage and stormwater management;
- Ensure the protection of environmentally sensitive lands designated in the comprehensive plan;
- Regulate signage; and
- Provide that public facilities and service meet adopted level of service standards.

Building Codes. Structure costs for labor and materials are presently responsible for about half of the total price of a new home. Residential construction is regulated by a set of structural, electrical, plumbing, heating, mechanical, energy and fire safety codes. These local building codes are established to protect the health and safety of the occupants, and to ensure the quality of construction and durability of the buildings. Though minimum building requirements are necessary, increasingly higher standards and strict requirements have contributed to the rising cost of housing. The Southern Standard Building Code, which is used throughout the Tampa Bay region, was designed to provide standardization of construction requirements.

IV. SPECIAL TOPICS IN HOUSING

Rule 9J-5.010(2)(f), F.A.C., requires that each local government address the following special topics:

A. Future Housing Supply

City of Treasure Island relies entirely on the private sector, supplemented by outside government programs, to ensure the provision of adequate housing. In 1990, 55 percent of the renters paid $549 or less, and over 50 percent of owner-occupants had a housing cost of less than $1,250 versus less than $700 countywide. There are also a number of housing assistance programs available to the residents of the city, including Section 8 and low interest loans. The city will, additionally, take actions to encourage the development of very-low, low, and moderate income housing, where the city has identified need for said housing, by continuing to provide a variety of residential densities. The infrastructure currently in place is adequate to meet the needs of the residents of Treasure Island. The city provides the same level, amount, and quality of

infrastructure to all city residents, regardless of the resident's income.

B. Substandard Housing

A windshield survey of the city conducted in March, 1996, identified no substandard housing units on the exterior within the city's boundaries. According to the 1990 U.S. Census, 105 units reported interior substandard conditions. These conditions include: lack of complete plumbing, kitchen, and central heating facilities, and unit overcrowding. Due to the relatively high value of housing in the city, the private sector is quite active in ensuring the conservation and rehabilitation of housing. The city also actively enforces housing and health codes to ensure that the housing stock is brought up to, and remains in, standard condition.

C. Affordable Housing

There is a limited amount of vacant land remaining in the city. Thus, there are limited opportunities to build new housing within different price ranges. The city will take actions encouraging the private sector to provide very-low, low, and moderate income housing as long as such housing adheres to the density ranges established herein. No increase in density will be allowed for any purpose as such an increase could compound traffic and emergency evacuation efforts, have deleterious environmental impacts, and would contradict objectives established in the state, regional, and this comprehensive plan. Mobile homes are no longer allowed in the city pursuant to FEMA regulations. All of the mobile homes in the city have been removed since 1989.

D. Group Homes and Foster Care Facilities

No group homes are currently located in Treasure Island. Due to the cost of land and rents, it is very unlikely that group homes will be located in Treasure Island. The City of Treasure Island, however, requires no special permits or review for local residents to become foster parents, should they so choose.

E. The identification of conservation, rehabilitation or demolition activities and historically significant housing or neighborhoods.

Structurally, Treasure Island is a young community. There are no buildings in the city listed on the *National Register of Historic Places* or in the *Florida Master Site File*. Demolition, conservation, and rehabilitation activities are easily identified through the records of the building permit office, and the identification of historically significant housing can be accomplished through review of the records of the county property appraiser and the local historical society

GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Section 163.3177(6)(a), F.S., and Rule 9J-5.010(3), F.A.C., the following represents the housing goals, objectives, and the policies of the City of Treasure Island. The goals are intended to address the establishment of a long-term end towards which the housing programs and activities of the community are ultimately directed. Objectives are measurable actions, while policies are implementation activities, both of which support attainment of the goals.

B. Nonapplicable Items

~~Based on the findings contained in this element and pursuant to Rule 9J-5.002, F.A.C., it has been determined that the following objectives and policies identified in Rule 9J-5.010(3), F.A.C., are not applicable to the City of Treasure Island.~~

- ~~Rule 9J-5.010(3)(b)3., F.A.C.: Adequate sites for mobile and manufactured homes - No mobile homes exist in the city because of its location in the Coastal High Hazard Area.~~
- ~~Rule 9J-5.010(3)(c)5., F.A.C.: Establishment of principles and criteria guiding the location of homes for rural and farm worker households - There is no agricultural land used for farms in Treasure Island and there are no migrant or farm workers.~~

~~C. Implementation~~

~~Unless otherwise stated, the implementation of objectives and policies contained in Section D shall be through application of land development regulations (see *Future Land Use Element*~~).

Introduction

The Housing Element is intended to be used to promote decent, safe, and sanitary housing in suitable neighborhoods at attainable costs to meet the needs of the present and future residents of the City, free from arbitrary discrimination because of race, color, religion, national origin, gender, sexual orientation, disability, and familial status.

Goal~~s, Objectives, and Policies~~

~~Goal:~~ The C~~c~~ity shall ~~promote~~ maintain standards that encourage the provision of decent, safe, attainable, and sanitary housing in suitable neighborhoods ~~at affordable costs~~ to meet the needs of the present and future residents of the City, free from ~~arbitrary~~ discrimination because of race, color, religion, national origin, gender, sexual orientation, disability, and familial status ~~sex, handicap, ethnic background, age, marital status, or household composition.~~

Objective 1.1: Adequate and Affordable Housing

The City shall assist ~~the~~ private sector in providing for a suitable mixture and distribution of affordable housing types where possible, including extremely low-income, very low-income, low-income, and moderate-income families, with supporting infrastructure and public facilities ~~affordable housing~~ to meet the needs of the ~~existing~~ current and future population, and any households with special housing needs.

Policy 1.1.1: The City ~~shall~~ may provide information and technical assistance to the private and nonprofit sectors for development or redevelopment of additional affordable housing units.

Policy 1.1.2: The City shall review ordinances, codes, regulations, and the permitting process for the purpose of updating, amending, and streamlining in order to increase private participation in any future residential development and minimize development costs and delays while continuing to ensure the health, welfare, and safety of the residents.

Policy 1.1.3: The City ~~will~~ may encourage housing development to be affordable and widely dispersed throughout the community whenever possible.

Policy 1.1.4: The City shall ~~continue to~~ allow a variety of residential densities and housing types to permit a range of housing costs.

Policy 1.1.5: The City will ~~continue its~~ participat~~e~~ion in a cooperation agreement with Pinellas County for the administration of the Community Development Block Grant Program and HOME Investment Partnerships Programs.

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Policy 1.1.6: The City will explore the feasibility of using incentives to promote housing in downtown redevelopment. The City will explore density, unit size, and lot size provisions to encourage affordable housing.

Policy 1.1.7: The City may consider a policy implementing affordable housing into the Transfer of Development Rights process.

Policy 1.1.8: The City will monitor current and future housing needs and explore innovative solutions to increase the affordability and diversity of housing stock while maintaining compliance with Coastal High Hazard Area and Floodplain regulations.

Policy 1.1.9: The City shall seek for the development, redevelopment, retention, or replacement of affordable and attainable homeowner, and rental units to reduce the number of cost burdened households.

Policy 1.1.10: The City may foster public/private partnerships encouraging additional affordable housing development.

Policy 1.1.11: The City may seek additional funding, including grants, for affordable housing.

Policy 1.1.12: The City shall encourage developers to provide a wide range of flexible and affordable housing types.

Policy 1.1.13: The City may promote development to consider integrating health and equity.

Policy 1.1.14: The City may coordinate with the private sector in order to identify regulatory barriers to the provision of affordable, workforce, elderly and special needs housing, and ensure that these barriers are revised or removed in the land development regulations.

~~**Measure:** The provision of a suitable housing mix for a diverse population~~

Objective 1.2: Fair Housing

The City shall ensure the opportunity for all citizens to purchase or rent decent, safe, and sanitary housing free from ~~arbitrary~~ discrimination because of race, color, religion, national origin, gender, sexual orientation, disability, and familial status. ~~sex, handicap ethnic background, age, marital status, or household composition.~~

Policy 1.2.1: The City shall notify enforcement agencies whenever housing discrimination is encountered.

Policy 1.2.2: The City shall ~~continue to~~ enforce the *Pinellas County Fair Housing Ordinance*.

Policy 1.2.3: The City shall enforce compliance with the Americans with Disabilities Act (ADA) in order to ensure that persons with disabilities have equal access to housing, employment and services.

~~**Measure:** Enforcement of the *Pinellas County Fair Housing Ordinance*~~

Objective 1.3: Group Homes

Sites for group homes and foster care facilities shall ~~continue to~~ be made available in areas of residential character to ensure that the needs of City residents requiring such housing are met pursuant to Chapter 419, Florida Statutes.

Policy 1.3.1: The City shall review, and amend if warranted, the land development regulations so that group homes (community residential homes), for persons who do not require special provisions for emergency evacuation, will be permitted in areas of residential character, where group homes are necessary to meet the needs of residents pursuant to ~~Chapter 419,~~ Florida Statutes.

~~**Measure:** The placement of group and foster homes~~

Objective 1.4: Homelessness

The City shall seek opportunities to provide solutions to the homeless population.

Policy 1.4.1. The City will coordinate with the public and private sector to provide temporary, transitional and permanent housing or related support services, and support programs and initiatives serving the City's homeless population.

Objective 1.4~~5~~: Housing Maintenance

The ~~character of~~ existing residential ~~neighborhoods~~ housing stock shall be maintained

through the conservation, improvement, and/or rebuilding ~~rehabilitation~~ of structures in accordance with FEMA, City and County floodplain regulations, ~~compliant housing stock~~, and ~~the~~ elimination of substandard housing.

Policy 1.4~~5~~.1: The City shall review and amend where necessary the housing and health codes and standards relating to care and maintenance of residential and neighborhood environments and facilities.

Policy 1.4~~5~~.2: The City shall encourage individual homeowners to increase private reinvestment in housing by providing referral to the appropriate county or state program.

Policy 1.4~~5~~.3: The City shall maintain or increase code enforcement activities, through regular inspections of the housing stock.

Policy 1.4~~5~~.4: The land development regulations shall contain principles to guide techniques and strategies for conservation, rehabilitation, and demolition of existing housing.

~~**Measure:** Number of housing units improved or maintained; absence of substandard housing~~

Objective 1.~~5~~6: Displacement

The City shall provide uniform and equitable treatment for persons and businesses displaced by natural disasters or state and local government programs consistent with ~~Section 421.55,~~ Florida Statutes.

Policy 1.~~5~~6.1: Prior to their displacement, the City shall establish procedures to ensure that reasonably located, standard housing at affordable costs is available to persons displaced through public action.

Policy 1.6.2: The City shall coordinate with Pinellas County and private and non-profit sectors to ensure the availability of housing assistance to residents and other individuals within the City that are displaced by natural disasters and other acts of God.

Policy 1.6.3: The City shall coordinate with, maintain and distribute a list of Pinellas County emergency shelters, transitional housing options, and relocation assistance programs for those displaced by natural disasters.

~~**Measure:** The establishment of procedures to deal with displacement consistent with state and federal law~~

Objective 1.~~6~~7: Historic Preservation

The City shall identify, preserve, and protect historically and architecturally significant housing and structures.

Policy 1.~~6~~7.1: The City shall assist property owners of historically or architecturally significant

housing and structures in applying for and utilizing state and federal assistance programs.

Policy 1.6~~7~~.2: The City shall assist and encourage the rehabilitation and adaptive reuse of historically or architecturally significant housing by providing technical assistance and economic assistance programs.

Policy 1.6~~7~~.3: By providing referral to the appropriate governmental agencies, the City shall assist property owners in the identification of historically significant structures.

Policy 1.7.4: In the event that historically significant housing or structures are identified through surveying or other efforts, the City shall consider the establishment of a local register and listing processes and procedures.

Policy 1.7.5: The City shall coordinate, as appropriate, with local, ounty, State and Federal agencies and the private sector to ensure the protection of historically designated housing and structures that may be located within its boundaries.

~~**Measure:** The preservation of historically or architecturally significant housing~~.

Objective 1.8: Environmental Design and Construction Features

The City shall encourage new residential development and redevelopment to incorporate environmentally – friendly and resilient design and construction features.

Policy 1.8.1. The City shall promote green building regulations or incentives.

Policy 1.8.2. The City shall support and encourage energy and resource conservation measures as a component of development and redevelopment.

Policy 1.8.3. The City shall explore potential land development regulations to provide for the improvement of energy efficiency in new housing and in the redevelopment of existing housing.

Policy 1.8.4. The City shall educate current and new residents on resource reduction strategies.

Policy 1.8.5. The City may encourage that all new housing units are water and energy efficient to reduce monthly costs for the residents.

Policy 1.8.6. The City will encourage green design and building standards on all proposed new housing units and renovation building plans.

Policy 1.8.7 The City shall encourage terrain modification for developments with respect to projected sea level rise scenarios and flooding potential when practical.

~~References~~

~~City of Treasure Island,~~

~~*City of Treasure Island Comprehensive Plan*, 1989.~~
~~*City of Treasure Island Evaluation and Appraisal Report*, 1996.~~
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~~*Chapter 9J-5, Florida Administrative Code*, 1994.~~
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~~United States Department of Commerce, Bureau of the Census,~~

~~*1990 Census of Housing, Characteristics of Housing Units, Detailed Housing Characteristics, Florida, Part II, HC80-1-B11.*~~

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~~Census.gov~~

INFRASTRUCTURE ELEMENT

The purpose of the (Potable Water, Sanitary Sewer, Solid Waste, Stormwater Management, and Natural Groundwater Aquifer Recharge Element, hereafter referred to as the Infrastructure Element) element is to provide for necessary public facilities and services correlated to future land use projections.

Rule 9J-5.011(1), Florida Administrative Code

I. INTRODUCTION

The following section discusses the condition of public services and facilities in Treasure Island, including potable water, sanitary sewer, solid waste, and stormwater management. The following analysis includes a description of the current condition and level of service for each service and facility, and anticipates future demand based on projected population growth. As discussed in the *Future Land Use Element*, the total city population includes permanent residents, seasonal residents, and tourists (see Table 1).

Table 1
Permanent and Seasonal Population Estimates and Projections, 1995-2010

Year	Permanent Population	Seasonal Population		Total Population
		Permanent Housing*	**Tourists**	
1995	7,355	1,489	4,210	13,054
2005	7,432	1,503	4,214	13,149
2010	7,448	1,506	4,215	13,169

Source: Pinellas County Planning Department, 1995

In addition to the public services and facilities described above, statutory requirements mandate that local governments examine the effect of urban development on natural groundwater aquifer recharge areas. Because the West Coast Regional Water Supply Authority (WCRWSA), recently renamed "Tampa Bay Water", has determined that Treasure Island and the immediate surrounding area has very low to no recharge to any groundwater aquifer, this analysis will be limited in scope.

II. POTABLE WATER SUB-ELEMENT

A. Potable Water Facilities

1. Service Area and Predominant Land Uses

Treasure Island receives potable water from the Pinellas County Utilities System (PCUS). The PCUS service area includes over 630,000 people, and encompasses most of the

unincorporated county, as well as the cities of Largo, Seminole, Treasure Island, and the other beach communities. PCUS also supplements other water distribution systems, supplying water on a wholesale basis to the cities of Clearwater, Dunedin, Pinellas Park, Safety Harbor, and Tarpon Springs. The dominant land use classification within the service area is residential, although commercial, industrial, recreational, and public facility uses are also served.

2. Design Capacity

In early 1995, potable water was derived from the five wellfields listed in Table 2. Due to water quality problems, the East Lake Road wellfield was taken off-line in the fall of 1995. Of the four operating wellfields currently serving PCUS customers, three are managed by Tampa Bay Water, formerly known as the West Coast Regional Water Supply Authority (WCRWSA). Tampa Bay Water is charged with planning the future regional water supply system in an effort to accommodate expected growth. Pinellas, Pasco, and Hillsborough counties use this forum to discuss multi-jurisdictional issues associated with providing potable water to all residents within the Tampa Bay metropolitan area.

Table 2
Pinellas County Utility System Wellfields in 1996

Wellfield	Location	Operator	Average Daily Flow	Maximum Daily Flow
Eldridge-Wilde	NE corner Pinellas & NW corner of Hillsborough counties	PCUS	35 mgd	55 mgd
East Lake Road	NE corner of Pinellas Co., east of Lake Tarpon	PCUS	Taken off-line in Sept. 1995	Taken off-line in Sept. 1995
Cypress Creek	Central Pasco County	TBW	30 mgd*	40 mgd*
Cross Bar Ranch	Northern Pasco County	TBW	30 mgd	45 mgd
Cypress Bridge	Pasco County	TBW	8 mgd**	25 mgd**

TBW = Tampa Bay Water (formerly the West Coast Regional Water Supply Authority)
PCUS = Pinellas County Utilities System
* Pinellas County is entitled to withdraw 15 mgd average day and 18 mgd maximum day.
** Pinellas County is entitled to withdraw 4.45 mgd average day, or 55.65% of permitted capacity.
Source: Pinellas County, 1996

Currently, the permitted average daily capacity available to the PCUS is approximately 85 million gallons per day (mgd), and maximum daily capacity equals 135 mgd. To calculate existing and future demand, the Pinellas County Planning Department has divided the county into four water demand planning areas (WDPA). Treasure Island is considered part of the

Pinellas County WDPA which also includes the cities of Clearwater and Tarpon Springs water departments. These combined water systems have an average design capacity of 91 mgd, with a maximum capacity of 140 mgd.

B. Proportional Capacity

No proportional capacity agreement exists between Pinellas County and Treasure Island. To estimate potable water consumed by the city, its total population is multiplied by the per capita consumption for the overall service area.

C. Demand: Existing Level of Service (1995)

Since 1989, the PCUS service area population has increased by over 23 percent. Despite this growth, wellfield production has decreased due to a reduction in per capita demand. In 1987, average daily wellfield production was 72.7 mgd. Comparatively, average daily wellfield production was recorded at 67.3 mgd in 1994. In light of these new figures, Pinellas County has reduced the adopted level-of-service standard within the Pinellas County WDPA from 150 gallons per capita a day (gpcd) in 1989 to 125 gpcd in 1997. Because the consumption rate of 125 gpcd was based on 1994 potable water demand data, this figure will be applied to the city and Pinellas County WDPA population estimates for 1995, which are the most up-to-date counts currently available.

The total population, including permanent residents, seasonal residents, and tourists, amounted to 13,054 persons in 1995. Based on this estimate and a level-of-service standard of 125 gpcd, Treasure Island demanded approximately 1.63 mgd of potable water daily, thereby accounting for approximately 2.1 percent of the WDPA average daily flow (see Table 3).

Table 3
Potable Water Demand in 1995

	Pinellas County	**Treasure**
Total Population**	631,901	13,054
Level of Service	125 gpcd	125 gpcd
Average Daily Demand	78.9 mgd	1.63 mgd
% of Total Average Daily	100 %	2.1%

* Includes: Pinellas County Water Demand Planning Area (WDPA) includes the service areas of the PCUS and the cities of Clearwater and Tarpon Springs.
** Includes permanent residents, seasonal residents, and tourists.
Source: Pinellas County, 1997

D. Projected Demand; Level of Service (2005 and 2010)

The county level-of-service standard for potable water will remain at 125 gpcd until the year 2005, and will then decrease to 120 gpcd for the remainder of the planning time frame. To calculate future demand, the projected service area population was multiplied by the

appropriate level-of-service standard for the years 2000, 2005, and 2010. As shown in Table 4, average daily flow is forecasted to rise by 1.2 mgd between 2000 and 2010 while capacity remains constant, producing a surplus of 7.35 mgd or greater.

Table 4
Water Supply Needs, 2000-2010
Pinellas County Water Demand Planning Area*

	2000	**2005**	**2010**
Service Area	666,538	689,294	704,329
Level-of-Service	125 gpcd	120 gpcd	120 gpcd
Average Daily Flow	83.3 mgd	82.7 mgd	84.5 mgd
Average Daily	91.85 mgd	91.85	91.85
Surplus	**8.55 mgd**	**9.15 mgd**	**7.35 mgd**

* The Pinellas County Water Demand Planning Area includes the service areas of the PCUS and the cities of Clearwater and Tarpon Springs.
** Includes permanent residents, seasonal residents, and tourists.
Source: Pinellas County, Florida. 1998. *Pinellas County Comprehensive Plan.*

The water demands of the Pinellas WDPA can be satisfied by existing supply facilities through the year 2010, assuming that there are no reductions in permitted capacity, or water quality problems which would require removing wells from service. However, negotiations currently being conducted at the regional level may limit potable water withdrawals from existing wellfields over time. Since full permitted capacity may not be available throughout the planning horizon, development of alternative potable water supplies will most likely be required (Pinellas County, 1998).

E. Performance, Problems, and Opportunities

To ensure that potable water will be available beyond the year 2015, opportunities to conserve and locate alternative sources are continually being sought. Conservation programs are generally handed down from Pinellas County and regional agencies, particularly the former West Coast Regional Water Supply Authority, recently renamed "Tampa Bay Water." Under a new cooperative agreement between the major water providers in Pinellas, Hillsborough, and Pasco counties, Tampa Bay Water will own and oversee the regional water system, providing a reliable supply to all member utilities while promoting resource sharing. This agency is also responsible for locating and developing new water sources, and is currently studying the feasibility of building a desalination plant somewhere in the region.

In support of these regional efforts, Pinellas County will continue working to conserve potable water by reducing system losses, protecting groundwater against degradation of water quality and yield, and encouraging county residents to install water conservation devices. In addition, the county's commitment to promoting reclaimed water use for irrigation could significantly reduce potable water demand, decrease the chloride content in deep wells, and eliminate the

need to discharge treated wastewater into surface waterbodies. Reclaimed water is currently being supplied to golf courses and select residential communities throughout the county. Pinellas County is "committed to reusing all treated wastewater, and is completing the upgrade of all facilities to the level of advanced wastewater treatment so that all wastewater will be available to be utilized in the reclaimed water system" (Pinellas County, 1997). Recently, the city has begun to explore the idea of developing a reclaimed water program in cooperation with PCUS. This program would bring effluent from the South Cross Bayou Wastewater Treatment Plant to the barrier island for irrigation use. However, this proposal is still early in its infancy, and many details have not yet been finalized.

Treasure Island is committed to conserving potable water, and strongly enforces local restrictions on irrigation. As set forth by ordinance, lawn watering is restricted to two days a week, between the hours of 4:00 p.m. and 10:00 a.m.

III. SANITARY SEWER SUB-ELEMENT

A. Operational Responsibility and Proportional Capacity

Treasure Island and St. Petersburg have entered into an interlocal agreement whereby St. Petersburg is responsible for the city's sewage treatment. With no septic tanks located within the jurisdictional boundaries of Treasure Island, all sewage is pumped to and treated at the Northwest Wastewater Reclamation Facility, located at 7500-26th Avenue North.

Because this facility serves several jurisdictions as well as areas of unincorporated Pinellas County, no proportional capacity agreement exists between St. Petersburg and Treasure Island. All data and analyses are initially based on the plant's service area population. Thereafter, Treasure Island's consumption rate is factored by its percentage share of the total population.

B. The Northwest Wastewater Reclamation Facility

All wastewater produced within the city travels along the Treasure Island Causeway in an 18-inch force main, joins sewage originating from St. Pete Beach at 79th Street and Central Avenue, moves through a 24-inch force main to a pump station located in South Pasadena, and then finally flows into the Northwest Wastewater Reclamation Facility. Treasure Island maintains the force main to 79th Street and Central Avenue. Thereafter, Treasure Island and St. Pete Beach are jointly responsible for shared pipes.

1. Background and Design Capacity

The Northwest Wastewater Reclamation Facility is a Type I complete mix activated sludge wastewater treatment plant with a capacity of 20 mgd. Treatment methods involve secondary, advanced, and activated sludge with filtration. Dewatered sludge is removed by private hauler and transported to Manatee, Hardee, and Desoto counties to be used for agricultural purposes; effluent is disposed through two methods, distribution of reclaimed water and deep well injection. Although Treasure Island is currently not a recipient of reclaimed water, city sewage treated at the Northwest Facility is pumped to reclaimed water customers residing in St. Petersburg. Recycling water yields several benefits, including reducing per capita demand for potable water, decreasing the chloride content in deep wells, and eliminating the need to discharge treated wastewater into surface water bodies. Effluent that exceeds reclaimed water demand or fails to meet reclaimed water quality standards is injected into deep wells.

2. Service Area and Predominant Land Uses

The Northwest Wastewater Reclamation Facility service area encompasses the northwest district of St. Petersburg, along with a portion of Gulfport, the cities of South Pasadena and St. Pete Beach, and the Bear Creek area of unincorporated Pinellas County. Within Treasure Island, the land uses served are predominantly residential, occupying 64 percent of the land area. Preservation areas account for 17 percent, with commercial, recreational, and public facility uses occupying another 17 percent.

C. Existing Level of Service

In order to remain consistent with the level-of-service analysis detailed within the St. Petersburg *Evaluation and Appraisal Report* (EAR), the following average daily flow calculations are based on the total population, excluding tourists. In 1995, the Northwest Facility was operating at an average daily flow of 12.9 mgd, or 64.5 percent of capacity. Serving an estimated population of 84,725 persons, the facility was operating at a level of service of 152.25 gallons per capita a day (gpcd), as shown in Table 5.

Table 5
Northwest Water Reclamation Facility in 1995

Capacity	20.0 mgd
Population*	84,725
Level of Service	152.25 gpcd
Average Daily Flow	12.9 mgd

* Includes permanent and seasonal residents, excludes tourists.
Source: City of St. Petersburg, 1996

D. Projected 2005 and 2010 Level of Service

Future levels of service were calculated by multiplying the expected population by the anticipated wastewater generation rate. First, population projections were developed by the City of St. Petersburg based on data from the Pinellas County Planning Department. As shown in Table 6, the Northwest Facility service area is expected to stay relatively stable, increasing by fewer than 2,700 users between 1995 and 2010.

Table 6
Service Area Population Projections, 1995-2010

Year	Population	% Change
1995	84,725	--
2005	86,744	2.38%
2010	87,369	0.72%

Source: City of St. Petersburg, 1996

Future wastewater generation rates were based on the highest average daily flow figure recorded between 1990 and 1995. As noted in the St. Petersburg EAR, the highest flow was used because "...flows vary significantly due to the effect of weather conditions on flow levels. Severe wet weather increases the amount of infiltration and thus increases the effluent at the wastewater treatment facilities." The highest average daily flow (14.4 mgd) occurred in 1992.

With a 1995 service area population of 84,725 and an average daily flow of 14.4 mgd, daily per capita demand equaled 170 gpcd. St. Petersburg considers this amount the newly adopted level-of-service standard for the Northwest Wastewater Reclamation Facility service area, and applies this rate when forecasting projected demand (see Table 7).

Table 7
Per Capita Daily Demand Level-of-Service Standard

1995 Service Area Population	84,725
Forecasted Average Daily Flow	14.4 mgd
Per Capita Demand/Level-of-Service	170 gpcd

Source: City of St. Petersburg, 1996

Based on a level-of-service standard of 170 gpcd, Table 8 lists the expected amount of wastewater that will be generated in 2005 and 2010. As illustrated below, the Northwest Facility has adequate capacity to treat the wastewater that will be generated from these projected populations.

Table 8
Projected Population Served, 1995-2010

	1995	2005	2010
Capacity	20.0 mgd	20.0 mgd	20.0 mgd
Service Area Population*	84,725	86,744	87,369
Level of Service	152 gpcd	170 gpcd**	170 gpcd**
Average Daily Flow	12.9 mgd	14.7 mgd	14.8 mgd
% of Capacity	64.5%	73.5%	74%
Surplus	7.1 mgd	5.3 mgd	5.2 mgd

* Includes permanent and seasonal residents, excluding tourists.
** Based level-of-service standard of 170 gpcd, as calculated by the St. Petersburg Planning, Housing, and Development Review Services Department.
Source: City of St. Petersburg, 1996

E. Performance, Problems, And Opportunities

Both St. Petersburg and Treasure Island have ongoing preventive maintenance programs that ensure the sanitary sewer system is operating efficiently. Currently, the city is rebuilding gravity lines and force mains along Gulf Boulevard from 108th Avenue to 117th Avenue, and has relined approximately 75 percent of its brick-lined manholes. Ongoing sewer improvements are scheduled through the year 2002, as shown in the *Capital Improvements Element*.

For a complete discussion of the current and future performance, condition, life expectancy, and problems and opportunities of the Northwest Wastewater Reclamation Facility, see the *Sanitary Sewer Subelement* of the *City of St. Petersburg Comprehensive Plan*.

IV. SOLID WASTE SUB-ELEMENT

A. The Role of Pinellas County

1. Operational Responsibility and Service Area

Along with the other twenty-three municipalities within Pinellas County, Treasure Island has entered into an interlocal agreement under which the county is responsible for the disposal of the city's solid waste. Prior to this agreement, the county enforced the Solid Waste Disposal and Resource Recovery Act, which legislatively charged the Board of County Commissioners with countywide disposal responsibility and also granted the Board flow control to direct all solid waste to one location. The U.S. Supreme Court found

flow control mandates unconstitutional in 1994. In response, Pinellas County looked toward the interlocal agreements to maintain municipal flow control authority.

Currently, Wheelabrator Environmental Systems (formally Universal Oil Products) is charged with the operational responsibility of the Refuse-to-Energy Plant. Through a 20-year management agreement originally signed in 1978, the contractor designed, constructed, and continues to manage the county-owned facility. The adjacent Bridgeway Acres Sanitary Landfill is operated by Addington, Inc.

Local refuse is collected by four city-owned 25-cubic yard rear loading trucks. On average, one truck is replaced every three years. The city also spends approximately $15,000 annually on the rehabilitation and purchase of dumpsters.

2. Proportional Capacity and Land Uses

Located at 3001-114th Avenue North, the Refuse-to-Energy Plant and adjacent landfill share operational space. Currently, no proportional capacity agreement for solid waste disposal exists between Treasure Island and Pinellas County. However, the city does record the total amount of refuse received, recycled, and sent to the Refuse-to-Energy Plant and Bridgeway Acres Sanitary Landfill. A wide array of land use activities is serviced by these facilities, including residential, commercial, and industrial uses. Within Treasure Island, residential remains the most predominant land use type and occupies 64 percent of all upland acreage. Commercial, recreation, and public facilities account for a combined total of 17 percent.

B. Background and Design Capacity

Countywide, the amount of solid waste collected annually surmounted the million ton mark in the late 1980s and appeared to be on the rise (see Table 9). Fortunately, this trend was counterbalanced by the rising popularity of recycling, increased donations to charitable organizations, and the diversion of construction and demolition debris to the county artificial reef program. The amount of collected refuse has stabilized at approximately 900,000 tons per year.

Solid waste entering the landfill has also significantly declined since the 1980s. As reported between 1990 to 1995, the annual average tonnage of refuse entering the landfill was just over 67,000 tons per year or 166 tons per day, representing a 69 percent reduction from the amount of waste deposited during the late 1980s. Reasons for this decline can be attributed to the following: more construction and demolition debris being diverted to the Refuse-to-Energy Plant and the recent expansion of this facility; construction debris being diverted to Pasco County; and massive recycling efforts.

Table 9
Refuse-to-Energy Plant Performance, 1986 - 1996 (tons/year)

Calender	Refuse-to-	Landfill	Stockpile	Total
1986	752,266	244,109	0	999,539

1987	934,722	230,167	0	1,165,564
1988	855,466	225,721	0	1,111,187
1989	867,648	170,034	160	1,037,842
1990	843,619	128,780	179	972,578
1991	773,375	101,683	314	875,373
1992	831,076	36,114	757	867,947
1993	860,960	62,050	207	923,217
1994	828,175	57,287	185	885,647
1995	818,757	75,029	202	893,988
1996	821,254	72,555	5	893,814

* Construction and demolition debris stockpiled for artificial reef program.
Source: Pinellas County Department of Solid Waste Management

Listed below is a description of the various types of solid waste disposal facilities used by the city and the associated design capacities.

1. Pinellas County Refuse-to-Energy Plant

A state-of-the-art facility, the three-boiler Refuse-to-Energy Plant disposes of waste through mass burning with waterwall incinerators, creating steam that drives turbines and generates electricity. The facility has a capacity of 3,150 tons per day or nearly 1,150,000 tons per year, and is currently operating at about 71 percent of capacity, with Treasure Island accounting for only 0.7 percent of average daily flow.

2. Landfill

Located adjacent to the Refuse-to-Energy Plant, the Bridgeway Acres Sanitary Landfill is the only Class I landfill in Pinellas County. A Class I facility can accommodate a wide variety of waste products and must be lined in order to prevent groundwater contamination. Typically, non-processible or non-burnable solid waste such as large tree trunks and construction debris is buried here.

Bridgeway Acres has approximately 538 acres of remaining permitted capacity, and is expected to last until approximately 2030. Due to high population densities and stringent groundwater regulations, the county has determined that Bridgeway Acres will be the last Class I landfill within county limits.

3. Recycling

Currently, the city's recycling program provides an opportunity for residents to recycle yard waste, cardboard, paper, clear glass, metals, and plastics. By contract with the city, Kimmins Recycling handles curbside pick-up for single-family residences. Meanwhile, commercial uses and multifamily units are encouraged to deposit recyclable materials at

four drop off sites. Yard waste is collected on regular collection days and is recycled into mulch.

C. Existing Demand (1995)

Treasure Island records the amount of solid waste collected, recycled, and incinerated. To calculate the per capita generation rate, tons collected per day was divided by the total population, including tourists. The city generated an average of 24.2 tons of solid waste daily in FY 1994/95 or 3.71 pounds per capita a day (ppcd). Of this total, 90 percent of all solid waste was sent to the incinerator or landfill. Table 10 shows that the city has a significantly lower per capita generation rate than the Pinellas County service area, which has a per capita generation rate of 10.11 ppcd.

Table 10
Solid Waste Generation, 1994/1995

	Pinellas County Service Area*	Service Area Per Capita Rates	Treasure Island**	Treasure Island Per Capita Rates
Population	925,591	--	13,054	--
Total Generation (per	4,681 tons	10.11 lbs.	24.2 tons	3.71 lbs.
Incinerated Solid Waste	2,241 tons (47.9%)	4.83 lbs.	21.8 tons (90.0%)	3.34 lbs.
Buried Solid	214 tons (4.6%)	0.48 lbs.		
Recycled	2,226 tons	4.80 lbs.	2.4 tons	0.37 lbs.

* Pinellas County Service Area, based on solid waste collected between July 1, 1994 and June 30, 1995.
** Based on solid waste collection figures collected between October 1, 1994 and September 30, 1995 and recorded by the City of Treasure Island.
Source: Pinellas County, 1996

It should be noted that this low per capita rate may not truly describe the solid waste generation habits of Treasure Island residents, due to two factors unique to the city. First, the use of total population figures within the analysis may skew per capita totals. As shown in Table 1, approximately 44 percent of the total city population consists of seasonal residents and tourists. Because these residents typically live in Treasure Island only during the winter months, they generate much less solid waste than permanent residents on an annual basis. As a result, the per capita solid waste generation rate for the permanent population is most likely higher than 3.71 ppcd. Secondly, although per capita generation of solid waste in Treasure Island was less than half that of the county, only ten percent of city waste is recycled, compared with 47.5 percent for the county. Therefore, the per capita generation of nonrecycled waste in the city (3.34 ppcd) is closer to that of the county (5.31 ppcd).

D. Projected Demand: 2005 and 2010 LOS

Treasure Island's total population is expected to reach 13,149 persons in 2005 and 13,169 persons in 2010, as shown in Table 11. At the current generation rate of 3.34 ppcd (which excludes recycled materials), the city will send approximately 22 tons of solid waste per day to the incinerator in both 2005 and 2010.

Table 11
Projected Level of Service, 2005-2010

	2005	**2010**
Projected Total Population	13,149	13,169
Generation Rate of Incinerated and Buried	3.34 ppcd	3.34 ppcd
Incinerated and Buried Solid Waste	21.96 tons per	21.99 tons per

Sources: Pinellas County Planning Department, 1995

Assuming that the solid waste generation remains relatively stable through the year 2010, and that countywide recycling continues at the current rate of nearly fifty percent, the Refuse-to-Energy Plant and adjacent landfill will have adequate capacity to handle expected demand through 2010 and beyond. As such, Pinellas County has concluded that no immediate need exists to expand the Refuse-to-Energy Plant or construct a second facility.

E. Performance, Problems, and Opportunities

The Refuse-to-Energy Plant has minimal impacts on adjacent natural resources. A bentonite slurry wall connected to an impervious clay wall allows zero discharge of pollutants into adjacent soils, groundwater, or surface waters, which are extensively monitored by Pinellas County. Runoff generated by the plant is collected and recycled for use in the cooling system. Construction, design, and monitoring of the facility complies with all federal and state regulations, and air quality around the site meets acceptable levels of the Environmental Protection Agency (EPA). For a complete discussion of the current and future performance, condition, life expectancy, problems, and opportunities of the Refuse-to-Energy Plant and Bridgeway Acres Sanitary Landfill, see the *Solid Waste and Resource Recovery Element* of the *Pinellas County Comprehensive Plan.*

V. STORMWATER MANAGEMENT SUB-ELEMENT

A. Operational Responsibility and Predominant Land Uses

The city maintains an extensive system of storm drains, which extend approximately 11 miles in length throughout public rights-of-way. Additional drains, swales, and other stormwater facilities located on private property are the responsibility of individual property owners. As discussed in the *Future Land Use Element*, residentially designated property remains the most predominate land use type within the city, occupying 64 percent of all upland area. Seventeen percent of land is held for preservation, and 17 percent is occupied by commercial uses, public facilities, and recreation/open space. The remaining 2 percent is vacant and undeveloped.

B. Background

Treasure Island is comprised of five small islands located within Florida's Gulf of Mexico barrier island system. The barrier islands were built up from sand and shell as a result of thousands of years of wave and tidal action, and have evolved natural drainage patterns to accommodate storms and flooding. During the rapid urbanization of the last several decades, however, these drainage patterns were dramatically altered. Asphalt and other impervious surfaces replaced permeable soils, while dredging, filling, and grading changed the shape of the natural landscape. As a result, stormwater no longer drained efficiently, causing flooding in many areas.

In 1981, Pinellas County adopted the *Pinellas County Master Drainage Plan* along with 52 individual storm drainage basin studies. These studies represented a comprehensive approach to identifying drainage needs within the county. Unfortunately, due to the small size of the sub-basins found on the barrier islands, the beach communities were not included within the plan. Local drainage problems were left to each municipality to resolve.

In 1996, the city commissioned Tampa Bay Engineering, Inc., to develop a drainage plan that identified needed drainage improvements within Treasure Island. In December 1996, the *City of Treasure Island Master Drainage Plan* was completed. The plan recommended improvements to be made to the stormwater management system, and set forth design criteria to be adopted into the comprehensive plan and land development regulations.

C. *Treasure Island Master Drainage Plan*

As part of the *Master Drainage Plan*, each of the city's drainage basins was analyzed using a 25-year/24-hour storm event, the level-of-service standard adopted in the 1989 comprehensive plan. Roughly, this translates into nine inches of rain within 24 hours. The analysis concluded that designing a stormwater conveyance system for such an event was physically and financially impractical, and that the city should instead adhere to a three-year storm design. Pipe diameters and inlets designed in accordance with this standard would reduce street flooding when the tide level is at or below one foot above sea level. When the tide level exceeds one foot above sea level or surmounts the seawall, storm pipes would not drain regardless of pipe size, water would back up, and flooding would occur. Furthermore, using larger pipes could impede drainage because sediment is not carried as efficiently and would build up over time, reducing conveyance capacity. The *Master Drainage Plan* recommends continued use of the 25-year/24-hour storm design for stormwater retention purposes only.

Table 12 lists six categories used to measure the performance of the stormwater management system. Level of service (LOS) "C" is the newly-adopted standard for Treasure Island. This level provides adequate protection at the most affordable cost. Improving the system to function at LOS "A" and LOS "B" would require a larger storm system, which would cost considerably more but would not significantly reducing flooding. All drainage basins analyzed by Tampa Bay Engineering currently function at LOS "C" or better.

Table 12
Level-of-Service Criteria

LOS A	Maximum water level below the top of curb and all traffic lanes are open.
LOS B	Partial yard flooding and standing water in traffic lanes. Water level is 0 to 3 inches over the crown of the road.
LOS C	Yard flooded; but first floor of buildings, including garages, are dry and one traffic lane open. Water level is 3 to 12 inches over the crown of road.
LOS D	Garage flooded. Water level is 12 to 18 inches over the crown of the road.
LOS E	First floor of building is flooded. Water level is greater than 18 inches over the crown of road.
LOS F	No flood protection; flooding threatens lives, structures, and property.

Source: Tampa Bay Engineering, 1996

D. Projected Demand: Level of Service (2005 and 2010)

Treasure Island relies heavily on new development and redevelopment to improve existing conditions. In 1987, no local regulations or programs were in place that addressed drainage. Since that time, the land development regulations now require all new development to address stormwater management during site plan review. The city also plans to improve its system by completing the recommended improvements included within the *Master Drainage Plan*, and amending the land development regulations to require a three-year storm design.

E. Performance, Problems, and Opportunities

Occasionally, flooding occurs along Gulf Boulevard during heavy rains at high tide. Several years ago, Gulf Boulevard was improved by the Florida Department of Transportation (FDOT) between 105th to 125th Avenues. Although drainage improvements were made simultaneously, flooding still occurs during severe storms, although not at the same intensity. Table 13 describes the major drainage project scheduled to be completed over the next two years. Further improvements will be planned for subsequent years, as need is determined.

Table 13
Recommended Drainage Improvements

Location	**Project Description**
West Gulf	

	Removal of stormwater via an exfiltration system using Parking Lots #2 and #3 and a new outfall on 88th Avenue. Drainage along West Gulf will be redone to connect to the parking lots. The lots will be resurfaced to provide improved permeability so storm water will move into the ground under the parking lots instead of on the roadways.

Source: Treasure Island Public Works Department

Runoff pollutant levels were recorded during the development of the *Master Drainage Plan.* Measured according to the SWFWMD *Non-Point Source Pollutant Loading Model*, loading rates in pounds per year were estimated for twelve pollutant constituents. The results indicated that Treasure Island's pollutant loading is average for a barrier island city, meets state regulations, and is at an acceptable level to enter Boca Ciega Bay.

F. Regulations

Stormwater management is regulated by a number of agencies, including the SWFWMD, the Department of Environmental Protection (DEP), and the federal Environmental Protection Agency (EPA). The city, together with the county and most other municipalities in the county, has received the final National Pollution Discharge Elimination System (NPDES) permit and is operating under its conditions.

The *Treasure Island Land Development Code* imposes extensive requirements regarding storm drainage. Section 43-117 mandates that certain developments undergo review for storm drainage prior to the issuance of a building permit. These developments include all permitted uses and approved special exception uses located on lots greater than 30,000 square feet, and uses (excluding single-family and two-family dwellings) located on lots abutting Boca Ciega Bay or any connecting waterway or canal. Drainage plans must include a hydraulic survey of the site and stormwater facilities proximate to the site, a description of on-site retention facilities, and a preliminary design drawing of the proposed storm drainage facilities. Section 43 of the *Land Development Code* states that "on-site retention methods and analysis and calculations shall be in accordance with the requirements, procedures, and methods as set forth by the city." Additionally, Section 36-77 requires the retention of the first one-inch of rainfall on site as a part of the concurrency management system. The comprehensive plan expands on this requirement to mandate that developments design for a three-year storm event. As outlined in the goals, objectives, and policies section of this element, the recommendations of the *Master Drainage Plan* will be incorporated into the land development regulations, to facilitate the site plan review process and improve the stormwater management system.

VI. NATURAL GROUNDWATER AQUIFER RECHARGE SUB-ELEMENT

Over 80 percent of the Tampa Bay freshwater supply comes from groundwater resources. Groundwater refers to the water found beneath the surface of the earth in saturated soils or geologic formations, called aquifers. The surficial aquifer lies closest to the surface and lacks a continuous impermeable top layer. Below the surficial aquifer is a fairly impermeable confining layer that separates the surficial aquifer from the confined aquifer below. Generally, aquifers are replenished by rain water percolating through the surficial aquifer, crossing the

~~confining layer, and reaching the confined aquifer. This process is known as natural recharge. High recharge areas are found where the confining layer is absent or discontinuous and where permeable soils and sands exist.~~

~~In Pinellas County, recharge rates of the confined aquifer, otherwise known locally as the Floridan Aquifer, are generally very low to virtually zero. Of the 22 inches of annual rainfall entering the surficial aquifer, only two inches infiltrate downward into the Floridan. Progressing farther south within the county, the Floridan Aquifer becomes more confined, receives little or no local recharge, and typically yields water that is highly mineralized. The most significant recharge areas are located within the Clearwater, Dunedin, and Seminole areas. Below coastal communities and adjacent mainland areas in southern Pinellas County, groundwater is saline and recharge rates are negligible. Therefore, little or no groundwater recharge occurs in or around Treasure Island.~~

~~A. Introduction~~

~~Pursuant to Section 163.3177(6)(c), Florida Statutes (F.S.), and Rule 9J-5.011(2), F.A.C., the following represents the sanitary sewer, solid waste, drainage, potable water, and natural groundwater aquifer recharge goals, objectives, and policies of the City of Treasure Island, Florida, and to the providers or suppliers of these government services, on an areawide, county, or regional level.~~

~~B. Nonapplicable Items~~

~~Based on the findings contained in this element, it has been determined that the provisions related to natural groundwater aquifer recharge are not applicable to the City of Treasure Island based on the determination by the Southwest Florida Water Management District that the city is an "area of generally no recharge."~~

~~C. Implementation~~

~~Unless otherwise stated, the implementation of objectives and associated policies contained in Section D shall be through the implementation of land development regulations.~~

Introduction

The ~~purpose of the (Potable Water, Sanitary Sewer, Solid Waste, Stormwater Management, and Natural Groundwater Aquifer Recharge Element, hereafter referred to as the~~ Infrastructure Element~~) element~~ <u>provides for necessary public facilities and services for solid waste management, water, sewer, and stormwater that are efficient, equitable, sustainable, and reliable in order to service the public health and quality of life needs for the residents and visitors of the City.</u>

Goal 1:

The City shall ensure that needed sanitary sewer, solid waste, and potable water services be provided by a safe and efficient system which maintains adequate facilities and provides for orderly growth and expansion.

Objective 1.1: Concurrency Management System

Utilize a system of standards for potable water, sanitary sewer, and solid waste to ensure adequate facility capacity for current and future needs. ~~Development permits shall be issued only when adequate facility capacity is available to serve the development and do not result in a reduction in the level-of-service standards adopted within this element.~~

Policy 1.1.1: The adopted potable water, sanitary sewer, and solid waste level-of-service standards for the City ~~of Treasure Island~~ shall be those listed in Table 1:

Table 1
Adopted Level-of-Service Standards

Facility	~~Time Period~~	Level-of-Service Standard
Potable Water	~~Beginning of planning time frame to 2005~~ ~~2005 to end of planning time frame~~	~~125 gallons per capita a day~~ ~~120~~ 115 gallons per capita a day*
Sanitary Sewer	~~To extend throughout the time frame of this comprehensive plan~~	1907~~0~~ gallons per capita a day**
Solid Waste	~~To extend throughout the time frame of this comprehensive plan~~	~~3.34 pounds per capita a day (excludes recycled materials)~~ 1.3 tons per capita per year

* The LOS standards for potable water and solid waste are reflective of the standards adopted by Pinellas County.

**The wastewater LOS standard was calculated using the 2020 permanent population of 6,929 residents and the highest five-year treated flow from fiscal year 2017 through fiscal year 2021.

Policy 1.1.2: The development, expansion, replacement, or modification of infrastructure facilities shall be compatible with the adopted level-of-service standards.

~~**Measure:** Maintaining adopted level-of-service standards and agreements with the City of St. Petersburg and Pinellas County.~~

Goal 2: The City shall support ~~Pinellas County~~ efforts to meet local potable water quality and capacity needs, while maintaining the highest water quality standards and

provideing for the safe collection~~, treatment, and disposal~~ of wastewater ~~while protecting~~ to protect the surrounding natural environment.

Objective 2.1: Potable Water

The City ~~of Treasure Island and Pinellas County~~ shall work ~~together~~ to ~~reduce the city's potable water demand.~~ ensure that adequate and dependable supplies of potable water are available to meet existing and projected water demand.

Policy 2.1.1: The City will, prior to issuance of development orders and building permits, check to ensure adequate water supplies to serve new development will be available.

Policy 2.1.~~1~~2: The City shall require low water usage plumbing fixtures be installed in all new buildings or in conjunction with renovations.

Policy 2.1.~~2~~3: The City shall ~~continue to enforce the Pinellas County Utilities System water conservation program that restricts the unnecessary consumption of potable water, particularly as it relates to irrigation, lawn watering, and car washing during periods of drought, supply reduction, and other emergencies.~~ implement a water conservation program to reduce demand on potable water resources.

Policy 2.1.~~3~~4: ~~The City shall promote the use and reuse of water of the lowest acceptable quality for the intended purpose.~~ The City shall regularly review and maintain, through its land development regulations, water efficient design and construction standards that include rainwater capture and reuse.

Policy 2.1.4~~5~~: The City shall promote the use of native and Florida Friendly Landscaping™ ~~drought-tolerant landscaping~~ and encourage educational efforts that promote potable water conservation ~~as a means of conserving water~~.

~~**Policy 2.1.5:** The City shall support the reuse of treated wastewater for irrigation and landscaping.~~

~~**Policy 2.1.6:** The City shall enforce the requirements of Section 373.62, Florida Statutes, with regard to requiring the installation of rain sensor devices for new irrigation systems which will override the timing cycle when adequate rainfall has occurred.~~

Policy 2.1.6: The City will coordinate with Pinellas County to plan for potable water infrastructure improvements that may be needed with respect to sea level rise projections.

~~**Measure:** Adherence to adopted level-of-service standards.~~

Objective 2.2: Sanitary Sewer

~~**The City shall work with the City of St. Petersburg to reduce wastewater generation levels.**~~

The City shall ensure its sanitary sewer flows and needs are met in an efficient, economical and environmentally sensitive manner through interlocal agreements,

which provide that the City will collect and transfer wastewater to an outside jurisdiction for treatment.

Policy 2.2.1: The City shall support the reuse of treated wastewater for irrigation and landscaping.

Policy 2.2.2: The City ~~of Treasure Island~~ shall ~~continue the~~ implement~~ation of~~ a progressive maintenance program for C~~c~~ity-owned sanitary sewer lines and pump stations.

Policy 2.2.3: ~~In an effort t~~To increase the efficiency of the existing sanitary sewer system, the City shall identify damaged sanitary sewer lines in need of replacement or rehabilitation and ~~organize a line~~ maintain an ongoing repair and replacement program.

Policy 2.2.4: The City will evaluate inflow and infiltration and make repairs as needed.

Policy 2.2.5: The City will consider options for maintaining and upgrading sewer lines by performing sewer line inspections and requiring the installation of sewer cleanouts for new development and redevelopment.

~~**Measure:** Adherence to adopted level-of-service standards.~~

Goal 3: The City shall ~~continue~~ ensure that the solid waste collection needs of the City are met and strive to reduce the solid waste generation rate through ~~increased~~ recycling, yard waste reuse, ~~participation~~ and education ~~while ensuring that solid waste is being collected in an efficient and environmentally sound manner.~~

Objective 3.1: Solid Waste

~~**The City shall encourage the reduction of its per capita generation of non-recyclable solid waste by 10 percent by 2010.**~~ **The City shall ensure the regular collection, management, and maintenance of solid waste to protect the environment and public health.**

~~**Policy 3.1.1:** The City shall promote a sustainable recycling program.~~

~~**Policy 3.1.2:** The City shall continue the collection of solid waste according to the schedule adopted by the City Commission.~~

Policy 3.1.1: The City shall ensure the collection and management of residential, multifamily and commercial solid waste through municipal, contracted or City-licensed haulers, and ensure the adequate management of waste streams.

Policy 3.1.2: The City will provide receptacles and solid waste collection services, including recycling, on City properties and in public places as appropriate.

Policy 3.1.3: The City shall incorporate recycling programs with the goal of achieving 75% recycling of all waste in City buildings and offices by 2030.

Policy 3.1.4: The City shall promote, endorse, and implement education and outreach programs on waste conservation, management, and diversion, including, as applicable, the promotion of recycling, beneficial reuse of yard waste, reuse and diversions.

Policy 3.1.5: The City shall conduct regular maintenance and code enforcement to mitigate and abate solid waste impacts from disasters, including, but not limited to regular tree canopy trimming and storm preparation of public property.

Policy 3.1.6: The City will incorporate debris removal and management as a component of standard operating procedures for pre-disaster planning and post-disaster recovery efforts.

~~**Measure:** Reduction in solid waste generation~~

Goal 4:

Ensure that all areas of the City are reasonably protected from flooding giving due consideration to the City's natural and built environment. ~~Stormwater shall be managed to provide flood protection for residents and businesses and to preserve, protect, and enhance the water quality of receiving water bodies.~~

Objective 4.1: ~~*Treasure Island Master Drainage Plan*~~ Stormwater

~~The City shall implement the 1996 *Treasure Island Master Drainage Plan*.~~ Stormwater shall be managed to provide flood protection for residents and businesses and to preserve, protect, and prevent the degradation of ~~enhance the~~ water quality prior ~~of~~ to ~~receiving water bodies~~ discharge.

Policy 4.1.1: The City shall ~~ensure that adopted level-of-service standards for flood control are maintained as outlined in the Treasure Island Master Drainage Plan.~~ plan for stormwater improvements with the following objectives:

1. Identify stormwater infrastructure and funding needs;
2. Maintain or improve stormwater asset levels of service to the extent practical;
3. Minimize stormwater assets lifecycle costs;
4. Identify and manage risks; and
5. Evaluate additional regulations and/or incentive-based programs.

Policy 4.1.2: ~~Stormwater retention systems shall be designed to accommodate a 25-year, 24-hour storm event.~~ The City shall ensure that all ~~S~~stormwater management systems and conveyance ~~devices (e.g., drainage pipes) should be designed to accommodate a three-year storm event.~~ are designed and constructed in accordance with applicable laws, regulations and ordinances. Stormwater management systems and conveyances shall adhere to the level of service requirements outlined within the Watershed Management Plan.

Policy 4.1.3: The City shall require that the stormwater discharge rate for a post-developed or redeveloped site shall not exceed, in terms of peak flow and total volume, which would occur from the site under existing conditions for the design storm~~.~~, unless increases in flow rate or volume will not result in adverse impacts.

Policy 4.1.4: The Cc~~c~~ity will ~~continue to~~ coordinate with Pinellas County regarding surface water management efforts including the implementation of and compliance with the National Pollution Discharge Elimination System permit program.

Policy 4.1.5: ~~As part of the implementation of the *Treasure Island Master Drainage Plan*,~~ t~~T~~he City shall ~~develop~~ utilize ~~an~~ educational programs ~~which~~ to advise~~s~~ its citizens of the dangers associated with non-point source pollution, ~~and shall~~ addressing the following:

- Proper pesticide, herbicide, and fertilizer application practices;
- Illicit discharge detection and prevention methods;
- ~~Uses of turf blocks for patios, sidewalks, driveways, etc., to prevent~~ Measures to reduce ~~increasing~~ impervious surface area;
- The importance of maintaining motor vehicles to prevent the accumulation of oils, grease, transmission fluid, etc., on driveways; and
- ~~The importance of regularly collecting and properly composting~~ Prevention of yard debris ~~to prevent the accumulation of detritus which can adversely affect~~ from entering into the street, stormwater infrastructure or surface waters; and
- That storm sewers are not to be used for disposal purposes.

Policy 4.1.6: The following management techniques shall be incorporated into the Cc~~c~~ity's land development regulations:

- ~~No more than 70 percent of multifamily residential lots and 90 percent of commercial lots be covered by impervious surface;~~ The City will adopt within its land development regulations standards on the permissible amount of impervious surface;
- Site regulations shall ensure that new development or redevelopment does not adversely impact off-site conveyance and treatment systems;
- Commercial developments, new residential development or redevelopment, and multi-family developments or redevelopment, or any other regulated development, shall be designed and constructed to meet state and local laws governing water quality and quantity criteria;
- Use of front, rear, and side lot line swales in new development and redevelopment;
- ~~Use~~ Implementation of construction erosion control practices ~~and runoff control devices during construction~~ to restrict sediment transport;
- Minimization of surface cover vegetation loss during construction;
- ~~Design of finished grades to direct water flows along natural drainage courses and through natural terrain;~~
- ~~Where prudent and economically feasible, consider the construction of drainage retention areas in the public rights-of-way and the use of eminent domain condemnation to acquire property for drainage retention purposes; and~~
- ~~On the Gulf of Mexico, n~~Native ~~marine~~ vegetation shall be used for shoreline stabilization where ~~technically~~ feasible.

Policy 4.1.7: The land development regulations shall contain provisions which, at a minimum, protect natural drainage features found within the Cc~~c~~ity as follows:

- Impacts to t~~T~~he existing flood-carrying and flood-storage capacity of the 100-year floodplain shall be minimized to the greatest extent possible ~~maintained~~;

- Development along Boca Ciega Bay shall maintain adequate setbacks to maintain any existing areas of natural coastal/marine habitat;
- The prevention of erosion, retardation of runoff, protection of natural functions, and values of the floodplain shall be considered while promoting public usage; and
- The City shall require development or redevelopment proposals to be consistent with the performance standards regulating development within the designated floodplain.

Policy 4.1.8: The City ~~shall, as needed, improve and maintain the finger canals around Isle of Capri, Isle of Palms, and Paradise Island.~~ will utilize as needed the Preservation land use designation to protect open natural drainage areas from undue development.

Policy 4.1.9: The City will codify and enforce land development regulations adopted to implement minimum design criteria for drainage improvements.

Policy 4.1.10: The City shall maintain its outfall maintenance program and its pump systems to maintain the performance of its stormwater system.

Policy 4.1.11: All applicable federal, state, and local regulations relating to flood control, stormwater treatment, and wetland protection shall be met in public and private project design.

Policy 4.1.12: Where possible, the City will encourage the usage of low impact development (LID) techniques in public and private development or redevelopment, including but not limited to the reduction of impervious area, disconnecting impervious areas to facilitate infiltration, and conserving natural areas.

Policy 4.1.13: Where appropriate, the City may use backflow prevention to address tidal flooding impacts.

Policy 4.1.14: By 2025, the City shall review and include as appropriate land development regulation updates addressing the following considerations for the land development regulations:

- Establishing fill thresholds that would warrant heightened review;
- Mitigation strategies at locations of overland flow transfer;
- Seawall design considerations where overland flow transfer occurs;
- Workflows to determine when development would warrant stormwater model updates; and
- Defining how FEMA's "50% rule" is implemented within the City.

Policy 4.1.15: The City may encourage through its land development regulations the installation of rain sensor devices for irrigation systems which will override the timing cycle when adequate rainfall has occurred.

~~**Measure:** Implementation of the *Treasure Island Master Drainage Plan*~~

Objective 4.2: Water Quality

The City shall continue to protect and improve surface water quality within its jurisdiction to meet or exceed the standards established by the Southwest Florida Water Management District, the Florida Department of Environmental Protection, and Chapter 62-25, Florida Administrative Code.

Policy 4.2.1: The city land development regulations shall contain provisions which ensure that all development activity, excluding single-family homes, shall adhere to the drainage requirements that retain the first one-inch of rainfall on-site.

Measure: Implementation of regulations designed to retain the first one-inch of rainfall on-site.

Objective 4.3: Existing Deficiencies

The following existing deficiencies are considered top priority within the stormwater management improvement program as listed in Table 2 and identified on *Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area*.

Table 2
Drainage Improvement Program

Location	**Project Description**
West Gulf	Removal of stormwater via an exfiltration system using Parking Lots #2 and #3 and a new outfall on 88th Avenue. Drainage along West Gulf will be redone to connect to the parking lots. The lots will be resurfaced to provide improved permeability so storm water will move into the ground under the parking lots instead of on the roadways.

Measure: Correction of deficiencies

References

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Post, Buckley, Schuh & Jernigan, Inc, for the Pinellas County Planning Council, *Master Drainage Plan for Pinellas County, Florida*, 1976.

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Areas of Natural Recharge to the Floridan Aquifer in the Southwest Florida Water Management District, 1985.

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U.S. Dept. of Agriculture, Soil Conservation Service, *Soil Survey of Pinellas Co., Florida*, 1972.

West Coast Regional Water Supply Authority, *Recharge Areas of the Florida Aquifer*, Nov. 7, 1985.

COASTAL MANAGEMENT, ~~AND~~ CONSERVATION, AND RESILIENCY ELEMENT

~~*. The purpose of this Coastal Management and Conservation Element is to plan for and where appropriate restrict development activities where such activities would damage or destroy coastal resources, to protect human life and limit public expenditures in areas that are subject to destruction by natural disaster, and to promote the conservation, use, and protection of natural resources.*~~

~~*Rule 9J-5.012 and 9J-5.013, Florida Administrative Code*~~

~~I. INTRODUCTION~~

~~Spanning five islands in the Pinellas County barrier island system, Treasure Island was once dominated by mangroves, salt marshes, and other wetland vegetation that supported hundreds of wildlife species. Today, very little remains of what was once a unique ecosystem. Undisturbed natural areas are limited to small scattered marine wetlands, beaches, and dunes along the coast, and two islands located in Boca Ciega Bay. In an effort to preserve these vital resources, the city strictly enforces existing policies that support wetland protection, beach renourishment, and habitat restoration. However, the city realizes these regulations must be strengthened to reflect recent legislative changes and public opinion. Preparation and adoption of this element is recognized as the first step in this process.~~

~~This element of the comprehensive plan details the extensive array of factors affecting Treasure Island's natural resources. The following also discusses the city's impact on regional resources, including air quality, water quality, and hazardous waste. Natural disaster preparedness and post-disaster redevelopment procedures are reviewed, and sections on existing and future potable water demand and conservation measures are also included.~~

~~II. PREPARATION OF A COASTAL MANAGEMENT AND CONSERVATION ELEMENT~~

~~As outlined in Rule 9J-5, Florida Administrative Code (F.A.C.), the *Coastal Management and Conservation Element* is actually two individual elements, with each required to have its own data and analysis as well as goals, objectives, and policies. Only select local governments specified by the Department of Community Affairs, such as Treasure Island, must prepare a coastal management element. However, all local governments must prepare a conservation element. Because the city is located on a barrier island, and all natural resources required to be addressed within the conservation element are coastal in natural, the two elements have been combined pursuant to Rule 9J-5.005(1)(a), F.A.C.~~

~~III. COASTAL PLANNING AREA~~

~~The following analysis focuses upon the "coastal planning area" as defined by Rule 9J-5, F.A.C. (see below). According to this definition and as agreed to by the Board of City Commissioners, the entire City of Treasure Island is considered within this area and is included within the scope of this element. Rule 9J-5, F.A.C., defines a "coastal planning area" as:~~

...an area of the local government's choosing; however, this area must encompass all of the following where they occur within the local government's jurisdiction: water and submerged lands of oceanic water bodies or estuarine water bodies; shorelines adjacent to oceanic waters or estuaries; *coastal barriers* [emphasis added]; living marine resources; marine wetlands; water-dependent facilities or water-related facilities on oceanic or estuarine waters; or public access facilities to oceanic beaches or estuarine shorelines; and all lands adjacent to such occurrences where development activities would impact the integrity or quality of the above. When preparing and implementing the hurricane evacuation or hazard mitigation requirements of the coastal management element, the coastal planning area shall be those portions of the local government's jurisdiction which lie in the hurricane vulnerability zone. When preparing and implementing the requirements of the coastal management element concerning water quality, water quantity, estuarine pollution, or estuarine environmental quality, the coastal planning area shall be all occurrences within the local government's jurisdiction of oceanic waters or estuarine waters.

IV. EXISTING LAND USE CONDITIONS

Typically, land use acreage within a "coastal planning area" would be significantly less than city-wide totals. However, in the case of Treasure Island and similar beach communities, the coastal planning area encompasses the entire city. As a result, the existing land uses within this area reflect those depicted on *Map LU-1: Existing Land Use Map.*

A. Existing Land Use Inventory

Treasure Island is dominated by residential land uses that occupy 64 percent of all land area, excluding rights-of-way. Conservation areas amount to 126 acres or seventeen percent, with the majority being beaches and dunes along the Gulf of Mexico. Of this, twenty acres are found on nearby Elnor Island and Bird Key. The remaining acreage is concentrated in three clusters along the shoreline of Boca Ciega Bay. Commercial uses occupy twelve percent of upland area and are located along Treasure Island Causeway and Gulf Boulevard. Finally, recreational facilities, open space, and public facilities comprise only five percent of land area. For a more detailed description of existing land uses within the city, see the *Future Land Use Element*.

B. Water-Dependent/Water-Related Land Uses

With a bustling economy geared toward tourists and seasonal residents, the city relies heavily on water-related activities. In addition to private residential docks, many other structures and land uses along the Gulf of Mexico and Boca Ciega Bay attract visitors. These uses are depicted on *Map R/OS-1: Public Facilities, Recreation Facilities, and Water-Dependent/Water-Related Facilities*, and include the following:

- A boardwalk located adjacent to the Land's End Condominium at Blind Pass;
- Four municipal parking lots near the Sunset Beach area and three municipal parking lots located north of Blind Pass Bridge;

- Two private docks associated with restaurants at the foot of the Blind Pass Bridge and at 116th Avenue;
- Several private docks associated with condominium developments and a private marina located adjacent to John's Pass;
- A private fishing pier located adjacent to John's Pass;
- A public ramp and dock at the end of 123rd Avenue;
- A public dock at the end of 83rd Avenue; and
- A floating dock at the 100th Avenue boat ramp.

C. Shoreline Uses and Redevelopment

The water-related activities described above are not in conflict with any abutting land uses, and adequately serve the needs of the community and surrounding area. Redevelopment activities may be needed in the future, but none are currently required.

D. Economic Base

Due to the abundance of tourists and seasonal residents visiting Treasure Island each year, the city's economic base rests primarily on commercial activities geared to these groups, specifically retail trade and hotel/motel services. Due to the built-out nature of the city, future land uses are not expected to alter the existing economic base significantly. Of the fifteen acres of vacant land within the city, only 1.8 acres are designated as commercial.

V. EFFECT OF FUTURE LAND USES ON NATURAL RESOURCES

As discussed in the *Future Land Use Element*, fifteen acres of vacant land are located within Treasure Island. Of this, thirteen acres can accommodate either residential or hotel/motel facilities. No expansive areas of undeveloped land remain, in that the largest of these parcels measure roughly one acre in size. Natural resources such as wetlands, wildlife habitats, and other marine resources are adequately protected by coastal management provisions in the city land development regulations. The following section provides an inventory of various natural resources found within the city, followed by an analysis of the effect future land uses may have upon these features.

A. Vegetative Cover

Due to extreme alteration by development, very few pristine natural areas remain in Treasure Island. Nearly all native vegetation has been destroyed by urbanization and the expansion of exotic plant species, such as Brazilian peppers, Australian pines, bishopwoods, ear trees, laurel figs, weeping figs, eucalyptus, willows, and punk trees. Currently, the land development regulations do not protect these species, and prohibit their planting in an effort to allow native vegetation to regain dominance. Only isolated areas of slash pine, oak, and palmetto, and three small pockets of wetland vegetative species currently exist on the island. Elnor Island and Bird Key, two spoil islands found in Boca Ciega Bay, are the only other areas within city limits that have entirely maintained their native vegetation.

B. Wetlands

Before the advent of dredge and fill development, Boca Ciega Bay's shoreline was dominated by extensive mangrove and saltmarsh communities with nearby subtidal seagrass beds. Currently, beach and dunes are found along the Gulf of Mexico coastline, stretching from the city's southern to northern boundary. In areas absent of seawalls, isolated mangrove and marsh areas are scattered along properties abutting Boca Ciega Bay. Tidal swamp environments are restricted to Elnor Island and Bird Key. Finally, seagrass beds are limited to a seven-acre area near the Isle of Palms, a ten- acre area between Isle of Capri and the Treasure Island Causeway, and the shallow water surrounding Elnor Island just north of Coney Island. The seagrass beds typically consist of either turtle grass (*Thalassia testudinum*), manatee grass (*Syringodium filiforme*), shoal grass *(Halodule wrightii*), or widgeon grass (*Ruppia maritima*).

C. Groundwater

In Pinellas County, recharge rates of the confined aquifer, known locally as the Floridan Aquifer, are generally very low to virtually zero. Of the 22 inches of annual rainfall entering the surficial aquifer, only two inches infiltrate downward into the Floridan. Progressing farther south within the county, the Floridan Aquifer becomes more confined, receives little or no local recharge, and typically yields water that is highly mineralized. The most significant recharge areas are located within the Clearwater, Dunedin, and Seminole areas. Below coastal communities and adjacent mainland areas in southern Pinellas County, groundwater is saline and recharge rates are negligible. Therefore, little or no groundwater recharge occurs within Treasure Island.

D. Air Quality

Pinellas County is located in a highly urbanized area of west central Florida. Many modern conveniences enjoyed by residents require the combustion of fossil fuel, which releases pollutants into the air. In 1970 the federal government passed the *Clean Air Act*, empowering the Environmental Protection Agency (EPA) to establish nationally uniform air quality standards to ensure that these pollutants do not reach unhealthful levels. Currently, the EPA enforces standards for the following six types of pollutants:

- Particulate: Solid materials suspended in the air, including dust, soot, and pollen particles. These airborne particles are generated from transportation sources, open burning of trash and garbage, dust from construction and industrial activity, and from the combustion of diesel fuel.
- Lead: A common metal that is present in many areas, including, air, water, and dust. Ambient lead is a particulate but is given special attention because of its potentially toxic effects.
- Nitrogen Dioxide: A brownish, highly reactive gas emitted during combustion especially during high temperature processes.
- Carbon Monoxide: A colorless, odorless, and poisonous gas that is a by-product of the incomplete combustion of carbon fuels. Transportation sources account for over 98 percent of all carbon monoxide pollution emitted in Pinellas County.
- Sulphur Dioxide: A pungent gas that can destroy lung tissue and weaken the lung's cleaning and protective mechanism, especially in children and the elderly. This compound is emitted primarily from power-generating plants that use fossil fuels such as sulphur coal and oil and is also a principal component of acid rain.

- Ozone: A colorless and highly unstable form of oxygen which is the principal component of urban smog. Although ozone in the upper atmosphere acts a shield against harmful ultraviolet rays, in the lower atmosphere it can be harmful when inhaled. Ozone is formed by a complex chemical reaction of compounds that are emitted from vehicles, combustion sources, and even trees and plants.

1. Tampa Bay Airshed

   With pollutants flowing across jurisdictional lines, the responsibility of maintaining clear air commands regional support. Pinellas and Hillsborough counties are considered part of one airshed. As such, the city has historically relied on and adhered to policies and regulations developed by Pinellas County and other joint efforts with Hillsborough County and the EPA.

2. Monitoring Process

   The Pinellas County Emergency Management Department has been monitoring the county's air since 1975. Currently, the department maintains a system of thirteen air quality sampling stations scattered throughout the county. The nearest station to Treasure Island is approximately one and a half miles away at Azalea Park, located at 72nd Street and 2nd Avenue North in St. Petersburg. Here samples are taken for nitrogen oxide, carbon dioxide, ozone, and particulates.

   The Air Quality Index, sometimes referred to as the Pollution Standards Index, was developed by the EPA in an effort to provide daily information regarding pollutant levels. A pre-recorded message announcing the Air Quality Index can be heard by calling the Pinellas County Emergency Management Department. An analysis of the index taken over the last ten years indicates a reduction in overall pollutants released into the air. Currently, air quality is considered good for an average of three out of four days during the year, and moderate for an average of one out of four days. In 1996, the last available data year, air quality was not considered unhealthful or harmful on any day.

3. Adherence to the *Clean Air Act*

   In 1978, the EPA officially designated Pinellas County as a nonattainment area for sulphur dioxide and ozone according to National Ambient Air Quality Standards. Consequently, corrective measures were applied to lower the discharge amount of these pollutants to safe levels. Sulphur dioxide levels were brought almost into immediate compliance, however, high levels of the pollutant ozone continued to be recorded. In 1982, although Pinellas County could prove that all ozone control strategies were being executed, the EPA could not grant a redesignation because Hillsborough County, which is classified within the same airshed, had not been in full compliance. After the completion of several studies and programs targeted at reducing ozone levels and implementation of industrial and automotive pollution control technologies, the EPA reclassified the Tampa Bay airshed to "attainment/maintenance" status in February, 1996.

E. Floodplains and Areas Subject to Coastal Flooding

A floodplain is an area that experiences repeated flooding. Typically, floodplain boundaries are delineated according to a 100-year storm event, where the chances are that land located inside this area will flood at least once every 100 years. Mapping a floodplain requires analysis

of topography, drainage patterns, and rainfall amount. The possibility of a tidal surge is also considered, as in the case of the area west of Gulf Boulevard.

F. Marine Life and Wildlife

The Gulf of Mexico, and more significantly the estuarine environment of Boca Ciega Bay, attracts a large variety marine life, birds, and animals. Below is a description of the species that are commonly found in the waters surrounding Treasure Island.

1. Shellfish

   Boca Ciega Bay once offered a plentiful supply of shellfish, particularly oysters and clams that were concentrated in flats, banks, or reefs. An important food source for many aquatic and bird species, shellfish also filtered significant amounts of water each day, and in doing so remove suspended matter and reduced turbidity. As a result of overharvesting, habitat destruction, and degradation of water quality, shellfish populations have sharply declined over the last thirty years, and scallops have virtually disappeared. However, with recent improvements in water quality as well as an active seagrass restoration program sponsored by the Tampa Bay National Estuary Program, scientists are hopeful that shellfish populations will recover.

2. Fish

   The coastal waters of Boca Ciega Bay and the Gulf of Mexico serve as home, feeding ground, and/or nursery for more than 270 species of resident, migrant, and commercial fishes (U.S. Fish and Wildlife Service, 1984). Many of the estuarine-dependent and recreationally important fishes found in the area include red drum, spotted sea trout, sheepshead, southern flounder, Florida pompano, black drum, and mullet. Offshore species include gag grouper, red snapper, and king and Spanish mackerel. In addition, the common snook is a species of special concern commonly found in this area. Although supplies of fish have experienced sharp declines, recent bans on purse seines and gill nets are expected to reduce commercial harvesting rates significantly, allowing these populations to recover.

3. Manatees

   Both Tampa Bay and the Gulf of Mexico provide critical habitats for manatees, which are protected by the federal *Endangered Species Act*. Recent research has revealed that seagrass meadows and manmade freshwater sources in these waterbodies attract manatees by providing feeding and gathering areas. Although not designated as a protection area by the Tampa Bay National Estuary Program, Boca Ciega Bay still serves as a year-round or seasonal home to some manatees.

   The Treasure Island *Code of Ordinances*, Section 72-143, protects manatee habitat such as seagrass beds. Any development likely to generate or attract increased boating activity in an area known to be frequented by manatees is required to establish an area-specific manatee protection plan, in cooperation with FDEP and the U.S. Fish and Wildlife Service. General seagrass bed locations are identified on *Map CM-1: Vegetative Cover and Marine Resources*.

4. Turtles

Through the *Endangered Species Act of 1973* and Chapter 370, Florida Statutes (F.S.), federal, state, and local agencies have continually pushed forward to protect existing sea turtle populations and assist in their proliferation. Contracted by the Board of County Commissioners, the Clearwater Marine Aquarium (CMA) monitors the survival of endangered and threatened sea turtles along county beaches from Clearwater to Treasure Island. Virtually all species of sea turtles nesting along the county's Gulf coast are loggerhead sea turtles, which are classified as threatened species.

Annually, CMA staff conducts routine daily beach surveys during the nesting season, which lasts between May and September. In 1996, due to good weather conditions in conjunction with a relocation program, the nesting season was very successful in terms of both the number of nests and the number of hatchlings released. Of the almost 14,500 eggs deposited, 78 percent hatched, compared to only 48 percent in 1995. Of the 147 nests located within the entire CMA study area, nineteen were within Treasure Island.

According to the CMA, lighting continues to be the number one problem for sea turtles and their hatchlings, most notably along northern Sand Key and in Madeira Beach. Bright lights can disorient and mislead hatchlings away from the water. Other obstacles facing sea turtles are beach renourishment projects, which compact sand and affect hatchlings' incubation period, and nest disturbances caused by humans and other animals (Clearwater Marine Aquarium, 1996). Currently, Section 40-51 of the *City of Treasure Island Land Development Code* limits development activity that will likely interfere with sea turtle nesting areas to winter and spring months. No lighting provisions are included.

5. Birds

Treasure Island serves as the seasonal home for hundreds of birds each year. In particular, Elnor Island, Bird Key, and other nearby mangrove islands are considered highly productive nesting areas. The meadowlark, warbler, brown pelican, heron, egret, and spoonbill are often seen in and around the city. Shore birds include gulls, skimmers, terns, and sandpipers. Species of special concern that frequent Treasure Island include little blue herons, reddish and snowy egrets, tricolored herons, white ibis, American oystercatchers, brown pelicans, and black skimmers. Endangered and threatened species, such as the bald eagle and the least tern, are also periodically spotted.

G. Terrestrial Habitats

Urbanization has eliminated virtually all terrestrial wildlife habitat in the city. Remaining wildlife consists of species adapted to the urban environment, such as mangrove water snakes, marsh rabbits, diamond-backed terrapins, raccoons, and domesticated animals.

H. Minerals

No known commercially valuable minerals are located within Treasure Island.

I. Soil

As shown in *Map LU-3: Soils Association*, the soils in Treasure Island fall into the following major categories: coastal beach, Made Land (created by dredge and fill activities), Palm Beach, St. Lucie fine sands, and Tidal Swamp. A description of each is provided in the *Future Land Use Element*.

~~VI. IMPACT OF FUTURE LAND USES ON HISTORIC SITES~~

~~As detailed in the *Future Land Use Element*, the city contains one prehistoric archaeological site, which is listed on the *Florida Master Site File* as "John's Pass Mound, 8PI4." *Map LU-5: Historic Resources* indicates that this site has been covered by a development project. There are no other known historic sites, and because the city is virtually built out, no future discoveries are anticipated. However, any such discovery would be protected from the impacts of development by policies contained within this comprehensive plan.~~

~~VII. ESTUARINE AND SURFACE WATER ENVIRONMENT~~

~~With the combination of a warm climate and miles of white beaches, the city has benefited economically from its geographic location. Both the Gulf of Mexico and Boca Ciega Bay have stimulated economic growth by attracting tourists and mainland neighbors in search of recreational opportunities, and by accommodating the ever-growing demand for waterfront and waterview properties. However, the transformation of this once pristine natural ecosystem into a popular urban destination has come with several drawbacks. Stormwater runoff and wastewater have polluted the Gulf of Mexico and Boca Ciega Bay, natural shorelines have been replaced with seawalls, and dredge and fill activities have destroyed many acres of wetlands. After understanding the effects these actions had upon surrounding waters, residents and visitors have learned that protecting the natural environment is vital to maintaining quality of life. The following section analyzes the impact development has had on these adjacent waterbodies, specifically Boca Ciega Bay, and details existing and proposed regulations designed to improve water quality.~~

~~A. Surface Waters~~

~~Surface water resources include both marine and estuarine waterbodies. Facing the Gulf of Mexico to the west and Boca Ciega Bay to the east, the city's shorelines are influenced by tidal movements. In Boca Ciega Bay, dredge and fill activities have extended the shoreline, creating numerous finger canals.~~

~~Two passes, Blind Pass to the east of the city and John's Pass to the north, allow boats to move between the Gulf and Bay. Blind Pass ranges from 200 to 750 feet wide and extends approximately one and a quarter miles, with depths ranging from one to nine feet. Although the pass is oriented in a north-south direction, it connects Boca Ciega Bay in the east to the Gulf of Mexico in the west. Historically, this channel has been unstable, with the secondary entrance at the north end having opened and closed several times. In 1978, the pass closed completely, but was re-opened the following year as crews used its fill for a portion of the Long Key beach renourishment project. On the northern end of the island, John's Pass has remained a stable, tide-dominated inlet connecting Boca Ciega Bay to the Gulf since its formation in 1848. In 1966, the inlet was dredged in conjunction with a general improvement project that included a new bridge.~~

~~B. Estuarine Waters~~

~~An estuary is a semi-enclosed coastal body of water that has open access to the ocean and is measurably diluted with freshwater derived from rivers. Freshwater mixing with saltwater creates a unique chemical and physical environment that attracts a large number and variety of marine species, birds, and other animals, some of which are described in Section V. Abutting~~

the entire eastern length of Treasure Island, Boca Ciega Bay remains a significant estuary within Pinellas County, although this resource is possibly the most physically and hydrologically modified estuarine system on Florida's Gulf Coast (Florida Department of Environmental Protection, 1996).

Covering approximately 24 square miles, with a mean depth of six feet, Boca Ciega Bay separates Sand Key and Treasure Island from mainland Pinellas County and serves as receiving waters for Long Bayou, Cross Bayou Canal, Clam Bayou, and Frenchman Creek. Boca Ciega Bay has undergone extraordinary changes in the last one hundred years. Dredging of navigational channels has provided enough fill to create a maze of finger canals to accommodate highly demanded waterfront homes. Since 1900, 2,506 acres of fill covering 22 percent of the original bay has been relocated within these waters to create new real estate and causeways. Other areas of the bay have been dredged to provide navigational channels and fill for upland development.

1. Tampa Bay National Estuary Program

   Although an estuary in its own right, Boca Ciega Bay is considered part of the Tampa Bay estuarine system, and is influenced by the water, pollutants, and marine life circulating within this larger area. In 1991, the Tampa Bay National Estuary Program was established to assist the community in developing a comprehensive plan to restore and protect Tampa Bay. Created under the auspices of the *Clean Water Act*, the program is part of a national network of estuary programs and is administered by the EPA. Local administrative support is provided by the Tampa Bay Regional Planning Council. Surrounding local governments and agencies that impact the Bay have agreed to set forth the goals of the program's *Comprehensive Conservation and Management Plan,* which focuses on improving water quality through the reduction of pollutants and the resurgence of native vegetation.

2. Boca Ciega Bay Aquatic Preserve

   Under the provisions spelled out in Section 258.397, F.S., the Boca Ciega Bay Aquatic Preserve was established to block the continued degradation of the bay and promote the propagation of native vegetation and marine life. With this designation, dredging and spoiling activities are prohibited unless approved by the Pinellas County Water Navigation Control Authority. Furthermore, seawalls cannot be constructed waterward of the mean high water line.

3. Outstanding Florida Waters

   Under the auspices of the Outstanding Florida Waters (OFW) program, the Florida Department of Environmental Protection (FDEP) has classified Clearwater Harbor and Boca Ciega Bay as Class III waters that are to be used for body contact activities, such as swimming or water skiing, and for the maintenance of a productive fish and wildlife population. With this designation, FDEP cannot issue permits that would allow direct or indirect pollutant discharges that would lower existing water quality. Additionally, permits for dredging and filling must meet Outstanding Florida Waters requirements.

C. Water Quality

Unsafe levels of nutrients and contaminants continually threaten the life of marine species and vegetation. Boca Ciega Bay is the receiving waterbody for many sources of pollutants,

including stormwater runoff flowing from several beach communities, mainland Pinellas County from Largo to Mullet Key, and two industrial developments located in central and northern Pinellas County. The finger canals created by dredge and fill activity also perpetuate water quality problems. The canals were created to increase boating access; however, these same canals obstruct natural tidal flushing patterns. As a result, nutrients and pollutants discharged into the Bay are flushed out slowly. In addition, the depths necessary to provide safe boat passage prevent subtidal seagrass growth and facilitate the accumulation of polluted sediments.

Research conducted by the Tampa Bay National Estuary Program and other agencies have revealed high levels of nutrients and contaminants within Boca Ciega Bay. Excess amounts of nitrogen, he most common nutrient, can trigger algae blooms that reduce oxygen levels and shield light from reaching the sandy bottom. This process, known as eutrophication, has led to the death of virtually all of the Bay's underwater grass beds and has impeded their regeneration. Boca Ciega Bay also maintains one of the highest levels of containments found within Tampa Bay. Substances found within these waters include various metals such as copper, lead and zinc, pesticides, polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs). Immediately northeast of Treasure Island, the entrance to Long and Clam Bayous is considered one of the most contaminated areas of Tampa Bay, with over 65 percent of sediment samples taken exceeding the highest threshold levels.

Nitrogen and other contaminants chiefly enter Boca Ciega Bay through stormwater runoff, wastewater discharges, and atmospheric deposition, as shown in Table 1. Although less frequent, spills and sewage overflows can also dramatically affect water quality.

Table 1
Annual Nitrogen Loadings and Discharging Sources (1992-1994 Average)

	Boca Ciega Bay		**Tampa Bay**	
	Tons	**%**	**Tons**	**%**
Stormwater Runoff	69	39%	1,710	45%
Atmospheric Deposition	93	52.5%	1,100	29%
Industrial and Municipal Point Sources	15	8.5%	420	11%
Fertilizer Material Losses	0	--	270	7%
Springs and Groundwater	0	--	190	5%
Total	**177**	**--**	**3,800**	**--**

Source: Tampa Bay National Estuary Program, 1996

Pollution sources are classified as either "point source" or "non-point source." Point source pollution includes any discrete, identifiable source that discharges directly into the water or air, such as a factory or sewage treatment plant. Contaminants produced by these sources can

be measured and regulated. Conversely, non-point source pollution flows from an unconfined or unidentifiable source, such as agricultural land, parking lots, or automobile traffic.

1. Point Source Pollution

Over 36 billion gallons of sewage effluent are discharged into Tampa Bay each year. Although most is treated by tertiary/advanced methods, treatment plants are still responsible for eleven percent of the annual nitrogen loading within Tampa Bay, and 8.5 percent within Boca Ciega Bay. Locally, the Northwest Wastewater Treatment Plant stopped discharging effluent into the Bay in 1983, and now disposes of it through deep well injection and reuse.

Other point source pollution contributors to Boca Ciega Bay include Florida Rock Industries and Ewell Industries, located in central and northern Pinellas County. Emissions from these sources travel through a canal that discharges into Cross and Long Bayous, and subsequently flows into Boca Ciega Bay. Another point source discharge occurred on August 10, 1993, when three tankers collided near Fort DeSoto Park and spilled nearly 328,000 gallons of oil into Tampa Bay. The oil was spread north along the Pinellas County coastline and contaminated several south county beaches, including Treasure Island.

2. Non-Point Source Pollution

Over 90 percent of nitrogen loadings entering Boca Ciega Bay are deposited through non-point pollution sources, primarily through atmospheric deposition and stormwater runoff. Runoff from these sites can only be reduced during redevelopment, through land development regulations requiring stormwater facilities to be retrofitted to current standards.

a. Stormwater Runoff

Due to the amount of impermeable urban land and the severe alteration of the natural shoreline, urban runoff levels remain high within Treasure Island, particularly during and after hard rain events. Stormwater runoff accounts for 45 percent of nitrogen entering Tampa Bay, and 39 percent entering Boca Ciega Bay. Excessive phosphorus levels recorded within local waters are also carried through this process (Environmental Protection Agency, 1986).

In order to reduce runoff, existing land development regulations require all new development to address stormwater management during site plan review. The city also plans to improve its stormwater drainage system, following recommendations made by the 1996 *Master Drainage Plan*. For a more extensive discussion of stormwater drainage issues, please refer to the *Infrastructure Element*.

While the volume of runoff is currently high, tests conducted during the development of the *Master Drainage Plan* show that pollutant loading levels (pounds per year) are average for a barrier island city, and that stormwater quality is at an acceptable level to enter Boca Ciega Bay, based on standards established by the Southwest Florida Water Management District. The city will continue to upgrade its drainage system according to the *Master Drainage Plan*, in order to maintain or improve water quality.

b. Atmospheric Deposition

As explained above, Tampa Bay's air quality is affected by the combustion of fossil fuels that lead to the emission of pollutants. Recently, scientists have discovered that pollutants found in the air play a leading role in the degradation of water quality. In addition to the 93 tons of nitrogen loadings that are annually deposited into Boca Ciega Bay from the atmosphere, significant amounts of cadmium, copper, and lead are also deposited into the Bay from this process.

Reducing airborne containment loads is difficult at best. Because emissions travel up to hundreds of miles, local control strategies cannot entirely reduce all levels. In upcoming years, nitrogen loads are expected to continue increasing, although not at the same rapid rate that occurred in the 1970s and 80s.

D. Impact of Development and Future Facilities

Treasure Island is classified as a built-out community, and city officials anticipate that future development will have virtually no impact on the circulation patterns, water quality, or accumulation of contaminants in local waters. To achieve this end, the land development regulations state that "no project which is likely to negatively impact any existing marine sea grass bed shall be permitted. All projects which are likely to inhibit tidal circulation shall include mitigation measures to maintain tidal circulation and flushing."

The land development regulations also regulate the construction and maintenance of seawalls, groins, jetties, docks, and boat lifts. Seawall construction is prohibited along the Gulf of Mexico, even in cases where existing seawalls are damaged. Although not required, the regulations also encourage shorelines along non-seawalled waterways to be planted with native marine vegetation.

Although no immediate dredging activities are scheduled, any future activities must be reviewed and permitted by the Pinellas County Navigation Control Authority, in accordance with the Boca Ciega Bay Aquatic Preserve and Outstanding Florida Waters regulations.

E. Actions to Remedy Pollution Problems

As stated previously, the majority of nutrients and pollutants entering Boca Ciega Bay are the result of atmospheric deposition and stormwater runoff. Although Treasure Island enforces air quality regulations, air pollution continues to be a regional problem requiring regional solutions. However, local action alone can significantly reduce the amount of pollutants discharged through stormwater runoff. Through requirements outlined within the land development regulations, all new development and select redevelopment must design stormwater management facilities to accommodate a 25-year storm event and retain the first one-inch of rainfall on site.

Unfortunately, recent research has revealed that designing for a 25-year event is beyond the ability of most developments. A more achievable design storm was suggested by Tampa Bay Engineering during the preparation of the *Treasure Island Master Drainage Plan.* The plan concluded that new development should adhere to a three-year storm. Pipe diameters and inlets designed in accordance with this standard would reduce street flooding when the tide level is at or below one foot above sea level. When the tide level exceeds one foot above sea level or surmounts the seawall, storm pipes would not drain regardless of pipe size, water

would back up, and flooding would occur. Furthermore, using larger pipes could impede drainage because sediment is not carried as efficiently and would build up over time, reducing conveyance capacity. For a further discussion of Tampa Bay Engineering's findings, see the *Infrastructure Element*.

F. Regulatory Programs

Regulatory programs governing the Boca Ciega Bay estuary are largely carried out on the state level by FDEP, and at the regional level by the Southwest Florida Water Management District (SWFWMD). The FDEP *Florida Water Plan* and SWFWMD *Water Management Plan* contain directives guiding flood protection, water quality, and estuarine integrity. Additionally, FDEP provides funding for the development of estuarine protection studies, establishes standards for the state's natural resources, and implements habitat restoration programs for local aquatic preserves.

VIII. BEACH AND DUNE SYSTEMS

Treasure Island's sandy beaches not only provide recreational opportunities for residents and tourists, but also perform several natural functions. Along the Gulf of Mexico, beaches and dunes serve as buffers against threatening waves and storm surges while serving as a home and/or nesting area for birds and sea turtles. The preservation of the dune system is reliant upon continued protection against development and the presence of native vegetation. Salt-tolerant plants found within these dunes, including sea oats, railroad vine, and sea grapes, grip sand within their root system. By anchoring down sand, the dune retains its form and can continue to inhibit erosion and protect against tidal action.

Since urbanizing, mangrove stands that once lined Boca Ciega Bay have been uprooted and replaced with seawalls, while high density condominiums and hotels have encroached into the beach and dune system along the Gulf of Mexico. Although the shoreline abutting Boca Ciega Bay and the majority of the city only vaguely resemble pre-development conditions, the narrow portion of beach stretching over 3.5 miles has retained its original form due to the efforts of an active beach renourishment program.

A. Erosion and Accretion

1. Boca Ciega Bay

In an effort to retain fill material and prevent erosion, seawalls and other shoreline hardening devices were installed along Boca Ciega Bay in the 1960s. Consequently, dredging and filling activities associated with seawall construction destroyed vast areas of coastal, intertidal, and subtidal habitats. In addition, finger fills created to meet the demand for waterfront property have greatly extended the Boca Ciega Bay shoreline.

2. Gulf of Mexico

Excluding the north end, Treasure Island's shoreline abutting the Gulf of Mexico receded between 1873 and 1950. Thereafter, aerial photographs indicate the shoreline advanced over the entire length of the island until 1979. In particular, the north end grew from deposits of fill leftover after dredging John's Pass. The remaining beach advanced due to accretion at the Blind Pass jetty and the placement of fill by the federal beach erosion

control project for Treasure Island (U.S. Department of the Interior, 1994). Currently, the beach width is maintained by the beach renourishment projects being conducted by the U.S. Army Corps of Engineers (CoE) and Pinellas County.

B. Coastal Protection Structures

1. Boca Ciega Bay

After monitoring their effectiveness against erosion for many years, scientists have recently discovered that shoreline hardening actually facilitates erosion and may escalate property damage during strong storms. When large waves strike a seawall, energy is displaced both downward and upward. The downward water pressure scours out vegetation, sand, and bottom sediments in front of the seawall, while the water shunted upward commonly erodes the material landward of the seawall. Both actions create a high maintenance problem for landowners.

Currently accepted development practices suggest a combination of native vegetation and gradual sloping to protect property from tidal action. Where existing seawalls require maintenance, the toe area of the wall should be planted with native vegetation or rip-rap material to prevent additional scouring. New seawalls should only be constructed when the two adjacent properties possess seawalls. Current regulations prohibit seawall construction along the Gulf of Mexico, even in cases where existing seawalls are damaged. However, seawall construction, in accordance with the land development regulations, is still allowed along Boca Ciega Bay.

2. Gulf of Mexico

Since the 1950s, many federal, state, and local agencies have contributed funds to prevent erosion along the Gulf beaches. In 1960, the city built 56 groins and replaced existing timber panels with concrete at a total cost of $263,000. In 1962, a native stone, rubble-mound jetty was built on the north side of Blind Pass at a cost of $18,000. In the 1970s, this groin was raised 2.5 feet to prevent overspillage of sand. Although the groins and jetty have reduced rates of erosion, beaches are still being threatened by strong tidal action and storms, and require periodic renourishment.

C. Existing and Potential Beach Renourishment Areas

Since 1964, the city and the CoE have conducted several large-scale beach renourishment projects along the Gulf of Mexico to supplement the efforts of existing coastal protective structures. Beach renourishment areas include the entire length of the city's coastline abutting the Gulf of Mexico. Specific sites in this area are treated as the need arises. Improvements to the channels, passes, and beaches found within and around Treasure Island were first recorded in 1916, when a secondary entrance at the north end of Blind Pass was closed by pumping sand from an offshore bar. Not until the 1960s did the city begin to actively construct protective devices to prevent the erosion of community beaches. Also during this decade, Blind Pass and John's Pass were dredged and emergency fill was deposited on the city's northern shoreline. During the 1970s and 80s, six renourishment projects were conducted by the CoE in an attempt to restore beach areas.

D. Measures to Protect or Restore Beaches or Dunes

Treasure Island beaches will continue to require preventative measures for protection against erosion. The city, in cooperation with Pinellas County and the state, has been involved with a number of beach stabilization projects since the early 1970s. These projects include construction of dune walkovers and the replanting of sea oats along shorelines.

Through Chapter 161, Florida Statutes, FDEP administers the Coastal Construction Control Line program and beach erosion control. Furthermore, the city continues to uphold Section 40-51 of the *Land Development Code*, which states that "construction which is likely to adversely impact any primary sand dune is prohibited."

IX. BEACH FACILITIES

Twenty-eight public access points allow residents and visitors access to the city's beaches as illustrated on *Map R/OS-1: Public Facilities, Recreation Facilities, and Water Dependent/Water Related Uses.* Generally located at the end of public rights-of-way, seven beach access areas have associated municipal parking lots, while the remaining have limited parking available with typically less than ten spaces each.

X. COASTAL PLANNING AREA AND COASTAL HIGH HAZARD AREA

Due to its coastal location, the city contains several boundaries delineating construction lines, floodplains, and hazard areas. Included within the glossary located at the end of this comprehensive plan are definitions describing each demarcation line and the agency responsible for its implementation. As part of this element and as shown on *Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area*, the Florida Legislature requires the city to illustrate the boundaries of the coastal planning area and Coastal High Hazard Area (CHHA).

A. Coastal Planning Area

The coastal planning area includes all land area in the city, and supports a mixture of resort facilities, housing, and retail business. Many of these structures were built prior to stringent federal, state, and local regulations designed to protect them from hurricane hazards, and as a result, remain susceptible to damage by major storms.

B. Coastal High Hazard Area

Until 1993, the CHHA only included property seaward of the Coastal Construction Control Line and the V-Zone established by the National Flood Insurance Program. Realizing that land outside this area was equally susceptible to severe damage resulting from strong storms, the Florida Legislature amended the CHHA definition. According to Section 163.3178, F.S., the CHHA is defined as "category 1 evacuation zones", or those areas that must evacuate when a category 1 hurricane threatens a region. According to the Tampa Bay Regional Planning Council, Treasure Island is located entirely within Evacuation Level "A", and therefore all residents would evacuate in the event of any hurricane. With this designation, the entire city is

within the CHHA, as shown on *Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area*.

C. Existing Infrastructure

Table 2 lists Treasure Island's existing infrastructure. Because the CHHA encompasses the entire city, existing infrastructure cannot be relocated to a less threatened area.

Table 2
Existing Infrastructure, 1996

Seawalls	50-foot seawalls on the east ends of 127th, 122nd, 121st, 120th, 119th, 101st, 102nd, and 99th Avenues. 20-foot seawall on east end of Harrell Ave., on each corner of the bridge that crosses from Isle of Capri on 116th Ave, along all four corners of 115th Ave. by the Isle of Palms, on all four corners of 107th Ave. where it crosses Paradise Island, and six 20-foot seawalls and one 100-foot seawall on the bridges along the Treasure Island Causeway. 40-foot seawall on both sides of bridge to the Isle of Palms. 65-foot seawall at south end of Bayshore Drive. 680 feet of seawall behind the City Hall and Fire Department. 2,334 feet of seawall along the Paradise Island Golf Course.
Sanitary Sewer & Potable Water Facilities	Potable water services are provided by Pinellas County. Sewage treatment service is provided by the City of St. Petersburg. The city owns and maintains 25 miles of sanitary sewer lines and 11 lift stations.
Drainage Facilities	Natural drainage pattern of the city diverts water into Boca Ciega Bay.
Bridges	The city owns the following bridges: three on the Treasure Island Causeway and a fixed bridge on both the Isle of Palms and the Isle of Capri.
Marina	The city owns a municipal marina behind City Hall and four boat ramps accessing Boca Ciega Bay.
Boat Launch Facilities	A light craft launching area to the Gulf is located at Municipal Lot No. 2.

D. Future Demand on Infrastructure

Because Treasure Island is virtually built-out, future demand on existing infrastructure is expected to remain relatively consistent with existing demand. For a discussion of capital improvement projects, see the *Capital Improvements Element*.

XI. NATURAL DISASTER PLANNING

The National Weather Service has identified the Tampa Bay region as one of the most hurricane-vulnerable areas in the United States, with the potential for large-scale loss of life. This is especially true of Treasure Island. Since 1886, 37 hurricanes have passed within 100 nautical miles of the mouth of Tampa Bay. Based on these statistics, a hurricane can be expected to pass within 100 nautical miles of the city at least once every 2.8 years (Pinellas County Department of Emergency Management, 1985). The latest storm to hit the area was Tropical Storm Josephine. Skirting the Pinellas County coastline on October 7, 1993, the storm resulted in a presidential disaster declaration with over $25 million worth of damage.

The most recent major hurricane that affected the Pinellas County coastline was Hurricane Elena in the summer of 1985. Although the center of this Category 3 storm remained more than 100 miles from shore, heavy flooding occurred, structures were damaged, and electrical service was disrupted for over 40,000 county residents. In southern Pinellas County, damage assessment teams identified more than 7,500 structures that sustained at least moderate damage. Within Treasure Island, the city had to repair sidewalks, the phone system, parking lots, and the drawbridge's hydraulic system. Although damage was considerable, the results could have been significantly worse had Hurricane Elena come closer to the Pinellas County shoreline and been a more intense storm (Florida Department of Community Affairs, 1985).

Although cyclonic storms are recognized as the most common type of life-threatening disaster affecting Pinellas County, a recent disaster was not caused by a hurricane, tropical storm, or tornado. In March, 1993, an unusually strong cold front with associated gale force winds, hail, and rain moved into the Tampa Bay area. This winter storm, more commonly referred to as the "Storm of the Century", dropped temperatures into the high 20s, swept boats onto shore, shattered windows, and tore roofs. The storm resulted in $20 million worth of damage and received a presidential disaster declaration. Treasure Island beaches suffered serious erosion due to strong tidal effects of the storm.

With the looming possibility of severe storms or other natural disasters striking Treasure Island, fast, safe, and efficient evacuation is critical in protecting infrastructure and the life of residents. The following section summarizes the plans and procedures guiding hurricane evacuation, and details the various elements that affect evacuation within Treasure Island.

A. *Treasure Island Emergency Action Guide* and the *Pinellas County Comprehensive Emergency Management Plan*

Adopted in 1983, the *Treasure Island Emergency Action Guide* outlines the procedures to be taken in response to a natural disaster. The *Guide* defines the Disaster Committee, which is comprised of the Mayor, department heads, and the City Commission, and details their roles. The *Guide* provides standard operating procedures, and provides a description of the personnel, equipment, communications and warning system involved in supervising an evacuation. Also included is an outline of the expected public response to occur during warning periods, evacuations, and after the emergency passes. The city has designated the Fire Chief as the emergency management coordinator who oversees the development and maintenance of the *Guide*. Continuously updated, the document works in unison with the Pinellas County *Comprehensive Emergency Management Plan* (CEMP).

The CEMP was developed by the Pinellas County Department of Emergency Management to set forth policies, procedures, and guidelines to prepare for, respond to, recover from, and mitigate future impacts of the hazards and disasters that could affect Pinellas County. A key component in implementing the CEMP is the Disaster Advisory Committee (DAC). Consisting of representatives from all municipalities, fire districts, disaster response agencies, and other key county officials, the DAC acts as the "conduit for information on plans, exercises, training, and response and recovery activities" (Pinellas County Department of Emergency Management, 1997). The DAC also advises the Board of County Commissioners on the timing and level of any needed evacuations. Treasure Island actively participates in the DAC, with the Fire Chief serving as the city representative.

B. Hurricane Vulnerability Zone

Based on elevation, proximity to shore, and other geographical factors, all of the land area in Pinellas County falls within one of six hurricane evacuation levels. An area is assigned an evacuation level of "A" through "E" based on its likelihood of being inundated by landfalling hurricanes of categories 1 through 5. For example, an area that would be inundated by a category 1 hurricane is designated as Evacuation Level "A" (also called the Coastal High Hazard Area). Areas that would not be inundated even during a category 5 hurricane are designated as non-evacuation areas. All residents of mobile homes, regardless of location, are required to evacuate in the event of any hurricane.

The 1998 Hurricane Guide, distributed to residents annually by Pinellas County and local municipalities, contains a color-coded map delineating evacuation levels. Table 3 defines Evacuation Levels "A" through "E" by their corresponding hurricane and storm surge vulnerability levels (Tampa Bay Regional Planning Council, 1998). According to this map, all of Treasure Island is located in Evacuation Level "A."

Table 3
Hurricane Evacuation Levels

LEVEL A	Category 1 hurricane -- Coastal High Hazard Area Storm surge of five (5) to seven (7) feet

~~LEVEL B~~	~~Category 2 hurricane Storm surge of seven (7) to twelve (12) feet~~
~~LEVEL C~~	~~Category 3 hurricane Storm surge of twelve (12) to fifteen (15) feet~~
~~LEVEL D~~	~~Category 4 hurricane Storm surge of fifteen (15) to twenty (20) feet~~
~~LEVEL E~~	~~Category 5 hurricane Storm surge of twenty (20) to twenty four (24) feet~~

~~Source: Tampa Bay Regional Planning Council, 1998~~

~~C. Evacuation Population~~

~~Because all residents must evacuate when the Board of County Commissioners announce any evacuation, the affected population would equal the total city population. Emergency transportation is provided by the county for those disabled and elderly residents who have no other means to evacuate. Treasure Island is assigned two large buses, provided by the Pinellas County School Board, which report to the Treasure Island Community Center located at 1 Park Place. The Pinellas County Emergency Operation Center (EOC) arranges any additional emergency transportation that may be needed.~~

~~Residents requiring special assistance during an evacuation are urged to pre-register with the city and/or county. According to the Treasure Island Fire Department, 25 residents are currently listed on the "evacuees with special needs" roster. In accordance with Section 252.355, F.S., this roster is maintained by both the Fire Department and the Pinellas County Department of Emergency Management. Emergency personnel are charged with keeping records of all transported evacuees and where they are taken. The city, in coordination with the Pinellas County EOC, would confirm that all registered people with special needs have received necessary assistance before evacuating the Treasure Island EOC located in City Hall.~~

~~D. Evacuation Routes~~

~~As shown on *Map T-4: Existing & Future Hurricane Evacuation Routes*, the evacuation routes for Treasure Island direct traffic along the Treasure Island Causeway, east on Central Avenue, north on I-275, and across the Howard Frankland Bridge to I-4. The bridge approaches to the causeway and bridge are low-lying and susceptible to flooding. The Tampa Bay Regional Planning Council's *Hurricane Evacuation Plan* identifies 31 critical route points in Pinellas County, which could potentially cut off the evacuation of other areas if severe flooding occurs. Two of these points are located within the city:~~

- ~~Boulevard south of John's Pass: Inundation can impede the evacuation of North Treasure Island south to the Treasure Island Causeway; elevation 4.7 feet above mean sea level (msl).~~

- Mainland approach to the Treasure Island Causeway: Inundation can impede the evacuation of Treasure Island's evacuation east to St. Petersburg; elevation 4.0 feet above msl.

E. Evacuation Times

Pinellas County periodically prepares estimates of the time needed to evacuate threatened residents from an approaching hurricane. Evacuation time includes two components: "clearance time", the time required for all evacuees to pack, travel on an evacuation route, wait in traffic jams, and arrive at a safe location; and "additional delay", caused by the expected 20 percent reduction in roadway capacity due to rainfall. As shown in Table 4, evacuation times are estimated for two scenarios, an "expected threat" and an "unexpected threat." An expected threat assumes good public response due to average lead time, while an unexpected threat assumes a rapid public response because of short lead time. Treasure Island and other areas located in Evacuation Level "A" should be able to evacuate within thirteen hours for an expected threat and twelve hours for an unexpected threat.

Table 4
Pinellas County Clearance Times
by Evacuation Level and Threat

Evacuation Level	Expected Threat* + Additional Delay** = Evacuation Time In Hours	Unexpected Threat† + Additional Delay** = Evacuation Time In Hours
A	10 + 3 = 13	10 + 2 = 12
B	13 + 3 = 16	12 + 2 = 14
C	13 + 3 = 16	12 + 2 = 14
D	14 + 3 = 17	15 + 2 = 17
E	17 + 3 = 20	15 + 2 = 17

Source: Pinellas County Department of Emergency Management, 1997

* An expected threat anticipates a good public response due to average lead time.

** Additionally delay resulting from a 20% reduction in roadway capacity due to pre-storm rainfall.

† An unexpected threat anticipates a rapid public response due to short lead time.

F. Hurricane Shelters

The American Red Cross is the lead agency providing emergency public shelter for Treasure Island. The agency has a total of 62 primary shelters, located throughout Pinellas County. Primary shelters are typically schools and large churches located in non-evacuation zones. Secondary shelters are facilities that, because of size, food preparation capability, or other factors, are used only for overflow. These shelters are opened when the nearest primary

shelter reaches capacity or when a major hurricane evacuation is called. Currently, city evacuees are not zoned to any particular shelter. The closest primary shelters available to Treasure Island residents are Azalea Elementary School at 1680-74th Street North, and Azalea Middle School at 7855-22nd Avenue North. These shelters have a combined capacity of 3,510 persons.

G. Number of Persons Requiring Public Hurricane Shelter

A number of refuge alternatives are available to evacuees. As forecasted by the Tampa Bay Regional Planning Council, approximately fifteen percent of evacuees seek public shelters during a disaster. Other options include leaving the region, checking into a motel or hotel, or staying with a friend or relative within a non-evacuation zone. Currently, Pinellas County is recommending the "Host Home" concept as the preferred kind of evacuation. The Host Home program solicits churches, businesses, and organizations to pre-determine the evacuation status of all members, and encourage members living in non-evacuation areas to host evacuees. In cases where the entire membership lives in an evacuation area or in mobile homes, a church or facility outside that area is encouraged to accommodate those members during an evacuation. Because of projected deficits in hurricane shelter spaces that exist, all public education and information efforts are focused on encouraging evacuees to stay with friends, relatives, motels/hotels, or host-homes in non-evacuation zones. Furthermore, Pinellas County is looking at alternatives to traditional public shelters. These include retrofitting structures to meet shelter space criteria, using unconventional refuge locations, and evacuating guests from transient accommodations to inland "sister" accommodations.

H. Anticipated Evacuation Population

The 100 additional residents expected to reside in the city by 2010 will have virtually no impact on the amount of evacuation space needed. However, the city will continue to circulate information regarding hurricane routes, shelters, and evacuation procedures.

I. Measures to Reduce Evacuation Times

The city actively informs residents of hurricane evacuation procedures by conducting annual seminars, distributing newsletters and flyers, and actively supporting the Disaster Advisory Committee. In addition, Treasure Island continues to support the Metropolitan Planning Organizations in its efforts to improve regional evacuation routes.

XII. POST-DISASTER REDEVELOPMENT

Recovery from a major disaster generally occurs in three stages: the immediate emergency period, a short-range restoration period, and a long-range reconstruction period. Many question arise throughout this process from how reconstruction expenses are to be paid, to what new regulations must be followed during redevelopment. To lessen the chaos that usually follows a major disaster, local governments should outline clear and concise redevelopment procedures in advance.

In the event of such an occurrence, the city is to follow the procedures spelled out in the *Treasure Island Disaster Recovery Planning Guide*. The document details a step by step

process that should be undertaken following a disaster, including search and rescue procedures, restoration of services, and damage assessments. Redevelopment provisions are outlined within the land development regulations. Furthermore, the city is to consult the Pinellas County *Post-Disaster Redevelopment Guide* and *Post-Disaster Redevelopment Plan,* tailoring procedures to meet the needs of the community. Below is a brief description of the policies and procedures the city will follow after a major disaster.

A. *Treasure Island Disaster Recovery Planning Guide*

Last updated in June 1995, the *Treasure Island Disaster Recovery Planning Guide* includes all pertinent ordinances, forms, and procedures that should be carried out immediately following a disaster. Associated emergency ordinances empower local officials to impose curfews, prohibit price gouging, and regulate the use of potable water. Recovery operations are divided into three phases, an immediate emergency period, a short-range restoration period, and a long-range reconstruction period. The procedures and forms included within the *Guide* address each phase. However, reconstruction and redevelopment procedures are more thoroughly addressed within the land development regulations.

B. *Treasure Island Land Development Code*

The *Land Development Code* contain a non-conforming use provision that states, "a structure that has been damaged or made unsafe or unusable to an extent less than 50 percent of its fair market value may be restored or reconstructed for its intended use." However, the regulations specifically state that "nothing contained in this section shall relieve the owner/developer of the obligation to restore the damaged structure in compliance with the *Building and Life Safety Codes* in effect." As such, all damaged property must be restored to prevent recurring damage from a severe storm.

C. *Pinellas County Post-Disaster Redevelopment Guide*

The Pinellas County *Post-Disaster Redevelopment Guide* adheres to the requirements of Rule 9J-5, F.A.C., by setting forth procedures to eliminate the exposure of human life and property to natural hazards. However, the guide has a dual purpose; it also provides locals governments with supplemental guidance in carrying out critical actions following a major disaster.

The *Post-Disaster Redevelopment Guide* also encourages each local government to establish a Post-Disaster Redevelopment Task Force. The task force advises the governing board regarding issues and problems faced during redevelopment and reconstruction. Among other functions, the task force would review damage reports, recommend rezonings and building moratoria, set a schedule for recovery, and recommend relocations and property acquisitions. For smaller local governments like Treasure Island, the task group should be broad-based and include both elected and non-elected representatives who could provide fresh perspectives on development.

D. Reconstruction

To effectively manage the timing and sequence of reconstruction, the city will follow a sequential process. According to the *Treasure Island Disaster Recovery Planning Guide,* a primary task of the Building Official and Building Inspector will create a damage assessment

team to determine the extent of property damage, provide data in order to complete federal assistance applications, and identify and mark structures unsafe to occupy. Reconstruction cannot commence until a damage assessment field report is completed. The land development regulations provide guidance and instructions for the massive undertaking of post-disaster redevelopment. However, the city realizes that certain topics must be added, amended, and/or strengthened to expedite this process, including economic recovery, redevelopment of public facilities, and criteria for acquisition of damaged land and structures.

E. Hazard Mitigation

Treasure Island participates in a number of hazard mitigation programs created at the federal, state, and county level. Likely the most notable program developed by the federal government is the National Flood Insurance Program (NFIP) established in 1968. The program grants federal flood insurance to floodplain residents where building code and land use control measures have been instituted by the local government. In addition, the agency records data on the number of flood insurance claims in each community, allowing local governments to identify areas with critical flooding problems. According to the NFIP, the city contains one hundred and eleven "repetitive loss properties", or properties that have filed two or more flood insurance claims in the past five years.

Other federal programs include the Community Rating System, Disaster Assistance Programs, the Coastal Barrier Resources System, and beach renourishment projects administered by the CoE. In addition, the Interagency Hazard Mitigation Team dispatches survey teams to tour disaster sites following a presidential declaration of a major disaster. Based on the team's observations, a report is issued that includes recommendations to the local government regarding methods to reduce damage caused by future storms.

State programs include the *Coastal Zone Protection Act of 1985*; the Coastal Construction Control Line program; permitting programs operated by FDEP for the construction of piers, docks, breakwaters, groins, jetties, and beach renourishment; the State Conservation and Recreation Lands program; the Florida Beach Management and Erosion Control Program; the Coastal Barrier Infrastructure Program; and the Statewide Hazard Mitigation Strategy.

At the county level, the Local Mitigation Strategies initiative was designed to assist communities with hazard mitigation. Through this program, communities appoint work groups composed of local officials, city staff, community volunteers, and other interested parties to examine hazard mitigation issues. Each work group identifies repetitive loss properties, hazardous materials sites, and other vulnerable areas within its community, and formulates strategies to reduce known hazards. Appropriate recommendations of the work group are then integrated into the community's comprehensive plan, land development regulations, site plan reviews, and other planning procedures and guidelines. Treasure Island actively participates in this program.

XIII. POTABLE WATER

Rule 9J-5.013, F.A.C., requires local government to address current and projected water needs and sources within a ten-year planning time frame. Although conservation issues are discussed in the following paragraphs, in order to eliminate redundancy between elements, please refer to the extensive needs analysis provided in the *Infrastructure Element* of this

~~comprehensive plan. Furthermore, because Pinellas County Utilities System (PCUS) provides potable water to the city, a needs assessment-based study can be found within the *Pinellas County Comprehensive Plan Potable Water Sub-Element*.~~

~~To ensure that potable water will be available beyond the year 2015, opportunities to conserve and locate alternative sources are continually being sought. Conservation programs are generally handed down from Pinellas County and regional agencies, particularly the former West Coast Regional Water Supply Authority, recently renamed "Tampa Bay Water." Under a new cooperative agreement between the major water providers in Pinellas, Hillsborough, and Pasco counties, Tampa Bay Water will own and oversee the regional water system, providing a reliable supply to all member utilities while promoting resource sharing. This agency is also responsible for locating and developing new water sources, and is currently studying the feasibility of building a desalination plant somewhere in the region.~~

~~In support of these regional efforts, Pinellas County will continue working to conserve potable water by reducing system losses, protecting groundwater against degradation of water quality and yield, and encouraging county residents to install water conservation devices. In addition, the county's commitment to promoting reclaimed water use for irrigation could significantly reduce potable water demand, decrease the chloride content in deep wells, and eliminate the need to discharge treated wastewater into surface waterbodies. Reclaimed water is currently being supplied to golf courses and select residential communities throughout the county. Pinellas County is "committed to reusing all treated wastewater, and is completing the upgrade of all facilities to the level of advanced wastewater treatment so that all wastewater will be available to be utilized in the reclaimed water system" (Pinellas County, 1997). Recently, the city has begun to explore the idea of developing a reclaimed water program in cooperation with PCUS. This program would bring effluent from the South Cross Bayou Wastewater Treatment Plant to the barrier island for irrigation use. However, this proposal is still in its infancy, and many details have not yet been finalized.~~

~~XIV. HAZARDOUS WASTE~~

~~Hazardous wastes are "materials which by their nature are inherently dangerous to handle or dispose of, such as old explosives, radioactive materials, some chemicals, and some biological wastes" (International City Management Association, 1987). Many pieces of federal and state legislation have been passed in the last twenty-five years to control the amount of hazardous waste being discarded, in an effort to protect public health, safety, and welfare. Hazardous waste disposal in Florida is administered by Florida Department of Environmental Protection (FDEP), and locally hazardous waste management is handled at the county level. Although no federally recognized hazardous waste sites exist within Treasure Island, some small businesses such as gas stations, dry cleaners, and photo shops discard small quantities of hazardous materials.~~

~~Until 1993, Treasure Island participated with Pinellas County in the state's Amnesty Day program. This program encouraged residents to bring hazardous household chemicals to a mobile facility for disposal. In 1993, the program was discontinued with the opening of the Household Chemical Collection Center (HC3) located adjacent to the Refuse-to-Energy Plant. Residents are encouraged to dispose of fertilizers, fungicides, pesticides, household chemicals, cleansers, paints, solvents, automotive fluids, pool chemicals, and household~~

batteries at this facility. Pinellas County and some cities also coordinate local collection days, where hazardous materials are dropped off locally and then transported to appropriate disposal or recycling facilities.

In addition to these efforts, Pinellas County has developed a proactive program to reduce the volume of hazardous waste currently being produced. The Pollution Prevention Program provides counsel and technical assistance to any individual or company conducting business within Pinellas County.

Rule 9J-5.013(1)(b), F.A.C., requires that "for each natural resource (rivers, bays, lakes, wetlands, air, floodplains, soil, fisheries, wildlife, marine habitats and vegetative communities) known pollution problems including hazardous waste and the potential for conservation, use, or protection shall be identified." Pollution remains a critical issue affecting Treasure Island, Boca Ciega Bay, and the Gulf of Mexico. The most common types of hazardous waste affecting the city stem from atmospheric deposition of pollutants, stormwater discharges, and isolated spillage accidents involving petroleum. The most significant accident involving hazardous waste occurred on August 10, 1993, when three tankers collided near Fort DeSoto Park and spilled nearly 328,000 gallons of oil into Tampa Bay. The oil was spread north along the Pinellas County coastline and affected several south county beaches, including Treasure Island. However, more extensive damage was avoided due to favorable tide and weather conditions and quick mobilization of clean-up crews.

XV. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Sections 163.3177(9) and (10), F.S., and Rule 9J-5.012(3) and 9J-5.013(2) F.A.C., the following represents the coastal management and conservation goals, objectives, and policies of the City of Treasure Island intended to address the establishment of a long-term directive for protecting and enhancing the natural resources found in the community.

B. Nonapplicable Items

The municipal boundaries and the coastal area designation are the same. Therefore, those goals, objectives, and policies addressed in the other elements are applicable to the City of Treasure Island coastal area. However, based on the findings contained in this element and pursuant to Rule 9J-5.002, F.A.C., it has been determined that the following objectives and policies are not applicable to the City of Treasure Island:

- ~~Rule 9J-5.012(3)(c)12: Orderly development of deepwater ports - The city contains no ports.~~
- ~~Rule 9J-5.013(2)(c)7: Protection of existing natural reservations - The city contains no natural reservations.~~
- ~~Rule 9J-5.013(2)(c)2: Protection of areas suitable for extraction of minerals - The city contains no areas where minerals are to be extracted.~~
- ~~Rule 9J-5.013(2)(c)1: Protection of groundwater aquifer recharge areas and wellhead protection areas - No such areas are found within the city.~~

~~C. Implementation~~

~~Unless otherwise stated, the implementation of objectives and associated policies contained in Section D shall be through the implementation of land development regulations.~~

Introduction:

The Coastal Management, Conservation, and Resiliency Element centralizes interdisciplinary objectives for sustainability and adaptation to climate change. The element contains policies to address resiliency planning including natural resource protection, shoreline protection, land development, City operations and emergency preparedness.

Goal 1:

To ensure the highest environmental quality possible, the City ~~of Treasure Island~~ shall conserve, protect, and appropriately manage natural resources ~~(aquatic, wetland, terrestrial, and air)~~.

Objective 1.1: Water Conservation and Quality

The City shall protect the quality and quantity of surface and groundwater.

Policy 1.1.1: The City shall promote water conservation as an integral part of water management programs, rules, and plans and the use and reuse of water of the lowest acceptable quality for the intended purpose.

Policy 1.1.2: The City shall enforce the provisions set forth by the Southwest Florida Water Management District and Pinellas County as applicable ~~in the Southwest Florida Water Management District Water Shortage Plan, Chapter 40D-21, Florida Administrative Code~~.

Policy 1.1.3: The City shall meet or exceed the National Pollution Discharge Elimination System (NPDES) regulatory standards, and report on activities associated with the City's Stormwater Management Program annually to the Florida Department of Environmental Protection (FDEP).

Policy 1.1.4: The City shall explore incentive programs and regulations for private sewer lateral inspection and maintenance.

~~**Measure:** Improvement in surface and groundwater quality and quantity~~

Objective 1.2: Floodplain Management

Regulations for development within the 100-year floodplain shall be strictly enforced.

Policy 1.2.1: New development or redevelopment approvals shall require that ~~post-development runoff rates, volumes and pollutant loafs do not exceed pre-development conditions~~ impacts to exiting flood storage capacity be minimized to the greatest extent possible.

Policy 1.2.1~~2~~: Recognizing that the community is located within the 100-year floodplain, the City shall strictly enforce all appropriate federal, state, ~~and~~ regional, and local ~~coastal~~ floodplain management, construction codes and ~~coastal setback~~ regulations.

~~**Policy 1.2.3:** The City shall protect the natural functions of the 100-year floodplain so that the flood-carrying and flood-storage capacity are maintained.~~

~~**Policy 1.2.4:** The City shall adhere to the impervious surface ratios defined in Objective 1.1 and associated policies of the *Future Land Use Element*, in order to minimize runoff and stabilize water quality.~~

~~**Measure:** Implementation of floodplain management and impervious surface ratio regulations~~

Objective 1.3: Wetlands

The City shall conserve ~~or improve~~ wetlands, aquatic resources, and wildlife ~~population and~~ habitat to maintain their environmental and recreational value.

Policy 1.3.1: ~~Mangroves and marsh~~ Wetland areas shall be designated Preservation on the ~~*Map LU-4:*~~ City's Future Land Use Map.

Policy 1.3.2: The City shall coordinate with other agencies for the protection of ~~locations of known marine~~ seagrass beds and other protected habitats. ~~shall be identified on *Map CM-1: Vegetative Cover and Marine Resources*, and shall be protected to the greatest extent possible from adverse impacts.~~

Policy 1.3.3: Projects ~~(e.g., marinas, causeways, and dredging)~~ which could inhibit tidal circulation shall include measures to maintain or improve tidal circulation and flushing.

~~**Policy 1.3.4:** Any project which produces changes in tidal circulation patterns shall be approved only after sufficient hydrographic information is available to allow an accurate evaluation of the possible impacts of the project.~~

Policy 1.3.~~5~~3: The City's existing wetlands shall be conserved and protected from physical and hydrological alterations, as required by law.

Policy 1.3.~~6~~4: ~~Marine w~~Wetlands, ~~barrier island~~ property containing native vegetative communities, ~~and/~~or shoreline locations ~~with limited habitat diversity~~ shall be considered priorities for environmental land acquisition.

Policy 1.3.~~7~~5: The City shall ~~continue to~~ preserve ~~Bird Key and~~ Elnor Island in its natural state.

Policy 1.3.6: The City shall review any proposed development and redevelopment that would reduce recreational and commercial working waterfront uses against the potential for the development to mitigate such loss of any economic and recreational benefits the City would lose.

~~**Measure:** Implementation of land regulations which protect environmental systems~~

Objective 1.4: ~~Native~~ Vegetation

The City shall conserve~~, appropriately use,~~ and protect native vegetation.

Policy 1.4.1: ~~By 2000, t~~The City shall ~~modify~~ enforce the local tree ordinance to require that all new development and redevelopment preserve ~~on-site native~~ vegetation according to standards contained in the land development regulations.

Policy 1.4.2: Native and Florida Friendly™ vegetation shall ~~continue to receive priority~~ be the preferred species in the landscaping requirements of the land development regulations.

Policy 1.4.3: ~~Land development regulations shall encourage shorelines lacking wetland vegetation to be planted with native vegetation in order to minimize potential flood damage, stabilize the shoreline, trap sediments and other non-point source pollutants, and provide additional habitat for fish and wildlife~~ The City shall promote the construction of living shorelines where appropriate.

Policy 1.4.4: Land development regulations shall ~~continue to~~ encourage the removal and prohibit the planting of exotic and invasive species. ~~such as punk trees (*Melaleuca sp.*), Australian pine (*Casuarina sp.*), and Brazilian pepper (*Schinus sp.*).~~

Policy 1.4.5: The City shall consider soil conditions and vegetation classifications when designating land use categories.

~~**Policy 1.4.6:** Although limited natural resources remain in the City of Treasure Island, every effort shall be taken to protect these resources as follows:~~

Policy 1.4.6: ~~Recreational d~~Development shall be compatible with the surrounding natural environment and shall be subject to performance standards adopted in the land development regulations.~~; and~~

Policy 1.4.7· The clearing of trees and wetland vegetation shall be prohibited, unless specifically permitted by the land development regulations and the Florida Statutes.

~~**Measure:** Development and implementation of land development regulations~~

Objective 1.5: Species of Special Status

The City shall protect species with special status from adverse impacts of development.

Policy 1.5.1: The City shall assist in the application of and compliance with all state and federal regulations pertaining to species of special status (i.e., endangered, rare, threatened, and species of special concern).

~~**Policy 1.5.2:** Beach renourishment projects shall protect sea turtle nesting areas by limiting construction in such areas to winter and spring months, or by collecting eggs from the nests, incubating them, and releasing the hatchlings.~~

~~**Policy 1.5.3:** All spoil islands shall be designated bird sanctuaries.~~

~~**Policy 1.5.4:** The City shall work in cooperation with the Florida Department of Environmental Protection , U.S. Fish and Wildlife Service, and other state and federal agencies to develop an area-specific manatee protection plan to ensure long-range manatee and habitat protection.~~

Policy 1.5.2: The City will work with the appropriate agencies to assist in enacting and enforcing measures to protect species of importance and their habitats.

Policy 1.5.3: The City shall identify and manage plant and wildlife species in City-owned natural areas in coordination with local, state and federal agencies.

~~**Measure:** Implementation of protective measures~~

Objective 1.6: Hazardous Waste

The City shall coordinate with the appropriate entities ~~participate with Pinellas County to~~ ensure hazardous wastes are handled, collected, transported, stored, disposed of, and recycled in a manner that protects human health, safety, and the environment.

Policy 1.6.1: The City shall support ~~the Pinellas County Pollution Prevention (P2) P~~programs which aim~~s~~ to regulate small generators of hazardous wastes and reduce the volume produced in the county.

Policy 1.6.2: The City, in conjunction with Pinellas County and neighboring local governments, shall ~~institute an educational program~~ perform public outreach ~~using regular bill mailings and public meetings~~ to inform residents of effective methods to minimize the use of,

safely store, dispose of, and recycle hazardous waste products such as oils, solvents, and paints.

Policy 1.6.3: The City shall encourage residents to deposit household hazardous waste at the ~~Pinellas County household chemical~~ appropriate collection centers.

~~**Policy 1.6.4:** The City shall direct generators and users of hazardous material to Pinellas County staff for technical assistance regarding proper disposal methods.~~

~~**Measure:** Participation in hazardous waste management efforts~~

Objective 1.7: Air Quality

The City shall comply with all state and federal standards for air quality.

Policy 1.7.1: The City shall work to reduce the potential for automobile emissions pollution by the following measures:

- Require vegetative buffer strips between roadways and ~~residential~~ development where appropriate.~~;~~
- Promote ~~alternative~~ multi-modal transportation, consistent with the Multimodal Transportation Element of this comprehensive plan, modes such as transit, carpooling, pedestrian and bicycle paths; and
- ~~Assure continued operation of roadways at acceptable levels of service.~~
- Support efforts to expand electric vehicle infrastructure within the City.
- Evaluate the feasibility of converting the City's fleet to electric or hybrid vehicles.

Policy 1.7.2: The City shall support expansion of renewable energy sources.

Policy 1.7.3: The City shall evaluate the feasibility of incorporating renewable energy during the construction or reconstruction of public buildings.

Policy 1.7.4: The City shall consider maintaining a greenhouse gas inventory and developing a reduction plan.

~~**Measure:** Compliance with standards~~

Objective 1.8: Boca Ciega Bay ~~Estuary~~ Protection

The City shall carry out the provisions of federal, state, and regional programs aimed at protecting the quality of Boca Ciega Bay.

~~**Policy 1.8.1:** In order to reduce non-point source pollutant loadings, land development regulations governing stormwater management shall follow the recommendations of the 1996 *Treasure Island Master Drainage Plan*, and shall meet the requirements of Chapter 40D-4, F.A.C.~~

Policy 1.8.12: ~~In order to reduce non-point source pollutant loadings and improve the functioning of the City drainage system, t~~The land development regulations shall include provisions prohibiting the dumping of debris ~~of any kind (e.g., yard clippings and trimmings),~~ into roadways, drainage ditches, the bay, canals, and stormwater collection and control structures.

~~**Policy 1.8.3:** The City shall coordinate with neighboring municipalities, Pinellas County, and the Tampa Bay Regional Council to protect estuarine areas by providing adequate sites for water-dependent uses, preventing pollution, controlling surface water runoff, protecting living marine resources, reducing exposure to natural hazards, and ensuring public access.~~

Policy 1.8.24: The state of natural watercourses shall be protected, and their alteration shall be prohibited, except in cases of overriding public benefit as determined by the City Commission (e.g., construction of groins to reduce erosion).

Policy 1.8.35: The City shall ensure ~~utilize~~ construction that ~~and maintenance methods that do~~does not adversely affect water quality or flow.

Policy 1.8.46: The City shall adhere to regulations pertaining to Boca Ciega Bay as an aquatic preserve ~~as~~ outlined in the ~~Section 258.97,~~ Florida Statutes~~, Boca Ciega Bay Aquatic Preserve,~~ and the Florida Department of Environmental Protection Outstanding Florida Waters designation.

Policy 1.8.57: The City ~~of Treasure Island~~ shall work with the Southwest Florida Water Management District in implementing ~~the Tampa Bay Surface Water Improvement and Management (S.W.I.M.) program in an e~~efforts to improve water quality ~~and restore coastal habitats~~ within Boca Ciega Bay.

Policy 1.8.68: The City shall support the policies identified in the Tampa Bay National Estuary Program *Comprehensive Preservation and Management Plan* for Tampa Bay in an effort to improve water quality and encourage natural resource recovery.

~~**Measure:** Development practices consistent with the Outstanding Florida Waters designation, the S.W.I.M. program, and the Tampa Bay National Estuary Program.~~

Objective 1.9: Beaches and Dunes

The City ~~of Treasure Island~~ shall protect and support restor~~ation~~e of its beaches, dunes, and natural systems and establish construction standards ~~which~~ to minimize the impacts of man-made structures on these systems.

Policy 1.9.1: Construction seaward of the Coastal Construction Control Line shall be subject to the permitting procedures pursuant to ~~Section 161.05,~~ Florida Statutes.

Policy 1.9.2: Seawalls shall be prohibited on the Gulf of Mexico and ~~when~~ such existing seawalls ~~on the Gulf are damaged, they~~ shall not be replaced.

Policy 1.9.3: ~~A dune preservation zone shall be established in the land development regulations to~~The City shall uphold state regulations to protect the ~~primary~~ dune system~~, which shall address~~ and prohibit~~ion on~~ the excavation~~s,~~ or destruction of native dune vegetation~~, and activities which affect the natural fluctuation of the dunes~~.

Policy 1.9.4: The City shall ~~continue~~ advocate for ~~its program for~~ the restoration and maintenance of the coastal dune system which shall include stabilization projects utilizing native vegetation and ~~development~~ implementing ~~of~~ an educational program emphasizing the need to protect the coastline. As appropriate, the City shall apply for state and other funding through the DEP to plan for and enhance the coastal dunes.

~~**Policy 1.9.5:** The City shall continue its program for the restoration and maintenance of its beaches.~~

Policy 1.9.6~~5~~5: The City shall ~~continue~~ provide~~ing~~ adequate public access to beaches and shorelines; enforcing public access to beaches renourished at public expense; enforcing the public access requirements of the *Coastal Zone Protection Act of 1985*; and providing parking facilities for beach and shoreline access.

Policy 1.9.7~~7~~6: The City shall limit shoreline development ~~that will adversely~~ impacts to marine fisheries habitats.

Policy 1.9.7: The City shall assure shoreline stabilization strategies are found to be in the public interest while taking into consideration the City's vulnerability to climate change impacts.

~~**Measure:** Implementation of coastal construction regulations~~

Objective 1.10: Intergovernmental Coordination

The City shall participate in the establishment and implementation of an intergovernmental coordination mechanism to protect coastal resources which shall address natural systems on a systemwide basis regardless of political boundaries.

Policy 1.10.1: The City shall participate in proceedings to develop joint planning and management programs with neighboring municipalities for hurricane evacuation, provision of public access, provision of infrastructure, controlling stormwater, protection of wetland vegetation, coastal management, and coordinating efforts to protect species with special status.

Policy 1.10.2: The City shall cooperate with the U.S. Army Corps of Engineers and Pinellas County in addressing the environmental issues associated with the maintenance of navigational channels.

~~**Policy 1.10.3:** Pursuant to Rule 9J-5.012(3)(b)11., Florida Administrative Code, the levels of service for coastal area are those designated in this element and in Objective 1.5 of the *Capital Improvements Element*.~~

Policy 1.10.34: For development and redevelopment which may impact coastal resources, t~~T~~he City shall ~~continue to~~ coordinate with Pinellas County to ~~plan and fund infrastructure and services consistent with~~ meet the adopted level-of-service ~~standards~~ and to ~~shall~~ ensure that permits ~~for development and redevelopment activities~~ are issued only if the public facilities necessary to meet the standards are available concurrent with the impacts of the development.

~~**Measure:** Establishment of intergovernmental coordination mechanisms to manage coastal resources and enforcement of concurrency requirements~~

Goal 2:

The City shall provide a set of guidelines for development and redevelopment that protects the lives and property of its residents from the effects of natural disasters.

Objective 2.1: Coastal High Hazard Area Development

The City shall limit public expenditures that support development permitted in Coastal High Hazard Area except for restoration or enhancement of natural resources, or facilities determined to be an overriding public benefit.

Policy 2.1.1: The Coastal High Hazard Area ~~is~~ shall be defined as the area ~~within an Evacuation Level "A" as established by the *Tampa Bay Region Hurricane Evacuation Study Update,* published by the Tampa Bay Regional Council and inclusive of the area~~ below the elevation of the category 1 storm surge line, as established by Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model. ~~**Policy 2.1.2:** The City shall not support or finance new local transportation corridors which lie within the Coastal High Hazard Area, although existing corridors may be maintained or improved as~~ The City shall limit public funding within the identified Coastal High Hazard Area unless infrastructure improvements are necessary to protect the health, safety, access, or ~~and~~ welfare of ~~existing~~ residents, and those population densities anticipated by this comprehensive plan.

~~**Measure:** Amount and nature of public expenditures in the Coastal High Hazard Area~~

Objective 2.2: Coastal High Hazard Area Population

The City shall ~~not increase permanent population concentrations in the Coastal High Hazard Area except as anticipated in this comprehensive plan.~~ support hazard mitigation and protection of human life against the effects of natural disaster, including population evacuation, through policies that consider the capability to safely evacuate the density of coastal population in the event of an impending natural disaster.

Policy 2.2.1: The City shall implement growth management directives to control development/redevelopment, including maintaining or reducing~~e~~ allowable permanent density

within the Coastal High Hazard Area consistent with adequate evacuation times. ~~with the adopted *Future Land Use Map,* of this comprehensive plan~~.

~~**Policy 2.2.2:** The City of Treasure Island shall continue to implement growth management directives which control development/redevelopment other than recreational purposes within the Coastal High Hazard Area consistent with the adopted *Future Land Use Map,* of this comprehensive plan.~~

Policy 2.2.2~~3~~: Consistent with ~~Section 163.3178(8),~~ Florida Statutes, as may be amended from time to time, the City ~~of Treasure Island~~ shall review proposed comprehensive plan map amendments for compliance with state coastal high-hazard provisions. Proposed amendments shall be found in compliance with state coastal high-hazard provisions if:

1. The adopted level of service for out-of-county hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale;

OR

2. A 12-hour evacuation time to shelter is maintained for a category 5 storm event as measured on the Saffi~~r~~c-Simpson scale and shelter space reasonably expected to accommodate the residents of the development contemplated by a proposed comprehensive plan amendment is available;

OR

3. Appropriate mitigation is provided that will satisfy subparagraphs 1. or 2. Appropriate mitigation shall include, without limitation, payment of money, contribution of land, and construction of hurricane shelters and transportation facilities. Required mitigation may not exceed the amount required for an applicant to accommodate impacts reasonably attributable to the development. The City and the applicant shall enter into a binding agreement to memorialize the mitigation plan.

AND

4. The Final Project Plan adheres to the provisions of Section 163.3178(8), Florida Statutes, as may be amended from time to time.

Policy 2.2.3~~4~~: The City may ~~shall maintain its~~ establish a program ~~off~~ or ~~public~~ land acquisition and management for recreation, conservation, and preservation areas. This may include designated adaptation action areas which experience coastal flooding due to extreme high tides and storm surge and that are vulnerable to the impacts of rising sea level.

Policy 2.2.4~~5~~: The City shall review federal and state development projects which are to be located within the City, and support those which are consistent with this plan.

~~**Measure:** Control of development within the Coastal High Hazard Area~~

Objective 2.3: Hurricane Clearance

The City shall through coordination with state, regional and county agencies, shall support funding necessary to improve evacuation routes and promote early evacuation of the population, in order to reduce hurricane clearance times.

Policy 2.3.1: The City shall coordinate with state, regional, and county agencies to ensure that major evacuation routes are adequately maintained and, when necessary, improved to facilitate an efficient and safe evacuation.

Policy 2.3.2: The City, in cooperation with the Pinellas County Department of Emergency Management, ~~and~~ the American Red Cross, and other agencies, shall sponsor preparedness seminars to increase hurricane awareness.

Policy 2.3.3: City emergency response personnel and volunteers shall coordinate pre- and post-event activities with county and state emergency response agencies in an effort to plan for safe and efficient evacuations and re-entries.

~~**Policy 2.3.4:** The City shall suspend the collection of tolls on the Treasure Island Causeway to expedite ordered evacuations and re-entries.~~

~~**Measure:** The City's participation with other governmental and non-profit agencies in the Tampa Bay Region to educate the public on emergency preparedness and early evacuation.~~

~~The participation of the City's emergency personnel with other agencies to provide traffic control in order to facilitate travel and reduce hurricane evacuation clearance times.~~

Objective 2.4: Natural Disaster Preparedness

The City shall reduce the risk of exposure of human life and public and private property to natural disasters through preparedness planning and implementation of hazard mitigation measures.

Policy 2.4.1: The City, in coordination with the Pinellas County Department of Emergency Management, shall ~~continue to~~ maintain and update ~~the *Treasure Island Emergency Action Guide*~~ an emergency preparedness and management plan which addresses the four phases of comprehensive emergency management: preparedness, response, recovery, and mitigation.

Policy 2.4.2: The City shall review the existing coastal construction building code and adopt, at a minimum, the coastal construction standards embodied in the *Coastal Zone Protection Act* and shall strictly enforce their implementation through the building inspection process.

Policy 2.4.3: Recognizing the entire community is located within the Hurricane Vulnerability Zone and the 100-year floodplain, the City shall adopt and strictly enforce all appropriate federal, state, and local coastal construction codes, ~~coastal~~ setback requirements, special

Coastal Construction Control Line facility siting restrictions, and floodplain management regulations in effect at the time of adoption of this plan.

Policy 2.4.4: Special care facilities, including hospitals, nursing homes, and similar types of facilities established for the care of non-ambulatory patients, shall not be located in the Coastal High Hazard Area.

~~**Measure:** Implementation of the *Treasure Island Emergency Action Guide*.~~

Goal 3:

The City shall expedite post-disaster recovery and reduce the future risk to human life, and public and private property from natural hazards, through recovery and redevelopment strategies.

Objective 3.1: Post-Disaster Recovery

The City shall develop and maintain ~~a system of~~ post-disaster recovery procedures, including debris clearance, property damage assessments, and restoration and continuity of basic services~~, which shall be outlined in the *Treasure Island Disaster Recovery Planning Guide*~~.

Policy 3.1.1: The City's emergency management coordinator~~, as designated by the City Manager, shall revise, as appropriate, the *Treasure Island Disaster Recovery Guide*;~~ shall maintain an Emergency Management Plan and act as a liaison between state, regional, county, and city emergency response and planning agencies; and ensure coordination between emergency management and development management activities in the ~~c~~City of Treasure Island.

Policy 3.1.2: City infrastructure damaged by storms intended to be repaired or replaced ~~in its current location~~ shall be built to a higher standard, or relocated, to the extent feasible.

Policy 3.1.3: The City shall develop a Substantial Damage Management Plan that describes the community's process for evaluating damage to buildings and addressing those that have been substantially damaged.

Policy 3.1.4: The City may pursue grant funding to develop a Post Disaster Recovery Plan to outline procedures and higher design guidelines for redevelopment to expedite permitting during disaster recovery.

~~**Objective 3.2: Short-Term Reconstruction**~~

~~**The City shall maintain procedures to guide short-term repair and cleanup activities following a disaster, in order to protect public health and safety.**~~

Policy 3.1.5~~2.1~~: Following a major disaster, the City Commission may adopt a temporary post-disaster building moratorium to allow sufficient time for immediate damage assessment, the identification of redevelopment opportunities, and hazard mitigation policy implementation.

~~**Policy 3.2.2:** The City shall adopt post-disaster redevelopment procedures which will expedite permitting for minor repairs, include development plan review, engineering approval, and permitting while ensuring coordination with appropriate agencies and consistency with the objectives of this comprehensive plan.~~

~~**Measure:** Establishment of reconstruction permitting procedures~~

Objective 3.~~3~~2: Hazard Mitigation

The City shall ~~follow~~ maintain long-term redevelopment strategies~~,~~ which will be used to promote hazard mitigation.

Policy 3.~~3~~2.1: Where feasible, property which has received recurring major hurricane damage from storm surge should be publicly acquired or designated Preservation on the adopted *Future Land Use Map* of this comprehensive plan*,* to prevent redevelopment of the property to its pre-disaster land use.

Policy 3.~~3~~2.2: The City may consider one or more of the following strategies in those areas which receive major or moderate damage:

- Reduction of permissible permanent density of development in the area;
- Reconstruction according to more stringent building and construction standards; and
- Public acquisition of damaged areas.

Policy 3.~~3~~2.3: The City shall interrelate hazard and non-hazard mitigation goals during reconstruction decision-making including the following objectives:

- Enhancement of local recreational and open space opportunities;
- Enhancement of local public beach access;
- Enhancement and restoration of local natural ecosystems;
- Reduction of traffic congestion, noise, and other transportation related problems; and
- Enhancement of the long-term economic vitality of the local commercial base.

Policy 3.~~3~~2.4: The City shall explore the potential for removal, relocation, or structural modification of any infrastructure damaged during a natural disaster, consistent with federal funding guidelines and public safety.

Policy 3.~~3~~2.5: Appropriate recommendations of interagency hazard mitigation reports, such as the *Pinellas County Local Mitigation Strategies* initiative, shall be incorporated into this comprehensive plan.

~~**Measure:** Implementation of post-disaster redevelopment policies and procedures~~

Objective 3.3 Redevelopment Strategies

The City shall implement redevelopment strategies to reduce future risk of damage to real property.

Policy 3.3.1: The City shall work to identify areas particularly susceptible to damage from flooding, including FEMA designated flood zones and repetitive loss areas, and shall specify procedures for relocating or replacing public infrastructure away from these locations, where feasible. Working in coordination with county, state, and federal agencies and programs, the City will work to mitigate hazards through acquisition, elevation, or relocation mitigation alternatives.

Policy 3.3.2: The City will work with FEMA and other agencies as appropriate to support public and private projects and programs that elevate, relocate, or provide for the voluntary acquisition of properties with repetitive flooding.

Policy 3.3.3: The City will maintain a list of critical facilities within areas vulnerable to repeat flooding and analyze the facilities capacity to accommodate sea-level rise over the life expectancy of the infrastructure.

Policy 3.3.4: The City will maintain federal, state, County and regional programs that will assist in reducing flood risk to a level that is at minimum consistent with the required program, and where possible and in the best interest of the City, more stringent than the program.

Policy 3.3.5: The City will participate in the Community Rating System administered by the National Flood Insurance Program.

Policy 3.3.6: The City shall adopt a Community Rating System target score in its Strategic Plan, and as appropriate maintain or strengthen its adaptation strategies to meet the target score.

Policy 3.3.7: The City will take advantage of emerging data and technological opportunities to regularly evaluate adaptation strategies for public infrastructure identified as vulnerable to climate-related impacts. Adaptation strategies may include, but are not limited to:

a. Public Infrastructure Planning, Siting, Construction, Replacement, Operation and Maintenance
b. Emergency Management
c. Stormwater Management
d. Land Development Regulations
e. Building Codes
f. Comprehensive Planning
g. Utility Asset Management

Policy 3.3.8: The City shall, through its land development regulations, ensure that any structure not compliant with current flood plain regulations, shall be rebuilt only to the extent that complies with the current floodplain management standards for the affected property.

Policy 3.3.9: The City may evaluate the feasibility of pre-buildback regulations as a mitigation strategy in order to expedite potential permitting and other needs for post-disaster recovery.

Goal 4: Sustainability & Resiliency

The City shall aim to protect and enhance quality of life through actions and strategies that promote sustainability, where environmental, economic, and social development meets the needs of the present without compromising the livelihood of future generations. Resiliency shall be of the utmost importance.

Objective 4.1: Sustainability Planning

The City shall provide for and implement strategies to ensure planning for a sustainable and resilient community.

Policy 4.1.1: The City shall adopt and maintain a sustainability and resiliency plan and coordinate with other entities to develop and fund sustainability and resiliency strategies.

Policy 4.1.2: As part of its sustainability and resiliency planning, the City will evaluate and incorporate as appropriate pre-disaster mitigation strategies to enhance resiliency.

Policy 4.1.2: The City shall consider pursuing LEED for cities certification.

Policy 4.1.3: The City shall consider sustainability and resiliency in the CIP review and prioritization process.

Policy 4.1.4: The City shall evaluate the appropriateness of a green building ordinance with incentives or options, which may include in lieu fees, to meet green building standards."

Objective 4.2: Sustainability and Resiliency Education and Outreach

The City will coordinate with public and private partners for ongoing assessments of existing and projected conditions related to our changing climate and collaborate as necessary in the identification and development of effective solutions and strategies to adapt and improve resiliency of the community.

Policy 4.2.1: The City shall provide regular outreach to encourage public education of current policies, ideas, and sustainable practices to promote sustainability, reduce household GHGs and energy waste, promote participation in clean energy programs, and increase community resiliency.

Policy 4.2.2: The City shall incorporate sustainability education into City programming and events as feasible.

Policy 4.2.3: The City shall provide, as part of information at the beginning of the hurricane season, information on evacuation routes, sources of information in case of emergencies, and best practices and contact information for reporting of flood and debris post disaster.

Policy 4.2.4: The City will foster effective collaborations, partnerships (including P3), and coordination with national, state, regional, and local partners to identify risks, vulnerabilities, and opportunities associated with coastal hazards and the impacts from climate change.

Objective 4.3 Resiliency in Design

The City shall ensure the application of various design techniques to enhance resiliency and address climate change needs for the City's built environment.

Policy 4.3.1: The City shall encourage the incorporation of resilient design elements in new development and redevelopment and adopt design guidelines conducive to address climate change mitigation, coordinated with Florida Building Code requirements.

Policy 4.3.2: To promote resiliency to natural disasters, the City may develop programs to incentivize building standards above those required by law.

Policy 4.3.3: Land development regulations shall encourage or require the maintenance of seawalls and increased seawall heights, as feasible.

Policy 4.3.4: The land development regulations shall contain provisions that encourage increased resiliency to future environmental changes and incorporate building design specifications that increase resilience to impacts from more intense storm and increasing flood events through available resilience strategies.

Policy 4.3.5: The City may consider adopting redevelopment regulations providing for adaptive building design (including first floor adaptability) and form-based approaches, including but not limited to flexible first floor ceiling heights, overall maximum building heights, freeboard regulations, and flex use, which provide for physical modifications of buildings for ~~easy~~ change of use.

Policy 4.3.6: To improve resiliency and address impacts of climate change, the City may evaluate revising its code to permit a maximum freeboard requirement without penalty for building height in order to allow flexible adaptability of ground level uses.

Policy 4.3.7: The City shall encourage reductions in impervious cover and promote stormwater infiltration onsite to the extent feasible.

Policy 4.3.8: The City may assess and implement innovative infrastructure for stormwater management, including hard and natural systems, and incorporate these guidelines into design construction criteria.

Policy 4.3.9: The City shall promote approaches to design that lead to the reduction of heat islands, including, but not limited to, the incorporation of acceptable alternative construction materials allowable by Building Code or engineering, cool roofs, and increases in tree canopies within the City.

Policy 4.3.10: The City shall ensure power resiliency for critical City infrastructure and support hardening of infrastructure and utility undergrounding, as appropriate.

Objective 4.4: Waste Reduction

The City shall promote waste reduction to support a sustainable community.

Policy 4.4.1: The City shall consider the elimination of use of single use plastics and polystyrene by the City, licensees operating on City property, and users of City facilities and at permitted events on City property.

Policy 4.4.2: The City shall strive to divert City construction and demolition waste as feasible.

Policy 4.4.3: The City shall assess the feasibility of implementing a residential composting program.

Policy 4.4.4: The City shall encourage commercial waste reduction through policies or incentives.

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PARKS, RECREATION AND OPEN SPACE ELEMENT

The purpose of the Recreation and Open Space Element is to plan for a comprehensive system of public and private sites for recreation, including, but not limited to, natural reservations, parks and playgrounds, parkways, beaches and public access to beaches, open spaces, and other recreational facilities.

Section 163.3177(4)(e), Florida Statutes

I. INTRODUCTION

Pinellas County has become one of the most attractive areas in the United States for those who seek warmth, sunshine, and abundant leisure and recreational opportunities. As one of Pinellas County's prime coastal municipalities, Treasure Island offers residents and visitors a unique natural setting. The shallow Gulf waters and natural resources of the city provide an attractive and readily accessible environment for recreational activities. Approximately 3.5 miles of beaches stretch along the Gulf of Mexico, providing year-round sunbathing and swimming for residents while attracting thousands of tourists each year. The scenic waters of the Gulf and Boca Ciega Bay are popular for boating, fishing, picnicking, and observing wildlife. In addition to these outdoor attractions, the city offers a wide variety of restaurants, shops, hotels, and other entertainment options.

Although the population is relatively stable in size, the process of maintaining and upgrading recreational resources is ongoing. The City of Treasure Island, along with other governmental agencies, shares in the responsibility of providing recreational opportunities and protecting open spaces. This element of the comprehensive plan assesses current opportunities, analyzes future needs, and contains goal, objective, and policy statements which will be used by the city to further the system of public and private recreation and open space sites available to the public.

II. INVENTORY OF EXISTING RECREATION AND OPEN SPACE FACILITIES

A. Existing Recreation Facilities

1. Resource-Based and User-Oriented Sites and Facilities

Outdoor recreation, broadly defined, is any leisure activity which takes place outdoors. Typically, the vast field of outdoor recreation is subdivided into two categories: "resource-based" and "user-oriented" (Florida Department of Environmental Protection, 1994).

Resource-based outdoor recreation is dependent on some particular element or combination of elements in the natural environment, such as a beach or a forest. Participants must travel to a suitable, naturally-occurring area; facilities cannot be located for user convenience. This category includes both active and passive types of activities, and tends to be informal rather than rule- or team-oriented. Examples of resource-based recreation include beach activities, boating, fishing, hiking, nature study, and visiting historical/archeological sites.

User-oriented activities, by contrast, tend to be structured and rule-oriented, and are often conducted as part of a local recreation program under the supervision of trained staff. Facilities for user-oriented recreation are part of the built environment, and most can be located in neighborhoods or urban centers for the convenience of users. Some common user-oriented activities include golf, tennis, basketball, football, and swimming pool use.

2. Resource-Based Recreation

There are many opportunities for resource-based recreation in Treasure Island. The most prominent recreational resources are the Gulf of Mexico and Boca Ciega Bay, which surround the city. Twenty-eight access points along the Gulf Beaches and Boca Ciega Bay offer a range of amenities, including rest rooms, showers, dune walk-overs, and concession stands. Boat ramps and fishing sites are found at the Bay access points on 84th, 99th, 100th, and 123rd Avenues.

3. User-Oriented Facilities

There are a number of activity-based recreation sites and facilities within Treasure Island, including:

- The Treasure Island Park and Community Center, located at 1 Park Place and 106th Avenue. The Center has picnic tables, a shelter, an exercise parcourse with 12 stations, a multi-purpose field, and a center that hosts numerous community events.
- The Treasure Island Golf, Tennis, and Recreation Center, located on Paradise Boulevard. Facilities include a par-3 executive golf course, a putting green, tennis courts, shuffleboard courts, a basketball goal, a volleyball court, a horseshoe pit, a clubhouse, an equipped playground, and picnicking areas. The center originally existed as two separate sites: the Paradise Isle Golf and Tennis Club, which was owned by the city and leased to a private agency, and the Paradise Island Playground. The city upgraded and combined the sites in 1994.
- Roselli Park, located at Second Street East and Capri Circle South. This park provides picnic tables, tennis courts, shuffleboard courts, a baseball/softball field, an equipped play area, a basketball goal, and a concession stand.
- The Boardwalk, located at the southern end of Sunset Beach.

The Recreation Department provides a number of programs and activities at these recreation centers. Past activities have included art classes, concerts, holiday parties, sporting events, and special events for children.

4. Recreation Facilities Levels of Service/Standards

In order to identify existing and future recreation needs, an inventory of recreation and open space lands was updated, and a population-based recreation standard was developed. Because many parks are suitable for both resource-based and user-oriented activities, the sites and facilities were first categorized by physical size, then by specific activity.

The standards adopted by the city were formulated by the Florida Department of Environmental Protection (1994) to provide guidance to local governments, and have been modified to meet the specific recreation needs of the community. For example,

handball/racquetball courts were removed from the list in accordance with citizen input. Other activities are already adequately served by regional facilities found outside of city limits, such as the football field at Boca Ciega High School. Still other facilities are supplied in abundance by the private sector, such as the swimming pools and shuffleboard courts found at many hotels and commercial recreation centers.

a. Recreation Site Guidelines

Site guidelines are a set of general criteria for determining the specific types and amounts of park lands necessary to accommodate the recreational needs of local communities. The criteria define the acreage, facility type and service area requirements for various types of community recreation sites and areas, and are shown in Table 1.

Table 1
Level-of-Service Standards For Parks and Open Space

Park Facility	Service Area/ Population Served	Facilities
Mini-Park	2 - 3 block area/2,500	Play apparatus areas, benches, and open space, landscaping, picnic tables optional.
Neighborhood Park	0.25 - 0.5 mile/5,000	Play apparatus areas, recreation buildings, sports fields, multi-purpose fields, senior citizen areas, landscaping, open space, free play areas.
Community Park	0.5 - 3 miles/5,000	All facilities found in the neighborhood park plus facilities to service the entire family. Pools, softball/baseball fields, tennis courts, play areas, picnic areas, passive and active recreation areas, and recreation buildings.
Open Space	1 acre/1,000	Passive recreation area, trails, and commemorative structures optional.
Beach	1 access/0.5 mile of	Walkways, parking, and rest rooms

Source: Florida Department of Environmental Protection, 1994

b. Facility Standards for Specific Activities

In order to adequately assess the recreational needs of a community, it is necessary to look not only at the need for different facilities, but also the need for particular types of activities within each facility. The adopted level-of-service standards for specific activities are presented in Table 2.

Table 2
Level-of-Service Standards for Specific Activities

Activity	Per Person Level-of-Service Standard
Baseball/Softball	1 field per 6,000
Basketball	1 court per 5,000
Beach Activities	1 mile beach per 25,000
Bicycling	1 mile of trail per 5,000
Boating	1 boat ramp/dock per 5,000
Fishing (from land)	1 site per 5,000
General Play	1 equipped play area per 10,000
Golf	1 9-hole course per 25,000
Jogging/Walking	1 exercise/parcourse trail per 15,000
Picnicking	1 acre per 6,000
Tennis	1 court per 2,000

Source: Florida Department of Environmental Protection, 1994

5. Existing Recreation Inventory

Table 3 presents an inventory of existing recreation and open space sites and facilities in the city, including information on ownership, location, access, facilities provided, and condition for each site. These sites are also geographically located on *Map R/OS-1: Public Facilities, Recreation Facilities, and Water-Dependent/Water-Related Facilities.*

Table 3
Recreation and Open Space Sites - Existing Inventory

Map No.	Site, Type, Name & Address	Mgmt/ Owner	Total Acres	Beach Areas	Age Equipment mments
COMMUNITY PARKS					
1	Municipal Beach E 1	M	3.4	N/A	Restrooms, Show rs
					Concession Stand
2	Treasure Island Tennis, Golf,	Y/M	15.0	N/A	8 Tennis CourtsE

	& Recreation Center 10315 Paradise				1 Par 3 (9 golf holes) 2 Shuffleboard Courts 1 Horseshoe Pit 1 Clubhouse w/ Storage 1 Putting Green 1 Basketball Goal 1 Volleyball Court 1 Equipped Play Area
NEIGHBORHOOD PARKS					
3	Treasure Island Park & Community Center 1 Park Place & 106th Ave.	M	4.0	N/A	Tables, 1 ShelterE 1 Community Center 1 Commem. Structure 1Exercise/Parcourse (12 stat.) 1 Multi-purpose Field 1 Equipped Play Area
4	Roselli Park 2nd St. E & Capri Circle So.	M	3.4	N/A	Tables, 2 Tennis Co G 1 2 Shuffleboard Courts 1 Baseball/Softball Field 1 Equipped Play Area 1 Basketball Goal
5	Treasure Island Beach Center 8000 W. Gulf Boulevard	M	1.03		1 Multipurpose Bui D Use to be med
MINI-PARKS					
6	82nd Ave. Mini Park 82nd Ave. & Gulf Blvd.	M	0.24	50' □ 75'	Tables
7	Beach Park Between 77th & 79th Ave.	M	0.9	300' □ 75'	None F
8	Bay Access/Mini Park 125th Ave.	M	0.33	55' □ 100'	1 Saltwater Board lk G 1 (30' Length) 1 Equipped Play Area

Map No.	**Site, Type, Name & Address**	**Mgmt/ Owner**	**Total Acres**	**Beach Areas**	**Equipment** **Age ents**
MINI-PARKS (continued)					
9	Kingfish Drive Park Kingfish Drive Boardwalk (20' Length)	M	0.25	N/A	3 Tables, 1 Shelter G1 1 Saltwater
10	Bay Access/Mini Park	M	0.1	60' □ 75'	Table G

	103rd Ave. on Boca Ciega Bay				
11	Bay Access/Mini Park	M	0.15	60' □ 75'	Table
	119th Ave. on Boca Ciega Bay				1 Saltwater Boardwalk (10' Length)
12	Bay Access/Mini Park	M	0.1	60' □ 75'	Table G
	127th Ave. on Boca Ciega Bay				
13	Bay Access/Mini Park	M		60' □ 75'	1 Table
	125th Ave. on Boca Ciega Bay				1 Boardwalk (30' □ 20')
SPECIAL PURPOSE FACILITIES					
14	Municipal Marina	M	3.4	N/A	2 Saltwater Boaralk1
	120 - 108th Ave. on Boca Ciega Bay				(70' Length), Tables, 1 Saltwater Marina (20 slips)
15	Bay Access/Boat Ramp	M	0.10	45' □ 105'	Tabl
	84th Ave. on Boca Ciega Bay	1 Saltwater Boardwalk (10' Length)			1 Saltwater Ramp (1 lane)
16	City Hall & Auditorium	M	8,542 sq. ft.	N/A	Conference Room
	120 - 108th Avenue				Auditorium, Art Guild
17	Bay Access/Boat Ramp	M	0.21	72' □ 130'	1 Saltwater Ramp (1
	100th Ave. on Boca Ciega Bay				
18 G 1	John's Pass Bridge Catwalk	S	0.10	N/A	2 Saltwater Catwal
	SR 699/Welch Causeway John's Pass at Gulf of Mexico				(700' Length)
19 G 1	Bay Access/Boat Ramp	M	0.10	50' □ 100'	1 Saltwater Ramp
	123rd Ave. on Boca Ciega Bay				(1 Lane)
CONSERVATION/PRESERVATION AREA					
20 ation	Elnor Island	M	10.5	N/A	None E
	John's Pass in Boca Ciega Bay				Area/Open Space

Recreation and Open Space Sites - Existing Inventory

Map No.	**Site, Type, Name & Address**	**Mgmt/ Owner**	**Total Acres**	**Beach Areas**	**Age Equipmen mments**
PUBLIC BEACH ACCESS					

21	Public Beach	M Recreation	180.0	Dimensions vary	Noneion/ pace/
22	Weckesser Park	M	0.02	80' □ 117'	4 Picnic TablesG
	88th Avenue o& Gulf Blvd.				
23	97th Avenue & Gulf Blvd.	M	0.05	30' □ 75'	None
24	99th Avenue & Gulf Blvd.	M	0.08	30' □ 110'	Dune walk-over (0G
25	100th Avenue & Gulf Blvd.	M	0.10	60' □ 75'	Dune walk-over (40' □ 40')
26	101st Avenue & Gulf Blvd.	M	0.10	60' □ 75'	None G1
27	102nd Avenue & Gulf Blvd.	M	0.09	50' □ 75'	Dune walk-over (50')G1
28	103rd Avenue & Gulf Blvd.	M	0.10	60' □ 75'	Dune walk-over (50')1
29	119th Avenue & Gulf Blvd.	M	0.21	30' □ 300'	None1
30	120th Avenue & Gulf Blvd.	M	0.21	60' □ 150'	Dune walk-over (')1
31	121st Avenue & Gulf Blvd.	M	0.09	60' □ 75'	Dune walk-over (40')
32	122nd Avenue & Gulf Blvd. (150') G 1	M	0.50	40' □ 120'	Dune walk-over
33	123rd Avenue & Gulf Blvd.	M (150')	0.75	50' □ 100' G 1	Dune walk-over
34	124th Avenue & Gulf Blvd.	M	0.55	40' □ 100'	Dune walk-over (1)1
35	125th Avenue & Gulf Blvd.	M	0.03	50' □ 30'	Dune walk-over (150') 1
36 1	126th Avenue & Gulf Blvd.	M	0.10	30' □ 150	Dune walk-over (40'
37	127th Avenue & Gulf Blvd.	M	0.50	50' □ 400'	None 1
38	Bay Access	M	0.10	60' □ 75'	None

Blind Pass Dr. &
Bayshore Dr. on Boca Ciega Bay

Recreation and Open Space Sites - Existing Inventory

Map No.	**Site, Type, Name & Address**	**Mgmt/ Owner**	**Total Acres**	**Beach Areas**	**ge Equipment**

Comments
PUBLIC BEACH ACCESS (continued)

39	Bay Access	M	0.1	60' □ 75'	None

~~87th Avenue on Boca Ciega Bay~~

~~40 Bay Access M 0.06 40 □ 70' None G~~

~~90th Avenue on Boca Ciega Bay~~

~~41 Bay Access M 0.7 15' □ 130' None G~~

~~95th Avenue on Boca Ciega Bay~~

~~42 Bay Access M 0.1 60' □ 75' 1 Table, 1 Boat Ramp,~~

~~99th Avenue on Boca Ciega Bay 1 Dock~~

~~43 Bay Access M 0.1 60' □ 75' None~~

~~101st Avenue on Boca Ciega Bay~~

~~44 Bay Access M 0.1 60' □ 75 1 Bench~~
~~G 1~~
~~102nd Avenue on Boca Ciega Bay~~

~~45 Bay Access M 0.1 60' □ 75' 1 Bench G~~

~~120th Avenue on Boca Ciega Bay~~

~~46 Bay Access M 0.1 60' □ 75' 1 Saltwater Boardwalk~~

~~G 1~~
~~121st Avenue on Boca Ciega Bay (30' □ 15'), 1 Dock, 1 Bench~~

~~47 Bay Access M 0.1 60' □ 75' 1 Bench~~

~~G 1~~
~~122nd Avenue on Boca Ciega Bay~~

~~48 Bay Access M 0.1 60' □ 75' 1 Saltwater Boardwalk~~

~~G 1~~
~~123rd Avenue on Boca Ciega Bay (10' length), 1 Boat Ramp~~
~~1 Dock (30')~~

~~49 Bay Access M 0.1 60' □ 75' 1 Bench~~

~~G 1~~
~~124th Avenue on Boca Ciega Bay~~

~~PRIVATE CLUB, COMMERCIAL, MISCELLANEOUS~~

~~50 Bilmar Beach Resort X 1.0 550' □ 50' 2 Swimming Pools~~

~~E 1~~
~~10650 Gulf Blvd. (60' □ 40', 45' □ 25')~~

~~51 John's Pass Marina X 3.0 N/A 1 Saltwater Marina~~

~~E 1~~
~~12795 Fish Drive (14 slips/moorings)~~

on John's Pass (140 dry dock)

Recreation and Open Space Sites - Existing Inventory

Map No.	Site, Type, Name & Address	Mgmt/ Owner	Total Acres	Beach Areas	Age Equipmentts
	PRIVATE CLUB, COMMERCIAL, MISCELLANEOUS (continued)				
52	Jolly Roger Boatel	X	1.0	N/A	1 Saltwater Marina
	11525 Gulf Blvd. on Intracoastal Waterway				(6 slips/moorings)
53	Treasure Island Tennis	Y	1.5		14 Tennis Courts
	& Yacht Club				1 Saltwater Marina
	400 Treasure Island Causeway on Intracoastal				(36 slips/moorings)
54	Key Capri	Y	1.0		1 Saltwater Marina
	Key Capri on				(36 slips/moorings)
	Gulf of Mexico				1 Fishing Pier
55	Capri Lagoons Club	Y	1.0		1 Saltwater Marina
	12500 Capri Circle N. on Gulf of Mexico				(14 slips/moorings)
56	Paradise Island Towers	Y	1.0		1 Saltwater MarinaE
	10355 Paradise Boulevard				(12 slips/moorings)
57	Bay Breeze	X	DK	N/A	1 DockG
	10109 Gulf Boulevard on Bay				
58	Beach Club of T.I.	X	DK	N/A	1 Doc
	8516 E. Bay Drive on Gulf				
59	Beach Villas of T.I.	X	DK	N/A	Shuffleboard
	10280 Gulf Boulevard on Gulf				
60	Blind Pass Lagoons	X	DK	N/A	Marina, Pool
	9805 Harrell Avenue				
61	Blue Waters	X	DK	N/A	ShuffleboardG
	8105 W. Gulf Boulevard				

62	Caravel 12405 3rd St. E	X	DK	N/A	Dock	G
63	Capri Harbor 12200 2nd St. E		X	DK	N/A	Pool, Dock
G	1					
64	Capri Isle Garden 250 & 280 126 Ave.		X	DK	N/A	Dock
G	1					
65	Chalet Capri 275 Capri Circle		X	DK	N/A	Pool, Dock
G	1					

Recreation and Open Space Sites - Existing Inventory

Map No.	Site, Type, Name & Address		Mgmt/ Owner	Total Acres	Beach Areas	Age Equipmen dments
PRIVATE CLUB, COMMERCIAL, MISCELLANEOUS (continued)						
66	Capri Cove 11700 Capri Circle S		X	DK	N/A	Dock
67	Capri Landings 11775 116th Ave.		X	DK	N/A	Pool, Dock
68	Club Capri 175 116th Ave.		X	DK	N/A	Pool, Dock
69	Chanticleer 290 107th Ave.		X	DK	N/A	Dock
70	Copa Palms 11440 1st St. E		X	DK	N/A	Dock, Poo G
71	Courtyard Villas 279 104th Ave.	X	DK	N/A	Dock, Pool	
72	Fairlane 129 104th Ave.		X	DK	N/A	Dock G
73	Gulf to Bay Lagoons 10301 Gulf Blvd.		X	DK	N/A	Dock, Pool 1
74	Isla Del Capri 11655 3rd St. E		X	DK	N/A	Pool, Dock
75	Island Sun		X	DK	N/A	Dock, Pool

	12525 3rd St. E				
76	LaCosta Brava	X	DK	N/A	Pool, Dock
	505 Plaza Seville Ct.				
77	Lagoon Lane Condo	X	DK	N/A	Pool, Dock
	11901 Lagoon Lane				
78	Landt-Tri	X	DK	N/A	Dock
	225 116th Ave.				
79	Lands End	X	DK	N/A	Pools, Jacuzzi, Boar
	7500 Bayshore Dr.				Tennis, Volleyball

Recreation and Open Space Sites - Existing Inventory

Map No.	Site, Type, Name & Address	Mgmt/ Owner	Total Acres	Beach Areas	Age Equipment ts
PRIVATE CLUB, COMMERCIAL, MISCELLANEOUS (continued)					
80	Malyn	X	DK	N/A	Pool, Dock
	282 107th Ave.				
81	Mansions by the Sea	X	DK	N/A	Tennis, BoardwalkG
	7600 Bayshore Dr.				Pools, Shuffleboard
82	Mohawk Villas	X	DK	N/A	Pool
	8422 W Gulf Blvd				
83	Open Water Condo	X	DK	N/A	Dock
	275 110th Ave.				
84	Outrigger Condo	X	DK	N/A	Dock
	283 104th Ave.				
85	Pointe Capri	X	DK	N/A	Pool, Dock
	184 117th Ave.				
86	Pointes West	X	DK	N/A	Pool, DockG
	12000 Capri Circle S				
87	Porto Fino	X	DK	N/A	Dock

	143 94th Ave.				
88	Sanctuary	X	DK	N/A	Dock
	12495 3rd St. E				
89	Sand Dunes	X	DK	N/A	Pool
	200 120th Ave.				
90	Smugglers Cove	X	DK	N/A	Pool, Dock
	215 85th Ave.				
91	St. James	X	DK	N/A	Pool, Dock
	285 107th Ave.				
92	Sun Ketch	X	DK	N/A	Pools
93	Sunset Cove	X	DK	N/A	Pool, Dock
	8567 W Gulf Blvd.				
94	Sunset Chateau	X	DK	N/A	PoolG
	8470 W Gulf Blvd.				

Recreation and Open Space Sites - Existing Inventory

Map No.	**Site, Type, Name & Address**	**Mgmt/ Owner**	**Total Acres**	**Beach Areas**	**Equipment**
PRIVATE CLUB, COMMERCIAL, MISCELLANEOUS (continued)					
95	Tides of Capri E.	X	DK	N/A	Dock, Pool G
	12055 3rd St. E				
96	Tides of Capri W.	X	DK	N/A	Dock, Pool
	11650 Capri Cir. S				

97	Treasure Island Villas 10365 Paradise Blvd.	X	DK	N/A	Pool, Docks
98	T. I. Lagoons 9901 1st St. E	X	DK	N/A	Pool, Dock
99	Treasure Sands 11000 Gulf Blvd.	X	DK	N/A	Pool G
100	Treasure of Capri 255 Capri Circle N	X	DK	N/A	Pool, Marina
101	Village of Paradise Is Intracoastal Waterway	X	DK	N/A	Pool, Docks
102	Westwind 9715 Harrell Ave.	X	DK	N/A	Dock
103	Whitehart Condo 9755 Harrell Ave.	X	DK	N/A	Pool, Dock
104	135 Sunset Place 135 92nd Ave.	X	DK	N/A	Dock

Footnotes:
1 Management/Ownership Code: F - federal, S - state, C - county, M - municipal, Y - club, X - commercial, Z - non-profit organization, SD - special district
2 Condition Code: E - excellent, G - good, F - fair, NI - needs improvement, U - under construction, ND - not developed
3 Age Group Served Code: 1 - all, 2 - children, 3 - youth, 4 - adults, 5 - seniors, 6 - children and youth

6. Recreation for All Age Groups

All parks and recreational facilities are not used equally by the same groups of people. Persons of different age groups tend to prefer different types of recreation. Children often prefer to play active games and team sports with other children; senior citizens tend to enjoy dancing, arts, and crafts, and some prefer seniors-only activities. The Recreation Department addresses these age-specific needs, offering recreational classes, clubs, and events which appeal to a variety of age groups. The resource-based parks, while providing separate areas for recreation activities, are designed for all age groups to enjoy. Table 3 indicates the age groups served by each park and facility.

7. Recreation and the Business Community

While the city provides residents and tourists with many recreational opportunities, the business community also adds a vital component to recreation and leisure in Treasure Island. Examples of privately-owned recreational facilities include the Bilmar Beach Resort, John's Pass Marina, Jolly Roger Boatel, Treasure Island Tennis and Yacht Club, Key Capri, Capri Lagoons Club, Blind Pass Lagoons, and Paradise Island Towers. Private facilities are also inventoried in Table 3.

8. Recreation for Visitors

The Florida tourism industry, which draws visitors from all over the United States as well as Canada and Europe, is dependent on the state's favorable climate and abundant natural resources. As a barrier island community, Treasure Island possesses many of the features which draw Florida vacationers: miles of beaches, hotel, motel, and condominium accommodations, dining, night-life, shopping, popular attractions, and recreational opportunities on both the Gulf of Mexico and Boca Ciega Bay. These same resources attract Pinellas County residents from outside the city, who also contribute an important source of revenue and economic stimulus. When planning for the use of recreational and open space facilities, therefore, the needs of tourists and visitors must be taken into account.

The city encourages tourism through its membership in the Greater Gulf Beaches Chamber of Commerce, which prints informational brochures and holds promotional events for a consortium of local beach communities. In addition, the city extends nearly all of its recreational facilities to residents and visitors equally. Beaches, parks, open space areas, and all-ages events are accessible to all for free or for the same fee; only the golf course and some children's events charge a differential fee for nonresidents.

9. Recreation for Special Population Groups

Special population groups served by the City of Treasure Island include the physically disabled and members of various age groups. Parking facilities for disabled drivers are provided at municipal parks and facilities, and programs offered by the Recreation Department are accessible to patrons of all ages and levels of physical ability. Ramps, safety railings, modified restroom facilities, specially equipped playgrounds, and other accommodations allow safe use of the facilities by all.

10. Public Participation

Because recreational facilities are designed for use by the public, it is important for local governments to involve the public in the recreational planning process. Identifying citizens' needs and preferences in the early stages of planning leads to more effective use of financial resources, and decreases conflict over project choices.

The city encourages public participation through its Facilities Committee, a group of citizens, business people, and architects who provide the city with input regarding planned recreational improvements, and through public hearings which are held whenever a new project is considered. Based on citizen feedback, the city has canceled plans to build a handball/racquetball court which was recommended by the previous plan, and has concentrated on improving golf and tennis facilities.

11. Bicycle Recreation

Statewide, bicycle riding is the third most popular outdoor pastime among residents and tourists, after saltwater beach activities and pool swimming. The Tampa Bay area alone is projected to need 677.85 linear miles of new bike lanes and trails by the year 2000 to keep up with user demand (Florida Department of Environmental Protection, 1994). To help meet this need, Pinellas County has adopted the *Pinellas Bikeways Plan*, which seeks to coordinate the efforts of the County and local municipalities in creating a countywide network of bicycle routes. Projects will be financed through Penny for Pinellas and other local, state, and federal funding sources. Included in the plan is a proposed Gulf Beaches Bike Path, which would extend from Sand Key Park to the Pinellas Bayway, passing through Treasure Island. The route could include expanded sidewalks, bike lanes along existing roads, or dedicated bike trails, and could incorporate municipal, county, or state rights-of-way (Pinellas County Department of Planning, 1996).

Treasure Island is a popular destination for the many bicyclists who use Gulf Boulevard as a thoroughfare. Gulf Boulevard is an FDOT right-of-way, on which the city is unable to designate bike lanes. However, the city has a beautification project planned for this road, and has created 1.5 miles of bike lanes along three other rights-of-way, Capri Boulevard, Paradise Boulevard, and 115th Avenue. In addition, plans are being evaluated for an approximately four-mile-long pedestrian and bike trail, which would connect beachfront sidewalk areas with Gulf Boulevard.

To complement these projects, the city promotes safe bicycling in other ways, such as regular maintenance of sidewalks and vehicle lanes which receive bicycle travel. Where feasible, newly constructed or resurfaced roads can also be made "bicycle friendly" by the allocation of surplus space to the sidewalk or outside vehicle lane.

B. Existing Open Space

For the purposes of this plan, open space will be defined as undeveloped lands that are suitable for passive recreation or conservation uses, and which are available to the public for free or for a small fee. In addition to providing recreational opportunities, open space enhances community design by allowing trees and plants to grow, providing buffering between conflicting land uses, protecting homeowner privacy, and preserving views of the Gulf and Bay. Existing open spaces in Treasure Island were inventoried and classified according to function: passive recreation, conservation, or corridor open space.

1. Recreation Open Space

The primary role of passive recreational lands is to provide resource-based recreation. This classification overlaps the park designation and includes parks that were established for the protection of historic and/or natural resources or aesthetic beauty. There are approximately 33 acres of recreation open space in the city. *Map R/OS-1, Public Facilities, Recreation Facilities, and Water-Dependent/Water-Related Facilities* shows the location and extent of passive recreation open space. In addition, all of the beach acreage considered conservation open space is open to the public for recreation.

2. Conservation Open Space

Lands not suitable for development due to their environmental importance are classified as conservation open space. These areas include lakes, rivers, wetlands, floodplains, and areas dedicated to future resource development. There are 126 acres of conservation open space in the city, which consists of 20 acres on two spoil islands and 115.5 acres of public beach seaward of the Coastal Construction Control Line.

3. Corridor Open Space

Corridor open spaces are areas through which people travel but which are also designed for aesthetic enjoyment and leisure. These corridors can provide a linkage between recreational facilities and residential or commercial areas. Examples of corridor open space in Treasure Island include the rights-of-way along Gulf Boulevard and the public beach access points.

C. Natural Reservations

Rule 9J-5, F.A.C., defines natural reservations as those areas designated for conservation purposes, and operated by federal, state, regional, or local government or non-profit agencies. These areas include national and state parks, and lands purchased under the Save Our Coast, Conservation and Recreation Lands, Save Our Rivers, or similar programs. Also included are sanctuaries, preserves, monuments, archaeological sites, historic sites, wildlife management areas, National Seashores, and Outstanding Florida Waters. Boca Ciega Bay is an Outstanding Florida Water, an Aquatic Preserve, and a part of the Tampa Bay National Estuary Program.

1. Outstanding Florida Waters

The Outstanding Florida Waters (OFW) program is administered by the Department of Environmental Protection. With an OFW designation, the Department cannot issue permits that would allow direct or indirect pollutant discharges which would lower existing water quality. Additionally, permits for dredging and filling must meet OFW requirements. Boca Ciega Bay is designated as a Class III Outstanding Florida Water, which can be used for body contact activities such as swimming or water skiing as well as the maintenance of a productive fish and wildlife population.

2. Archaeological Site

The city has one prehistoric archaeological site listed in the *Florida Master Site File*, located in the John's Pass area. However, this site has since been covered by construction and is inaccessible.

3. Tampa Bay National Estuary Program

The Tampa Bay National Estuary Program was created in 1991 under the Clean Water Act. Administered by the U.S. Environmental Protection Agency (EPA) with local support from the Tampa Bay Regional Planning Council, the program's purpose is "to assist the community in developing a comprehensive plan to restore and protect Tampa Bay." Participating local governments must abide by the program's *Comprehensive Conservation and Management Plan*, which has set goals of reducing pollutants and

restoring native vegetation. As a part of the larger Tampa Bay estuary, Boca Ciega Bay is also protected by this program.

4. Boca Ciega Bay Aquatic Preserve

The Boca Ciega Bay Aquatic Preserve was established under the provisions of Section 258.397, F.S. Designed to protect water quality and marine life, the program prohibits dredging and spoiling activities in the Bay unless they are approved by the Pinellas County Water Navigation Control Authority. Construction of seawalls is also prohibited waterward of the mean high water line.

III. EXISTING AND PROJECTED NEEDS

The need for recreational facilities is determined by comparing the total population (permanent plus seasonal) with the level-of-service standard for each type of facility. For example, a city with a population of 10,000 and a standard of one mini-park per 2,500 persons would have a need for four mini-parks. Because populations change and increase over time, it is necessary to compare level-of-service standards against projected future populations at various intervals.

For this study, the adopted level-of-service standards presented in Table 1 were compared with population estimates and projections for Treasure Island through the year 2010, as discussed in the *Future Land Use Element*. Projections for the years 2000, 2005, and 2010 were used to calculate the minimum number of various park facilities needed for those years. These numbers were compared against the numbers of existing park facilities in each category, and the total number of needed new facilities was determined. As shown in Table 4, the city has adequate park facilities to meet level-of-service standards through the year 2010.

Table 4
Existing and Projected Need for Parks and Open Space

Park Type	Per Person Level-of-Service Standard	Minimum Existing Facilities Needed*	Minimum Facilities Needed by 2000**	Minimum Facilities Needed by 2005†	Minimum Facilities Needed by 2010††	Existing Facilities	Total New Facilities Required
Mini	1 per 2,500	5	5	5	5	7	0
Neighborhood	1 per 5,000	2	2	2	2	2	0
Community	1 per 5,000	2	2	2	2	2	0
						33 acres	0 acres

Park Type	Per Person Level-of-Service Standard	Minimum Existing Facilities Needed*	Minimum Facilities Needed by 2000**	Minimum Facilities Needed by 2005†	Minimum Facilities Needed by 2010††	Existing Facilities	Total New Facilities Required
Open Space	1 acre per 1,000	13 acres	13.1 acres	13.1 acres	13.2 acres		
Beach Access	1 per ½ mile of shoreline	7	7	7	7	28	0

* Based on an estimated 1995 total (permanent + seasonal) population of 13,054.
** Based on a projected 2000 total (permanent + seasonal) population of 13,114.
† Based on a projected 2005 total (permanent + seasonal) population of 13,149.
†† Based on a projected 2010 total (permanent + seasonal) population of 13,169.
Source: Florida Department of Environmental Protection, *Outdoor Recreation in Florida,* 1994 Pinellas County Department of Planning, *Pinellas County Population Projections, 1995-2030*, Appendix A, 1995

As with parks and open space, the adopted level-of-service standards presented in Table 5 were compared with population estimates and projections through the year 2010. The analysis indicates that the city has adequate facilities to meet level-of-service standards for specific recreational activities through the year 2010.

Table 5
Existing and Projected Need For Specific Activities

Activity	Per Person Level-of-Service Standards	Minimum Existing Facilities Needed*	Minimum Facilities Needed by 2000**	Minimum Facilities Needed by 2005†	Minimum Facilities Needed by 2010††	Existing Facilities	Total Additional Facilities Needed
Baseball/Softball	1 field/6,000	2	2	2	2	2	0
Basketball	1 court/5,000	2	2	2	2	2	0
Beach Activities	1 mile beach/25,000	1	1	1	1	3.5	0
Bicycling	1 mile trail/5,000	2	2	2	2	3	0

Activity	**Per Person Level-of-Service Standards**	**Minimum Existing Facilities Needed ***	**Minimum Facilities Needed by 2000****	**Minimum Facilities Needed by 2005†**	**Minimum Facilities Needed by 2010††**	**Existing Facilities**	**Total Additional Facilities Needed**
Boating	1 dock/5,000	2	2	2	2	2	0
Fishing (land)	1 site/5,000	2	2	2	2	4	0
General Play	1 play area/10,000	1	1	1	1	4	0
Golf	1 9-hole course/25,000	1	1	1	1	1	0
Jogging/Walking	1 parcourse/15,000	1	1	1	1	1	0
Picnicking	1 acre/6,000	2	2	2	2	2	0
Tennis	1 court/2,000	6	6	6	6	12	0

* Based on an estimated 1995 total (permanent + seasonal) population of 13,054.
** Based on a projected 2000 total (permanent + seasonal) population of 13,114.
† Based on a projected 2005 total (permanent + seasonal) population of 13,149.
†† Based on a projected 2010 total (permanent + seasonal) population of 13,169.
Source: Florida Department of Environmental Protection, *Outdoor Recreation in Florida,* 1994 Pinellas County Department of Planning, *Pinellas County Population Projections, 1995-2030*, Appendix A, 1995

Most recreational facilities in Treasure Island are focused on the Gulf of Mexico, which draws a large number of residents as well as many local visitors and tourists. It is of the utmost importance to keep these facilities adequately maintained. The analysis shows that the city has adequate recreational facilities to meet the needs of the community through the year 2010. The city meets adopted level-of-service standards for parks, open space, and specific recreational activities, and anticipates no deficiencies for the remainder of the planning period.

The city will continue to obtain citizen input into its recreational planning process, and to revise its level-of-service standards to reflect community interest. For example, the demonstrated popularity of tennis in the community may require the level-of-service standard to be increased in the future, in order to keep up with user demand. In addition, the city may choose to address the lack of facilities for in-line skating, which is popular among residents but currently illegal on many roads and sidewalks.

IV. GOALS, OBJECTIVES, AND POLICIES

~~**A. Introduction**~~

~~Pursuant to Section 163.3177(6)(e), Florida Statutes (F.S.), the following represents the recreation and open space goals, objectives, and policies of the City of Treasure Island. These goals, objectives, and policies are intended to address the establishment of a long-term end towards which the recreation programs and activities of the community are ultimately directed.~~

~~**B. Nonapplicable Items**~~

~~Based on the findings contained in this element, it has been determined that all items contained in Section 163.3177(6)(e), F.S., are applicable.~~

~~**C. Implementation**~~

~~Unless otherwise stated, the implementation of objectives and policies contained in Section D shall be through the application of the land development regulations.~~

Introduction:

The Parks, Recreation and Open Space Element commits the City to maintaining proper care of its parks and open spaces, ensuring quality spaces for activities to provide opportunities for community unity and healthy lifestyles. The City commits to ensuring equity, accessibility, and equality in community programming in order to enhance the quality of life for residents and visitors of all ages and abilities.

~~**D. Local Goals, Objectives, and Policies**~~

Goal:

The City shall ensure the provision, protection, and maintenance of a coordinated, efficient, and accessible system of public recreational parks and facilities and promote private recreational opportunities which shall meet the needs of current and future residents, visitors, and tourists.

Objective 1.1: ~~Level-of-Service~~ Standards

The City, in cooperation with other governmental agencies, shall ~~continue to~~ provide and maintain a system of accessible open spaces, parks, and recreational facilities, including ~~access to them and to~~ beaches and shores, ~~which~~ to meet or exceed user needs.

Policy 1.1.1: The City shall adopt a Master Park Plan to ensure user needs are addressed and facilities maintained. ~~standards shown in Tables 1 and 2 shall be the adopted level-of-service standards for park and recreation facilities in the City of Treasure Island.~~

Table 1
Level-of-Service Standards for Parks and Open Space

Park Facility	Service Area/ Population Served	Facilities
Mini Park	2 - 3 block area/2,500	Play apparatus areas, benches, and open space, landscaping, picnic tables optional.
Neighborhood Park	0.25 - 0.5 mile/5,000	Play apparatus areas, recreation buildings, sports fields, multi-purpose fields, senior citizen areas, landscaping, open space, free play areas.
Community Park	0.5 - 3 miles/5,000	All facilities found in the neighborhood park plus facilities to service the entire family including: softball/baseball fields, tennis courts, play areas, picnic areas, passive and active recreation areas, and recreation buildings.
Open Space	1 acre/1,000	Passive recreation area, trails, and commemorative structures optional.
Beach	1 access/0.5 mile of	Walkways, parking, and rest rooms optional.

Table 2
Level-of-Service Standards for Specific Activities

Activity	Per Person Level-of-Service Standard
Baseball/Softball	1 field per 6,000
Basketball	1 court per 5,000
Beach Activities	1 mile beach per 25,000
Bicycling	1 mile of trail per 5,000
Boating	1 boat ramp/dock per 5,000
Fishing (from land)	1 site per 5,000
Golf	1 9-hole course per 25,000
Jogging/Walking	1 exercise/parcourse trail per 15,000
Picnicking	1 acre per 6,000

~~Activity~~	~~Per Person Level-of-Service Standard~~
~~Tennis~~	~~1 court per 2,000~~

Policy 1.1.2: Land set aside by new development for parks, recreation or open space purposes shall ~~be determined suitable for that purpose~~ be of a sufficient size and/or condition suitable for utilization as a parks, recreation, or open space, as applicable. This shall be a criteria evaluated during the site planning process, if needed. ~~and should not be land which is remaining after development.~~

Policy 1.1.3: The designation and acquisition of recreation and park sites shall be in accordance with long-range comprehensive plans for C~~c~~ity development and redevelopment.

Policy 1.1.4: The City shall ensure that recreation and historic park sites be held inviolate against diversion to other uses, except in instances of overriding public benefit.

Policy 1.1.5: The City shall encourage a variety of recreational activities, including the utilization of unique natural features and scenic areas.

Policy 1.1.6: The City shall ~~continue to~~ support the promotional efforts to attract visitors and the utilization of year-round recreational tourist sites and activities.

Policy 1.1.7: ~~The City shall create a dedicated pedestrian and bicycle trail, as feasible, which shall be coordinated with the *Pinellas County Bikeways Plan*.~~ The City shall strive to enhance multimodal transportation connectivity to parks and open space facilities, consistent with the Mutimodal Transportation Element of this comprehensive plan, and coordinate, as feasible, with Pinellas County's regional multimodal transportation plans.

Policy 1.1.8: The City shall coordinate with neighboring municipalities to provide shared parks and recreational facilities for its residents.

~~Measure:~~ ~~Parks and recreation facility standards met~~

Objective 1.2: Public and Private Recreation

The City shall ~~continue to~~ coordinate public and private recreation resources.

Policy 1.2.1: The City ~~shall encourage~~ will include public participation in park and recreation planning.

Policy 1.2.2: The City, along with local businesses and development authorities, shall encourage coordination with local art and cultural organizations in local planning and redevelopment efforts. The City shall encourage public art by establishing a list of locations for future public art installments in parks, open spaces, and public spaces.

Policy 1.2.3: To ensure that any privately held open spaces provided to serve the public are of adequate size and can accommodate required amenities, the City shall establish minimum dimensions and configurations, among other design standards as applicable, for public open space as part of its land development regulations.

~~**Measure:** Private sector participation in recreational planning~~

Objective 1.3: Protection from Incompatible Land Uses

Lands designated as Recreation/Open Space or Preservation will ~~continue to~~ be protected from incompatible land uses.

Policy 1.3.1: The City shall adopt land development regulations which includes specific open space definitions and standards, ~~landscape and signage,~~ provides for the protection of open space and natural vegetation, and defines ~~as well as~~ ~~the~~ appropriate uses of open space and view corridors for buffering between land uses.

Policy 1.3.2: Open space ~~in parks~~ shall be maintained to protect and preserve native habitats and provide passive recreation opportunities as appropriate.

Policy 1.3.3: The City shall strive to use ~~O~~open space ~~shall be used~~ to buffer incompatible recreational activities or land uses.

Policy 1.3.4: The City may acquire and shall, within its jurisdiction, protect and maintain natural conservation and preservation lands ~~reservations~~.

~~**Measure:** Implementation of program policies addressing incompatible land uses~~

Objective 1.4:

The City shall ~~continue to~~ be responsive to the recreational needs of the permanent and seasonal population.

Policy 1.4.1: Access to park and recreation facilities and services shall be provided for all age groups, the disabled, and the economically disadvantaged, where feasible.

Policy 1.4.2: Parking facilities for disabled drivers and bicyclists shall be provided at parks and other recreation facilities, where feasible.

Policy 1.4.3: The provision of adequate public beach access shall be considered requisite to any and all shoreline development.

Policy 1.4.4: Public access to identified recreation sites shall be ensured and shall be designed to protect the integrity of ~~natural features including~~, where present, beaches and shores.

Policy 1.4.5: Encourage the use of adaptation strategies for planning and design of parks and open spaces in areas vulnerable to sea level rise and high tides in a manner that can help

serve multiple functions, such as: recreational; enhanced water quality; ecosystem restoration; and coastal flooding accommodation.

Policy 1.4.6: The City will, when feasible, improve accessibility and linkage for mobility impaired populations by upgrading the existing infrastructure that provides access to and guidance within parks. Americans with Disabilities Act (ADA) accessibility requirements guidelines will be met or exceeded, when feasible, at every park or facility location.

~~**Measure:** Adequate accessibility to parks and recreation facilities~~

Objective 1.5: Economic Efficiency and Sustainability

The City shall ~~continue to~~ provide open space, parks, and recreation facilities in an economically efficient and sustainable manner.

~~**Policy 1.5.1:** The land development regulations shall stipulate that new residential developments or redevelopments provide for the future recreation and open space needs created by the development.~~

Policy 1.5.2~~1~~: The City shall preserve, maintain, and enhance existing parks and recreation facilities through fiscal budgeting for programming and capital improvements, adopted fee schedules, and grants. ~~the use of adequate operating budgets, user fees, and proper management techniques.~~

Policy 1.5.3~~2~~: The City shall include funds for the acquisition and development of C~~c~~ity recreation sites in its Capital Improvements Program.

Policy 1.5.3: The City will consider and implement, if appropriate, a plan that prioritizes specific parks and open space in which to install renewable energy infrastructure.

Policy 1.5.4: The City shall integrate green design strategies into all new open space, parks, recreational, and preservation land facilities and structures.

Policy 1.5.5: The City shall consider maintaining a management program for invasive or exotic beach vegetation.

Policy.1.5.6: The City shall utilize where possible Florida Friendly™ or natural landscaping in it parks, open space, and recreational facilities.

~~**Measure:** Parks and recreation facilities cost assessment~~

Objective 1.6: Open Space ~~Character~~

The City shall ~~continue to~~ maintain or enhance the community's open space ~~character~~.

Policy 1.6.1: The City shall ~~continue to~~ maintain areas for parking and other supporting facilities in locations related to access ways to the public beaches and existing or proposed recreational facilities along the beaches.

Policy 1.6.2: The City shall ~~continue to~~ protect beaches as recreation and open space areas.

Policy 1.6.3: The City shall develop and incorporate into the land development regulations creative techniques aimed at preserving the access to and view of the beach and other recreational facilities by all residents of and visitors to this community.

Policy 1.6.4: The City shall work with Pinellas County and other appropriate governmental agencies to ensure and maintain public beach access.

Policy 1.6.5: The City shall install signs at appropriate locations identifying ingress and egress points to and from the Gulf of Mexico.

~~**Measure:** Maintenance of recreation areas and number of public beach access points~~

~~References~~

~~City of Treasure Island,~~

~~*Treasure Island Comprehensive Plan*, 1989.~~

~~*Treasure Island Evaluation and Appraisal Report*, September 1996.~~

~~Pinellas County Department of Planning,~~

~~*Pinellas County Metropolitan Planning Organization Bikeways Plan*, December 1996.~~

~~Department of Planning, *Pinellas County Population Projections, 1995-2030, App. A*, 1995.~~

~~Department of Planning, *Guide to the Pinellas Trail*, Tenth Edition, Fall 1997.~~

~~*Pinellas County Comprehensive Plan*, 1989.~~

~~State of Florida,~~

~~*Chapter 163.3177, Florida Statutes*, 1994.~~

~~*Rule 9J-5, Florida Administrative Code*, 1994.~~

~~Department of Environmental Protection, Division of Recreation and Parks, Office of Park Planning, *Outdoor Recreation in Florida*, 1994.~~

~~Tampa Bay National Estuary Program, *Charting the Course for Tampa Bay*, December 1996.~~

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INTERGOVERNMENTAL COORDINATION ELEMENT

~~*The purpose of the Intergovernmental Coordination Element is to identify and resolve incompatible goals, objectives, policies, and development proposed in local government comprehensive plans and to determine and respond to the needs for coordination processes and procedures with adjacent local governments, and regional and state agencies.*~~
~~*Rule 9J-5.015, Florida Administrative Code*~~

~~I. INVENTORY~~

~~A. Identification of Coordinating Entities~~

~~Pursuant to Rule 9J-5.015, F.A.C., The following organizations, utilities and governmental entities have been identified as being involved in the planning and coordination aspect of the *City of Treasure Island Comprehensive Plan*:~~

~~1. Adjacent Municipalities~~

~~a. City of Madeira Beach~~
~~b. City of St. Petersburg~~
~~c. City of St. Pete Beach~~

~~2. Pinellas County~~

~~a. Metropolitan Planning Organization (MPO) Forward Pinellas~~
~~b. Pinellas County School Board~~
~~c. Pinellas County Board of County Commissioners~~
~~d. Pinellas County Fire Protection Authority~~
~~e. Pinellas County Planning Council (PPC)~~
~~f. Pinellas County Utility System (PCUS)~~
~~g. Pinellas County Emergency Operations Center~~
~~h. Pinellas County Water and Navigation Control Authority~~

~~3. Regional Authorities~~

~~a. Tampa Bay Regional Planning Council (TBRPC)~~
~~b. Southwest Florida Water Management District (SWFWMD)~~
~~c. West Coast Regional Water Supply Authority (WCRWSA) (Tampa Bay Water)~~

~~4. State Agencies~~

~~a. Department of Transportation (DOT)~~
~~b. Department of Environmental Protection (DEP)~~
~~c. Department of Community Affairs (DCA) Department of Economic Opportunity (DEO)~~
~~d. Department of Education~~
~~e. Department of Children and Families~~

f. Department of Commerce
g. Executive Office of the Governor (EOG)
h. Department of State

5. Public/Private Utilities

a. Florida Power Corporation
b. General Telephone Company of Florida
c. Time Warner Cable
d. Pinellas County Utilities
e. Duke Energy
f. Teco People's Gas

II. EXISTING COORDINATION MECHANISMS

Pursuant to Rule 9J-5.015(1)(a), F.A.C., a A brief description of existing coordination mechanisms, where applicable, and the nature of the relationship (regulatory, advisory, etc.) is provided in the following text.

A. Existing Contracts/Agreements

Currently, the City of Treasure Island has ten agreements with various entities for the provision of services to the city including agreements with Duke Energy and Teco People's Gas Company. The city also maintains mutual aid agreements for police protection between the Treasure Island Police Department and the Madeira Beach Police Department, St. Petersburg Police Department and St. Petersburg Beach Police Department.

1. Ordinance Number 491 grants a certificate of convenience and necessity franchise to Time Warner Cable, Inc. to operate and maintain a Community Antenna Television System in the City of Treasure Island. The city and the cable company coordinate and consult when maintenance or construction of the cable system is necessary, or when those activities require construction or alteration of easements and rights-of-way.

2. Ordinance Number 227 grants an electric franchise to Florida Power Corporation (FPC), and authorizes FPC to construct, operate and maintain the facilities required to provide electric service to the residents and businesses of the city. The city receives a franchise fee from FPC, and both parties coordinate and communicate when maintenance or construction of the electrical transmission system is necessary, and when activity will occur in easements and rights-of-way. The Public Works Department is the office with primary coordination responsibility.

3. Ordinance Number 165 grants a franchise to General Telephone Company (GTE) of Florida to construct, operate and maintain the facilities necessary to provide telecommunications systems for public and private use. The city receives a franchise fee from GTE, and both parties coordinate and consult when maintenance or construction of the telephone system is necessary, or when activity will occur in easements and rights-of-way.

4. Ordinance Number 269 amends Ordinance Number 165 to commit GTE to pay the city, as consideration for the grant of the franchise, one percent of its gross local service revenues derived during each quarter of the calendar year.

5. An agreement with Pinellas County to perform maintenance services for traffic control signals in the corporate limits of the City of Treasure Island. This service agreement is coordinated by the City Manager.

6. An agreement with the city of St. Petersburg to treat total wastewater flow at the Northwest Treatment Plant of St. Petersburg for a period of 20 years. Under the agreement the city becomes a wholesale user of the sewage treatment plant. This service agreement is coordinated by the public works department and stipulates the charges for wastewater treatment services.

7. An agreement between the city and the City of St. Petersburg regarding the maintenance expense of the joint sewer force main extending from 79th Street and Treasure Island Causeway in the City of St. Petersburg to the Pasadena Pump Station. This maintenance agreement sets forth the conditions for the allocation of the costs of maintenance and operation of the force main. It is coordinated through the public works department.

8. A mutual aid agreement between the city and the Sheriff of Pinellas County to render assistance to one another in law enforcement emergencies.

9. A mutual aid agreement for police protection between the Treasure Island Police Department and the Madeira Beach Police Department. The agreement is for the purpose of securing mutual aid for police protection within the corporate limits of the respective municipalities.

10. A mutual aid agreement for police protection between the St. Pete Beach Police Department and the Treasure Island Police Department for the purpose of securing to each municipality and its citizens the benefits of mutual aid for police protection within the corporate limits of the respective municipalities.

11. A mutual aid agreement with the City of St. Petersburg Police Department for public safety on the Treasure Island Causeway east of the toll booth.

III. COORDINATION WITH LOCAL GOVERNMENTS

A. Pinellas County Metropolitan Planning Organization Forward Pinellas

In September 2014, the Pinellas Planning Council unified its membership with the Pinellas County Metropolitan Planning Organization to form a new entity, Forward Pinellas.
The City of Treasure Island coordinates transportation planning and regional land use planning with the Pinellas County Metropolitan Planning Organization (MPO) Forward Pinellas for the development and maintenance of mass transit plans, programs and projects. The city reviews those sections of the transportation improvement program that affect it.

Forward Pinellas establishes comprehensive countywide policies for growth and development.

B. Pinellas County School Board

The city has a crossing guard on the Treasure Island Causeway to assist children to cross the street safely. The crossing guard is paid with monies collected from a two- dollar surcharge levied on fines, forfeitures, and penalties. In matters of safety and discipline, the School Board cooperates with the local police department.

Pursuant to Section 235.193, F.S., the Intergovernmental Coordination Element (ICE) has been updated to include provisions for public educational facility siting. The City of Treasure Island has adopted a resolution that supports efforts to facilitate coordination of planning for the location and development of public educational facilities. Furthermore, pursuant to Section 163.3177(a), Objective 1.10 and associated policies have been added to the *Future Land Use Element* as part of the EAR-based amendment process that identifies the map categories into which the facilities may be established.

C. The Pinellas County Fire Protection Authority

Administered through the Pinellas County Emergency Management Department, the authority coordinates fire service-related activities for the five fire districts in the county. This service agreement is coordinated through the City Manager and the day-to-day operations involve the police and fire departments.

D. Pinellas County Planning Council (PPC)

An amendment to the Pinellas County home rule charter, providing for countywide planning authority, was approved in a countywide referendum on November 8, 1988. The powers and duties of the PPC are specified in the Laws of Florida, Chapter 88-458 and 88-464.

The PPC shall act as the countywide land planning agency for Pinellas County. The PPC establishes comprehensive countywide policies for growth and development. The *Countywide Comprehensive Plan* developed by the PPC serves as the principal coordinating mechanism for all local planning within the county.

In the event of a conflict between the *Countywide Future Land Use Plan* and a local government comprehensive plan concerning land use, the county plan prevails, unless the municipal plan provides for a less intense or a lesser density land use within the corporate boundaries than that provided by the county plan.

The PPC is composed of 13 members, and with the exception of the School Board member, all must be an elected official and a member of the governing body or one of the governing bodies they represent. They serve a two-year term and membership is specified as follows:

1. One member from each of these municipalities: Clearwater, Dunedin, Pinellas Park, Largo, St. Petersburg, Tarpon Springs, Oldsmar, and Safety Harbor.

2. One member each from the Pinellas County School Board and the Pinellas County Board of County Commissioners.

3. One member serves as the representative of the following group of municipalities: St. Pete Beach, Treasure Island, and Madeira Beach. The governing body of each named municipality submits nominations to the Board of County Commissioners, who appoints one from those nominated.

4. One member serves as the representative of the following group of municipalities: Indian Rocks Beach, Redington Shores, Redington Beach, Belleair Beach, Indian Shores, North Redington Beach, and Belleair Shore. The governing body of each named municipality submits nominations to the Board of County Commissioners, who appoints one from those nominated.

5. One member serves as the representative of the following group of municipalities: Gulfport, Kenneth City, Belleair, South Pasadena, Belleair Bluffs, and Seminole. The governing body of each named municipality submits nominations to the Board of County Commissioners, who appoints one from those nominated.

A majority plus one of the entire Board of County Commissioners, acting in their capacity as the Countywide Planning Authority, is required to take any action which is contrary to the recommendation of the PPC.

Directors of individual local government planning departments automatically become members of the Planners Advisory Committee. At the direction of the PPC, it performs a professional review of PPC staff recommendations that are to be acted upon by the PPC.

E. Pinellas County Utilities System (PCUS)

The city is served by the Pinellas County Utility System.

F. Pinellas County Emergency Operations Center (EOC)

Section 252.38 of the Florida Statutes delegates the authority to establish county and municipal Emergency Operation Centers (EOC). The EOC serves as a focal point for coordinated comprehensive emergency management efforts through the utilization of personnel and resources from municipal, county, and other disaster support agencies in the mitigation of, preparation for, response to, and recovery from both localized and countywide disasters. The EOC also serves as a center for information, coordination and requests for assistance from higher levels of government. The Fire Department Chief has been designated as the office with primary coordination responsibility with the EOC.

G. Pinellas County Water and Navigation Control Authority (PCWNCA)

The Pinellas County Board of County Commissioners serves as the Authority, and their control is countywide. They are involved in permit review and receive staff support from the Environmental Management Department. The PCWNCA coordinates with the City Manager and the Commission.

~~IV. COORDINATION WITH REGIONAL ENTITIES~~

~~A. Tampa Bay Regional Planning Council (TBRPC)~~

~~1. Legislative Authority~~

~~The TBRPC was established in 1962, under Chapter 160, Florida Statutes, and by interlocal agreement, Section 163.01, F.S., in 1975. It was reorganized under Chapter 160, F.S., amended in 1980 and subsequently replaced by Chapter 186 in 1985.~~

~~2. General Role~~

~~TBRPC is designated under Florida Statutes and Federal Law for many of its responsibilities. The TBRPC engages in areawide comprehensive and functional planning, mediates conflicts between local governments, adopts and maintains a *Strategic Regional Policy Plan*, and reviews and comments on applications and development orders for Developments of Regional Impact (DRIs). It also reviews applications for federal and state grants as the Regional Clearinghouse for Administrative District VIII, as designated by Presidential and Gubernatorial Executive Orders. The TBRPC serves as the Area Agency on Aging for District V and coordinates Tampa Bay management as the administrator of the Agency on Bay Management.~~

~~3. Nature of the Relationship~~

~~Treasure Island is not a member of the TBRPC and does not have an on-going formal relationship. The TBRPC reviews and transmits to the proper agencies dredge and fill permits, state and federal grant applications and transportation projects that impact or are located in the city. In these instances the city and the TBRPC communicate and coordinate review-related activities as necessary.~~

~~The TBRPC, comprised of locally elected representatives and gubernatorial appointees, was established to plan the region's long-term future and assist and guide in the resolution of contemporary problems and issues. The city's interests are indirectly represented by the elected official appointed by the county, which is a member of the TBRPC. The city receives technical assistance, by request, and has the opportunity to use the Regional Resource Library.~~

~~4. Office with Primary Responsibility~~

~~The City Manager and the Treasure Island City Commission are the offices with primary responsibility for coordination.~~

~~B. Southwest Florida Water Management District (SWFWMD)~~

~~1. Legislative Authority~~

The Southwest Florida Water Management District was created in 1961 under Chapter 61-691, Laws of Florida, as a public corporation for carrying out and effectuating the provisions of Chapter 378, Florida Statutes.

2. General Role

The Southwest Florida Water Management District (SWFWMD) is responsible for the administration of a permitting system for consumptive water use and other water related activities, the regulation of wells, and the management and storage of surface waters. SWFWMD is charged to effect the maximum beneficial utilization, development, and conservation of the water resources of the District in the best interests of its people and to prevent the waste, depletion, deterioration, and unreasonable use of resources. SWFWMD covers all or parts of 16 counties in west central Florida. A Governing Board, appointed by the Governor, determines overall policies, carries out regulatory responsibilities and functions, enters into contracts and authorizes a tax levy for administration of the District.

SWFWMD is divided into nine watershed basins; eight of these basins have basin boards, members of which are appointed by the Governor and confirmed by the Senate. The Pinellas-Anclote Basin Board is the Basin Board that serves Pinellas County.

SWFWMD is involved in major programs in the areas of flood control and water management, and has numerous water resources studies utilizing federal, state, regional and local input. In conjunction with municipal, regional and county governments, SWFWMD has sponsored several multiple use projects combining water management and recreation facilities.

The Surface Water Improvement and Management Program (SWIM) has responsibilities for identifying and addressing priority water bodies within the boundaries of the District which are in need of restoration, conservation, and/or preservation. Tampa Bay and its tributaries were identified by the legislature as a water body which must be addressed by the District. As a community of Tampa Bay, the municipality has an opportunity to coordinate with the SWIM program to address water quality issues and needs.

The Save Our Rivers (SOR) Program can be a source of acquisition funds the municipality may wish to become involved with to enhance protection of environmentally sensitive areas. SWFWMD bases land acquisition on the following needs criteria: natural flood control; water detention and/or retention; preservation and/or restoration of natural systems; water conveyance; water quality enhancement; structural flood control; recharge; and potable water supply. Local governments can nominate projects to SWFWMD for consideration under this program.

3. Nature of the Relationship

The city has a regulatory relationship with SWFWMD that permits all drainage plans and improvements. All coordination in terms of potable water is coordinated by Pinellas County, which provides potable water service to the city. The Public Works Department is the office with primary coordination responsibility.

4. Office With Primary Responsibility

The City Manager and Public Works Director are the officers with primary coordination responsibility.

C. West Coast Regional Water Supply Authority (Tampa Bay Water)

1. Legislative Authority

The West Coast Regional Water Supply Authority (WCRWSA), recently renamed "Tampa Bay Water", was established in 1974 as a result of enabling state legislation and a Five-Party Agreement between Hillsborough, Pasco, and Pinellas Counties, and the cities of St. Petersburg and Tampa. The WCRWSA was the first such entity organized under the provision of Chapter 373 of the Florida Statutes. As specified in Chapter 373 the authority was "...for the purpose of developing, storing, and supplying water for county or municipal purposes in such a manner as will give priority to reducing adverse environmental effects of excessive or improper withdrawals of water from concentrated areas."

General Role

The West Coast Regional Water Supply Authority Tampa Bay Water (TBW) was the first authority to realize the benefits of a cooperative approach to water supply development. The Statute requires an authority to design, construct, operate and maintain facilities necessary to insure an adequate water supply for all citizens within the authority. The WCRWSA TBW is in the wholesale water business, not retail. The WCRWSA TBW supplies water, by designing, constructing, operating and maintaining facilities, to Pinellas, Hillsborough and Pasco Counties. The WCRWSA TBW owns and operates well fields and supplies potable water to government entities.

2. Nature of the Relationship

There is no relationship with the Authority.

3. Office with Primary Responsibility

The Public Works Director is the officer with primary responsibility for coordination.

V. COORDINATION WITH STATE AGENCIES

State agencies have regulatory and review powers over various types of development within the municipal boundaries of the City of Treasure Island.

A. Florida Department of Transportation (FDOT)

1. Legislative Authority

The Florida Department of Transportation was created by the Governmental Reorganization Act of 1969. It operates under the authority of Chapters 334-339 and 341, Florida Statutes.

2. General Role

FDOT is responsible for coordinating the planning of all modes of transportation on land, sea and air, and for constructing and maintaining the state highway system. The State Transportation Engineer coordinates project development in the seven districts throughout Florida. The district engineers manage and administer the department's work program and systems maintenance.

Urban transportation system plans are developed jointly by FDOT and Metropolitan Planning Organizations (MPOs) Forward Pinellas. Technical and administrative dealings among these legally designated planning agencies are established to conform with federal regulations and have been formalized through inter-local transportation planning agreements.

3. Nature of the Relationship

FDOT maintains Gulf Boulevard (SR 699) and the city notifies FDOT of maintenance hazards and problems. The city also refers all applicants desiring access or curb cuts on Gulf Boulevard to FDOT for approval and permits.

4. Office with Primary Responsibility

The City Manager is the officer with primary coordination responsibility.

B. Florida Department of Environmental Protection (FDEP)

1. Legislative Authority

The Department of Environmental Protection was created as a result of the combination of the former Department of Environmental Regulation and Department of Natural Resources.

2. General Role

FDEP is the principal agency for the implementation of state environmental policies and law. The department establishes standards for the protection of natural systems through the permitting process of activities that may impact the environment, including permitting and monitoring potential sources of pollution and discharges for compliance with state standards. In the event of non-compliance or violation, FDEP can take enforcement action.

FDEP manages eight environmental regulatory programs: Water Quality, Water Quantity, Drinking Water, Solid Waste, Air Quality, Noise Control, Coastal Zone Planning, and Power Plant Siting. FDEP programs are administered mainly through field offices located throughout the state, however, the Water Quantity Program is managed through the five regional water management districts. The functions of the FDEP and its districts are coordinated through using joint application procedures. FDEP permitting programs require coordination with the U.S. Army Corps of Engineers.

In administering the Water Quality Program, FDEP assists local governments in obtaining grants for sewage treatment facilities and loans for other pollution control projects. FDEP also

coordinates the coastal zone management program with citizens groups and governmental entities at all levels.

3. Nature of the Relationship

FDEP regulates the activities concerning the potable water and sanitary sewer facilities in the city. Pinellas County provides potable water and St. Petersburg provides wastewater treatment services to the city and each provider coordinates the regulatory requirements. The city coordinates dredge and fill permitting with FDEP.

4. Office with Primary Responsibility

The City Manager is the officer with primary coordination responsibility.

C. Florida Department of Community Affairs (DCA)

1. Legislative Authority

The Department of Community Affairs Department of Economic Opportunity was created by the *Government Reorganization Act of 1969*, pursuant to Section 20.18, Florida Statutes.

2. General Role

The Department of Community Affairs (DCA) Economic Opportunity (DEO) serves as the State Land Planning Agency and the State agency for advising the Governor on policies and programs for improving the criminal justice system in the state.

As the State Land Planning Agency, the DCA (DEO) reviews comprehensive plans for Florida's 11 Regional Planning Councils. In addition, the DCA DEO reviews and approves local government comprehensive plans and amendments. In the area of criminal justice planning, the DCA DEO provides technical assistance to local governments, state agencies, and public and private agencies. The DCA DEO also reviews local applications for federal criminal justice grants and administers awarded funds. The DCA DEO is also responsible for assisting local communities and other units of local government in defining and responding to problems in the area of housing, community development and building codes and standards.

Developments of Regional Impact and Applications for Development are coordinated through the Division of Community Planning. This division also reviews local comprehensive plans for consistency with regional plans and the State Plan. They are also responsible for determining the consistency of local emergency management plans with regional plans through the Division of Emergency Management.

3. Nature of the Relationship

The DCA DEO reviews amendments to the city's local comprehensive plan. This is a regulatory relationship.

4. Office with Primary Responsibility

The City Manager is the officer with primary coordination responsibility.

D. Florida Department of Education

1. Legislative Authority

The Department of Education was created in 1885 and established in present form in 1969, under Article IX, Section 2 of the Constitution of the State of Florida, and Section 20.15, Florida Statutes.

2. General Role

The department develops comprehensive objectives for public education, policies for the efficient operation of all phases of public education, and all required rules and regulations for the enforcement of school codes. The State Board of Education consists of the Governor and Cabinet, with an elected Commissioner of Education who serves as chief executive officer of the department. Four divisions and four boards oversee the operation of public and private educational institutions from the primary grades through the university system, including the Florida School for the Deaf and the Blind. The department coordinates with all levels of government in carrying out each phase of the educational program, and exercises general supervision over all divisions and boards to ensure coordination of educational plans and programs, and to resolve controversies.

3. Nature of the Relationship

There is no relationship with the department.

4. Office with Primary Responsibility

The City Manager is the officer with primary responsibility for coordination.

E. Florida Department of Children and Families

1. Legislative Authorities

The former Department of Health and Rehabilitative Services was reorganized in 1996 into the new Department of Children and Families.

2.

3. Roles

The department administers programs in the areas of health, mental health, retardation, youth services, children's medical services, social and economic services, vocational rehabilitation, and aging and adult services. All of the department's health, social and rehabilitative services are provided through eleven statewide service districts. Departmental services are coordinated with those of other public and private agencies in each district through advisory councils. The department also contains the State Health Planning and Development Agency, which is charged with the planning of Florida's Health System Agencies and establishing state health policy.

4. Nature of the Relationship

There is no relationship with the department.

5. Office with Primary Responsibility

The City Manager is the officer with primary responsibility for coordination.

F. Florida Department of Commerce

1. Legislative Authority

The Department of Commerce was created by the *Government Reorganization Act of 1969*, pursuant to Section 20.17, Florida Statutes.

2. General Role

The Department of Commerce is responsible for the guidance, stimulation, and promotion of economic development within the state, as it relates to industry, marketing and international development. The department also provides state leadership in the development and promotion of the tourist industry.

Through its five field offices, the department assists regional and local governments in economic planning activities and in applying for funds in support of economic development programs. The department also serves as liaison between the state and Florida businesses, and between the state and Caribbean, South American and Central American concerns. The Division of Tourism coordinates national and international ad campaigns, and assists municipalities, chambers of commerce and other tourist-oriented entities in formulating cooperative promotional programs.

3. Nature of the Relationship

There is no relationship with the department.

4. Office with Primary Responsibility

The City Manager is the officer with primary responsibility for coordination.

G. The Executive Office of the Governor (EOG)

1. Legislative Authority

The Executive Office of the Governor was created in 1972 under Section 14.201, F.S.

2. General Role

The functions of the EOG apply mainly to preparation of the annual executive budget and legislative agenda of the governor, and review of state agency plans and programs. Another major responsibility is the preparation, development and revision of the *State Comprehensive*

Plan. The Office also gathers data on the state energy resources and administers the State's role in petroleum allocation and conservation.

The EOG is directed by an Administrative Commission composed of the Governor and the Cabinet. The office coordinates planning among federal, state, regional and local levels of government and those of other states. The Office also coordinates all state agency planning and programming activities, serves as the state planning and development clearinghouse, and designates regional and area clearinghouse review agencies. The EOG also serves as liaison between the state and federal officials, agencies, and members of Congress.

3. Nature of the Relationship

The EOG receives all grant applications from the city and forwards them to clearinghouse review agencies. There is no regular relationship other than this.

4. Office with Primary Responsibility

The City Manager is the officer with primary coordination responsibility.

H. Florida Department of State

1. Legislative Authority

Chapter 20 of the Florida Statutes establishes the Department of State; Chapter 15 specifies the duties of the head of the department, the Secretary of State.

2. General Role

The Florida Department of State has the following divisions: Administration, Corporations, Cultural Affairs, Elections, Library Services, Licensing, and Historic Resources. The Division of Historic Resources is authorized to conduct and carry out a program of historic preservation grants-in-aid, including matching grants, to any department or agency of the state; any unit of the county, municipal, or other local government; and any corporation, partnership, or other organization, whether public or private, for the purposes of administration and protection.

3. Nature of the Relationship

The City of Treasure Island has no continuing formal relationship with the Department of State.

4. Office with Primary Responsibility

The City Commission is the office responsible for coordination.

VI. COORDINATION WITH UTILITY COMPANIES

The following utilities coordinate their activities with the Treasure Island City Commission, through franchise agreements or by city ordinance. The City Manager is the officer with primary coordination responsibility.

A. Florida Power Corporation (FPC)

Florida Power Corporation has a franchise agreement with the City of Treasure Island to provide electricity for residential and commercial uses. FPC is regulated by the Public Service Commission.

B. General Telephone Company of Florida (GTE)

GTE has a franchise agreement with Treasure Island to provide commercial and residential phone service. GTE is regulated by the Public Service Commission.

C. Time Warner Cable

Time Warner Cable has a franchise agreement to provide cable television service to Treasure Island.

D. Pinellas County Utilities

The Pinellas County Utilities System provides potable water and utility billing services.

VII. ANALYSES

Pursuant to Rule 9J-5.005(2), F.A.C., this element will: discuss the effectiveness of existing coordination mechanisms which are used to further intergovernmental coordination; identify and discuss specific problems and needs within each element of the comprehensive plan which would benefit from additional coordination; compare the growth and development proposed in the plan with appropriate comprehensive regional policies in order to evaluate the needs for additional coordination; and coordinate the plan with the rules, principles and guidelines for development in any area of critical state concern falling within the local government's jurisdiction.

A. Effectiveness of Existing Coordination Mechanisms

1. Existing Contracts and Agreements

The City of Treasure Island has ten nine formal agreements: four three utility or service agreements, and six covering service agreements between the city, other Pinellas municipalities, Pinellas County, and the state. These formal mechanisms have proven to be effective and require no changes.

2. Coordination with Local Governments

a. Pinellas County School Board

The city cooperates with the Pinellas County School Board on the issue of a crossing guard on the Treasure Island Causeway. The School Board cooperates with the Police Department on matters of public safety.

The *General Educational Facilities Report* (June, 1992) of the Pinellas County School Board indicates that there are no schools planned for the City of Treasure Island.

b. Pinellas County Government

Treasure Island coordinates transportation planning with the Pinellas County Metropolitan Planning Organization Forward Pinellas regarding the development and maintenance of mass transit plans, programs and projects.

The existing coordination mechanisms between the City of Treasure Island and Pinellas County serve the city adequately and require no changes.

c. Pinellas County Planning Council (PPC)

The City of Treasure Island and the PPC have entered into an interlocal agreement stipulating that the PPC will provide planning assistance.

3. Coordination with Regional and State Agencies

The city coordinates and communicates with the Tampa Bay Regional Planning Council on a regular basis. The TBRPC serves as the state-designated regional clearinghouse. As such, it reviews all grant and permit applications submitted for regional impacts which effect the city.

Through the permitting process and the allocation of federal and state grant funds, the city communicates and coordinates with all state agencies, as specified in the data section of this element, that have regulatory and review jurisdiction over development in the city.

There is no planned development proposed within Treasure Island's area of concern that will require planning coordination in addition to that currently in effect. Additionally, a review of the *Strategic Regional Policy Plan* does not reveal a need for planning coordination in addition to that currently in practice and those additional efforts specified and adopted in this plan. These existing mechanisms for each agency, combined with those changes adopted in this plan, serve the city well and require no additional changes.

4. Coordination with Utilities

The provision of utility services in the form of electric and gas, telecommunication and community antenna systems are provided through formal franchise agreements. These existing mechanisms have proved to be effective and need no changes.

B. Intergovernmental Coordination and Plan Elements

This section discusses specific problems and needs within each element of the comprehensive plan which would benefit from improved or additional intergovernmental coordination.

1. Future Land Use Element

The City of Treasure Island is located on a barrier island off the coast of Pinellas County. The city is characterized by a mixture of single and multifamily residential areas. The community is essentially built-out with little room for growth and annexation of additional lands is unlikely.

The city shares a common border with the City of St. Pete Beach to the south and is separated by Blind Pass. The City of Madeira Beach is located to the north, but the cities are physically separated by John's Pass.

- Issue - Prevention and elimination of incompatible land uses along common borders

Finding: The City of Treasure Island should coordinate and consult with the cities of St. Pete Beach, Madeira Beach, and St. Petersburg to ensure that future changes in zoning and land use along common borders reflect the types of land uses typical of those areas.

2. Transportation Element

The City of Treasure Island is a beach community on a barrier island which is served by one major north-south road, Gulf Boulevard (SR 699). The Treasure Island Causeway connects the city with the mainland to the east.

- Issue - Traffic Circulation System Improvements

Finding: The City of Treasure Island is not fiscally responsible for addressing all the transportation improvements identified in the *Transportation Element*. The city should coordinate and consult with the Pinellas County MPO Forward Pinellas and the FDOT and closely review transportation plans and improvements prepared by these entities to ensure that improvements are economical and meet the needs of the city. The preservation and protection of rights-of-way for future roadway construction and improvement are areas of special concern.

3. Housing Element

The City of Treasure Island is primarily a residential community which is essentially built-out and no major new developments can be expected due to a lack of vacant land to develop. Residences are maintained to a high degree. There are no public housing units within the corporate limits, and no group homes, but there are two state-licensed foster care facilities located in the city.

- Issue - Availability of Public Housing

Due to the built-out nature of Treasure Island and the costs associated with land and rents on coastal islands, the need and potential for public housing is very low. There are no agricultural land uses in the corporate limits. The city should continue to encourage the opportunity for all citizens to purchase or rent decent and affordable housing free from arbitrary discrimination.

4. Infrastructure Element

The City of Treasure Island owns and maintains the sanitary sewer lines within the city limits. Solid waste is collected by the city and disposed of at the Pinellas County Refuse-to-Energy Plant. The city and its citizens receive potable water from the Pinellas County Utility System (PCUS) as a retail customer.

· Issue - Drainage

Finding: The city occasionally experiences Gulf Boulevard area-wide flooding during periods of heavy rains that coincide with high tides. The city needs to continue working with the FDOT to plan improvements in several areas to alleviate existing problems. To adequately address the deficiencies, the city must work closely with the Pinellas County MPO Forward Pinellas and the Florida Department of Transportation to ensure that future improvements to Gulf Boulevard address drainage problems in the design and engineering stages. The city will continue to work with the County to support regional approaches to address resilient solutions to drainage issues.

5. Coastal Management and Conservation Element

Treasure Island is located on a barrier island, but very little remains of what was once a unique ecosystem.

· Issue - Beach Renourishment and Conservation

Finding: Treasure Island continues to coordinate and consult with Pinellas County, The Army Corp or Engineers and the State of Florida concerning beach renourishment activities and construction of erosion control structures. Treasure Island also continues to work with the same party parities to develop a plan for dune system establishment and conservation to augment beach renourishment activities.

·

· Issue - Water Quality and Habitat

Finding: The development of a sound management plan for the contingency of stormwater treatment needs to be addressed by coordinating and consulting with concerned parties on the development of an areawide drainage plan. Treasure Island should consult and work with Pinellas County and other island communities to develop a coastal management program that addresses such issues as water quality and preservation of habitats. The city will pursue continue to work with the County to support regional approaches to address resilient solutions to drainage issues.

6. Recreation and Open Space Element

The City of Treasure Island enjoys a natural setting that provides an abundance of outdoor recreational opportunities. The existing facilities available for recreation in the city are adequate to meet the current and future needs of residents and visitors.

- Issue - Maintenance/Coordination of Recreational Facilities

Finding: Most recreational facilities in the city focus on the sandy beaches of the Gulf of Mexico. They serve residents and large numbers of visitors as well. It is important to maintain public access to recreational resources.

- Issue - Preservation and Acquisition of Open Space

Finding: The city should shall continue to coordinate closely with Pinellas County and the State to protect natural resources and open space.

VIII. GOALS, OBJECTIVES, AND POLICIES

A. Introduction

Pursuant to Section 163.3177(9) and (10), F.S., and Rule 9J-5.015(3) F.A.C., the following represents the intergovernmental coordination goals, objectives, and policies of the City of Treasure Island. These goals, objectives, and policies are intended to address the establishment of a long-term directive for promoting coordination between jurisdictions of plans and policies that have been identified as having impacts other than a local nature.

B. Nonapplicable Items

The following objectives and policies are not applicable to the City of Treasure Island.

- Rule 9J-5.015(2)(d), F.A.C.: Those items pertain to the plan's coordination with the rules and principles guiding development, and development regulations in any designated area of critical state concern falling partially or wholly within the local government's jurisdiction. They are not applicable as no designated area of critical state concern falls partially or wholly within the local government's jurisdiction.
- Rule 9J-5.015(2)(d), (3)(b)4., (3)(c)8. & 9., F.A.C.: The City of Treasure Island has no dredge spoil disposal sites.

IX. GOALS, OBJECTIVES, AND POLICIES

C. Introduction

Pursuant to Section 163.3177(9) and (10), F.S., and Rule 9J 5.015(3) F.A.C., thefollowing represents the intergovernmental coordination goals, objectives, and policies of the City of Treasure Island. These goals, objectives, and policies are intended to address the establishment of a long-term directive for promoting coordination between jurisdictions of plans and policies that have been identified as having impacts other thana local nature.

Introduction

The Intergovernmental Coordination Element provides for guidance on mutually beneficial partnerships with all levels of government and partner agencies, including coordination with

other units of local government providing services to the City, coordination with adjacent municipal and county comprehensive plans, the state comprehensive plan and regional water supply plans.

~~**D. Nonapplicable Items**~~

~~The following objectives and policies are not applicable to the City of Treasure Island~~

~~Rule 9J 5.015(2)(d), F.A.C.: Those items pertain to the plan's coordination with the rules and principles guiding development, and development regulation in any designated area of critical state concern falling partially or wholly within the local government's jurisdiction. They are not applicable as no designated area of critical state concern falls partially or wholly within the local government's jurisdiction. Rule 9J 5.015(2)(d), (3)(b)4, (3)(c)8 & 9, F.A.C.: The City of Treasure Island has no dredge spoil disposal sites.~~

~~**Local Goals, Objectives, and Policies**~~

Goal:

Improve the existing system of interlocal coordination to successfully implement local government comprehensive plans and to effectively address regional resiliency ~~and to resolve conflicts resulting from the plans~~.

Objective 1.1: ~~Pinellas Planning Council~~ Pinellas County Coordination

The City shall utilize the forum of the ~~Pinellas Planning Council~~ Forward Pinellas for the purpose of providing close coordination, evaluation and integration of local comprehensive plans and development proposals.

Policy 1.1.1: The City shall, through its representative, participate in the~~ Pinellas Planning Council which is the~~ forum designated in the Pinellas County Charter to review and make recommendations to the Pinellas County Board of County Commissioners regarding ~~proposed annexations and the ability of a municipality to provide services and~~ compatibility between the ~~c~~City plan and the countywide plan.

Policy 1.1.2: The City will use ~~the PPC~~ the County designated ~~as a~~ forum to identify and discuss issues related to plan implementation, development and funding which affect one or more of these jurisdictions in such areas as land use, transportation, coastal management, drainage, conservation and open space planning.

- ~~*Future Land Use Element*, Fair Housing Practices~~
- ~~*Future Land Use Element*, Preserve Adopted Levels of Service~~
- ~~*Future Land Use Element*, Management of Boca Ciega Bay~~
- ~~*Future Land Use Element*, Land Available for Public Facilities~~
- ~~*Recreation/Open Space Element*, Public Beach Access *Intergovernmental Coordination Element*, Compatibility of Development/Redevelopment Activities~~

- ~~*Coastal Management and Conservation Element*, Coordination of Coastal Management Planning~~
- ~~*Future Land Use Element*, Coordination of Hurricane Planning and Preparedness~~
- ~~*Transportation Element*, Control of Access Points~~
- ~~*Transportation Element*, Coordination of Transportation Planning~~
- ~~*Housing Element*, Assist Private Sector to Meet Housing Needs~~
- ~~*Housing Element*, Enforcement of Fair Housing Standards and Legislation~~
- ~~*Housing Element*, Equitable Treatment for Persons/Businesses Displaced by Government Programs~~
- ~~*Infrastructure Element*, Concurrence of Development and Infrastructure~~
- ~~*Infrastructure Element*, Agreement with St Petersburg Regarding LOS (~~Madeira Beach and St. Pete Beach)
- ~~*Infrastructure Element*, Conservation of Potable Water~~
- ~~*Infrastructure Element*, Hazardous Waste Management~~
- ~~*Coastal Management and Conservation Element*, Protection of Water Quality and Quantity~~
- ~~*Coastal Management and Conservation Element*, Hazardous Waste Management~~
- ~~*Coastal Management and Conservation Element*, Estuary Management~~
- ~~*Coastal Management and Conservation Element*, Development of an Intergovernmental Coastal Resources Protection Plan~~
- ~~*Coastal Management and Conservation Element*, Maintenance and improvement of Hurricane Evacuation Routes~~
- ~~*Coastal Management and Conservation Element*, Participation in HurricanePreparedness Programs~~ Natural Disaster Programs
- ~~*Coastal Management and Conservation Element*, Coordination of Hurricane Planning~~
- ~~*Recreation and Open Space Element*, Provision and Maintenance of Recreational Facilities~~
- ~~*Recreation and Open Space Element*, Coordination of Art/Cultural Organizations~~
- ~~*Recreation and Open Space Element*, Acquisition of Funding for Open Space,Parks and Facilities~~

Policy 1.1.3: ~~The~~ ~~PPC~~ Forward Pinellas shall be the forum to discuss ~~annexation plans~~, consistency of land uses and provision of services; and the process established by ~~the PPC~~ Pinellas County for conflict resolution will be utilized to resolve disputes, if needed.

Policy 1.1.4: A representative appointed by the City Manager shall participate in the Planners Advisory Committee of ~~the PPC~~ Pinellas County.

Policy 1.1.5: In instances where the resolution of issues requiring intergovernmental concurrence has not been achieved, the City may initiate informal mediation by filing with the Tampa Bay Regional Planning Council a written request for mediation assistance, pursuant to ~~Chapter 29H-11, Laws of Florida, and Chapter 186,~~ Florida Statutes.

Policy 1.1.6: The City shall ~~continue to~~ communicate with ~~the Pinellas County Planning Council,~~ Forward Pinellas, Pinellas County Emergency Management ~~Operations Center~~, Pinellas County Sheriff, Pinellas County Water and Navigation Control Authority, Pinellas County Emergency Medical Services Authority, Pinellas County School Board, University

of South Florida, Stetson University/College of Law, St. Petersburg College, Pinellas Suncoast Transit Authority, City of Largo, Division of Forestry, Tampa Bay Regional Planning Council, Tampa Bay Water, Southwest Florida Water Management District and other state agencies such as the Department of ~~Community Affairs~~ Economic Opportunity, Department of Environmental Protection, Department of Transportation, and Department of Children and Families, Federal Emergency Management Agency and other federal agencies on projects that fall within their jurisdictions or are multi-jurisdictional in nature.

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~~· *Future Land Use Element*, Species of Special Status Protected~~
~~· *Future Land Use Element*, Preserve Adopted Levels of Service~~
~~· *Future Land Use Element*, Water Conservation Ordinance~~
~~· *Recreation and Open Space Element*, Public Beach Access~~
~~· *Intergovernmental Coordination Element*, Consistency of Comprehensive Plans and Development Orders/Permits~~
~~· *Intergovernmental Coordination Element*, Consistency of Development with Interlocal/Regional Objectives~~
~~· *Coastal Management and Conservation Element*, Coordination of Coastal Management Planning~~
~~· *Coastal Management and Conservation Element*, Coastal Construction Rules~~
~~· *Future Land Use Element*, Coordination of Hurricane~~ Natural Disaster ~~Planning and Preparedness~~
~~· *Transportation Element*, Control of Access Points~~
~~· *Transportation Element*, Coordination of Transportation Planning~~
~~· *Housing Element*, Enforcement of Fair Housing Standards and Legislation~~
~~· *Housing Element*, Equitable Treatment for Persons/Businesses Displaced by Government Programs~~
~~· *Infrastructure Element*, Concurrence of Development and Infrastructure~~
~~· *Infrastructure Element*, Conservation of Potable Water~~
~~· *Infrastructure Element*, Hazardous Waste Management~~
~~· *Infrastructure Element*, Outstanding Florida Waters Standards~~
~~· *Coastal Management and Conservation Element*, Water Shortage Plan~~
~~· *Coastal Management and Conservation Element*, Enforcement of all CoastalConstruction Codes and Regulations~~
~~· *Coastal Management and Conservation Element*, Protection of Species of SpecialStatus~~
~~· *Coastal Management and Conservation Element*, Hazardous Waste Management~~
~~· *Coastal Management and Conservation Element*, Air Quality Standards~~
~~· *Coastal Management and Conservation Element*, Estuary Management~~
~~· *Coastal Management and Conservation Element*, Development of an Intergovernmental Coastal Resources Protection Plan~~
~~· *Coastal Management and Conservation Element*, Maintenance and Improvementof Hurricane Evacuation Routes~~
~~· *Coastal Management and Conservation Element*, Coordination of HurricanePlanning~~
~~· *Recreation and Open Space Element*, Provision and Maintenance of Recreational Facilities~~
~~· *Capital Improvements Element*, Ensure Consistency of Plans with Other Agencies~~
~~· *Capital Improvements Element*, Fiscally Equitable Manner of Apportioning Cost~~

~~ofNeeded Capital Facilities~~

Policy 1.1.7: Through coordination with Pinellas County, the City will explore additional funding options, such as the National Disaster Resilience Competition through the Federal Department of Housing and Urban Development, for assistance with disaster recovery and long-term community resilience.

Policy 1.1.8: The City will support Pinellas County Sustainability and Resiliency Program and the Tampa Bay Regional Planning Council Resiliency Coalition, addressing resilience challenges through intergovernmental and community collaboration.

Policy 1.1.9: Through interlocal agreements, the City will partner with local agencies for mutual benefits: Pinellas County Emergency Management, Pinellas County Emergency Medical Services Authority, Pinellas County Sheriff, Gulf Beaches Library System, City of St. Pete Beach, City of St. Petersburg, Florida Department of Environmental Protection and the City of Largo.

Objective 1.2: Neighboring Jurisdictions

The City shall establish and maintain a means by which level-of-service standards and resources are coordinated with neighboring jurisdictions in order to maintain level-of-service; provide services to the taxpayers at potential cost savings; and provide regulations.

Policy 1.2.1: The City shall work with Florida Department of Transportation and ~~the Metropolitan Planning Organization~~ Pinellas County as necessary to attain and assure acceptable continued operational level of service for the city streets.

Policy 1.2.2: The City shall~~, through the Pinellas Planning Council,~~ coordinate with Pinellas County to ensure that each jurisdiction's future needs are considered in the acquisition and design of public service facilities, and to ensure level-of-service standards are met for items such as wastewater treatment, drainage, solid waste and potable water.

~~· Infrastructure Element, Provision of Public Services and Levels of Service~~
~~· Transportation Element, Level of Service Standards~~

Policy 1.2.3: The City shall participate in the ~~establishment of an~~ organization of beach communities, Barrier Islands Governmental Council (Big C), to coordinate the levels of service and preserve and protect the interests of the barrier island inhabitants including but not limited to beach preservation, beach re-nourishment and access, tourism, marine environment, air and water quality, public safety, public transportation, density management, recycling, waterway regulation, and taxation based on permanent residents and average transient population.

Policy 1.2.4: The City shall participate in the Wastewater/Stormwater Partnership with Pinellas County, municipalities, and other agencies to identify wastewater and stormwater solutions that: increase wastewater treatment capacity at appropriate

levels; increase wastewater storage capacity at appropriate levels; and reduce inflow and infiltration of stormwater and groundwater into the separate sanitary sewer system.

Objective 1.3: Coordination with Local Governments

The City shall ~~continue to improve~~ ensure communication, cooperation, and coordination between the City and ~~with~~ Pinellas County, Forward Pinellas, Pinellas County School Board, Tampa Bay Regional Planning Council, Tampa Bay Water, Southwest Florida Water Management District, and other local, state, regional, and federal governments, districts, and agencies.

Policy 1.3.1: The City ~~of Treasure Island~~ shall~~, through site plan review,~~ coordinate ~~and consult~~ with the cities of St. Pete Beach, Madeira Beach, and St. Petersburg on ~~to ensure that future changes in zoning and land use along common borders reflect the types of land use typical of these areas.~~ all changes in land use, zoning and/or the development or redevelopment of infrastructure relating to all multi-modal transportation infrastructure to ensure consistency between plans.

Policy 1.3.2: The City shall utilize the forum of the ~~Pinellas Planning Council~~ Forward Pinellas, to address intergovernmental issues of coordination, evaluation, and integration of local comprehensive plans and development proposals.

Policy 1.3.3: Recognizing the impacts of development extend beyond the limits of the community, the City shall ensure that development orders or permits are consistent withthe objectives of the Southwest Florida Water Management District, the Tampa Bay Regional Planning Council, and state and federal agencies.

~~**Policy 1.3.4:** The City of Treasure Island shall support Resolution 96-77, dated September 24, 1996, concerning review criteria and locational procedures and supporting applicable portions of Chapters 163 and 235, Florida Statutes, for public school siting upon a determination by the city that the proposed site is consistent with the *City of Treasure Island Comprehensive Plan.*~~

Policy 1.3.4 The City shall participate in interlocal agreements with the Pinellas County School Board as required by Florida law.

Policy 1.3.5: The City shall be a leader in planning for a resilient coordinated future with the adjacent local governments of St. Pete Beach, Madeira Beach and St. Petersburg by establishing a working group to plan for short-, medium-, and long-term goals for the region to address sea-level rise that affects all of the communities.

~~**Measure:** Extent of coordination and use of cooperative agreements~~

Objective 1.4 Water Supply Coordination

The City will commit to work with and participate in the planning of potable water supply and facilities and for wastewater treatment.

Policy 1.4.1: The City shall coordinate the planning of potable water facilities and services and level-of-service standards with Pinellas County and the Southwest Florida Water Management District and the Regional Water Supply Plan Update.

Policy 1.4.2: The City shall coordinate water supply planning and land use planning activities of the City with Pinellas County to ensure that water needs of the City's residents are met.

Policy 1.4.3: The City shall maintain consistency between the demand calculations in the Water Supply Facilities Work Plan and the population projections contained in the Future Land Use Element and work regularly with Pinellas County to update projections as necessary.

Policy 1.4.4: The City shall coordinate with the Florida Department of Environmental Protection, the Southwest Florida Water Management District, and the City of St. Petersburg as needed to address stormwater and/or wastewater infrastructure development as part of the implementation of the City of Treasure Island's Watershed Management Plan.

Objective 1.5 Regional Coordination to Support Homeless Populations

The City will strive to work with and participate in services that support the homeless populations in the region.

Policy 1.5.1: The City will utilize the "Life Intervention Focus Team, Inc." (LIFT) charity or other appropriate charities as examples to other neighboring communities as a positive way to support and address the homeless population.

Policy 1.5.2: The City will forge relationships with Pinellas County Human Services and the Homeless Leadership Alliance of Pinellas and other applicable organizations to create partnerships and coordinate resources for the City.

Objective 1.6: Local and Regional Resiliency Planning

The City shall be a leader in planning for a resilient coordinated future and to effectively address local and regional sustainability.

Policy 1.6.1: The City will support and participate in the Pinellas County Sustainability and Resiliency Network to address resilience challenges through intergovernmental and community collaboration.

Policy 1.6.2: The City shall plan for a resilient, coordinated future working with the Tampa Bay Regional Planning Council through the Tampa Bay Regional Resiliency Coalition to coordinate climate adaptation and mitigation activities, to advance local and regional responses to and preparations for economic and social disruption projected to result from

sea-level rise and to address the effects of climate change.

Policy 1.6.3: The City shall plan for sea level change, including using the resources available through the Tampa Bay Climate Advisory Panel and other local resources.

~~**References**~~

~~Treasure Island, unpublished miscellaneous city documents,~~

~~1998.Pinellas County, *Intergovernmental Coordination Element*,~~

~~1987.~~

CAPITAL IMPROVEMENTS ELEMENT

The purpose of the Capital Improvement Program Element is to proactively address the needs of public assets. The supporting goals, objectives, and policies relate to other elements of the Comprehensive Plan to ensure that sufficient facilities are in place prior to development.

Rule 9J-5.016, Florida Administrative Code

I. INTRODUCTION

In 1985, the Florida Legislature mandated that local governments plan for the availability of public facilities and services to support development concurrent with the impacts of such development. This element includes: (1) an inventory of capital improvement needs, financial resources, and local policies and practices; (2) a fiscal assessment of revenues and expenditures; (3) a discussion of issues and recommendations; (4) a listing of goals, objectives and policies; (5) a section detailing implementation, including a five-year schedule of capital improvements; and (6) a section describing monitoring and evaluation strategies.

I. INTRODUCTION

A capital improvements program (CIP) is generally defined as an expenditure greater than $25,000 for a public asset with an expected life of five years or more. The City's typical CIP is a five-year program. A CIP specifies each capital project or capital item along with estimates of the revenues needed to finance the project, and identifies the source of those revenues. As a planning tool, the CIP prioritizes capital projects and their impact the budget. A CIP project may be developed for the purchase, renovation, maintenance or construction of public facilities, infrastructure or assets. This may include routine projects such as street paving or purchases of equipment.

The CIP should be closely integrated with the local planning process, consistent with the adopted comprehensive plan, and used to implement the plan's recommendations for capital improvements. Capital decisions are of strategic importance to the health of a community because of their economic impact, and because decisions limit the options of a community by committing them to a particular course of action. Because of the importance of capital decisions, these decisions warrant special attention by elected officials, the staff, and the community.

A consistent theme echoed in all of the other elements of this comprehensive plan is the need for a scheduled approach, when possible, to maintaining the current public facilities that are the responsibility of the city. Routine maintenance and refurbishment of current capital assets should be established on a cycle corresponding to the current condition and anticipated useful life of the improvement.

II. LEVEL OF SERVICE STANDARDS

Level of service (LOS) isdefined in Rule 9J-5, F.A.C., as: "an indicator of the extent or degree of service provided by, or proposed to be provided by, a facility based on and related to the operational characteristics of the facility. Level of service shall indicate the capacity per unit of demand for each public facility." LOS standards are established and adopted by the municipality as indicators of public facility conditions, and can refer to either the existing or desired standards.

LOS standards are used in evaluating a municipality's existing and projected capital improvement needs. They can encourage growth in areas where facilities have excess capacity. Once adopted, LOS standards may prevent development until needed facilities and services are available; however, the provision of facilities can be phased in conjunction with development. The challenge of the municipality is to adopt LOS standards that are attainable given fiscal capacity and the desires of residents, balanced against pressures for development and redevelopment.

Capital improvements identified from other elements are contained in the Schedule of Capital Improvements (Schedule) adopted in Policy 1.1.6 of this element. This is consistent with the provision of Rule 9J-5.016, F.A.C., which requires this element to address existing and future capital improvements needed for at least the first five fiscal years after the adoption of the comprehensive plan. Capital improvements needed for the latter part of the planning period will be evaluated during the required annual review of this element.

Identified capital improvement projects are those necessary to maintain levels of service recommended in the other comprehensive plan elements. The Schedule provides a brief description of each of the capital improvement projects, indicates whether the project is needed to correct existing deficiencies or address projected needs, and provides an estimate of the total project cost. The capital improvement projects listed in the Schedule are not inclusive of all anticipated capital expenditures by the municipality during this time period. The list of improvements derived from the preceding elements has been limited to major components identified in each element, which cost $25,000 or more, and which the municipality is responsible for providing in order to maintain adopted levels of service. Smaller scale improvements of less than $25,000, together with the projects identified in the CIE, will both be addressed in the capital improvement program and annual capital budget as they occur over time.

A. Cost Estimates for Identified Capital Needs

Costs of identified capital improvements are listed in the Schedule of Capital Improvements in Policy 1.1.6 of this CIE.

B. Estimates for Identified Projects Impacting on Operating Cost

The impact of adopting policies that result in an increase in operating budgets must also be considered. No policies have been identified at this time that will impact the operating budget in excess of anticipated revenues.

II. INVENTORY OF PUBLIC HEALTH AND PUBLIC EDUCATION FACILITIES

~~Both public health and public education in Pinellas County are a function of the county. Public education is under the jurisdiction of the elected Pinellas County School Board, while the countywide public health system is under the jurisdiction of the elected Pinellas County Board of County Commissioners. The geographic service areas and locations were identified for public education and public health system components within the municipality's jurisdiction.~~

~~*City of Treasure Island -2 Capital Improvements Element - 4/27/99*~~

~~A. Health System~~

~~The Pinellas County Health Department provided information concerning the public health facilities for Treasure Island residents. To receive public health services a resident may choose to go to any of the public health facilities located in Pinellas County.~~

~~B. Public Education System~~

~~The Pinellas County School Board provided information pertaining to the public education facilities located in the Treasure Island area, and affirmed that the infrastructure is adequate to support the current facilities and that no additions were planned for the future. Children from Treasure Island attend public schools which are not located within the city limits. The schools are as follows:~~

~~Gulf Beaches Elementary Sixteenth Street Middle 8600 Boca Ciega Drive 701-16th Street South St. Pete Beach St. Petersburg~~

~~Boca Ciega Senior High Lakewood Senior High~~
~~924-58th Street South 1400-54th Avenue South St. Petersburg St. Petersburg~~

~~Gibbs Senior High Madeira Beach Middle~~
~~850-34th Street South 591 Madeira Beach Causeway St. Petersburg Madeira Beach~~

~~Pasadena Elementary Southside Fundamental Middle 95-72nd Street North 1701-10th Street South~~
~~St. Petersburg St. Petersburg~~

~~Azalea Middle St. Petersburg High School 7855-22nd Avenue North 2500-5th Avenue North~~
~~St. Petersburg St. Petersburg~~

~~III. REVENUES~~

~~A. Accounting System~~

~~The primary sources of information for the following data and analysis section are *City of Treasure Island Budget (1997-98 2022-2026)* which is attached as reference. and the *City of*~~

Treasure Island Comprehensive Annual Financial Report for the fiscal year ending on September 30, 1996. The accounts of the City of Treasure Island are organized on the basis of funds and account groups, as follows:

1. Governmental Funds

   a. The General Fund is the major operating fund. All revenues which by law or administrative control are not in separate funds are deposited in the General Fund. It is used to provide police and fire services; building inspection; repairs, maintenance, and beautification of municipal facilities, equipment and land; recreation and leisure programs; and overall city administration, including management, finance, and legal advice. It is also used to account for all financial resources except those required to be accounted for in another fund.

The primary source of revenue to the General Fund is the local property tax which accounts for over 20 percent of the fund revenue. The second major source of revenues are the franchise and utility taxes. Total taxes account for one-half of the revenue in the fund. Also in the General Fund is revenue from licenses and permits; intergovernmental revenues; charges for services, fines, and forfeitures; and revenue from the use of money and property.

   b. Special revenue funds are used to account for the proceeds of specific revenue sources (other than special assessments, expendable trusts or major capital projects) that are legally restricted to expenditures for specified purposes.

   c. The debt service fund is used to account for the accumulation of resources for, and the payment of, general long-term debt principal, interest and related costs.

   d. The capital projects fund is used to account for the accumulation of financial resources to be used for the acquisition of major capital systems or facilities.

2. Proprietary Funds

Enterprise funds are used to account for operations (a) that are financed and operated in a manner similar to private business enterprises -- where the intent of the governing body is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges; or (b) where the governing body has decided that periodic determination of revenues earned, expenses incurred, and/or net income is appropriate for capital maintenance, public policy, management control, accountability or other purposes.

Revenue for the Water Pollution Control and Solid Waste Fund comes from charges to homes and businesses for sewer service and trash pick up respectively. Causeway Fund revenues come from cash tolls and the sale of annual passes. Transit system fund revenues come from fares and advertising.

3. Fiduciary Funds

Trust funds are used to account for assets held by the city in a trustee capacity or as an agent for individuals, private organizations, other governments and/or other funds. The city's trust funds include the Policeman's and Employees' Pension Trust Funds. Pension trust funds are accounted for in essentially the same manner as proprietary funds since capital maintenance is critical.

4. Account Groups

Account groups are used to establish control and accountability over the city's general fixed assets, and the unmatured principal of its general long-term debt, which is not associated with or the obligation of the proprietary or trust funds. Accordingly, the city maintains a general fixed asset account group and a general long-term debt account group.

B. Governmental - General Fund

1. Ad Valorem Taxes (Property Taxes)

An ad valorem tax is a tax levied in proportion to the assessed value of taxable property (taxable land, improvements thereon and tangible personal property). The ad valorem tax is also known as the property tax. Property taxes are based on a millage rate (one mill is the equivalent of $1 per $1,000 of assessed value or
0.1 percent) which is applied to the total taxable value of all real and tangible personal property. Revenue from ad valorem taxes may be used to fund both operating costs and capital projects.

Current Status: The City of Treasure Island anticipates raising a total of $950,000 through property taxes for FY 1997-98 with an adopted millage rate of 1.5272 mills.

2. Franchise Taxes/Fees and Utility Taxes

a. Franchise Tax

A franchise tax or fee is a charge levied against a corporation or individual by a local government in return for granting a privilege, sanctioning a monopoly, or permitting the use of public property.

to Section 337.401(b), Florida Statutes (F.S.), telephone franchise fees "...may not exceed 1 percent of the gross receipts on recurring local service revenues for services provided within the corporate limits of the municipality by such telephone company. This subsection shall not impair any franchise in existence on July 1, 1985."

The *Cable Communications Policy Act of 1984* established a limit on the franchise fee that could be levied on a cable company. Section 622(b) states: "For any twelve-month period, the franchise fees paid by a cable operator with respect to any cable system shall not exceed 5 percent of such cable operator's gross revenues derived in such period from the operation

of the cable system."

Current Status: The City of Treasure Island levies the following franchise fees:

Company	Method of Calculating Fee	FY 95-96 Actual Revenues
Florida Power Corporation	6 percent of bills	$472,000
Time Warner	5 percent	$82,000
General Telephone	1 percent of local bills	$17,000
Natural Gas	6 percent	$16,000
Total Franchise Fees FY 1995-96		$587,000

The City of Treasure Island expects to raise $585,000 from franchise fees in FY 1997-98.

b. Utility Tax

A utility tax is a tax levied by a local government on the consumers of various utilities, such as electricity, telephone, gas, cable, etc.

Current Status: The City of Treasure Island levies utility taxes, per Ordinance 82-9.

Utility	Method of Calculating Fee	FY 95-96 Actual Revenues
Electricity	6 percent of bills	$405,000
Fuel Oil	2.4 cents per gallon	$600
Water	6 percent	$67,000
Natural Gas	6 percent	$20,000
Total Utility Service Taxes FY 1995-96		$492,600
Total utility service taxes budgeted for FY 1997-98 are		$484,500

3. Occupational License Tax

A municipality may levy an occupational license tax for the privilege of engaging in or managing any business, profession, or occupation within its jurisdiction.

Current Status: Total revenue collected from professional and occupational licenses in FY 1995-96 was $38,000, and the budget in this category for FY 1997- 98 is $47,000.

4. Permits

Permits are issued to individuals/businesses granting permission for some action. Fees for issuing permits can be assessed to generate excess revenues or set to cover cost. Permits allow a municipality to be aware of activities going on within their jurisdiction and to regulate them for the public safety and interest. For example, building permits are required to ensure that buildings within a municipality meet the building codes the municipality has adopted.

Current Status: The City of Treasure Island issues building, electrical, and plumbing permits, as well as requiring site plan reviews. Total revenue collected
from permits in FY 1995-96 was $61,000. Revenues for permits for 1997-98 are projected to

~~be as follows:~~

~~Building Permits~~	~~=~~	~~$60,000~~
~~P & Z Fees~~	~~=~~	~~$1,000~~
~~Total Permits FY 1997-98~~	~~=~~	~~$61,000~~

~~5. Fines, Forfeitures, and Penalties~~

~~Fines, forfeitures, and penalties are monies collected locally (e.g., parking tickets) or collected at the county level (e.g., court fines) and distributed back to the municipality by Clerk of the Circuit Court, as specified in the Florida Statutes.~~

~~Current Status: Fines, forfeitures, and penalties revenue for FY 1995-96 was $172,500. Budgeted for FY 1997-98 under fines, forfeitures and penalties are revenues of $180,000.~~

~~6. Charges for Services~~

~~Charges for services include monies collected by the city for services rendered.~~

~~Current Status: Treasure Island received revenues in this category for FY 1995-96 of $760,000. The FY 1997-98 budget anticipates revenues of $796,000 from this source.~~

~~7. Interest~~

~~Interest is monies earned on investment of municipal revenues and surpluses. Interest payments resulting from aggressive money management have become an increasingly important source of revenue for municipalities.~~

~~Current Status: Interest earnings for FY 1995-96 were reported as $71,000 in the general fund and earnings for FY 1997-98 are budgeted to be $70,000.~~

~~8. Miscellaneous~~

~~Miscellaneous revenues are revenues generated through a variety of sources, including sale of municipal services, rental of municipal property, donations, interest payments, etc.~~

~~Current Status: Treasure Island includes interest earnings under miscellaneous revenue. In FY 1997-98, the city anticipates receipts of $67,000 from miscellaneous revenues.~~

~~9. Cash Brought Forward -- Unreserved (Undesignated) Fund Balance~~

~~The unreserved or undesignated fund balance consists of revenues that are not committed or reserved for a particular expenditure or use, i.e., monies available to spend. The City of Treasure Island has over $639,000 in unreserved fund balances for FY 1997-98.~~

~~Florida municipalities are not allowed by statute to budget more expenditures than income;~~

they may not operate at a deficit, and they must have a balanced budget. Cash brought forward (also called the undesignated fund balance) is a transfer of monies remaining from previous fiscal year's budget to the current year. The money brought forward may be used to balance the city's budget, or for unplanned emergencies or large capital purchases.

The size of a local government's fund balances can affect its ability to withstand financial emergencies. It can also affect its ability to accumulate funds for capital purchases without having to borrow. There are no set rules for determining the appropriate level of reserves, however, ten to fifteen percent of operating revenues is typical. Much depends on circumstances, such as the kinds of natural disasters or hardships that the jurisdiction is subject to, the adequacy of its insurance coverage, the flexibility of the revenue base, the overall financial health of the local government, state regulations, and national economic conditions.

Current Status: Treasure Island required no cash brought forward to balance their FY 1995-96 budget. For FY 1997-98, the city has budgeted approximately $500,000 from the unappropriated fund balance to cover operating expenses.

C. Governmental - Special Revenue Sources - Intergovernmental Revenues

Intergovernmental revenues are monies received by the municipality from other levels of government. They may be used to finance a service the city performs for its citizens, services that may normally be provided by a different level of government, or as a special funding source established to pay for a particular service. Examples would include an ad valorem fire district tax for a designated geographical area, or a charge levied on phone service to fund countywide emergency medical services.

Current Status: The City of Treasure Island receives intergovernmental revenues from several sources, among them state revenue sharing, sales taxes, and gasoline rebate. For FY 1997-98, Treasure Island has budgeted a total of $771,000 in intergovernmental revenues. Individual special revenue sources are explained below.

1. Special Revenue Sources - Treasure Island and Pinellas County

    a. EMS Services Treasure Island received $286,000 from Pinellas County for operating EMS services in FY 1995-96, and expects to receive the same amount in FY 1997- 98.

    b. Impact Fees - Transportation Impact Fee (Transportation Trust Fund)

Impact fees are charges assessed against new development, which attempt to cover the cost of providing capital facilities (infrastructure) needed to serve the development. Their use is promoted as a way for growth to "pay its own way" by charging at the beginning for infrastructure needed by new development. Impact fees are one way to ensure that existing residents will not bear the entire cost of new facilities necessitated by new growth and development.

The "fair share" philosophy underlying impact fee usage is its most fundamental principle. It is this principle which prohibits use of the fees for any purpose other than that of providing new

facilities necessary to accommodate the new development. Therefore, impact fees cannot be used to correct existing infrastructure deficiencies.

Current Status: The City of Treasure Island levies an impact fee for transportation based on Pinellas County Ordinance 86-43. The *Pinellas County Transportation Fee Ordinance* establishes fixed impact fees for all of the county. As specified in an agreement with the county, 50 percent of funds collected from developers for the transportation impact fee, minus an administration charge of four percent, is returned to the county.

The City of Treasure Island received revenues of $8,600 from the transportation impact fee and the administration of the fee in FY 1995-96. Anticipated revenues for FY 1997-98 are $8,000 from the transportation impact fee and the administration of the transportation impact fee.

c. County Local Option Gas Tax (County Gas Tax Fund)

Through an interlocal agreement resigned in 1997 between the municipalities and Pinellas County government, the permitted six cents local option gas tax authorized by Section 336.025(7), F.S., was extended through August 31, 2007. The agreement divides the proceeds ($16 million was received in fiscal year 1995-96 on a countywide basis) between the municipalities (25 percent) and the county (75 percent).

Current Status: The City of Treasure Island anticipates receiving $93,000 in Local Option Gas Tax monies during FY 1997-98.

d. Local Option Sales Tax Fund

The 1987 Florida Legislature passed the *Local Government Infrastructure Act* which expands local government revenue generating capacity by authorizing each county to levy a local government infrastructure sales surtax. The discretionary sales surtax of one-half of one percent or one percent is subject to approval by a majority of the electorate of the county. The surtax may be levied for up to 15 years after being implemented, and its proceeds must be expended within the county and its municipalities to finance, plan, and construct infrastructure, defined in the bill to mean:

"...any fixed capital expenditure or fixed capital costs associated with the construction, reconstruction, or improvement of public facilities which have a life expectancy of 5 or more years and any land acquisition, land improvement, design and engineering costs related thereto." (Section 212.055(3), F.S.)

Current Status: The Local Option Sales Tax (Penny For Pinellas) was approved by the voters in 1990, and in 1997 was reapproved for another ten years until 2010. The City of Treasure Island anticipates receipts of approximately $573,000 in FY 1997-98 and $7.5 million over the next ten years.

2. Special Revenue Sources - State Revenue Sharing

State-shared revenues are initially received by the state, and are then proportionately returned to or shared with municipalities and counties. The City of Treasure Island anticipates

total receipts of $485,000 from this source in FY 1997-98. Individual state revenue sources are discussed below.

a. Half-Cent Sales Tax Disbursement

The Local Government Half-Cent Sales Tax Program is administered by the Department of Revenue. Eligibility to receive half-cent sales tax revenues is limited to cities and counties which qualify to receive revenue sharing program funds.

"A local government is authorized to pledge proceeds of the local government half-cent sales tax for the payment of principal and interest on any capital project" (Section 218.64, F.S.). Cities are directed to expend these revenues "only for municipality-wide programs or for municipality-wide property tax or municipal utility tax relief." Additionally, "all utility tax reductions afforded by participation in the local government half-cent sales tax shall be applied uniformly across all types of taxed utility services."

Current Status: The Department of Revenue estimates that Treasure Island will receive $310,000 from the half-cent local government sales tax distributions in FY 1997-98. The City of Treasure Island received $311,000 in FY 1995-96.

b. Beverage License Tax

Florida's beverage license is administered by the Department of Business Regulation, Division of Alcoholic Beverages and Tobacco. A portion of the license tax imposed and collected within an incorporated municipality is returned to that municipality.

Current Status: The City of Treasure Island received $21,000 in FY 1995-96. The city has budgeted $20,000 in expected receipts from this source for FY 1997-98.

c. Mobile Home License Tax

Mobile home license fees ranging from $20 to $80 (levied according to length) are collected annually by each county Tax Collector and remitted to the Department of Highway Safety. After a one dollar fifty cents sum per license is paid into the general revenue fund, the balance is returned to the county in which the mobile homes are located. The revenue is divided: one-half to the district school board and the remainder either to the county or the city where the mobile home is located.

Current Status: The City of Treasure Island receives no money from the Mobile Home License Tax.

d. Motor Fuel Tax Refunds for Municipalities

The motor fuel tax refund is that portion of the state motor and special fuels taxes which is paid by the municipality on motor fuel or special fuel used in motor vehicles operated for a municipal purpose. The money is returned to the governing body of the municipality. However, the governing body of the municipality must file an application form with the Department of Revenue in order to obtain a permit which entitles the entity to a refund.

Current Status: The City of Treasure Island received $3,400 for FY 1995-96 from the Motor Fuel Tax Refunds for Municipalities, but no receipts are budgeted from this source for FY 1997-98.

e. Firefighters Supplemental Compensation

The firefighters supplemental compensation is an educational incentive for firefighters, and this supplement reimburses the municipality from state funds. Supplemental compensation is added to the income of firefighters who meet

certain educational requirements, if said education is not a requirement for employment. Each firefighter with an associates degree receives $50 per month, and each firefighter with a bachelors degree in a fire-related subject receives a supplement of $110 monthly. The municipality reports monies paid under this statute (Section 633.382, F.S.) to the Division of State Fire Marshal of the Department of Insurance to receive reimbursement from the state.

Current Status: The City of Treasure Island received $1,200 from the Firefighters Supplemental compensation fund in FY 1995-96, and has budgeted the same amount for FY 1997-98.

f. Two-Cent Cigarette Tax Distribution to Municipalities

A portion of the tax levied on each pack of cigarettes is distributed monthly to municipalities.

Current Status: The City of Treasure Island received $20,400 in FY 1995-96, and estimates that it will receive $19,500 in FY 1997-98 .

D. Governmental - Capital Projects Fund

The Capital Projects Fund is used to account for the accumulation of financial resources to be used for the acquisition of major capital equipment or facilities. The Capital Projects Fund is composed of five programs: the Road Resurfacing Fund (accumulates appropriations for the General Fund for road resurfacing of city-maintained streets); the Beach Improvements fund (funded by interest); the EMS Equipment Sinking Fund (for renewal and replacement of EMS equipment); the Public Works Equipment Sinking fund (for purchases of capital equipment); and the Police Contraband Forfeiture Fund (financed through the sale of confiscated property for purchases of police equipment and facilities). Capital Projects Fund revenues and expenditures are illustrated below:

Table 1
Capital Projects Fund Revenues and Expenditures

Program	**Fund Balance 9/30/96**	**Fund Balance 9/30/97**	**Proposed 97/98 Revenues**	**Proposed 97/98 Expenditures**
Road Resurfacing	$157,359	$199,859	$7,500	$119,750
P/W Equipment	37,364	57,674	22,000	63,100

Beach Improvement	416,141	387,041	21,000	50,000
EMS Equipment	168,912	188,442	19,500	250,000

Source: *Treasure Island FY 1997-98 Budget*

E. Proprietary/Enterprise Funds

Enterprise funds are used to account for municipal services that are operated and financed in a manner similar to private business enterprises. It is established by the local government to account for all revenues and expenditures for a service. An enterprise fund is a mechanism to ensure that the fees charged for the service recoup all cost associated with the service, both capital and operating.

Enterprise funds are typically used for utilities: water, sewer, gas, and sanitation. They can also be used where revenues are collected in connection with providing the service, such as toll bridge, marina, parking or pier fishing services. Enterprise funds are used to account for the provision of goods and services, primarily to the public at large, on a user charge basis.

Revenue bonds are often used to finance needed improvements in services operated as enterprise funds. The revenue bonds are backed by the revenues generated primarily through user charges, connection fees, franchise fees or utility taxes. Revenue bonds may have a requirement that revenues must equal operating expenses, renewal and replacement payments and debt service. The benefit to the municipality is that the true cost of providing the service is isolated and allows a determination of the true value of that service.

Current Status: Treasure Island utilizes four enterprise funds. These funds are as follows:

1. Causeway Fund

The causeway fund accounts for the operation and maintenance of the Treasure Island Causeway toll collection and drawbridge facilities. In FY 1996-97 the city raised $1,896,000; $1,909,000 is anticipated for FY 1997-98, with capital expenditures of $1,284,000.

2. Water Pollution Control Fund

The Water Pollution Control Fund accounts for the operation and maintenance of the waste water collection and transmission system. Connection fees are fees charged individuals and businesses to connect to current infrastructure. They are used to allay capital cost of infrastructure necessary to support an additional user. The City of Treasure Island assesses a Sewer Impact Fee (connection fee) of $325 per new unit. This is a one time only fee charged to new buildings which require sewer services. Although no new connections were made in FY 1996-97 and none are expected in FY 1997-98, the city raised $1,435,000 from service charges. The city anticipates receiving $1,423,000 from service charges in FY 1997-98, with capital expenditures of $258,000.

3. Solid Waste Fund

Garbage and Trash Fund accounts for the operation and maintenance of collecting and disposing of all refuse generated within the city. In FY 1996-97 the city raised $1,022,300; $1,018,000 is anticipated for FY 1997-98, but no capital expenditures are planned.

4. Transit System Fund

The Transit System Fund accounts for the operation and maintenance of the city public transportation system. The system generated approximately $52,000 in FY 1996-97, and over $57,000 is anticipated for FY 1997-98, but no major capital expenditures are planned.

5. Stormwater Management Fund

This fund accounts for the operation and maintenance of the city stormwater management system, as required by the National Pollution Discharge Elimination System (NPDES). The fund generated approximately $163,000 in FY 1996-97, and an increase to $169,000 is anticipated for FY 1997-98. Stormwater capital improvements are planned for FY 1997-98 and FY 1998-99 in the sum of $300,000, and approximately $74,000 was expended in FY 1996-97 for vehicles and equipment.

6. Treasure Island Recreation Center Fund

This fund accounts for the operation and maintenance of the Treasure Island Golf, Tennis, and Recreation Center on Paradise Island. The fund generated approximately $217,000 in FY 1996-97, and approximately $219,000 is anticipated for FY 1997-98, with $17,500 being spent on major capital expenditures.

F. Fiduciary Funds

The City of Treasure Island has no fiduciary funds that impact or can be used for capital improvements.

G. Other Sources

1. Borrowing

The high cost of many capital improvements requires local governments to utilize borrowing, either through short-term or long-term financing. Short-term financing is one option available to raise required revenue for short periods, generally ranging from one to five years. The more customary method, however, is to authorize long-term bond issues, normally for five to forty years. One of the rationales for borrowing in a state that is experiencing tremendous growth, is that the residents who are enjoying the benefits of the capital improvements in the future are responsible for paying part of the cost. Furthermore, all cost is not borne by those residents currently residing in a municipality, since the cost is spread out over the life of the particular improvement. Ideally there should be a direct correlation between the term of the bond and the expected life of the capital improvement.

There are two types of bonds typically used by municipalities to raise funds. The first is the general obligation bond, which is backed by the full faith and credit of the local government,

and is required to be approved by voter referendum. General obligation bonds offer lower interest rates than other bonds, as they are, in effect, secured by the taxing power of the government. Revenues collected from ad valorem taxes on real estate and other sources of general revenue are used to service the government debt. Capital improvements financed through general obligation bonds should benefit the municipality as a whole rather than particular areas or groups.

The second type of bond is the revenue bond, which is financed by those directly benefiting from the capital improvement. Revenue obtained from the issuance of revenue bonds is generally used to finance publicly owned facilities, such as sewage treatment plants, parking garages, water systems, etc. Charges collected from the users of these facilities are used, in turn, to retire the bond obligations. In this respect, the capital project is self- supporting. Interest rates tend to be higher than for general obligation bonds, and issuance of the bonds may be approved by the governing body without voter referendum.

The City Commission may also approve issuance of a revenue bond pledging a particular source of funding to repay the bond. For example, parking meter revenues (or a designated portion of them) may be pledged to retire a bond issue to construct a parking garage.

General Obligation Bonds Current Status: The City of Treasure Island has a AAA bond rating, and has issued general obligation bonds to finance the establishment and maintenance of the municipal sewer system. Ad valorem taxes were pledged in payment of bond principal and interest. The status of the general obligation bonds is as follows:

1977 General Obligation Sewer Bonds

Orig. Amt.	Interest	Amt. Remaining	Final Maturity
$500,000	5.5-5.9%	$160,000	9/1/02

Revenue Bonds Current Status: The City of Treasure Island has a AAA bond rating and has issued revenue bonds for extension and improvements to the sewer system and for improvements to the municipal causeway. The 1977 Sewer Revenue Bonds are secured through system revenues, investment of the bond interest, and reserve funds.

The 1992 Causeway Improvement Revenue Refunding Bonds are secured with the operating revenue of the Causeway Fund.

1977 Sewer Revenue Bonds

Original Amount	Amount Outstanding	Interest Rate	Maturity
$410,000	$237,500	5.4-5.6%	01/07

1992 Causeway Improvement Revenue Refunding Bonds

Original Amount	Amount Outstanding	Interest Rate	Maturity
$2,250,000	$ $1,145,000	6.6-9.375%	11/01/02

2. County, Regional, State, and Federal Grants

Grants are monies received for which the city must make application. Grants are tied to a specific purpose or use, and cities are in competition to be awarded grant dollars. As such,

grants are not a reliable source of funding.

Policy and Practice Inventory

Rule 9J-5, F.A.C., requires LOS standards to be addressed by all local governments in their comprehensive planning process.

Current Status: Treasure Island has formally adopted LOS standards within this comprehensive plan.

BUDGETING

1. Capital Budget

Capital budgeting is a form of economic technical analysis that systematically compares costs to benefits in the hope that scarce resources can be allocated efficiently. A capital budget is an annual financial plan that specifies the capital improvements or items a municipality plans to provide during a given fiscal year, while specifying the revenues that will be used to pay for the improvements or items. As defined in Rule 9J-5, F.A.C., "capital budget means the portion of each local government's budget which reflects capital improvements scheduled for a fiscal year."

Prior to establishing a capital budget, the local government should adopt a definition of what will be included in that budget. Capital improvements are defined in Rule 9J-5, F.A.C., as "physical assets constructed or purchased to provide, improve or replace a public facility which is large scale and high in cost. The cost of a capital improvement is generally nonrecurring and may require multi-year financing. For the purposes of this rule, physical assets which have been identified as existing or projected needs in the individual comprehensive plan elements shall be considered capital improvements."

Most definitions concern the cost of the improvement and the expected life and method of payment. All of the elements of the definition are variables that should be tailored to the size of the municipality. An example definition of a capital improvement is an improvement costing $5,000 or more, with an expected life of five years or more and requiring multi-year financing.

Current Status: Treasure Island currently adopts an annual capital budget in conjunction with the operating budget.

and Infrastructure Construction

As a condition for development approval, local governments can require developers to dedicate land for roads, parks, etc., to be used for public purposes. Dedications, infrastructure construction, and/or payment in lieu of such actions are generally used as tools in concert with impact fees, to ensure that infrastructure is adequate to support the LOS standards adopted by the community.

When an area for development is too small for such land dedications, or it is not feasible, the municipality may require payment of a fee of equivalent value. The fee would be used for

provision of services required by the development. Construction of public facilities by the developer, which are then transferred to the municipality, is another method utilized by municipalities to ensure that necessary infrastructure is in place to support development.

Current Status: The City of Treasure Island may require land dedication or infrastructure improvements as a condition for development.

2. Other Methods

There are other methods available to municipalities, some of which include the use of Urban Service Areas, moratoria, and tax increment financing. The City of Treasure Island has not availed itself of any of these methods.

IV. ANALYSIS

A. Background

This section begins the examination of the municipality's ability to fund the capital needs derived from the Schedule of Capital Improvements. The purpose of this section is to determine if sufficient revenue will be available within the existing budgeting framework of the municipality to fund improvements as needed.

A consideration of alternatives implies that a decision is made by the municipality to maintain, increase, or decrease its LOS standards based on cost and willingness to pay.

The Department of Community Affairs is required by Rule 9J-5, F.A.C., to base its determination of compliance of the municipality's comprehensive plan with the requirements of the law on the specific characteristics of the community. Concerning capital improvements, "...the Department shall consider the scale of public services the local government provides or is projected to provide as it relates to the level of capital improvements planning required." [Rule 9J-5.002(2)(c)]

B. Changes in Fund Balances/Retained Earnings

Fund balances or retained earnings are an integral factor in determining the financial strategy of the city. A table showing fund balances and retained earnings as of September 30, 1996, for each of the city's funds follows:

Table 2 Fund Balances and Retained Earnings For FY 1996

Fund	Unreserved Fund Balance	Unreserved Retained Earnings	Increase (Decrease) Over FY 95

General Fund	$1,348,106	--	$514,798

Special Revenue Funds			
Local Option Sales Tax	1,835,471	--	417,305
County Gas Tax Fund	201,758	--	50,494
Police Training Fund	35,459	--	(4,797)
Transportation Trust Fund	152,730	--	8,587
Capital Projects Fund			
P/W Equipment Sinking Fund	37,364	--	21,502
EMS Equipment Sinking Fund	168,912	--	19,614
Road Resurfacing Fund	157,359	--	7,974
Beach Improvement Fund	416,141	--	(46,258)
Contraband Fund	1,593	--	(1,533)
Proprietary/Enterprise Funds			
Transit System Fund	--	21,270	(2,017)
Causeway Fund	--	6,372,813	918,203
Water Pollution Control Fund	--	3,289,972	38,623
Solid Waste Fund	--	628,739	11,957
Stormwater Management Fund	--	204,115	161,622
Recreation Center Fund	--	418,368	(76,663)

Source: *City of Treasure Island Comprehensive Annual Financial Report,* September 30, 1996

C. Cash and Investments

Cash resources of the individual funds are combined to form a pool of cash and investments which is managed by the city Finance Director. Investments of pooled cash consist primarily of certificates of deposit and time deposits, and are carried at the lower of cost or market value. Interest income earned as a result of pooling, is distributed to the appropriate funds utilizing a formula based on the average daily balance of cash and marketable securities of each fund. The pension funds and the agency fund assets are carried at market value. Interest income for all investment amounted to $885,834 in FY 1995-96, a decrease of 4.88 percent over the previous fiscal year.

All of the city's investments are insured or registered and are held by the city or its agents.

The city's pension investments are comprised of U.S. Government Securities, including GNMAs, FHLMC securities, Treasury strips and receipts. The assets in deferred compensation plan are comprised of mutual funds.

D. Financial Assessment of Ability to Fund Identified Capital Needs

1. Forecasting of Revenues and Expenditures

Forecasts and projections of future revenues and expenditures can be a useful planning tool if the reader accepts them for what they are - educated guesses about the future financial environment. The danger that forecasts and projections present is that they will be viewed as absolute once they are printed in a document such as a comprehensive plan. Rather than placing total reliance on the long-term accuracy of forecasts and projections, they should be considered an approximation or estimate of what can be expected to occur. The reader should always keep in mind that with changeable local, national, and international environments, what is thought today to be valid and accurate, may tomorrow be of little value. Nonetheless, forecasts and projections are required by Rule 9J-5 to be included in the *Capital Improvements Element.* Those that follow represent good-faith attempts to make them worthwhile estimates of future financial conditions.

There is considerable debate about whether to apply inflation factors to projections. Because future inflation percentages are among the unknowns, for the purposes of this element, present day dollars are used in the tables. During the annual review of the CIE and preparation of the operating budget and capital improvements program, the figures should be adjusted to reflect future costs as they become known.

2. Projection of Debt Service Obligations

The City of Treasure Island's long-term debt service obligations are depicted below. The percentage of net bonded debt to assessed valuation and the amount of bonded debt per capita are useful indications of the city's debt position to municipal management, citizens, and investors. These data for the city as of September 30, 1996, were as follows:

Percentage of debt to assessed value 0.02%
Debt per capita (permanent population) $21.78

3. Projection of Ad Valorem Tax Data

See Section IV. of this Data and Analysis for a general discussion of ad valorem taxation. For the City of Treasure Island, taxable value has increased over the last ten years by an average of 3.7 percent per year. The millage levy has varied from 1.4235 (1987 to 1989) to 1.6172 (1994). Ad valorem dollars have represented an average of 20.7 percent of total city revenues over the period of 1987 to 1996, ranging from a low18.8 percent in FY 1991 to a high of 23.9 percent in FY 1990. For FY 1997-98 ad valorem taxes represent approximately 21 percent of total revenues.

4. Projection of Other Major Tax Bases and Revenue Sources

Table 3
Ad Valorem Taxes Historic and Projected Rates Fiscal Years 1987 to 2002*

Fiscal Year	Taxable Assessed Value**	% Change	Millage	Revenue
1987	$443,398	--	1.4235	$631,177
1988	478,210	7.30%	1.4235	680,732
1989	483,384	1.10%	1.4235	688,097
1990	482,213	-0.20%	1.7535	845,560
1991	514,587	6.30%	1.4235	732,515
1992	539,368	4.60%	1.3745	741,361
1993	545,311	1.10%	1.3672	745,549
1994	587,577	7.20%	1.6172	950,230
1995	607,399	3.30%	1.5716	954,588
1996	622,072	2.40%	1.5430	959,857
1997	637,624	1.41%	1.5272	973,779
1998	653,564†	2.5%	1.5272***	998,123
1999	669,903	2.5%	1.5272	1,023,076
2000	686,651	2.5%	1.5272	1,048,653
2001	703,817	2.5%	1.5272	1,074,869
2002	721,413	2.5%	1.5272	1,101,742

Source: *City of Treasure Island Comprehensive Annual Financial Report*, September 30, 1996
City of Treasure Island Budget, FY 1997-98
* Assessed value numbers in millions of dollars
** Real and personal property
† Estimated revenues and tax rates for FY 98 to 2002

The table below illustrates the estimated revenues for major funding sources (other than ad valorem taxes) during the life of the current Capital Improvements Program.

Table 4
Estimated Revenues for Major Funding Sources

Revenue Source	FY 97-98	FY 98-99	FY 99-2000	FY 2000-01	FY 2001-02	Total

Local Option Sales Tax (Penny for Pinellas)	$1,424,000	$1,268,000	$727,000	$581,000	$572,000	$4,572,000
Causeway Fund	8,000,000	8,500,000	9,000,000	9,500,000	10,000,000	45,000,000
Stormwater Enterprise Fund	250,000	256,000	262,000	268,000	274,000	1,310,000
Wastewater Fund	3,000,000	2,970,000	2,940,300	2,910,897	2,881,788	14,702,985
Recreation Fund	169,000	170,690	172,397	174,120	175,862	862,069

Source: Pinellas County and Treasure Island Budget Office

Funding assumptions:

- Local Option Sales Tax - Pinellas County allocation will continue as projected.
- Causeway Fund - Revenues will increase by approximately $500,000 per year.
- Stormwater Enterprise Fund - Revenues will increase by approximately $6,000 per year.
- Wastewater Fund - Revenues will decrease by approximately 1 percent per year.
- Recreation Fund - Revenues will increase by approximately 1 percent per year.

5. Projection of Operating Cost Considerations

Operating costs are greatly influenced by inflation and the resultant increase in the costs of equipment, materials, and labor. No absolute operating cost figure can be projected, but if historical patterns are duplicated in the future, they can be expected to increase an average of three percent per year.

Table 5
Operating Costs Projections for Fiscal Years 1997-98 to 2001-2002
(Excluding Enterprise Funds, but Including Capital Projects and Special Revenues)

Fiscal Year	**Estimated Costs**
1997-1998	$7,207,210

1998-1999	7,423,426
1999-2000	7,646,129
2000-2001	7,875,513
2001-2002	8,111,778

Source: FY 97 Budget plus 3% per year

6. Projection of Debt Capacity

Debt capacity for the City of Treasure Island is excellent as evidenced by its AAA bond rating. Standard & Poor's municipal debt rating system defines a rating of AAA as: "Debt rated AAA has the highest rating assigned by Standard & Poor's. Capacity to pay interest and repay principal is extremely strong." Moody's bond rating defines AAA as: "Bonds which are rated AAA are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as *gilt edge*." Interest payments are protected by a large or by an exceptionally stable margin, and principal is secure. While the various protective elements are likely to change, foreseeable changes are unlikely to impair the fundamentally strong position of such issues. Debt capacity is addressed by Objective 1.2 of this *Capital Improvements Element*.

F. Summary of Findings

The following is a listing of the findings supported by the data collection and analysis of the capital needs, financial resources, and policies and practices, of the City of Treasure Island.

- The city currently has an excellent budget presentation and an award winning financial report. The graphs, historical data, budget message from the City Manager, and details available concerning line item expenditures provide the Commission with the necessary data to make informed financial decisions.

Finding: That the city continue its current budget presentation and award winning financial reports.

- No revenue source used by the city and under its control is at the maximum allowed under Florida law.

Finding: The city has many revenues sources available. The millage rate has historically been under two mills, although a levy of up to ten mills is allowed under Florida law. Additionally, utility taxes of up to 10 percent can be levied on all utility services within the city.

A. Concurrency Management Requirements

The Department of Community Affairs Department of Economic Opportunity has stated that any concurrency management system prepared by a local government must contain the following elements to be deemed adequate in meeting the intent of Rule 9J-5, F.A.C., and Chapter 163, F.S.

- A requirement that the local government maintain the adopted level-of-service standards.
- A requirement that the local government *Capital Improvements Element* set forth a financially feasible plan which demonstrates that the adopted level-of-service standards will be achieved and maintained.

- A system for monitoring and ensuring adherence to the adopted level-of-service standards, the schedule of capital improvements, and the availability of public facility capacity.
- Guidelines for interpreting and applying level-of-service standards to applications for development orders and development permits, and for determining when the test for concurrency must be met. The latest point in the application process for the determination of concurrency is prior to the approval of an application for a development order or permit which contains a specific plan for development, including the densities and intensities of development.
- A requirement that the local government adopt land development regulations which specify and implement provisions of the concurrency management system.

To meet the requirements of a concurrency management system, the City of Treasure Island will:

a. Continue to Adopt a Capital Budget and Implement a Capital Improvements Program and *Capital Improvements Element*

The capital budget will identify the costs and revenue sources for projects shown in the first year of the five-year capital improvements program. As projects are completed during the current budget year, they will be removed from the CIP and a new fifth year of projects added.

The CIPs may address deficiencies as identified in other elements of this comprehensive plan, as needed to serve new development or redevelopment proposed to be permitted by the local government. The plan is based on available or projected revenue sources adequate to fund identified capital assets.

b. Amend Current Land Development Regulations

The current land development regulations (LDRs) will be amended, as necessary, in order to maintain consistency with the adopted comprehensive plan.

c. Establish a Monitoring System to Ensure Concurrency

Programs and procedures will provide that levels of service shall not fall below those established in this comprehensive plan. The City Commission may issue a development permit when necessary facilities are in place at the time a development permit is issued, or a development permit may be issued subject to the condition that necessary facilities are in place when the impact of the development occurs.

d. Annual Review of the *Capital Improvements Element*

The required annual review of the *Capital Improvements Element* is articulated in the following section of this element, entitled "Monitoring and Evaluation."

V. MONITORING AND EVALUATION

Chapter 163, F.S., states that the CIE shall be reviewed on an annual basis and modified as necessary. Amendments to the comprehensive plans may be made not more than twice during any calendar year. However, corrections, updates and modifications concerning costs, revenues sources, acceptance of facilities pursuant to dedications which are consistent with the plan, or the date of construction of any facility enumerated in the *Capital Improvements Element* may be accomplished by ordinance and do not constitute an amendment to the plan.

Capital improvements programming is a continuous process and requires continuing involvement by the citizens, city staff, and City Commission. Some of the factors that require regular monitoring and evaluation are: changing capital needs, changes in revenue sources, expenditure levels, and public perceptions of these changes.

Community support is a vital element of a successful capital improvements program. Public involvement ensures that the goals of the community are reflected in decisions governing the way in which limited resources are expended. To accomplish this, an annual review of the *Capital Improvements Element* should be undertaken. The annual review will be the responsibility of the City Commission, and will include: a review of this element, recommendations concerning the capital improvements program and an annual capital budget based on the needs established in the review of this element. The City Commission should establish the timing of the presentation of the report at a public meeting to most effectively complement the budget cycle.

The review process may include, but is not limited to, an analysis of the following factors:

- Updates, corrections, and revision to costs, revenues, target dates and locations;
- Consistency with the other elements of the comprehensive plan;
- Actions of other local, county, and state agencies;
- Status of projects completed or progress made toward completion;
- The level of service being achieved;
- The debt status of the city;
- Grants or private donations received or being sought;
- Account balances and reserves; and
- Identification of new, emerging facility or land needs for the latter portion of the planning period.

VI. GOALS, OBJECTIVES, AND POLICIES

A. Background

~~Pursuant to Section 163.3177(9) and (10), F.S., and Rule 9J-5.016(3)(a), (b), and (c), F.A.C., the following represents the goals, objectives, and policies of the *Capital Improvements Element*. These goals, objectives, and policies are intended to establish the long-term end for the timely and efficient provision of public facilities through the use of sound fiscal policies.~~

~~**B. Nonapplicable Items**~~

~~All objectives and policies identified in Rule 9J-5.016, F.A.C., are applicable to the City of Treasure Island.~~

Introduction

The Treasure Island Capital Improvements Element is designed to consider the need for and the location of City public facilities and maintenance and replacement of assets.

Goal:

The City shall adopt ~~undertake fiscal actions necessary~~ an annual budget to provide and maintain a resilient community and public ~~facilities~~assets ~~for all residents within its jurisdiction at the adopted levels of service~~.

Objective 1.1: ~~Schedule of~~ Capital Improvements Planning

Capital improvements ~~contained in the adopted five-year Schedule of Capital Improvements~~, will be provided in Capital Improvement Plans (CIPs) ~~correct existing deficiencies~~ to proactively maintain assets, ~~to~~ accommodate desired future growth and resiliency, ~~and to replace worn out or obsolete facilities~~ and ~~will serve to~~ prioritize projects with fiscal resources ~~in order to maintain~~ in conjunction with adopted levels of service and City directives.

Policy 1.1.1: The City shall maintain a Capital Improvements Program (CIP) ~~the purpose of which is to evaluate projects proposed for inclusion in the five-year Schedule of Capital Improvements.~~

~~**Policy 1.1.2:** The City shall continue to develop and,~~ which is updated annually. ~~a multi-year CIP~~, ~~the first year of which shall be the Capital Budget.~~

~~**Policy 1.1.3:**~~ Proposed capital improvement projects shall be evaluated according to one or more of the following values ~~guidelines~~:

- Project is needed to eliminate a hazard to public health and safety;
- Project is needed to fulfill a legal commitment;
- Project is needed to preserve, maintain, refurbish, achieve full use of, or replace existing facilities or assets;

- Project is supported in the City's Strategic Plan, or other adopted plan;
- Project will provide or bring an existing facility up to an adopted level of service;
- Project will increase efficiency or use of existing facilities or assets, prevents or reduces futureimprovement or maintenance costs; ~~or provides service to all residents equitably;~~
- Project needed to accommodate facility demands resulting from new development or re-development;
- Project reduces capacity deficits;
- Project furthers policies adopted in other elements of this plan;
- Project needed to serve development for which a development order was issued prior to adoption of this comprehensive plan;
- Project will increase the economic base or quality of life of the residents; and
- ~~Budget impact of project, both capital and operating, will be considered and the City Commission will consider financial feasibility of project; and~~
- Project is ~~will be reviewed for~~ not in conflict ~~consistency~~ with plans of other agencies having responsibilityfor public facilities within the jurisdiction.

~~**Policy 1.1.4:** The City shall ensure the availability of public facilities at adopted levels of service needed to serve developments for which development permits were issued prior to the adoption of this comprehensive plan. Such facilities shall be provided in keeping with guidelines for the evaluation of capital improvements established in this element.~~

~~**Policy 1.1.5:** It is the policy of the City of Treasure Island to set a capital improvements cost threshold of $25,000 for projects to be included in the *Capital Improvements Element* of this comprehensive plan.~~

~~**Policy 1.1.6:** Existing and anticipated capacity deficiencies identified in other elements of this plan shall be corrected according to the financially feasible Schedule of Capital Improvements adopted through this *Capital Improvements Element* policy.~~

~~**Policy 1.1.7:** The City shall periodically examine the cost benefit of providing solid waste management by franchise collectors.~~

Policy 1.1.8~~2~~: The City shall consider the utilization of public or private ~~any federal, state, and/or local~~ grant~~s~~ funding ~~programs~~ or private funds to finance capital improvements ~~when such is recommended during any regular City Commission meeting~~, when feasible.

Policy 1.1.3: The City shall coordinate with Pinellas County, other agencies, the water management district, and other municipalities that provide public facilities within the City's jurisdiction to ensure projects are funded equitably.

Policy 1.1.4: The City shall, when appropriate, consider the adoption of impact fees assessments, user fees, or other funding mechanisms.

Policy 1.1.5: The City staff, shall issue development orders only when required capital facilities are present or will be available concurrent with the impact of development.

Policy 1.1.6: As a part of the capital improvement planning process, public facilities and utilities shall be located to: a) maximize the efficiency of services provided; b) minimize their

cost; and c) minimize their impacts on the natural environment, to the extent feasible.

Policy 1.1.7: The City will not give development approval to any new construction, redevelopment or renovation project which creates a need for new or expanded public capital improvements unless the project pays a proportional share of the costs of these improvements, or an alternate agreement is reached.

Policy 1.1.8: The City will prepare and adopt each year a five-year capital improvements program, to include all projects which entail expenditures of at least $25,000 and a life of at least five years.

Policy 1.1.9: The City will use developer contributions, including impact fees, to help fund the cost of public facilities needed to serve new development and redevelopment.

~~**Measure:** Implementation of policies.~~

~~**Type of Project & Name**~~	~~**Total**~~	~~**FY 99**~~	~~**FY 2000**~~	~~**FY 01**~~	~~**FY 02**~~	~~**FY 03**~~
~~***Sewer Service***~~						
~~Manhole and Line Rehabilitation~~	~~1,759.0~~	~~734.0 WF~~	~~246.0 WF~~	~~258.0 WF~~	~~271.0 WF~~	~~250.0 WF~~
~~***Drainage Improvements***~~						
~~West Gulf Area Storm Sewer Improvement~~	~~150.0~~	~~150.0 SF~~				
~~Misc. Sewer Improvements~~	~~50.0~~					~~50.0 SF~~
~~***Transportation***~~						
~~Road Resurfacing~~	~~383.0~~	~~94.0 GT~~	~~80.0 GT~~	~~69.0 GT~~	~~70.0 GT~~	~~70.0 GT~~
~~Treasure Island Causeway Replacement Feasibility Study~~	~~1,000.0~~		~~1,000.0 CF~~			
~~***Recreation/Open Space***~~						
~~Tennis Courts and Lighting~~	~~81.0~~	~~81.0 LO~~				
~~Treasure Island Beach~~	~~300.0~~	~~300.0 LO~~				

Center						
Fund Summary						
Causeway Fund	1,000.0		1,000.0			
County Gas Tax Fund	383.0	94.0	80.0	69.0	70.0	70.0
Local Option Sales Tax	381.0	381.0				
Stormwater Mgt. Fund	200.0	150.0				50.0
Water Poll. Control Fund	1,759.0	734.0	246.0	258.0	271.0	250.0
Totals	3,723.0	1,359.0	1,326.0	327.0	341.0	370.0

Source: City of Treasure Island Five Year Capital Improvement Program (FY 1999 to FY 2003)

Debt Management

The City shall manage its debt in a manner to retain the integrity of its fiscal resources.

Policy 1.2.1: When it is necessary for the city to incur debt in order to provide needed capital improvements to maintain adopted levels of service (LOS), the City shall give particular consideration to all factors that will achieve the highest possible rating of the national bond rating services and that will secure the lowest net interest cost for the indebtedness incurred.

Policy 1.2.2: The City will ensure that any bonds issued will be structured to be paid back within a period not to exceed the expected useful life of the capital project.

Policy 1.2.3: Where possible, special assessment, revenue, or other self supporting bonds will be used instead of general obligation bonds.

Policy 1.2.4: Borrowing power shall only be exercised upon an affirmative vote of four fifths (4/5) majority of the City Commission, and if required by the state constitution, by affirmative vote of the electors of the municipality, subject only to the following conditions:

The outstanding debt of the city, excluding debt directly related to the Treasure Island Causeway, shall not exceed three and one-half (3½) percent of the city's annual assessed valuation of the total taxable property within the City of Treasure Island. No single project shall be approved for debt financing by the City Commission without an affirmative vote of the electors of the municipality, if the cost of said project shall exceed fifteen (15) percent of the three and one-half (3½) percent debt limitation set out above.

The total annual debt service of the city, including required reserves but excluding alldebt service revenue relating directly to the Treasure Island Causeway, shall never exceed

~~twenty (20) percent of the annual total revenue of the city from all sources,excluding causeway revenues and federal and state revenue sharing funds.~~

~~In accepting any bid on the obligations of the city, the Commission shall be required to accept the bid which produces the lowest net interest cost for the indebtedness incurred, but the Commission shall have the power to refuse all bids.~~

~~In the preparation of any bond, the Commission shall give particular considerationto all factors that will achieve the highest possible rating of the national bond ratingservice, and that will secure the lowest net interest cost for the indebtedness incurred.~~

~~Measure: Implementation of policies and consistency with Florida law~~

Objective 1.2: Maintain Asset Management Programs

The City shall utilize the concepts of Asset Management to proactively maintain sanitary sewer, stormwater, transportation, buildings, significant structures, and recreational facilities.

Policy 1.2.1: The City will maintain an inventory of significant City-owned capital facilities, to include information on type, capacity, location and condition.

Policy 1.2.2: The City will maintain a program of regularly scheduled inspections of all capital facilities to monitor and record the condition of each.

Policy 1.2.3: Condition assessments shall be used to determine the improvements needed and to prioritize the improvements in a cost-effective manner to extend the life of the asset.

Policy 1.2.4: Asset management programs should be maintained and updated at least every five years.

Objective 1.3: Maintenance of Adopted Level-of-Service Standards

The City shall utilize its fiscal resources to eliminate any identified existing deficiencies and to provide needed capital improvements for future development and redevelopment, to address the goals of other comprehensive plan elements and to maintain ~~at~~ adopted levels of service. ~~as specified in the elements of this comprehensive plan.~~

~~**Policy 1.3.1:** The City shall work with other governmental jurisdictions to establish a strategyto ensure that the entire cost of providing necessary capital facilities, at adopted levels of service,for any future development or redevelopment within the jurisdiction shall not be borne by existing residents.~~

Policy 1.3.1: The City shall ensure the level of service standards established in the comprehensive plan through regular evaluation of facilities and assets and programming of

improvements as needed.

Policy 1.3.2: Upon any adoption of updated standards, the City will concurrently evaluate and adjust as needed its Capital Improvements Program to ensure that the capacity of facilities will meet the City's updated level of service standards.

~~**Policy 1.3.3:** The City shall, when appropriate, consider the adoption of impact fees in cooperation with other levels of government.~~

~~**Policy 1.3.4:** The city staff, at the direction of the City Commission, shall issue development orders and permits only when required capital facilities are present or will be available concurrent with the impact of development.~~

~~**Policy 1.3.5:** The adopted levels of service for public facilities within the jurisdiction of the City of Treasure Island shall be those adopted in the other elements of this plan and Policy 1.5.4 of this *Capital Improvements Element*.~~

~~**Measure:** Maintenance of levels of service~~

Objective 1.4: Coastal High Hazard Area

Public expenditures that support development in Coastal High Hazard Areas shall be limited to those improvements ~~included in this~~ supported by the adopted comprehensive plan or determined by the City Commission to be an overriding public benefit.

Policy 1.4.1: Public f ~~F~~unds shall not be expended in the Coastal High Hazard Area, except as ~~may be~~ deemed appropriate by the City to renew and replace public facilities in order to maintain adopted levels of service.

Policy 1.4.2: ~~Development~~ Developers shall fund required improvements generated by new development~~s~~ in the Coastal High Hazard Area, if the City Commission determines that those improvements are in the best interest of the City.

Objective 1.5: Concurrency Management ~~System~~

The City of Treasure Island shall provide, or require provision of, needed infrastructure for development and redevelopment concurrently with their impacts through the use of a concurrency management system, impact fees, implementation monitoring of the comprehensive plan, and enforcement of development regulations.

Policy 1.5.1: Land development regulations pertaining to concurrency management shall be amended to reflect section 163.3180, Florida Statutes and this policy.

Policy 1.5.2: The City shall ensure that all development and redevelopment taking place within its municipal boundaries do not result in a reduction of the level-of-service requirements as established and adopted in ~~the~~ ~~financially feasible~~ ~~*Capital Improvements Element*~~ of this comprehensive plan.

~~**Policy 1.5.2:** Development orders and permits shall be issued only if public facilities necessary to meet the level-of-service standards adopted pursuant to this comprehensive plan are available concurrent with the impacts of the development.~~

~~**Policy 1.5.3:** The land development regulations shall contain provisions whereby the development of residential and commercial land is timed and staged in conjunction with provision of supporting community facilities.~~

Policy 1.5.34: The City ~~of Treasure Island~~ shall ~~use~~ maintain the ~~following~~ levels of service provided in the comprehensive plan elements to determine the impacts of development and redevelopment.

~~Roads:~~

~~The operational level of service "D" peak hour shall be the standard for all arterial and collector roads within the city.~~

~~Sanitary Sewer:~~

~~The adopted level-of-service standard is 170 gallons per capita a day.~~Solid Waste:

~~The adopted level-of-service standard is 3.34 pounds per capita a day, excluding recycled materials.~~

~~Drainage:~~

~~The level of service "C", as described in the *Treasure Island Master Drainage Plan*, shall be the standard for flood control and stormwater management within the city. In addition, the following conditions shall be met:~~

- ~~Stormwater retention systems shall be designed to accommodate a 25-year, 24-hourstorm event.~~
- ~~Stormwater conveyance devices (e.g., drainage pipes) shall be designed to accommodate a three-year storm event.~~
- ~~The City shall require that the stormwater discharge rate for a post-developed or redeveloped site shall not exceed, in terms of peak flow and total volume, that which would occur from the site under existing conditions for the design storm.~~
- ~~Runoff shall, to the extent practicable, not be directly discharged into open~~
- ~~waters.~~
- ~~The land development regulations shall contain provisions which ensure that alldevelopment activity, excluding single-family homes, shall retain the first one inch ofrainfall on-site.~~

Potable Water:

The adopted level-of-service standard is 125 gallons per capita a day until the year 2004. Effective in 2005, the adopted level-of-service standard will decrease to 120 gallons per capita a day.

Coastal Management

- New development or redevelopment approvals shall require that post-development runoff rates, volumes, and pollutant loads do not exceed predevelopment conditions.
- The City shall protect the natural functions of the 100-year flood plain so that flood- carrying and flood storage capacity are maintained.
- The City shall adhere to the impervious surface ratios defined in Objective 1.1 and associated policies of the *Future Land Use Element*, in order to minimize runoff and stabilize water quality.

Parks and Recreation:

The standards shown in Tables 1 and 2 shall be the adopted parks and recreation facilities level-of-service standards.

Table 1
Level-of-Service Standards for Parks and Open Space

Park Facility	Service Area/ Population Served	Facilities
Mini Park	2 - 3 block area per 2,500	Play apparatus areas, benches, and open space, landscaping, picnic tables optional.
Neighborhood Park	0.25 - 0.5 mile per 5,000	Play apparatus areas, recreation buildings, sports fields, multi-purpose fields, senior citizen areas, landscaping, open space, free play areas.
Community Park	0.5 - 3 miles per 5,000	All facilities found in the neighborhood park plus facilities to service the entire family. Pools, softball/baseball fields, tennis courts, play areas, picnic areas, passive and active recreation areas, and recreation buildings.
Open Space	1 acre per 1,000	Passive recreation area, trails, and commemorative structures optional.

~~Beach~~	~~1 access per 0.5 mile of~~	~~Walkways, parking, and rest rooms~~

~~Table 2~~
~~Level-of-Service Standards for Specific Activities~~

~~Activity~~	~~Per Person LOS Standard~~
~~Baseball/Softball~~	~~1 field per 6,000~~
~~Basketball~~	~~1 court per 5,000~~
~~Beach Activities~~	~~1 mile beach per 25,000~~
~~Bicycling~~	~~1 mile of trail per 5,000~~
~~Boating~~	~~1 boat ramp/dock per 5,000~~
~~Fishing (from land)~~	~~1 site per 5,000~~
~~Golf~~	~~1 9-hole course per 25,000~~
~~Jogging/Walking~~	~~1 exercise/parcourse trail per 15,000~~
~~Picnicking~~	~~1 acre per 6,000~~
~~Tennis~~	~~1 court per 2,000~~

Policy 1.5.4~~5~~: The City ~~of Treasure Island~~ shall adopt and incorporate into its land development regulations a monitoring system designed to ensure adherence to adopted ~~continued enforcement of~~ levels of service, and provision of required public facility capacity.

~~**Policy 1.5.6:** The monitoring system shall be reviewed on an annual basis together with the review of the *Capital Improvements Element* and shall be updated the year prior to preparation of the required Evaluation and Appraisal Report.~~

~~**Policy 1.5.7:** Developments or redevelopments requiring the use of potable water, sanitary sewer, solid waste, or drainage facilities shall receive development orders subject to the following:~~

- ~~The public facilities are in place at the time of issuance of the certificate of occupancy; or~~
- ~~The provision of the facilities is guaranteed in an enforceable development agreement~~

~~pursuant to Section 163.3220, F.S., or an agreement or development order issued pursuant to Chapter 380, F.S., to be in place at the time of certificate of occupancy issuance.~~

~~**Policy 1.5.8:** Developments or redevelopments requiring the use of park and recreation facilities shall receive development orders subject to the following:~~

- ~~The facilities and services are in place or under construction at the time of~~

~~**Policy 1.5.9:** Developments or redevelopments requiring the use of roads shall receive development orders subject to:~~

- ~~The public facilities being in place or under construction at the time of issuance of the certificate of occupancy; or~~
- ~~The development order is issued conditioned on the necessary facilities and services being in place or under construction not more than three years after certificate of occupancy issuance as provided in the Schedule of Capital Improvements.~~

~~**Policy 1.5.10:** The Schedule of Capital Improvements may include projects listed in the firstthree years of the Florida Department of Transportation five-year work program.~~

~~**Policy 1.5.11:** The Schedule of Capital Improvements shall contain the estimated commencement and completion dates of road projects.~~

~~**Policy 1.5.12:** The elimination, deferral, or delay of construction of any road or service which is needed to maintain adopted level-of-service standards, and which is listed in the Schedule of Capital Improvements, shall require amendment of the comprehensive plan.~~

Policy 1.5.~~13~~6: Developments or redevelopments consisting of low-density residential dwellings, to be constructed on existing lots in subdivisions approved for such uses (residential infill), shall be considered de minimis and exempt from concurrency review. ~~Other developments or redevelopments shall be considered to have de minimis impacts and be exempt from concurrencyreview provided they comply with all of the following:~~

- ~~The net increase in traffic (peak hour) generated by the proposed development onto any affected roadway may not exceed one percent of the maximum service capacity of the roadway at the adopted peak-hour level-of-service standard.~~
- ~~The net increase in traffic (peak hour) generated by the proposed development, added to the total net increases in peak-hour traffic generated by all previously-approved de minimis exemptions on any affected roadway, may not exceed ten percent of the maximum service capacity of the roadway at the adopted peak-hour level-of-service standard.~~
- ~~The net increase in traffic (peak hour) generated by the proposed development onto any affected roadway designated as a hurricane evacuation route may not cause the actual level of service of the roadway to fall below the adopted peak-hour level-of-service standard.~~

Policy 1.5.7: The City shall develop a procedure to calculate compliance with the levels of service established in this comprehensive plan and shall follow the procedure to review development applications. The land development regulations will contain the formulas for calculating compliance plus tables which provide generation rates. Alternative methods

acceptable to the City Manager may also be used by the applicant for levels of service subject to concurrency requirements.

~~**Measure:** Adoption and implementation of a concurrency management system~~

Objective 1.6 Water Supply Planning

Appropriate mechanisms will be developed and adopted consistent with Pinellas County in order to assure that adequate water supplies are available to all water users.

Policy 1.6.1: In coordination with Pinellas County, assure that adequate water supplies and potable water facilities meeting the adopted level of service shall be in place and available to serve new development no later than the issuance of a certificate of occupancy.

Policy 1.6.2: The City shall implement the policies and goals described in the 10-Year Water Supply Facilities Plan.

Objective 1.7 Multi Modal Impact Fees

Maintain a multimodal transportation system that increases mobility for bicyclists, pedestrians and transit users as well as motorists, and that promotes development patterns that reduce vehicle miles traveled and greenhouse gas emissions.

Policy 1.7.1 In coordination with the County-wide Multimodal Impact Fee Ordinance, the City shall collect impact fees for new development and redevelopment based on the adopted Multimodal Impact Fee Schedule in Chapter 150, Impact Fees, of the Pinellas County Land Development Code.

Policy 1.7.2 Multimodal Impact Fee credit shall be given for previous Transportation Impact Fees paid for permitted uses as determined in the land development regulations.

Policy 1.7.3 The City will give development approval to any new construction, redevelopment or renovation project which creates a need for new or expanded public capital improvements under the County-wide Multimodal Impact Fee Ordinance only if the project pays a proportional share of the costs of these improvements in accordance with the Multimodal Impact Fee Program and upon the issuance of a City approved permit.

PROPERTY RIGHTS ELEMENT

Introduction

The City's Property Rights Element is to provide for guidance on decision making subject to state law and local ordinances to respect judicially acknowledged and constitutionally protected private property rights and ensure that private property rights are considered in local decision-making.

Goal:

The City shall consider all relevant information including property owner rights and the public's health safety and welfare.

Objective 1.1: The City will ensure private property rights are considered in local decisions making.

Policy 1.1.1 The right of a property owner to physically possess and control his or her interests in the property, including easements, leases, or mineral rights;

Policy 1.1.2 The right of a property owner to use, maintain, develop, and improve his or her property for personal use or for the use of any other person, subject to state law and local ordinances;

Policy 1.1.3 The right of the property owner to privacy and to exclude others from the property to protect the owner's possessions and property; and

Policy 1.1.4 The right of a property owner to dispose of his or her property through sale or gift.

Legend

- Single Family
- Duplex-Triplex/Multi-Family
- Commercial-Office
- Hotels
- Industrial
- Public/Semi-Public
- Recreation/Open Space
- Conservation/Preservation
- Submerged Land
- Parking
- Planned Unit Development
- Vacant
- Club, Lodge, Union Hall, Civic Club, Health Spa

LU-1 Existing Land Use

City of Treasure Island, FL

Last updated on Monday, July 18, 2022

N

0 0.25 0.5 1 Miles

State of Florida, Maxar, Pinellas County Property Appraiser

LU-2 Flood Zones, Flood Plains and CHHA

Legend

- LIMWA Line
- CHHA

Flood Zone

- AE
- VE
- X

City of Treasure Island, FL

Last updated on Monday, July 18, 2022

0 0.25 0.5 1 Miles

N

Sources: Esri, HERE, Garmin, GeoTechnologies, Inc., USGS, METI/NASA, EPA, USDA


LU-3 SOIL ASSOCIATIONS
Soil Type
Kesson Fine Sand
Matlacha & St. Augustine Soils and Urban Land
Palm Beach Fine Sand
Urban Land
Beaches
CITY OF TREASURE ISLAND FLORIDA
N
0.5
0.25
0
0.5 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community

LU-4 Future Land Use

Legend

- Residential Urban (RU)
- Residential Medium (RM)
- Resort Facilities Medium (RFM)
- Resort Facilities High (RFH)
- Commercial General (CG)
- Preservation (P)
- Recreation/Open Space (R/OS)
- Institutional (I)
- Transportation/Utility (T/U)
- Planned Redevelopment Mixed-Use (PR-MU)

City of Treasure Island, FL

Last updated on June 6th, 2022

0 0.2 0.4 0.8 Miles

N

County of Pinellas, Esri, HERE, Garmin, GeoTechnologies, Inc., NGA, USGS, FEMA

Legend

John's Pass Mound

LU-5 Historic Resources

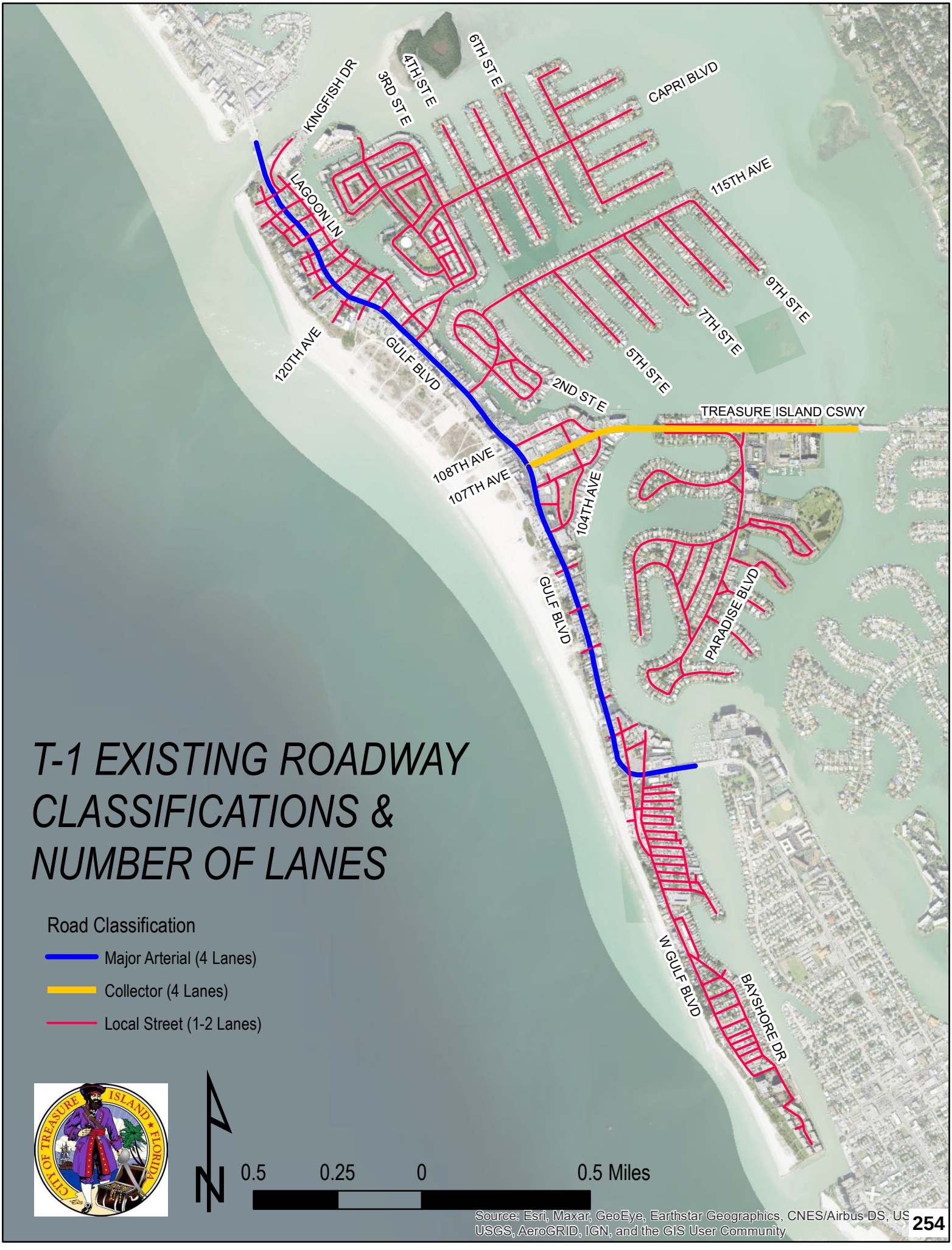
City of Treasure Island, FL

Last updated on June 9th, 2022

0 0.2 0.4 0.8 Miles

N

Sources: Florida Master Site File, County of Pinellas, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, METI/NASA, EPA, USDA


KINGFISH DR
4TH ST E
3RD ST E
6TH ST E
CAPRI BLVD
115TH AVE
LAGOON LN
9TH ST E
7TH ST E
120TH AVE
GULF BLVD
5TH ST E
2ND ST E
TREASURE ISLAND CSWY
108TH AVE
107TH AVE
104TH AVE
GULF BLVD
PARADISE BLVD
W GULF BLVD
BAYSHORE DR
T-1 EXISTING ROADWAY CLASSIFICATIONS & NUMBER OF LANES
Road Classification
Major Arterial (4 Lanes)
Collector (4 Lanes)
Local Street (1-2 Lanes)
CITY OF TREASURE ISLAND FLORIDA
N
0.5
0.25
0
0.5 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community



T-2 EXISTING & FUTURE PUBLIC TRANSIT & TRUCK ROUTES

PSTA Routes

Suncoast Beach Trolley

Truck Routes

No Trucks

Unrestricted Through Route

N

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community



T-3 EXISTING BICYCLE & SIDEWALK FACILITIES

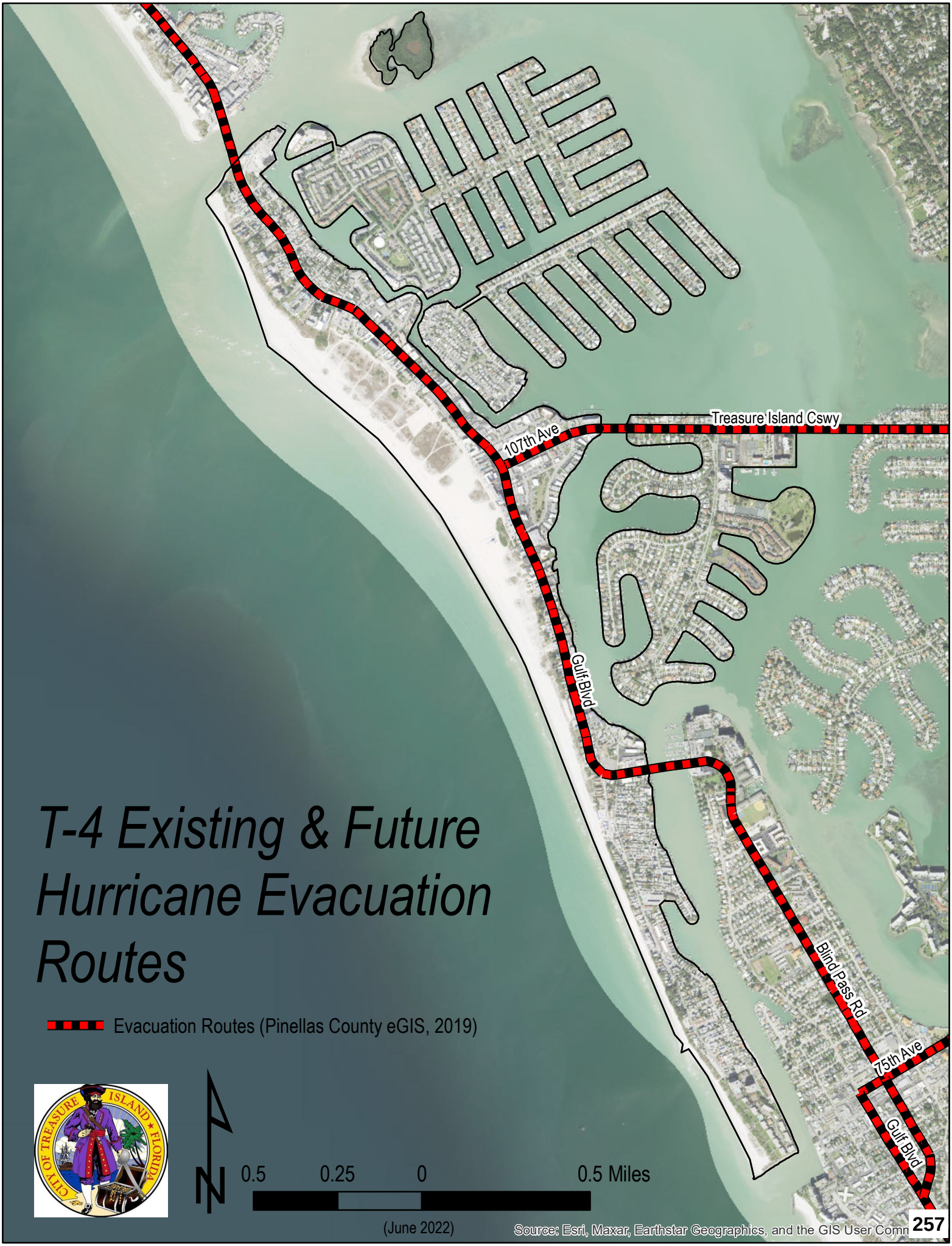
Source: City of Treasure Island

- Bike Racks
- Bike Routes
- Sidewalk

N

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community



T-4 Existing & Future Hurricane Evacuation Routes

Evacuation Routes (Pinellas County eGIS, 2019)

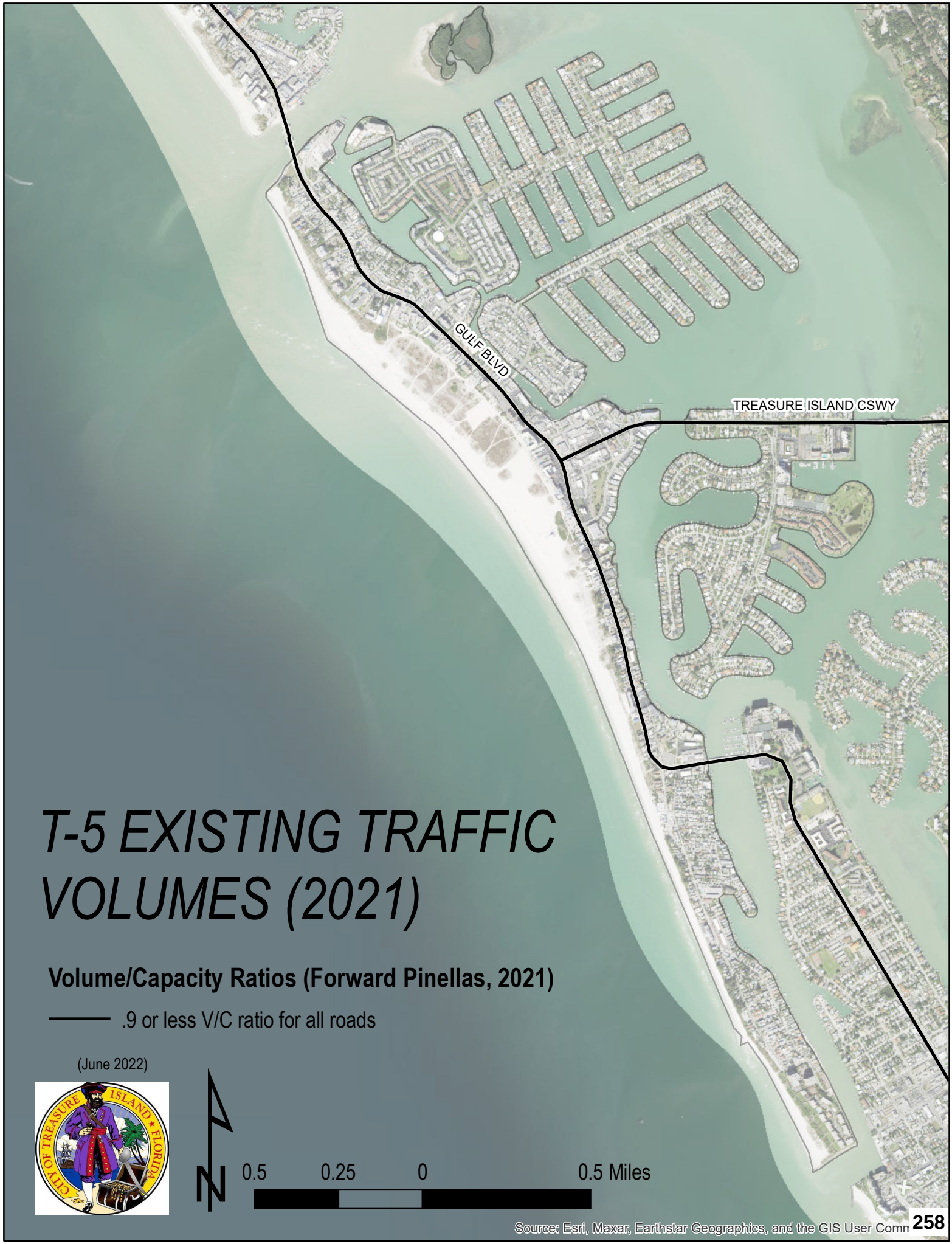
CITY OF TREASURE ISLAND FLORIDA

N

0.5 0.25 0 0.5 Miles

(June 2022)

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Comm



T-5 EXISTING TRAFFIC VOLUMES (2021)

Volume/Capacity Ratios (Forward Pinellas, 2021)

——— .9 or less V/C ratio for all roads

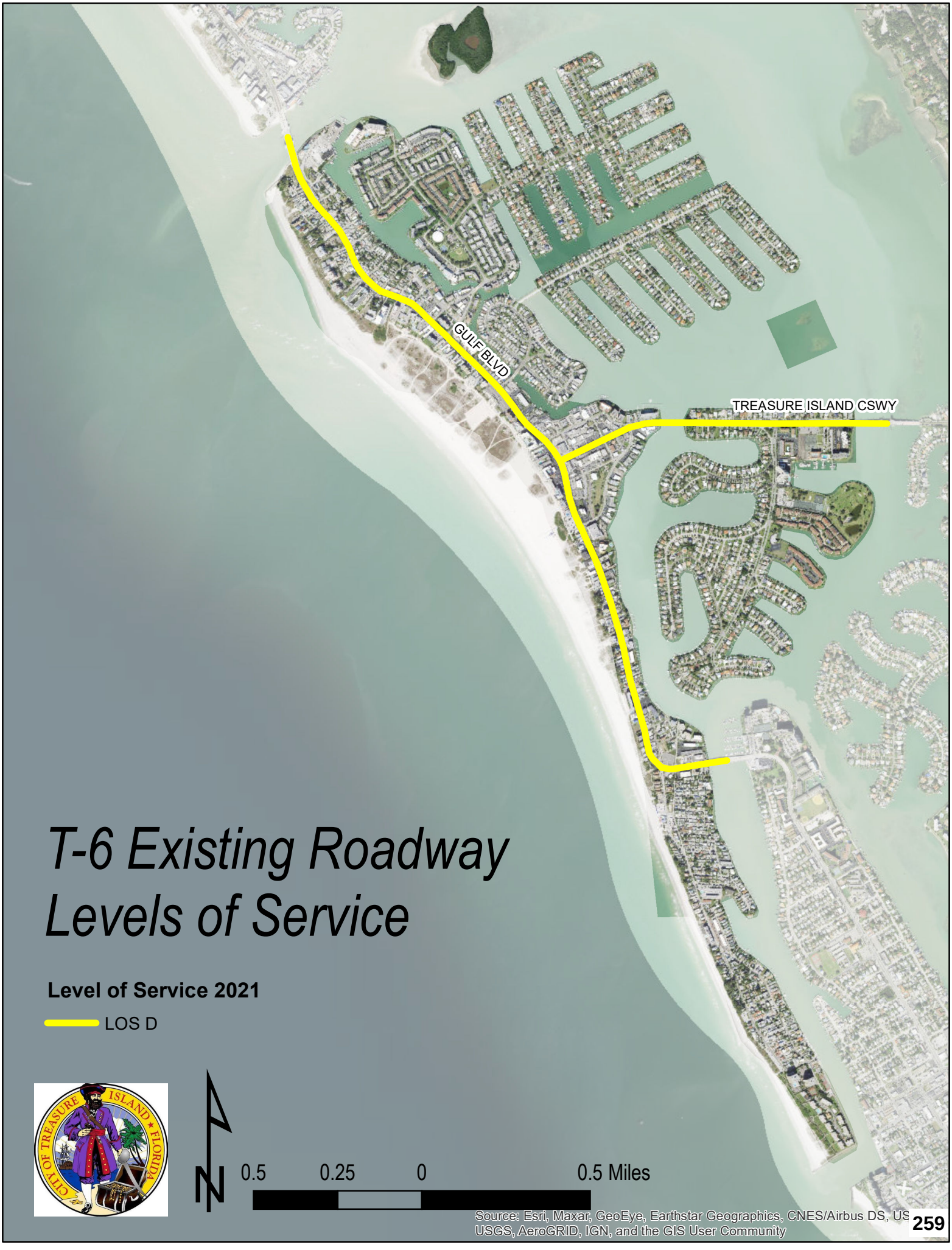
(June 2022)

CITY OF TREASURE ISLAND ★ FLORIDA

N

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Comm



T-6 Existing Roadway Levels of Service

Level of Service 2021

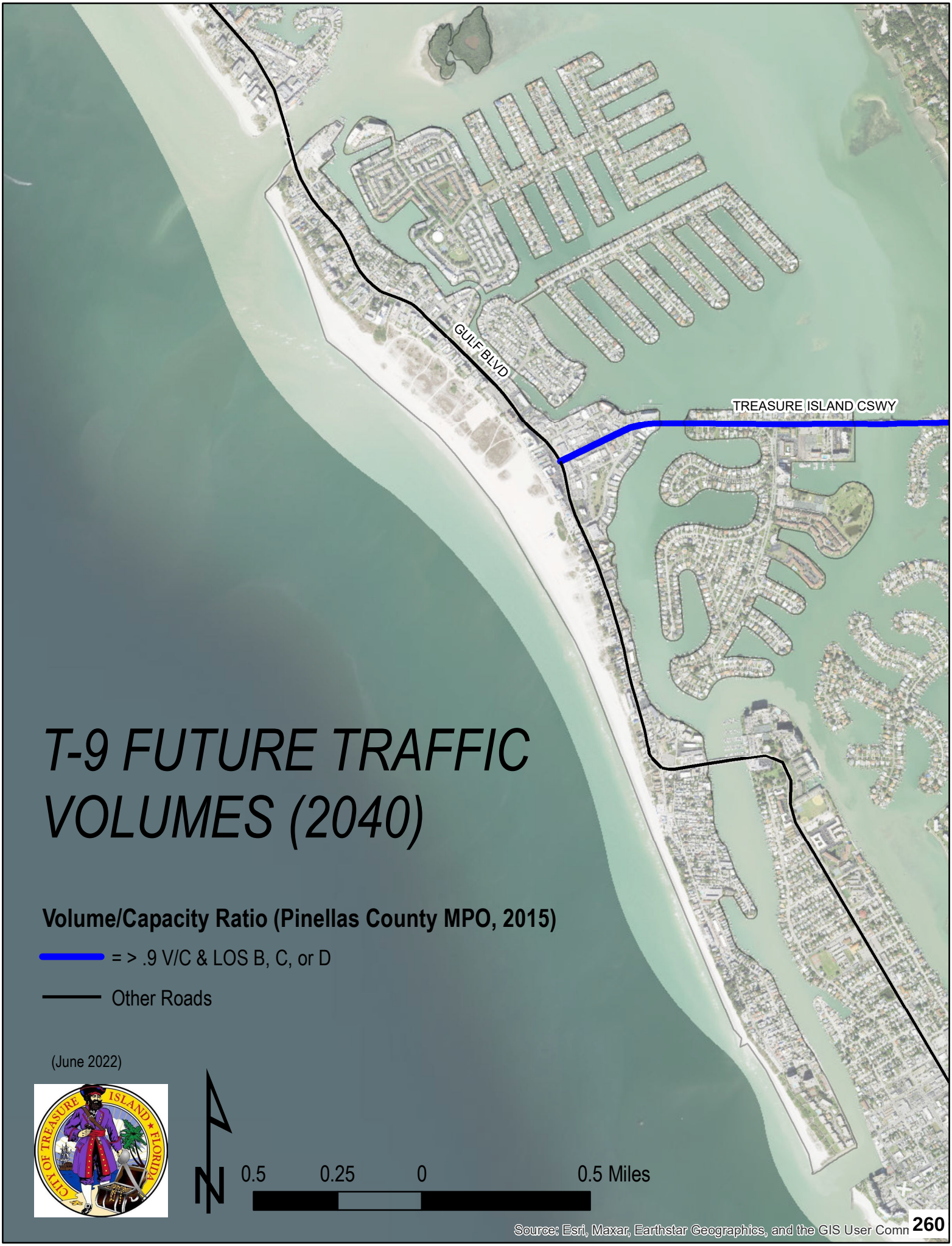
LOS D

CITY OF TREASURE ISLAND ★ FLORIDA

N

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community



T-9 FUTURE TRAFFIC VOLUMES (2040)

Volume/Capacity Ratio (Pinellas County MPO, 2015)

= > .9 V/C & LOS B, C, or D

Other Roads

(June 2022)

CITY OF TREASURE ISLAND ★ FLORIDA

N

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Comm



T-10 Future Roadway Levels of Service

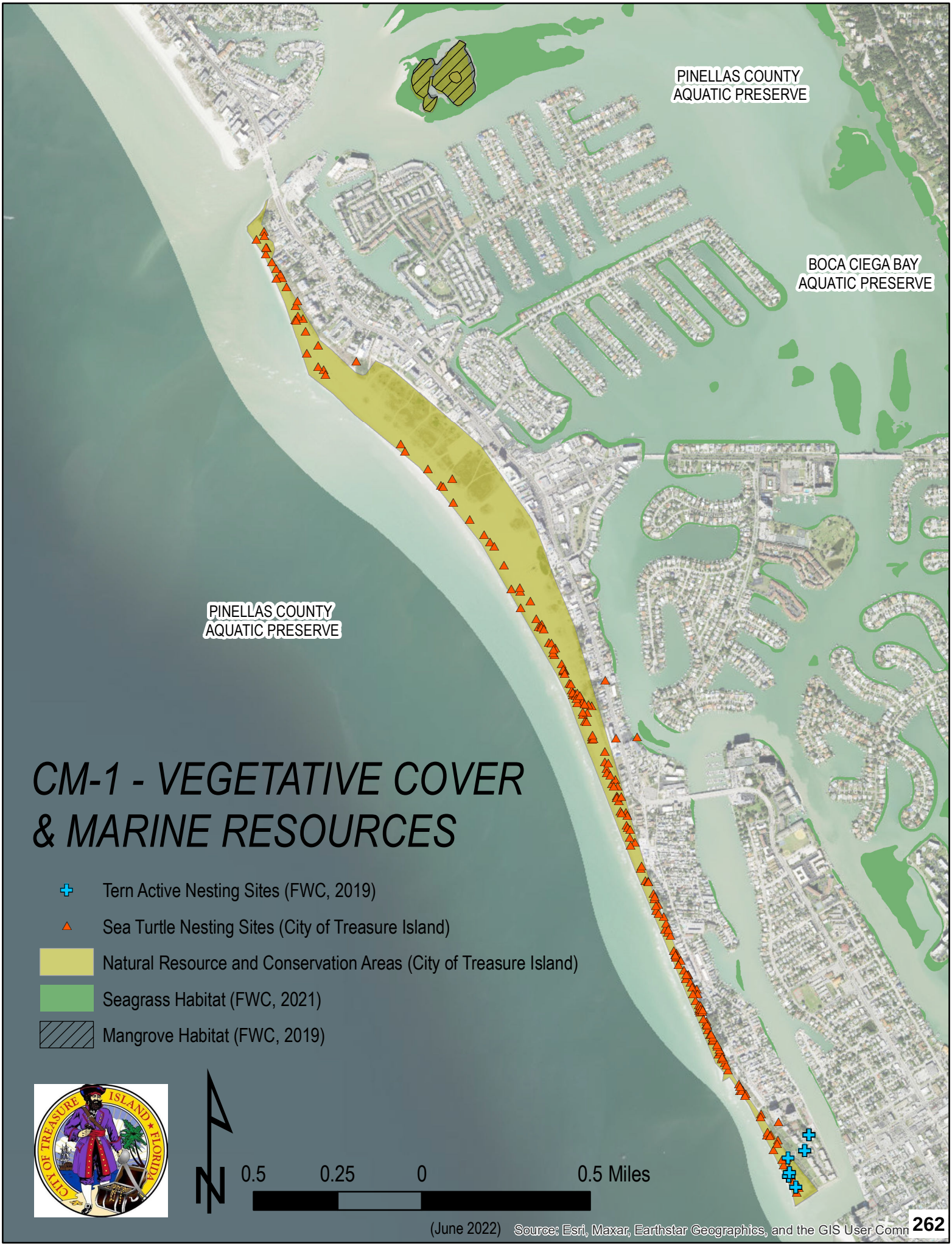
Level of Service 2040

LOS B

This data is from a 2015 projection. Forward Pinellas (MPO) has indicated that they now believe that forecasting this far in advance is not reliable In addition FDOT has requested that the MPO not forecast for FDOT roads unless a traffic study has been conducted.

0.5 0.25 0 0.5 Miles

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USGS, AeroGRID, IGN, and the GIS User Community


PINELLAS COUNTY
AQUATIC PRESERVE
BOCA CIEGA BAY
AQUATIC PRESERVE
PINELLAS COUNTY
AQUATIC PRESERVE
CM-1 - VEGETATIVE COVER
& MARINE RESOURCES
Tern Active Nesting Sites (FWC, 2019)
Sea Turtle Nesting Sites (City of Treasure Island)
Natural Resource and Conservation Areas (City of Treasure Island)
Seagrass Habitat (FWC, 2021)
Mangrove Habitat (FWC, 2019)
CITY OF TREASURE ISLAND FLORIDA
N
0.5
0.25
0
0.5 Miles
(June 2022)
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Comm


Elnor Island
Rosselli Park
Triangle Park
Treasure Lane Triangle
McLaughlin Park
Treasure Island Park
Treasure Bay Golf & Tennis Center
Island Drive Triangle
Marina Terrace Triangle
Yacht Club Drive Triangle
Sunset Vista Park
Weckesser Park
Beach Pavilion
PROS-1 PUBLIC & RECREATION FACILITIES
(Source: City of Treasure Island)
Park, Recreation Facility
Water Access
Open Space
CITY OF TREASURE ISLAND FLORIDA
N
0.5 0.25 0 0.5 Miles
Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, US
USGS, AeroGRID, IGN, and the GIS User Community

Future Land Use Element
Data and Analysis

The purpose of the Future Land Use Element is that it provides specific goals, objectives, and policies governing future development and revitalization, establishes the physical framework and appearance of the city while establishing the classification, spatial distribution, relationship, balance, and intensity/density of land uses. Specifically, it establishes the proposed future general distribution, location, and extent of planned uses of land within the City of Treasure Island based on analysis of existing land uses, natural characteristics, future population trends and needs, vacant land and required level of services.

I. INTRODUCTION

In 1975, the Florida Legislature adopted the *Local Government Comprehensive Planning Act.* With passage of this act, local governments were expected to begin the growth management process and systematically plan for the needs of future residents. The 1975 legislation strengthened local governments' ability to establish and implement comprehensive planning programs. The Florida Legislature required each local government to document these programs in a comprehensive plan. Once adopted by a local government, all future public and private development was required to be consistent with the adopted plan.

In 1985, the Florida Legislature reinforced the *Local Government Comprehensive Planning Act* with the adoption of the *Growth Management Act*. To ensure that local governments adhered to the previous requirements set forth in 1975, the Legislature designated the state as the overseer of the process. All comprehensive plans are now required to follow rules established by state land planning agency and are subject to a compliance review. This element of the comprehensive plan provides the framework of growth management in the City of Treasure Island.

In May 1955, the towns of Boca Ciega, Sunset, and Sunshine Beach and the City of Treasure Island, all located on the same land mass, merged to become one local government, the City of Treasure Island. The merger resulted in a population increase from 75 to 3,506 residents.

Treasure Island is located on a barrier island on the western coast of Pinellas County. Being a barrier island community, the municipality is surrounded by obstacles to territorial expansion. The city is bordered to the north by John's Pass Village and the City of Madeira Beach; on the south by Blind Pass and the City of St. Pete Beach; on the east by Boca Ciega Bay and the City of St. Petersburg; and on the west by the Gulf of Mexico. As a built-out community, Treasure Island has less opportunity for short-range benefit from land use planning than does a younger, growing suburb or municipality. Effective land use planning has its greatest importance in shaping redevelopment and protecting valuable natural resources. Without judicious planning and enforceable constraints, urbanization and development will continue to place excessive stresses on the natural and man-made elements of the city's environment.

To create a comprehensive plan that reflects the needs of the city, the social characteristics that define the community must be considered. Using information obtained from the 2000, 2010 and 2020 U.S. Census, and

the *2019/2020 5-year American Community Survey* data, the following section lists several socio-economic facts regarding Treasure Island.

- The decennial population decreased between 2010 (6,705) and 2020 (6,584). Thirteen percent of the population was between the ages of 15 and 44, as compared to 23.6 percent in 2010. The under 15 age group continued to be the smallest (3.4 percent) as it was in previous years. Residents aged 45 and over increased by 21.1 percent in the 2010s to total 5755 in 2020. The population in 2020 was composed of 52 to 55 percent female and 44 to 48 percent male. The median age increased from 52.4 in 2000 to 54.5 in 2010 and increased again in 2020 to 62.1. In 2020, the city remained predominantly white (91 percent).

- The city had a higher percentage of residents over the age of 25 with a high school diploma (96.8 percent) or four or more years of college (44.1 percent) than the county (91.6 percent and 32.5 percent respectively).

- In 2010, 21.2 percent of the city's population was foreign born and decreased to 11.3 percent by 2020.

- In 2010, 31.9 percent of the number of households earned between $10,000 and $34,999 annually, but this number has decreased to 14.7 percent by 2020. Eighty-one percent of the population earns $35,000 or more per year.

- In 2020, Treasure Island had a per capita income of $64,204 and the median household income of $68,292 was greater than that of the county ($56,419) or state ($57,703).

- In 2020, the City had a lower percentage of persons living below the poverty level (5.5 percent) than either the county (11.1 percent) or state (12.4 percent).

II. EXISTING LAND USES

Excluding public rights-of way, Treasure Island encompasses 749 upland acres, as shown in Table 1. The majority of the city is dominated by residential uses, primarily single-family homes. Large-scale multifamily development and commercial uses are found primarily along Gulf Boulevard. These uses, as well as the other types of land use classifications located within the city, are described in the following section. There are no industrial or agricultural uses.

A map of existing land uses was prepared for Treasure Island with data from the Florida Geographic Data Library (FGDL), sourced from the Pinellas County Property Appraiser's Office (PAO). The basis for *Map LU-2: Existing Land Use Map* is the property use/land type codes used by the PAO, grouped according to the existing land use categories. The information contained on the map is from the most current computer records maintained by the county.

Table 1
Existing Land Use Acreage, 2020*

LAND USE	ACREAGE	% OF TOTAL
Single Family	307	41%
Duplex-Triplex/ Multifamily	196	26%
Commercial-Office	59	8%
Vacant	28	4%
Public/Semi-Public	112	15%
Recreation/Open Space	24	3%
Conservation/Preservation	24	3%
Total	749	100%

* Excludes right-of-way acreage
Source: Pinellas County Property Appraiser's Office

A. Residential Land Use

The character of the city is residential. Single-family detached housing constitutes the predominant residential type by acreage while multifamily residences are the most predominant residential type by number. Of the 749 acres that comprise the upland portion of the city (excluding rights-of-way), 503 acres or 67 percent are devoted to residential land uses. Single-family homes account for 307 acres while duplex and multifamily units account for 196 acres. As reported by the U.S. Census, Treasure Island contained 5,694 housing units in 2020. Single-family homes accounted for 41 percent, while multifamily homes comprised 26 percent. The existing residential uses in the Treasure Island are concentrated in the following six distinct neighborhoods:

- *Sunshine Beach (Coney Island):* This is an older section of the city located at the northern end of the island adjacent to John's Pass. The area contains a mixture of land uses, including a mixture of single-family detached, duplex, and multifamily dwellings, and commercial tourist accommodations.

- *Isle of Capri:* This is an exclusively residential area. The eastern portion is an established single- family. The western portion is primarily a multifamily area.

- *Isle of Palms:* This area is developed with residential uses and the character of the entire neighborhood is well established. As with Isle of Capri, two distinct development areas exist here. The eastern portion is totally developed in single-family residential uses on finger canals. The western portion is developed with a mixture of single-family, duplex, and multifamily dwellings.

- *Central Gulf Area*: Although this area represents the commercial and tourist center of the city, there are several areas of multifamily residential development located south of the Treasure Island Causeway and east of Gulf Boulevard adjacent to Boca Ciega Bay. The area south of 103rd Avenue to the Blind Pass Bridge contains a mixture of residential types, tourist accommodations, and commercial uses of a varying nature.

- *Paradise Island:* This area is similar to both Isle of Capri and the Isle of Palms, in that it contains two distinct residential areas. The area adjacent to the Treasure Island Causeway contains multifamily

development with a few single-family detached dwellings scattered along the Causeway. South of this area are finger fills developed with single-family residential houses.

- *Sunset Beach:* Sunset Beach can be characterized as representing the old Florida beach community. Here can be found undersized lots, beach bungalows, single-family detached houses, duplexes, and multifamily dwellings, containing a mixture of old and new development, interspersed with commercial retail and tourist accommodation establishments.

B. Commercial Land Use

Sixty-one acres, or 8 percent of the city, have a commercial land use designation. As a tourist-oriented community, most commercial activity within Treasure Island is geared towards providing services to visitors. The majority of commercial tourist facilities can be found along Gulf Boulevard, from Blind Pass to John's Pass. The more intense commercial tourist development has taken place west of Gulf Boulevard. Moderate commercial tourist development has been concentrated east of Gulf Boulevard.

The primary commercial "downtown" for the city can be found around the intersection of the Treasure Island Causeway and Gulf Boulevard. Most of the commercial establishments found in this area are aimed at satisfying the needs of the tourist economy. The largest non-tourist commercial center is a strip shopping center located at Gulf Boulevard and 107th Avenue. A small neighborhood commercial area can be found on Gulf Boulevard near the Blind Pass Bridge. The most intense commercial center in the city is a small area located east of Gulf Boulevard at John's Pass which contains a marina and restaurant.

C. Public/Semi-Public Land Use

One hundred twelve acres, or fifteen percent of the land area, is identified as containing public or semi-public uses. The majority of this land is devoted to the beach area, City Hall, the Public Works Complex, a church, and a fraternal club.

D. Recreation/Open Space Land Use

Treasure Island has designated 24 acres of land as recreation/open space, accounting for 3 percent of all upland area, excluding rights-of-way. The largest facilities include: the Treasure Bay Golf and Tennis Facility, Treasure Island Park and Community Center; Rosselli Park; seven mini-parks; a municipal marina; John's Pass Bridge Catwalk; Treasure Island Beach Pavilion; Gulf Front Park and 32 beach access points and parking facilities. In addition to these facilities, City of St. Petersburg maintains a recreational area, St. Pete Municipal Beach at Treasure Island, located along Gulf Boulevard.

E. Conservation and Preservation Land Use

As a result of extensive urbanization, much of the natural vegetation on the island has been replaced by ornamental vegetation. Consequently, the natural habitat for avian and terrestrial species has been destroyed. Only scattered, isolated areas of marine vegetation can be found on the upland areas of the community. Due to their small size and location on private property, no attempt was made at calculating their acreage.

The most significant undisturbed habitat is found on Elnor Island located north of Isle of Capri in Boca Ciega Bay, between the cities of Treasure Island and Madeira Beach. Elnor Island contributes to the city land area by a total of 14.2 acres and represents approximately 2% of the city land area. The island is preserved due to the ecological assets afforded by such natural systems.

Finally, the largest conservation/preservation areas within Treasure Island are the approximately 82 acres of public beaches lining the Gulf of Mexico. These beaches provide passive recreation for thousands of residents, seasonal visitors, and tourists each year, and are a significant economic asset to the city.

F. Vacant/Undeveloped Land

Approximately twenty-eight acres of vacant/undeveloped land remain in Treasure Island, accounting for four percent of the total land area. Approximately 11.4 acres are designated as residential, 15 acres are designated as commercial, and 0.2 acre are designated as vacant governmental or institutional. This vacant land includes developed parking lots.

G. Historic Resources

The Florida Department of State has indicated that a prehistoric archaeological site is listed in the *Florida Master Site File* as being within Treasure Island. As described by the Department, "The site is 8PI4 (John's Pass Mound) which is listed as a Safety Harbor period burial mound now covered with fill." The site is located in a cul-de-sac at the south end of 6th Street East on Isle of Capri.

III. NATURAL RESOURCES

Included is MAP LU-1 Existing Land Use, illustrating natural resources located within Treasure Island. The following section lists each required natural resource, describes the status and importance of each feature, and identifies on which map the resource is illustrated.

Beginning around 1920, dredge-and-fill development began to permanently alter the coastline of Pinellas County, in order to provide additional waterfront land for commercial and residential real estate. Approximately 25 percent of Boca Ciega Bay has been filled in this manner.

The city is comprised primarily of Made Land soil, and only scattered, isolated remnant marine wetland systems remain in the community. A number of mangroves have reestablished themselves in the rubble and rip-rap fronting the seawalls along Boca Ciega Bay. The urbanized character of the community has displaced most of the indigenous species of wildlife through either direct habitat destruction or ecosystem alteration. The only true natural areas remaining in the city is Elnor Island, which is protected by way of the *Future Land Use Map* (Map LU-4). On other vacant parcels available for future uses, development will occur in accordance with designated uses and in areas which are already ecologically disturbed. Therefore, it is anticipated that future uses will not adversely impact natural resources.

A. Existing and Planned Public Potable Water Wells and Wellhead Protection Areas

Because of the proximity of large bodies of salt water, freshwater storage in the deep aquifer is relatively insignificant in this area. Some shallow wells may supply water for secondary purposes such as irrigation. The sources of potable water for the city are located in northeast Pinellas County, Pasco County, and Hillsborough County. Tampa Bay Water and the Southwest Florida Water Management District have determined the area around Treasure Island has very low to no recharge to the Floridian Aquifer, and therefore no wellhead protection areas are located within the city's jurisdictional boundaries.

B. Beaches and Shores

Treasure Island is a long, narrow, low island, bounded on the north by John's Pass and on the south by Blind Pass, which is about 3.5 miles in length and averages 1,500 feet in width. Natural elevations along the island are generally below eight feet. As a result of several renourishment projects conducted by the Army Corps of Engineers, and the installation of protective structures such as seawalls, Treasure Island and other areas of the Sand Key barrier island have remained relatively intact against erosion.

Boca Ciega Bay lies adjacent to the city on the east. The shoreline is quite extensive due to the number of fill areas and inlets lining the Bay. Generally, the properties abutting Boca Ciega Bay have a residential land use designation and are separated from the water by concrete seawalls.

C. Topography

The city is located on the Treasure Island barrier island, which runs from John's Pass to Blind Pass. Being located on a barrier island, the city falls entirely within the 100-year floodplain and within the Coastal High Hazard Area, as shown on Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area. Areas within these designations are typically subject to hurricane flood surge. The elevation of the city varies between sea level and 7.5 feet above mean sea level. At the southern end of the city is an area with an average elevation of 5.5 feet, which frequently experiences flooding during heavy storms and rains. In addition, Flood Insurance Rate Maps have identified a hurricane velocity zone along the west side of Gulf Boulevard. The base flood elevation for the 100-year flood zone was determined to be 12 feet, while the velocity zone was 16 feet. In accordance with the National Flood Insurance Program, all new construction is required to meet minimum floor elevations above the base flood level.

D. Wetlands

No expansive wetlands are located within the upland portions of Treasure Island. Existing isolated pockets of wetland environment are found on properties that line Boca Ciega Bay. Elnor Island in the Bay comprises approximately 14 acres of wetland area. This island is described in the *Coastal Management, Conservation, and Resiliency Element*, and is illustrated on *Map CM-1: Vegetative Cover and Marine Resources*.

E. Soils

As shown on *Map LU-3: Soils Associations* Natural Resources Conservation Service has identified Matlacha and St. Augustine soils and Urban land are the primary soil types found within Treasure Island. Typically, this association is characterized by nearly level land extensively altered by man created through diking, dredging,

and transporting of fill material. The association is found mostly on keys and in coastal areas and lacks any surface drainage pattern.

Table 2 identifies the soil types found in the city. Except for beaches, these soil types generally do not present a significant limitation on future development and the use of vacant land.

Table 2
Soil Types

TYPE	ACRES	CHARACTERISTICS
Beaches	135.2	The Beach soil series comprises very shallow and shallow, well drained, moderately permeable soils that formed in residuum from hard, very fine grained, metamorphic sandstone. These sloping to steep soils are located on sandstone hills and in valleys. Slopes range from 1 to about 70 percent.
Kesson fine sand, very frequently flooded	14.2	The Kesson soils series consists of deep, very poorly drained, rapid to moderately rapid permeable soils that formed in thick marine deposits of sand and shell fragments in tidal swamps and marshes along the Gulf Coast of Peninsular Florida. Slopes range from 0 to 1 percent.
Matlacha and St. Augustine soils and Urban land	651	The Matlacha soil series consists of sandy, siliceous soil and is somewhat poorly draining with moderately rapid to rapid permeability. The dominant vegetation is slash pine and various scattered understory. The major use of this series is urban development. The St. Augustine series consists of very deep, somewhat poorly drained, moderately rapid to very slowly permeable soils on broad to narrow flats and slight ridges and knolls bordering tidal marshes and estuaries of Peninsular Florida. They formed in fill material. The fill is the result of dredging and filling operations along peninsular Florida. They are composed of sandy materials containing loamy or clayey fragments and fragments of shell.
Palm Beach fine sand, 0 to 8 percent slopes	90.1	The Palm Beach soil series consists of very deep, well to excessively drained, rapidly permeable soils on dune-like ridges that are generally parallel to the coast. They form in thick deposits of sand and shell fragments. Slopes range from 0 to 17 percent.
Urban land, 0 to 2 percent slopes	28.2	The term urban soil refers to soils in areas of high population density in the largely built environment. Human-transported materials, human-altered materials, or minimally altered or intact "native" soils can significantly change this soil type. Soils in urban areas exhibit a wide variety of conditions and properties and may have impervious surfaces, such as buildings and pavement.

Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions, 2022

IV. PROJECTED POPULATION

Treasure Island is virtually built-out, with only small parcels of vacant residential land currently available. As such, population projections will remain fairly consistent with the size of the existing population. Additionally, due to the numerous seasonal residents Treasure Island continues to attract, seasonal projections will be forecasted in the following analysis.

A. Historical Population Trends

The May 1955, merger between the towns of Boca Ciega, Sunset, and Sunshine Beach and the city of Treasure Island brought the combined city population from 75 residents to over 3,500. The city experienced rapid growth

through the 1960s, which tapered at the end of the decade. Once again, the city experienced a moderate increase in population during the 1980s, with the completion of several multifamily developments located on the last large vacant sites within the community.

Table 3
Permanent Population Trends, 1950-2020

Year	Population	% Change
1950	75	--
1960	3,506	+4574.7%
1970	6,120	+74.6%
1980	6,316	+3.2%
1990	7,266	+15 %
2000	7,377	+2.50%
2010	6,705	-9.1%
2020	6,584	-1.8%

Source: U.S. Bureau of the Census, 1950, 1960, 1970, 1980, 1990, 2000, 2010, and 2020

B. 2040 Population Estimates

The 2040 permanent population estimate was obtained from two following sources: the Bureau of Economic and Business Research (BEBR) at the University of Florida and Shimberg Center for Housing Studies and the 2020 ACS. Seasonal population data was projected using 2020 ACS and Decennial Census Data. Tourist figures were obtained from the *Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone. 2010-2035* report completed by the Pinellas County Planning Department.

1. 2040 Permanent Population

The resident population consists of those people living within the city who consider Treasure Island their usual place of residence. According to U.S. Census data, the permanent population was 6,584 in 2020. This number represents a decrease of 121 residents, or 1.8 percent, from the 2010 decennial count.

Table 4
Permanent Residents Population Estimates, 2010-2040

Year	Population	% Change
2010	6705	---
2020	6929	+3.3%
2025	6891	+0.5%
2030	6806	-1.2%
2035	6690	-1.7%
2040	6583	-1.6%

Estimates and projections by Shimberg Center for Housing Studies, based on 2000 and 2010 U.S. Census data and population projections by the Bureau of Economic and Business Research, University of Florida

2. 2040 Seasonal Population

The number of seasonal residents living in permanent housing (excluding tourists) was based on data obtained from the U.S. Bureau of the Census. Pinellas County's tourist data was supplied by the Pinellas County Planning Department. The 2020 seasonal population living in permanent housing totaled 2,643 persons, while tourists accounted for an additional 3,166 persons, as reported in Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone, 2010 to 2035.

3. 2020 Total Population

Table 5 combines the decennial census permanent population and seasonal population data with the tourist data developed by Pinellas County.

Table 5
Total Population, 2020

		Population
Permanent Population		6584*
Seasonal Population	Seasonal Residents	2643**
	Tourists	3166***
Total Population		12,393

Sources: *2020 Decennial US Census
** Total Seasonal Residents= seasonal housing * average household size. Seasonal Housing: 1,510 (2020 ACS, B25004 Vacancy Status), Average Household Size: 1.75 (2020 ACS, Quick Facts Families and Living Arrangements)
***Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone Years 2010 to 2035

C. Population Projections

Population projection data was obtained from the University of Florida's Bureau of Economic and Business Research (BEBR). BEBR's Population Program produces Florida's official city, county, and state population estimates each year. It also develops estimates of the number of households and average household size; projections of total population; and population projections by age, sex, race and Hispanic origin for the state and each county. These estimates and projections are used for a wide variety of planning, budgeting, and analytical purposes by state and local government agencies, businesses, research analysts, the media, and members of

the general public. Two planning time frames are included in the population analysis, "one for at least the first five-year period subsequent to the plan's adoption and one for at least an overall ten-year period." In accordance with these requirements, the planning time frames of 2035 and 2040 were selected.

1. Permanent Population Projection

Treasure Island is a virtually built-out community, with only 11.4 acres of available vacant land with a residential land use designation. Table 6 below shows the projected decline in population projected through 2040.

Table 6
Permanent Population Projections

Year	Population	% Change
2020	6929	3.3%
2025	6891	0.5%
2030	6806	-1.2%
2035	6690	-1.7%
2040	6583	-1.6%

Estimates and projections by Shimberg Center for Housing Studies, based on 2000 and 2010 U.S. Census data and population projections by the Bureau of Economic and Business Research, University of Florida

2. Seasonal Population Projection

Seasonal population data was projected using findings from the 2020 ACS and Decennial Census Data. Tourist figures were obtained from the Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone, 2010 to 2035.

Table 7
Permanent and Seasonal Population Estimates and Projections, 2020 to 2040

YEAR	PERMANENT POPULATION*	SEASONAL POPULATION		TOTAL POPULATION
		SEASONAL RESIDENT**	TOURIST***	
2020	6,929	2,643	3,166	12,738
2025	6,891	2,643	3,170	12,704
2030	6,806	2,643	3,170	12,619
2035	6,690	2,643	3,173	12,506
2040	6,583	2,643	3,173	12,399

* Estimates and projections by Shimberg Center for Housing Studies, based on 2000 and 2010 U.S. Census data and population projections by the Bureau of Economic and Business Research, University of Florida

** Total Seasonal Residents= seasonal housing * average household size. Seasonal Housing: 1,510 (2020 ACS, B25004 Vacancy Status), Average Household Size: 1.75 (2020 ACS, Quick Facts Families and Living Arrangements)
***Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone Years 2010 to 2035

V. PUBLIC FACILITY AND SERVICE ANALYSIS

The premise of concurrency is that the public facilities will be provided in order to achieve and maintain the adopted level-of-service standard. Services subject to concurrency requirements, include transportation, sanitary sewer, potable water, solid waste, and stormwater management. However, before providing public facilities and services for new development, a city must prove that these mechanisms are available for existing land uses. The following section addresses the availability of facilities and services within Treasure Island.

A. Traffic Circulation

There are three minor arterial facilities which serve Treasure Island, including state-controlled Gulf Boulevard and Blind Pass Bridge, and locally controlled Treasure Island Causeway. In 2021, the roadway segments were operating at the level-of-service standard (LOS) "D". In 2040, the major roadways in Treasure Island are projected to operate at a LOS "B".

B. Sanitary Sewer

The City of Treasure Island owns and maintains 25 miles of sanitary sewer lines; 11 satellite lift stations, and one master pump station located within its municipal boundaries. There are no septic tanks in Treasure Island. All sewage is treated at the Northwest Wastewater Reclamation Facility, which is owned and operated by the City of St. Petersburg Utilities Department and has a permitted capacity of 20 million gallons per day. In 2020, the Northwest Facility was operating at an average daily flow of approximately 10 mgd, or 50 percent of capacity (City of St. Petersburg Public Meeting #2 Presentation, May 2021). Currently, the Northwest Facility serves 84,725 people and maintains a level of service of 152 gallons per capita a day (gpcd). Based on this data, the plant is operating at an acceptable level of service and the facility continues to serve the demand of existing land uses. The city is exploring alternative disposal and treatment methods with Pinellas County to replace or supplement treatment capacity.

C. Solid Waste

With the exception of three locations, the City of Treasure Island collects all commercial and residential refuse generated within its boundaries. The city does not collect construction and demolition debris or recyclables. The City maintains recycling contracts to provide collection of residential and multi-family recycling for dwellings with units of six or more. All solid waste is sent to the Pinellas County Refuse-to-Energy Plant, the Bridgeway Acres Sanitary Landfill, or is recycled. According to city collection figures, Treasure Island produced 7,393 tons of solid waste in Fiscal Year 19/20. Of this amount, 10 percent was recycled using single-stream collection and 90 percent was delivered to the waste-to-Energy plant and landfill. With a total population of 12,393 the city generates an estimated 3.27 pound per capita a day (ppcd) of solid waste, with 2.9 ppcd sent to the incinerator or buried in the landfill. Due to the high proportion of seasonal residents included within these estimations, the average generation rate is approximately 50 percent lower than the countywide average. For the last six-year period, the Refuse-to-Energy Plant has been incinerating solid waste at 71 percent of capacity, and the landfill

is not expected to reach capacity until 2025. Based on these data, the plant and landfill are operating at an acceptable level of service, and the facilities continue to serve the demands of existing land uses. Pinellas County's Technical Management Committee is recommending expansion of the WTE and considering constructing a Municipal Recycling Facility

D. Stormwater Management

As part of the Pinellas County barrier island system, Treasure Island is subject to the effects of heavy rains, storm surges, and high tides. Currently, the City requires that stormwater management systems be designed to accommodate a 25-year, 24-hour storm event. Until recently, the City has relied heavily on new development and redevelopment to improve existing conditions. Realizing the difficulty in adhering to these requirements and continued flooding problems, the city commissioned Tampa Bay Engineering, Inc. to develop the 1996 *Treasure Island Master Drainage Plan*. The plan brought forth several recommendations to improve the storm-water management system and recommended a series of modifications to existing design requirements. The city received funding through the Southwest Florida Water Management District's Cooperative Funding Initiative program to perform a City-wide evaluation of the City's stormwater system through the development and utilization of a stormwater model. The evaluation identified where stormwater capital improvements are needed to improve the level of service and the quality of water discharged to the Gulf of Mexico and Boca Ciega Bay. The resulting Watershed Management Plan (WMP) was adopted early 2021 to replace the City's former 1996 Master Drainage Plan and provide planning and management strategies to enhance the City's resilience to sea level rise. For a further discussion of the storm-water management system, see the *Infrastructure Element*.

E. Potable Water

Tampa Bay Water-provides potable water to Treasure Island residents and maintains the water distribution system up to individual property lines. Tampa Bay Water has an aggregate permitted supply capacity of 270 million gallons per day, with a current average demand of 156 million gallons per day. Tampa Bay Water has projected demands to be 212 million gallons per day by the year 2040. In 2016, the recorded average daily water demand for Treasure Island was at 1.37 million gallons per day.

F. Natural Groundwater Aquifer Recharge

As explained in the *Infrastructure Element*, the land beneath coastal communities and adjacent mainland areas in southern Pinellas County yields groundwater that is highly mineralized and saline. Therefore, in the area surrounding Treasure Island, groundwater recharge rates are negligible and have very low to no effect on the Floridan Aquifer.

VI. VACANT LAND ANALYSIS

As shown on *Map LU-1: Existing Land Use Map*, Treasure Island offers little area for future growth. Of the 749 developable acres, only 28 acres or 4 percent is vacant/undeveloped. Table 8 lists the number of vacant acres available in the various land use categories.

Table 8
Vacant Land by Future Land Use, 2020

Future Land Use Category	Acreage
Planned Development	.2
Commercial	15
Institutional	.2
Recreation	.9
Residential	11.4
Total	**28**

Source: FGDL, Pinellas County Property Appraiser

VII. LAND NEEDED TO SUPPORT PROJECTED POPULATION

A. Land Required for Total Housing Need

To accommodate the expected number of future residents, the city must ensure that land is available for future development. The permanent population (including seasonal residents, excluding tourist) in 2040 is estimated to be 9,236. In 2020, the American Community Survey (ACS) for Treasure Island estimated 1.75 persons per household. The city estimates that approximately 5,278 household units will be needed for the 2040 population projections. The 2020 Census documented 5,694 housing units in Treasure Island. There is an adequate number of housing units for the projected 2040 population.

VIII. REDEVELOPMENT

In 2000, the Downtown Central Business District was designated as a Community Development Block Grant (CDBG) area, and the city was the recipient of a $300,000 matching CDBG federal grant for streetscape and pedestrian improvements. Several businesses also participated in the CDBG building facade grant program.

In 2005, the City of Treasure Island initiated the development of a Downtown Redevelopment Plan, which was adopted in November 2006. During the same time period the Pinellas Planning Council (PPC) adopted new rule changes that require all municipalities to develop a Special Area Plan (SAP) for those areas in which they wish to promote redevelopment. Thus, the city began to initiate the development of a Downtown Special Area Plan upon approval of those changes with the Countywide Plan Rules. This document culminated into the development and future implementation of a Special Area Plan, which reflects the City's vision for the downtown core.

The purpose of the Downtown Special Area Plan is to bring about and encourage mixed-use redevelopment within the downtown core and make this area more compatible with the wishes of the community.

The City adopted land development regulations to implement the Downtown Special Area Plan by designating a Planned Redevelopment-Mixed Use Land Use Category. The new regulations established two subcategories under the PR-MU, as Planned Redevelopment Mixed Use-Core (PR-MU-Core) and Planned Redevelopment Mixed Use-Gulf Boulevard (PR-MU-Gulf Boulevard). These regulations define the requirements for mixed use

development addressing building placement and configuration, building heights and form, ground floor and upper story uses, parking, and conditions addressing design of ground level facades along streets and public spaces.

Multimodal Transportation Element
Data and Analysis

I. PURPOSE AND FORMAT

The purpose of the Multimodal Transportation Element is to establish the desired future transportation system within the local government's jurisdiction, and particularly to plan for future motorized and non-motorized traffic movement that places emphasis on multimodal transportation systems.

To determine the status of a community's transportation system, a criterion must be established. The criterion utilized is the determination of level of service (LOS). With this information a community can determine if improvements are necessary for its current roadway network and can develop possible solutions based upon an acceptable standard which it establishes for comparison.

II. INTRODUCTION

This document presents the data for the Multimodal Transportation Element of the City of Treasure Island comprehensive Plan. As indicated in the previous section, the Multimodal Transportation Element reviews the performance of the existing transportation system, as well as the future system. Needs, issues, and opportunities are identified, along with specific goals, objectives, and policies as they relate to the transportation system.

III. INVENTORY OF EXISTING SYSTEM

A. Existing Roadway Network

As shown in Table 1 and Map T-1: Functional Classification and Number of Lanes, the city's existing transportation network has remained essentially unchanged since the adoption of the 1989 Treasure Island Comprehensive Plan. Minor arterial facilities serving Treasure Island include Gulf Boulevard, Blind Pass Bridge, and the Treasure Island Causeway, while major local roads include West Gulf Boulevard, Capri Blvd. and Paradise Blvd., I 15th Avenue, and Bayshore Drive.

B. Significant Parking Facilities

Significant parking facilities are defined as public parking facilities with greater than 100 spaces. According to the Transportation Element of the Pinellas County Comprehensive Plan, no significant parking facilities exist within Treasure Island.

C. Mass Transit

Currently, the area is served by a seven day-a week Suncoast Beach trolley system. It has thirty-minute headways. The route runs along Gulf Boulevard and connects the barrier island cities from St. Pete Beach up to Clearwater Beach. There

are currently 16 southbound and 15 northbound stops in Treasure Island. The major generators and attractors of transit service include the hotels and beaches along the coast. The city contains no transit terminals, transfer stations, or exclusive transit corridors.

In December 2021, the Pinellas Suncoast Transit Authority (PSTA) unveiled the first completed SunRunner station in downtown St. Petersburg. The SunRunner is the region's first Bus Rapid Transit (BRT) system intended to connect mainland Pinellas County with the beaches and barrier islands. The BRT system is expected to be completed in the summer of 2022. The SunRunner route includes a station at Boca Ciega Drive, near the southern terminus of the Suncoast Beach Trolley system serving Treasure Island.

D. Bicycle and Sidewalk Facilities

Sidewalks are available along Gulf Boulevard, and the major facilities are illustrated (for arterial and collector roadways) in Map T-3: 1996 Bicycle and Sidewalk Facilities; however, many sidewalks exist along local streets. According to Pinellas County, a bike lane approximately 1.25 miles long runs along Gulf Boulevard from 112th Ave down to 1st St East. A shared bike path approximately .84 miles in length covers Gulf Boulevard from 127th Ave down to 112th Ave E. Gulf Boulevard is also equipped with sidewalk facilities running the entire length of the Boulevard from St. John's Pass to Blind Pass.

E. Port, Airport, Freight Rail Line Facilities

There are no port, airport, or freight rail line facilities within the city.

F. Intermodal Facilities and Truck Routes

Intermodal facilities are transportation facilities that integrate different forms of carriers to move people and goods, e.g., airports and rail stations. As of 2021, the city has no intermodal facilities. Truck routes have been delineated by Pinellas County. Gulf Boulevard from John's Pass Bridge to Blind Pass Bridge is an unrestricted truck route.

G. Waterway Connectivity

Waterway Connectivity is a form of mobility that allows water crafts, specifically kayaks, to connect through various waterway passages in the city. Within the City there is one municipal marina at 120 108th Avenue. The marina is equipped with a saltwater dock with 14 slips. The city occupies 3 slips on the east of the marina. Smaller member-only marinas are also available throughout the island. The city also has three public boat ramps with access to the bay and 31 beach access points.

H. Hurricane Evacuation Routes

The Tampa Bay Regional Planning Council prepared the Tampa Bay Region Hurricane Evacuation Study, Technical Data Report Update in December of 1992. This extensive study is the basis for the delineation of evacuation zones and the computation of clear zone response times in Pinellas County, as well as the designation of regional evacuation routes. In the 2007 2008 Pinellas County Comprehensive Plan, the evacuation route for the city directs residents across the Treasure

Island Causeway to Central Avenue and First Avenue South. The First Avenue South corridor is taken to Interstate 275, then across Tampa Bay via Interstate 275 or U.S. 92 (Gandy Boulevard). The portion of the evacuation route lying within city limits is illustrated on Figure 4 in the Coastal Management Element

Table 1
2020 Roadway Inventory and Level of Service

Facility	Jurisdiction	Facility Type	Road Type	Treasure Island LOS Standard	LOS Year	Length (Mi)	Signals Per Mile	LOS Method	Average Annual Daily Traffic	Volume	Physical Capacity	Vol/Cap Ratio	Facility Los
Blind Pass Rd: (75th Ave | Corey Ave -To- W Gulf Bl)	State Road	Signalized Arterial	4D	D	2020	1.392	1.705	Generalized Tables	15000	762	1960	0.389	D
Gulf Blvd: (W Gulf Bl -To- Treasure Island Cswy)	State Road	Signalized Arterial	4U	D	2020	0.959	3.678	Generalized Tables	15800	825	1776	0.465	D
Gulf Blvd: (Treasure Island Cswy -To- Madeira Beach Cswy)	State Road	Signalized Arterial	4D	D	2020	2.95	1.758	Generalized Tables	21500	940	1960	0.48	D
Treasure Island Cswy: (Park St -To- Gulf Blvd)	County Road	SA Signalized Arterial	4D	D	2020	1.739	3.274	Generalized Tables	19659	1027	1764	0.582	D

Source: Forward Pinellas Year 2021 Level of Service / Existing Conditions Analysis Report table.

IV. ANALYSIS OF EXISTING DEFICIENCIES

A. Level-of-Service Methodology

The Forward Pinellas Annual Level of Service Report was first published in 1994, and since then it has been utilized by local governments in Pinellas County as a data source to identify roads within their jurisdictions operating under

substandard level of service conditions. Local concurrency systems applied by local governments require development projects impacting these roads to address their impacts as part of their site plan approval.

The 2011 Community Planning Act eliminated State mandated transportation concurrency in Florida. In response to this legislation, the Pinellas County metropolitan planning organization (MPO) endorsed the Pinellas County Mobility Plan in 2013. The Mobility Plan provided a framework for a coordinated multi-modal approach to managing the traffic impacts of development projects as a replacement for local transportation concurrency systems. The Plan called for establishing a tiered development review approach requiring larger scale projects adding new trips to the surrounding road network to implement transportation management plans (TMPs) as credit toward their impact fee assessment.

In 2020, Forward Pinellas, (MPO), the transportation and land use agency for the county, developed a new countywide Bicycle and Pedestrian Master Plan branded as Advantage Pinellas: Active Transportation Plan. The plan offers actional, multimodal strategies to achieve improved bicycle and pedestrian mobility in Pinellas County. The planning effort was undertaken to identify current conditions, gaps, and opportunities for increasing active transportation options through the county.

Forward Pinellas prepares a Level of Service Report each year. Roadways included in the inventory are defined by their facility type (e.g., freeway, signalized arterial, signalized collector, signalized major collector, non-signalized arterial, non-signalized collector and non-signalized major collector). These roadways are categorized by characteristics used to measure their performance, such as exclusive use of uninterrupted traffic (freeways), primarily services through traffic and secondarily services abutting property (arterials) and collector roads (providing land access & traffic circulation from local roads to arterial roads.

B. The Level of Service Report identifies “deficient roads” as facilities operating at peak hour level of service E or F and/or volume to capacity ratios of 0.9 or greater. In order to identify deficient facilities, Forward Pinellas will rely on the Level of Service Report for its implementation.

C. The city adopted a LOS "D" on all collector and arterial roadways. Table 1 demonstrates all roadways are operating at the City’s adopted LOS Characteristics of Major Trip Generators and Attractors.

As indicated previously, the primary trip generators and attractors are the hotels and beaches along the coast within Treasure Island. As a result, the major generators and attractors involve recreation and/or tourism.

D. Adequacy of Transportation System for Coastal Population Evacuation

The hurricane evacuation route described previously and shown on Figure 4 from the Pinellas County Comprehensive Plan Coastal Management Element.

E. Analysis of Intermodal Deficiencies

Because there are no intermodal facilities, this requirement is not applicable.

V. ANALYSIS OF PROJECTED NEEDS

Projections were prepared of the future traffic circulation levels of service and system needs based upon the future land use patterns of Pinellas County. These projections serve as a basis for determining the need for new roadway facilities

and expansions to support planned development and maintain adopted LOS standards.

Treasure Island is located within an urbanized area and is, therefore, within the Metropolitan Planning Organization (MPO) jurisdiction. Since no major development is planned for this community, and the population is expected to remain relatively constant (as indicated in the Future Land Use Element of this plan), it is assumed that many of these future automobile trips will be the result of trips from other parts of Pinellas County, which are included in the traffic modeling process. The forecast of future traffic volumes for Treasure Island is consistent with reasonable expectations for future countywide traffic volumes.

A. Future Roadway Network

With the exception of the improvement on Blind Pass Bridge from a two-lane undivided to a four-lane divided roadway, the network is the same. The system continues to include three minor arterials (Gulf Boulevard, Treasure Island Causeway, and Blind Pass Bridge) and three minor collectors (West Gulf Boulevard, 115th Avenue, and Bayshore Drive).

B. Future Significant Parking Facilities

As indicated previously in the existing conditions inventory, no significant parking facilities exist within Treasure Island. Significant parking facilities today and in the future are not possible given the built-out nature of the city.

C. Future Mass Transit

The city anticipates continuing to operate a one-bus system with one-hour headways until such time as expanded transit services are deemed appropriate. Periodic evaluations will be performed to determine the need for additional public transportation. Map T-2: Transit Service and Truck Routes illustrates future transit service, which is currently identical to existing transit service. It is also anticipated that the major generators and attractors will continue to include the hotels and beaches along the coast.

D. Bicycle and Sidewalk Facilities

Connecting bicycle lanes along Gulf Boulevard are delineated in the Advantage Pinellas: Active Transportation Plan, and local bicycle lanes exist along Paradise Boulevard. Sidewalks will continue to be maintained as they currently exist. The inventory of major facilities is illustrated in Map T-8: Bicycle and Sidewalk Facilities.

E. Port, Airport, and Freight Rail Line Facilities

There are no existing or planned port, airport, or freight rail line facilities, making this requirement nonapplicable.

F. Intermodal Facilities and Truck Routes

No intermodal facilities exist within the city today, and none are expected by the year 2040. Truck routes have been delineated by Pinellas County. As such, Gulf Boulevard from John's Pass Bridge to Blind Pass Bridge has been designated as an unrestricted truck route. It is anticipated that this will continue to be a truck route in the future, as illustrated in Map T-2: Existing and Future Public Transit and Truck Routes.

G. Hurricane Evacuation Routes

The city will continue to direct residents along regional hurricane evacuation routes, which are delineated in the Map T-4: Existing and Future Hurricane Evacuation Routes. The future hurricane evacuation route for Treasure Island is assumed to be the same as the current route until such time as the region adopts a different route

H. Transportation Concurrency Management and Exception Areas

There are no transportation concurrency management or concurrency exception areas, making this requirement nonapplicable.

I. Projected Roadway Level of Service

The procedure used for analyzing projected system needs was the same method utilized for analyzing the existing roadway deficiencies, assuming a desired LOS "D" at peak hour for all collector and arterial roadways within the city and taking into account the improvements included in the adopted MPO 2015 Cost Feasible Transportation Plan.

J. Integration and Coordination

The review of existing and projected conditions for each of the modes available in the city suggests a commitment to the integration and coordination of transportation alternatives. The city is committed to the provision of a safe and efficient transportation network that provides for quality highways, public transportation, goods movement, bicycle facilities, and sidewalks.

Table 2
2040 Roadway Inventory and Projected Level of Service

	Jurisdiction	Facility Type	Road Type	City LOS	Length (mi)	Signals Per Mile	LOS Meth.	Avg. Annual Daily Traffic	Vol.	Phy. Cap.	V:Cap Ratio	Facility LOS
BLIND PASS RD: (75TH AVE | COREY AVE -To- W GULF BL)	State Road	Signalized Arterial	4 Lane Divided	D	1.414	1.41	General Tables	18,242	953	1,960	0.486	B
GULF BLVD: (W GULF BL -To- TREASURE ISLAND CSWY)	State Road	Signalized Arterial	4 Lane Undivided	D	0.968	2.07	General Tables	19,300	1,008	1,776	0.568	C
GULF BLVD: (TREASURE ISLAND CSWY -To- MADEIRA BEACH CSWY)	State Road	Signalized Arterial	4 Lane Divided	D	2.992	1.34	General Tables	30,694	1,604	1,960	0.818	C

TREASURE ISLAND CSWY: (PARK ST - To- GULF BLVD)	Treasure Island	Signalized Arterial	4 Lane Divided	D	1.754	1.71	General Tables	30,495	1,593	1,764	0.903	C

Source: 2040 LOS Analysis with Cost Feasible Improv. DEC. 2015 - AADT40AD

Housing Element
Data and Analysis

The purpose of the Housing Element is to provide guidance to local governments to develop appropriate plans and policies to meet identified or projected deficits in the supply of housing for moderate, low, and very low-income households, group homes, foster care facilities, and households with special needs.

I. INTRODUCTION

Treasure Island is a predominately residential community, containing a mixture of seasonal and permanent residents, and is one of the few Pinellas County communities that can boast a neighborhood community atmosphere. As discussed in the *Future Land Use Element*, the city is divided into several distinct neighborhoods, including Sunshine Beach, Isle of Capri, Isle of Palms, Central Gulf Area, Paradise Island, and Sunset Beach. Because the city is virtually built out, there is minimal opportunity for large-scale growth other than through redevelopment.

As detailed throughout this element, a lack of vacant land combined with a high demand for coastal property have escalated housing values within Treasure Island. The median value of an owner-occupied home was $382,000 in 2019, nearly double the countywide median of $201,200. During the same year, the median cost of a rental unit within the city ($936) was also higher than the countywide average ($545). Consequently, most residents who can afford to live in Treasure Island are within the middle to upper income brackets. Affordable housing for very-low-income households is virtually nonexistent, and the shortage is expected to continue throughout the planning horizon.

II. EXISTING CONDITIONS

A. Housing Stock Data

1. Number and Type of Housing Units

According to the U.S. Census Bureau, the city contained 6,156 housing units in 2019. Of these, 3804 units (61.8 percent) were classified as occupied and 2352 (38.2 percent) as vacant, as shown in Table 1. Although a vacancy rate of 38.2 percent is considered high, as discussed below, the majority of these "vacant" units are actually held for seasonal, recreational, or occasional use by households with a primary residence elsewhere. By comparison, 20 percent of countywide housing was classified as vacant.

Like many other Florida beach communities, Treasure Island is considered home for thousands of seasonal residents. Generally, these residents have purchased second homes in Florida, live in them during the winter months, and leave them unoccupied during the summer season. However, the U.S. Census Bureau classifies a housing unit as "vacant" if it is not the primary residence of its occupants. The 2020 census noted that of the 2,352 "vacant" units in the city,1,540 were held for seasonal, recreational, or occasional use. Table 2 provides a comparison of vacant units for the city and Pinellas County.

Table 1
Total Housing Inventory in 2020

	OCCUPIED	% OF TOTAL	VACANT	% OF TOTAL	TOTAL
Treasure Island	3,795	67%	1,899	33%	5694
Pinellas County	442,789	86%	73,535	14%	516,324

Source: U.S. Bureau of the Census, 2020

2. Type of Dwelling Units

Although single-family dwellings occupy more land area, multifamily dwellings account for a larger percentage of the total housing stock. As shown in Table 2, the 2020 housing stock consisted of 31.3 percent single-family and 68.4 percent multifamily dwellings. The vast majority of multifamily residences are condominium complexes that line the Gulf of Mexico shoreline. The remaining one percent of the housing inventory consisted of 19 mobile homes and other types of dwelling units, including houseboats. Currently, the City's code prohibits the habitation of houseboats (Section 59-91). As substandard housing, mobile homes, RVs, and cars are not allowed as a permanent use in current Land Development Regulations and if in place, are non-conforming

Because the city is virtually built out, there is minimal opportunity for further large-scale residential growth other than through redevelopment.

Table 2
Housing Units by Type in 2020

	TREASURE ISLAND		PINELLAS COUNTY	
	# OF DWELLINGS	% OF TOTAL	# OF DWELLINGS	% OF TOTAL
Single-Family	1089	31.3%	244,020	47.9%
Multifamily	5048	68.4%	160,989	42.8%
Mobile Home*	19	0.3%	47,031	9.2%
Other**	0	0	462	.1%
Total	**6,156**	**100%**	**458,341**	**100%**

Source: U.S. Bureau of the Census, 2020
** 2020 Census/ ACS 5 year. Counts for mobile homes include cars, recreational vehicles, etc.,*
*** Includes campers, vans, etc.*

3. Housing Units by Tenure

The percentage of owner-occupied housing within Treasure Island is slightly higher than the countywide average. According to the 2020 U.S. Census, of the 3,804 occupied housing units within the city (excluding seasonal units), 2,959 units or 77.8 percent were owner-occupied. Comparatively, the countywide average was 67

percent. The city percentage may be artificially high because of the large number of seasonal units, which are generally occupied by homeowners, but are not classified as "owner-occupied" by the U.S. Census Bureau.

Table 3
Housing Units by Tenure for Occupied Units in 2020

	OWNER-OCCUPIED	% OF TOTAL	RENTER-OCCUPIED	% OF TOTAL	TOTAL
Treasure Island	2,959	77.8%	845	22.2%	**3,804**
Pinellas County	273,128	67%	134,418	33%	**407,546**

Source: U.S. Bureau of the Census, 2020

4. Housing Units by Age

Home construction soared during the 1960s and 1970s, with approximately 3,200 new homes built. Combined with home construction occurring since then, approximately 89 percent of the total housing stock is less than 30 years old (see Table 4). With less of vacant land available for residential or mixed uses, new housing construction is expected to decline in upcoming years.

Table 4
Age of Housing Stock in 2020

	TREASURE ISLAND		PINELLAS COUNTY	
YEAR BUILT	# OF UNITS	% OF TOTAL	#OF UNITS	% OF TOTAL
2017 or later	500	13.1%	45,484	11.2%
2015 to 2016	607	16.0%	69,655	17.1%
2010 to 2014	985	25.9%	106,308	26.1%
2000 to 2009	697	18.3%	89,531	22%
1990 to 1999	586	15.4%	54,202	13.3%
1989 or earlier	429	11.3%	42,366	10.4%
Total	**3804**	**100%**	**407,546**	**100%**

Source: U.S. Bureau of the Census, 2020

5. Value of Owner-Occupied Housing

The median value of an owner-occupied home in Treasure Island almost doubled during the 1980s, reaching $155,400 in 1990. In 2020, the median value is $382,200. This value is nearly double the countywide median of $201,200. (see Table 5). Within the city, the value of most units ranged from $300,000 to $499,000. Countywide, the majority were valued between $200,000 to $299,000.

Table 5
Owner-Occupied Housing Units by Value Ranges in 2020

	<$149,000	$150,000 - $199,999	$200,000 - $299,000	$300,000 - $499,999	$500,000 - $999,999	>$1,000,000	MEDIAN
Treasure Island	194	336	556	835	825	212	$382,200
Pinellas County	93,366	42,420	61,222	48,043	21,761	6,316	$201,200

Source: U.S. Bureau of the Census, 2020

6. Monthly Cost of Housing

a. Owner-Occupied Mortgaged Units

The U.S. Census Bureau defines the monthly cost of owner-occupied housing to include monthly mortgage payments, real estate taxes, fire hazard and flood insurance, utilities, and fuels. In 2020, the median monthly cost of an owner-occupied *mortgaged* housing unit in the city was $1,999, as shown in Table 6. This value of the countywide median cost of $1,490.

Table 6
Monthly Costs of Owner-Occupied Mortgaged Units in 2020

	<$999	$1,000 - $1,499	$1,500 - $1,999	$2,000 - $2,499	$2,500 - $2,999	>$3,000	MEDIAN
Treasure Island	98	200	395	137	145	410	**$1,999**
Pinellas County	27,847	45,252	32,268	16,070	9,606	13,331	**$1,490**

Source: U.S. Bureau of the Census 2020

b. Owner-Occupied Non-Mortgaged Units

The monthly cost of owner-occupied *non-mortgaged* units within the city was much lower, with a median cost of 936 per month. Similar to mortgaged units, this value is higher than the countywide median of $545 (see Table 7).

Table 7
Monthly Costs of Owner-Occupied Non-Mortgaged Units in 2020

	<$250	$250 - $399	$400 - $599	$600 - $799	$800 - $999	>$1,000	MEDIAN
Treasure Island	17	31	165	366	286	709	**$936**
Pinellas County	14,574	22,236	37,774	25,307	12,167	16,696	**$545**

Source: U.S. Bureau of the Census, 2020

c. Renter-Occupied Units

The cost of living in renter-occupied housing, called "gross rent," is considered to include mortgage/rental payments, taxes, insurance, and utilities. In 2020, the median monthly gross rent for a renter-occupied housing unit in Treasure Island was $1240 as compared to $1112 for the entire county. As suggested by these data, the greater orientation of the rental market in Treasure Island is toward medium to higher rents.

7. Housing Cost-to-Income Ratio

According to the Florida Statutes, housing that is affordable consumes no more than 30 percent of a household's income, including mortgage or rent payments, taxes, insurance, and utilities. In the following analysis, households living in owner- and renter-occupied housing considered non-affordable were enumerated.

Table 8

Owner-Occupied Households, Cost Burden by Income, 2020 Estimate (Summary)

		Housing Cost Burden		
Geography	Household Income	30% or less	30.1-50%	More than 50%
Pinellas County, Florida	30% AMI or less	2410	2644	12778
Pinellas County, Florida	30.01-50% AMI	9858	7744	9022
Pinellas County, Florida	50.01-80% AMI	24366	10835	6129
Pinellas County, Florida	80.01-100% AMI	18616	5797	1937
Pinellas County, Florida	Greater than 100% AMI	144278	12991	1854
City of Treasure Island , Florida	30% AMI or less		11	170
City of Treasure Island, Florida	30.01-50% AMI	57	45	126
City of Treasure Island, Florida	50.01-80% AMI	80	160	95
City of Treasure Island, Florida	80.01-100% AMI	80	62	11
City of Treasure Island, Florida	Greater than 100% AMI	1785	189	51

Owner-Occupied Households, Cost Burden by Income, 2020 Estimate (Summary)				
		Housing Cost Burden		
Geography	Household Income	30% or less	30.1-50%	More than 50%

Sources: Estimates and projections by Shimberg Center for Housing Studies, based on U.S. Department of Housing Development, Comprehensive Housing Affordability Strategy (CHAS) dataset and population projections by the Bureau of Economic and Business Research, University of Florida

It should be noted that apparent mismatches of housing and income may be linked to the large number of retirees living in Treasure Island, many of whom may have sold homes in other states to finance the purchase or rental of a home in Florida. Because this one-time sale of the home in another state is not reflected in the census definition of income, the homeowner's income would not appear to be large enough to afford the high-priced housing typical of barrier island communities. In addition, many residents purchased homes in the community prior to 1975, before housing prices began to outpace household income and before property values in coastal communities appreciated dramatically.

B. Condition of the Housing Stock

In addition to enumerating housing units, the U.S. Census Bureau publishes data regarding the structural condition of the housing stock. The survey includes the number of dwelling units lacking complete plumbing, complete kitchen facilities, and central heating, and those which are overcrowded. As shown in Table 9, only a small percentage of homes within Treasure Island lack these facilities or are considered overcrowded.

Table 9
Condition of the Housing Stock in 2020

	# HOMES LACKING COMPLETE PLUMBING*	% OF TOTAL	# HOMES LACKING COMPLETE KITCHEN*	% OF TOTAL
Treasure Island	0	0.0%	0	0.0%
Pinellas County	1,320	0.3%	3,686	0.9%

Source: U.S. Bureau of the Census, 2020 ACS

C. Subsidized Renter-Occupied Housing Developments

There are no public housing units located within the corporate limits of Treasure Island.

D. Group Homes

There are no group homes (community residential homes) licensed by the Florida Department of Children and Families within the corporate limits of the city.

E. Mobile Home Parks

The City of Treasure Island land development regulations do not allow mobile homes in the city, in accordance with Federal Emergency Management Agency (FEMA) regulations. However, it should be noted that an estimated 19 mobile home were counted in the 2020 census. If these structures are grandfathered in, they should be considered substandard housing, and should be replaced when feasible.

F. Historically Significant Housing

Thirty-two properties are listed in the *National Register of Historic Places* or on the *Florida Master Site File*. Of those 32 properties, 29 are housing structures., but all the structures listed are considered non-contributing.

Site ID	Site Name	Year	Additional Information
PI09685	12616 Gulf Blvd	1939 (1949)	Frame Vernacular
PI09686	12717 Sunshine Lane	1944*	Frame Vernacular
PI09687	12714 Gulf Blvd	1949*	Masonry Vernacular
PI09688	12725 Sunshine Lane	1942*	Masonry Vernacular
PI09689	110 127th Ave	1947*	Masonry Vernacular
PI09690	12725 Kingfish Dr	1946*	Masonry Vernacular
PI10576	10699 Gulf Blvd	1950*	Masonry Vernacular
PI10577	102 Central Ave (107th Ave)	1950*	Masonry Vernacular
PI10578	118-146 Central Ave (107th Ave)	1948 (1956)	Masonry Vernacular
PI10580	1 Treasure Lane	1952 (2003)	Masonry Vernacular
PI10581	1 Paradise Lane	1949	Masonry Vernacular
PI10582	2 Treasure Lane	1951	Masonry Vernacular
PI10583	2 Paradise Lane	1948	Masonry Vernacular
PI10584	3 Paradise Lane	1948	Other
PI10585	4 Treasure Lane	1951	Other
PI10586	6 Treasure Lane	1950	Ranch
PI10587	7 Paradise Lane	1951	Other
PI10588	8 Treasure Lane	1952 (2003)	Other
PI10589	10 Treasure Lane	1951 (2017)	Other
PI10590	11 Paradise Lane	1952	Other
PI10591	11 Treasure Lane	1950	Frame Vernacular
PI10592	12 Treasure Lane	1951	Ranch
PI10593	13 Treasure Lane	1950 (2018)	Masonry Vernacular
PI10594	15 Treasure Lane	1950 (1952)	Ranch
PI10595	16 Paradise Lane	1951 (1972)	Other
PI10596	31 Paradise Lane	1951 (2005)	Other
PI10597	32 Paradise Lane	1949	Ranch
PI10598	33 Paradise Lane	1949	Other

Source: Florida Master Sile File, 2021

III. HOUSING ANALYSIS

Chapter 163, Florida Statutes, an affordable housing needs assessment for local jurisdictions. All communities, including Treasure Island, are required to use available data and incorporate it into their comprehensive plan. Under contract with the Department of Economic Opportunity, the Shimberg Center for Affordable Housing at the University of Florida prepared the *Affordable Housing Needs Assessment Study*, which is the basis for the following housing analysis. All projections developed by the Shimberg Center were based on data collected by the Pinellas County Planning Department. 2010 to 2040 data is utilized to better understand 2010 to 2020 historical trend, as well as 2020 to 2040 horizon.

Table 10
Household Projections by Tenure, Income (%AMI) and Cost Burden 2010-2040

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2010	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2177
Pinellas County, Florida	2010	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2388
Pinellas County, Florida	2010	Owner occupied	less than or equal to 30% of AMI	greater than 50%	11541
Pinellas County, Florida	2010	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4227
Pinellas County, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	8905
Pinellas County, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	6995
Pinellas County, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	8149
Pinellas County, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	22008

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	9787
Pinellas County, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	5536
Pinellas County, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	16815
Pinellas County, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	5236
Pinellas County, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	1750
Pinellas County, Florida	2010	Owner occupied	greater than 100% of AMI	less than or equal to 30%	130319
Pinellas County, Florida	2010	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	11734
Pinellas County, Florida	2010	Owner occupied	greater than 100% of AMI	greater than 50%	1675
Pinellas County, Florida	2010	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2062
Pinellas County, Florida	2010	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1275
Pinellas County, Florida	2010	Renter occupied	less than or equal to 30% of AMI	greater than 50%	14632
Pinellas County, Florida	2010	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4241

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2366
Pinellas County, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	6397
Pinellas County, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	11228
Pinellas County, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	8240
Pinellas County, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	14395
Pinellas County, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	3869
Pinellas County, Florida	2010	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	8759
Pinellas County, Florida	2010	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4384
Pinellas County, Florida	2010	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	528
Pinellas County, Florida	2010	Renter occupied	greater than 100% of AMI	less than or equal to 30%	39710
Pinellas County, Florida	2010	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	3762

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2010	Renter occupied	greater than 100% of AMI	greater than 50%	497
Pinellas County, Florida	2020	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2446
Pinellas County, Florida	2020	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2683
Pinellas County, Florida	2020	Owner occupied	less than or equal to 30% of AMI	greater than 50%	12966
Pinellas County, Florida	2020	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4749
Pinellas County, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	10004
Pinellas County, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	7859
Pinellas County, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	9156
Pinellas County, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	24726
Pinellas County, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	10995
Pinellas County, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	6220

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	18891
Pinellas County, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	5882
Pinellas County, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	1966
Pinellas County, Florida	2020	Owner occupied	greater than 100% of AMI	less than or equal to 30%	146409
Pinellas County, Florida	2020	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	13182
Pinellas County, Florida	2020	Owner occupied	greater than 100% of AMI	greater than 50%	1882
Pinellas County, Florida	2020	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2205
Pinellas County, Florida	2020	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1363
Pinellas County, Florida	2020	Renter occupied	less than or equal to 30% of AMI	greater than 50%	15646
Pinellas County, Florida	2020	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4535
Pinellas County, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2530
Pinellas County, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	6840

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	12006
Pinellas County, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	8811
Pinellas County, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	15393
Pinellas County, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	4138
Pinellas County, Florida	2020	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	9366
Pinellas County, Florida	2020	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4688
Pinellas County, Florida	2020	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	564
Pinellas County, Florida	2020	Renter occupied	greater than 100% of AMI	less than or equal to 30%	42462
Pinellas County, Florida	2020	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	4023
Pinellas County, Florida	2020	Renter occupied	greater than 100% of AMI	greater than 50%	531
Pinellas County, Florida	2025	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2552

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2025	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2800
Pinellas County, Florida	2025	Owner occupied	less than or equal to 30% of AMI	greater than 50%	13530
Pinellas County, Florida	2025	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4956
Pinellas County, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	10439
Pinellas County, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	8201
Pinellas County, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	9554
Pinellas County, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	25801
Pinellas County, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	11473
Pinellas County, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	6490
Pinellas County, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	19712
Pinellas County, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	6138

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	2052
Pinellas County, Florida	2025	Owner occupied	greater than 100% of AMI	less than or equal to 30%	152775
Pinellas County, Florida	2025	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	13756
Pinellas County, Florida	2025	Owner occupied	greater than 100% of AMI	greater than 50%	1964
Pinellas County, Florida	2025	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2253
Pinellas County, Florida	2025	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1393
Pinellas County, Florida	2025	Renter occupied	less than or equal to 30% of AMI	greater than 50%	15984
Pinellas County, Florida	2025	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4632
Pinellas County, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2585
Pinellas County, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	6988
Pinellas County, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	12265
Pinellas County, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	9001

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	15725
Pinellas County, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	4227
Pinellas County, Florida	2025	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	9568
Pinellas County, Florida	2025	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4789
Pinellas County, Florida	2025	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	577
Pinellas County, Florida	2025	Renter occupied	greater than 100% of AMI	less than or equal to 30%	43378
Pinellas County, Florida	2025	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	4110
Pinellas County, Florida	2025	Renter occupied	greater than 100% of AMI	greater than 50%	542
Pinellas County, Florida	2030	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2638
Pinellas County, Florida	2030	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2894
Pinellas County, Florida	2030	Owner occupied	less than or equal to 30% of AMI	greater than 50%	13988
Pinellas County, Florida	2030	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	5123

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	10792
Pinellas County, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	8478
Pinellas County, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	9877
Pinellas County, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	26673
Pinellas County, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	11861
Pinellas County, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	6710
Pinellas County, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	20379
Pinellas County, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	6346
Pinellas County, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	2121
Pinellas County, Florida	2030	Owner occupied	greater than 100% of AMI	less than or equal to 30%	157942
Pinellas County, Florida	2030	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	14221

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2030	Owner occupied	greater than 100% of AMI	greater than 50%	2030
Pinellas County, Florida	2030	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2271
Pinellas County, Florida	2030	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1404
Pinellas County, Florida	2030	Renter occupied	less than or equal to 30% of AMI	greater than 50%	16114
Pinellas County, Florida	2030	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4670
Pinellas County, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2606
Pinellas County, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	7045
Pinellas County, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	12365
Pinellas County, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	9074
Pinellas County, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	15853
Pinellas County, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	4261

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2030	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	9646
Pinellas County, Florida	2030	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4828
Pinellas County, Florida	2030	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	581
Pinellas County, Florida	2030	Renter occupied	greater than 100% of AMI	less than or equal to 30%	43731
Pinellas County, Florida	2030	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	4143
Pinellas County, Florida	2030	Renter occupied	greater than 100% of AMI	greater than 50%	547
Pinellas County, Florida	2035	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2687
Pinellas County, Florida	2035	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2947
Pinellas County, Florida	2035	Owner occupied	less than or equal to 30% of AMI	greater than 50%	14245
Pinellas County, Florida	2035	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	5217
Pinellas County, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	10990
Pinellas County, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	8634

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	10058
Pinellas County, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	27163
Pinellas County, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	12079
Pinellas County, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	6833
Pinellas County, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	20753
Pinellas County, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	6462
Pinellas County, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	2160
Pinellas County, Florida	2035	Owner occupied	greater than 100% of AMI	less than or equal to 30%	160842
Pinellas County, Florida	2035	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	14482
Pinellas County, Florida	2035	Owner occupied	greater than 100% of AMI	greater than 50%	2067
Pinellas County, Florida	2035	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2289

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2035	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1415
Pinellas County, Florida	2035	Renter occupied	less than or equal to 30% of AMI	greater than 50%	16243
Pinellas County, Florida	2035	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4708
Pinellas County, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2627
Pinellas County, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	7101
Pinellas County, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	12464
Pinellas County, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	9147
Pinellas County, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	15980
Pinellas County, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	4295
Pinellas County, Florida	2035	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	9723
Pinellas County, Florida	2035	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4867

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2035	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	586
Pinellas County, Florida	2035	Renter occupied	greater than 100% of AMI	less than or equal to 30%	44082
Pinellas County, Florida	2035	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	4176
Pinellas County, Florida	2035	Renter occupied	greater than 100% of AMI	greater than 50%	551
Pinellas County, Florida	2040	Owner occupied	less than or equal to 30% of AMI	less than or equal to 30%	2732
Pinellas County, Florida	2040	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	2997
Pinellas County, Florida	2040	Owner occupied	less than or equal to 30% of AMI	greater than 50%	14484
Pinellas County, Florida	2040	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	5305
Pinellas County, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	11175
Pinellas County, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	8779
Pinellas County, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	10227
Pinellas County, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	27619

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	12282
Pinellas County, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	6948
Pinellas County, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	21102
Pinellas County, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	6571
Pinellas County, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	2196
Pinellas County, Florida	2040	Owner occupied	greater than 100% of AMI	less than or equal to 30%	163543
Pinellas County, Florida	2040	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	14725
Pinellas County, Florida	2040	Owner occupied	greater than 100% of AMI	greater than 50%	2102
Pinellas County, Florida	2040	Renter occupied	less than or equal to 30% of AMI	less than or equal to 30%	2307
Pinellas County, Florida	2040	Renter occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	1426
Pinellas County, Florida	2040	Renter occupied	less than or equal to 30% of AMI	greater than 50%	16372
Pinellas County, Florida	2040	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	4745

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	2648
Pinellas County, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	7157
Pinellas County, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	12563
Pinellas County, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	9219
Pinellas County, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	16106
Pinellas County, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	4329
Pinellas County, Florida	2040	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	9800
Pinellas County, Florida	2040	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	4905
Pinellas County, Florida	2040	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	591
Pinellas County, Florida	2040	Renter occupied	greater than 100% of AMI	less than or equal to 30%	44430
Pinellas County, Florida	2040	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	4209

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
Pinellas County, Florida	2040	Renter occupied	greater than 100% of AMI	greater than 50%	556
City of Treasure Island, Florida	2010	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	10
City of Treasure Island, Florida	2010	Owner occupied	less than or equal to 30% of AMI	greater than 50%	148
City of Treasure Island, Florida	2010	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	39
City of Treasure Island, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	50
City of Treasure Island, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	39
City of Treasure Island, Florida	2010	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	109
City of Treasure Island, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	69
City of Treasure Island, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	139
City of Treasure Island, Florida	2010	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	82
City of Treasure Island, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	69

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	54
City of Treasure Island, Florida	2010	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	10
City of Treasure Island, Florida	2010	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1546
City of Treasure Island, Florida	2010	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	163
City of Treasure Island, Florida	2010	Owner occupied	greater than 100% of AMI	greater than 50%	45
City of Treasure Island, Florida	2010	Renter occupied	less than or equal to 30% of AMI	greater than 50%	72
City of Treasure Island, Florida	2010	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	11
City of Treasure Island, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	8
City of Treasure Island, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	16
City of Treasure Island, Florida	2010	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	104
City of Treasure Island, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	16

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	36
City of Treasure Island, Florida	2010	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	73
City of Treasure Island, Florida	2010	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	69
City of Treasure Island, Florida	2010	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	48
City of Treasure Island, Florida	2010	Renter occupied	greater than 100% of AMI	less than or equal to 30%	319
City of Treasure Island, Florida	2010	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	72
City of Treasure Island, Florida	2020	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	11
City of Treasure Island, Florida	2020	Owner occupied	less than or equal to 30% of AMI	greater than 50%	160
City of Treasure Island, Florida	2020	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	42
City of Treasure Island, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	54
City of Treasure Island, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	42

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2020	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	118
City of Treasure Island, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	150
City of Treasure Island, Florida	2020	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	89
City of Treasure Island, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	58
City of Treasure Island, Florida	2020	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	11
City of Treasure Island, Florida	2020	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1675
City of Treasure Island, Florida	2020	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	177
City of Treasure Island, Florida	2020	Owner occupied	greater than 100% of AMI	greater than 50%	48
City of Treasure Island, Florida	2020	Renter occupied	less than or equal to 30% of AMI	greater than 50%	71

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2020	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	11
City of Treasure Island, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	8
City of Treasure Island, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	16
City of Treasure Island, Florida	2020	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	102
City of Treasure Island, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	16
City of Treasure Island, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	35
City of Treasure Island, Florida	2020	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	71
City of Treasure Island, Florida	2020	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	68
City of Treasure Island, Florida	2020	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	48
City of Treasure Island, Florida	2020	Renter occupied	greater than 100% of AMI	less than or equal to 30%	314
City of Treasure Island, Florida	2020	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	71

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2025	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	11
City of Treasure Island, Florida	2025	Owner occupied	less than or equal to 30% of AMI	greater than 50%	161
City of Treasure Island, Florida	2025	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	42
City of Treasure Island, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	54
City of Treasure Island, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	42
City of Treasure Island, Florida	2025	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	119
City of Treasure Island, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	151
City of Treasure Island, Florida	2025	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	89
City of Treasure Island, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	58

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2025	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	11
City of Treasure Island, Florida	2025	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1682
City of Treasure Island, Florida	2025	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	178
City of Treasure Island, Florida	2025	Owner occupied	greater than 100% of AMI	greater than 50%	49
City of Treasure Island, Florida	2025	Renter occupied	less than or equal to 30% of AMI	greater than 50%	69
City of Treasure Island, Florida	2025	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	11
City of Treasure Island, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	8
City of Treasure Island, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	16
City of Treasure Island, Florida	2025	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	100
City of Treasure Island, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	16
City of Treasure Island, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	34

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2025	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	70
City of Treasure Island, Florida	2025	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	66
City of Treasure Island, Florida	2025	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	47
City of Treasure Island, Florida	2025	Renter occupied	greater than 100% of AMI	less than or equal to 30%	307
City of Treasure Island, Florida	2025	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	69
City of Treasure Island, Florida	2030	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	11
City of Treasure Island, Florida	2030	Owner occupied	less than or equal to 30% of AMI	greater than 50%	161
City of Treasure Island, Florida	2030	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	42
City of Treasure Island, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	54
City of Treasure Island, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	42
City of Treasure Island, Florida	2030	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	119

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	151
City of Treasure Island, Florida	2030	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	89
City of Treasure Island, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	75
City of Treasure Island, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	58
City of Treasure Island, Florida	2030	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	11
City of Treasure Island, Florida	2030	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1681
City of Treasure Island, Florida	2030	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	178
City of Treasure Island, Florida	2030	Owner occupied	greater than 100% of AMI	greater than 50%	48
City of Treasure Island, Florida	2030	Renter occupied	less than or equal to 30% of AMI	greater than 50%	67
City of Treasure Island, Florida	2030	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	10

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)					
Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	7
City of Treasure Island, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	15
City of Treasure Island, Florida	2030	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	96
City of Treasure Island, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	15
City of Treasure Island, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	33
City of Treasure Island, Florida	2030	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	67
City of Treasure Island, Florida	2030	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	64
City of Treasure Island, Florida	2030	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	45
City of Treasure Island, Florida	2030	Renter occupied	greater than 100% of AMI	less than or equal to 30%	295
City of Treasure Island, Florida	2030	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	67
City of Treasure Island, Florida	2035	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	10

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2035	Owner occupied	less than or equal to 30% of AMI	greater than 50%	156
City of Treasure Island, Florida	2035	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	41
City of Treasure Island, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	52
City of Treasure Island, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	41
City of Treasure Island, Florida	2035	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	115
City of Treasure Island, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	73
City of Treasure Island, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	147
City of Treasure Island, Florida	2035	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	87
City of Treasure Island, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	73
City of Treasure Island, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	57
City of Treasure Island, Florida	2035	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	10

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2035	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1638
City of Treasure Island, Florida	2035	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	173
City of Treasure Island, Florida	2035	Owner occupied	greater than 100% of AMI	greater than 50%	47
City of Treasure Island, Florida	2035	Renter occupied	less than or equal to 30% of AMI	greater than 50%	65
City of Treasure Island, Florida	2035	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	10
City of Treasure Island, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	7
City of Treasure Island, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	15
City of Treasure Island, Florida	2035	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	95
City of Treasure Island, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	15
City of Treasure Island, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	32
City of Treasure Island, Florida	2035	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	66

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2035	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	62
City of Treasure Island, Florida	2035	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	44
City of Treasure Island, Florida	2035	Renter occupied	greater than 100% of AMI	less than or equal to 30%	290
City of Treasure Island, Florida	2035	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	65
City of Treasure Island, Florida	2040	Owner occupied	less than or equal to 30% of AMI	greater than 30% but less than or equal to 50%	10
City of Treasure Island, Florida	2040	Owner occupied	less than or equal to 30% of AMI	greater than 50%	152
City of Treasure Island, Florida	2040	Owner occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	40
City of Treasure Island, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	51
City of Treasure Island, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	40
City of Treasure Island, Florida	2040	Owner occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	113
City of Treasure Island, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	72

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	143
City of Treasure Island, Florida	2040	Owner occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	85
City of Treasure Island, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	72
City of Treasure Island, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	55
City of Treasure Island, Florida	2040	Owner occupied	greater than 80% but less than or equal to 100% of AMI	greater than 50%	10
City of Treasure Island, Florida	2040	Owner occupied	greater than 100% of AMI	less than or equal to 30%	1596
City of Treasure Island, Florida	2040	Owner occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	169
City of Treasure Island, Florida	2040	Owner occupied	greater than 100% of AMI	greater than 50%	46
City of Treasure Island, Florida	2040	Renter occupied	less than or equal to 30% of AMI	greater than 50%	64
City of Treasure Island, Florida	2040	Renter occupied	less than or equal to 30% of AMI	not computed (household has no/negative income)	10
City of Treasure Island, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	less than or equal to 30%	7

Household Projections by Tenure, Income (%AMI) and Cost Burden, 2000-2040 (Detail)

Geography	Year	Tenure	Household Income	Housing Cost Burden	Household Count
City of Treasure Island, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 30% but less than or equal to 50%	14
City of Treasure Island, Florida	2040	Renter occupied	greater than 30% but less than or equal to 50% of AMI	greater than 50%	93
City of Treasure Island, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	less than or equal to 30%	14
City of Treasure Island, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 30% but less than or equal to 50%	32
City of Treasure Island, Florida	2040	Renter occupied	greater than 50% but less than or equal to 80% of AMI	greater than 50%	65
City of Treasure Island, Florida	2040	Renter occupied	greater than 80% but less than or equal to 100% of AMI	less than or equal to 30%	62
City of Treasure Island, Florida	2040	Renter occupied	greater than 80% but less than or equal to 100% of AMI	greater than 30% but less than or equal to 50%	43
City of Treasure Island, Florida	2040	Renter occupied	greater than 100% of AMI	less than or equal to 30%	286
City of Treasure Island, Florida	2040	Renter occupied	greater than 100% of AMI	greater than 30% but less than or equal to 50%	64

Sources: Estimates and projections by Shimberg Center for Housing Studies, based on U.S. Department of Housing Development, Comprehensive Housing Affordability Strategy (CHAS) dataset and population projections by the Bureau of Economic and Business Research, University of Florida

2. Projected Number of Households by Income Range

As shown in Table 10, the projected number of households in each income range is expected to remain relatively unchanged throughout the planning timeframes. However, the city population includes a large number of retirees, many of whom have modest annual incomes but are able to finance higher priced homes through accumulated savings.

B. Estimated Housing Demand and Need

The final phase in the needs assessment process is to prepare housing demand and need estimates for 2020 and the projected years of 2025, 2030, 2035. Housing demand and need is presented by the total number of housing units needed by type, tenure, and value. Furthermore, only units which are considered inhabited by permanent (non-seasonal) residents are considered within this analysis. The following formula is used to calculate future housing demand:

Future housing demand = (future # of households)
Future # Households = Future population/Population per household.

1. Estimated Demand for Housing, 2020

In 2020, the total number of housing units within Treasure Island equaled 5,694 with a total vacancy rate of 33 percent (see Table 11). Typically, a jurisdiction's vacancy rate averages around 5 percent. However, the high rate is partially explained by the Census Bureau's definition of a "vacant unit", which includes homes where the respondent claimed their usual place of residence as "elsewhere."

Table 11
Total Number of Housing Units in 2020

	NUMBER OF UNITS
Total Housing Units	5,694
Vacant Units	1,899
Vacancy Rate	33%

Source: U.S. Bureau of the Census, 2020

2. Projected Demand and Need, 2020-2040

Table 12
Total Number of Housing Units Needed in 2020-2040

	NUMBER OF UNITS
Total Housing Units	5,273
Units for Permanent Population	3,763
Units for Seasonal Population	1,510

3. Projected Need for Rental Housing Units by Value Ranges

According to the Shimberg Center, a rental payment is considered affordable if the amount is less than 30 percent of the household's monthly income. Similar to the analysis for ownership housing, households are classified according to their income and a range of affordability is calculated. For example, a household earning between $50,000 and $55,000 can afford a rental payment that is 30 percent of the monthly income, or between $1250 and $1375.

4. Need for Housing by Affordability Groups

Chapter 420, State Housing Initiatives Partnership, Florida Statutes, defines various affordability groups according to their annual income level (see Table 13). Although statutory requirements stipulate that "affordability" be based on the median income of a metropolitan statistical area, the Shimberg Center has based their calculations on Pinellas County's median income figure, which was reported at $54,090 in 2020.

Table 13
Income Ranges, Defined

Affordability Group	Definition
Very-low income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 50 percent of the median annual adjusted gross income for households within the metropolitan statistical area... While occupying a rental unit, a very-low-income household's annual income may increase to 140 percent of the 50 percent of the median income adjusted for family size.
Low income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 80 percent of the median annual adjusted gross income for households within the metropolitan statical area...While occupying a rental unit, a low-income household's annual income may increase to 140 percent of the 80 percent of the median income adjusted for family size.
Moderate income	One or more persons or a family, not including students, that has a total annual adjusted gross household income that does not exceed 120 percent of the median annual adjusted gross income for households within the metropolitan statistical area... While occupying a rental unit, a moderate-income household's annual income may increase to 140 percent of the 120 percent of the median income adjusted for family size.

Very-low, low, and moderate income households are not adequately served by the existing and projected ownership housing supply. As a result, affordable housing for those households earning less than median income is virtually non-existent.

With rental payments more in line with countywide averages, a deficit of affordable rental housing exists for only very-low income households. Low income and moderate income households seem to be adequately served by the existing rental housing supply and future supply projections.

Table 14
HUD Fair Market Rent, 2021- Pinellas

STUDIO	1 BEDROOM	2 BEDROOM	3 BEDROOM	4 BEDROOM
$989	$1040	$1271	$1651	$2028

** Source: Shimberg Center for Affordable Housing, 2021*

C. Land Required for Total Housing Need

To accommodate the anticipated population of future residents, the city must ensure that land is available for residential development. The permanent population in 2020 is estimated to be 6,584. 3,763 units will be needed to accommodate this population. The City should be maintaining its existing housing stock to provide for this permanent population. Seasonal population is estimated to be 2,859. Seasonal population is expected to need approximately 1,634 units to accommodate demand. While seasonal populations may utilize timeshare and other techniques that will reduce the overall demand, for the purposes of long-range planning it is assumed that the seasonal population will have their own individual units.

Infrastructure Element
Data and Analysis

The purpose of the Infrastructure Element is to provide for necessary public facilities and services correlated to future land use projections.

I. INTRODUCTION

The following section discusses the condition of public services and facilities in Treasure Island, including potable water, sanitary sewer, solid waste, and stormwater management. The following analysis includes a description of the current condition and level of service for each service and facility, and anticipates future demand based on projected population growth. As discussed in the *Future Land Use Element*, the total city population includes permanent residents, seasonal residents, and tourists (see Table 1).

Table 1
Permanent and Seasonal Population Estimates and Projections,
2020-2040

YEAR	PERMANENT POPULATION*	SEASONAL POPULATION		TOTAL POPULATION
		SEASONAL RESIDENT**	TOURIST***	
2020	6,929	2,643	3,166	12,738
2025	6,891	2,643	3,170	12,704
2030	6,806	2,643	3,170	12,619
2035	6,690	2,643	3,173	12,506
2040	6,583	2,643	3,173	12,399

** Estimates and projections by Shimberg Center for Housing Studies, based on 2000 and 2010 U.S. Census data and population projections by the Bureau of Economic and Business Research, University of Florida*
*** Total Seasonal Residents= seasonal housing * average household size. Seasonal Housing: 1,510 (2020 ACS, B25004 Vacancy Status), Average Household Size: 1.75 (2020 ACS, Quick Facts Families and Living Arrangements)*
****Pinellas County Tourist/Visitor Population Projections by Census Tract and by Traffic Analysis Zone Years 2010 to 2035*

In addition to the public services and facilities described above, statutory requirements mandate that local governments examine the effect of urban development on natural groundwater aquifer recharge areas. Because Tampa Bay Water has determined that Treasure Island and the immediate surrounding area has very low to no recharge to any groundwater aquifer, this analysis will be limited in scope.

Both St. Petersburg and Treasure Island have ongoing preventive maintenance programs that ensure the sanitary sewer system is operating efficiently. The City has also been investing in the rehabilitation of the wastewater collection system to reduce inflow and infiltration throughout the system. As a measure of system-wide performance rainfall events with precipitation close to the 10-year storm system design criteria are resulting in more frequent sanitary system

overflows. In 2016, Hurricanes Matthew and Hermine resulted in more than three times the usual influent volume causing the Northwest Wastewater Treatment Facility to be overloaded to failure. In 2017, an FDEP report found the primary cause of this failure was hydraulic overloading from I&I and inundation associated with saturated soils, elevated groundwater levels, and above-average rainfall

I. POTABLE WATER

A. Potable Water Facilities

1. Service Area and Predominant Land Uses

Treasure Island receives potable water from the Pinellas County Utilities System (PCUS). The PCUS service area includes over 697,735 people, and encompasses most of the unincorporated county, as well as the cities of Largo, Seminole, Treasure Island, and the other beach communities. PCUS also supplements other water distribution systems, supplying water on a wholesale basis. The dominant land use classification within the service area is residential, although commercial, industrial, recreational, and public facility uses are also served.

2. Design Capacity

Treasure Island is a retail customer of Pinellas County Utilities which receives drinking water from sources managed by the regional water supplier, Tampa Bay Water, which is a unique and complex water supply system that is reliable and sustainable.

The 11 permitted regional wellfields were brought under a unitary Southwest Florida Water Management District (SWFWMD) permit issued to Tampa Bay Water which allows for the rotation of pumping throughout the wellfields. The flexibility of wellfield rotation may allow for better management of environmental impacts. In addition, Tampa Bay Water diversified its water supply portfolio with surface water components. Tampa Bay Water has been issued a permit to withdraw water from the Alafia River and Hillsborough River.

Currently, the permitted average daily capacity available to the PCUS, through the regional water supplier, Tampa Bay Water is an aggregate permitted supply capacity of approximately 270 million gallons per day (mgd). To calculate existing and future demand, the Pinellas County Planning Department has divided the county into four water demand planning areas (WDPA). Treasure Island is considered part of the Pinellas County WDPA which also includes the cities of Clearwater and Tarpon Springs water departments.

B. Proportional Capacity

No proportional capacity agreement exists between Pinellas County and Treasure Island. To estimate potable water consumed by the city, its total population is multiplied by the per capita consumption for the overall service area.

C. Demand: Existing Level of Service (2020)

The total population, including permanent residents, seasonal residents, and tourists, amounted to 12,738 persons in 2020. Based on this estimate and a level-of-service standard of 115 gpcd, the City of Treasure Island has an

approximately 1.13mgd of potable water daily use, thereby accounting for approximately 1.41 percent of the WDPA average daily flow (see Table 3).

Table 3
Potable Water Demand in 2020

	PINELLAS COUNTY WDPA*	TREASURE ISLAND**
Total Population**	697,735	12,738
Level of Service	115 gpcd	115 gpcd
Average Daily Demand	80.23 mgd	1.13 mgd
% of Total Average Daily Demand	100 %	1.41%

** Includes: Pinellas County Water Demand Planning Area (WDPA) includes the service areas of the PCUS and the cities of Clearwater and Tarpon Springs.*
*** Includes permanent residents, seasonal residents, and tourists.*
Source: Pinellas County 2021 10 Year Water Supply Facilities Work Plan

D. Projected Demand: Level of Service (2020 to 2030)

The water demands of the Pinellas WDPA can be satisfied by existing supply facilities through the year 2030, assuming that there are no reductions in permitted capacity. Since full permitted capacity may not be available throughout the planning horizon, development of alternative potable water supplies will continue to be the future of water supply planning.

Table 4
Water Supply Needs, 2020-2030
Pinellas County Water Demand Planning Area*

	2020	2025	2030
Service Area Population**	697,735	702,832	708,308
Level-of-Service Standard	115 gpcd	115 gpcd	115 gpcd
Average Daily Demand	53 mgd	51 mgd	51 mgd
Average Daily Capacity	270 mgd	270 mgd	270 mgd
Surplus	**217 mgd**	**219 mgd**	219 **mgd**

** The Pinellas County Water Demand Planning Area includes the service areas of the PCUS and the cities of Clearwater and Tarpon Springs.*
*** Includes permanent residents, seasonal residents, and tourists.*
Source: Pinellas County, Florida. Pinellas County Comprehensive Plan; 2021 10 Year Water Supply Facilities Work Plan

E. Performance, Problems, and Opportunities

To ensure that potable water will be available beyond the year 2030, opportunities to conserve and locate alternative sources are continually being sought. Conservation programs are generally handed down from Pinellas County and regional agencies.

In support of these regional efforts, Pinellas County will continue working to conserve potable water by reducing system losses, protecting groundwater against degradation of water quality and yield, and encouraging county residents to install water conservation devices. In addition, the county's commitment to promoting reclaimed water use for irrigation could significantly reduce potable water demand, decrease the chloride content in deep wells, and eliminate the need to discharge treated wastewater into surface waterbodies. Reclaimed water is currently being supplied to golf courses and select residential communities throughout the county, including Treasure Island

Treasure Island is committed to conserving potable water. The City is provided reclaimed water by Pinellas County and follows the County's regulations for watering.

II. SANITARY SEWER

A. Operational Responsibility and Proportional Capacity

Treasure Island and St. Petersburg have entered into an interlocal agreement whereby St. Petersburg is responsible for the City's sewage treatment. With no septic tanks located within the jurisdictional boundaries of Treasure Island, all sewage is pumped to and treated at the Northwest Wastewater Reclamation Facility, located at 7500-26th Avenue North, St. Petersburg, Florida 33710.

Because this facility serves several jurisdictions as well as areas of unincorporated Pinellas County, no proportional capacity agreement exists between St. Petersburg and Treasure Island. All data and analyses are initially based on the plant's service area population. Thereafter, Treasure Island's consumption rate is factored by its percentage share of the total population.

B. The Northwest Wastewater Reclamation Facility

The Northwest Water Reclamation Facility (NWWRF), provides essential wastewater and reclaimed water service for the Northwest Service Area and areas outside the city limits via interlocal agreements. The facility was originally constructed in 1957 and has been upgraded and expanded several times. It has a permitted capacity of 20 million gallons per day annual average daily flow. Currently, the City of St. Petersburg is updating and upgrading the NWWRF with the NWWRF Improvements Project to enhance reliability, resiliency and sustainability. This project will replace aging assets, improve wastewater service and reliability, and mitigate wet weather overflows.

All wastewater produced within the city travels along the Treasure Island Causeway in an 18-inch force main, joins sewage originating from St. Pete Beach at 79th Street and Central Avenue, moves through a 24-inch force main to a pump station located in South Pasadena, and then finally flows into the Northwest Wastewater Reclamation Facility. Treasure Island maintains the force main to 79th Street and Central Avenue. Thereafter, Treasure Island and St. Pete Beach are jointly responsible for shared pipes.

1. Background and Design Capacity

The Northwest Wastewater Reclamation Facility is a Type I complete mix activated sludge wastewater treatment plant with a capacity of 20 mgd. Treatment methods involve secondary, advanced, and activated sludge with filtration. Dewatered sludge is removed by private hauler and transported to Manatee, Hardee, and Desoto counties to be used for agricultural purposes; effluent is disposed through two methods, distribution of reclaimed water and deep well injection. Although Treasure Island is currently not a recipient of reclaimed water, city sewage treated at the Northwest Facility is pumped to reclaimed water customers residing in St. Petersburg. Recycling water yields several benefits, including reducing per capita demand for potable water, decreasing the chloride content in deep wells, and eliminating the need to discharge treated wastewater into surface water bodies. Effluent that exceeds reclaimed water demand or fails to meet reclaimed water quality standards is injected into deep wells.

2. Service Area and Predominant Land Uses

The Northwest Wastewater Reclamation Facility service area encompasses the northwest district of St. Petersburg, along with a portion of Gulfport, the cities of South Pasadena and St. Pete Beach, and the Bear Creek area of unincorporated Pinellas County. Within Treasure Island, the land uses served are predominantly residential, occupying 64 percent of the land area. Preservation areas account for 17 percent, with commercial, recreational, and public facility uses occupying another 17 percent.

C. Existing Level of Service

In 2020, the Northwest Facility was operating at an average daily flow of approximately 10 mgd, or 50 percent of capacity (City of St. Petersburg Public Meeting #2 Presentation, May 2021).

D. Projected Capacity

Projected capacity was determined using data from the Southwest Florida Water Management District 2020 Regional Water Supply Plan. The plan's reclaimed water data treat's the regional service areas of the St. Petersburg system as a whole. As a result, the data shows the St. Petersburg Wastewater Treatment Plant (WWTP) with a flow capacity of 39.26 million gallons per day and a reuse flow for the region of 14.79 million gallons per day (mgpd). The expected 2040 additional reuse expansion is 7.28 mgpd, and the Regional Water Supply Plan provides a projection of 22.07 mgd for wastewater usage for the overall system. Overall, the system will operate at 56% capacity in 2040.

The NWWRF accounts for 20 million gallons per day of the St. Petersburg Wastewater Treatment Plant. From a proportional share, it is anticipated that the NWWRF operate with a flow of up to 15.2 mgpd. That is a 76% capacity by the NWWRF, and with 4.8 mgpd surplus.

Because the City is subject to agreements of another system, it will have to adjust the LOS standards based on St. Petersburg's evolving level of service standards and any interlocal agreement with the City St. Petersburg.

E. Performance, Problems, And Opportunities

Both St. Petersburg and Treasure Island have ongoing preventive maintenance programs that ensure the sanitary sewer system is operating efficiently. The City has also been investing in the rehabilitation of the wastewater collection system to reduce inflow and infiltration throughout the system.

The City of St. Petersburg is updating and upgrading the NWWRF with the NWWRF Improvements Project to enhance reliability, resiliency and sustainability. This project will replace aging assets, improve wastewater service and reliability, and mitigate wet weather overflows. Key components of the project include:

- New influent pump station to replace aging infrastructure and maintain reliable wastewater/reclaimed water services.
- New coarse screening facility to remove large debris from wastewater influent and protect downstream pumps, gates and valves.
- Upgraded fine screens to improvement operations and reliability.
- New odor control system to minimize odors that could adversely affect facility staff and/or the surrounding community.
- Two new 7.5 million-gallon covered reject water storage tanks (200 feet wide and 50 feet high) to provide one day of storage volume for water that requires retreatment, as required by state statutes.

In addition, the City of Treasure Island is evaluating the feasibility of replacing or supplementing the existing force main with an independent or combined force main transmission system that continues to discharge to the City of St. Petersburg (St. Pete) or propose a new discharge point to Pinellas County at its Bear Creek or South Cross Bayou facilities. The Master Force Main is the only wastewater discharge for the barrier islands of Treasure Island and St. Pete Beach. An alternative route does not exist, and an efficient and logistically feasible method of bypassing is not available in the event of a force main failure. Maintaining the Master Force Main is critical for successful operation of both City's wastewater conveyance systems. Condition assessments were completed for the City's Master Force Main in 2011 by Cardno TBE titled Master Force Main Limited Condition Assessment, and in 2021 by Kimley-Horn titled City of Treasure Island Master Force Main Assessment Post Assessment Report. It was recommended that the City begin establishing a plan for the replacement of the Master Force Main due to the criticality of the infrastructure. The City's section of the force main is not expected to exceed its useful life until 2065; however, additional testing and follow-up force main assessments are recommended every 10-years to ensure the rate of degradation does not increase over time.

The City continues to fund preventive maintenance and rehabilitation through the capital budgeting process.

III. SOLID WASTE

A. The Role of Pinellas County

1. Operational Responsibility and Service Area

Along with the other twenty-three municipalities within Pinellas County, Treasure Island has entered into an interlocal agreement under which the county is responsible for the disposal of the city's solid waste. Prior to this agreement, the county enforced the Solid Waste Disposal and Resource Recovery Act, which legislatively charged the Board of County Commissioners with countywide disposal responsibility and also granted the Board flow control to direct all solid waste to one location. The U.S. Supreme Court found flow control mandates

unconstitutional in 1994. In response, Pinellas County looked toward the interlocal agreements to maintain municipal flow control authority.

Currently, a private vendor is charged with the operational responsibility of the Refuse-to-Energy Plant. Through a 20-year management agreement originally signed in 1978, the contractor designed, constructed, and continues to manage the county-owned facility. A new 17-year contract was awarded in January 2007. The adjacent Bridgeway Acres Sanitary Landfill is operated by Addington, Inc.

The city operates automated side loading and rear loading sanitation vehicles for collection of waste. When feasible, yard debris is kept separate from other household and commercial waste and taken to a vegetation reclamation facility as a best practice.

2. Proportional Capacity and Land Uses

Located at 3001-114th Avenue North, the Waste-to-Energy Plant and adjacent landfill share operational space. Currently, no proportional capacity agreement for solid waste disposal exists between Treasure Island and Pinellas County. However, the city does record the total amount of refuse received, recycled, and sent to the Waste-to-Energy Plant and Bridgeway Acres Sanitary Landfill. A wide array of land use activities is serviced by these facilities, including residential, commercial, and industrial uses. Within Treasure Island, residential remains the most predominant land use type and occupies 67 percent of all upland acreage. Commercial, recreation, and public facilities account for a combined total of 26 percent.

B. Background and Design Capacity

Countywide, the amount of solid waste collected annually surmounted the million-ton mark in the late 1980s and appeared to be on the rise (see Table 9). Fortunately, this trend was counterbalanced by the rising popularity of recycling, material reuse, increased donations to charitable organizations, and the diversion of construction and demolition debris. The amount of collected refuse has stabilized at approximately 1,215,347 tons per year.

Solid waste entering the landfill has also significantly declined since the 1980s. As reported between 1990 to 1995, the annual average tonnage of refuse entering the landfill was just over 67,000 tons per year or 166 tons per day, representing a 69 percent reduction from the amount of waste deposited during the late 1980s. Reasons for this decline can be attributed to the following: more construction and demolition debris being diverted to the Waste-to-Energy Plant and the recent expansion of this facility; construction debris being diverted to Pasco County; and massive recycling efforts. Although, as can be seen in more recent years, the trend has reversed, and more waste was deposited year over year into the landfill between years 2012 to 2020.

Table 9
Waste-to-Energy Plant Performance, 2012-2020 (tons/year)

CALENDAR YEAR	REFUSE-TO-ENERGY	LANDFILL &YARD WASTE	TOTAL
2012	762,904	176,092	938,996
2013	808,689	147,783	956,472
2014	843,304	128,244	971,548
2015	788,002	276,284	1,064,286

2016	769,257	282,742	1,051,999
2017	789,621	266,979	1,056,600
2018	641,165	525,609	1,166,774
2019	733,417	458,037	1,191,454
2020	573,381	580,607	1,153,988

Source: Pinellas County DEP MSW Annual Reports

Listed below is a description of the various types of solid waste disposal facilities used by the city and the associated design capacities.

1. Pinellas County Waste-to-Energy Plant

A state-of-the-art facility, the three-boiler Waste-to-Energy Plant disposes of waste through mass burning with waterwall incinerators, creating steam that drives turbines and generates electricity. The facility has a capacity of 3,150 tons per day or nearly 1,150,000 tons per year, and is currently operating at about 75 percent of capacity, with Treasure Island accounting for only 0.7 percent of average daily flow. PCUS is evaluating options for facility expansion

2. Landfill

Located adjacent to the Waste-to-Energy Plant, the Bridgeway Acres Sanitary Landfill is the only Class I landfill in Pinellas County. A Class I facility can accommodate a wide variety of waste products and must be lined in order to prevent groundwater contamination. Typically, non-processible or non-burnable solid waste such as large tree trunks and construction debris is buried here. As of 2020, almost 78% of tons of non-recoverable waste was entering the facility for disposal are combusted at the WTE plant and the remainder is landfilled.

Bridgeway Acres Sanitary Landfill has approximately 538 acres of remaining permitted capacity and is expected to last until approximately 2060. Due to high population densities and stringent groundwater regulations, the county has determined that Bridgeway Acres Sanitary Landfill will be the last Class I landfill within county limits.

3. Recycling

Currently, the city's single-stream recycling program provides an opportunity for residents to recycle yard waste, cardboard, paper, clear glass, metals, and plastics. By contract with the city, a hauling contractors provide curbside collection for single and multi-family residences and for residential complexes with 5 units or less. Countywide, of the 2.3 million tons of waste generated, approximately 1.2 million tons are recycled annually.

4. Yard Waste

In effort to limit mixing with household waste, the sanitation department only collects yard waste on Wednesdays throughout the city. The city maintains an agreement with a local vegetation reuse facility within Pinellas County to divert waste that would otherwise be sent to the County's Waste-to-Energy facility. Yard waste is collected more frequently from city residents ahead of approaching storms.

C. Existing Demand (2020)

Treasure Island records the amount of solid waste collected, recycled, and incinerated. To calculate the per capita generation rate, tons collected per day was divided by the total population, including seasonal populations. The city generated an average of 19 tons of solid waste daily in FY 19/20 or 3.49 pounds per capita a day (ppcd). Of this total, 90 percent of all solid waste was sent to the incinerator or landfill. Table 10 shows that the city has a significantly lower per capita generation rate than the Pinellas County service area, which has a per capita generation rate of 13.19 ppcd.

Table 10
Solid Waste Generation, 2020

	PINELLAS COUNTY SERVICE AREA	SERVICE AREA PER CAPITA RATES	TREASURE ISLAND**	TREASURE ISLAND PER CAPITA RATES
Population	984,054	--	12,738	--
Total Generation (per day)	6,491 tons	13.19 lbs.	22.2 tons	3.49 lbs.
Incinerated Solid Waste	1,590 tons (24.4%)	3.23 lbs.	10 tons***(40%)	1.57 lbs
Buried Solid Waste	1,584tons (24.4%)	3.22 lbs.	10.1 tons 40%	1.578 lbs.
Recycled	3,329 tons (51%)	6.76 lbs.	2.2 tons (10.0%)	0.16 lbs.

*Source: * Pinellas County MSW Report 2020; FDEP*
*** Based on solid waste collection & recycling figures collected for 2020 and recorded by the City of Treasure Island.*
****Estimated based on 50% rates of combustion and landfilling at WTE Plant*

D. Projected Demand: Level of Service (LOS) 2025 and 2030

Treasure Island's total population is expected to reach 12,704 persons in 2025 and 12,619 persons in 2030, as shown in Table 11. At the current generation rate of 3.49 ppcd (which excludes recycled materials), the city will send approximately 22 tons of solid waste per day to the incinerator in both 2025 and 2030.

Table 11
Projected Level of Service, 2025-2030

	2025	2030
Projected Total Population	12,704	12,619
Generation Rate of Incinerated and Buried Solid Waste	3.34 ppcd	3.34 ppcd
Incinerated and Buried Solid Waste	21.96 tons per day	21.99 tons per day

Sources: Pinellas County Planning Department, 2021

Assuming that the solid waste generation remains relatively stable through the year 2030, and that countywide recycling continues at the current rate of nearly fifty-five percent, the Waste-to-Energy Plant and adjacent landfill will be near

capacity to handle expected demand through 2030 and exceed capacity shortly thereafter. As such, Pinellas County is considering plans to expand the Waste-to-Energy Plant or construct a second facility.

E. Performance, Problems, and Opportunities

The Waste-to-Energy Plant has minimal impacts on adjacent natural resources. A bentonite slurry wall connected to an impervious clay wall is designed to prohibit the release of pollutants into adjacent soils, groundwater, or surface waters, which are extensively monitored by Pinellas County. Runoff generated by the plant is collected and recycled for use in the cooling system. Construction, design, and monitoring of the facility complies with all federal and state regulations, and air quality around the site meets acceptable levels of the Environmental Protection Agency (EPA). In addition, expansion of the usable capacity of the existing landfill and expansion of the Waste- to-Energy facility. These improvements are further detailed in the County's Solid Waste Master Plan.

IV. STORMWATER MANAGEMENT

A. Operational Responsibility and Predominant Land Uses

The city maintains an extensive system of storm drains, which extend approximately 11 miles in length throughout public rights-of-way. Additional drains, swales, and other stormwater facilities located on private property are the responsibility of individual property owners. As discussed in the *Future Land Use Element*, residentially designated property remains the most predominate land use type within the city, occupying 67-percent of all upland area. Three percent of land is held for preservation, and 8 percent is occupied by commercial uses, public facilities, and recreation/open space. The remaining 4 percent is vacant and undeveloped.

B. Background

Treasure Island is comprised of five small islands located within Florida's Gulf of Mexico barrier island system. The barrier islands were built up from sand and shell as a result of thousands of years of wave and tidal action and have evolved natural drainage patterns to accommodate storms and flooding. During the rapid urbanization of the last several decades, however, these drainage patterns were dramatically altered. Asphalt and other impervious surfaces replaced permeable soils, while dredging, filling, and grading changed the shape of the natural landscape. As a result, stormwater no longer drained efficiently, causing flooding in many areas.

In 1981, Pinellas County adopted the *Pinellas County Master Drainage Plan* along with 52 individual storm drainage basin studies. These studies represented a comprehensive approach to identifying drainage needs within the county. Unfortunately, due to the small size of the sub-basins found on the barrier islands, the beach communities were not included within the plan. Local drainage problems were left to each municipality to resolve.

The City received funding through the Southwest Florida Water Management District's Cooperative Funding Initiative program to perform a City-wide evaluation of the City's stormwater system through the development and utilization of a stormwater model. The evaluation identified where stormwater capital improvements are needed to improve the level of service and the quality of water discharged to the Gulf of Mexico and Boca Ciega Bay. The resulting Watershed Management Plan (WMP) was adopted early 2021 to replace the City's former 1996 Master Drainage Plan and provide planning and management strategies to enhance the City's resilience to sea level rise.

The plan recommended improvements to be made to the stormwater management system and set forth design criteria to be adopted into the comprehensive plan and land development regulations.

C. Treasure Island Watershed Management Plan

The City of Treasure Island Watershed Management Plan facilitated the preparation of a hydrologic hydraulic stormwater model which was used to evaluate the performance an effectiveness of the City's stormwater infrastructure. Capital improvement projects were identified in locations where stormwater level of service was found to be deficient under future sea level rise scenarios. Opportunities to improve the quality of water prior to discharge to the Gulf of Mexico and Boca Ciega Bay were also identified.

The city recognizes the challenges that lie ahead. Recent strategic planning efforts focused on sustainability goals and the bold actions needed for achievement. Sea level rise was identified by City residents, business leaders and staff as a threat to daily life in this coastal community.

The Watershed Management Plan focuses on current day stormwater performance, but also evaluates how changing environment conditions could impact system effectiveness. Mitigation opportunities and planning recommendations have been provided on how the city can rise above sea level challenges.

It is a recommendation from the Watershed Management Plan that the level of service classification and criteria revisions be made to correlate storm event performance expectations to roadway importance. In a general sense, a higher use roadway's stormwater system should have a superior performance when compared to a local roadway used by a small percentage of the population. A roadway hierarchy has been defined by identify three classes: primary, secondary and local. Criteria revisions are also recommended for each LOS classification.

Based upon the recommended criteria revisions and roadway class assignment, the below table represents the rubric used to evaluate the level of service for each basin within the City. The basins are further described in the Watershed Management Plan. The City's prior level of service allowed for up to 12" of roadway flooding for the 25-Year/24-Hour storm event. While this may be prudent for a local roadway, heightened performance may be desired for roadways more critical. The new criteria attempt to balance impacts to day-to-day life and the ability to attain a certain LOS in a cost-effective manner.

Newly Adopted Level of Service (LOS) Standards								
Primary			Secondary			Local		
10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H	10Y24H	25Y24H	100Y24H
A	B	D	A	C	D	B	D	E

D. Projected Demand: Level of Service (2025 and 2030)

The following is an excerpt from the Watershed Management Plan showing a table to compare the current condition and future condition after the 100-year/24-hour storm event, which represents the most severe rainfall scenario evaluated for the study. The report highlights the correlation between tailwater elevation and stormwater system response. The table below documents the change in performance when elevating the tailwater conditions by approximately 18 inches.

Primary			Secondary			Local		
10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H
Current Conditions								
43.42%	44.74%	72.37%	27.45%	39.22%	41.18%	49.79%	75.97%	80.26%
Future Conditions								
31.58%	30.26%	67.11%	23.53%	35.29%	39.22%	39.48%	65.67%	69.96%

Table 7-2 *Percentage of Basins Meeting LOS Goals (Current vs. Future Condition)*

E. Performance, Problems, and Opportunities

The Watershed Management Plan identified projects that could result in level of service improvements and/or improve water quality. Each project proposes infrastructure improvements to the degree needed to achieve LOS goals identified in the study. The projects are summarized in the report and policies are included in the City's comprehensive plan to support implementation of the recommended projects.

F. Regulations

Stormwater management is regulated by a number of agencies, including the SWFWMD, the Department of Environmental Protection (DEP), and the federal Environmental Protection Agency (EPA). The city, together with the county and most other municipalities in the county, has received the final National Pollution Discharge Elimination System (NPDES) permit and is operating under its conditions.

The *Treasure Island Land Development Code* imposes extensive requirements regarding storm drainage. Section 75-171 through section 75-176 mandates that certain developments undergo review for storm drainage prior to the issuance of a building permit. Drainage plans must include a hydraulic survey of the site and stormwater facilities proximate to the site, a description of on-site retention facilities, and a preliminary design drawing of the proposed storm drainage facilities. Section 68 of the *Land Development Code* states that "on-site retention methods and analysis and calculations shall be in accordance with the requirements, procedures, and methods as set forth by the city." Additionally, Section 68-224 requires the retention of the first one inch of rainfall on site as a part of the concurrency management system. The comprehensive plan expands on this requirement to mandate that developments design for a three-year storm event.

V. NATURAL GROUNDWATER AQUIFER RECHARGE

Over 80 percent of the Tampa Bay freshwater supply comes from groundwater resources. Groundwater refers to the water found beneath the surface of the earth in saturated soils or geologic formations, called aquifers. The surficial aquifer lies closest to the surface and lacks a continuous impermeable top layer. Below the surficial aquifer is a fairly impermeable confining layer that separates the surficial aquifer from the confined aquifer below. Generally, aquifers are replenished by rainwater percolating through the surficial aquifer, crossing the confining layer, and reaching the confined aquifer. This process is known as natural recharge. High recharge areas are found where the confining layer is absent or discontinuous and where permeable soils and sands exist.

In Pinellas County, recharge rates of the confined aquifer, otherwise known locally as the Floridan Aquifer, are generally very low to virtually zero. Per US Geological Survey data, of the 10-25 inches of annual rainfall entering the surficial aquifer, less than one-inch infiltrates downward into the Floridan. Progressing farther south within the county, the Floridan Aquifer becomes more confined, receives little or no local recharge, and typically yields water that is highly mineralized. All of Pinellas County is west of the brackish water line and as a barrier island community, total chlorides would significantly exceed 1000 mg/l. The most significant recharge areas are located within the Clearwater, Dunedin, and Seminole areas. Below coastal communities and adjacent mainland areas in southern Pinellas County, groundwater is high in chlorides, and recharge rates are negligible. Therefore, little or no groundwater recharge occurs in or around Treasure Island.

COASTAL MANAGEMENT, CONSERVATION, AND RESILIENCY ELEMENT DATA AND ANALYSIS

The purpose of this Coastal Management, Conservation, and Resiliency Element is to plan for and where appropriate restrict development activities where such activities would damage or destroy coastal resources, to protect human life and limit public expenditures in areas that are subject to destruction by natural disaster, and to promote the conservation, use, and protection of natural resources.

I. INTRODUCTION

Spanning five islands in the Pinellas County barrier island system, Treasure Island was once dominated by mangroves, salt marshes, and other wetland vegetation that supported hundreds of wildlife species. Today, very little remains of what was once a unique ecosystem. Undisturbed natural areas are limited to small scattered marine wetlands, beaches, and dunes along the coast, and Elnor Island located in Boca Ciega Bay. In an effort to preserve these vital resources, the city strictly enforces existing policies that support wetland protection, beach renourishment, and habitat restoration.

This element of the comprehensive plan details the extensive array of factors affecting Treasure Island's natural resources. The following also discusses the city's impact on regional resources, including air quality, water quality, and hazardous waste. Natural disaster preparedness and post-disaster redevelopment procedures are reviewed, and sections on existing and future potable water demand and conservation measures, and data on sea level rise are also included.

II. PREPARATION OF A COASTAL MANAGEMENT, ~~AND~~ CONSERVATION, AND RESILIENCY ELEMENT

The Coastal Management, Conservation, and Resiliency Element is actually two individual elements, with each required to have its own data and analysis as well as goals, objectives, and policies. Only select local governments specified by the state land planning agency such as Treasure Island, must prepare a coastal management element. However, all local governments must prepare a conservation element. Because the city is located on a barrier island, and all natural resources required to be addressed within the conservation element are coastal in natural, the two elements have been combined.

III. COASTAL PLANNING AREA

The following analysis focuses upon the coastal planning area. The entire City of Treasure Island is considered within this area and is included within the scope of this element.

IV. EXISTING LAND USE CONDITIONS

Typically, land use acreage within a coastal planning area would be significantly less than city-wide totals. However, in the case of Treasure Island and similar beach communities, the coastal planning area encompasses the entire city. As a result, the existing land uses within this area reflect those depicted on Map LU-1: Existing Land Use Map.

A. Existing Land Use Inventory

Treasure Island is dominated by residential land uses that occupy 67 percent of all land area, excluding rights-of-way. Conservation areas amount to 97 acres or three percent, with the majority being beaches and dunes along the Gulf of Mexico. Of this, approximately fourteen acres are found on nearby Elnor Island. The remaining acreage is concentrated along the shoreline of Boca Ciega Bay. Commercial uses occupy eight percent of upland area and are located along Treasure Island Causeway and Gulf Boulevard. Finally, recreational facilities, open space, and public facilities comprise three percent of land area. For a more detailed description of existing land uses within the city, see the *Future Land Use Element*.

B. Water-Dependent/Water-Related Land Uses

With a bustling economy geared toward tourists and seasonal residents, the city relies heavily on water-related activities. In addition to private residential docks, many other structures and land uses along the Gulf of Mexico and Boca Ciega Bay attract visitors. These uses are depicted on the Map PROS -1 Public and Recreational Facilities,

C. Shoreline Uses and Redevelopment

Existing water-related activities are not in conflict with any abutting land uses, and adequately serve the needs of the community and surrounding area.

D. Economic Base

Due to the abundance of tourists and seasonal residents visiting Treasure Island each year, the city's economic base rests primarily on commercial activities geared to these groups, specifically retail trade and hotel/motel services. Due to the built-out nature of the city, future land uses are not expected to alter the existing economic base significantly. Of the twenty-eight acres of vacant land within the city, approximately 15 acres are designated as commercial.

V. EFFECT OF FUTURE LAND USES ON NATURAL RESOURCES

As discussed in the *Future Land Use Element*, twenty-eight acres of vacant land are located within Treasure Island. Of this, approximately twenty-six acres can accommodate either residential or hotel/motel facilities. No expansive areas of undeveloped land remain, in that the largest of these parcels measure roughly 1.5 acres in size. Natural resources such as wetlands, wildlife habitats, and other marine resources are adequately protected by coastal management provisions in the city land development regulations. The following section provides an inventory of various natural resources found within the city, followed by an analysis of the effect future land uses may have upon these features.

A. Vegetative Cover

Very few pristine natural areas remain in Treasure Island. Nearly all native vegetation has been destroyed by urbanization and the expansion of exotic plant species, such as Brazilian peppers, Australian pines, bishopwoods, ear trees, laurel figs, weeping figs, eucalyptus, willows, and punk trees. Currently, the land development regulations do not protect these species, and prohibit their planting in an effort to allow native vegetation to regain dominance. The City's Land Development Regulations encourage the use of native tree and landscape

species, and the removal of exotic trees and vegetation. The planting of exotic trees and vegetation is to be generally prohibited.

Only isolated areas of slash pine, oak, and palmetto, and three small pockets of wetland vegetative species currently exist on the island. Elnor Island, a spoil island in Boca Ciega Bay, is the only other area within city limits that has entirely maintained their native vegetation.

B. Wetlands

Before the advent of dredge and fill development, Boca Ciega Bay's shoreline was dominated by extensive mangrove and saltmarsh communities with nearby subtidal seagrass beds. Currently, beach and dunes are found along the Gulf of Mexico coastline, stretching from the city's southern to northern boundary. Swamp and mangrove environments are restricted to Elnor Island. Seagrass beds are found along the shallow waters of Boca Ciega Bay surrounding Treasure Island. A significant seagrass habitat is located in the waters surrounding Elnor Island. The seagrass beds typically consist of either turtle grass (Thalassia testudinum), manatee grass (Syringodium filiforme), shoal grass (Halodule wrightii), or widgeon grass (Ruppia maritima).

C. Groundwater

In Pinellas County, recharge rates of the confined aquifer, known locally as the Floridan Aquifer, are generally very low to virtually zero. Of the 22 inches of annual rainfall entering the surficial aquifer, only two inches infiltrate downward into the Floridan. Progressing farther south within the county, the Floridan Aquifer becomes more confined, receives little or no local recharge, and typically yields water that is highly mineralized. All of Pinellas County is west of the line of brackish water where total chlorides exceed 1000 mg/l, with the highest level of saltwater intrusion increasing in intensity as you move westward. The most significant recharge areas are located within the Clearwater, Dunedin, and Seminole areas. Below coastal communities and adjacent mainland areas in southern Pinellas County, groundwater is high in chlorides, and recharge rates are negligible. Therefore, little or no groundwater recharge occurs within Treasure Island.

D. Air Quality

Pinellas County is located in a highly urbanized area of west central Florida. Many modern conveniences enjoyed by residents require the combustion of fossil fuel, which releases pollutants into the air. In 1970 the federal government passed the *Clean Air Act*, empowering the Environmental Protection Agency (EPA) to establish nationally uniform air quality standards to ensure that these pollutants do not reach unhealthful levels. Currently, the EPA enforces standards for the following six types of criteria air pollutants:

- Particulate Matter: Solid materials suspended in the air, including dust, soot, and pollen particles. These airborne particles are generated from transportation sources, open burning of trash and garbage, dust from construction and industrial activity, and from the combustion of diesel fuel.
- Lead: A common metal that is present in many areas, including, air, water, and dust. Ambient lead is a particulate but is given special attention because of its potentially toxic effects.
- Nitrogen Dioxide: A brownish, highly reactive gas emitted during combustion especially during high temperature processes. Nitrogen Dioxide forms from emissions from cars, trucks and buses, power plans, and off-road equipment.

- Carbon Monoxide: A colorless, odorless, and poisonous gas that is a by-product of the incomplete combustion of carbon fuels. Transportation sources account for over 98 percent of all carbon monoxide pollution emitted in Pinellas County.
- Sulfur Dioxide: A pungent gas that can destroy lung tissue and weaken the lung's cleaning and protective mechanism, especially in children and the elderly. This compound is emitted primarily from power-generating plants that use fossil fuels such as sulfur coal and oil and is also a principal component of acid rain.
- Ground-level Ozone: A colorless and highly unstable form of oxygen which is the principal component of urban smog. Although ozone in the upper atmosphere acts a shield against harmful ultraviolet rays, in the lower atmosphere it can be harmful when inhaled. Ozone is formed by a complex chemical reaction of compounds that are emitted from vehicles, combustion sources, and even trees and plants.

1. Tampa Bay Airshed

With pollutants flowing across jurisdictional lines, the responsibility of maintaining clear air commands regional support. Pinellas and Hillsborough counties are considered part of one airshed. As such, the city has historically relied on and adhered to policies and regulations developed by Pinellas County and other joint efforts with Hillsborough County and the EPA.

2. Monitoring Process

The Pinellas County Emergency Management Department has been monitoring the county's air since 1975. Currently, the department maintains a system of thirteen air quality sampling stations scattered throughout the county. The nearest station to Treasure Island is approximately one and a half miles away at Azalea Park, located at 72nd Street and 2nd Avenue North in St. Petersburg. Here samples are taken for ozone, particle pollution, particulate matter and nitrogen dioxide.

The Air Quality Index, sometimes referred to as the Pollution Standards Index was developed by the EPA in an effort to provide daily information regarding pollutant levels. An analysis of the index taken over the years indicates a reduction in overall pollutants released into the air. Per AirNow.gov, air quality is considered good for an average of five out of seven days during the year week~~,~~ and moderate for an average of two out of seven days.

3. Adherence to the *Clean Air Act*

In 1978, the EPA officially designated Pinellas County as a nonattainment area for sulfur dioxide and ozone according to National Ambient Air Quality Standards. Consequently, corrective measures were applied to lower the discharge amount of these pollutants to safe levels. Sulphur dioxide levels were brought almost into immediate compliance, however, high levels of the pollutant ozone continued to be recorded. In 1982, although Pinellas County could prove that all ozone control strategies were being executed, the EPA could not grant a redesignation because Hillsborough County, which is classified within the same airshed, had not been in full compliance. After the completion of several studies and programs targeted at reducing ozone levels and implementation of industrial and automotive pollution control technologies, the EPA reclassified the Tampa Bay airshed to "attainment/maintenance" status in February, 1996, and has remained since.

4. Attainment Status for Azalea Park

The table below provides the four highest data points that are needed to determine an area's attainment status with the 8-hr ozone standard. If the average is higher than 70 parts per billion, the area will not meet the ozone standard. The 2021 three-year attainment average is 61.

Year	4th Highest 8hr Average (displayed in parts per billion)	Date
2022	55	11-MAY
2021	58	16-MAY
2020	63	22-APR
2019	63	21-MAR

Source: 2022 Attainment Status - Division of Air Resource Management - FDEP (state.fl.us)

E. Floodplains and Areas Subject to Coastal Flooding

FEMA defines a floodplain as an area that is susceptible to being inundated by floodwaters from any source. Typically, floodplain boundaries are delineated according to a 100-year storm event, where the chances are that land located inside this area will flood at least once every 100 years. Refer to the map LU-2 - Flood Zones, Floodplains, & CHHA for the city's floodplains and areas subject to coastal flooding.

F. Marine Life and Wildlife

The Gulf of Mexico, and more significantly the estuarine environment of Boca Ciega Bay, attracts a large variety of marine life, birds, and animals. Below is a description of the species that are commonly found in the waters surrounding Treasure Island.

1. Shellfish

Boca Ciega Bay once offered a plentiful supply of shellfish, particularly oysters and clams that were concentrated in flats, banks, or reefs. An important food source for many aquatic and bird species, shellfish also filtered significant amounts of water each day, and in doing so remove suspended matter and reduced turbidity. As a result of overharvesting, habitat destruction, and degradation of water quality, shellfish populations have sharply declined over the last thirty years, and scallops have virtually disappeared. However, with recent improvements in water quality as well as an active seagrass restoration program sponsored by the Tampa Bay National Estuary Program, scientists are hopeful that shellfish populations will recover.

2. Fish

The coastal waters of Boca Ciega Bay are a popular fishing location (Florida Fish and Wildlife Conservation Commission, 2022).

Many of the estuarine-dependent and recreationally important fishes found in the area include red drum, spotted sea trout, sheepshead, Florida pompano, black drum, and tarpon. Offshore species include gag grouper, red snapper, hogfish and king mackerel. In addition, the common snook is a species of special concern commonly found in this area.

3. Manatees

Both Tampa Bay and the Gulf of Mexico provide critical habitats for manatees, which are protected by the federal *Endangered Species Act*. Recent research has revealed that seagrass meadows and manmade freshwater sources in these waterbodies attract manatees by providing feeding and gathering areas. Although not designated as a protection area by the Tampa Bay National Estuary Program, Boca Ciega Bay still serves as a year-round or seasonal home to some manatees.

The Treasure Island *Code of Ordinances*, Section 72-143, protects manatee habitat such as seagrass beds. Any development likely to generate or attract increased boating activity in an area known to be frequented by manatees is required to establish an area-specific manatee protection plan, in cooperation with FDEP and the U.S. Fish and Wildlife Service. General seagrass bed locations are identified on *Map CM-1: Vegetative Cover and Marine Resources*.

4. Turtles

Through the *Endangered Species Act of 1973* and Chapter 379, Florida Statutes (F.S.), federal, state, and local agencies have continually pushed forward to protect existing sea turtle populations and assist in their proliferation. The Fish and Wildlife Research Institute (FWRI) coordinates the Statewide Nesting Beach Survey program (SNBS) to document the total distribution, seasonality and abundance of nesting by sea turtles in Florida.

Three species of sea turtles – loggerhead (Caretta caretta), green turtle (Chelonia mydas) and leatherback (Dermochelys coriacea) – regularly nest on Florida beaches. Two other species – Kemp's ridley (Lepidochelys kempii) and hawksbill (Eretmochelys imbricata) – also nest in Florida, but in very small numbers. All of these sea turtle species are listed as either threatened or endangered under the Endangered Species Act, and monitoring nesting activity is critical to understanding the biology and ecology of these imperiled species. Managers use survey results to evaluate and minimize impacts to sea turtles and their nests from human activities such as coastal construction, beach renourishment and recreation. They also use survey results to identify important areas for enhanced protection or land acquisition.

Using Statewide Nesting Beach Survey data collected during the last five years, FWRI researchers prepared a statewide atlas of nesting occurrence and density for loggerheads, green turtles and leatherbacks. Researchers excluded survey beaches on which these three species were not observed to have nested during the five-year time period.

The last SNBS survey completed for Treasure Island was in 2018. The SNBS survey determined a low-density classification for loggerhead turtle nests and found no green turtle or leatherback turtle nests on the Island.

Lighting continues to be the number one problem for sea turtles and their hatchlings. Bright lights can disorient and mislead hatchlings away from the water. Other obstacles facing sea turtles are beach renourishment projects, which compact sand and affect hatchlings' incubation period, and nest disturbances caused by humans and other animals (Clearwater Marine Aquarium, 1996). Currently, Section 68-466 provides that "No artificial public or private light source shall illuminate where it may deter adult female sea turtles from nesting or disorient hatchlings to the Gulf of Mexico during May 1 — October 31".

5. Birds

Treasure Island serves as the seasonal home for hundreds of birds each year. In particular, Elnor Island and other nearby mangrove islands are considered highly productive nesting areas. The meadowlark, warbler, brown pelican, heron, egret, and spoonbill are often seen in and around the city. Shorebirds include gulls, skimmers, terns, and sandpipers. Species of special concern that frequent Treasure Island include little blue herons, reddish and snowy egrets, tricolored herons, white ibis, American oystercatchers, brown pelicans, and black skimmers. Endangered and threatened species, such as the bald eagle and the least tern, are also periodically spotted.

G. Terrestrial Habitats

Urbanization has eliminated virtually all terrestrial wildlife habitat in the city. Remaining wildlife consists of species adapted to the urban environment, such as mangrove water snakes, marsh rabbits, diamond-backed terrapins, raccoons, and domesticated animals.

H. Minerals

No known commercially valuable minerals are located within Treasure Island.

I. Soil

As shown in *Map LU-3: Soils Association*, the soils in Treasure Island fall into the following major categories: Beaches, Kesson and Palm Beach fine sand, Matlacha and St. Augustine soil, and Urban land. A description of each is provided in the *Future Land Use Element*.

VI. IMPACT OF FUTURE LAND USES ON HISTORIC SITES

As detailed in the *Future Land Use Element*, the city contains one prehistoric archaeological site, which is listed on the *Florida Master Site File* as "John's Pass Mound, 8PI4." *Map LU-5: Historic Resources* indicates that this site has been covered by a development project. There are no other known historic sites, and because the city is virtually built out, no future discoveries are anticipated. However, any such discovery would be protected from the impacts of development by policies contained within this comprehensive plan.

VII. ESTUARINE AND SURFACE WATER ENVIRONMENT

With the combination of a warm climate and miles of white beaches, the city has benefited economically from its geographic location. Both the Gulf of Mexico and Boca Ciega Bay have stimulated economic growth by attracting tourists and mainland neighbors in search of recreational opportunities, and by accommodating the demand for waterfront and water view properties. The following section analyzes the impact development has had on these adjacent water bodies, specifically Boca Ciega Bay, and details existing and proposed regulations designed to improve water quality.

A. Surface Waters

Surface water resources include both marine and estuarine waterbodies. Facing the Gulf of Mexico to the west and Boca Ciega Bay to the east, the city's shorelines are influenced by tidal movements. In Boca Ciega Bay, dredge and fill activities have extended the shoreline, creating numerous finger canals.

Two passes, Blind Pass to the east of the city and John's Pass to the north, allow boats to move between the Gulf and Bay. Blind Pass ranges from 200 to 750 feet wide and extends approximately one and a quarter miles, with depths ranging from one to nine feet. Although the pass is oriented in a north-south direction, it connects Boca Ciega Bay in the east to the Gulf of Mexico in the west. Historically, this channel has been unstable, with the secondary entrance at the north end having opened and closed several times. In 1978, the pass closed completely, but was re-opened the following year as crews used its fill for a portion of the Long Key beach renourishment project. On the northern end of the island, John's Pass has remained a stable, tide-dominated inlet connecting Boca Ciega Bay to the Gulf since its formation in 1848. In 1966, the inlet was dredged in conjunction with a general improvement project that included a new bridge.

B. Estuarine Waters

An estuary is a semi-enclosed coastal body of water that has open access to the ocean and is measurably diluted with freshwater derived from rivers. Freshwater mixing with saltwater creates a unique chemical and physical environment that attracts a large number and variety of marine species, birds, and other animals, some of which are described in Section V. Abutting the entire eastern length of Treasure Island, Boca Ciega Bay remains a significant estuary within Pinellas County.

Covering approximately 24 square miles, with a mean depth of six feet, Boca Ciega Bay separates Sand Key and Treasure Island from mainland Pinellas County and serves as receiving waters for Long Bayou, Cross Bayou Canal, Clam Bayou, and Frenchman Creek. Boca Ciega Bay has undergone extraordinary changes in the last one hundred years. Dredging of navigational channels has provided enough fill to create a maze of finger canals to accommodate highly demanded waterfront homes. Since 1900, 2,506 acres of fill covering 22 percent of the original bay has been relocated within these waters to create new real estate and causeways. Other areas of the bay have been dredged to provide navigational channels and fill for upland development.

1. Tampa Bay National Estuary Program

Although an estuary in its own right, Boca Ciega Bay is considered part of the Tampa Bay estuarine system, and is influenced by the water, pollutants, and marine life circulating within this larger area. In 1991, the Tampa Bay National Estuary Program was established to assist the community in developing a comprehensive plan to restore and protect Tampa Bay. Created under the auspices of the *Clean Water Act*, the program is part of a national network of estuary programs and is administered by the EPA. Local administrative support is provided by the Tampa Bay Regional Planning Council. Surrounding local governments and agencies that impact the Bay have agreed to set forth the goals of the Tampa Bay Estuary Program's *Comprehensive Conservation and Management Plan,* which focuses on improving water quality through the reduction of pollutants and the resurgence of native vegetation.

2. Boca Ciega Bay Aquatic Preserve

Under the provisions spelled out in Section 258.396, F.S., the Boca Ciega Bay Aquatic Preserve was established to block the continued degradation of the bay and promote the propagation of native vegetation and marine life. With this designation, dredging and spoiling activities are prohibited unless approved by the Pinellas County Water Navigation Control Authority.

3. Outstanding Florida Waters

Under the auspices of the Outstanding Florida Waters (OFW) program, the Florida Department of Environmental Protection (FDEP) has classified Clearwater Harbor and Boca Ciega Bay as Class III waters that are to be used for body contact activities, such as swimming or water skiing, and for the maintenance of a productive fish and wildlife population. With this designation, FDEP cannot issue permits that would allow direct or indirect pollutant discharges that would lower existing water quality. Additionally, permits for dredging and filling must meet Outstanding Florida Waters requirements.

C. Water Quality

Unsafe levels of nutrients and contaminants continually threaten the life of marine species and vegetation. Boca Ciega Bay is the receiving waterbody for many sources of pollutants, including stormwater runoff flowing from several beach communities, mainland Pinellas County from Largo to Mullet Key, and two industrial developments located in central and northern Pinellas County. The finger canals created by dredge and fill activity also perpetuate water quality problems. The canals were created to increase boating access; however, these same canals obstruct natural tidal flushing patterns. As a result, nutrients and pollutants discharged into the Bay are flushed out slowly. In addition, the depths necessary to provide safe boat passage prevent subtidal seagrass growth and facilitate the accumulation of polluted sediments.

Nitrogen and other contaminants chiefly enter Boca Ciega Bay through stormwater runoff, wastewater discharges, and atmospheric deposition, as shown in Table 1. Although less frequent, spills and sewage overflows can also dramatically affect water quality.

Table 1

Estimated Total Nitrogen loadings (tons/year and percentage of total) by source to Boca Ciega Bay, mean annual 1992-1994 and annual 1999-2003.

Source	1992-1994	1995-98	1999	2000	2001	2002	2003	1999-03
Atmospheric Deposition	93 (53%)	97 (33%)	66 (35%)	76 (32%)	67 (20%)	79 (35%)	113 (28%)	80 (29%)
Domestic Point Sources	15 (9%)	16 (5%)	5 (2%)	5 (2%)	5 (2%)	18 (8%)	61 (15%)	19 (7%)
Industrial Point Sources	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Springs	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Groundwater	<1 (0%)	<1 (0%)	<1 (0%)	<1 (0%)	<1 (0%)	<1 (0%)	<1 (0%)	<1 (0%)
Material Losses	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Nonpoint Sources	69 (39%)	179 (61%)	117 (62%)	158 (66%)	258 (78%)	128 (57%)	227 (57%)	178 (64%)
TOTAL	177	292	188	238	330	226	401	277

Source: Tampa Bay National Estuary Program, 2005

Pollution sources are classified as either "point source" or "non-point source." Point source pollution includes any discrete, identifiable source that discharges directly into the water or air, such as a factory or sewage treatment plant. Contaminants produced by these sources can be measured and regulated. Conversely, non-point source pollution flows from an unconfined or unidentifiable source, such as agricultural land, parking lots, or automobile traffic.

1. Point Source Pollution

Over 36 billion gallons of sewage effluent are discharged into Tampa Bay each year. Although most is treated by tertiary/advanced methods, treatment plants are still responsible for eleven percent of the annual nitrogen loading within Tampa Bay, and 8.5 percent within Boca Ciega Bay. Locally, the Northwest Wastewater Treatment Plant stopped discharging effluent into the Bay in 1983, and now disposes of it through deep well injection and reuse.

Other point source pollution contributors to Boca Ciega Bay include Florida Rock Industries and Ewell Industries, located in central and northern Pinellas County. Emissions from these sources travel through a canal that discharges into Cross and Long Bayous, and subsequently flows into Boca Ciega Bay.

2. Non-Point Source Pollution

Nitrogen loadings entering Boca Ciega Bay are deposited through non-point pollution sources, primarily through atmospheric deposition and stormwater runoff. Runoff from these sites can only be reduced during redevelopment, through land development regulations requiring stormwater facilities to be retrofitted to current standards.

a. Stormwater Runoff

Due to the amount of impermeable urban land and the severe alteration of the natural shoreline, urban runoff levels remain high within Treasure Island, particularly during and after hard rain events.

In order to reduce runoff, existing land development regulations require all new development to address stormwater management during site plan review. The city also plans to improve its stormwater drainage system, following recommendations made by the *2021 Watershed Management Plan (WMP).* For a more extensive discussion of stormwater drainage issues, please refer to the *Infrastructure Element*.

The city will continue to upgrade its drainage system according to the *Watershed Management Plan*, in order to maintain or improve water quality.

b. Atmospheric Deposition

As explained above, Tampa Bay's air quality is affected by the combustion of fossil fuels that lead to the emission of pollutants. Recently, scientists have discovered that pollutants found in the air play a leading role in the degradation of water quality. In addition to the 93 tons of nitrogen loadings that are annually deposited into Boca Ciega Bay from the atmosphere, significant amounts of cadmium, copper, and lead are also deposited into the Bay from this process.

Reducing airborne containment loads is difficult at best. Because emissions travel up to hundreds of miles, local control strategies cannot entirely reduce all levels.

D. Impact of Development and Future Facilities

Treasure Island is classified as a built-out community, and city officials anticipate that future development will have virtually no impact on the circulation patterns, water quality, or accumulation of contaminants in local waters. To achieve this end, the land development regulations state that "no project which is likely to negatively impact any existing marine seagrass bed shall be permitted. All projects which are likely to inhibit tidal circulation shall include mitigation measures to maintain tidal circulation and flushing."

The land development regulations also regulate the construction and maintenance of seawalls, groins, jetties, docks, and boat lifts. Seawall construction is prohibited along the Gulf of Mexico, even in cases where existing seawalls are damaged. Although not required, the regulations also encourage shorelines along non-sea walled waterways to be planted with native marine vegetation.

Although no immediate dredging activities are scheduled, any future activities must be reviewed and permitted by the Pinellas County Navigation Control Authority, in accordance with the Boca Ciega Bay Aquatic Preserve and Outstanding Florida Waters regulations.

E. Actions to Remedy Pollution Problems

As stated previously, the majority of nutrients and pollutants entering Boca Ciega Bay are the result of atmospheric deposition and stormwater runoff. Although Treasure Island enforces air quality regulations, air pollution continues to be a regional problem requiring regional solutions. However, local action alone can

significantly reduce the amount of pollutants discharged through stormwater runoff. Through requirements outlined within the land development regulations, all new development and select redevelopment must design stormwater management facilities to accommodate a 25-year storm event and retain the first one-inch of rainfall on site.

F. Regulatory Programs

Regulatory programs governing the Boca Ciega Bay estuary are largely carried out on the state level by FDEP, and at the regional level by the Southwest Florida Water Management District (SWFWMD). The FDEP *Florida Water Plan* and SWFWMD *Water Management Plan* contain directives guiding flood protection, water quality, and estuarine integrity. Additionally, FDEP provides funding for the development of estuarine protection studies, establishes standards for the state's natural resources, and implements habitat restoration programs for local aquatic preserves.

VIII. BEACH AND DUNE SYSTEMS

Treasure Island's sandy beaches not only provide recreational opportunities for residents and tourists, but also perform several natural functions. Along the Gulf of Mexico, beaches and dunes serve as buffers against threatening waves and storm surges while serving as a home and/or nesting area for birds and sea turtles. The preservation of the dune system is reliant upon continued protection against development and the presence of native vegetation. Salt-tolerant plants found within these dunes, including sea oats, railroad vine, and sea grapes, grip sand within their root system. By anchoring down sand, the dune retains its form and can continue to inhibit erosion and protect against tidal action.

Since urbanizing, mangrove stands that once lined Boca Ciega Bay have been uprooted and replaced with seawalls, while high density condominiums and hotels have encroached into the beach and dune system along the Gulf of Mexico. Although the shoreline abutting Boca Ciega Bay and the majority of the city only vaguely resemble pre-development conditions, the narrow portion of beach stretching over 3.5 miles has retained its original form due to the efforts of an active beach renourishment program.

A. Erosion and Accretion

1. Boca Ciega Bay

In an effort to retain fill material and prevent erosion, seawalls and other shoreline hardening devices were installed along Boca Ciega Bay in the 1960s. Consequently, dredging and filling activities associated with seawall construction destroyed vast areas of coastal, intertidal, and subtidal habitats. In addition, finger fills created to meet the demand for waterfront property have greatly extended the Boca Ciega Bay shoreline.

2. Gulf of Mexico

Excluding the north end, Treasure Island's shoreline abutting the Gulf of Mexico receded between 1873 and 1950. Thereafter, aerial photographs indicate the shoreline advanced over the entire length of the island until 1979. In particular, the north end grew from deposits of fill leftover after dredging John's

Pass. The remaining beach advanced due to accretion at the Blind Pass jetty and the placement of fill by the federal beach erosion control project for Treasure Island (U.S. Department of the Interior, 1994). Currently, the beach width is maintained by the beach renourishment projects being conducted by the U.S. Army Corps of Engineers (CoE) and Pinellas County.

B. Coastal Protection Structures

1. Boca Ciega Bay

After monitoring their effectiveness against erosion for many years, scientists have recently discovered that shoreline hardening actually facilitates erosion and may escalate property damage during strong storms. When large waves strike a seawall, energy is displaced both downward and upward. The downward water pressure scours out vegetation, sand, and bottom sediments in front of the seawall, while the water shunted upward commonly erodes the material landward of the seawall. Both actions create a high maintenance problem for landowners.

2. Gulf of Mexico

Since the 1950s, many federal, state, and local agencies have contributed funds to prevent erosion along the Gulf beaches. In 1960, the city built 56 groins and replaced existing timber panels with concrete at a total cost of $263,000. In 1962, a native stone, rubble-mound jetty was built on the north side of Blind Pass at a cost of $18,000. In the 1970s, this groin was raised 2.5 feet to prevent over- spillage of sand. Although the groins and jetty have reduced rates of erosion, beaches are still being threatened by strong tidal action and storms, and require periodic renourishment.

C. Existing and Potential Beach Renourishment Areas

Since 1964, the city and the CoE have conducted several large-scale beach renourishment projects along the Gulf of Mexico to supplement the efforts of existing coastal protective structures. Beach renourishment areas include the entire length of the city's coastline abutting the Gulf of Mexico. Specific sites in this area are treated as the need arises. Improvements to the channels, passes, and beaches found within and around Treasure Island were first recorded in 1916, when a secondary entrance at the north end of Blind Pass was closed by pumping sand from an offshore bar. Not until the 1960s did the city begin to actively construct protective devices to prevent the erosion of community beaches. Also during this decade, Blind Pass and John's Pass were dredged and emergency fill was deposited on the city's northern shoreline.

The areas of Sunshine and Sunset Beach are dependent on sand replenishment every four to five years due to erosion. Renourishment was last completed for Treasure Island in 2019 and was funded by the federal government (60%), the State (20%), and the County's tourist development tax (20%). Requests to add sand behind private property must be permitted through the City's building department and the Florida Department of Environmental Protection.

All of Treasure Island's beaches are designated as critically eroded. The Florida Administrative Code (F.A.C.), defines "critically eroded shoreline" as, a segment of the shoreline where natural processes or human activity have caused or contributed to erosion and recession of the beach or dune system to such a degree that upland development, recreational interests, wildlife habitat, or important cultural resources are threatened or lost.

Critically eroded shorelines may also include peripheral segments or gaps between identified critically eroded areas which, although they may be stable or slightly erosional now, their inclusion is necessary for continuity of management of the coastal system or for the design integrity of adjacent beach management projects. Although Treasure Island undergoes regular beach renourishment, it retains its critical erosion designation in order to retain State of Florida funding eligibility for long-term management and beach project maintenance and monitoring. Beach erosion in Treasure Island is due to significant weather events and interruptions in the natural drift due to John's Pass inlet and the Blind Pass inlet

. The most erosive storms were Hurricane Agnes (1972), subtropical storms in June of 1974 and June of 1982, Hurricane Elena and Tropical Storm Juan (1985), Tropical Storm Josephine (1996), Hurricanes Frances (2004), Hurricane Jeanne (2004), Tropical Storm Debby (2012), Tropical Storm Colin (2016), Hurricane Hermine (2016) and Hurricane Irma (2017).

In 2015 an Inlet Management Plan for John's Pass inlet was adopted by the Florida Department of Environmental Protection and Pinellas County. Pinellas County and the U.S. Army Corp of Engineers are responsible for the dredging of John's Pass and mitigating the extent of beach erosion caused by the inlet. Maintenance dredging is conducted every five to ten years as needed.

Natural fluctuations in shoreline position along southern Sand Key and northern Treasure Island have been observed in the historical record of aerial photography, beach profiles, and shoreline surveys. Beach erosion control activities on Treasure Island and Sand Key have been conducted since 1934, and include shore-protection structures, beach restoration and nourishment, and inlet sand bypassing. Since 1969, 3,080,776 cubic yards of restorative beach fill have been placed along Treasure Island's beaches as part of the inlet management plan.

In addition to the renourishment provided by the John's Pass Management Plan, 909,652 cubic yards of sand have been placed through the federal Pinellas County Shore Protection Project (PCSPP). This nourishment occurs every three to five years.

Sources: FDEP_Critically Eroded Beaches Report_06-2022 (floridadep.gov)
John's Pass - Inlet Managment Plan, 01-2018 (floridadep.gov)
Strategic Beach Managment Plan, SW Region, 04-2020 (floridadep.gov)

D. Measures to Protect or Restore Beaches or Dunes

Treasure Island beaches will continue to require preventative measures for protection against erosion. The city, in cooperation with Pinellas County and the state, has been involved with a number of beach stabilization projects since the early 1970s. These projects include construction of dune walkovers and the replanting of sea oats along shorelines.

Through Chapter 161, Florida Statutes, FDEP administers the Coastal Construction Control Line program and beach erosion control. Furthermore, the city continues to uphold Section 72-142 of the *Land Development Code*, which states that "Within this zone, excavation, destruction of native vegetation, and any other activities which are likely to adversely impact or affect the natural fluctuation of any primary sand dune are prohibited".

IX. BEACH FACILITIES

Thirty-two public access points allow residents and visitors access to the city's beaches as illustrated in Map *PROS-1 Public and Recreational Facilities*. Generally located at the end of public rights-of-way, seven beach access areas have associated municipal parking lots, while the remaining have limited parking available with typically less than ten spaces each.

X. COASTAL PLANNING AREA AND COASTAL HIGH HAZARD AREA

Due to its coastal location, the city contains several boundaries delineating construction lines, floodplains, and hazard areas. Included within the glossary located at the end of this comprehensive plan are definitions describing each demarcation line and the agency responsible for its implementation. As part of this element and as shown on *Map LU-2: Flood Zones, Floodplains, and Coastal High Hazard Area*, the Florida Legislature requires the city to illustrate the boundaries of the coastal planning area and Coastal High Hazard Area (CHHA).

A. Coastal Planning Area

The coastal planning area includes all land area in the city, and supports a mixture of resort facilities, housing, and retail business. Many of these structures were built prior to stringent federal, state, and local regulations designed to protect them from hurricane hazards, and as a result, remain susceptible to damage by major storms.

B. Coastal High Hazard Area

Until 1993, the CHHA only included property seaward of the Coastal Construction Control Line and the V-Zone established by the National Flood Insurance Program. Realizing that land outside this area was equally susceptible to severe damage resulting from strong storms, the Florida Legislature amended the CHHA definition. According to Section 163.3178, F.S., the CHHA is defined as "category 1 evacuation zones", or those areas that must evacuate when a category 1 hurricane threatens a region. According to the Tampa Bay Regional Planning Council, Treasure Island is located entirely within Evacuation Level "A", and therefore all residents would evacuate in the event of any hurricane. With this designation, the entire city is within the CHHA, as shown on *Map LU-2: Flood Zones, Floodplains, Coastal High Hazard Area*.

C. Existing Infrastructure

Table 2 lists Treasure Island's existing infrastructure. Because the CHHA encompasses the entire city, existing infrastructure cannot be relocated to a less threatened area.

Table 2
Existing Infrastructure, 2022

Seawalls	50-foot seawalls on the east ends of 127th, 122nd, 121st, 120th, 119th, 101st, 102nd, and 99th Avenues. 20-foot seawall on east end of Harrell Ave., on each corner of the bridge that crosses from Isle of Capri on 116th Ave, along all four corners of 115th Ave. by the Isle of Palms, on all four corners of 107th Ave. where it crosses Paradise Island, and six 20-foot seawalls and one 100-foot seawall on the bridges along the Treasure Island Causeway. 40-foot seawall on both sides of bridge to the Isle of Palms. 65-foot seawall at south end of Bayshore Drive. 680 feet of seawall behind the City Hall and Fire Department. 2,334 feet of seawall along the Paradise Island Golf Course.
Sanitary Sewer & Potable Water Facilities	Potable water services are provided by Pinellas County. Sewage treatment service is provided by the City of St. Petersburg. The city owns and maintains 25 miles of sanitary sewer lines and 11 lift stations.
Drainage Facilities	Natural drainage pattern of the city diverts water into Boca Ciega Bay.
Bridges	The city owns the following bridges: three on the Treasure Island Causeway and a fixed bridge on both the Isle of Palms and the Isle of Capri.
Marina	The city owns a municipal marina behind City Hall and occupies three slips.
Boat Launch Facilities	A light craft launching area to the Gulf is located at Municipal Lot No. 2. Boat ramps are also available at: 84th Ave East & Bayshore Drive, 100th Ave East & Gulf Blvd, and 123rd Ave East & Lagoon Lane

D. Future Demand on Infrastructure

Because Treasure Island is virtually built-out, future demand on existing infrastructure is expected to remain relatively consistent with existing demand. For a discussion of capital improvement projects, see the *Capital Improvements Element*.

XI. NATURAL DISASTER PLANNING

The National Weather Service has identified the Tampa Bay region as one of the most hurricane-vulnerable areas in the United States, with the potential for large-scale loss of life. This is especially true of Treasure Island. Since 1886, 37 hurricanes have passed within 100 nautical miles of the mouth of Tampa Bay. One of the latest storms to hit the area was Tropical Storm Elsa in July 2021. Elsa was classified as a hurricane, however, decreased in intensity to a tropical storm when it made landfall. Areas along the west coast of Florida experienced as much as 2 to 3 feet of storm surge.

With the looming possibility of severe storms or other natural disasters striking Treasure Island, fast, safe, and efficient evacuation is critical in protecting infrastructure and the life of residents. The following section

summarizes the plans and procedures guiding hurricane evacuation and details the various elements that affect evacuation within Treasure Island.

A. Hurricane Vulnerability Zone

Based on elevation, proximity to shore, and other geographical factors, all of the land area in Pinellas County falls within one of six hurricane evacuation levels. An area is assigned an evacuation level of "A" through "E" based on potential hurricane surge flooding. Areas that would not be inundated even during a category 5 hurricane are designated as non-evacuation areas. All residents of mobile homes, regardless of location, are required to evacuate in the event of any hurricane.

The Hurricane Preparedness Guide, distributed to residents annually by Pinellas County and local municipalities, contains a color-coded map delineating evacuation levels. Table 3 defines Evacuation Levels "A" through "E" by their corresponding hurricane and storm surge vulnerability levels Pinellas County Hurricane Preparedness Guide, 2021-2022. According to this map, all of Treasure Island is located in Evacuation Level "A."

Table 3
Hurricane Evacuation Levels

EVACUATION ZONES	Potential Surge Heights *(in feet)*
Mobile Home Parks	Mobile homes MUST always evacuate.
A	Up to 11 feet Evacuate red areas and all mobile homes
B	Up to 15 feet Evacuate red and orange areas and all mobile homes
C	Up to 20 feet Evacuate red and orange areas and all mobile homes
D	Up to 28 feet Evacuate red, orange, yellow and green areas and all mobile homes
E	Up to 35 feet Evacuate red, orange, yellow, green and purple areas and all mobile homes

Source: Pinellas County Hurricane Preparedness, Guide 2021-2022

C. Evacuation Population

Because all residents must evacuate when the Board of County Commissioners announces any evacuation, the affected population would equal the total city population. Emergency transportation is provided by the county for those disabled and elderly residents who have no other means to evacuate.

Residents requiring special assistance during an evacuation are urged to pre-register with the city and/or county

D. Evacuation Routes

As shown on *Map T-4: Existing & Future Hurricane Evacuation Routes*, the evacuation routes for Treasure Island direct traffic along the Treasure Island Causeway, east on Central Avenue, north on I-275, and across the Howard Frankland Bridge to I-4.

E. Evacuation Times

For hurricanes, evacuation orders are given based upon how long it will take to evacuate people to safety in advance of the arrival of tropical storm-force winds. Statewide evacuation studies are done to model the clearance time based on the size and strength of the storm. For Pinellas County, the estimated times to evacuate are shown below on Table 4.

Table 4
Pinellas County Clearance Times

EVACUATION LEVEL	ESTIMATED TIME TO EVACUATE
Mobile Homes	17 hours
A	17 hours
B	20 hours
C	26 hours
D	42 hours
E	50 hours

Source: Pinellas County 2022 All Hazards Preparedness Guide

F. Hurricane Shelters

The County has a total of 33 shelters, located throughout Pinellas County. Shelters are typically schools and large churches located in non-evacuation zones. Currently, city evacuees are not zoned to any particular shelter. The closest shelters available to Treasure Island residents is Boca Ciega High School.

G. Number of Persons Requiring Public Hurricane Shelter

A number of refuge alternatives are available to evacuees. Other options include leaving the region, checking into a motel or hotel, or staying with a friend or relative within a non-evacuation zone. Currently, Pinellas County is recommending the "Host Home" concept as the preferred kind of evacuation. The Host Home program solicits churches, businesses, and organizations to pre-determine the evacuation status of all members, and encourage members living in non-evacuation areas to host evacuees. In cases where the entire membership lives in an evacuation area or in mobile homes, a church or facility outside that area is encouraged to accommodate those members during an evacuation. Because of projected deficits in hurricane shelter spaces that exist, all public education and information efforts are focused on encouraging evacuees to stay with friends, relatives, motels/hotels, or host-homes in non-evacuation zones. Furthermore, Pinellas County is looking at alternatives to traditional public shelters. These include retrofitting structures to meet shelter space criteria, using

unconventional refuge locations, and evacuating guests from transient accommodations to inland "sister" accommodations.

H. Anticipated Evacuation Population

The City's population is expected to decline by 2040 and will have minimal impact on the amount of evacuation space needed. However, the city will continue to circulate information regarding hurricane routes, shelters, and evacuation procedures.

I. Measures to Reduce Evacuation Times

The city actively informs residents of hurricane evacuation procedures by conducting annual seminars, distributing newsletters and flyers, and actively supporting the efforts of Pinellas County's Emergency Management Office. In addition, Treasure Island continues to support the Metropolitan Planning Organizations in its efforts to improve regional evacuation routes.

XII. POST-DISASTER REDEVELOPMENT

Recovery from a major disaster generally occurs in three stages: the immediate emergency period, a short-range restoration period, and a long-range reconstruction period. Many questions arise throughout this process from how reconstruction expenses are to be paid, to what new regulations must be followed during redevelopment. As a small beach community in Florida, the City of Treasure Island takes an "all-hands" approach to Emergency Management and Preparedness. Staff in all city departments play a role in the city's responsibility of keeping the community prepared for any and all hazards so that the city can return to normal as soon as possible after any event. In the event of such an occurrence, the city is to follow the procedures spelled out in the Pinellas County All Hazards Preparedness Guide. Below is a brief description of the policies and procedures the city will follow after a major disaster.

A. *Treasure Island Land Development Code*

The *Land Development Code* contain a non-conforming use provision that states: "any nonconforming structure which has been damaged or made unsafe or unusable to an extent less than 50 percent of its fair market value may be restored or reconstructed for its intended use provided the floor area of such use, building or structure shall not exceed the floor area which existed prior to such damage. All repairs shall be substantially completed within one year after damages occur or such use shall not be rebuilt except as a conforming use". All work requires an issued Treasure Island Building permit. As such, all damaged property must be restored to prevent recurring damage from a severe storm."

B. *Pinellas County Post-Disaster Redevelopment Guide*

The Pinellas County *All Hazards Preparedness Guide* sets forth procedures to eliminate the exposure of human life and property to natural hazards. However, the guide has a dual purpose; it also provides locals governments with supplemental guidance in carrying out critical actions following a major disaster.

C. Reconstruction

To effectively manage the timing and sequence of reconstruction, the city will follow a sequential process. A primary task of the Community Development Department is to create damage assessment teams to determine and provide Pinellas County the extent of property damage. The Building Official and the Building Inspector will determine if structures located throughout the city, are deemed dangerous and cannot be entered, are habitable/repairable, have limited entry, can reconnect utilities, and can enter without risk. Reconstruction cannot commence until a damage assessment field report is completed. All reconstruction, unless otherwise exempted or fees waived or reduced by the City Commission, requires a Treasure Island issued Building permit. The city will provide guidance and instructions for the massive undertaking of post-disaster redevelopment. However, the city realizes that certain topics must be added, amended, and/or strengthened to expedite this process, including economic recovery, redevelopment of public facilities, and criteria for acquisition of damaged land and structures.

D. Hazard Mitigation

Treasure Island participates in a number of hazard mitigation programs created at the federal, state, and county level. Likely the most notable program developed by the federal government is the National Flood Insurance Program (NFIP) established in 1968. The program grants federal flood insurance to floodplain residents where building code and land use control measures have been instituted by the local government. In addition, the agency records data on the number of flood insurance claims in each community, allowing local governments to identify areas with critical flooding problems.

Other federal programs include the Community Rating System, Disaster Assistance Programs, the Coastal Barrier Resources System, and beach renourishment projects administered by the US Army Corps of Engineers.

State programs include the *Coastal Zone Protection Act of 1985*; the Coastal Construction Control Line program; permitting programs operated by FDEP for the construction of piers, docks, breakwaters, groins, jetties, and beach renourishment; the State Conservation and Recreation Lands program; the Florida Beach Management and Erosion Control Program; the Coastal Barrier Infrastructure Program; and the Statewide Hazard Mitigation Strategy.

At the county level, the Local Mitigation Strategies initiative was designed to assist communities with hazard mitigation. Through this program, communities appoint work groups composed of local officials, city staff, community volunteers, and other interested parties to examine hazard mitigation issues. Each work group identifies repetitive loss properties, hazardous materials sites, and other vulnerable areas within its community, and formulates strategies to reduce known hazards. Appropriate recommendations of the work group are then integrated into the community's comprehensive plan, land development regulations, site plan reviews, and other planning procedures and guidelines. Treasure Island actively participates in this program.

XIII. POTABLE WATER

The state land planning agency requires local government to address current and projected water needs and sources within a ten-year planning time frame. Although conservation issues are discussed in the following paragraphs, in order to eliminate redundancy between elements, please refer to the extensive needs analysis provided in the *Infrastructure Element* of this comprehensive plan

To ensure that potable water will be available beyond the year 2040, opportunities to conserve and locate alternative sources are continually being sought. Conservation programs are generally handed down from Pinellas County and regional agencies, particularly the former West Coast Regional Water Supply Authority, recently renamed "Tampa Bay Water." Under a cooperative agreement between the major water providers in Pinellas, Hillsborough, and Pasco counties, Tampa Bay Water oversees the regional water system, providing a reliable supply to all member utilities while promoting resource sharing. This agency is also responsible for locating and developing new water sources. The C.W. Bill Young Regional Reservoir was constructed from 2002 to 2005 and was placed in service in March 2005. Desalinated seawater was online in 2007.

In support of these regional efforts, Pinellas County will continue working to conserve potable water by reducing system losses, protecting groundwater against degradation of water quality and yield, and encouraging county residents to install water conservation devices.

XIV. HAZARDOUS WASTE

Hazardous wastes are "materials which by their nature are inherently dangerous to handle or dispose of, such as old explosives, radioactive materials, some chemicals, and some biological wastes" (International City Management Association, 1987). Many pieces of federal and state legislation have been passed over the years to control the amount of hazardous waste being discarded, in an effort to protect public health, safety, and welfare. Hazardous waste disposal in Florida is administered by Florida Department of Environmental Protection (FDEP), and locally hazardous waste management is handled at the county level.

In Treasure Island, Hazardous Waste is collected through the County's Solid Waste mobile collection system. Mobile collections provide a way for citizens to safely dispose of unwanted household electronics and chemicals. Although no federally recognized hazardous waste sites exist within Treasure Island, some small businesses such as gas stations, dry cleaners, and photo shops discard small quantities of hazardous materials.

XV. SEA LEVEL RISE

As a barrier island community, the City is most vulnerable to the impacts of sea-level rise. Regional measurements show that the Tampa Bay region is already experiencing sea level rise and there is broad scientific consensus that this trend will continue into the next century. The Tampa Bay Climate Science Advisory Panel (CSAP) in its April 2019 report recommended a common set of sea-level rise projections for use throughout the Tampa Bay region. Chief among their findings was that data measured at the St. Petersburg tide gauge shows that water levels in Tampa Bay have already increased approximately 7.8 inches since 1946. Based on a thorough assessment of scientific data and literature, the City can expect to see an additional 2 to 8.5 feet of sea-level rise by 2100. A World Bank 2013 report identified the Tampa Bay region as one of the most vulnerable coastal metropolitan areas throughout the world due to sea-level rise and flooding. If adaptation strategies are not implemented, cities throughout the Tampa Bay region will likely experience the following conditions, all of which may incur substantial economic costs: flooding of public infrastructure and private property; shoreline and beach erosion; impacts to the operation and management of coastal drainage systems; storm surge; threats to drinking water and wastewater treatment facilities and distribution infrastructure; and shifts in wetlands and other tidal habitats, resulting in the loss of ecosystem services.

Sea-level rise estimates provided by CSAP integrate data from the U.S. Army Corp of Engineers using datum, rate of change, and projection modeling to produce a plot or table that describes a range of projected sea-level rise. The graphic and table below are excerpted from the report.

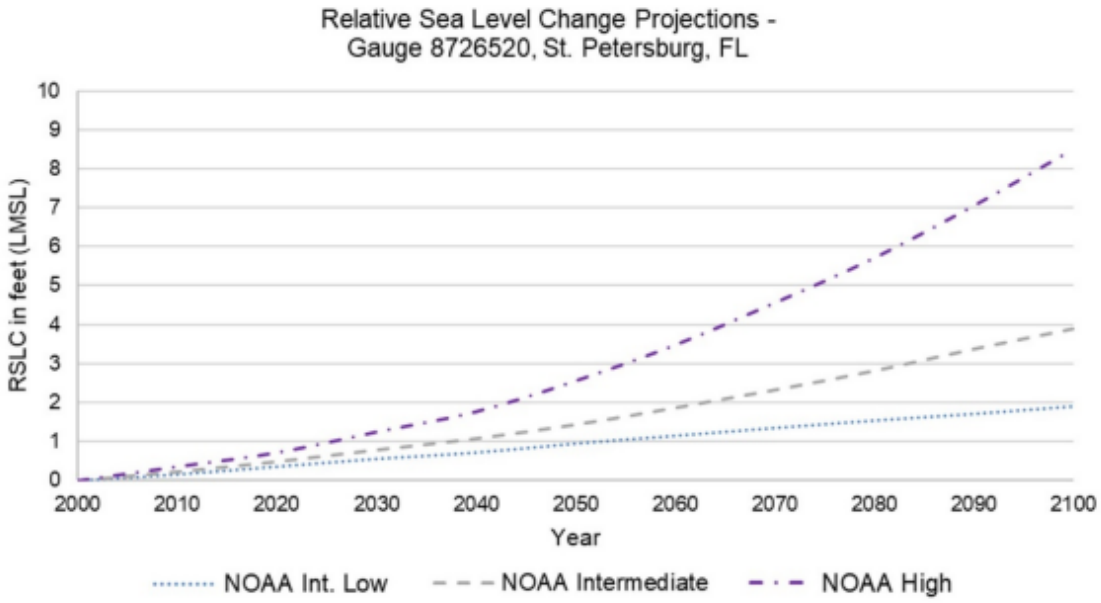


***Figure 3**. Graphic Relative Sea Level Change (RSLC) Scenarios for St. Petersburg, Florida, as calculated using the regionally corrected NOAA 2017 curves. (USACE 2019)*

Year	NOAA Int-Low (feet)	NOAA Intermediate (feet)	NOAA High (feet)
2000[3]	0	0	0
2030	0.56	0.79	1.25
2040	0.72	1.08	1.77
2050	0.95	1.44	2.56
2060	1.15	1.87	3.48
2070	1.35	2.33	4.56
2080	1.54	2.82	5.71
2090	1.71	3.38	7.05
2100	1.90	3.90	8.50

***Table 1.** Sea Level Change Relative to the Year 2000 for St. Petersburg, FL in Feet above Local Mean Sea Level (LMSL).*

SLR projections should only be used to determine the change in sea level between any two given time periods. For example, the table above shows sea level change in 2100 under the NOAA High scenario as 8.50 feet. This means that the sea level height at any location is projected to be 8.50 feet higher on average than it was at that site in the year 2000. The ultimate findings in the report concluded that "Based upon a thorough assessment of

scientific data and literature on SLR, the City of Treasure Island and the Tampa Bay region can expect to see approximately 1 to 2.5 feet SLR by 2050 and between 2 to 8.5 feet by 2100"

Source: Recommended Projections of Sea Level Rise in the Tampa Bay Region (tbrpc.org)

Parks, Recreation and Open Space Element
Data and Analysis

The purpose of the Parks, Recreation and Open Space Element is to plan for a comprehensive system of public and private sites for recreation, including, but not limited to, natural reservations, parks and playgrounds, parkways, beaches and public access to beaches, open spaces, and other recreational facilities.

I. INTRODUCTION

Pinellas County has become one of the most attractive areas in the United States for those who seek warmth, sunshine, and abundant leisure and recreational opportunities. As one of Pinellas County's prime coastal municipalities, Treasure Island offers residents and visitors a unique natural setting. The shallow Gulf waters and natural resources of the city provide an attractive and readily accessible environment for recreational activities. Approximately 3.5 miles of beaches stretch along the Gulf of Mexico, providing year-round sunbathing and swimming for residents while attracting thousands of tourists each year. The scenic waters of the Gulf and Boca Ciega Bay are popular for boating, fishing, picnicking, and observing wildlife. In addition to these outdoor attractions, the city offers a wide variety of restaurants, shops, hotels, and other entertainment options.

Although the population is relatively stable in size, the process of maintaining and upgrading recreational resources is ongoing. The City of Treasure Island, along with other governmental agencies, shares in the responsibility of providing recreational opportunities and protecting open spaces. This element of the comprehensive plan assesses current opportunities, analyzes future needs, and contains goal, objective, and policy statements which will be used by the city to further the system of public and private recreation and open space sites available to the public.

II. INVENTORY OF EXISTING RECREATION AND OPEN SPACE FACILITIES

A. Existing Recreation Facilities

1. Resource-Based and User-Oriented Sites and Facilities

Outdoor recreation, broadly defined, is any leisure activity which takes place outdoors. Typically, the vast field of outdoor recreation is subdivided into two categories: "resource-based" and "user-oriented" (Florida Department of Environmental Protection, 2019).

Resource-based outdoor recreation is dependent on some particular element or combination of elements in the natural environment, such as a beach or a forest. Participants must travel to a suitable, naturally-occurring area; facilities cannot be located for user convenience. This category includes both active and passive types of activities, and tends to be informal rather than rule- or team-oriented. Examples of resource-based recreation include beach activities, boating, fishing, kayaking, and nature study.

User-oriented activities, by contrast, tend to be structured and rule-oriented, and are often conducted as part of a local recreation program under the supervision of trained staff. Facilities for user-oriented recreation are part of the built environment, and most can be located in neighborhoods or urban centers for the convenience of users. Some common user-oriented activities include golf, tennis, basketball, shuffleboard, pickleball, and football.

2. Resource-Based Recreation

There are many opportunities for resource-based recreation in Treasure Island. The most prominent recreational resources are the Gulf of Mexico and Boca Ciega Bay, which surround the city. Thirty-two access points along the Gulf Beaches and Boca Ciega Bay offer a range of amenities, including rest rooms, showers, dune walk-overs, and concession stands. Boat ramps and fishing sites are found at the Bay access points on 84th, 100th, and 123rd Avenues.

3. User-Oriented Facilities

There are a number of activity-based recreation sites and facilities within Treasure Island, including:

- The Treasure Island Park and Community Center, located at 1 Park Place and 106th Avenue. The Center has picnic tables, a shelter, an exercise parcourse with 12 stations, a multi-purpose field, and a center that hosts numerous community events.

- The Treasure Bay Golf and Tennis Center at 10315 Paradise Boulevard. Facilities include a par-3 executive golf course, a putting green, tennis courts, shuffleboard courts, a basketball court, a volleyball court, a clubhouse, an equipped playground, and picnicking areas. The center originally existed as two separate sites: the Paradise Isle Golf and Tennis Club, which was owned by the city and leased to a private agency, and the Paradise Island Playground. The city upgraded and combined the sites in 1994.

- Rosselli Park, located at Second Street East and Capri Circle South. This park includes a dog park, picnic tables, tennis courts, shuffleboard courts, a baseball/softball field, an equipped play area, a basketball goal, and a concession stand.

- The Boardwalk, located at the southern end of Sunset Beach.

The Parks and Recreation Department provides a number of programs and activities at these recreation centers. Past activities have included art classes, concerts, holiday parties, sporting events, and special events for children.

4. Recreation Standards

The City's adopted Master Park Plan (2021 – 2031) serves as the decision-making tool to set priorities and identify funding sources for parks and recreational amenities that reflect the needs of the community. Included is an inventory of recreation and open space lands in the city. Other activities are adequately served by regional facilities found outside of city limits, such as the football field at Boca Ciega High School. Still other facilities are supplied in abundance by the private sector, such as the swimming pools found at many hotels and commercial recreation centers. Table 1 below is an inventory of the existing recreation and open spaces sites, on-site equipment, and use type.

Table 1: Recreation and Open Space Sites - Existing Inventory

NAME, SITE, ADDRESS	EQUIPMENT	TYPE
Public Beach	Multiple resource-based and user-oriented recreational activities available.	Beach Access
Beach Trail	- 1 Mile of Paved, 12ft Wide Beach Trail - Bike Racks - Trash Receptacles - Access To Mobimat - Educational Signage	Beach Access
Tern Lot, W Gulf Blvd between 77th & 79th Ave	- 53 Metered Parking - 3 Dune Walk-Overs - Access To Public Nature - Boardwalk	Beach Access
Ring-billed Lot, W Gulf Blvd between 81st & 82nd Ave	- 41 Metered Parking - 2 Dune Walk-Overs - Wooden Sign	Beach Access
W Gulf Blvd & 84th Ave	- Pedestrian Access Only - Updated Signage	Beach Access
W Gulf Blvd between 84th & 85th Ave (South)	- Pedestrian Access Only - Updated Signage	Beach Access
W Gulf Blvd between 84th & 85th Ave (North)	- Pedestrian Access Only - Updated Signage	Beach Access
W Gulf Blvd between 85th Ave & Bay Plaza	- Pedestrian Access Only - Updated Signage	Beach Access
Weckesser Park & Brown Pelican Lot, W Gulf Blvd & 88th Ave	- 9 Metered Parking - 2 Picnic Tables - Trash Receptacles - 1 Bench	Beach Access
W Gulf Blvd & 90th Ave	- Pedestrian Access Only - Updated Signage	Beach Access
Sunset Vista Park, Gulf Blvd & 97th Ave	- Covered Seating Structure - Bike Rack - 2 Dune Walk- Overs - Maintained Beach Trail - Educational/Decorative Signage - Shower	Beach Access
Gulf Blvd & 99th Ave	- Metered Parking - Dune Walk-Over - Bike Rack - Trash Receptacle	Beach Access
Gulf Blvd between 99th & 100th Ave	- Pedestrian Access Only - Updated Signage	Beach Access

Sandpiper Lot, Gulf Blvd & 100th Ave	- Metered Parking - Dune Walk-Over - Solar Light Fixture - Trash Receptacle	Beach Access
Gulf Blvd & 101st Ave	- Unmetered Parking - Bike Rack - Informative Signage, - Solar Light Fixture - Trash Receptacle	Beach Access
Gulf Blvd & 102nd Ave	- 1 ADA Accessible Parking Area Dune Walk-Over - Bike Rack, Solar - Light Fixture - Trash Receptacle	Beach Access
Gulf Blvd & 103rd Ave	- Metered Parking - Dune Walk-Over - Informative Signage - Bike Rack - Trash Receptacle - Solar Light Fixture	Beach Access
Gulf Front Park, Gulf Blvd & 104th Ave	- 71 Metered Parking - Dune Walk-Over - Mobimat Access - Restrooms - Showers - 2 Bike Racks - Beach Trail Access - Cigarette Disposal Containers - Trash Receptacles	Beach Access
Gulf Blvd between 104th &105th Ave	- Updated Signage - Pedestrian Access Only - Access To Beach Trail	Beach Access
Gulf Blvd north of 108th Ave	- Updated Signage - Pedestrian Access Only - Access To Beach Trail	Beach Access
Gulf Blvd & 116th Ave	- Updated Signage - Pedestrian Access Only - Access To Beach Trail	Beach Access
Gulf Blvd & 117th Ave	- Updated Signage - Pedestrian Access Only - Access To Beach Trail	Beach Access
Gulf Blvd & 119th Ave	- Updated Signage - Pedestrian Access Only - Access To Beach Trail - Educational Signage - Bike Rack - Trash - Receptacles	Beach Access
Gulf Blvd & 120th Ave	- Dune Walk-Over - Bike Rack - Trash Receptacle - Solar Light Fixture - “No Parking” Signage	Beach Access
Gulf Blvd & 121st Ave	- Dune Walk-Over - Bike Rack - Trash Receptacles - Educational Signage - Solar Light Fixture	Beach Access

Gulf Blvd & 122nd Ave	- Dune Walk-Over - Bike Rack - Trash Receptacle - Solar Light Fixture	Beach Access
Gulf Blvd & 123rd Ave	- Dune Walk-Over - Bike Rack - Solar Light Fixture, - Trash Receptacle - "No Parking" Sign	Beach Access
Gulf Blvd & 124th Ave	- 16 Metered Parking - Dune Walk-Over - Bike Rack - Solar Light Fixture - Trash Receptacle	Beach Access
Gulf Blvd & 125th Ave	- Dune Walk-Over - Bike Rack - Solar Light Fixture - Trash Receptacle	Beach Access
Snowy Egret Lot, Gulf Blvd & 126th Ave	- 11 Metered Parking - Dune Walk- Over - Bike Rack - Solar Light Fixture - Trash Receptacle	Beach Access
Gulf Blvd & 127th Ave	- Unmetered Parking - Bike Rack - "No Parking" & "Loading/Unloading Only" Signage - Trash Receptacle	Beach Access
John's Pass at Gulf of Mexico	- Gulf Front Jetty/Walkway - Bench Seating - Fishing Line Receptacles - Protective Railing	Beach Access
Treasure Bay Golf & Tennis Center, 10315 Paradise Blvd	- Waterfront Facility - 9-Hole Par 3 Golf Course with Footgolf, - 8 Clay Tennis Courts - 2 Asphalt Tennis Courts - 1 Sand Volleyball Court - 1 Basketball Court (Regulation Size) - 2 Shuffleboard Courts - ADA Accessible Playground Equipment - Covered Picnic Area - Open Picnic Area with Grill - Clubhouse - Water Views	Community/ Neighborhood Parks

Triangle Park, 2nd St East & 112th Ave	- Playground Equipment - 2 Shuffleboard Courts - Bench Seating - Bike Rack - Pinellas County Schools Covered Bus Stop - Water Fountain - Trash Receptacle - Flag Pole - Fencing - Decorative Signage	Community/ Neighborhood Parks
Heron Lot, Bayshore Dr & 75th Ave	- 14 Metered Parking - Bench Seating - Bike Rack - Trash Receptacles - Wood Signage - Access To Public Nature Boardwalk	Mini-Parks/Bay Access
99th Ave East on Boca Ciega Bay	- None - Sea Wall	Mini-Parks/Bay Access
101st Ave East & Gulf Blvd	- None - Planned Bay Access	Mini-Parks/Bay Access
102nd Ave East & Gulf Blvd	- None - Sea Wall	Mini-Parks/Bay Access
119th Ave East & Lagoon Lane	- Paved Lot, - Saltwater Dock - "Neighborhood Dock" Signage - Landscape - Piling	Mini-Parks/Bay Access
120th Ave East & Lagoon Lane	- Open Lot, Unpaved - Bench Seating - Trash Receptacle - Landscape - Pilings - Seawall	Mini-Parks/Bay Access
121st Ave East & Lagoon Lane	- Open Lot, - Saltwater Dock (Closed to Public) - Seawall	Mini-Parks/Bay Access
122nd Ave East & Lagoon Lane	- Open Lot with Shell - Bench Seating - Improved Landscaping (Trees) - Seawall	Mini-Parks/Bay Access

Rosselli Park, 2nd St East & Capri Circle S	- Paved Parking (Unmetered) - Little League Complex (Field, Dugouts, Scoreboard, Concession Stand, & Covered Spectator Seating) - 2 Asphalt Lighted Tennis Courts W/Backboard - Playground Equipment (Lighted) - 2 Shuffleboard Courts - 1 Basketball Hoop - Gazebo with Picnic Tables - Dog Park - Bike Rack - Water Station - Bathrooms - 4 Picnic Tables - Community Bulletin Board - Trail-Like Sidewalk with Bench Seating - Pinellas County Schools Covered Bus Stop	Community/ Neighborhood Parks
Treasure Island Park & Community Center, 1 Park Place & 106th Ave	- 99 Metered Parking - Community Center Structure - Bike Rack - Fitness Equipment - Paved Fitness Trail - Community Bulletin Board - Bench Seating (Perimeter) - Pavilion With Picnic Tables - Trash Receptacles - decorative signage, “Bucky” statue - bridge memorial - VFW memorial with flagpole, open space - paved trail around the park also connects pedestrians to other existing trails/walkways.	Community/ Neighborhood Parks
Beach Pavilion, 8000 W Gulf Blvd	- Pavilion Structure - 2 Dune Walk- Overs - Covered Playground Equipment - Covered Picnic Tables - Benches - Shower - Bike Rack - Restrooms	Community/ Neighborhood Parks

5. Recreation for Special Population Groups

100th Ave East & Gulf Blvd	- Submerged Boat Ramp - Saltwater Dock with Floating Dock - Educational Bulletin Board - Trash Receptacles	Special-Use Facilities
123rd Ave East & Lagoon Lane	- Submerged Boat Ramp - Saltwater Dock - Dedication Sign (Pennies 4 Pinellas) - Boat Trailer Parking	Special-Use Facilities
Elnor Island	- None - Dedicated Protected Area.	Open/Conservation Areas
McLaughlin Park, 70 Dolphin Dr & Paradise Blvd	- Covered Bench Seating - Trash Receptacles - City Operated Lift Station	Open/Conservation Areas
Paradise Blvd & Island Dr	- Bench Seat	Open/Conservation Areas
Paradise Blvd & Marina Terr	- None	Open/Conservation Areas

Special population groups served by the City of Treasure Island include the physically disabled and members of various age groups. Parking facilities for disabled drivers are provided at municipal parks and facilities, and programs offered by the Parks and Recreation Department are accessible to patrons of all ages and levels of physical ability. Ramps, safety railings, modified restroom facilities, specially equipped playgrounds, beach wheelchairs, and other accommodations allow safe use of the facilities by all. The city installed an ADA beach access mat, the first of its kind in Pinellas County. The Mobi-Mat was installed at Gulf Front Park. It extends approximately 400 FT. towards the Gulf and is 6.5 FT. wide. It provides improved accessibility for those with mobility impairment and for pedestrians and users of strollers and beach carts.

6. Recreation for Visitors

The Florida tourism industry, which draws visitors from all over the United States as well as Canada and Europe, is dependent on the state's favorable climate and abundant natural resources. As a barrier island community, Treasure Island possesses many of the features which draw Florida vacationers: miles of beaches, hotel, motel, and condominium accommodations, dining, nightlife, shopping, popular attractions, and recreational opportunities on both the Gulf of Mexico and Boca Ciega Bay. These same resources attract Pinellas County residents from outside the city, who also contribute an important source of revenue and economic stimulus. When planning for the use of recreational and open space facilities, therefore, the needs of tourists and visitors must be taken into account.

The city encourages tourism through its membership in the Treasure Island and Madeira Beach Chamber of Commerce, and the Tampa Bay Beaches Chamber of Commerce, which prints informational brochures and holds promotional events for a consortium of local beach communities. In addition, the city extends nearly all of its recreational facilities to residents and visitors equally. Beaches, parks, open space areas, and all-ages events are accessible to all.

7. Bicycle Recreation

Treasure Island is a popular destination for the many bicyclists who use Gulf Boulevard as a thoroughfare. On Treasure Island, Gulf Boulevard is equipped with approximately 4.5 miles of dedicated bike lanes and approximately 0.8 miles of shared lane markings, or "sharrows". an FDOT right-of-way, on which the city is unable to designate bike lanes. However, the city has a beautification project planned for this road and has created 1.5 miles of bike lanes along three other rights-of-way, Capri Boulevard, Paradise Boulevard, and 115th Avenue. In addition, plans are being evaluated for an approximately four-mile-long pedestrian and bike trail, which would connect beachfront sidewalk areas with Gulf Boulevard.

To complement these projects, the city promotes safe bicycling in other ways, such as regular maintenance of sidewalks and vehicle lanes which receive bicycle travel. Where feasible, newly constructed or resurfaced roads can also be made "bicycle friendly" by the allocation of surplus space to the sidewalk or outside vehicle lane.

B. Existing Open Space

For the purposes of this plan, open space will be defined as undeveloped lands that are suitable for passive recreation or conservation uses, and which are available to the public for free or for a small fee. In addition to providing recreational opportunities, open space enhances community design by allowing trees and plants to grow, providing buffering between conflicting land uses, protecting homeowner privacy, and preserving views of the Gulf and Bay. Existing open spaces in Treasure Island were inventoried and classified according to function: passive recreation, conservation, or corridor open space.

1. Recreation Open Space

The primary role of passive recreational lands is to provide resource-based recreation. This classification overlaps the park designation and includes parks that were established for the protection of historic and/or natural resources or aesthetic beauty. There are approximately 24 acres of recreation open space in the city. The *Map PROS-1 Public and Recreational Facilities* shows the location and extent of passive recreation open space. In addition, all of the beach acreage considered conservation open space is open to the public for recreation.

2. Conservation Open Space

Conservation Open Space areas include any undeveloped land that is accessible by the public (Environmental Protection Agency, n.d.). These areas may include lakes, rivers, wetlands, floodplains. Conservation areas are protected from development and certain uses, and often contain important or sensitive natural environments. There are 136 acres of conservation and open space in the city, which consists of approximately 14 acres on Elnor Island and 115.5 acres of public beach seaward of the Coastal Construction Control Line.

3. Corridor Open Space

Corridor open spaces are areas through which people travel but which are also designed for aesthetic enjoyment and leisure. These corridors can provide a linkage between recreational facilities and residential or commercial areas. Examples of corridor open space in Treasure Island include the rights-of-way along Gulf Boulevard and the public beach access points.

C. Natural Reservations

Natural reservations as those areas designated for conservation purposes, and operated by federal, state, regional, or local government or non-profit agencies. These areas include national and state parks, and lands purchased under the Save Our Coast, Conservation and Recreation Lands, Save Our Rivers, or similar programs. Also included are sanctuaries, preserves, monuments, archaeological sites, historic sites, wildlife management areas, National Seashores, and Outstanding Florida Waters. Boca Ciega Bay is an Outstanding Florida Water, an Aquatic Preserve, and a part of the Tampa Bay National Estuary Program.

1. Outstanding Florida Waters

The Outstanding Florida Waters (OFW) program is administered by the Department of Environmental Protection. With an OFW designation, the Department cannot issue permits that would allow direct or indirect pollutant discharges which would lower existing water quality. Additionally, permits for dredging and filling must meet OFW requirements. Boca Ciega Bay is designated as a Class III Outstanding Florida Water, which can be used for body contact activities such as swimming or water skiing as well as the maintenance of a productive fish and wildlife population.

2. Archaeological Site

The city has one prehistoric archaeological site listed in the *Florida Master Site File*, located in the John's Pass area. However, this site has since been covered by construction and is inaccessible.

3. Tampa Bay National Estuary Program

The Tampa Bay National Estuary Program was created in 1991 under the Clean Water Act. Administered by the U.S. Environmental Protection Agency (EPA) with local support from the Tampa Bay Regional Planning Council, the program's purpose is "to assist the community in developing a comprehensive plan to restore and protect Tampa Bay." Participating local governments must abide by the program's *Comprehensive Conservation and Management Plan*, which has set goals of reducing pollutants and restoring native vegetation. As a part of the larger Tampa Bay estuary, Boca Ciega Bay is also protected by this program.

4. Boca Ciega Bay Aquatic Preserve

The Boca Ciega Bay Aquatic Preserve was established under the provisions of Section 258.396, F.S. Designed to protect water quality and marine life, the program prohibits dredging and spoiling activities in the Bay unless they are approved by the Pinellas County Water Navigation Control Authority. Construction of seawalls is also prohibited waterward of the mean high water line.

III. EXISTING AND PROJECTED NEEDS

Most recreational facilities in Treasure Island are focused on the Gulf of Mexico, which draws a large number of residents as well as many local visitors and tourists. It is of the utmost importance to keep these facilities adequately maintained. The analysis shows that the city has adequate recreational facilities to meet the needs of the community.

The city will continue to obtain citizen input into its recreational planning process, and standards to reflect community interest.



Strategic Plan Progress Report

As of 09/30/2021

City of Treasure Island, Florida

Adopted by Res. No. 20-17
November 17, 2020

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The City of Treasure Island is guiding its future growth and development with its Strategic Plan which will consist of specific goals and objectives and is based on input from City Commission, staff, residents, and businesses.

Our Mission

We are dedicated to being good fiscal and environmental stewards of our community, while providing responsive, high-quality public services to meet the needs of our residents, business owners, and visitors - today and tomorrow.

Our Vision

We strive to be a vibrant, unique, and sustainable beach community.

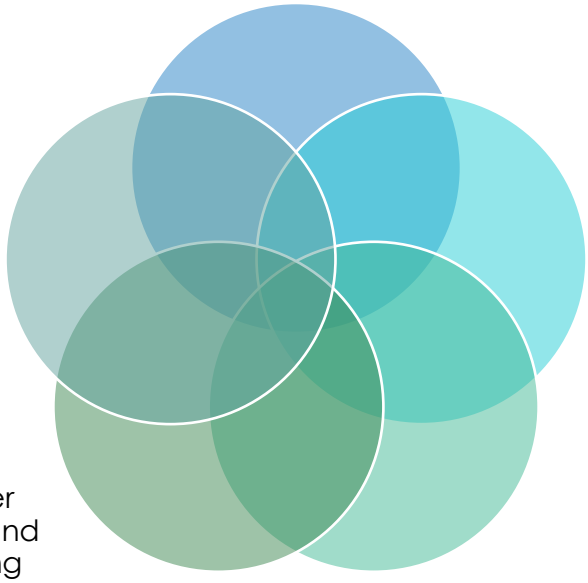
Our Values

Dynamic

- We celebrate our dynamic community and workforce, understanding that both are necessary to preserve the unique spirit of Treasure Island.

Responsiveness

- We are accessible and adaptive to the current and future needs of our community.



Integrity

- We will be guided by strong ethical principles and conduct ourselves in an honest and transparent way.

Respect

- We treat each other with mutual respect and sensitivity, recognizing the importance of diversity, by valuing all contributions.

Fair

- We treat everyone equally and make decisions that are in public's best interest thought objectivity and impartiality.

Our Goals

The goals are what we want to accomplish, and the objectives indicate how we will reach our goals.

Community

Goal 1: Promote a Socially Connected Community through the Implementation of the Master Park Plan

Objectives	Measure of Success
Implement the Master Park Plan	Adopted the FY22 budget with park projects funded. Scheduled a community meeting to discuss Treasure Bay future
Promote Treasure Bay as a flagship waterfront recreation facility	New Junior Tennis Program
Expand programming opportunities and unique community events	Reapplying for the FY22 kayak launch and trail grants. These grants, while ranked were not funded in FY21
	2022 Community Appreciation Day and other community events
	Contract with Civic Plus for Recreation Software

Goal 2: Maintain A Safe Community

Objectives	Measure of Success
Provide meaningful outreach programs	Improved marketing and social media posts
Ensure the Comprehensive Emergency Management Plan (CEMP)prepares the City for any community incident	Participation in vaccination outreach programs by Treasure Island Fire Department
	CEMP departmental annexes updated and tertiarty Emergency Operations Center (EOC) added to document

Goal 3: Cultivate a unified sense Community Pride and Identity

Objectives	Measure of Success
Update the Community Brand	Branding Initiative funded in FY22 Budget

Environmental Sustainability

Goal 1: Become an Environmentally Sustainable and Resilient Community

Objectives	Measure Success
Implement a Sustainability Plan	LEED for Cities Local Goverment Program grant was not awarded; Reapply for a new LEED cohort grant in FY22
"Rise above" sea-level challenges	In FY22, predesign for the elevation of the West Causeway, a living shoreline at Treasure Bay, and a Resiliency Implementation Plan are planned
Promote community-driven sustainability actions	The Fire Dept. is replacing F250 utility vehicle with ECO friendly F150
Encourage the use of alternative transportation	Engineering plans will be developed to elevate the wastewater master pump station
	A draft seawall code revision has been made to incorporate living shorelines, further revisions will be made in FY22 for adoption after the updates to the Comprehensive Plan
	A resiliency implementation plan was initiated.
	In FY22 the West Causeway will undergo pre-design and public engagement to develop a conceptual plan to be used in grant applications for roadway elevation

Financial and Economic Development

Goal 1: Foster a Vibrant Business Community

Objectives	Measure Success
Identify opportunities to cultivate an environment to help local businesses thrive	Identifying needed updates to the City's parking codes
Implement the Economic Development Vision	Economoic Development policies will be drafted as part of the Comprehensive Plan Policy updates

Goal 2: Maximize the Utilization of the City's Resources

Objectives	Measure Success
Gain an understanding of how resources/assets are valued by the community	Approved new parking equipment to convert 3 zones to walk-up kiosks, a 3-year renewal with Flowbird, installation of mobile-only zones
Continue towards the replacement of City facilities	Citywide connectivity plan is being developed
	City Center construction underway and will be completed in FY22

Goal 3: Obtain Awards and Recognition for The Beach

Objectives	Measure Success
Identify opportunities to garner recognition to further the promotion of the beach	Beach of the Bay nominations for Community Center, Dog Park, Treasue Bay, and Sanding Ovations. Trip Advisors Top 25 Beaches - US Travelors Choice Beach #16

Infrastructure

Goal 1: Protect City Assets to Sustain the Future of Treasure Island

Objectives	Measure Success
Assess status, and maintain City-owned infrastructure (seawalls, stormwater, sanitary sewer, roads, and buildings)	Seawall assessment and needs report was finalized November 2020. An update was made to the report to include the Lands End seawall. Major seawall rehabilitations at 115th Ave. and 120th Ave. will be constructed in FY22
Fully fund the maintenance of the bascule bridge	Treasure Bay community engagment sessions scheduled for December 2021
Enhance City-wide connectivity to create an improved environment for bikes and pedestrians	Stormwater Rate Study will be done in FY22
	The master force main assessment was completed and determined that the estimated remaining life is approximately 40 years. The assessment will need to be re-performed in 2030.
	Preliminary flow analysis and determined that Pinellas County's capacity was sufficient to accept the City's wastewater flows. The larger analysis is underway to determine economic feasibility and alternatives
	In FY22, the eastern portions of the walkovers will be reconstructed
	Working on developing a scope of work for a City-wide connectivity plan

Administration

Goal 1: Develop, support, and retain a diverse workforce to serve the needs of the community

Objectives	Measure Success
Encourage professional development and leadership opportunities to support a dynamic workforce	Cross-Departmental collaboration invisioning process for the Comprehensive Plan Update
Evaluate needs, skills, and positions for future staffing	To date, some job descriptions have been reviewed and updated.
Continue to elevate customer-centric service	Public Information Officer (PIO) continues to update and expand City website content and enhance the user experience
	Increased City's social media presence
	Purchased two message boards in FY21. One additional message board will be purchased in FY22



CITY OF TREASURE ISLAND WATERSHED MANAGEMENT PLAN

AGREEMENT NO. 18CF0000875 (N866)

February, 2021

Prepared for:

Southwest Florida Water Management District
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1.0 INTRODUCTION

The City of Treasure Island is a barrier island municipality located in southwest in Pinellas County. This Watershed Management Plan, partially funded through the Southwest Florida Water Management District's (SWFWMD) Cooperative Funding Initiative program, facilitated the preparation of a hydrologic and hydraulic (H&H) stormwater model which was used to evaluate the performance and effectiveness of the City's stormwater infrastructure. Capital improvement projects were identified in locations where stormwater level of service (LOS) was found to be deficient. Opportunities to improve the quality of water prior to discharge to the Gulf of Mexico and Boca Ciega Bay were also identified.

The City recognizes the challenges that lie ahead. Recent strategic planning efforts focused on sustainability goals and the bold actions needed for achievement. Sea level rise was identified by City residents, business leaders and staff as a threat to daily life in this coastal community.

This report not only focuses on current day stormwater performance but also evaluates how changing environmental conditions could impact system effectiveness. Mitigation opportunities and planning recommendations have been provided on how the City can "rise above" sea level challenges.

1.1 PREVIOUS STUDIES

The City's *Master Drainage Plan* was prepared by Cardno, Inc. (formally Tampa Bay Engineering, Inc.) and included an existing system evaluation and a LOS assessment. Peak discharges for each basin were identified and seven (7) drainage improvement projects were recommended (all of which have been completed by the City). Stormwater system maintenance procedure recommendation were also outlined within this report.

Assumptions within this report pertaining to basin interconnectivity and design tidal conditions are not representative of current stormwater evaluation practices. Now that all improvements derived from this report have been implemented, the report is considered to be obsolete.

1.2 REPORT STRUCTURE

A variety of references documents, such as maps, figures and other materials have been prepared in conjunction with the narrative portion of this report. An executable hydrologic and hydraulic model, constructed as part of this effort, will be used as the baseline for all future stormwater-based evaluations. An accompanying geodatabase has also been provided. The sections contained within this report are as follows:

- Section 2 Watershed Characteristics
- Section 3 Topographic Information
- Section 4 Hydrologic and Hydraulic Inventory
- Section 5 Watershed Model Development
- Section 6 Level of Service Assessment
- Section 7 Planning Recommendations
- Section 8 Project Recommendations
- Section 9 Program Recommendations
- Section 10 Implementation Recommendations

2.0 WATERSHED CHARACTERISTICS

2.1 CLIMATE

The City of Treasure Island, a barrier island community located in west-central Florida, lies within the humid subtropical climate zone which encompasses a large portion of the state. High and low annual temperature averages range from ~81° to ~67°, respectively, resulting in an annual average temperature of ~74°. Temperatures within the island community are regulated by the surrounding waterbodies which limit overall fluctuations. When compared to inland portions of the Tampa Bay area, the City experiences lower highs during the summer months and higher lows during the winter months.

Generalized precipitation data finds that City experiences 50.81" of rainfall annually. Approximately 46% of the City's total rainfall occurs in the three (3) month period from July – September with August averages being the greatest. The United States Geological Survey (USGS) operates and maintains multiple rain gauges throughout the Tampa Bay area. While no gauges are located within the municipal boundaries of the City, two (2) rain gauges are located within a five-mile radius of the City. Data obtained from these gauges, as summarized below, illustrates the difference between recent yearly rainfall totals and the above-reported precipitation averages.

Gauge Identification / Location	Rainfall Totals (in.)		
	2017	2018	2019
USGS 02307780 / Seminole Lake Outlet	34.13	55.44	61.19*
USGS 02308950 / Joes Creek at 62nd St.	N/A	51.56^	61.47*
** Value Includes Provisional Data*	*^ 229 Day Duration*		

Table 2-1 *2017-2019 Rainfall Totals*

Gauge USGS 02307780 began recording rainfall data on December 20, 2016 while Gauge USGS 02308950 commenced precipitation recording on May 16, 2018. The data present in the above table is too limited to make conclusions regarding historical rainfall averages and future rainfall trends. However, future monitoring of these rainfall gauges will be helpful to compare historical precipitation volumes with field-recorded data.

2.2 SOILS

As much of Pinellas County, the City experienced significant development within the 20th century. Historical aerials from 1926 show a fraction of the City's current land mass as these records predate the construction of the Treasure Island Causeway; an infrastructure element that spurred community development once completed in November of 1939. Subsequent aerial photography shows segmental growth of the City's land mass until 1965 when the current landward boundaries of the City are clearly visible.

Soil information utilized for this evaluation was obtained from the Natural Resources Conservation Service's (NRCS) Soil Survey Geographic (SSURGO) dataset. This dataset identifies the spatial location of specific soil profiles as well as corresponding physical characteristics including, but not limited to, natural drainage class, depth to water table and hydrologic soil group. A summary of the various soil types and corresponding acreages can be seen below:

Soil Unit Name (Map Symbol)	Soil Characteristics			Soil Coverage	
	Natural Drainage Class	Depth to Water Table (in.)	Hydrologic Soil Group	Area (Acres)	Percent
Matlacha and St. Augustine Soils and Urban Land (16)	Somewhat Poorly Drained	~ 18 - 36	C	455.44	75.51%
Palm Beach Fine Sand, 0 to 8 Percent Slopes (19)	Excessively Drained	> 80"	A	75.83	12.57%
Beaches (8)	Poorly Drained	~ 0 -24	D	45.71	7.58%
Urban Land, 0 to 2 Percent Slopes (30)	N/A	N/A	N/A	26.20	4.34%
			Total	603.18	100.00%

Table 2-2 *Soil Characteristics & Coverage*

Four (4) soil types are present within the City's watershed. Matlacha and St. Augustine Soils and Urban Land, which cover nearly 75% of the watershed, is the predominant soil. SSURGO information reports that this soil profile is a (near) equal blend of Matlacha, St. Augustine & Urban Land.

A large percentage of the City's current land mass was not present in the earlier 20th century as much of the watershed was developed on artificial (i.e. man-made) lands. Therefore, it is not surprising that urban lands, defined as soils extensively influenced by human activities, are widespread throughout the study area. The minimal amount of natural soils (Palm Beach Fine Sand) appears to correlate to natural areas present prior to the community's development.

A soil's hydrologic soils group is a characteristic that directly correlates to runoff potential. As such, the specific group designation for each soil unit is a crucial parameter used in the development of a hydrologic and hydraulic stormwater model. Generally speaking, soils classified in hydrologic soil group "A" have high infiltration rates and low runoff potential. Conversely, soils classified as group "D" have low infiltration rates and high runoff potential.

Palm Beach Fine Sand is the only soil unit which has a published hydrologic soil group within the SSURGO dataset. Published records from the Southwest Florida Water Management District (SWFWMD) pertaining to soil groups supplemented SSURGO records where data gaps were present. For purposes of this report, Urban Land will be assigned a hydrologic soil group of "D". Figure 2-1, seen on the following page, identifies the location of various soil types present within the watershed.



Figure 2-1 *Soil Coverage Map*

2.3 LAND USE

When evaluating a watershed, an understanding of specific land uses within the watershed is critical. The usage of land throughout any watershed varies and plays an important role in determining runoff potential and projected pollutant loadings. Standardized land use coverages have been mapped statewide and defined through the use of the Florida Land Use and Cover Classification System (FLUCCS). Developed in the 1970s, the FLUCCS implements a numbering system to describe all developed and undeveloped lands. Updates performed in 2017 were retrieved from the SWFWMD's open data portal and incorporated into this study.

Review of this information found that, in a general sense, the City's land use portfolio was accurately depicted. However, opportunities existed to further refine and/or revise some of the land use classifications to better match the watershed. Modifications performed are summarized below:

FLUCCS Code 1300 Residential, High Density

The City has multiple residential areas throughout its jurisdictional limits. Current records depicted all residential areas as Residential High Density which is defined as locations where the concentration of fixed single-family units is six per acre (6 / ac.) or greater. However, residential properties in Sunset Beach are uniquely different from similar areas on Paradise Island. The Residential High Density land usage was refined by removing single family residential properties on the Isle of Capri, Isle of Palms and Paradise Island from this category.

FLUCCS Code 1200 Residential, Medium Density

By definition, this land use classification is utilized for areas where the concentration of fixed single-family units is between two to 5 units per acre (2-5 / ac.). Areas removed from the residential high density category, as discussed above, were assigned this land use code. Standard lot dimensions for properties in these areas support this revision.

FLUCCS Code 1400 Commercial and Services

This land use classification covers commercial land uses which, for the City, predominantly consists of storefronts and commercial lodging. High density residential commingles with commercial properties especially along the beach. A parcel-by-parcel assessment was performed and high density residential properties (i.e. condominiums) were re-appropriated to the applicable land usage category.

FLUCCS Code 1720 Institutional, Religious

While only a single religious institution is present within the watershed (Paradise Lutheran Church), the parcel in which it resides was classified under FLUCCS Code 1720.

FLUCCS Code 1800 Recreational

Larger community recreational facilities, such as Rosselli Park, the Recreation Center, etc., were properly classified within the original dataset. Smaller "pocket parks", however, were combined with their adjacent land use(s) and categorized accordingly. These smaller community features were reclassified as recreational lands for the purposes of this study.

FLUCCS Code 8140 Transportation

Subsequent sections of this report will discuss the correlation between land usage and runoff potential and pollutant loading. One of the greatest contributors to both is the transportation network; specifically the curbing and roadway driving surface. To improve the accuracy of this report, the City's roadway network was delineated and categorized under FLUCCS Code 8140.

FLUCCS Code 8300 Utilities

This category was expanded further to cover lands which serve a public utility function.

A summary of land uses within the watershed can be seen below:

FLUCCS Code	FLUCCS Description	Land Use Coverage	
		Area (Acres)	Percent
1200	Residential, Medium Density	168.92	28.01%
1300	Residential, High Density	209.89	34.80%
1400	Commercial and Services	74.27	12.31%
1720	Institutional, Religious	1.49	0.25%
1800	Recreational	11.43	1.89%
1810	Recreational, Swimming Beach	4.53	0.75%
1820	Recreational, Golf Courses	7.87	1.30%
1860	Recreational, Community Recreational Features	10.14	1.68%
5300	Reservoirs	1.91	0.32%
8140	Roads and Highway	109.57	18.17%
8300	Utilities	3.16	0.52%
	Total	603.18	100.00%

Table 2-3 *Summary of Land Use Coverage*

Figure 2-2, Land Use & Cover Classification Map, identifies the location of the land use types summarized above.

It shall be noted that FLUCCS land uses assigned for stormwater evaluation purposes may not directly coincide with the City's zoning and future land use designations.

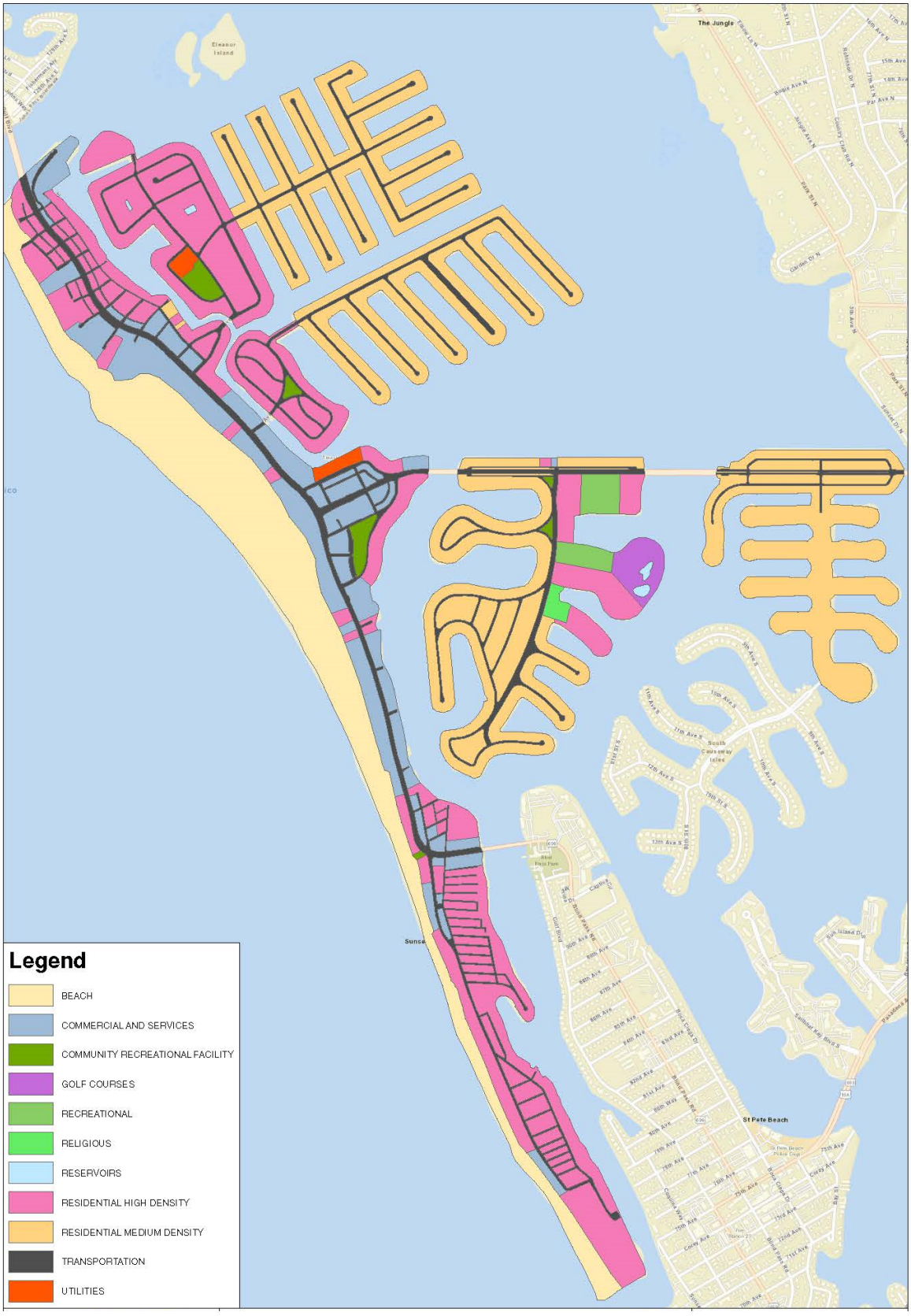


Figure 2-2 *Land Use & Cover Classification Map*

2.4 BOUNDARY WATERS

Bordered by the Gulf of Mexico and Boca Ciega Bay, the City's stormwater system discharges exclusively to tidally impacted water bodies. Tidal fluctuations within these receiving waters directly impact system performance and, often times, establishes the "starting point" in which all functionality measures are evaluated. Low-lying terrain, coupled by elevated tidal conditions, can result in roadway level of service (LOS) concerns prior to the consideration of precipitation impacts.

The Florida Department of Environmental Protection (FDEP) and National Oceanic and Atmospheric Administration (NOAA) maintain an inventory of tidal stations throughout the State. Critical tide heights are / were officially monitored at these locations and standardized into tidal datums. Elevations are assigned to these datum points referencing the North American Vertical Datum of 1988 (NAVD 88). Tailwater conditions, a key evaluation element when performing stormwater LOS assessments, are typically determined by selecting the appropriate tidal datum from the nearest tidal station.

The NOAA tidal stations within Pinellas County are located on Pier 60 (at Clearwater Beach) and at the U.S. Coast Guard Station located along the east coast of St. Petersburg. While NOAA stations are more limited in number, they generally record a wider array of data. FDEP tidal stations, while more numerous, typically maintain a more streamlined dataset. Of the twenty plus FDEP stations within the County, Tide Station 872-6533, located at John's Pass Village in Madeira Beach, is the closest tidal station to the City. A summary of the tidal datums for this station, as well as a description of what these datums document, can be seen below.

Tidal Datum	Tidal Datum Description	Elevation (Ft.)
MHHW	Mean Higher High Water (average of higher high water height of each day)	+ 0.81'
MHW	Mean High Water (average of all high water heights at the station)	+ 0.46'
MSL	Mean Sea Level (arithmetic mean of hourly heights observed at the station)	- 0.28'
MLW	Mean Low Water (average of all low water heights at the station)	- 0.99'
MLLW	Mean Lower Low Water (average of the lower low water height of each day)	- 1.43'
Note: Tidal datums are based upon water level averages within a 19-year period between 1983-2001 (National Tidal Datum Epoch)		

Table 2-4 *Tide Station 872-6533 Tidal Datums Summary*

As stated above, tidal stations are a useful tool to determine tailwater conditions for a stormwater system. However, there are certain factors that need to be considered when utilizing this data:

1. Tidal datums are based upon a 19-year return period referenced as the National Tidal Datum Epoch. Data used to calculate these water level elevation averages is from 1983-2001.

2. Mean sea level elevation trends from 2002 and beyond are not included within the published datums.

3. Tidal datums represent average elevations throughout all seasons during the 19-year evaluation period. Since these numbers represent an average, tides greater than the datum values provided will be frequently experienced.

Use of the Mean High Water elevation at FDEP Tide Station 872-6533 as the tailwater condition would comply with industry standard practices. However, using this datum wouldn't capture recent sea level fluctuations that may or may not be occurring. As such, additional investigation is warranted.

NOAA stations, although fewer in frequency, record the necessary data to evaluate Mean High Water trends since 2001 (the end year for the present Epoch). Tidal Station 8726520, located near downtown St. Petersburg, represents the monitoring site closest to the City. A Mean High Water datum elevation (NAVD 88) is identified as 0.50' for this site; slightly higher than the 0.46' elevation identified at the FDEP's tidal station closest to the City. Monthly Mean High Water elevations were extracted from the station's dataset and plotted below.

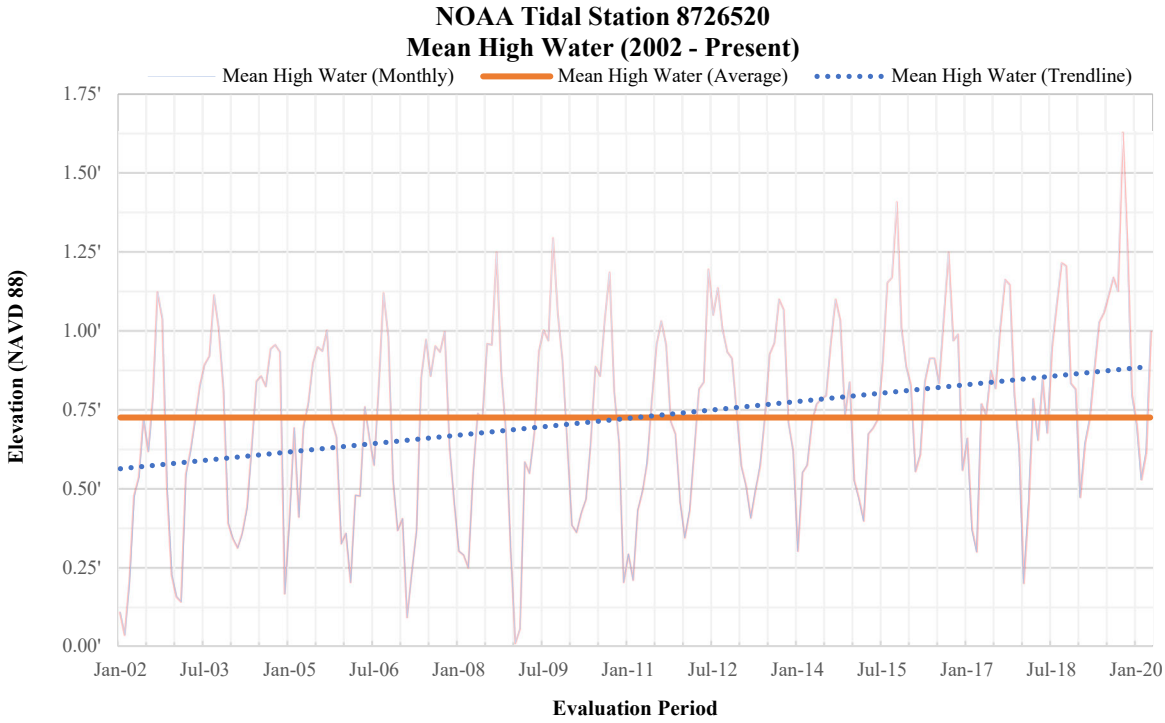


Figure 2-3 *Mean High Water Trends at Tidal Station No. 8726520*

While the tides occur daily in a semidiurnal manner, plotting the monthly Mean High Water shows a seasonally-based diurnal tidal pattern. Trend analysis identified an increase within these monthly values. This upward trend in Mean High Water elevation results in a modified Mean High Water elevation of 0.73'; representing an increase of 0.23' over the 1983-2001 values. Therefore, to account for this upward trajectory in Mean High Water elevations, the Mean High Water tidal datum elevation at FDEP Tide Station 872-6533 will be adjusted by a factor of 0.23'.

2.5 STORMWATER SYSTEM COMPOSITION

A component of this study focused on the City's stormwater inventory. In an effort to more accurately reflect the City's stormwater system within a hydrologic and hydraulic model, the City's inventory was "field-truthed" on a structure-by-structure basis. A geodatabase, using ESRI's local government model with modifications, was prepared and submitted to the City for incorporation into their asset management program.

The City's stormwater system predominantly consists of structures for stormwater collection and piping for stormwater conveyance. Few open conveyance systems (i.e. swales, ditches or channels) are present. Open systems within the City are smaller swales focused on conveying localized runoff. Ditches or channels do not exist within the highly urbanized watershed.

Multiple smaller diameter outfalls are present within the City. This configuration creates more compact, and isolated, drainage areas. Only a small percentage of the City's outfalls convey runoff collected by ten (10) or more structures.

As a barrier island, the City discharges to what could be considered an infinite volume basin; the tidal waters of Boca Ciega Bay. While individual properties may have small facilities for stormwater attenuation, the receiving waters do not have any volume sensitivity.

Water quality is typically addressed in two ways; through the use of stormwater treatment structures or smaller dry detention facilities. The City does not own or maintain any permitted dry detention facilities. Water quality improvement has historically been provided through the use of below-grade treatment structures. However, multiple properties utilize small dry ponds to meet water quality regulations.

2.6 STORMWATER SYSTEM OWNERSHIP

Conventionally, stormwater system ownership directly correlates with right-of-way ownership. Mainland Pinellas County municipalities often have roadways within their jurisdictional limits owned and maintained by Pinellas County or the Florida Department of Transportation (FDOT). The FDOT is the only non-City owner of right-of-way within the watershed. Stormwater structures and piping associated with this roadway, State Road 699 (Gulf Blvd.), are therefore owned and maintained by the FDOT. Once piping exits the FDOT's right-of-way, ownership transfers to the City. With limited outfalls within FDOT's right-of-way, the City maintains ownership of the majority of outfalls serving Gulf Blvd.

3.0 TOPOGRAPHIC INFORMATION

Topographic information utilized for this watershed evaluation was obtained from a variety of sources. Generally speaking, terrain elevations were documented within the Southwest Florida Water Management District's (SWFWMD) provided Digital Elevation Model (DEM) and topographic / record drawing surveys were utilized to construct below-grade conveyance systems within the stormwater model. All elevations reference the North American Vertical Datum of 1988 (NAVD 88).

Certain records referenced for the National Geodetic Vertical Datum of 1929 (NGVD 29). To convert these elevations to the study's preferred datum, a location-specific conversion factor of -0.89' was applied. The National Oceanic and Atmospheric Administration's (NOAA) Online Vertical Datum Transformation tool was used to obtain this value.

3.1 DIGITAL ELEVATION MODEL

The Digital Elevation Model (DEM), as provided by SWFWMD, served a critical role in this study. Ground elevations, documented on a 5' x 5' grid, are based on LiDAR information collected between July 5, 2007 – August 9, 2007. SWFWMD contracted with Earth Eye, LLC in 2010 to enhance the DEM in a manner that improved functionality for watershed evaluation-type tasks. While the DEM does not reflect building elevations, it accurately reflects the terrain within the City. The DEM depicts minimal topographic variation within the watershed.

3.2 ENVIRONMENTAL RESOURCE PERMITS



Figure 3-1 *ERP Locations*

Environmental Resource Permits (ERPs) are the predominant permitting vehicle for stormwater and land development projects within the SWFWMD's jurisdictional boundary. Acquisition of an ERP requires submission of construction plans and design calculations to confirm that regulatory requirements have been met. As such, ERP record files contain a wealth of information deemed beneficial for stormwater studies.

Sixty (60) permit record files were provided by the District. Permit locations, as seen to the left, vary throughout the City but are more prevalent along the limits of State Road 699 (Gulf Blvd.). These permits covered a wide array of improvements; large resorts, multi-family developments and public stormwater infrastructure. With the DEM depicting the majority of depressional storage for these permits, records were used to obtain critical elevations and infrastructure dimensions. Records were also used as a quality control tool for basin delineation and to determine pipe connectivity.



Figure 3-2 *Digital Elevation Model*

It shall be noted that the date certain for this study is October 1, 2018. Permits subsequent to this date were not incorporated into the evaluation.

While permitted under the same program, certain ERPs present a larger impact to the City's stormwater infrastructure. A summary of these more impactful permits can be seen below:

Permit Number		Project Alias	Permit Commentary
Base Number	Revision Number		
6285	000	Mainland Capri Single Family Residences	Representing the only single family development on the main island of the Isle of Capri, this permit documents how stormwater flows are conveyed from interior portions of the island to the outfall.
10346	000	Gulf Blvd. Improvements @ Sunset Beach	The southern portions of Gulf Blvd., prior to crossing over Blind Pass, drains through a FDOT outfall as well as a City-owned outfall. Plans within this permit file document where flows are split between these two outfalls.
19177	001	90th Avenue Stormwater Pump Station	Serving low-lying terrain, permit records document the service areas for this stormwater pump station; the only one within the City.
27197	000	Bascule Bridge	Collection networks on, and adjacent to, the bridge are depicted within the records provided by the SWFWMD.
28697	001	Treasure Island Resort	The TI Resort is one of the newer larger resort facilities on the island. Permit drawings contain stage / storage relationships for underground vault storage and depict the outfall configuration to FDOT's stormwater system on Gulf Blvd.
29828	001	The Club at Treasure Island	This site was believed to be hydraulically isolated from the City's stormwater drainage system. SWFWMD-provided documentation confirmed this assumption for this large development.
32114	000	Publix	The site plan for this grocer highlighted the system independence between internal drainage and an outfall serving Gulf Blvd and City right-of-way.
40570	000	Implementation of BMPs at 99th Avenue	Record drawings from this stormwater infrastructure project provided constructed elevations for the piping installed by the Contractor.
40678	001	Implementation of BMPs within the Sunset Beach Watershed (All Phases)	Record drawings from this stormwater infrastructure project provided constructed elevations for the piping installed by the Contractor.
41268	001		

Table 3-1 *Summary of Critical ERPs*

3.3 TOPOGRAPHIC SURVEY

Performed under the supervision of a Florida-Registered Professional Land Surveyor, record drawings and topographic surveys were used for accurate incorporation of stormwater elements into the City-wide model. Data acquired during the field investigation activities associated with the stormwater inventory mapping was referenced when topographic data was not available.

As stated above, record drawings associated with SWFWMD ERPs were quite useful in development of the City-wide model. However, record drawings not associated with permitted activities were also utilized as an input source. The predominant record drawing which was not associated with an ERP correlated to the Gulf Blvd drainage improvements between 99th Avenue & 105th Avenue.

Topographic survey supplemented SWFWMD's permit records and served to document the location, elevation and size of critical stormwater facilities. Considering its importance as an evacuation route and impact on daily City functions, obtaining information on Gulf Blvd. north of the downtown area, was deemed essential. This survey also extended outside of the FDOT's right-of-way to encumber five (5) major outfalls serving this stretch of roadway.

3.4 TOPOGRAPHIC VOIDS

The City of Treasure Island is a densely-populated barrier island with few undeveloped parcels. Typical development seen within the community consists of razing a site and constructing a new development. A largely impervious pre-development site condition minimizes the need to address attenuation at the time of redevelopment. When redevelopment occurs on the island, stormwater improvements typically consist of a stormwater collection system, corresponding piping and a small water quality pond.

Voids within the DEM's topography are considered to be present when significant land alterations occurred after the time of LiDAR acquisition, where tree canopies impact the accuracy of the ground surface elevations or where elevations are missing. The elevation model, as provided by SWFWMD, did not include any voids associated with tree coverage or data gaps.

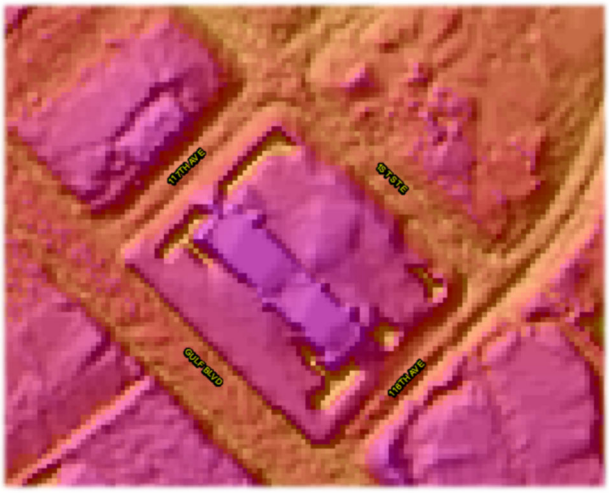


Figure 3-3 *DEM Modifications*

A review of historical aerial photography, months prior to the date of DEM acquisition, finds that land coverage and development remained relatively constant. However, there were certain locations where modification to the DEM was necessary to further define stormwater pond boundaries and depict sites that were significantly elevated at the time of redevelopment.

Permit records associated with the site were utilized as the basis of DEM manipulation. Terrain modifications were made at the following locations:

- Sunset Vistas Beachfront Suites (ERP No. 27071.000)
- Crystal Palms Beach Resort (ERP No. 32447.000)
- Treasure Island Resort (ERP No. 28697.001)
- Publix (ERP No. 32114.000)
- Bella Casa Townhomes (ERP No. 30190.002)

4.0 HYDROLOGIC & HYDRAULIC INVENTORY

A component of this evaluation entailed the creation of an inventory database for the City's stormwater system. Existing records, available in both hard copy and digital formats, were provided by the City and Florida Department of Transportation (FDOT) as the basis of physical infrastructure mapping. These documents were utilized in conjunction with permit records review, Digital Elevation Model (DEM) evaluation and field observations to better understand overland and subsurface stormwater flow patterns within the City.

4.1 SUBWATERSHED DELINEATION

Subwatershed itemization within an overall watershed typically focuses on major conveyance systems and/or detention / retention stormwater management facilities of regional significance. However, as previously stated, the City's stormwater system consists of multiple smaller outfalls and regional stormwater management areas are not present within the City. Therefore, the subwatershed identification process grouped multiple smaller outfalls in a manner which considered land use, ridges within the terrain and overland drainage barriers such as bridges or waterways.

Eight (8) subwatersheds were identified within the City and a listing of these subwatersheds can be seen below:

- Subwatershed A – Sunset Beach
- Subwatershed B – Gulf Blvd. South
- Subwatershed C – Downtown
- Subwatershed D – Sunshine Beach
- Subwatershed E – Isle of Capri
- Subwatershed F – Isle of Palms
- Subwatershed G – Paradise Island
- Subwatershed H – Causeway Isles
    - It shall be noted that Subwatershed H delineates areas which drain to City of St. Petersburg-owned outfalls. These areas have been assigned Subwatershed SP.

A map of the above-listed watersheds can be seen on the subsequent page.

4.2 SUBWATERSHED CHARACTERISTICS

Land use, stormwater infrastructure and (to a degree) terrain is distinctly different within each subwatershed. Please reference subsequent pages of this section to view a detailed breakdown of each subwatershed's characteristics.

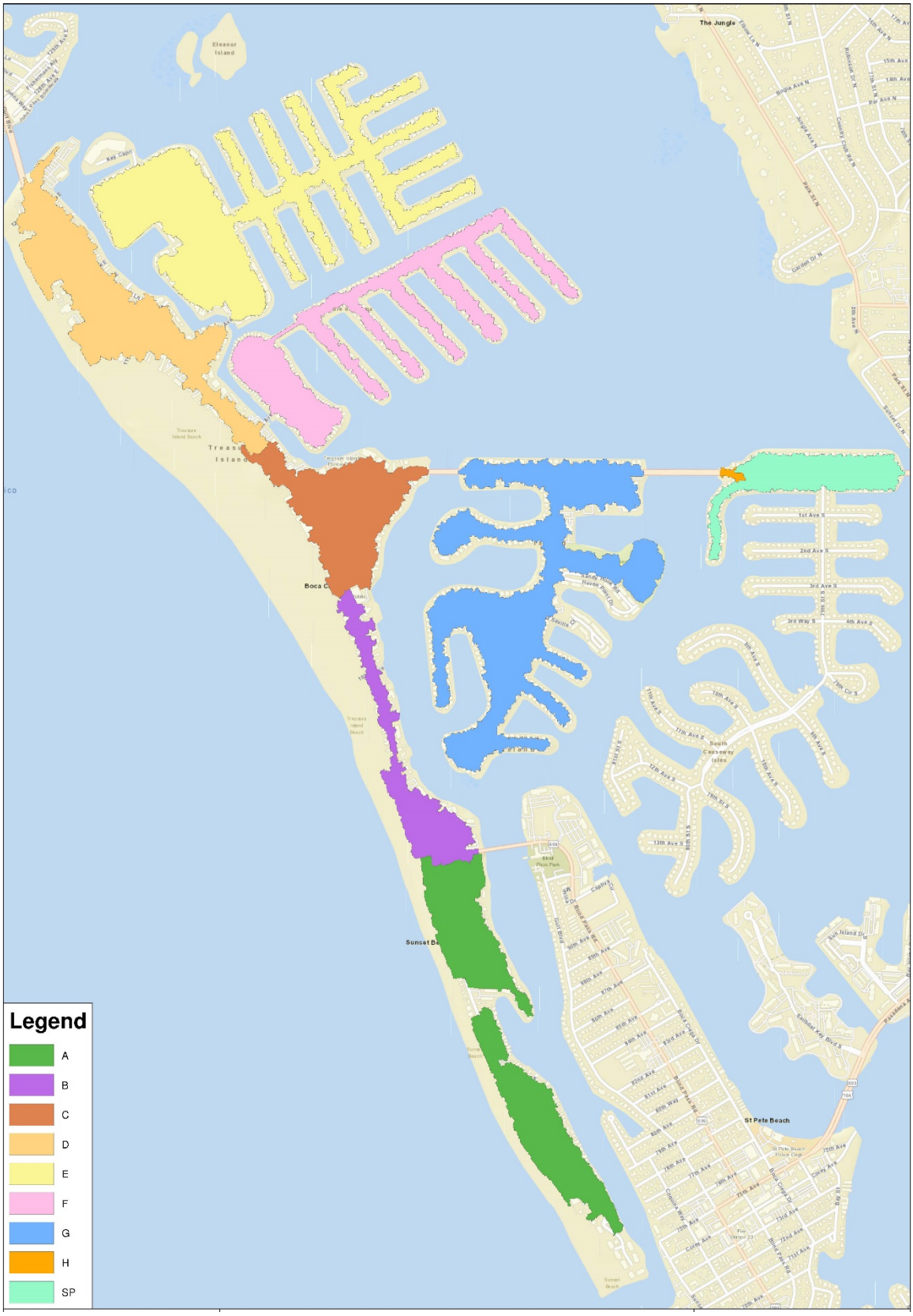


Figure 4-1 *Overall Subwatershed Map*

4.2.1 Sunset Beach (Subwatershed A)

Located at the southern tip of the City, Sunset Beach is often considered a beach lover's community "straight out of a Buffet song". This region is one of the lower lying areas of the City and experiences sunny day flooding multiple times throughout the year.

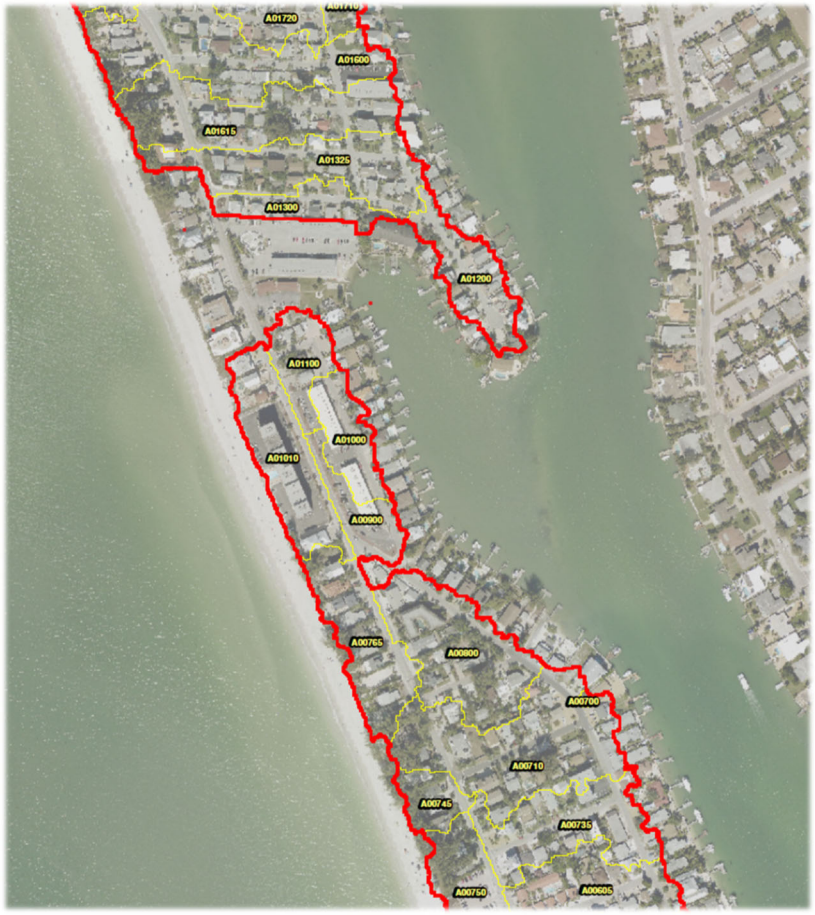


Figure 4-2 *Subwatershed A & Internal Basins*

PREDOMINANT LAND USE

Land use within this subwatershed consists predominantly of single family (high density) and multi family residential units. Single family home lot sizes are relatively compact and the type of homes within this area are drastically different. Multifamily land uses have similar variety as this region has large multiple tower development to smaller duplex / triplex / quadplex units.

SIGNIFICANT DEVELOPMENTS

Land's End and Mansions by the Sea, both located at the southern limits of the subwatershed, are the predominant developments within the region.

CRITICAL STORMWATER INFRASTRUCTURE

Locations south of the Bayshore Drive / West Gulf Blvd. intersection are served by two (2) major outfalls constructed as part of the Implementation of BMPs within the Sunset Beach Watershed multi-phased project. Two (2) stormwater treatment structures were constructed in conjunction with this project and are associated with each outfall; located at 84th & 77th Avenues.

The City's only stormwater pump station, located at the eastern terminus of 90th Avenue, serves the areas between 91st Avenue and 88th Avenue. This station also collects flow from West Gulf Blvd. extending north to Gulf Blvd. and south to East Bay Drive.

4.2.2 Gulf Blvd. South (Subwatershed B)

The Gulf Blvd. South subwatershed extends from 104th Avenue south to the easterly bend in Gulf Blvd. (State Road 699). Many parcels within this region drain directly to Boca Ciega Bay or the beach resulting in exclusion from the subwatershed.

PREDOMINANT LAND USE

While single family residences are located sporadically throughout this area, commercial and multi family developments are the dominant land uses.

SIGNIFICANT DEVELOPMENTS

Developments within this region are generally less than one (1) acre. By land mass, Blind Pass Lagoons, Island Inn Beach Resort, Gulf to Bay Lagoons and The Palms at Treasure Island represent the largest developments within this subwatershed.

CRITICAL STORMWATER INFRASTRUCTURE

Many of the developments within this area are hydraulically isolated from the public stormwater infrastructure system due to their direct outfall to the beach or tidal waters. Therefore, the subwatershed closely follows the right-of-way in many locations.



Figure 4-3 *Subwatershed B & Internal Basins*

The largest contiguous portion of the subwatershed is located in the southeast corner; south of 100th Avenue to Gulf Blvd. A City-owned 29" x 45" Elliptical Reinforced Concrete Pipe (ERCP) at 99th Avenue serves the majority of this area while one of the few FDOT-owned outfalls serves a portion of remaining areas.

Stormwater collected on Gulf Blvd. is done solely through trench drains and grated inlets. The lack of longitudinal fall on Gulf Blvd. has resulted in multiple phases of structure installation. Many of these structures convey flows to the outfall through small diameter piping.

4.2.3 Downtown (Subwatershed C)

Centrally located within the City, the Downtown subwatershed is the City's commercial hub. City Hall resides within this subwatershed as well as the Public Works, Police, Fire and Recreation Departments.



Figure 4-4 *Subwatershed C & Internal Basins*

PREDOMINANT LAND USE

Multifamily residential properties perimeter the eastern waterfront limits of this area. All other land uses within this region are commercial or related to governmental operations.

SIGNIFICANT DEVELOPMENTS

Beachfront resorts (Treasure Island Resort, Thunderbird Beach Resort, Bilmar) constitute the largest developments within Subwatershed C.

CRITICAL STORMWATER INFRASTRUCTURE

Western portions of the Downtown subwatershed are routed through a 38" x 60" ERCP located within the parking lot of Middle Grounds Grill. Directly upstream of this outfall, topographic survey identifies the presence of concrete weirs constructed within connected piping. These structures are believed to isolate FDOT-owned piping from tidal waters to possibly prevent barnacle growth.

Central areas of this subwatershed are routed through three (3) separate 18" Reinforced Concrete Pipes (RCP) located at adjacent to the Public Works Dept., Police / Fire Dept. and the northern edge of the Treasure Island Community Center parcel.

A 24" RCP serves southern portions of this area including segments of Gulf Blvd. as well as the proposed site for the new City Hall complex.

4.2.4 Sunshine Beach (Subwatershed D)

Extending from 112th Avenue to the northern limits of the City, the Sunshine Beach subwatershed encompasses the single access points to the Isle of Capri and the Isle of Palms.

PREDOMINANT LAND USE

There is a consistent concentration of single family residences east of Gulf Blvd. (north of 117th Avenue). Similar to the other subwatersheds, commercial and multifamily developments are located on either side of Gulf Blvd.

SIGNIFICANT DEVELOPMENTS

The largest development within this region is the Sunset Vista Beachfront Suites located between 121st and 120th Avenues. Multiple other smaller developments are located along the beachfront boundaries of this area.



Figure 4-5 *Subwatershed D & Internal Basins*

CRITICAL STORMWATER INFRASTRUCTURE

Four (4) major outfalls serve the stretch of Gulf Blvd. within Subwatershed D. The 36" RCP outfall located at 116th Avenue predominantly drains FDOT right-of-way while the outfalls at 119th Avenue (36" RCP), 123rd Avenue (36" RCP) and 127th Avenue (36" RCP) serve as a connection point for secondary City drainage facilities. Stormwater treatment structures are present on the 119th and 123rd Avenue outfalls.

Portions of this subwatershed west of Gulf Blvd., between 124th & 126th Avenue, do not have a positive culverted outfall. Therefore, with no outfall conveyances, all stormwater is collected and routed to exfiltration systems located along 1st Street West.

4.2.5 Isle of Capri (Subwatershed E)

As one of the City's three barrier island neighborhoods, the Isle of Capri consists of a western land mass and eastern "finger-type" waterfront development.



Figure 4-6 *Subwatershed E & Internal Basins*

PREDOMINANT LAND USE

Multifamily, single family, recreation and utility are the land uses within this subwatershed. The eastern "fingers" of the island are solely medium density single family.

SIGNIFICANT DEVELOPMENTS

Sun Ketch Units I-III, located on the main land mass, are the predominant developments.

CRITICAL STORMWATER INFRASTRUCTURE

Sun Ketch Units I-III have internal stormwater management facilities that serve a water quality and attenuation function. Sun Ketch Unit I flows are routed to the management area for Sun Ketch Unit II. This management area is controlled by a control structure which outfalls to City-owned piping located on 2nd Street East. In a similar manner, Sun Ketch Unit III's internal management area routes flows to a City-owned system on Capri Circle North.

4.2.6 Isle of Palms (Subwatershed F)

The Isle of Palms, similar to the Isle of Capri, consists of a western land mass and eastern "fingers". The western land mass of this subwatershed is visible on aerial photography dating back to 1926.



Figure 4-7 *Subwatershed F & Internal Basins*

PREDOMINANT LAND USE

Multifamily units and single family residences dominate the landscape within Subwatershed F. A minor recreational area is present within the western land mass (Triangle Park).

SIGNIFICANT DEVELOPMENTS

There are no developments of significance located within this subwatershed.

CRITICAL STORMWATER INFRASTRUCTURE

The stormwater collection system is relatively simplistic for this region. Each stormwater outfall serves a single intersection and no system consists of more than five (5) collection structures.

Many junction structures are believed to have no maintenance access due to their inability to be field located.

4.2.7 Paradise Island (Subwatershed G)

As the easternmost section of the City, this barrier island has eastern and western points of access.



Figure 4-8 *Subwatershed G & Internal*

PREDOMINANT LAND USE

Land use within this subwatershed consists of single family (medium and high density), multifamily, recreational and religious usages. The City's only golf course is located on this barrier island.

SIGNIFICANT DEVELOPMENTS

Due to the nature of usage, the Treasure Bay Golf & Tennis Center is the largest development on the island. A majority of the parcel is green space associated with the golf course. The Club at Treasure Island is another development of significance within the subwatershed. Villages of Paradise Island is the largest multifamily development from a landmass standpoint.

CRITICAL STORMWATER INFRASTRUCTURE

Many of the subwatershed's largest developments (The Club at Treasure Island, Villages of Paradise Island, La Costa Brava) and hydraulically isolated from the City's system and utilize independent stormwater collection structures and piping. However, in certain locations, runoff from City right-of-way comingles with runoff from private property prior to discharge.

Southern portions of the Treasure Island Causeway, east of Paradise Blvd., and northern portions of Paradise Blvd. are served by an outfall which abuts the Treasure Cay Condominiums and Treasure Island Villas. These communities discharge directly to this system either through a control structure or direct inlet connection.

Stormwater treatment structures are present on the eastern and western ends of Causeway Blvd.

4.2.8 Causeway Isles (Subwatershed H)

East of the City's municipal boundary, the Treasure Island Causeway continues along Causeway Isles until it terminates at mainland Pinellas County. The portion of the Treasure Island Causeway that bisects the Causeway Isles neighborhood resides within City-owned right-of-way (while being located within the City of St. Petersburg municipal limits). Areas that drain to basins within this sliver of City-owned right-of-way have been included in this study.

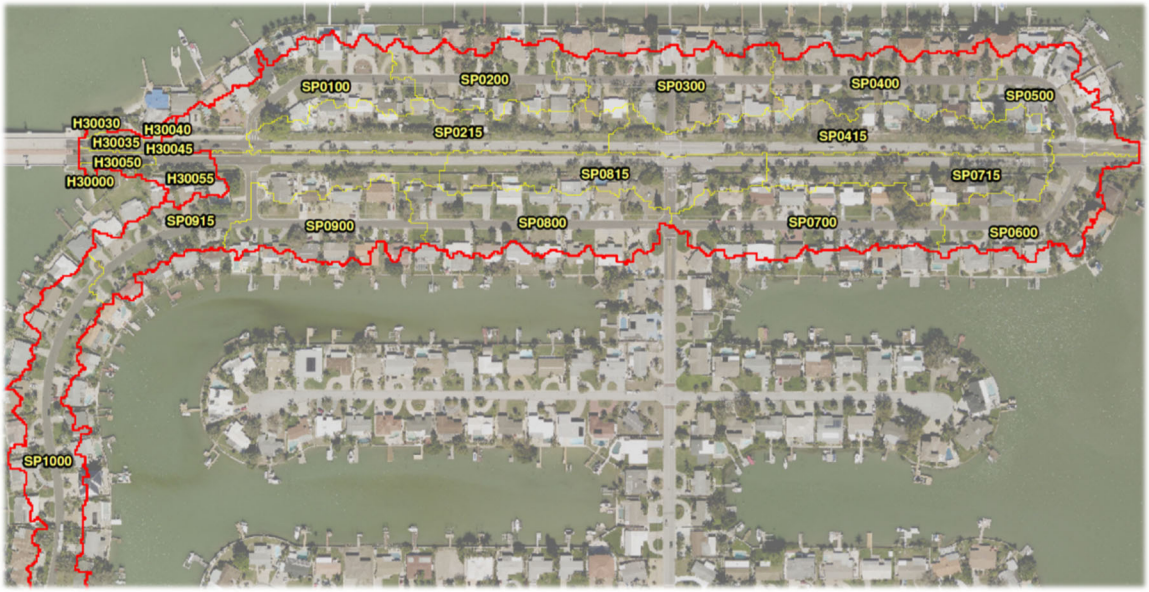


Figure 4-9 *Subwatershed H & Internal Basins*

PREDOMINANT LAND USE

Transportation and medium density residential are the only land uses present in this subwatershed.

SIGNIFICANT DEVELOPMENTS

No significant developments are present within this subwatershed.

CRITICAL STORMWATER INFRASTRUCTURE

Eastern portions of the City-owned drawbridge drain to a collection system located on the western edge of the subwatershed. Limited City-owned stormwater infrastructure is present beyond this location.

5.0 WATERSHED MODEL DEVELOPMENT

A hydrologic and hydraulic (H&H) stormwater model was developed to evaluate the performance of the City's stormwater system. The municipal boundaries of the City coincide with the watershed limits as there is no flow connectivity between other jurisdictions.

5.1 MODEL METHODOLOGY

The use of a H&H model allows for the prediction of stormwater runoff flow rates for various rainfall simulations. Said flows can then be routed through piping networks, storage facilities or other stormwater system elements to predict flood stages. The Interconnected Channel and Pond Routing (ICPR) model, Version 4.07.01, was the software selected for this assessment. ICPR is a commonly used model accepted by both the Southwest Florida Water Management District (SWFWMD) and the Federal Emergency Management Agency (FEMA) for floodplain mapping and flood insurance rate studies.

Arc Hydro, a set of watershed evaluation tools within ESRI's GIS software, was utilized to develop a hydro-network for the City's watershed. The hydro-network depicts overland and subsurface flow patterns, identifies stormwater collection areas and calculates depressional storage capabilities within the study limits. Using this hydro-network as a basis, a model schematic was prepared illustrating connectivity between individual catchments and the City's subwatersheds. Please reference the Appendix or accompanying geodatabase to view the model schematic.

5.2 BASIN DELINEATION

Section 4 identified the eight (8) subwatersheds within the City. These subwatersheds are a combination of multiple smaller basins which were defined using the conventional Arc Hydro workflow(s). Typically, a watershed-wide model would focus on stormwater elements of regional significance. However, the City's stormwater network is essentially a combination of multiple local systems with independent outfalls to tidal waters. To provide a detailed model of the City, a basin was defined for each grouping of collection structures. Larger basins were only permitted where developments had a single point discharge to tidal waters or the City's system.

The City's watershed consists of 395 basins. These basins were reviewed for accuracy using topographic survey, permit records, field observation and our local knowledge. Topology was also evaluated to ensure that no gaps or overlaps were present within the basin dataset.

It shall be noted that basins which drain directly to tidal waters, and therefore do not route flow to / through public infrastructure, were removed from the model where deemed appropriate.

5.3 Model Parameterization

Specific technical approaches were utilized to define the input parameters used for the H&H model. Below is a summary of the calculations and assumptions used for this study.

5.3.1 Rainfall Simulations

Various storm events were modeled in ICPR. While the duration of all storm events was 24-hours, the return frequency varied. Please see below to view a summary of the rainfall depths associated with each storm event. It shall be noted that SWFWMD's ERP Handbook, Volume II, was referenced for rainfall simulation depths.

Simulation	Return Frequency	Duration	Rainfall Depth (In.)
233Y24H (Mean Annual)	2.33 Years	24 Hours	4.50
10Y24H	10 Years	24 Hours	7.50
25Y24H	25 Years	24 Hours	9.00
50Y24H	50 Years	24 Hours	10.00
100Y24H	100 Years	24 Hours	12.00

Table 5-1 *Rainfall Simulations*

Per SWFWMD's standards, the Type II Florida Modified rainfall distribution was used.

5.3.2 Rainfall Excess & Unit Hydrograph

Considering the average basin size (1.73 acres) and the highly urbanized nature of the City, the NRCS Curve Number (CN) method was selected to generate runoff values. This approach relies on the hydrologic soil group, land cover type and other factors to determine the soil's infiltration capacity and corresponding rainfall excess. The publication *Urban Hydrology for Small Watersheds, TR-55, June 1986* contains CN look up tables which served as the basis for curve number origination.

A curve number was identified for each land use type and soil group. Impervious percentages were estimated for each FLUCCS code using desktop evaluation of aerial photography, local knowledge and the maximum allowable Impervious Surface Ratios (ISRs) permitted within the City's Land Development Regulations (Subpart B). Similar to the assumption made within TR-55, all impervious area is assumed to be directly connected.

Using the below look up table, Arc Hydro tools were utilized to perform an area-weighted CN calculation for each basin when considering land use and underlying soil type. Directly Connected Impervious Areas (DCIAs) were assigned a value of zero within the H&H model since the curve number accounts for impervious percentages.

A uniform hydrograph shape factor was used for all basins due to similarities in topography and terrain. Average basin slopes are less than 0.5% and significant surface storage capabilities are present. Considering these basin characteristics, a shape factor of 256 was used.

FLUCCS Code	FLUCCS Description	Directly Connected Impervious Area	Curve Number			
			Soil Group A	Soil Group B	Soil Group C	Soil Group D
1200	Residential, Medium Density	50%	69	80	86	89
1300	Residential, High Density	70%	80	87	91	93
1400	Commercial and Services	90%	92	94	96	96
1720	Institutional, Religious	65%	77	85	90	92
1800	Recreational	0%	39	61	74	80
1810	Recreational, Swimming Beach	0%	39	61	74	80
1820	Recreational, Golf Courses	0%	39	61	74	80
1860	Recreational, Community Recreational Features	0%	39	61	74	80
5300	Reservoirs	100%	100	100	100	100
8140	Roads and Highway	98%	98	98	98	98
8300	Utilities	90%	92	94	96	96

Table 5-2 *Curve Number (CN) Lookup Table*

5.3.3 Time of Concentration

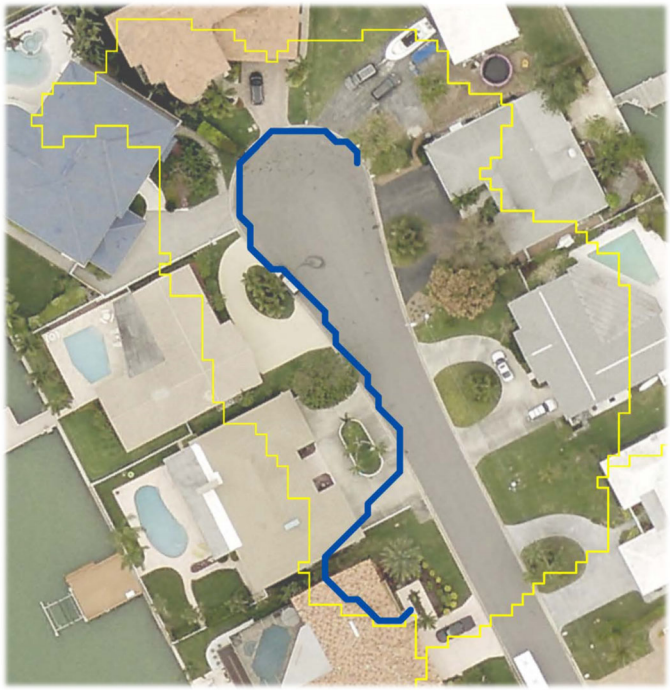


Figure 5-1 *Time of Concentration Overland Flow Path*

Calculation methodologies outlined within the aforementioned TR-55 publication were utilized to derive time of concentrations for each basin. The time of concentration represents the time water takes to travel from a basins most distant point to its outlet. This factor is a critical variable when basin runoff predictions are generated.

The longest flow path for each basin was identified using Arc Hydro's automated processes. Flow paths were segmented in either sheet flow or shallow concentrated flow. Sheet flow was assumed for the first 100 linear feet of flow path and remaining segments were considered shallow concentrated flow. Composite roughness coefficients, which correlate to land usage, were derived for sheet flow segments. Slope calculations were also performed in order to calculate the total travel time.

In accordance with industry standards, 10 minutes shall be considered the minimum time of concentration. Basins with a calculated duration less than 10 minutes were assigned this value. Overland flow paths, and corresponding flow path divisions, can be seen within the corresponding geodatabase.

5.3.4 Initial Stages

Nodes representing piped stormwater conveyances had initial stages set to match the lowest invert; mimicking the stormwater system being drained dry. However, where inverts were lower than the tailwater condition, the initial stage was revised to match the tailwater elevations reflecting a static tide within the stormwater network prior to the start of a storm event.

5.3.5 Stage-Storage Relationships

Stage-area relationships are utilized within the H&H model to represent storage capabilities within each node. Using Arc Hydro tools, storage volumes were extracted by cutting "slices" in the digital elevation model (DEM) at specified elevation intervals. No channels are present within the City negating the need to mask (or exclude) storage volumes occupied by flow.

5.3.6 Boundary Conditions

The lack of adjacent watersheds means that there are no upstream boundary conditions that will require constant, or time-varying, flows to be entered into the H&H model. However, the selection of the downstream boundary condition (tailwater) can have a drastic impact on system performance as well as future recommendations.

There are multiple values that could be considered the tailwater elevation when analyzing tidally influenced stormwater systems.

Option 1 → Mean High Water Elevation
Option 2 → Stillwater / Storm Tide Elevation
Option 3 → Sea Level Rise Adjustments (FDOT)
Option 4 → Sea Level Rise Adjustments (USACOE)
Option 5 → Sea Level Rise Adjustments (NOAA)

Mean High Water Elevation

As noted within regulatory documents, the Florida Department of Transportation (FDOT) and SWFWMD identify the mean high water (MHW) datum as an acceptable value for tailwater when designing piped systems which discharge to tidal waters. Published values are intended to represent the average of all high water marks recorded at a tide station over a 19-year tidal cycle. This value is often used in design and represents an economical means of addressing tidal impacts when performing pipe sizing activities.

Section 2.4 discussed the boundary waters of the City and identified an upward trend in the dataset retrieved from National Oceanic and Atmospheric Administration's (NOAA) online portal for station 8726520. While slight trends can be seen from the period from 2002-2010, the degree of rise has increased since 2010. It is our opinion that, if using this datum as the basis of tailwater selection, adjustments shall be made to modernize this value.

An adjustment factor of 0.23' is identified in Section 2.4 to account for the upward trend in sea level elevations. With FDEP Tide Station No. 872-6533 identifying a mean high water datum elevation of + 0.46', incorporation of the adjustment factor elevates this datum to + 0.69'.

Stillwater Elevation / Storm Tide

The Federal Emergency Management Agency (FEMA) defines the stillwater elevation as the surface of the water resulting from tides, storm surge and freshwater inputs. Wave setup and the effects of waves, which would be included when determining floodplain elevations, are factors specifically excluded when determining this value. Similar in scope, NOAA publishes storm tides; the surface water elevation when typical tides, storm surge and limited wave setup caused by breaking waves.

Stillwater elevations are published by FEMA for the return intervals of 500-years, 100-years (basis of floodplain), 50-years, 25-years and 10-years. NOAA also provides storm tide adjustment factors for 100-year and 10-year return periods while also identifying 2-year and 1-year estimates.

By nature of its calculation method, MHW values do in fact include these event-based tidal stages. However, by averaging these stages with all high tides, the output value is diluted. Frontal systems typically bring a combination of precipitation and elevated tides. To account for the joint probability of an elevated tide and rainfall event, system design efforts can utilize the stillwater elevation as the tailwater condition or incorporate storm tide adjustment factors.

NOAA Station 8726520 records identify a 1.97' storm tide adjustment for the 1-year return period and a 2.69' adjustment for the 2-year return period. These factors would then be added to a date-adjusted mean sea level to obtain a reference elevation. Trend analysis performed on the NOAA Station 8726520 dataset for the mean sea level and mean high water datums found identical date-adjustment factors could be applied. As such, with a date-adjusted mean sea level of -0.05', the 1-year and 2-year return period storm tide elevations would be 1.92' and 2.64', respectively. These elevations are likely more representative of the tidal events that result in "sunny day" flooding, i.e. roadway inundation without a rainfall event.

FEMA's preliminary Flood Insurance Study identifies multiple transects and corresponding stillwater elevations within and adjacent to the City. While stillwater elevations are not provided for the 1-year (100% Annual Chance) and 2-year (50% annual chance) return periods, a best fit line was constructed and extrapolated for value comparison purposes. The average stillwater elevation (for multiple transects) is within a reasonable proximity to NOAA's date-adjusted storm tides. Graphical representation of this verification activity can be seen on Figure 5-2.

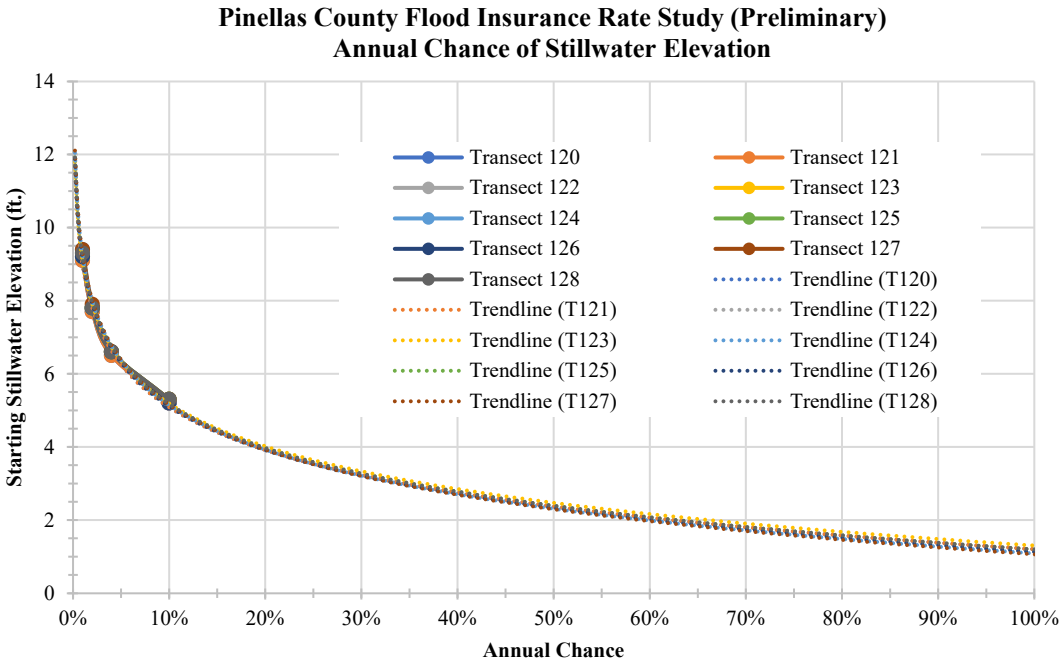


Figure 5-2 *Stillwater Elevations & Recurrence Intervals*

Sea Level Rise Adjustments

The above-discussed tailwater options capture the current day environment with varying tidal conditions. Upward mean high water and mean sea level trends are already present within available datasets as illustrated elsewhere within this report. As a barrier island, stormwater system effectiveness directly correlates to the tailwater (or tidal) condition. Therefore, the City would experience performance decreases should sea levels continue to elevate. Assessing stormwater system resiliency by evaluating sea level rise projections may assist in long term planning.

To incorporate sea level rise projections into this study (through tailwater adjustments), a target planning date must first be selected. Stormwater piping material is conventionally expected to last between 50-100 years; typically closer to 100 years when residing below urban (curbed) roadways. Therefore, the majority of stormwater pipes replaced or upsized after the time of this report would likely be in service at the century's end. As such, we recommend that year 2100 projections be utilized for this assessment.

Selection of the preferred sea level rise data supplier must also occur. This report will focus on three (3) governmental entities that publish sea level rise predictive projections; the Florida Department of Transportation (FDOT), the U.S. Army Corps of Engineers (USACOE) and NOAA. A single projection is put forth by the FDOT while the USACOE and NOAA identify upper, middle and lower sea level rise ranges. Figure 5-3 compiles these projections into a single view for comparison purposes.

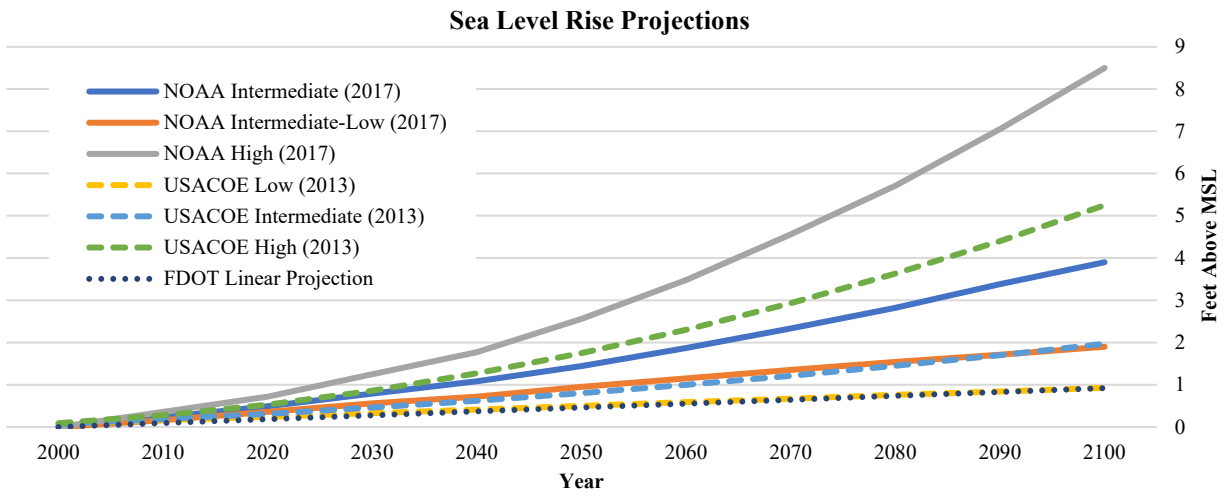


Figure 5-3 *Summary of Sea Level Rise Predictions from Various Government Agencies*

The above projections detail the hypothetical increase to mean sea level; a tidal datum. With 2100 as the planning date, the difference between the year 2100 and year 2020 levels would be added to the current (date-adjusted) mean sea level. The resultant value would not reflect any further increase caused by normal tidal fluctuation, a storm tide or larger surge. Therefore, to meet conventional stormwater design requirements, a year 2100 mean high water would need to be established.

It is possible that the elevation difference between mean sea level and other tidal datums will differ in 2100. However, for purposes of this study, it is assumed that the mean sea level – mean high water elevation relationship will remain constant. The selected sea level rise value will be added to the date-adjusted mean high water elevation of + 0.69' to determine the various design tailwater options.

Sea Level Rise Adjustments (FDOT)

The FDOT recommends a linear-based projection based upon a standard height increase per year. When added to the date-adjusted mean high water, a manageable year 2100 elevation is identified.

Sea Level Rise Adjustments (USACOE)

With three (3) different scenarios, the USACOE projections provide a range of planning alternatives for local governments. The Low Scenario is nearly identical to the FDOT's linear projection while the High Scenario presents a much more troublesome outlook.

Sea Level Rise Adjustments (NOAA)

The NOAA Technical Report, titled *Global and Regional Sea Level Rise Scenarios for the United States* (Sweet et al. 2017b), contains multiple sea level rise projections mutually agreed upon by the report collaborators. Future greenhouse emissions and the resulting increase in ocean temperatures were key variables used in the derivation of the various possibilities. Regional factors were also considered.

The Tampa Bay Climate Science Advisory Panel (CSAP), a network of scientists and resource managers working in the Tampa Bay area, used the above-referenced Technical Report as the basis for a guidance document titled *Recommended Projections of Sea Level Rise in the Tampa Bay Region*. This report, dated April 2019, is intended to assist governmental entities in accounting for sea level rise in future planning efforts. While NOAAs original Technical Report contained six (6) sea level rise projections, the CSAP guidance document recommended that only the Intermediate-Low Scenario, Intermediate Scenario and High Scenario be considered.

The Intermediate-Low Scenario, in the opinion of the CSAP, is to be considered the lowest plausible bound for future sea level change while the High Scenario represents the upper bound. As the recommended scenario, Intermediate sea level rise projections are reported to fully capture the likely range of all predicted outcomes. Sea level rise predictions are provided for each scenario in ten-year intervals with 2100 being the latest quantified date.

Figure 5-4 plots tailwater elevation options against selected reference elevations. Bracketed by the 2-year and 1-year storm tide is the USACOE's Intermediate projection and NOAA's Intermediate-Low Scenario. Some of the more lower lying areas of the City are located in Sunset Beach. As such, a representative ground elevation of this subwatershed has also been plotted for comparison purposes.

Elevations of the preliminary Special Flood Hazard Area (SFHA) vary throughout the City. The plotted SFHA elevation references the lowest value and illustrates the severity of a large tidal surge.

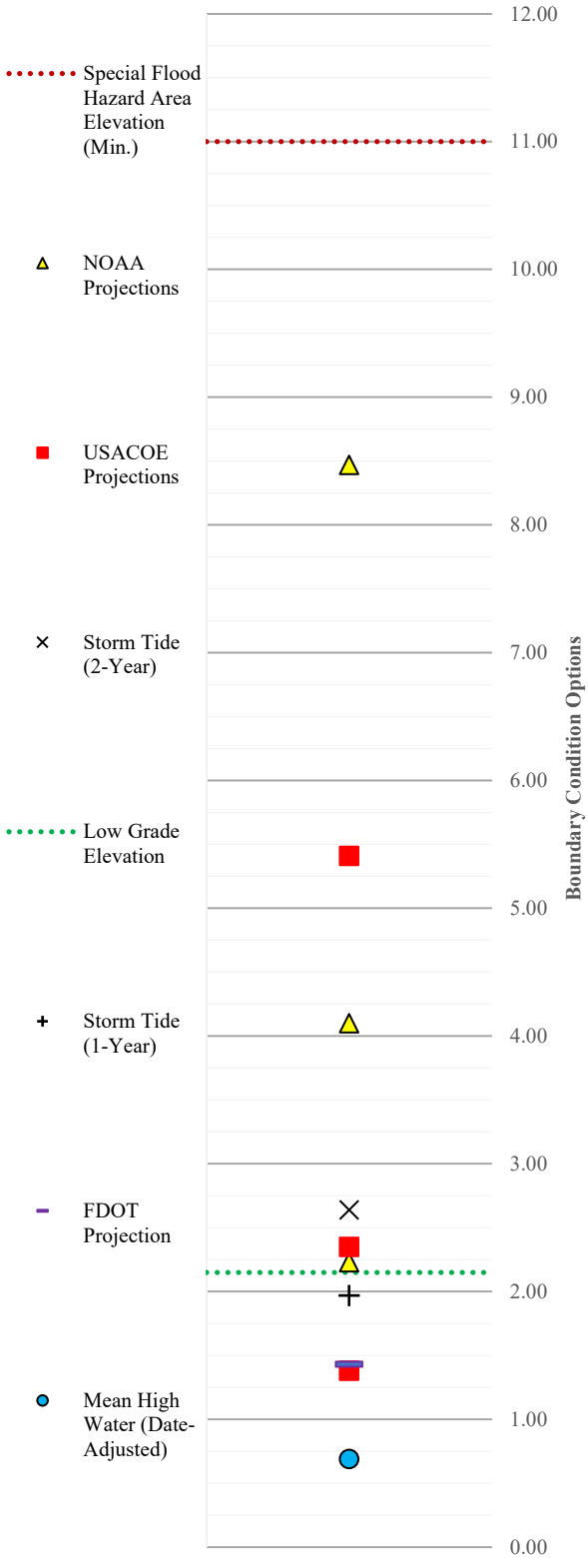


Figure 5-4 *Tailwater Elevation Options*

The stormwater system's performance will be evaluated under "current" conditions by executing the H&H model with the date-adjusted mean high water elevation (of 0.69') as the tailwater

condition. The sea level rise adjustment factor presented within NOAA's Intermediate-Low Scenario will be incorporated into the H&H model in an effort to assess how the system would perform under "future" conditions. While representing the "floor" of the NOAA sea level rise projections, the use of higher values would not be practical without the implementation of other large-scale and drastic resiliency measures.

5.3.7 Hydraulic Links

Mimicking the City's stormwater system, hydraulic links utilized within the model were limited to closed conduits (i.e. pipes), drop structures, rating curves and overland flow weirs. A numeric summary of hydraulic links within the H&H model is provided in the adjacent table.

Hydraulic Link Type	Quantity
Pipes	384
Drop Structures	9
Rating Curves	6
Overland Flow Weirs	1,146

Table 5-3 *Summary of Hydraulic Links*

Topographic survey and permit records were supplemented by field investigation to create the City's stormwater piping inventory database. In turn, this database was referenced to define pipe sizes, invert elevations and upstream / downstream connectivity within the model. Only pipes which transfer flow from one basin to another were considered for modeling. When a multiple collection structures are located at an intersection, only the downstream pipe conveying flows away from the intersection (and towards the outfall) was included for performance evaluation. The corresponding lengths of these representative pipe segments served as the basis for length determination within the model.

Where stormwater is attenuated upstream of public infrastructure, drop structures were utilized to replicate the timing of offsite flows entering the stormwater system. Please note that drop structures which predominantly serve water quality facilities were not included within the H&H model.

Three (3) basins within the City's watershed rely solely on exfiltration trenches for the removal of stormwater from the roadway / driving surface. While these basins are hydraulically independent, larger storm events will result in flow transfers to adjacent basins served by public infrastructure. Therefore, in order to not overestimate the volume of the water transferred via overland flow, rating curves were developed to reflect the percolation capabilities of these systems.

As discussed in Section 4, a stormwater pump station serves portions of the Sunset Beach subwatershed. This two (2) pump system provides a uniform discharge rate when one or both pumps are on. Rates were calculated through the development of a system curve and creation of a "two pumps on" curve. The system curve's points of intersection represents the discharge rates used within the model.

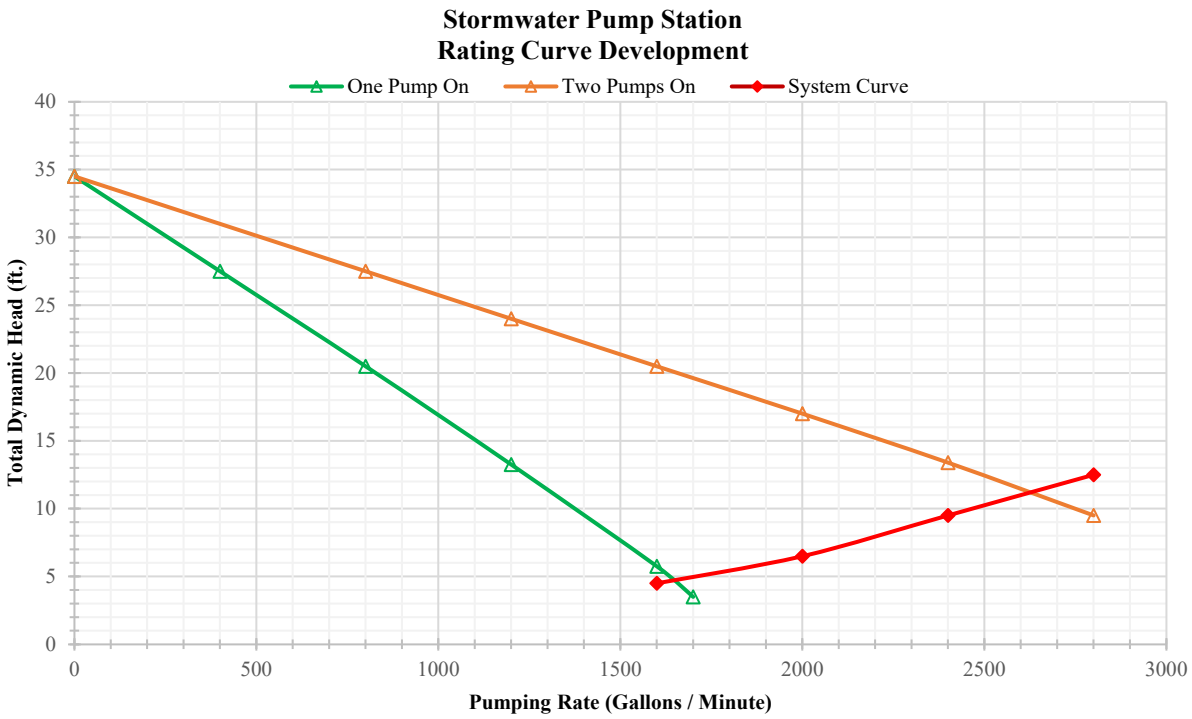


Figure 5-5 *Stormwater Pump Station System Curve*

Pump curve information, as provided by City staff, is for a Xylem CP 3217 pump with a 150 mm impeller. This pump has a published rated power of 7.5 horsepower.

For certain rainfall simulations, stage elevations increase to such a degree that results in stormwater exiting its parent basin and entering another basin. This "spillover" conveyance is incorporated within the H&H model through the development of overland flow weirs. Typically, overland flows occur at the lowest point of a basin's boundary. Using the flow direction raster, the location at which this transfer occurs is identified when determining the overland preferential link. However, unlike other areas of the County, the City's basins have minimal elevation difference along their boundaries. To account for additional locations of flow transfer, additional overland flow weirs were manually added using the hydrojunctions to define secondary saddles along a basin's perimeter.

Weir cross sections were then defined once the points of flow transfer were identified. Elevations, obtained from the Digital Elevation Model (DEM), were assigned to each point along the basin's boundary. Weir lengths were revised through the smoothing process in order to properly estimate the true length of the conveyance feature. Subsequently, the thinning process allowed for the weirs vertical shape to be similarly represented within the model while removing extraneous data points. Original and modified cross sections associated with these overland flow weirs were then compared to ensure that thinning and smoothing operations did not fundamentally change geometric characteristics.

5.4 Model Calibration & Verification

Stormwater model calibration typically requires the comparison of modeled results to "real world" events; typically a significant storm event. Aerial imagery, surveyed high water marks, stream gauge data or other sources are used to compare limits of pooled water and/or flows within a conveyance system.

As previously discussed, the City's stormwater system performance is directly impacted by the rainfall intensity and tidal (tailwater) elevation. The H&H model accounts for both of these factors at the time of execution and, as such, both variables would require time-dependent verification as part of a larger model "truthing" effort.

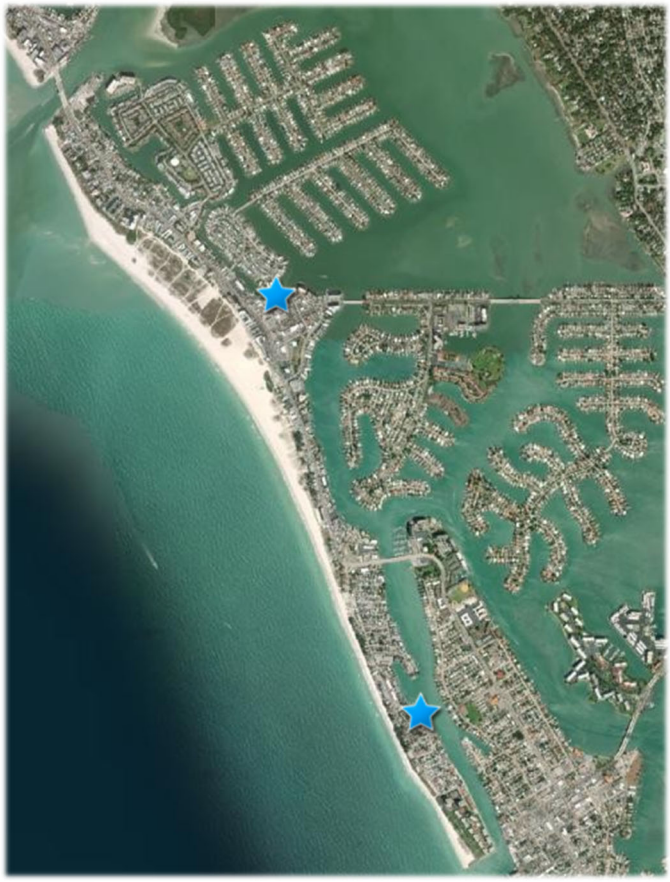


Figure 5-6 *Level Gauge Locations*

Formal model calibration was not performed for this study due to a lack of comparison data sources. However, model verification activities were performed using tidal gauge data, local knowledge of the WMP design team / City staff and resident reports.

Water level monitoring gauges were set early on in the project to gain a better understanding of the number of times the mean high high water benchmark was exceeded (MHHW) and the extent of high / extreme tidal events. Located as shown on Figure 5-6, these gauges were placed in locations controlled by the City and located within stilling wells in an effort to mitigate for fluctuations resulting from wave action. The Rugged TROLL 100 Data Logger (as manufactured by In-Situ, Inc.) was identified as the preferred product. Additionally, the BarTROLL Data Logger (as manufactured by In-Situ, Inc.) was placed at an offsite location to document barometric pressure data for data evaluation purposes.

Data was extracted from these data loggers intermittently throughout the study phase of the project. Water surface elevations recorded by the device were revised to account for barometric conditions and converted to the study's datum (NAVD 88). These elevations were then compared to the elevations available at the aforementioned NOAA station for quality assurance purposes. This data showed that water levels exceeded the MHHW datum quite regularly. Additionally, when using reference ground elevations, tide elevations suggested "sunny day" flooding occurred multiple times throughout the watershed evaluation phase. Many recordings depicted tidal elevations that exceeded the resulting tailwater when incorporating the NOAA intermediate-low sea level rise scenario.

Model verification activities focused on the use of two sources; WMP team knowledge and resident reports. Historical locations of (rainfall event based) non-structural flooding are well known to staff. The City's use of SeeClickFix, a software which allows residents to log concerns, served as a key tool in documenting flooding complaints from the community. Over 800 archived inquiries were reviewed and non-pertinent records were removed from consideration. It shall be noted that multiple records which reported flooding pertained to what are believed to be tidal conditions.

These sources yielded the following locations of concern for rainfall-related flooding:

Subwatershed A (Sunset Beach)	East Bay Drive
Subwatershed A (Sunset Beach)	Western Edge of Pavement of West Gulf Blvd. from Gulf Blvd. to Bayshore Dr.
Subwatershed C (Downtown)	105th & 106th Avenue Intersection w/ Gulf Blvd.
Subwatershed D (Sunshine Beach)	125th Avenue Terminus

Floodplain boundaries contained within this report generally coincide with these problematic locations. However, it shall be noted that there were certain locations in which flooding was not reported by the City but found to be present within the model. Review of these locations finds that, during these larger storm events, warning stages are exceeded only during times of increased intensity. Short periods of elevated stages in urban watersheds may be harder to detect if not directly experienced, not in a high traffic locations or not extending over large areas.

Model stability was also reviewed to verify the validity of the results. Link time max output charts were evaluated and significant changes and/or flow reversals were not found. "Glass walls" (locations where water artificially stacks adjacent to basin boundary) were also not found to be present.

6.0 LEVEL OF SERVICE ASSESSMENT

Utilizing the City-wide hydrologic and hydraulic (H&H) model, the functionality of the City's stormwater system was assessed for multiple rainfall scenarios and tailwater conditions. Each rainfall scenario was executed with a conventional tailwater elevation (intended to mimic "current" conditions) and an elevated tailwater scenario (intended to mimic "future" conditions) which incorporates sea level rise projections discussed in Section 5.

6.1 LIMITATIONS

The barrier island nature of the watershed means that, whether through piping or overland flow, the City's land mass typically has a positive outfall to an infinite volume basin. Practically speaking, an unlimited volume of stormwater could be discharged to the boundary waters without increasing the waterbody's elevation. Large rain events may result in localized flooding and, in some locations, even encroach into the parkway. However, the water elevations are generally regulated by the low-lying grades on the island which allows for flow to travel downstream by cascading from basin to basin. These "pop off" locations associated with the City's terrain, and incorporated within the H&H model as overland flow weirs, provide a degree of protection from structural flooding due to rainfall for non-extreme tidal events.

Conventional level of service (LOS) assessments would focus on two elements; roadway flooding and structural flooding. Structural flooding within the City generally coincides with extreme tidal events; a phenomenon that cannot be mitigated through piping improvements. As such, with no stormwater-based solutions available to resolve tidal event-based structural flooding, LOS assessment efforts will focus of the City's roadway network.

6.2 COMPREHENSIVE PLAN CORRELATION

Stormwater management is discussed within the Infrastructure Element of the City's Comprehensive Plan; a document which is currently being updated. Section V, Subsection C, discusses the *Master Drainage Plan* completed in 1996 and specifically references the adoption of the three-year design storm. Review of the *Master Drainage Plan* finds the design storm recommendation pertained to pipe sizing which replicates the Florida Department of Transportation (FDOT) approach. Considering the FDOT utilizes the Rational Method as the method of evaluation, the use of the 10-Year / 24-Hour storm event as the basis of performance evaluation adheres to the Comprehensive Plan. The 10-Year / 24-Hour storm event has been found to provide similar peak flows to the 3-year return frequency. As such, the 10-Year / 24-Hour storm will be considered the design storm event.

LOS criteria, discussed in greater detail below, outlined in the *Master Drainage Plan* is restated within the Comprehensive Plan. LOS "C" was adopted as the City's standard for stormwater infrastructure. As summarized below, meeting this classification requires that overtopping of the roadway's centerline be between 3" – 12" in height. All basins were reported to meet this criterion for the 25-Year / 24-Hour storm event.

Level of Service (LOS) Classification	Existing Level of Service (LOS) Criteria
A	Maximum water level below top of curb and all traffic lanes are open
B	Partial yard flooding and standing water in traffic lanes. Water level is 0 to 3 inches over the crown of the road.
C	Yard flooded; but first floor of buildings, including garages, are dry and one traffic lane is open. Water level is 3 to 12 inches over the crown of the road.
D	Garage flooded. Water level is 12 to 18 inches over the crown of the road.
E	First floor of building is flooded. Water level is greater than 18 inches over the crown of the road.
F	No flood protection; flooding threatens lives, structures and property.

Table 6-1 *Existing Level of Service Criteria*

6.3 Recommended Roadway Level of Service Revisions

It is recommended that LOS classification and criteria revisions be made to correlate storm event performance expectations to roadway importance. In a general sense, a higher use roadway's stormwater system should have superior performance when compared to a local roadway used by a small percentage of the population.

A roadway hierarchy has been defined by identifying three (3) classes; primary, secondary and local. State Road 699 (Gulf Blvd.), 107th Avenue and the Treasure Island Causeway have been designated as primary roadways due to the degree of usage and access they provide to the barrier island community. Other roads within the City, such as Capri Blvd. / 2nd Street E. / 117th Avenue, 115th Avenue / 112th Avenue, Paradise Blvd. and W. Gulf Blvd., serve a similar function but on a smaller scale. These roadways are considered secondary due to their function as a collector. All other roadways would be considered local.

Criteria revisions are also recommended for each LOS classification. Inundation requirements identified in the adjacent table do not correlate to the roadway's centerline but rather focus on overall depth at any location. Roadway's within the City have varying widths and cross slopes and, by plotting expected flood stages on the Digital Elevation Model (DEM), edge of roadway and centerline flooding depths can be better documented.

Level of Service (LOS) Classification	Proposed Level of Service (LOS) Criteria
A	No Roadway Flooding.
B	Roadway Flooding Depth < 3"
C	3" < Roadway Flooding Depth < 9"
D	9" < Roadway Flooding Depth < 12"
E	12" < Roadway Flooding Depth < 16"
F	Roadway Flooding Depth > 16"

Table 6-2 *Proposed Level of Service Criteria*

While the recommended flooding criteria revisions are not location dependent, centerline (or edge of travel lane) inundation can be generalized for each roadway class. Figure 6-1 on the following page depicts typical sections for Primary, Secondary and Local roadways. Local

roadways are typically 20' in width resulting in two (2) 10' travel lanes. Assuming a standard cross slope of 2%, LOS B would result a maximum of ½" of standing water over the centerline. Secondary roadways often are wider to accommodate a bicycle lane. LOS B on these typically wider roads would encroach into the travel lane but not reach the centerline. In a similar manner, a primary roadway's interior travel lane would only be partially impacted when flooding depths are less than 3".

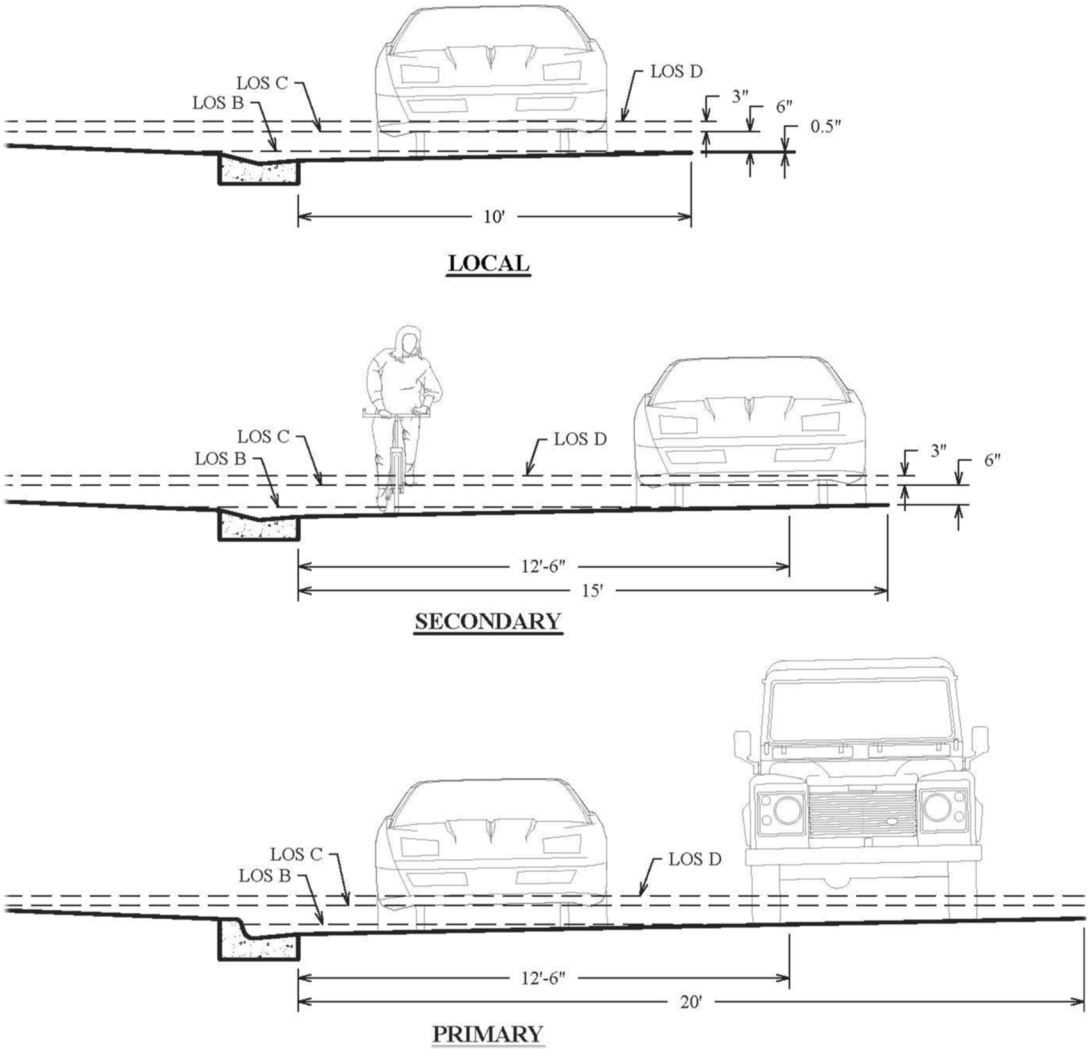


Figure 6-1 *Typical Roadway Sections & Level of Service Inundations*

Based upon the above recommended criteria revisions and roadway class assignments, the below table represents the rubric used to evaluate the LOS for each basin within the City.

Proposed Level of Service (LOS) Standards								
Primary			Secondary			Local		
10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H
A	B	D	A	C	D	B	D	E

Table 6-3 *Proposed Level of Service Standards*

The City's prior LOS allowed for up to 12" of roadway flooding for the 25-Year / 24-Hour storm event. While this may be prudent for a local roadway, heightened performance may be desired for roadways deemed more critical. The above criteria attempts to balance impacts to day-to-day life and the ability to attain a certain LOS in a cost-effective manner.

6.4 Roadway Level of Service Methodology

When identifying each basin's LOS, a type was assigned to each basin to determine whether the Primary, Secondary or Local standards would be applied. Multiple road classes were present in certain basins. In these locations, the predominant road type and/or node location was used for class designation.

Depth grids were prepared for each storm event (and tailwater condition) by calculating the elevation difference between the maximum modeled flood stage and the surface grade identified on the DEM. A depth measurement was tied to each 5' x 5' cell within the DEM where flooding was observed. The transportation land use polygon was used to trim the depth grid so only locations within the limits of the roadway were evaluated.

Each basin was then reviewed for each storm event and a pass (P) / fail (F) grade was applied. For example, if the depth grid shows that flooding within a secondary roadway is between 9"-12" for the 25-Year / 24-Hour storm event, then the basin is determined to not meet the LOS standard (and assigned a failing grade). Conversely, if the same conditions are observed for a local roadway, the basin would be identified as having met the LOS standard (and assigned a passing grade).

It shall be noted that this approach is being utilized for the sole purposes of assessing basin performance with a large watershed. Project-specific design shall focus on ensuring that the LOS standards are met for all locations within the project limits.

6.5 Subwatershed Performance Summary

Adherence to the above-discussed LOS standards are summarized, per subwatershed, in the following tables. It shall be noted that the Future Conditions columns identify the LOS results when the H&H model was executed with the elevated tailwater condition. Please reference Appendix A to view City-wide Depth of Flooding figures for all executed storm event / tailwater conditions.

Subwatershed A

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
A00100	L	P	P	P	P	P	P
A00106	L	P	P	P	P	P	P
A00110	L	P	P	P	P	P	P
A00200	L	P	P	P	P	P	P
A00300	L	P	P	P	F	F	P
A00312	L	P	P	P	P	P	P
A00314P	L	P	P	P	P	P	P
A00335	L	P	P	P	F	F	P
A00360	L	P	P	P	F	F	P
A00370	S	P	P	P	P	P	P
A00375	S	P	P	P	P	P	P
A00385	S	P	P	P	F	P	P
A00510	L	F	F	P	F	F	F
A00605	L	F	F	P	F	F	P
A00620	L	F	P	P	F	P	P
A00700	L	P	P	P	F	F	P
A00710	L	P	P	P	F	P	P
A00735	L	F	F	P	F	F	P
A00745	S	P	P	P	P	P	P
A00750	S	P	P	P	F	P	P
A00765	S	F	P	P	F	P	P
A00800	L	P	P	P	F	P	P
A00900	L	F	P	P	F	P	P
A01000	L	P	P	P	F	F	P
A01010	S	F	P	P	F	P	P
A01100	L	F	P	P	F	P	P
A01200	L	P	P	P	F	P	P
A01300	L	F	P	P	F	F	P
A01325	L	F	F	P	F	F	F
A01600	L	F	F	F	F	F	F
A01615	L	F	F	F	F	F	F
A01700	L	F	F	F	F	F	F
A01710	L	F	F	F	F	F	F
A01720	L	F	F	P	F	F	F
A01800	L	F	F	P	F	F	P
A01816	L	F	P	P	F	P	P
A01825	L	F	P	P	F	P	P
A01835	L	F	F	P	F	F	P
A01850	L	F	F	P	F	P	P
A01855	S	F	F	P	F	F	P
A01900	L	F	P	P	F	P	P
A02000	L	F	P	P	F	P	P
A02100	L	F	F	F	F	F	F
A02110	L	F	P	P	F	F	F
A02120	L	P	P	P	P	P	P

Table 6-4 *Subwatershed Performance Summary (Subwatershed A)*

Subwatershed B

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
B02200	P	P	P	P	P	P	P
B02215	P	P	P	P	P	P	P
B02235	P	P	P	P	P	P	P
B02245	L	P	P	P	P	P	P
B02260	L	P	P	P	P	P	P
B02270	L	P	P	P	P	P	P
B02310	L	F	P	P	F	P	P
B02315	L	F	F	F	F	F	F
B02320	L	P	P	P	P	P	P
B02325	L	P	P	P	P	P	P
B02400	L	P	P	P	F	P	P
B02410	L	P	P	P	F	P	P
B02412	L	F	P	P	F	F	P
B02425	P	F	P	P	F	P	P
B02426	P	F	F	P	F	F	P
B02427	P	F	F	P	F	F	P
B02430	P	F	F	P	F	F	P
B02435	P	F	F	P	F	F	P
B02445	P	F	P	P	F	F	P
B02455	P	P	P	P	P	P	P
B02500	P	P	P	P	P	P	P
B02510	P	P	P	P	P	F	P
B02517P	L	P	P	P	P	P	P
B02600	L	P	P	P	P	P	P
B02610	P	P	P	P	P	P	P
B02615	P	P	P	P	P	P	P
B02616	P	F	F	P	F	F	P
B02617	P	F	F	P	F	F	P
B02618	P	F	F	P	F	F	P
B02620	P	F	F	P	P	F	P
B02622	P	F	F	P	F	F	P
B02700	P	P	P	P	F	F	P
B02706	P	F	P	P	F	F	P
B02707	P	F	F	P	F	F	P
B02710	P	F	F	P	F	F	P
B02800	P	P	F	P	F	F	P
B02900	L	P	P	P	P	P	P
B02910	P	F	F	F	F	F	F
B02930	P	F	F	P	F	F	P
B02965	P	F	F	P	F	F	P

Table 6-5 *Subwatershed Performance Summary (Subwatershed B)*

Subwatershed C

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
C002P	L	P	P	P	P	P	P
C003P	L	P	P	P	P	P	P
C03000	L	F	P	P	P	P	P
C03031P	L	P	P	P	P	P	P
C03040	P	F	F	P	F	F	P
C03050	P	F	F	P	F	F	P
C03055	P	F	F	P	F	F	P
C03100	L	P	P	P	P	P	P
C03120	L	F	P	P	F	P	P
C03123P	L	P	P	P	P	P	P
C03125	P	F	F	F	F	F	F
C03135	P	F	F	F	F	F	F
C03137	L	F	P	P	F	P	P
C03160	P	F	F	F	F	F	F
C03200	L	F	F	P	F	F	P
C03210	L	F	F	P	F	F	F
C03220	L	F	F	P	F	F	P
C03222	L	P	P	P	P	P	P
C03235	L	F	P	P	F	P	P
C03240	L	F	P	P	F	P	P
C03300	L	F	F	F	F	F	F
C03400	P	P	P	P	F	F	P
C03415	P	P	P	P	F	F	P
C03500	L	P	F	F	F	F	F
C03600	L	P	P	P	P	P	P
C03610	L	F	P	P	F	P	P
C03615	L	F	P	P	F	P	P
C03625	P	F	F	P	F	F	P
C03700	L	F	P	P	F	P	P
C03715	L	F	P	P	F	P	P
C03716	L	F	P	P	F	P	P
C03720	P	F	F	P	F	F	P
C03723	P	F	F	P	F	F	P
C03730	P	F	F	P	F	F	P
C03737	P	F	F	P	F	F	P
C03800	P	P	P	P	P	F	F
C03825	P	F	F	F	F	F	F
C03830	P	F	F	F	F	F	F
C03833P	L	P	P	P	P	P	P
C03835P	L	P	P	P	P	P	P
C03837P	L	P	P	P	P	P	P
C03845	P	F	F	F	F	F	F
C03850	P	F	F	F	F	F	F
C03855	P	F	F	F	F	F	F
C03856	P	F	F	F	F	F	F
C06000	L	P	P	P	P	P	P
C06010	L	P	P	P	P	P	P
C06020	L	F	P	P	F	P	P
C06400	L	P	P	P	P	P	P

Table 6-6 *Subwatershed Performance Summary (Subwatershed C)*

Subwatershed D

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
D04000	S	P	P	P	F	F	F
D04010	S	P	P	P	P	P	P
D04015	S	P	P	P	P	P	P
D04030	P	P	P	P	P	P	F
D04100	S	F	F	P	F	F	F
D04200	S	F	F	P	F	F	P
D04300	L	F	F	P	F	F	P
D04315	S	F	P	P	F	P	P
D04400	L	P	P	P	P	P	P
D04500	L	F	P	P	F	P	P
D04511	L	P	P	P	P	P	P
D04512	L	P	P	P	P	P	P
D04513	L	F	P	P	F	P	P
D04515	P	F	P	P	F	P	P
D04530	P	P	F	P	F	F	F
D04542	P	F	F	F	F	F	F
D04550	P	F	F	F	F	F	F
D04555	P	F	F	F	F	F	F
D04565	L	F	F	F	F	F	F
D04600	L	F	F	P	F	F	F
D04700	L	P	P	P	P	P	P
D04715	L	P	P	P	P	P	P
D04800	L	F	P	P	F	F	P
D04815	L	P	P	P	P	P	P
D04900	L	F	P	P	F	F	P
D04913	L	P	P	P	P	P	P
D04915	L	P	P	P	P	P	P
D04925	P	P	P	P	P	P	P
D04930	P	P	F	P	F	F	P
D04935	P	P	P	P	F	F	P
D04947	P	F	F	F	F	F	F
D04949P	L	F	F	P	F	F	P
D04951	P	F	F	P	F	F	P
D04960	P	F	F	F	F	F	F
D04961	P	P	P	P	F	F	P
D05000	L	P	F	P	F	F	P
D05100	L	P	P	P	P	P	P
D05200	L	F	P	P	F	P	P
D05300	L	P	P	P	P	P	P
D05310	L	P	P	P	P	P	P
D05315	L	P	P	P	P	P	P
D05316	L	P	P	P	F	P	P
D05335	P	P	P	P	P	P	P
D05337	P	P	P	P	P	P	P
D05339	L	P	P	P	P	P	P
D05345	P	P	P	P	F	P	P
D05355	P	P	P	P	P	P	P
D05360	L	P	P	P	P	P	P
D05365	P	P	P	P	P	P	P
D05375	P	F	F	F	F	F	F
D05405	L	P	F	P	F	F	P
D05500	L	P	P	P	P	P	P

Table 6-7 *Subwatershed Performance Summary (Subwatershed D)*

Subwatershed D (Continued)

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
D05600	L	F	P	P	F	P	P
D05700	L	F	P	F	F	P	F
D05800	L	P	P	P	P	P	P
D05900	L	P	P	P	P	P	P
D05910	L	F	P	P	F	P	P

cont. Table 6-7 *Subwatershed Performance Summary (Subwatershed D)*

Subwatershed E

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
E020P	L	P	P	P	P	P	P
E08000	S	P	P	F	P	F	F
E08100	L	F	F	P	F	F	P
E08200	L	F	F	F	F	F	F
E08300	L	F	F	P	F	F	P
E08400	L	F	F	P	F	F	P
E08500	L	F	F	P	F	F	F
E08600	L	F	P	P	F	P	P
E08615	L	F	F	F	F	F	F
E08625	L	F	F	F	F	F	F
E08700	L	F	F	P	F	F	F
E08716	L	P	P	P	P	P	P
E08717	L	P	P	P	F	P	P
E08720	L	F	P	P	F	P	P
E08735	L	P	P	P	P	P	P
E08745	L	F	P	P	F	P	P
E08800	L	P	P	P	P	P	P
E08900	L	P	P	P	P	P	P
E09000	L	P	P	P	F	P	P
E09100	L	P	P	P	P	P	P
E09110	L	P	P	P	P	P	P
E09125	L	P	P	P	P	P	P
E09200	L	P	P	P	P	P	P
E09210	L	P	P	P	P	P	P
E09220	L	P	P	P	P	P	P
E09300	L	F	F	F	F	F	F
E09400	L	F	F	F	F	F	F
E09415	S	F	F	P	F	F	F
E09500	L	F	F	F	F	F	F
E09600	S	F	F	F	F	F	F
E09700	L	F	P	P	F	P	P
E09800	L	P	P	P	P	P	P
E09900	L	P	P	P	F	P	P
E10000	L	P	P	P	P	P	P
E10100	L	P	P	P	F	P	F

Table 6-8 *Subwatershed Performance Summary (Subwatershed E)*

Subwatershed E (Continued)

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
E10200	S	F	P	F	F	F	F
E10300	L	P	P	P	F	F	P
E10400	L	F	P	P	F	P	P
E10500	L	P	P	P	P	P	P
E10600	L	P	P	P	F	P	P
E10700	L	P	P	P	F	F	P
E10800	S	P	P	P	F	F	F
E10900	L	P	P	P	P	P	P
E11000	L	F	F	F	F	F	F
E11100	L	P	P	P	F	P	P
E11200	L	F	F	P	F	F	F
E11300	L	P	P	P	F	P	P
E11400	S	F	F	F	F	F	F
E11500	L	F	P	P	F	F	F
E11600	L	F	P	P	F	F	F
E11700	L	F	F	P	F	F	P
E11800	L	F	F	F	F	F	F
E11900	L	F	P	P	F	F	F
E12000	L	F	P	P	F	P	P
E12100	L	P	P	P	F	P	P
E12200	L	F	P	P	F	F	P
E12300	L	P	P	P	F	P	P
E12400	L	F	P	P	F	F	P
E12500	L	F	P	P	F	F	F
E12600	L	P	P	P	F	P	P
E13100	S	P	F	F	F	F	F
E14000	S	P	P	P	P	P	P

cont. Table 6-8 *Subwatershed Performance Summary (Subwatershed E)*

Subwatershed F

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
F15000	S	F	F	F	F	F	F
F15010	S	F	F	F	F	F	F
F15100	L	F	F	P	F	F	P
F15200	L	F	F	P	F	F	F
F15210	L	F	F	F	F	F	F
F15215	L	F	F	P	F	F	F
F15300	S	F	F	F	F	F	F
F15315	S	F	F	F	F	F	F
F15330	S	F	F	F	F	F	F
F15400	S	F	F	F	F	F	F
F15500	L	F	F	P	F	F	P
F15600	S	F	F	F	F	F	F
F15700	L	F	P	P	F	F	P
F15800	L	F	P	P	F	F	F
F15900	S	F	F	F	F	F	F
F16000	L	P	P	P	P	P	P
F16100	L	F	F	P	F	F	P
F16200	S	F	F	F	F	F	F
F16300	L	P	P	P	F	F	P
F16310	L	F	P	P	F	F	P
F16500	L	F	P	P	F	F	F
F16510	L	F	P	P	F	F	P
F16700	L	P	P	P	P	P	P
F16800	S	F	F	F	F	F	F
F16900	S	F	F	F	F	F	F
F17000	L	F	F	F	F	F	F
F17100	L	F	F	F	F	F	F
F17200	L	F	P	P	F	P	P
F17210	L	F	F	F	F	F	F
F17300	L	P	P	P	P	P	P
F17400	L	F	F	F	F	F	F
F17500	L	F	F	P	F	F	P
F17600	S	F	F	F	F	F	F
F17700	L	F	P	F	F	F	F
F17800	L	F	P	P	F	F	P

Table 6-9 *Subwatershed Performance Summary (Subwatershed F)*

Subwatershed G

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
G20000	L	P	P	P	P	P	P
G20100	L	F	F	F	F	F	F
G20200	L	F	P	P	F	F	P
G20300	L	F	P	P	F	F	F
G20400	S	F	F	F	F	F	F
G20500	S	F	F	F	F	F	F
G20600	S	F	F	F	F	F	F
G20700	L	F	P	P	F	P	P
G20800	S	F	P	F	F	F	F
G20810	S	F	F	F	F	F	F
G20900	L	P	P	P	P	P	P
G21000	S	F	F	F	F	F	F
G21010	S	F	F	P	F	F	F
G21100	S	F	F	F	F	F	F
G21110	S	F	F	F	F	F	F
G21200	S	P	P	P	P	P	P
G21300	L	F	F	F	F	F	F
G21400	L	F	F	F	F	F	F
G21415	L	F	P	P	F	P	P
G21500	L	F	F	F	F	F	F
G21600	L	F	F	F	F	F	F
G21700	L	F	F	F	F	F	F
G21715	L	F	P	P	F	P	P
G21800	L	F	P	P	F	P	P
G21810	L	F	F	P	F	F	P
G21900	S	F	F	F	F	F	F
G22000	L	P	P	P	P	P	P
G22000P	L	P	P	P	P	P	P
G22015P	L	P	P	P	P	P	P
G22025	L	P	P	P	P	P	P
G22040	S	F	F	F	F	F	F
G22100	S	F	F	F	F	F	F
G22300	S	P	P	P	F	P	P
G22400	S	F	F	P	F	F	F
G22500	L	F	F	P	F	F	P
G22600	L	P	P	P	F	P	P
G22700	L	F	P	P	F	F	P
G22800	L	F	P	P	F	F	P
G22900	L	F	P	P	F	P	P
G23000	L	F	F	P	F	F	P
G23015	S	P	P	P	F	P	P
G23100	L	F	P	P	F	P	P
G23200	L	F	P	P	F	P	P
G23300	L	P	P	P	F	P	P
G23315	L	P	P	P	F	F	P
G23400	L	F	P	P	F	F	P
G23500	L	P	P	P	F	P	P
G23600	L	F	P	P	F	F	P
G23700	L	F	P	P	F	F	P
G23800	L	P	P	P	F	F	P
G23900	L	P	P	P	F	P	P

Table 6-10 *Subwatershed Performance Summary (Subwatershed G)*

Subwatershed G (Continued)

Basin ID	Roadway Class	Adherence to Level of Service (LOS) Standards					
		Current Conditions			*Future Conditions*		
		10Y/24H	*25Y/24H*	*100Y/24H*	*10Y/24H*	*25Y/24H*	*100Y/24H*
G24000	L	F	P	P	F	F	P
G24100	L	P	P	P	F	P	P
G24200	P	P	P	P	P	P	P
G24216	P	P	P	P	P	P	P
G24225	P	P	P	P	P	P	P
G24230	P	P	P	P	P	P	P
G24300	L	P	P	P	P	P	P
G24320	P	P	P	P	P	P	P
G24322	P	F	F	P	F	F	P
G24330	S	F	F	F	F	F	F
G24335	L	P	P	P	P	P	P
G24340	P	F	F	P	F	P	P
G24341	S	F	F	P	F	P	P
G24400	P	F	P	P	F	F	P
G24500P	L	P	P	P	P	P	P
G24516P	L	P	P	P	P	P	P
G24527P	L	P	P	P	P	P	P
G24530P	L	P	P	P	P	P	P
G24600P	L	P	P	P	P	P	P

cont. Table 6-10 *Subwatershed Performance Summary (Subwatershed G)*

6.6 AREAS OF CONCERN

Long range planning goals would likely focus on ensuring that LOS standards are met through infrastructure improvements. It was not expected that every basin would achieve LOS standards for all storm events. However, there are certain locations within each watershed that are cause for concern due to the degree of the flooding for the (current) design storm event.

Subwatershed A – East Bay Drive from 89th Avenue to 85th Avenue



Figure 6-2 *Subwatershed A Area of Concern*

East of W. Gulf Blvd., this low-lying region of Sunset Beach experiences considerable flooding during the design storm event and current tailwater condition. Up to 3" of roadway flooding would be deemed acceptable based upon the basin's local designation. However, upwards of 1' of flooding depth is documented within this region.

Figure 5-4, Tailwater Elevation Options, plotted a reference "low grade elevation" which was representative of the terrain within this specific location. The "future" tailwater elevation is greater than this referenced elevation.

As such, performance in this area is extremely sensitive to tidal impacts as illustrated by the resulting stage elevations when elevated tailwater conditions are simulated.

Subwatershed B – Gulf Blvd. at 103rd Avenue

Outfall piping which serves this stretch of Gulf Blvd. within Subwatershed B was generally found to be performing in a satisfactory manner. However, immediately south of Downtown, performance issues were noted for areas that are routed to the 103rd Avenue outfall.

As a primary roadway, no flooding depth is permitted for the design storm. Floodplain mapping depicts depths approaching one foot and encroachment into the interior travel lanes. Sidewalk inundation, while not a component of LOS evaluation, is also depicted in this scenario.

Record drawings for this area show the presence of 18" concrete piping; likely suitable for the minimal drainage area for the corresponding collection structures. However, the run is shown to restrict down to a 12" prior to reaching the outfall. It is possible that elimination of this restriction will improve the LOS.

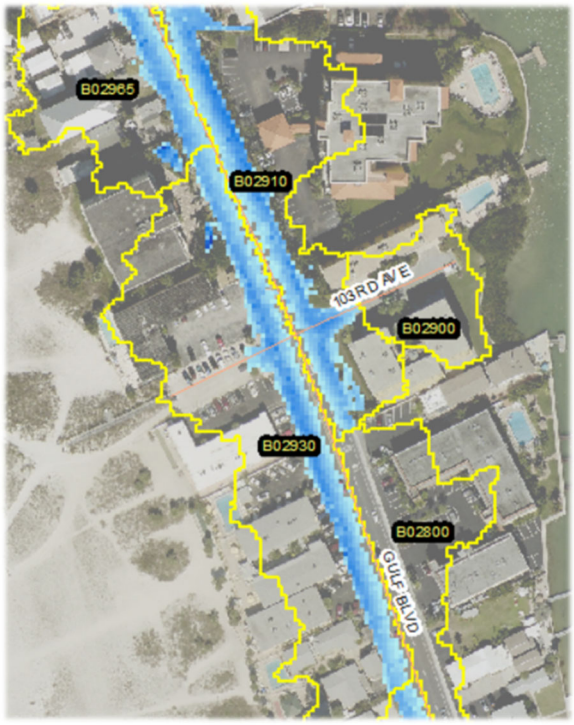


Figure 6-3 *Subwatershed B Area of Concern*

Subwatershed C – Gulf Blvd. from 107th Avenue to 104th Avenue



Figure 6-4 *Subwatershed C Area of Concern*

This section of Gulf Blvd., heavily traveled and located adjacent to the new City Hall complex, experiences severe flooding. At flood depths exceeding 18" for the design storm, LOS compliance discussion is outweighed by the safety concerns such a flooding condition would present.

Two (2) outfalls serve this area of concern; the large elliptical outfall north of Downtown serves the Gulf Blvd. / 107th Avenue intersection while remaining areas are routed to the 24" outfall located at 105th Avenue. The 105th Avenue outfall will likely need to be upsized considering that it serves a majority impervious basin greater than 10 acres with minimal hydraulic grade line slope.

Subwatershed D – Gulf Blvd. from 122nd Avenue to 121st Avenue

Served by the 36" outfall located at 123rd Avenue, the above-referenced intersections show flooding depths which, by definition for primary basins, results in the basin not reaching LOS goals. Roadway centerline inundation is shown for segments due north and south of 122nd Avenue.

While not depicted in the adjacent figure, minor flooding is also shown present at the 124th Avenue / Gulf Blvd. intersection.

It shall be noted that, while only a local roadway, significant flooding is also depicted on 1st Street West. The road is hydrologically isolated from a piped outfall and only discharges through a series of exfiltration trenches located at 125th Avenue and 124th Avenue. Connection to the FDOT's drainage system will be explored.



Figure 6-5 *Subwatershed D Area of Concern*

Subwatershed E – Capri Blvd. between 3rd Street East & 4th Street East

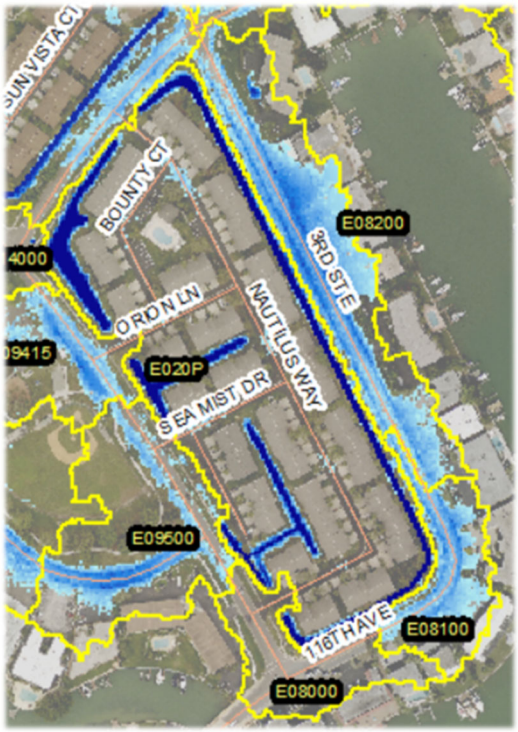


Figure 6-6 *Subwatershed E Area of Concern*

Capri Blvd. serves as the only ingress/egress for residents east of the Isle of Capri's main landmass. As such, this roadway was designated as a secondary roadway. Figure 6-6 illustrates that this segment of roadway, between 3rd Street and 4th Street East, fails to meet LOS requirements.

While the associated basin area is slightly over 3 acres, the low time of concentration and high impervious nature results in a runoff volume that overwhelms the existing 15" outfall. The existing outfall traverses a vacant lot which could suggest that construction complexity would be minimal should this culvert be upsized.

It is possible that, while not designated as a secondary roadway, 3rd Street East may be considered highly traveled for residents entering the Isle. As such, improvements may be warranted where flooding is currently shown.

Subwatershed F – 112th Avenue



Figure 6-7 *Subwatershed F Area of Concern*

LOS requirements are not met for the intersection at the immediate entrance to the Isle of Palms. Furthermore, intersections immediately northeast of the entrance share similar LOS deficiencies. Multiple outfalls serve this general area and all may need to be improved to achieve the proposed functionality goals. As noted in prior sections of this report, multiple structures were found without access points within this general area. Any improvements would likely also be expanded to address this hinderance to maintenance.

To a lesser degree, performance issues are also observed on 115th Avenue. Centerline inundation is shown at 4th Street East; an intersection that must be traversed by all residents who live on the "fingers". Flooding depths at this location increase when the model is executed with the future tailwater condition.

Subwatershed G – Paradise Blvd. / Causeway Intersection

This intersection of a primary and secondary roadway has limited drainage facilities within the vicinity. As such, LOS improvements are needed to address the degree of flooding identified within the H&H model.

This intersection is served by two (2) outfalls; one routing flows west and another which directs flows to the east through the Treasure Cay property. It is possible that isolating the public and private flows would improve performance at this location.

The network of local roadways south of Treasure Bay and west of Paradise Blvd. are shown to be inundated for the design storm event. Multiple outfalls serve this problematic region.

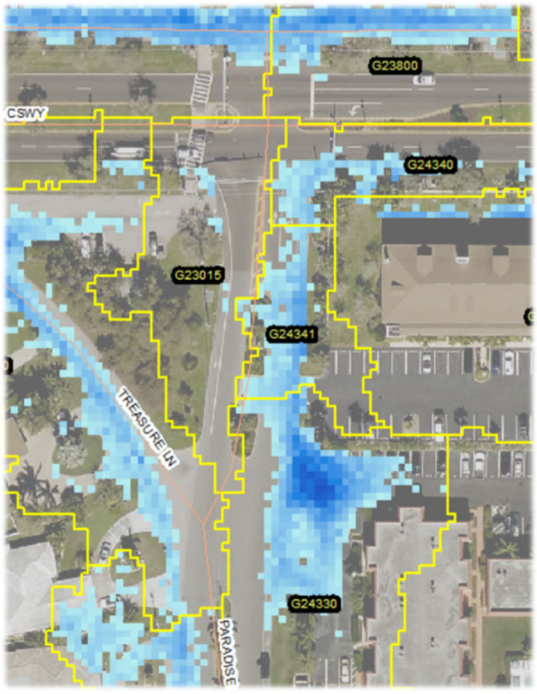


Figure 6-8 *Subwatershed G Area of Concern*

7.0 PLANNING RECOMMENDATIONS

Level of service (LOS) achievements were summarized to assess the watershed's overall performance. These results guided recommendations for future City planning.

7.1 WATERSHED PERFORMANCE EVALUATION

Level of Service (LOS) grades, summarized in Section 6, document City-wide performance for multiple storm events. Supplemental LOS grades were also assigned for a higher tailwater scenario which could be indicative of future conditions when considering the threat of sea level rise (SLR). Areas of concern, defined as locations where considerable flooding is present, were present in each subwatershed and identified in the aforementioned report section.

Section 6 of the report recognizes that achieving a passing LOS was not expected for all basins. Table 7-1, as seen below, tabulates overall watershed performance for the three (3) storm events using the "current" tailwater condition.

Primary			Secondary			Local		
10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H
43.42%	44.74%	72.37%	27.45%	39.22%	41.18%	49.79%	75.97%	80.26%

Table 7-1 *Percentage of Basins Meeting LOS Goals (Current Condition)*

When reviewing LOS grades, it shall be noted that the pass / fail nature of the rubric does not consider the extent of flooding beyond the depth threshold. Exceedance of the flooding depth parameters by an inch, or in severe cases by a foot or more, would result in identical scoring. Additionally, the level pool acreage of flooding is not considered when assigning LOS grades. While overall degree of failure is not a component of this metric, the above LOS summary table provides a "snapshot" of City-wide stormwater infrastructure performance during certain storm events.

LOS goals for the 10-Year / 24-Hour storm event, identified as the design storm in Section 6, disallow any roadway flooding for primary and secondary roads. Flooding depths of up to 3" are permitted for local roadways. Secondary roads generally performed poorly during this storm event while a reasonable level of effectiveness was observed for primary and local roadways. As the depth and intensity of storm events increase, performance expectations are reduced. A considerable increase in storm-relative performance can be seen for secondary and local roadways when accessing 25-Year / 24-Hour LOS goals. With primary roadway's required to achieve a LOS B for this larger storm event, the percent of basins passing remains relatively unchanged.

The 100-Year / 24-Hour storm event represents the most severe rainfall scenario evaluated for this study. As such, the LOS goals have been calibrated to expect a performance level which corresponds to the infrequency and severity of the event. A significant number of primary and local roadway basins are found to be passing while secondary roadway performance is lower than desired.

Earlier sections of this report highlight the correlation between tailwater elevation (i.e. tide) and stormwater system performance. The below table documents the change in performance when elevating the tailwater conditions by approximately 18".

Primary			Secondary			Local		
10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H	10Y/24H	25Y/24H	100Y/24H
Current Conditions								
43.42%	44.74%	72.37%	27.45%	39.22%	41.18%	49.79%	75.97%	80.26%
Future Conditions								
31.58%	30.26%	67.11%	23.53%	35.29%	39.22%	39.48%	65.67%	69.96%

Table 7-2 *Percentage of Basins Meeting LOS Goals (Current vs. Future Condition)*

Increasing the tailwater condition to this degree reduces the number of "passing" basins by approximately 10% for the evaluated design storms. An elevated tailwater scenario also exacerbates performance deficiencies in basins deemed "failing" in earlier assessments; a significant impact not quantified by the performance reduction presented above. In a similar manner, stormwater modeling results show increased water elevations within basin's which maintained a "passing" grade.

7.2 RESILIENCY ALTERNATIVES

Preparation and execution of a City-wide hydrologic and hydraulic (H&H) stormwater model facilitated a more regional assessment of the City. Localized infrastructure deficiencies were able to be reviewed to determine how specific inefficiencies impacted adjacent systems. Additionally, a greater understanding of how the watershed responds to various environmental factors (most notably changes in rainfall depth/intensity and tidal conditions) was also realized. A predominant goal of this assessment was to develop project recommendations where performance improvements were sought. It is our opinion that these projects must be developed in a manner that accommodates future growth, accounts for projected environmental changes, and adheres to the goals and objectives set forth in the City's Strategic Plan.

The City's renowned beaches will continue to attract development projects. With vacant parcels sparse, these projects will most likely focus on redeveloping existing properties. Generally speaking, the City's built out nature and development density results in a high percentage of impervious surfaces (concrete, asphalt, building, etc.). City regulations cross reference Southwest Florida Water Management District's (SWFWMD) stormwater management rules which restricts an increase in offsite discharge rates. Therefore, with the City possessing a high

percentage of impervious lands and the inability of a development to increase offsite flows, it is not believed that stormwater improvement projects would need to account for additional runoff generated by new development or redevelopment.

Becoming an environmentally sustainable and resilient community is a stated goal within the City's Strategic Plan. Achieving this goal requires environmental stewardship while also recognizing and accounting for environmental changes that could impact the daily activities of the City's residents and visitors. From a stormwater perspective, the greatest challenge faced by the City is the threat of sea level rise.

Section 5 included discussion on the various sea level rise adjustment factors published by NOAA, the Army Corps of Engineers and the FDOT. Projections presented by NOAA are regionally accepted and recommended by the Tampa Bay Climate Science Advisory Panel (CSAP) for infrastructure planning purposes. Three unique sea level rise scenarios within the NOAA projections have been deemed worthy of consideration by the CSAP (Intermediate-Low, Intermediate and High).

This report evaluates "future" conditions based upon the Intermediate-Low scenario. However, it is recommended that future planning utilize the Intermediate scenario since this projection better represents the average of the accepted scenarios. When identifying variables to be used for the "future" conditions model, the inability to utilize the Intermediate scenario was readily apparent. The representative tailwater would reside at elevation 4.10' which, as seen in Figure 7-1, would represent significant tidal flooding prior to precipitation.

Conventional stormwater management, reliant upon a vertical difference between the point of collection and point of discharge, would not be feasible in such a scenario. Without terrain modification, the City would need to consider repurposing low-lying sections of the City, constructing flood barriers (operable or static) or natural protection systems in order to suitably manage stormwater with this tailwater condition.

Flood barriers function by breaking the connection between the stormwater system and point of discharge. Runoff generated within the confines of static flood barriers would need to be collected and discharged via pump station since the use of a static flood barrier implies that the water elevation at the point of discharge is below the watershed. For reference purposes, an elevated seawall is essentially a static flood barrier.

Earlier sections of this report highlighted the fact that the City utilizes multiple smaller diameter outfalls as opposed to a few larger points of discharge. Managing stormwater with this configuration and the hypothetical presence of static flood barriers would require a means of pumping at each outfall. Piping network consolidation would allow for the system to function with fewer pump stations.



Figure 7-1 *Limits of Flooding (Elevation 4.10')*

The strategic use of static flood barriers (and stormwater pumping stations) is a sound means to effectively manage stormwater when combatting the threat of level rise. However, certain challenges present themselves should static flood barriers be the singular means to improve City resiliency. Abandoning gravity discharge to tidal waters requires that the City become completely reliant upon pumping stations as the sole means to evacuate rainfall. Each station would require a general area for operations, an electrical control system, and in certain cases, a redundant power source. Adding this many stations to the City's portfolio represents a heightened maintenance burden and greater capital output for operation when compared to the City's current stormwater system. Available lands, infrequently present within the City, would be needed to site the stations.

Converting to a pump-based stormwater system also presents more risk when considering infrastructure failure. The shutdown of a stormwater pumping station would be operationally equivalent to a blockage within an existing City-owned outfall pipe. Currently, an outfall blockage could theoretically pool within the collection basin, stage up to the high point in a resident's yard and spill over the seawall. Incorporation of static flood barriers would likely result in the seawall (or similar retaining structure) being located at a higher elevation. The presence of this elevated barrier, coupled with station failure, would remove the "pop off" (or relief) point present in the City's terrain and result in a larger area being inundated. This additional risk element, coupled with heightened maintenance and operational requirements, disincentives static flood barriers as the sole means to provide a suitable level of service with higher tailwater elevations.

This report recognizes that backflow prevention valves are functionally similar to static flood barriers. These devices are installed on the downstream end of outfall pipes and restrict tidal water from "backing up" into the system. When a certain degree of pressure is applied to the upstream face of the appurtenance, water is able to exit the system. Backflow prevention valves are a suitable means to address sunny day flooding in localized areas. However, these devices only allow for water to exit the system when the upstream elevation exceeds the downstream elevation. Therefore, for elevated tide conditions, rainfall would need to be collected and pooled to an elevation higher than the tide to flow out. While backflow prevention valves are effective in certain conditions and can improve the longevity of a roadway, this report does not consider this technology as the mitigation measure to address the challenges associated with sea level rise.

The placement of operable flood barriers at John's Pass, Blind Pass and other locations throughout Boca Ciega Bay would certainly be an effective means of isolating the City from tidal impacts. However, this mitigation strategy was not reviewed in detail for this assessment when considering the significant cost and regional partnerships needed to successfully implement such a system.

Prior to the development of Florida's coastline, natural systems served as a means of flood control for inland areas. Coastal dunes, mangrove strands and barrier islands serve a flood protection purpose while providing habitat and other ecological value. One of the remaining natural coastal dunes systems in Pinellas County is located within the City. It is recommended that the City continue to support the coastal dunes as this natural system provides a much-needed barrier between tidal waters and low-lying areas of the City. The dense and highly urbanized nature of the City's waterfront may not facilitate natural system development to the extent required to provide flood protection to the City. However, the City should continue to pursue

regional partnerships which could lead to the development of larger, more effective, natural systems which could serve this purpose.

7.3 RECOMMENDATIONS

Following regional planning recommendations for sea level rise presents a scenario where typical high tide events will result in considerable roadway inundation. Mitigation strategies were presented above that would not entail terrain modification. However, there are significant implementation and functional limitations that would result from these pursuits. As such, it is recommended that the City consider terrain modification as a tool to combat sea level rise.

Terrain modification, or elevating low lying sections of the City and roadway network, should be done to establish a vertical buffer between the point of collection and point of discharge. While this would require that the City transition away from "no fill" policies, the City would be able to utilize more conventional, cost-effective and reliable systems for stormwater management. Rising above sea level challenges in this manner requires that long-term, intermediate and immediate goals be established.

Incorporating the Intermediate sea level rise scenario into stormwater infrastructure planning would result in a tailwater elevation of 4.10'. In order to maximize effectiveness of gravity flow stormwater systems, it is recommended that the low point of any collection basin be above elevation 5.10; providing a minimum of one (1) foot of freeboard between the tide and low road elevation. While not a focal point of this study, pursuing this degree of freeboard (at a minimum) would elevate a roadway's base above high tide improving longevity and protecting the City's investment. Achieving a low point of road minimum elevation of 5.10' has been identified as a recommended long-term goal for future planning activities.

Terrain models utilized for this study show many locations where roadways are at or below elevation 3.00'. Furthermore, elevation certificates available on file show many structures have low adjacent grades that would not facilitate the proposed low roadway elevation. This illustrates that, in only but a few locations, achieving this goal in a single project would not be practical without drastic changes to the use and aesthetics of abutting properties. However, the City's long-term goal can be achieved by ensuring that immediate goals are met on future infrastructure projects. Achieving a low point of road minimum elevation of 3.25' has been identified as a recommended immediate goal for future planning activities.

The following sequence is envisioned to achieve the City's long term goal:

Stage 1

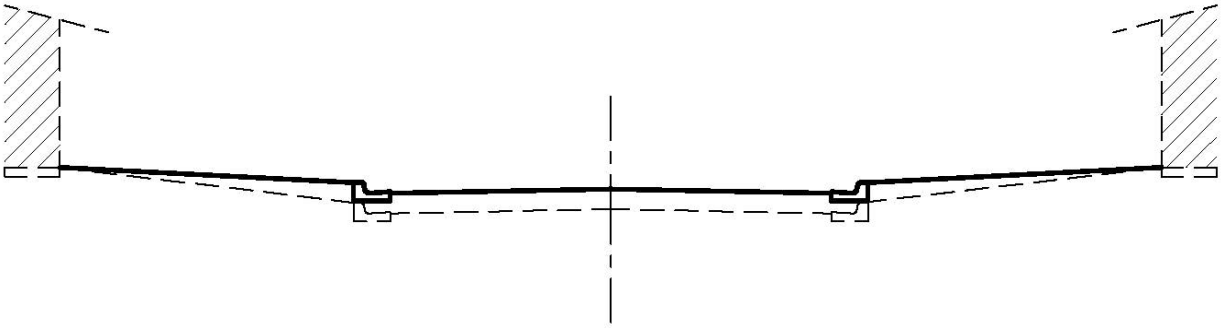


Figure 7-2 *Long Term Goal Sequence (Stage 1)*

Stage 1 would entail meeting, at a minimum, the City's immediate goal by achieving a low road elevation of 3.25'. In many locations, positive fall on driveways will be maintained. Where positive fall cannot be provided, back of curb drainage will be needed.

It is recommended that the City consider achieving greater low road elevations during Stage 1 should this pursuit not impact the aesthetics of the area or abutting properties.

Stage 2

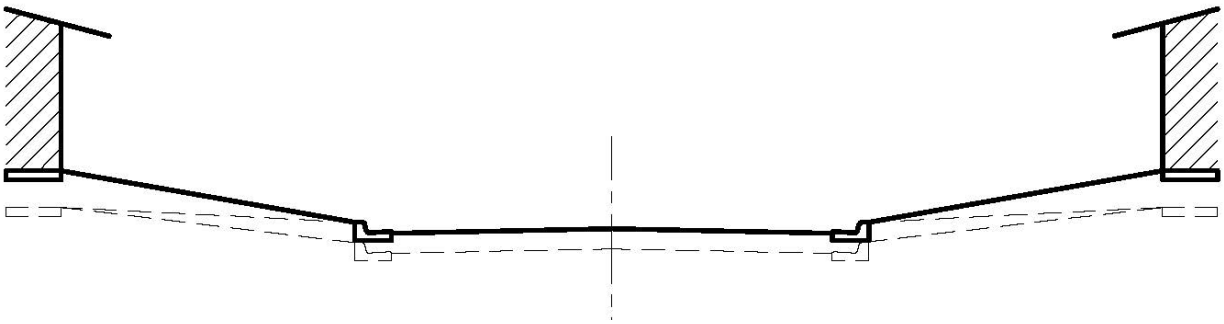


Figure 7-3 *Long Term Goal Sequence (Stage 2)*

Pursuit of the City's long-term goal will require that a minimum low floor / garage elevation be established. Setting this elevation allows for new structures to be built in such a manner that positive fall towards the road can be maintained once the minimum low road elevation of 5.10' is achieved. Prior sections of this report identify the sea level rise projection planning timeline through 2100. Therefore, within the next eighty (80) years, it is likely that residential and commercial properties will be reconstructed or, as a result of the FEMA 50% rule, elevated in place.

It shall be noted that allowing for elevated low floors / garages could present offsite drainage concerns. As new structures are developed under this criterion, the City will need to require that each property owner can suitably management stormwater runoff.

It shall be noted that elevating low floors / garages may require a more detailed review for properties within designated velocity zones. Furthermore, structures that will reside within the (yet to be formally delineated) coastal A zone may require additional consideration.

Stage 3

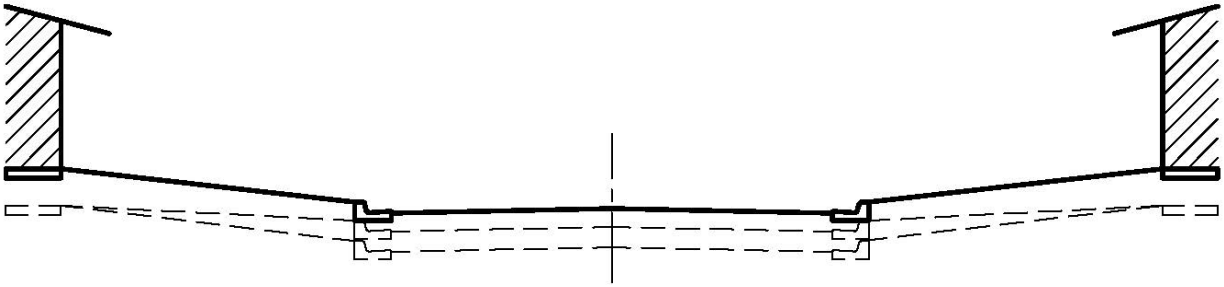


Figure 7-4 *Long Term Goal Sequence (Stage 3)*

Similar to structure improvement assumptions, conventional roadway rehabilitation timelines suggest that each City roadway would be reconstructed / improved at least twice throughout the planning timeline. Subsequent roadway improvement projects would allow for the final roadway "lift" to occur. Driveway / parkway slopes would be softened while maintaining positive fall towards the roadway.

Please reference the below for a summary of the recommended terrain modification goals.

Terrain Modification Goal	Low Road Elevation (NAVD 1988)
Long-Term	5.10'
Intermediate	4.10'
Immediate	3.25'

Table 7-3 *Terrain Modification Goal Summary Table*

Pursuit of these goals will require heightened scrutiny during the project development and design phase. Elevating roadways reduces storage volume which, in some cases, could result in increased stage elevations during larger storm events. While a design storm has been identified in prior sections of this report, a critical storm analysis will need to be performed as a part of the design process. Topographic survey obtained for design and construction purposes will need to extend well beyond the conventional acquisition limits. At a minimum, finished floor elevations and low adjacent grades should be known for all properties within the limits of the project.

Specific attention shall be paid to locations where overland flow transfer occurs during larger storm events. Permitting the elevation of properties will result in scenarios where a handful of lower parcels have yet to be developed. To ensure that these properties are not adversely impacted by the program, an analysis of a partially "built out" scenario may be needed.

Utility improvement projects which entail gravity piping typically result in the need to restore a considerable percentage of a roadway. Therefore, the City may consider adding terrain modification to the scope of utility improvement projects as a means to expedite the achievement of immediate or intermediate goals while reducing overall construction costs associated with roadway improvement and rehabilitation.

7.4 TAILWATER CONSIDERATIONS

A low road elevation of 5.10' has been identified as the long-term terrain modification goal. This elevation was based upon providing one (1) foot of freeboard above the projected Year 2100 tailwater condition. In order to maintain this relationship, it is recommended that new stormwater systems be designed utilizing a tailwater elevation one foot below the proposed low road elevation.

It is understood that updated sea level rise projections will be published throughout the implementation of this program. Predictions may result in elevated Year 2100 conditions when compared to the current dataset used for this report. While the City should continue to monitor trends in sea level rise research, it may be beneficial to utilize the identified terrain modification goals for the foreseeable future regardless of projection changes. Accomplishing the long-term goal will present a unique challenge when considering the City's current topography and built out nature. Changing the long-term goal each time new projections are issued could result in the development and design community feel as if these goals are a "moving target". Consistency in what the end goal is may improve program stability increasing the probability that program is successful.

The phenomenon of sea level rise will likely continue beyond the year 2100. Therefore, it is likely that new long-term goals may need to be established towards the later years of this program.

7.5 IMPLEMENTATION TIMELINE

Achieving the long-term terrain modification goal will require changes to how the City permits development and designs infrastructure improvements. It is not practical to suggest that all projects moving forward incorporate the recommendations of this report. Many projects may be in the later parts of the design stage and others may be funded based upon a previously defined scope. Including terrain modification in active projects presents timing and funding challenges. Therefore, to keep current projects on schedule while pivoting to the future, it is recommended that terrain modification be a component of all projects that begin design in FY 2022 or later.

8.0 PROJECT RECOMMENDATIONS

An analysis was performed by Advanced Engineering & Design, Inc. (AED) to identify projects that could result in level of service (LOS) improvements and /or improve water quality. Each project proposes infrastructure improvements to the degree needed to achieve the LOS goals identified in prior sections. A summary of the presented projects can be seen below:

Project Name	Flood Control	Water Quality
Downtown Drainage Improvements	X	
115th Avenue Reconstruction	X	X
112th Avenue Drainage Improvements	X	X
Sunshine Beach Stormwater Pump Station	X	
Sunset Beach Drainage Improvements	X	
116th & 117th Avenue Drainage Improvements	X	X
3rd Street East Drainage Improvements	X	X
Paradise Blvd. Drainage Improvements	X	X
120th Avenue Stormwater Pump Station	X	
West Treasure Island Causeway BMPs	X	X

Table 8-1 *Summary of Project Recommendations*

Please reference Figure 8-1 to view the location of these projects.

LOS goals were outlined for the 10-Year / 24-Hour event, the 25-Year / 24-Hour event and the 100-Year / 24-Hour storm event. While a future improvement would need to ensure that all of these LOS goals are met, this report focuses on the design storm defined as the 10-Year / 24-Hour event in prior sections. Selection was based upon the understanding that the Special Flood Hazard Area (SFHA) is predominantly surge based and stormwater infrastructure improvements will not alter the limits nor depth of flooding at this elevation (minimum elevation of 11.00'). Evaluation of more severe storm events, specifically the 100-Year / 24-Hour event, will be critical in locations where terrain modification is proposed.

All of the projects presented follow the planning recommendation guidelines set forth in the prior section. Elevations of public and private property were reviewed in great detail to determine which terrain modification goal could be achieved. Stormwater infrastructure was sized based upon the tailwater considerations outlined in Section 7. For purposes of this report, the tailwater elevations were modified based upon existing terrain to maintain this spatial relationship.

It shall be noted that each project can be pursued independently as project sequencing is not required to achieve the stated LOS goals. Projects have been listed in no particular order.

Project-specific construction pricing represents present day values with no escalation factor.

BMP Locations
City of Treasure Island Watershed Management Plan

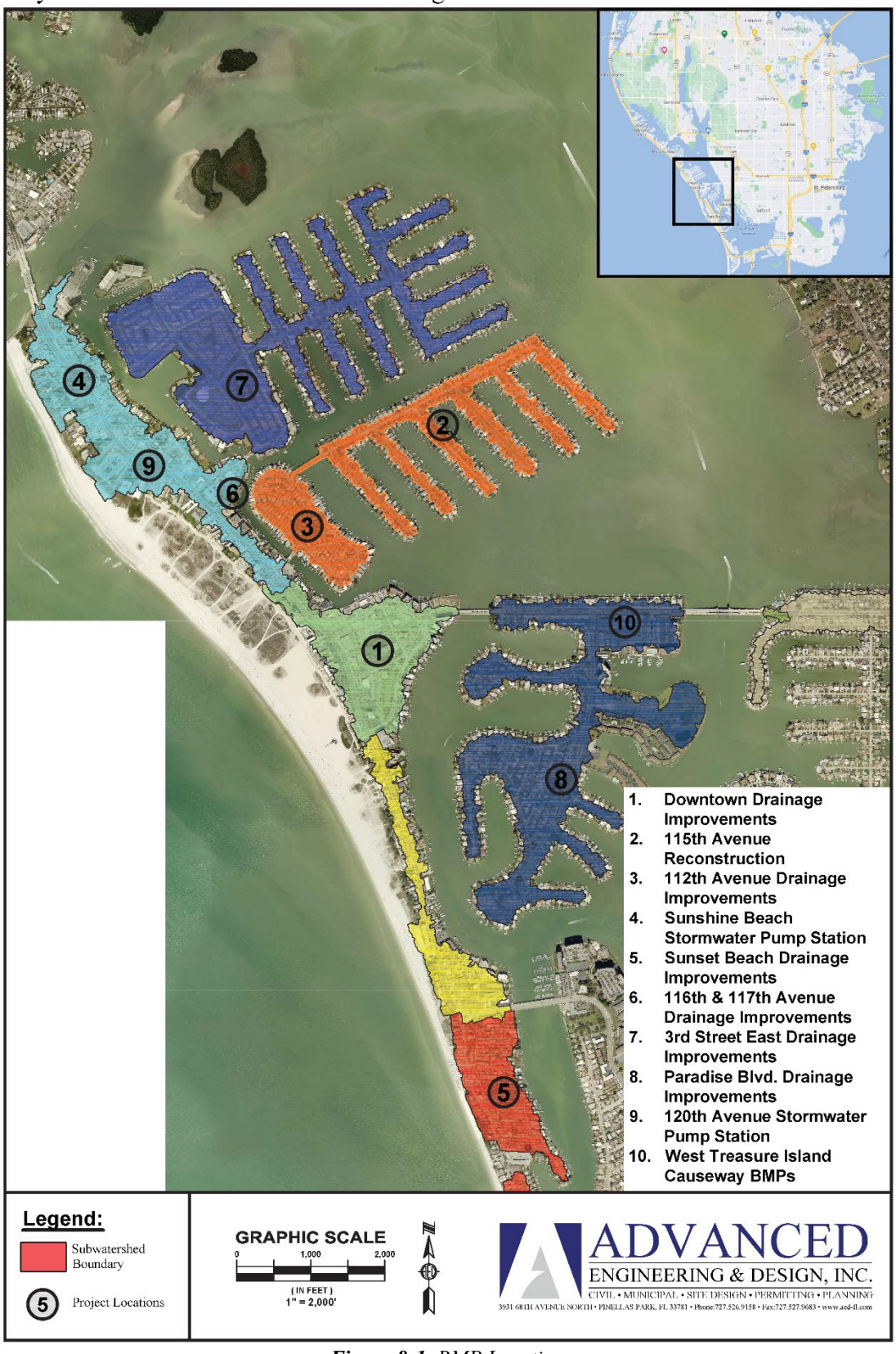


Figure 8-1 *BMP Locations*

8.1 Downtown Drainage Improvements

Located within Subwatershed C, the Downtown area represents over fifty (50) acres of land mass with multiple outfalls. Gulf Blvd., a state-owned roadway, does not meet the LOS goals outlined for a primary roadway within this subwatershed. This report does not recommend that the City improve State-owned infrastructure. However, for this and other projects, there are opportunities to improve City-owned infrastructure in a manner that results in secondary improvements along Gulf Blvd. The proposed projects also consider that City-funded elevation adjustments to Gulf Blvd. are not likely.

The segment of Gulf Blvd. traversing the Downtown subwatershed is served by two (2) different outfalls; a 24" outfall that runs east on 105th Avenue and a large elliptical outfall located on the side property line of a private parcel. The intersection of 107th Avenue and areas north drain through the aforementioned large elliptical culvert.



Photograph 8-1 *Pipe Bulkhead*

When performing field reconnaissance, bulkheads were observed within the pipes directly upstream of the large elliptical culvert. As seen in the attached photograph, these bulkheads represent significant obstructions which impact performance of the pipe. The Florida Department of Transportation (FDOT) is investigating the presence and purpose of these pipe modifications as their removal has been requested. This project evaluates LOS goals with these bulkheads remaining in place. Naturally, additional improvements can be expected upon removal.

Review of the modeling results finds that the City-owned infrastructure on 107th Avenue, a primary roadway, is undersized. These performance inefficiencies result in an overland transfer of stormwater to the lower Gulf Blvd. basins. Figure 8-1 outlines the infrastructure improvements proposed for this project which entails the construction of new structures and piping along 107th Avenue.

Project Benefits

Piping improvements are proposed along 1st Street East, north and south of 107th Avenue, to ensure that LOS goals are met for 107th Avenue as well as 104th & 108th Avenue. Nearly 5" of stage reduction is anticipated at the Gulf Blvd. / 105th Avenue intersection through improvement of the outfall piping. However, with a segment of the roadway below the tailwater elevation and terrain modification on the State-owned roadway unlikely, achieving LOS goals at this intersection will require partnering with FDOT.

PROJECT COST

The estimated opinion of construction cost is $7,638,662.97. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

Improving the outfall from Basin C03300, in lieu of constructing the 24" RCP interconnect, may result in a project cost savings. Additional investigation regarding easement presence and size will be needed.

Achieving the terrain modification goals for 107th Avenue will require reconstruction of private parking lots on both the north and south sides of the roadway. Property owner approval will be needed in order perform these activities.

Downtown Drainage Improvements
City of Treasure Island Watershed Management Plan

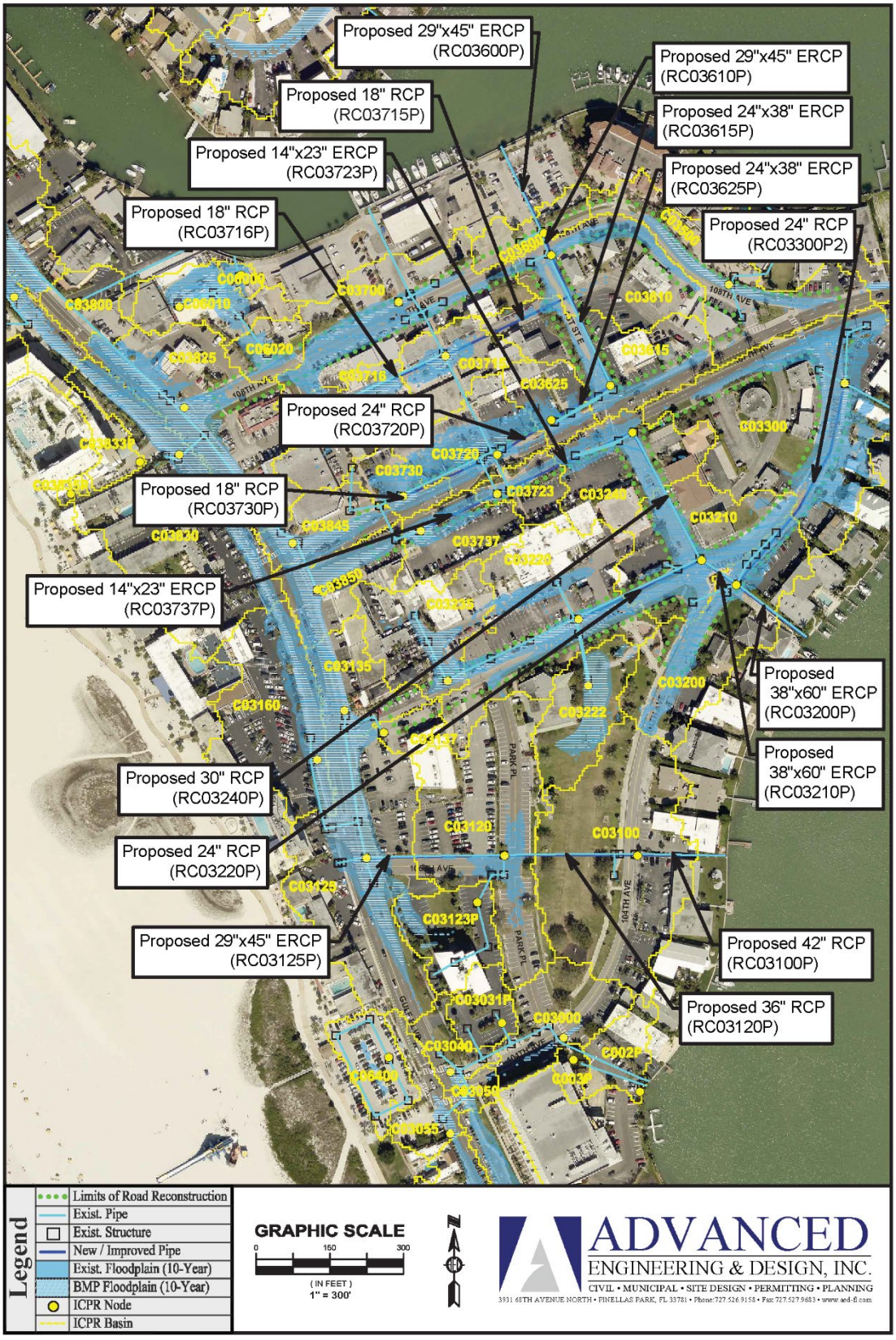


Figure 8-2 *Downtown Drainage Improvements*

8.2 115TH AVENUE RECONSTRUCTION

115th Avenue, identified as a secondary roadway, serves as the main point of access to the eastern portions of the Isle of Palms neighborhood. The roadway drains through multiple outfalls that are typically located at side street intersections. A majority of the project area resides below the minimum desired low road elevation.

Low impact development (LID) elements proposed for this project are impervious reduction and bioretention. Roadway reconstruction is proposed in a manner that will transform the roadway from a conventional crowned section to an inverted section with a 10' depressed median. Runoff from adjacent properties and the roadway will flow into the depressed median where elevated ditch bottom inlets will be located. These elevated structures will allow for the first ¼" of runoff to infiltrate providing a water quality benefit to the project. Existing outfalls, which are located on the side lot lines of parcels, would be improved and directly connected to the elevated structures within the median.

Reducing impervious area would result in the loss of the bicycle lane on either side of the roadway. However, when considering the roadway's design speed and traffic volume, incorporating shared lane markings would essentially replicate this function. Vegetation within the median would provide an aesthetic benefit while the roadway width reduction could also provide a degree traffic calming.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this secondary roadway. With stages reduced in the design storm, overland flow transfer between 115th Avenue and adjacent basins is not present. This results in stage reductions between 2" – 4" for many of the side streets. Incorporating LID elements will result in a total nitrogen (TN) load reduction of approximately 77 pounds / year and a total phosphorus (TP) load reduction of approximately 10 pounds / year.

PROJECT COST

The estimated opinion of construction cost is $4,296,019.06. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Immediate (El. 3.25')

PROJECT CONSIDERATIONS

When considering the construction footprint associated with the improvements, a sidewalk could be added as a scope item with minimal additional cost. It is believed the sidewalk would best fit within the southern parkway when considering right-of-way limits and points of pedestrian access. Outfall improvements will require that the presence and size of easements be evaluated.

115th Avenue Reconstruction
City of Treasure Island Watershed Management Plan



Figure 8-3 *115th Avenue Reconstruction*

8.3 112TH AVENUE DRAINAGE IMPROVEMENTS

Located within Subwatershed F, 112th Avenue serves as the only access to the Isle of Palms neighborhood. This area is served by a multitude of independent systems. Many of these systems have constructed-in-place structures and limited points of access which increases maintenance difficulty.

The proposed improvements would entail improving two (2) existing outfalls. The northern outfall at the intersection of 115th Avenue and 3rd Street East would be upsized to 24". Two existing outfalls off of 3rd Street East would remain in place and collect flows from one side of the roadway. Existing structures on the west side of the road would be redirected to the new outfall proposed at the intersection of 112th Avenue and 1st Street East.

Water quality improvements are proposed to be accomplished through the use of a treatment structure. For purposes of system uniformity, a nutrient separating baffle box has been considered for use.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this secondary roadway. 3rd Street East, classified as a local roadway, would experience between 6" – 12" of stage reduction due to a reduction in overland flow transfer. Inclusion of stormwater treatment technology will result in a total nitrogen (TN) load reduction of approximately 45 pounds / year and a total phosphorus (TP) load reduction of approximately 6 pounds / year.

PROJECT COST

The estimated opinion of construction cost is $2,270,082.03. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

As currently proposed, improved outfalls are all located on City-owned lands so easement acquisition may not be needed.

Elevation modifications to the roadway may allow for the existing curbing to the replaced with an upright curb and gutter. Coupled with an expansion of the sidewalk to a six-foot width, pedestrian safety could be improved in conjunction with the base scope of work.

112th Avenue Drainage Improvements
City of Treasure Island Watershed Management Plan

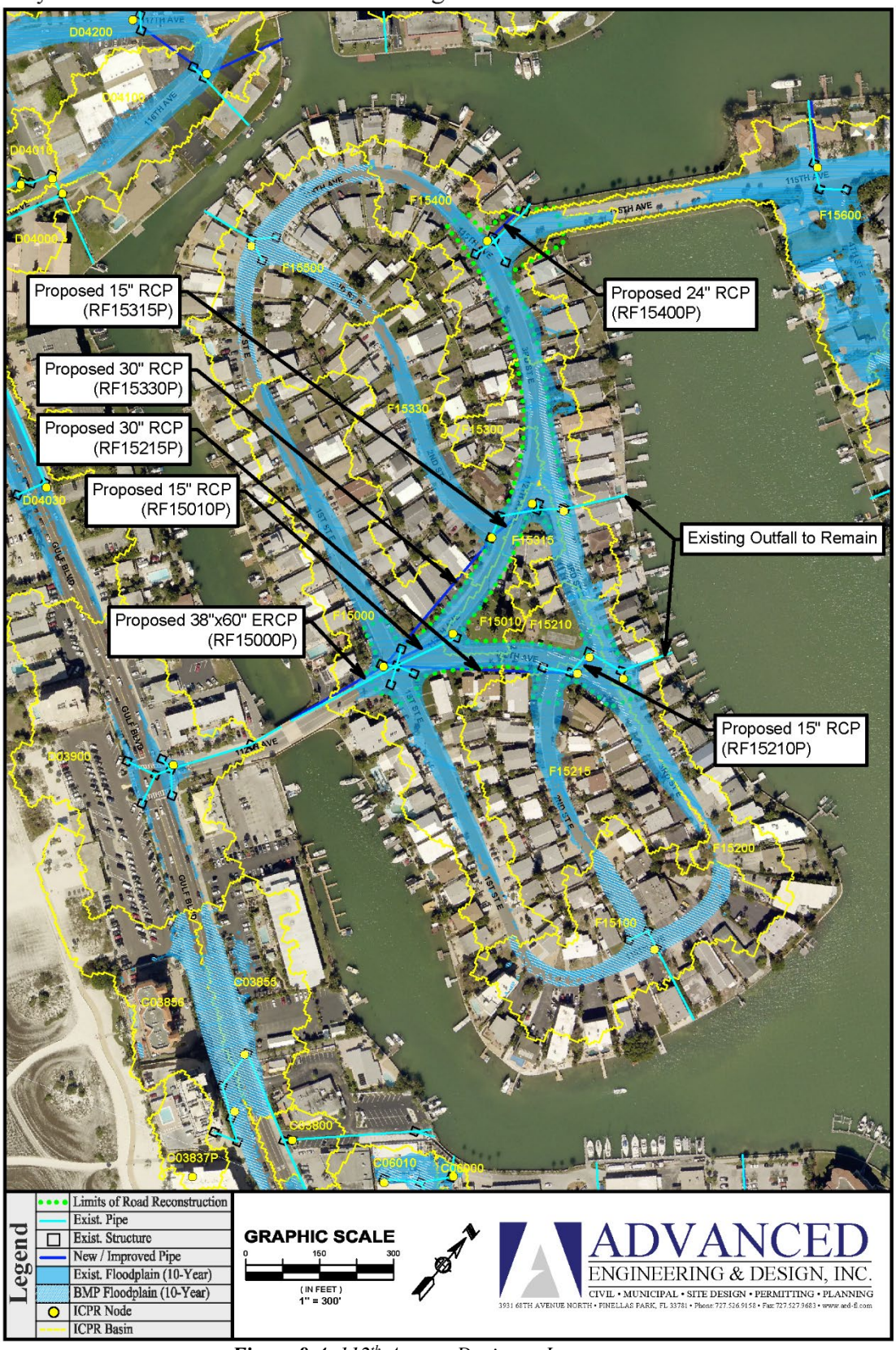


Figure 8-4 *112th Avenue Drainage Improvements*

8.4 SUNSHINE BEACH STORMWATER PUMP STATION

Located with Subwatershed D, 1st Street West is located within a depressional area between 124th and 126th Avenue. This roadway does not have a positive drainage outlet as it is bounded to the west by the beach and to the east by the FDOT's system on Gulf Blvd. Recent improvements performed by the City have greatly assisted performance in this area. However, the exfiltration discharge systems which serve this basin are not suitable to convey the design storm to the extent needed to achieve the City's LOS goals.

The FDOT's drainage system on Gulf Blvd. represents the nearest possible point of connection for any conventional stormwater improvements proposed within this basin. Routing runoff to the State-owned system would require a Drainage Connection Permit. It is assumed that this permit would not be able to be obtained since the project could not meet one of the Department's core requirements; replicating the pre-improvement runoff rate. No flows from this basin currently enter the Department's system. As such, collected stormwater would need to be routed east underneath Gulf Blvd. or west to the beach.

A 15 HP stormwater pump station is proposed for this project. Force main installation would entail a trenchless crossing of Gulf Blvd. and connection to a City-owned structure at the intersection of Lagoon Lane and 124th Avenue. Outfall improvements are proposed in conjunction with this connection to account for the addition of new flow.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this local roadway. It is believed that an increase in pump size to 20 HP could exceed the LOS goals for a local roadway. A pump size increase to this extent may have a negligible impact on costs associated with other station-related appurtenances.

PROJECT COST

The estimated opinion of construction cost is $1,476,492.19. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

By nature of the basin being located within a depressional area, the roadway is confined by higher elevations on all sides. The presence of this ridge and the lack of a gravity connection to this basin results in a future tailwater condition of 4.10' having no impact on the performance of the system. Terrain modification would not be needed to achieve the City's desired goals in this location.

PROJECT CONSIDERATIONS

With a functioning exfiltration system in place, removal is not recommended.

Sunshine Beach Stormwater Pump Station
City of Treasure Island Watershed Management Plan

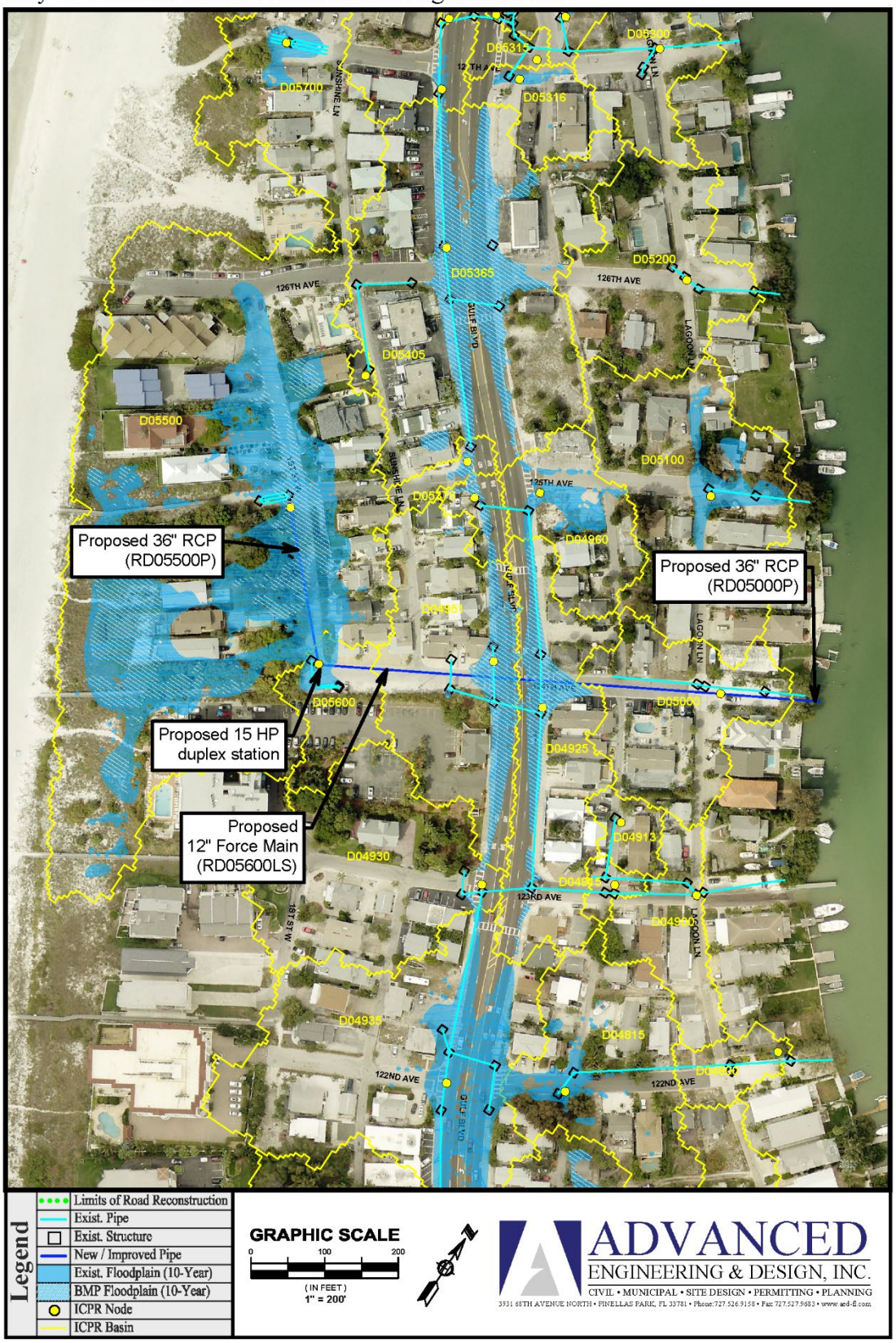


Figure 8-5 *Sunshine Beach Stormwater Pump Station*

8.5 SUNSET BEACH DRAINAGE IMPROVEMENTS

Figure 5-4, Tailwater Elevation Options, plots the various tailwater conditions evaluated for use at the time of watershed model development. A "low grade elevation" was depicted on this figure to correlate tailwater elevations to lower lying portions of the City. The low grade elevation used was from within the boundaries of this proposed project.

East of West Gulf Blvd., between East Bay Drive and 85th Avenue, lies some of the lower terrain within the City. Large swaths of the roadway network reside below the "future" conditions tailwater elevation and nearly 18" below the tailwater condition recommended for use in future planning. Therefore, in order to achieve the immediate terrain modification goal, considerable effort is needed.

Elevation certificates on file with the City show many low adjacent grades are below the desired minimum low road elevation of 3.25'. The terrain model reinforces this observation. Limited right-of-way (approx. 30') and minimal front yard setbacks present significant challenges in elevating the road at the current width.

To mitigate for these challenges, the project proposes reducing roadways to 10' which would facilitate traffic in only one direction. An inverted cross section would be proposed to contain roadway runoff within the edge of pavement limits. Collection would occur through structures located at the roadway's centerline. Reducing the roadway width would provide additional parkway to soften transition grades. Back of curb drainage would also be proposed to collect runoff from private property.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this local roadway.

PROJECT COST

The estimated opinion of construction cost is $4,987,618.28. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Immediate (El. 3.25')

PROJECT CONSIDERATIONS

Extensive resident outreach would be recommended prior to pursuing this project as design and construction of the project would entail close coordination with the property owners.

Elevating the roadway would require extensive investigation into the impact that terrain modification would have on overland flow transfers for larger storm events. Soils within the project area are conducive for infiltration should LID elements be incorporated.

Sunset Beach Drainage Improvements
City of Treasure Island Watershed Management Plan

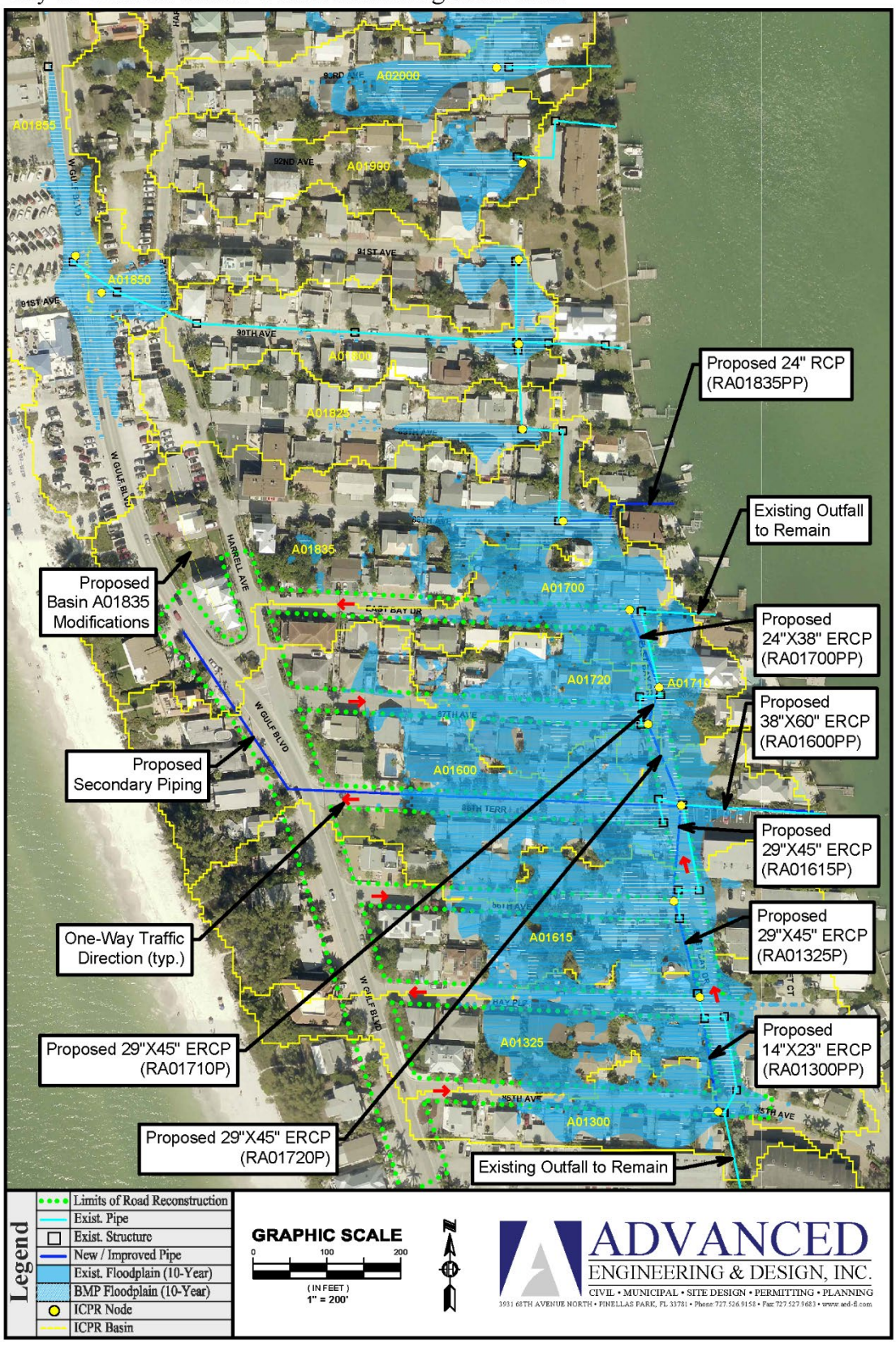


Figure 8-6 *Sunset Beach Drainage Improvements*

8.6 116TH & 117TH DRAINAGE IMPROVEMENTS

Located within Subwatershed D, 116th & 117th Avenues serves as the only access to the Isle of Capri neighborhood. Two (2) small diameter outfalls serve the stretch of roadway between 1st Street East and the bridge.

The proposed improvements would entail constructing a new outfall and connecting both systems as one. Existing outfalls are proposed to remain as this allows for the new outfall to be downsized. Proposed outfall construction would occur on land controlled by the City.

Water quality improvements are proposed to be accomplished through the use of a treatment structure. For purposes of system uniformity, a nutrient separating baffle box has been considered for use.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this secondary roadway. Minimal improvements (less than 2") can be experienced in adjacent basins due to reduced overland flow transfer. Inclusion of stormwater treatment technology will result in a total nitrogen (TN) load reduction of approximately 11 pounds / year and a total phosphorus (TP) load reduction of approximately 2 pounds / year.

PROJECT COST

The estimated opinion of construction cost is $1,353,036.09. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

Existing outfall piping runs in close proximity to or directly beneath larger multi-family structures. The City may be of opinion that eliminating these outfalls removes risk from their portfolio which would offset the construction costs associated with a larger outfall.



***Figure 8-7** 116th & 117th Avenue Drainage Improvements*

8.7 3RD STREET EAST DRAINAGE IMPROVEMENTS

Many motorist use 3rd Street East as the main route to Capri Blvd. which results in a secondary roadway designation. The segment of roadway within the project boundaries, between 2nd Street East and Capri Blvd., drains through two (2) outfalls. Multifamily developments are present along both sides of the roadway.

LOS deficiencies can be correlated to insufficient outfall piping. However, the performance of the stormwater management systems associated with Sunketch I & II also contribute to the depicted surcharging. During the design storm, stormwater retained within the perimeter storage swale "pop off" and discharge to 3rd Street East.

Increasing the size of outfall piping to accommodate this spillover volume will be needed. However, the project proposes modification to a privately-owned discharge structure internal to the development. This will result in a higher discharge rate to other City systems that have the capacity to handle higher flows. New control structures are proposed on 3rd Street East (within Sunketch I) and Capri Blvd. (within Sunketch II) to evacuate water from these developments at earlier periods during the storm. Doing so reduces the "slug" of flow which exits the system making piping improvements more manageable.

Low impact development (LID) elements proposed for this project are impervious reduction and bioretention. On 3rd Street East, roadway reconstruction would result in a 2' reduction in the roadway's width while still being able to accommodate a travel and bicycle lane in each direction. The sidewalk which runs along the western parkway would be shifted to facilitate the construction of a retention area that would treat runoff from one half of the roadway.

Capri Blvd., west of 3rd Street East, is a City-owned road that drains through the aforementioned private developments. Constructing two (2) bioswales on either side of the road would treat runoff from this section and new piping would route runoff from this area to a new outfall on Capri Blvd.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this secondary roadway. With stages reduced in the design storm, stage reductions would also be experienced in eastern sections of Capri Blvd. (west of 4th Street East) and on 3rd Street East adjacent to Sunketch II. Incorporating LID elements will result in a total nitrogen (TN) load reduction of approximately 16 pounds / year and a total phosphorus (TP) load reduction of approximately 3 pounds / year.

PROJECT COST

The estimated opinion of construction cost is $2,468,173.13. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

The eastern parkway of 3rd Street East is used for vehicle parking which limits the available lands for bioswale placement. Additional water quality improvement could be realized if the roadway were converted to an inverted section with a depressed median.

3rd Street East Drainage Improvements
City of Treasure Island Watershed Management Plan

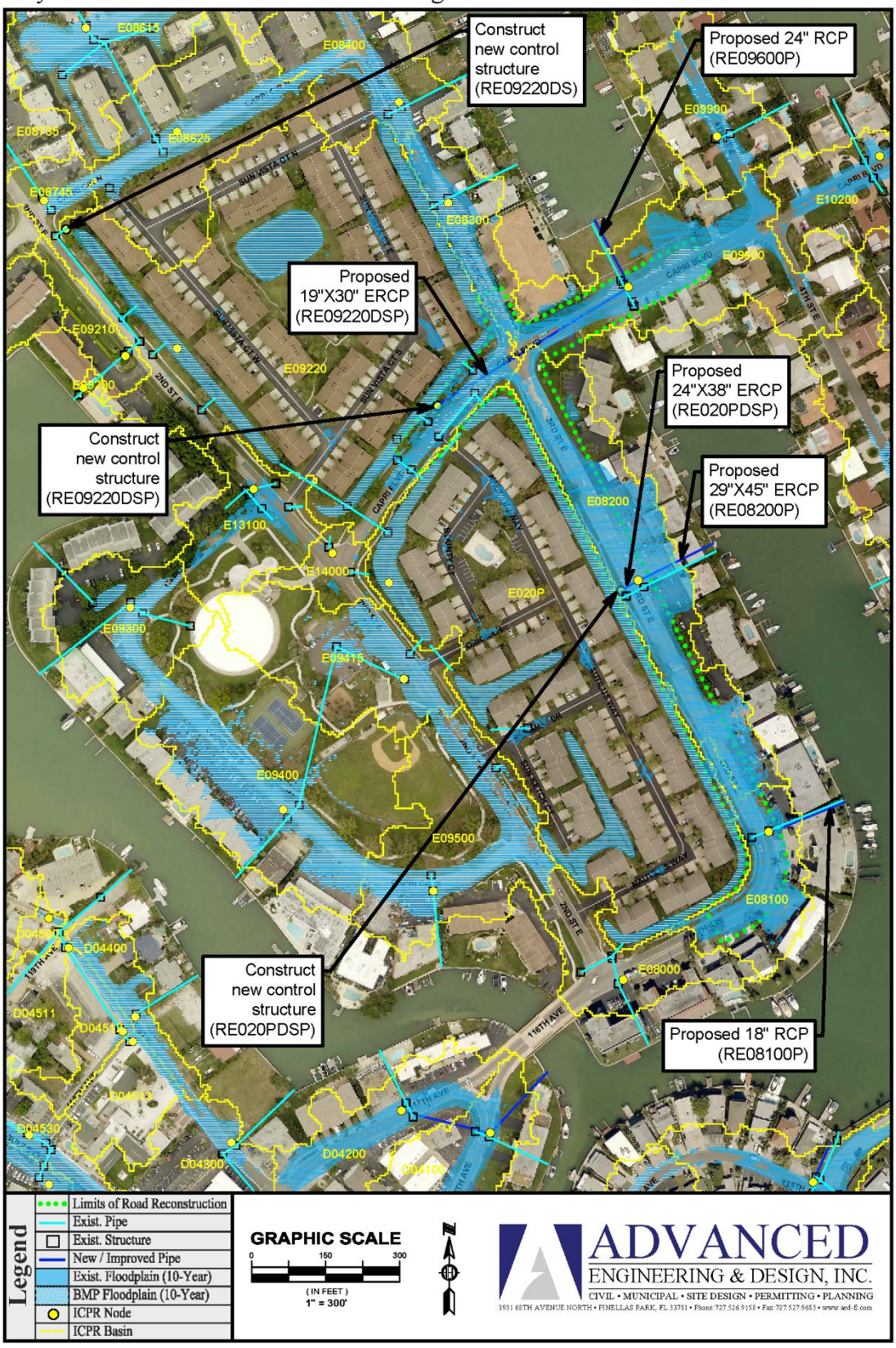


Figure 8-8 *3rd Street East Drainage Improvements*

8.8 PARADISE BLVD. DRAINAGE IMPROVEMENTS

Located within Subwatershed G, Paradise Bvd. serves as the main access to portions of Paradise Island. The segment of roadway within the proposed project limits is drained by multiple outfalls. In lieu of improving each culvert, certain outfalls are proposed to be replaced while unimproved outfalls are connected to the new system.

Existing grassed medians are proposed to be removed and the roadway reconstructed in a manner that reduces the end impervious area. Bioswales along either side of the roadway represent the additional low impact development (LID) element proposed for this project. Depressional storage is also proposed within City-owned land located at the intersection of Paradise Blvd. and Yacht Club Dr. Elevated structures within these bioswales will allow for the first ¼" of runoff to infiltrate providing a water quality benefit to the project.

Reducing roadway widths will not result in the loss of the bicycle lane as the current width is greater than needed to facilitate a travel and bicycle lane.

PROJECT BENEFITS

The proposed improvements would result in the City achieving the LOS goals for this secondary roadway. With stages reduced in the design storm, overland flow transfer between adjacent basins is not present. Incorporating LID elements will result in a total nitrogen (TN) load reduction of approximately 76 pounds / year and a total phosphorus (TP) load reduction of approximately 11 pounds / year.

PROJECT COST

The estimated opinion of construction cost is $3,192,385.63. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

When considering the construction footprint associated with the improvements, a sidewalk could be added as a scope item with minimal additional cost. Additionally, reconstruction of the road in a manner that converts the grassed medians to depressional storage would be possible. It is recognized that bioswales along the edge of pavement may not be desired by residents on this roadway.

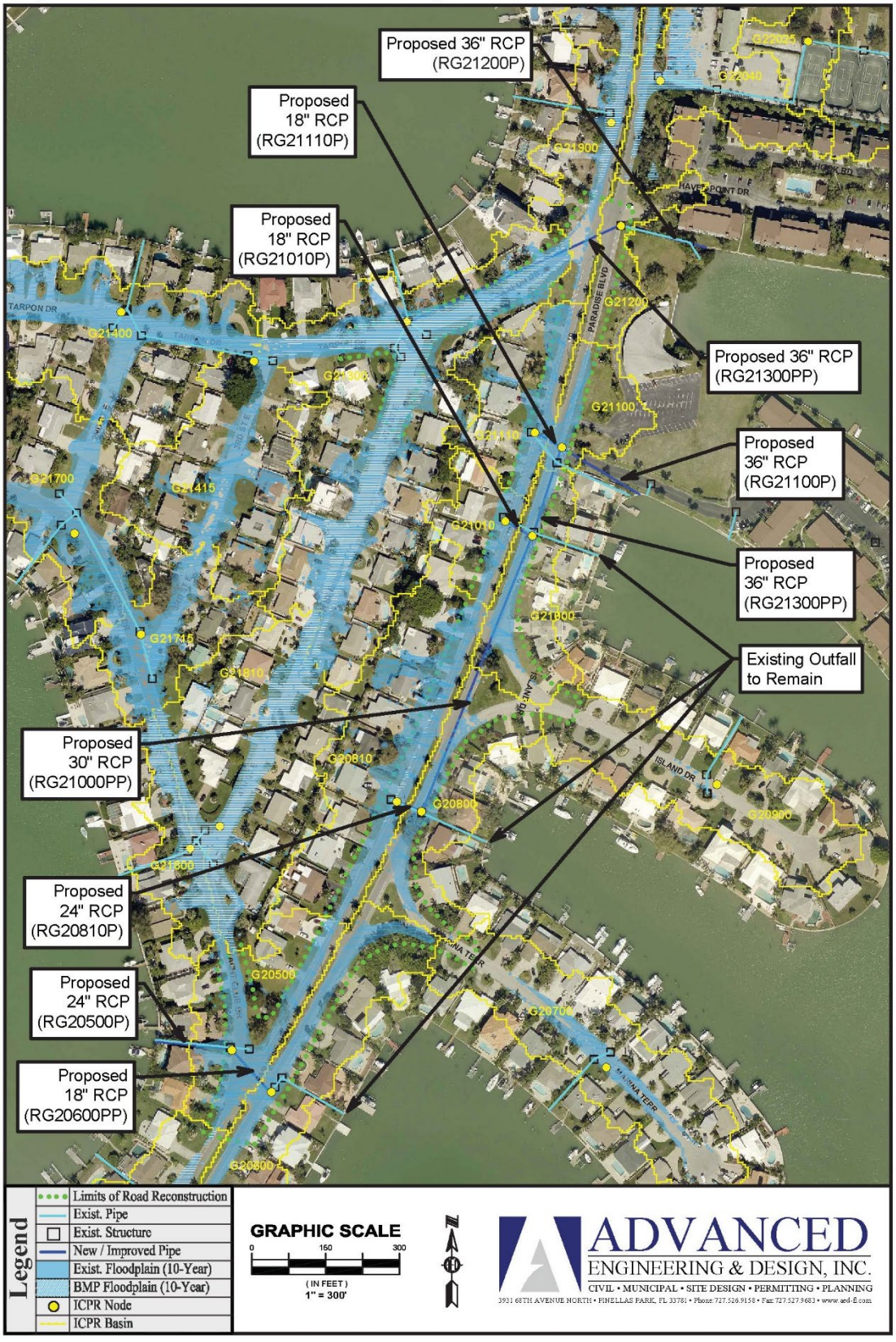


Figure 8-9 *Paradise Blvd. Drainage Improvements*

8.9 120TH AVENUE STORMWATER PUMP STATION

Gulf Blvd., between 118th Avenue and 120th Avenue, is shown to lack the performance desired by the City. A review of the H&H model finds that piping restrictions within the FDOT's system contribute to these inefficiencies. This section of roadway has many larger basins which overwhelm existing piping. Further compounding on these issues, sections of 120th Avenue (west of Gulf Blvd.) transfer a significant volume of stormwater via overland flow resulting in further stage increases.

Improvement of the FDOT's stormwater infrastructure is not considered an actionable item for this assessment. However, for this location, opportunities are present to reduce the land mass draining to this underperforming system as well as "siphoning" peak storm flows and routing them to systems where capacity limitations can be addressed.

This project proposes the reconstruction of 120th Avenue east of Gulf Blvd. Rather than draining towards Gulf Blvd., the roadway grades would be modified to facilitate stormwater collection at the alley due east of the State roadway. A 15 HP stormwater pump station would redirect water to the new point of collection at the alley through a 16" force main. Outfall improvements would be needed to accommodate the additional flows now directed towards the eastern terminus of 120th Avenue.

PROJECT BENEFITS

The proposed improvements would not result in the City achieving the LOS goals for this local roadway, nor the adjacent primary roadway. It is believed that an increase in pump size to 20 HP would improve performance although LOS goals would still go unmet. A pump size increase to this extent may have a negligible impact on costs associated with other station-related appurtenances.

PROJECT COST

The estimated opinion of construction cost is $1,574,055.31. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Intermediate (El. 4.10')

PROJECT CONSIDERATIONS

Wholesale LOS improvements will only be realized along this stretch of roadway when FDOT performs piping modifications between these limits.

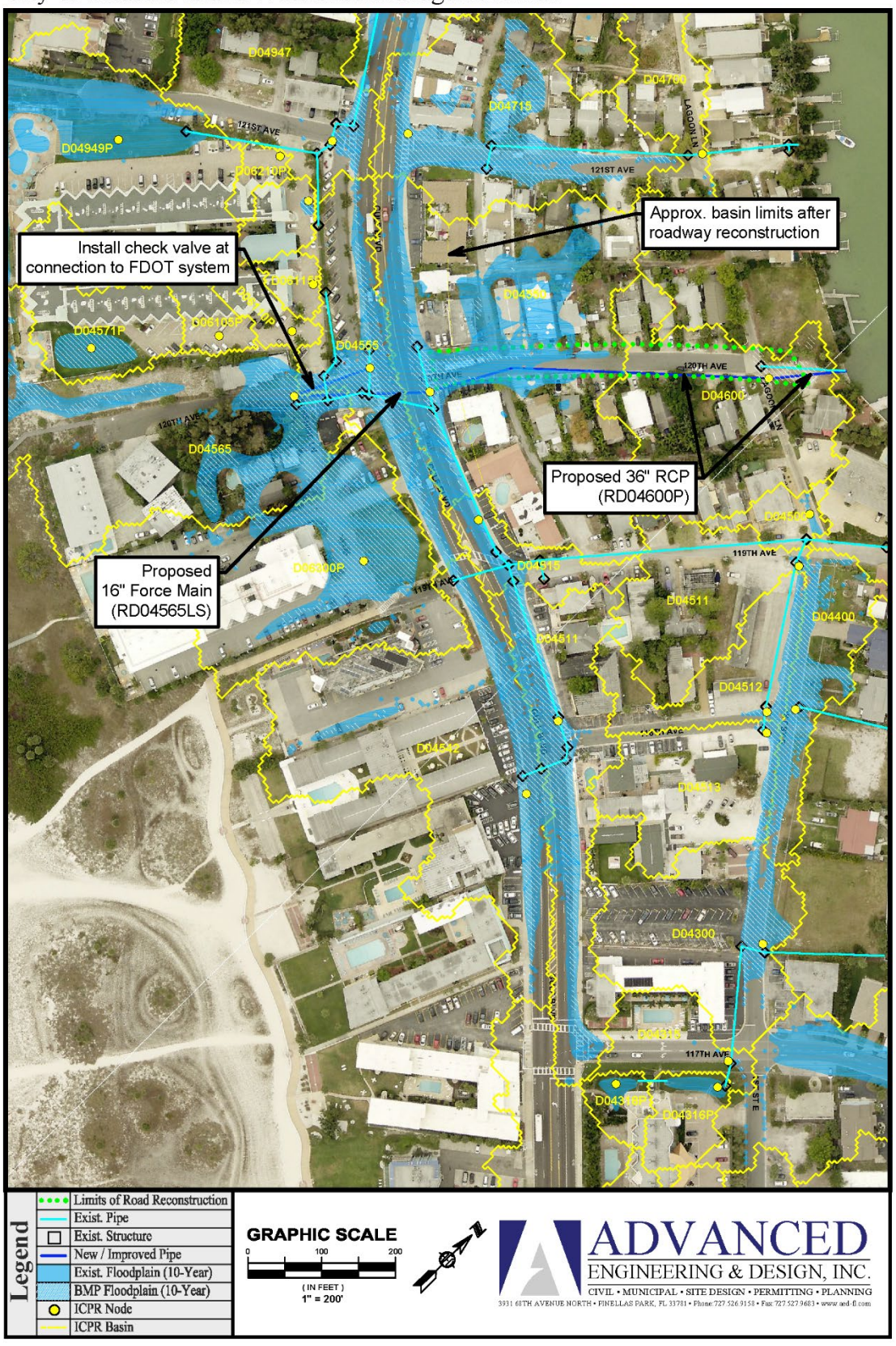


Figure 8-10 *120th Avenue Stormwater Pump Station*

8.10 West Treasure Island Causeway BMPs

The West Treasure Island Causeway is a Primary roadway located on Paradise Island (Subwatershed G). Essentially an extension of 107th Avenue, this roadway serves as the only east-west ingress / egress to the barrier island community.

The existing corridor is somewhat unique as commercial or residential properties do not directly abut the road's right-of-way. With no driveway connections, the road is essentially a limited access facility. Conventionally, parcels within the City drain towards the roadway. However, the West Treasure Island Causeway does not receive runoff from adjacent properties and, in a general sense, drains towards the paralleling service roads. Minor depressions within the grassed areas located between the service road and the Causeway collect and convey stormwater to adjacent systems.

Floodplains associated with the design storm event depict minimal rainfall-based flooding on the roadway even when considering future conditions. This is likely due to the elevation of the road, limited runoff from adjacent lands and the storage volumes associated with the adjacent service roads. While AED is aware of drainage concerns on this roadway, this issue is likely attributed with non-uniform parkway elevations as opposed to volume and conveyance limitations within the subwatershed.

Recommendations within this report propose that a higher tailwater condition be used for future planning. When evaluating this segment of roadway using this revised variable, more significant impacts are anticipated. These impacts, coupled with the roadway's primary classification, result in the need to consider improvements.

For purposes of this study, the project scope consists of roadway elevation modifications and further defining / expansion of the depressional areas within the parkway. A degree of water quality improvement would be provided through retention of the initial ¼" – ½" of runoff from the roadway. Future evaluation, performed during the design phase, will assess the volumetric impact roadway elevation has on the basins and the corresponding performance differences for larger storm events.

Project Benefits

The presence of the service roads would provide the buffer needed to accomplish the City's long-term goals within a single improvement. Incorporating LID elements will result in a total nitrogen (TN) load reduction of approximately 32 pounds / year and a total phosphorus (TP) load reduction of approximately 5 pounds / year.

Project Cost

The estimated opinion of construction cost is $4,611,280.78. Please reference Appendix F for additional information on project cost development.

TERRAIN MODIFICATION GOAL

Long-Term (El. 5.10')

PROJECT CONSIDERATIONS

Expansion of the project could allow for the adjacent service roads to be elevated in conjunction with the Causeway. While the degree of elevation would differ, it is believed that the Immediate terrain modification goal could be met.

The intersection of Paradise Blvd. and the Causeway is low-lying in nature and is shown to have infrastructure limitations. Expansion of the project to address the intersection, and the northbound Paradise Blvd. approach, could provide additional value to the City. It is believed that the project's footprint would need to expand approximately 450' south of the Causeway.



Figure 8-11 *West Treasure Island Causeway BMPs*

8.11 SUMMARY OF PROJECT PERFORMANCE

The projects presented within this section serve to reduce roadway flooding. Please reference below to view a summary of modeling results which compares the pre-improvement scenario to the post-improvement scenario for the design storm event (identified in Section 6 as the 10-Year / 24-Hour storm).

Downtown Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NC03000	3.58	3.58	0.00
NC03031P	3.84	3.84	0.00
NC03040	3.63	3.63	0.00
NC03050	3.63	3.63	0.00
NC03055	3.78	3.78	0.00
NC03100	3.54	2.64	-0.90
NC03120	3.77	3.15	-0.62
NC03123P	3.85	3.77	-0.08
NC03125	3.77	3.35	-0.42
NC03135	3.77	3.35	-0.42
NC03137	3.78	3.36	-0.42
NC03160	3.77	3.35	-0.42
NC03200	4.34	2.60	-1.74
NC03210	4.34	2.74	-1.60
NC03220	4.35	3.96	-0.39
NC03222	4.70	4.62	-0.08
NC03235	4.40	4.32	-0.08
NC03240	4.34	2.98	-1.36
NC03300	4.04	3.33	-0.71
NC03400	3.85	3.82	-0.03
NC03415	4.01	4.00	-0.01
NC03500	3.84	3.54	-0.30
NC03600	2.99	2.76	-0.23
NC03610	4.07	3.03	-1.04
NC03615	4.14	3.50	-0.64
NC03625	4.19	3.55	-0.64
NC03700	4.06	3.60	-0.46
NC03715	4.20	3.96	-0.24
NC03716	4.24	4.17	-0.07
NC03720	4.19	3.69	-0.50
NC03723	4.28	3.63	-0.65
NC03730	4.18	3.75	-0.43
NC03737	4.17	3.86	-0.31
NC03800	2.84	2.47	-0.37
NC03825	3.76	3.34	-0.42
NC03830	3.76	3.42	-0.34
NC03833P	3.79	3.57	-0.22
NC03835P	3.79	3.57	-0.22
NC03837P	3.80	3.58	-0.22
NC03845	3.77	3.35	-0.42
NC03850	3.77	3.35	-0.42
NC03855	3.57	3.51	-0.06
NC03856	3.57	3.51	-0.06
NC06000	3.23	2.67	-0.56
NC06010	3.43	3.13	-0.30
NC06020	3.73	3.20	-0.53

Table 8-2 *Summary of Project Performance (Downtown Drainage Improvements)*

115th Avenue Reconstruction

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NF15600	3.55	2.46	-1.09
NF15700	3.55	3.29	-0.26
NF15800	3.46	3.46	0.00
NF15900	3.55	2.16	-1.39
NF16000	3.55	3.55	0.00
NF16100	3.89	3.89	0.00
NF16200	3.13	2.20	-0.93
NF16300	3.12	2.96	-0.16
NF16310	3.12	2.96	-0.16
NF16500	3.12	2.97	-0.15
NF16510	3.12	2.97	-0.15
NF16700	2.60	2.60	0.00
NF16800	3.12	2.02	-1.10
NF16900	3.12	2.13	-0.99
NF17000	3.12	2.82	-0.30
NF17100	3.12	2.76	-0.36
NF17200	3.51	3.51	0.00
NF17210	3.53	3.53	0.00
NF17300	2.54	2.54	0.00
NF17400	3.80	3.80	0.00
NF17500	3.81	3.81	0.00
NF17600	3.43	2.07	-1.36
NF17700	3.42	3.37	-0.05
NF17800	3.78	3.78	0.00
NF15600	3.55	2.46	-1.09
NF15700	3.55	3.29	-0.26
NF15800	3.46	3.46	0.00
NF15900	3.55	2.16	-1.39
NF16000	3.55	3.55	0.00
NF16100	3.89	3.89	0.00
NF16200	3.13	2.20	-0.93
NF16300	3.12	2.96	-0.16
NF16310	3.12	2.96	-0.16
NF16500	3.12	2.97	-0.15
NF16510	3.12	2.97	-0.15
NF16700	2.60	2.60	0.00
NF16800	3.12	2.02	-1.10
NF16900	3.12	2.13	-0.99
NF17800	3.78	3.78	0.00

Table 8-3 *Summary of Project Performance (115th Avenue Reconstruction)*

112th Avenue Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NF15000	4.46	2.80	-1.66
NF15010	4.46	2.87	-1.59
NF15100	4.72	4.72	0.00
NF15200	4.45	3.49	-0.96
NF15210	4.45	3.68	-0.77
NF15215	4.46	3.62	-0.84
NF15300	4.45	3.91	-0.54
NF15315	4.45	3.40	-1.05
NF15330	4.45	3.26	-1.19
NF15400	4.32	2.73	-1.59
NF15500	4.40	4.40	0.00
NF15000	4.46	2.80	-1.66
NF15010	4.46	2.87	-1.59
NF15100	4.72	4.72	0.00

Table 8-4 *Summary of Project Performance (112th Avenue Drainage Improvements)*

Sunshine Beach Stormwater Pump Station

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
ND04915	3.35	3.35	0.00
ND04925	3.91	3.91	0.00
ND04930	3.83	3.83	0.00
ND04951	4.05	4.05	0.00
ND04961	4.00	4.00	0.00
ND05000	2.32	2.31	-0.01
ND05365	3.95	3.95	0.00
ND05375	3.95	3.95	0.00
ND05405	4.48	4.48	0.00
ND05500	5.00	4.46	-0.54
ND05600	4.99	4.38	-0.61
ND04915	3.35	3.35	0.00
ND04925	3.91	3.91	0.00
ND04930	3.83	3.83	0.00
ND04951	4.05	4.05	0.00

Table 8-5 *Summary of Project Performance (Sunshine Beach Stormwater Pump Station)*

Sunset Beach Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NA01300	2.78	2.15	-0.63
NA01325	2.78	2.21	-0.57
NA01600	2.78	1.96	-0.82
NA01615	2.78	2.19	-0.59
NA01700	2.78	1.96	-0.82
NA01710	2.78	1.97	-0.81
NA01720	2.78	1.97	-0.81
NA01800	3.23	3.23	0.00
NA01816	3.03	3.03	0.00
NA01825	3.32	3.31	-0.01
NA01835	2.78	2.63	-0.15
NA01850	4.57	4.58	0.01
NA01855	4.63	4.63	0.00
NA01900	2.94	2.73	-0.21
NA02000	2.97	2.78	-0.19
NA02100	2.97	2.78	-0.19
NA02110	2.97	2.78	-0.19
NA02120	3.52	3.54	0.02
NA01300	2.78	2.15	-0.63
NA01325	2.78	2.21	-0.57

Table 8-6 *Summary of Project Performance (Sunset Beach Drainage Improvements)*

116th Avenue & 117th Avenue Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
ND04000	2.68	2.23	-0.45
ND04010	2.82	2.23	-0.59
ND04100	3.57	2.25	-1.32
ND04200	3.57	2.38	-1.19
ND04300	2.97	2.93	-0.04
ND04315	3.60	3.55	-0.05
ND04000	2.68	2.23	-0.45
ND04010	2.82	2.23	-0.59
ND04100	3.57	2.25	-1.32
ND04200	3.57	2.38	-1.19

Table 8-7 *Summary of Project Performance (116th Avenue & 117th Avenue Drainage Improvements)*

3rd Street East Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NE020P	4.21	3.97	-0.24
NE08000	3.22	2.73	-0.49
NE08100	4.20	2.87	-1.33
NE08200	4.21	2.97	-1.24
NE08300	4.24	3.90	-0.34
NE08400	4.24	4.22	-0.02
NE08500	4.20	4.21	0.01
NE08600	4.20	4.21	0.01
NE08615	4.45	4.46	0.01
NE08625	4.31	4.31	0.00
NE08700	4.20	4.21	0.01
NE08716	4.74	4.75	0.01
NE08717	4.87	4.87	0.00
NE08720	4.20	4.21	0.01
NE08735	4.40	4.41	0.01
NE08745	4.34	4.34	0.00
NE08800	3.59	3.57	-0.02
NE08900	3.53	3.53	0.00
NE09000	4.38	4.38	0.00
NE09100	2.61	2.61	0.00
NE09110	2.89	2.89	0.00
NE09125	4.54	4.54	0.00
NE09200	2.31	2.39	0.08
NE09210	2.40	2.56	0.16
NE09220	4.24	3.91	-0.33
NE09300	4.20	4.22	0.02
NE09400	4.21	4.22	0.01
NE09415	4.38	4.38	0.00
NE09500	4.21	4.22	0.01
NE09600	4.13	3.35	-0.78
NE09700	3.90	3.90	0.00
NE09800	3.10	3.10	0.00
NE09900	3.93	3.56	-0.37

Table 8-8 *Summary of Project Performance (3rd Street East Drainage Improvements)*

Paradise Blvd. Drainage Improvements

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
NG20100	4.04	4.06	0.02
NG20400	4.00	4.02	0.02
NG20500	4.21	2.92	-1.29
NG20600	4.23	3.18	-1.05
NG20800	4.01	3.20	-0.81
NG20810	4.21	3.43	-0.78
NG21000	4.09	2.87	-1.22
NG21010	4.15	2.95	-1.20
NG21100	4.09	2.85	-1.24
NG21110	4.15	3.01	-1.14
NG21200	3.39	2.90	-0.49
NG21300	4.24	3.95	-0.29
NG21800	4.24	4.20	-0.04
NG21810	4.24	4.20	-0.04
NG21900	3.88	3.68	-0.20
NG22040	3.72	3.77	0.05
NG22100	3.62	3.59	-0.03
NG22400	3.61	3.59	-0.02

Table 8-9 *Summary of Project Performance (Paradise Blvd. Drainage Improvements)*

120th Avenue Stormwater Pump Station

Node	10-Year / 24-Hour Storm Event		
	Pre-Improvement Stage (Ft., NAVD)	Post-Improvement Stage (Ft., NAVD)	Stage Difference (Ft.)
ND04400	2.93	2.92	-0.01
ND04500	3.04	2.76	-0.28
ND04511	3.08	2.95	-0.13
ND04512	2.93	2.92	-0.01
ND04513	2.93	2.92	-0.01
ND04515	4.13	3.38	-0.75
ND04530	4.17	4.02	-0.15
ND04542	4.17	4.03	-0.14
ND04550	4.17	3.57	-0.60
ND04555	4.17	3.96	-0.21
ND04565	4.17	3.96	-0.21
ND04571P	4.77	4.74	-0.03
ND04600	2.39	2.70	0.31
ND04700	3.46	3.46	0.00
ND04715	4.14	4.14	0.00
ND04947	4.19	4.19	0.00
ND06105P	4.91	4.88	-0.03
ND06110P	4.96	4.94	-0.02
ND06115P	4.98	4.96	-0.02
ND06215P	5.34	5.34	0.00
ND06215P	5.34	5.34	0.00
ND06300P	4.17	3.98	-0.19

Table 8-10 *Summary of Project Performance (120th Avenue Stormwater Pump Station)*

9.0 PROGRAM RECOMMENDATIONS

Many City departments are involved in stormwater management in some capacity. Whether it's the maintenance of the public stormwater system through Public Works, addressing nuisance park flooding with Recreation, or Community Development reviewing stormwater calculations for a new development, it is imperative that the City manage stormwater and related issues in a uniform manner.

Program recommendations are as follows:

- Expand Upon Water Quality Requirements within the Land Development Regulations
- Pursue Additional Community Rating System (CRS) Creditable Activities
- Continue Outfall Maintenance Program
- Incorporate Existing Outfalls in Future Projects
- Consider Strategic Implementation of Backflow Prevention Technology
- Promote Low Impact Development

9.1 EXPAND UPON WATER QUALITY REQUIREMENTS WITHIN THE LAND DEVELOPMENT REGULATIONS

Review of stormwater-based land development regulations finds that, generally speaking, the City follows conventional concepts regarding site discharge rates. While improvements to the City's stormwater system are needed in multiple locations, none of the subwatersheds would truly be considered "volume sensitive" which would restrict discharge volumes or rates in order to prevent structural flooding. Therefore, restricting a site's discharge rate to no more than that which is generated in the pre-development condition would be considered a suitable policy.

Water quality is addressed within Section 68-223 by requiring that the first inch of rainfall be retained on site. Improving water quality by ensuring that the "first flush" is not discharged is conceptually identical to the Southwest Florida Water Management District's (SWFWMD) regulations. This is done to reduce nutrients from transporting downstream. The City's (and SWFWMD's) water quality criteria focuses on a specific means to improve water quality. Conversely, the Pinellas County Stormwater Manual dictates the degree of nutrient removal required for the project and allows the designer flexibility in how to accomplish this goal. The City may see a benefit in allowing for developers to either a.) follow the City's current regulations for water quality or b.) illustrate nutrient reduction to the degree outlined with the Pinellas County Stormwater Manual. Doing so may also further encourage the use of low impact development (LID) techniques in development and redevelopment projects.

By formally allowing water quality requirements to be met by focusing on specific degrees of reduction, the City would essentially be incentivizing the implementation of certain LID principles. Reducing the amount of pervious area, disconnecting impervious areas to facilitate infiltration and conserving natural areas are all LID principles that provide a calculatable benefit towards achieving a site's water quality goals. Allowing for sites to be elevated could also create more opportunities for infiltration-based management by increasing the clearance between grade and the seasonal high water table.

9.2 PURSUE ADDITIONAL COMMUNITY RATING SYSTEM (CRS) CREDITABLE ACTIVITIES

The Community Rating System (CRS) is a program that encourages, and incentives, certain floodplain management practices. Points are awarded for specific activities that exceed the minimum criteria established by the National Flood Insurance Program (NFIP) for flood insurance to be issued to structures within the community. As points are awarded, the community's classification drops and each reduction in classification results in a corresponding premium discount. Community classification 6, the City's current ranking, results in a 20% premium discount.

A summary table correlating specific categories and the corresponding point value awarded to the City was provided for general review. While the City received points throughout various program categories, a large percentage of the points were concentrated within the 430 section which covers Higher Regulatory Standards. Approximately 280 points can be awarded to a participant should the placement of fill be prohibited within recorded ordinances and regulations. This restriction is not only applicable to structures but bridges, highways and other transportation elements as well. It is assumed that the City received credit for this activity.

Planning recommendations identify terrain modification (or elevating roadways) as a means of mitigating for the stormwater performance (and quality of life) impacts associated with sea level rise. Pursuing this recommendation would deviate from this development regulation likely resulting in an overall point reduction and corresponding class increase. A five (5) percent reduction in the premium discount may also be realized.

It is apparent that the City takes great pride in reducing flood insurance costs. In an effort to offset the possible loss of points associated with permitting the use of fill, pursuit of the below-discussed creditable activities is recommended:

322.b Additional Firm Information (MI2)

Upon issuance of updated flood maps from FEMA, up to 20 points could be received for providing the public mapping information on the Coastal A zone. Specifically, property owners could determine if they are waterward of the Limit of Moderate Wave Action (LiMWA).

322.d Flood Depth Data (MI4)

Valued at 20 points, providing flood depth information at specific locations could be done using the terrain and stormwater model used for this study.

432.i Local Drainage Protection (LDP)

Discussion in prior sections of this report discuss how the elevating of base floors (i.e. garages) would be needed to ensure that the aesthetics of neighborhoods are maintained as the roadway elevations are increased. It is believed that this would require establishing minimum elevations for future structures to ensure positive drainage towards the roadway. This may present an opportunity to obtain up to 120 points under this category.

432.k Coastal A Zones (CAZ)

While not currently delineated within the City, preliminary floodplain documents show that the City will have a designated Coastal A Zone in the near future. Regulating Coastal A Zones in the same manner as V zones could result in up to 500 points. Additional discussion would be needed on how the possible roadway elevation program would coincide with zone requirements.

452.a Stormwater Management Regulations (SMR)

The City's existing regulations suggest that credit under the Size of Development (SZ) and Design Storms used in Regulations (DS) could be achieved. Approximately 280 points could be accumulated within this section. It shall be noted that clarification language may need to be added to the specific regulation(s) covering this subject.

452.b Watershed Master Plan (WMP)

Additional model simulations were executed in order to assess the impacts of the sea level rise scenario recommended within the program guidelines (see Appendix E). As such, it is believed that 90 points could be obtained upon adoption of this report. Minor revisions may be needed to address requirements identified within the 2021 Addendum.

542.b Problem Site Maintenance (PSM)

Inspection activities associated with the National Pollution Discharge Elimination System (NPDES) program appear to render the City eligible for credit in Section 540 (Drainage System Maintenance). Specifically, 542.b references the specific inspection of "choke points" and other problematic areas. This report, coupled with the City's prior operational knowledge, can assist in documenting these locations in greater detail. Expanding the City's NPDES inspections to focus on bottlenecks and other problem areas may allow for an additional 50 points.

543.c Capital Improvement Program (CIP)

Should the City receive points for the above, up to 70 points could be available for correlating the capital improvement program to the listing of problematic sites. Modification to the City's CIP framework may be required while the intent and implementation approach would remain unchanged.

9.3 CONTINUE OUTFALL MAINTENANCE PROGRAM

The City's stormwater system consists of many smaller collection systems as opposed to fewer larger systems. Maintaining these outfalls is essential to the performance of the stormwater system. In assisting with the NPDES, we have become intimately familiar with the City's maintenance protocol as it relates to stormwater outfalls. Practices and procedures in place address the two (2) predominant maintenance challenges faced by the City; barnacle growth and sediment blockage.



Photograph 9-1 *Significant Sediment Deposit*

Barnacle Growth

Barnacle growth can be mitigated by siting outfalls above typical tide elevations. However, the City's flat terrain and the need to obtain suitable cover while avoiding utility conflicts makes this task quite difficult. Larger collection systems (which inherently require larger culverts) tend to be deeper exposing the pipe to barnacle growth. The City implements a mechanical barnacle removal program which balances performance of the system, environmental impacts and staff resources.

When performing stormwater improvements, strategies to reduce the likelihood of barnacle growth in a manner that does not compromise the City's performance and resiliency goals should be evaluated.

Sediment Blockage

Outfall capacity can be significantly reduced as sediment accumulates at the point of discharge. Stormwater runoff can convey sediment from upland locations to the system. Over time, this sediment can build up reducing performance and impacting level of service. However, the more significant concern is associated with suspended sediment within tidal waters. Surge events, and even typical tidal patterns, can deposit significant volumes of sediment creating a plugged condition at the outfall.

Sediment is removed by the City when significant operational limitations are experienced. While this procedure should be continued, the evaluation of additional measures may be worthwhile of consideration.

Means of addressing sediment buildup first requires that the source be properly identified. Sediment suspended within the collected stormwater and deposited within the system can be removed through structural best management practices (BMPs) such as filtering devices or structures that reduce flow velocity allowing particles to settle. Discharged sediment can also be

collected at the outfall through the construction of a sump structure having a finite volume below the invert to allow for sediment to be stored in a manner that does not impede flow. Non-structural BMPs, such as street sweeping, can also assist in reducing the degree of sediment received by the system.

The above strategies are not suitable when the predominant sediment source is from sand migration at the point of discharge. For new stormwater systems proposed in problematic areas, extending the outfall beyond the location where the mud line fluctuates may be a suitable way to protect against this phenomenon. Constructing an outfall structure which forces stormwater to be discharged through an elevated weir, assuming that the system hydraulics can accommodate this hydraulic inefficiency, can also mitigate for sand migration concerns. The low-lying terrain of the City likely limits the ability to construct stormwater infrastructure at a higher elevation which would render the system immune to sand buildup.

Maintenance dredging, done on a semi-annual or annual basis, could be pursued in conjunction with or independent of the above mitigation strategies. Additionally, strategic outfall relocation could be considered where this option is available. Pumping stormwater flows, and discharging said flows well beyond the limits of migrating sediment, could be considered when all other mitigation strategies have been deemed ineffective.

9.4 Incorporate Existing Outfalls in Future Projects

Many drainage improvement projects presented in this report propose the construction of a new outfall or the improvement of an existing outfall. Where practical to do so, flows from multiple smaller systems are combined into one (1) larger system. Existing outfalls are then reconnected to the new system allowing for the discharge of excess stormwater at higher stages.

Connecting existing outfalls to new stormwater systems often times reduces the size of piping needed to meet the City's performance goals. Naturally, a pipe size reduction has a direct correlation to reduced construction costs and a smaller construction footprint. When considering that outfalls typically run along side lot lines between structures, a reduction in pipe size also reduces risk for the City while minimizing the impacts to property owners.

9.5 Consider Strategic Implementation of Backflow Prevention Technology

The use of backflow prevention devices is discussed within the Planning Recommendations section of this report. It is our opinion that incorporation of backflow preventions measures at each outfall would not meet the City's long-term performance goals when considering the impacts of sea level rise. However, the strategic implementation of backflow prevention devices in low lying areas of the City would provide relief for sunny-day flooding. This not only improves mobility (at times when there is no precipitation) but also prevents saltwater inundation which can adversely impact the condition a roadway over time.

9.6 PROMOTE LOW IMPACT DEVELOPMENT

As previously discussed, allowing flexibility in how water quality requirements are satisfied may incentivize the pursuit of LID techniques. LID design principles essentially attempt to replicate natural processes to improve water quality and reduce stormwater discharge rates and volumes. LID, often times referred to as green infrastructure, has been summarized by the Florida Department of Environmental Protection (FDEP) as follows:

> *Green infrastructure or Low Impact Development (GI/LID) is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits. While single-purpose gray stormwater infrastructure—conventional piped drainage and water treatment systems—is designed to move urban stormwater away from the built environment, green infrastructure reduces and treats stormwater at its source while delivering environmental, social, and economic benefits. (FDEP, 2020)*

It is recommended that the City promote the use of LID practices in public and private development / redevelopment projects. Furthermore, where feasible, it is recommended that the City incorporate LID principles into infrastructure improvement projects. Many completed and current City projects have utilized LID or other strategies to improve water quality.

10.0 IMPLEMENTATION RECOMMENDATIONS

Successful implementation of the planning recommendations, as outlined in Section 7, will require that all future building and infrastructure improvements focus on the end program goals. Achieving the degree of terrain modification required to support gravity-based stormwater infrastructure will alter the manner in which the City reviews and permits development within the City. The placement of fill will not only be allowed but essentially mandated to ensure that minimum "low floor" elevations are achieved.

Coordination between City Departments, consultants and the development community will be critical as ordinances, regulations and requirements are formed to support the program. Maintaining open lines of communication with these same parties will be just as important once the program is in place. Technical, compliance and administrative team members will need to keep a close eye on development.

10.1 TECHNICAL REVIEW MANUAL DEVELOPMENT

As noted in prior sections, modifications to the City's Land Development Regulations (LDR) will be needed to support the program. It is recommended that the development of a Technical Review Manual be undertaken concurrent with the LDR revisions. This document would serve to establish protocol for permit review personnel and provide guidance to the design and construction community. Topics discussed with this technical manual could include, but not be limited to, the following:

- Establishing fill thresholds that would warrant heightened review.
- Identifying locations where overland flow transfer occurs.
- Mitigation strategies at locations of overland flow transfer.
- Seawall design considerations where overland flow transfer occurs.
- Workflows to determine when development would warrant stormwater model updates.
- Redefining how FEMA's "50% Rule" is implemented within the Community.

Considering the complexity and degree of deviation this represents when compared to the current development procedures, it is recommended that the technical manual be thoroughly vetted prior to adoption. This process may entail a peer review, industry outreach and coordination with other governmental and/or regulatory entities.

The stormwater model prepared for the Watershed Management Plan will likely be a tool used for the review of certain public and private improvements. As stated above, the Technical Review Manual will likely identify workflows which will assist staff in determining when hydraulic modeling is warranted. It is recognized that performing stormwater modeling for each improvement increases the permit review duration and increases consultant expenditures. For

this reason, it is recommended that minimum thresholds be established to balance the need for detailed evaluation and the City's service goals in regard to permit review duration.

10.2 Watershed Management Plan Updates

It is recommended that updates to this Watershed Management Plan (WMP) be done at a certain frequency to keep the plan and floodplain information current. At a minimum, the WMP should be revisited every 5-7 years when considering that the City will be promoting fill within the floodplain.

However, certain factors may warrant revisiting the plan on more frequent basis. Naturally, technological advances and changes to stormwater evaluation techniques could result in the need to update the plan. Other circumstances which may trigger a WMP update may include:

- Significant permitted activity not included within the stormwater model.
- Terrain modification that may drastically reduce storage volume within the watershed.
- Improvements pursued by the Florida Department of Transportation (FDOT).
- Land use changes.
- Changes in environmental conditions.

It shall be noted that future WMP updates will likely vary in size and scope as the action that generated the updated will likely to determine the degree of assessment required.

10.3 Internal & External Funding Sources

Pursuit of this program will require that funding mechanisms, both internal and external, be evaluated. The City's stormwater utility may need to reassessed to confirm it is meeting the City's needs. It is recommended that the City continue the pursuit of resiliency-based grants and seek out external funding opportunities when feasible.

APPENDIX A

Subwatershed Maps


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G24000
G24200
G24100
G24340
G24320
G24322
G24216
G24225
G23300
G23200
G23100
G23015
G24335
G24230
G23000
G24341
G24615P
G24527P
G24330
G24300
G24500P
G24530P
G24600P
G24516P
G22700
G22600
G22400
G22300
G22900
G22500
G22800
G24400
G22100
G22025
G22040
G22000
G22015P
G21900
G21200
G22000P
G21400
G21500
G21110
G21100
G21300
G21415
G21700
G21010
G21000
G21715
G20800
G20810
G21810
G20900
G21600
G21800
G20600
G20500
G20700
G20400
G20300
G20100
G20000
G20200
Legend
SUBWATERSHED
BASIN
ADVANCED
ENGINEERING & DESIGN, INC.
CIVIL•MUNICIPAL•SITE DESIGN•PERMITTING•PLANNING
City of Treasure Island
Watershed Management Plan
Subwatershed G
0 55 110 220 330 440
Feet
N


SP0100
SP0200
SP0300
SP0400
SP0500
H30030
H30040
SP0215
SP0415
H30035
H30045
H30050
H30000
H30055
SP0815
SP0715
SP0915
SP0900
SP0800
SP0700
SP0600
SP1000
Legend
SUBWATERSHED
BASIN
ADVANCED
ENGINEERING & DESIGN, INC.
CIVIL•MUNICIPAL•SITE DESIGN•PERMITTING•PLANNING
City of Treasure Island
Watershed Management Plan
Subwatershed H
0 45 90 180 270 360
Feet
N

APPENDIX B

Model Schematic



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City of Treasure Island
Watershed Management Plan
Link Node Diagram

APPENDIX C

City-Wide Depth of Flooding Figures (Current Conditions)



Legend

2.33-year / 24-hour (Current Tailwater Condition)

High : 4.29 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

10-year / 24-hour (Current Tailwater Condition)

High : 4.69 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

25-year / 24-hour (Current Tailwater Condition)

High : 4.79 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
CIVIL•MUNICIPAL•SITE DESIGN•PERMITTING•PLANNING
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

50-year / 24-hour (Current Tailwater Condition)

High : 4.86 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
CIVIL•MUNICIPAL•SITE DESIGN•PERMITTING•PLANNING
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

100-year / 24-hour (Current Tailwater Condition)

High : 4.97 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N

APPENDIX D

City-Wide Depth of Flooding Figures (Future Conditions)



Legend

2.33-year / 24-hour (Future Tailwater Condition)

High : 4.29 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

10-year / 24-hour (Future Tailwater Condition)

High : 4.69 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

25-year / 24-hour (Future Tailwater Condition)

High : 4.79 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

50-year / 24-hour (Future Tailwater Condition)

High : 4.86 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N



Legend

100-year / 24-hour (Future Tailwater Condition)

High : 4.97 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N

APPENDIX E

City-Wide Depth of Flooding Figures (CRS Conditions)

The Community Rating System (CRS) identifies the preparation and adoption of a Watershed Management Plan (WMP) as a stormwater management program element. The 2017 CRS Coordinator's Manual requires that any WMP seeking credit evaluate the impacts of projected sea level rise. The National Oceanic and Atmospheric Administration's (NOAA) "intermediate high" projection (2012) for the Year 2100 was to be used as the basis of evaluation. Depth of Flooding Figures contained within this appendix show the limits of flooding for various storm events when adjusting the tailwater condition to replicate this sea level rise scenario (EL. = 4.42').

An Addendum to the aforementioned manual was issued in January 2021 as the WMP was nearing completion. This Addendum states that the recommended sea level rise determination tool is the U.S. Army Corps of Engineers' "Sea-Level Change Curve Calculator". However, language within the newly issued guidance document recognizes that the program is adopting a "best available data" baseline for providing credit for communities. It is believed that presenting projected future flooding using two (2) distinct sea level rise projections will serve to meet the prerequisites of the WMP creditable activity.



Legend

10-year / 24-hour (CRS)

High : 4.98 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N

Legend

25-year / 24-hour (CRS)

High : 5.03 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640

Feet

N

Legend

50-year / 24-hour (CRS)

High : 5.06 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640

Feet

N

Legend

100-year / 24-hour (CRS)

High : 5.12 ft

Low : 0 ft

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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640

Feet

N



Legend

2.33-year / 24-hour (CRS)

High : 4.83 ft

Low : 0 ft

ADVANCED ENGINEERING & DESIGN, INC.
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City of Treasure Island
Watershed Management Plan
Depth of Flooding

0 205 410 820 1,230 1,640
Feet

N

APPENDIX F

Pre-Design Opinions of Probable Cost

City of Treasure Island

Watershed Management Plan

Downtown Drainage Improvements

Pre-Design Opinion of Probable Cost

DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 200,000.00	$ 200,000.00
Erosion & Sediment Control	LS	1.00	$ 40,000.00	$ 40,000.00
STORMWATER				
14" x 23" ERCP	LF	490.00	$ 90.00	$ 44,100.00
24" x 38" ERCP	LF	530.00	$ 130.00	$ 68,900.00
29" x 45" ERCP	LF	525.00	$ 160.00	$ 84,000.00
38" x 60" ERCP	LF	225.00	$ 190.00	$ 42,750.00
18" RCP	LF	725.00	$ 85.00	$ 61,625.00
24" RCP	LF	995.00	$ 110.00	$ 109,450.00
30" RCP	LF	340.00	$ 130.00	$ 44,200.00
36" RCP	LF	250.00	$ 150.00	$ 37,500.00
42" RCP	LF	195.00	$ 175.00	$ 34,125.00
Grated Inlet	EA	8.00	$ 8,000.00	$ 64,000.00
Curb Inlet	EA	8.00	$ 13,500.00	$ 108,000.00
Manhole	EA	5.00	$ 6,500.00	$ 32,500.00
ROADWAY				
Curbing	LF	5,450.00	$ 45.00	$ 245,250.00
Base Material	CY	27,250.00	$ 40.00	$ 1,090,000.00
Asphaltic Concrete Pavement	TON	2,700.00	$ 175.00	$ 472,500.00
Concrete Sidewalk	SY	3,350.00	$ 80.00	$ 268,000.00
Transition Grading	SY	20,750.00	$ 15.00	$ 311,250.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	150.00	$ 150.00	$ 22,500.00
Sanitary Lateral Reconstruction	LF	500.00	$ 75.00	$ 37,500.00
Conflict Structure	EA	12.00	$ 10,000.00	$ 120,000.00
RESTORATION				
Sodding	SY	7,500.00	$ 10.00	$ 75,000.00
Pavement / Driveways	SY	14,235.00	$ 75.00	$ 1,067,625.00
Outfall	EA	3.00	$ 50,000.00	$ 150,000.00
			SUBTOTAL	$ 4,830,775.00
General Conditions			10%	$ 483,077.50
			SUBTOTAL	$ 5,313,852.50
Profit & Overhead			15%	$ 797,077.88
			SUBTOTAL	$ 6,110,930.38
Project Contingency			25%	$ 1,527,732.59
			TOTAL	**$ 7,638,662.97**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island
Watershed Management Plan
115th Avenue Reconstruction
Pre-Design Opinion of Probable Cost

DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 125,000.00	$ 125,000.00
Erosion & Sediment Control	LS	1.00	$ 35,000.00	$ 35,000.00
STORMWATER				
24" x 38" ERCP	LF	150.00	$ 130.00	$ 19,500.00
18" RCP	LF	675.00	$ 85.00	$ 57,375.00
24" RCP	LF	300.00	$ 110.00	$ 33,000.00
30" RCP	LF	450.00	$ 130.00	$ 58,500.00
Excavation	CY	2,585.00	$ 15.00	$ 38,775.00
Grated Inlet	EA	6.00	$ 8,000.00	$ 48,000.00
Curb Inlet	EA	12.00	$ 13,500.00	$ 162,000.00
Manhole	EA	8.00	$ 6,500.00	$ 52,000.00
ROADWAY				
Curbing	LF	19,900.00	$ 45.00	$ 895,500.00
Base Material	CY	4,850.00	$ 40.00	$ 194,000.00
Asphaltic Concrete Pavement	TON	590.00	$ 175.00	$ 103,250.00
Concrete Sidewalk	SY	365.00	$ 80.00	$ 29,200.00
Transition Grading	SY	14,750.00	$ 15.00	$ 221,250.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	50.00	$ 150.00	$ 7,500.00
Sanitary Lateral Reconstruction	LF	100.00	$ 75.00	$ 7,500.00
Conflict Structure	EA	3.00	$ 10,000.00	$ 30,000.00
RESTORATION				
Sodding	SY	1,825.00	$ 10.00	$ 18,250.00
Pavement / Driveways	SY	3,750.00	$ 75.00	$ 281,250.00
Outfall	EA	6.00	$ 50,000.00	$ 300,000.00
			SUBTOTAL	$ 2,716,850.00
General Conditions			10%	$ 271,685.00
			SUBTOTAL	$ 2,988,535.00
Profit & Overhead			15%	$ 448,280.25
			SUBTOTAL	$ 3,436,815.25
Project Contingency			25%	$ 859,203.81
			TOTAL	**$ 4,296,019.06**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island
Watershed Management Plan
112th Avenue Drainage Improvements
Pre-Design Opinion of Probable Cost

DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 65,000.00	$ 65,000.00
Erosion & Sediment Control	LS	1.00	$ 15,000.00	$ 15,000.00
STORMWATER				
38" x 60" ERCP	LF	205.00	$ 190.00	$ 38,950.00
15" RCP	LF	330.00	$ 80.00	$ 26,400.00
24" RCP	LF	135.00	$ 110.00	$ 14,850.00
30" RCP	LF	725.00	$ 130.00	$ 94,250.00
Stormwater Treatment Structure	EA	2.00	$ 50,000.00	$ 100,000.00
Grated Inlet	EA	2.00	$ 8,000.00	$ 16,000.00
Curb Inlet	EA	18.00	$ 13,500.00	$ 243,000.00
Manhole	EA	6.00	$ 6,500.00	$ 39,000.00
ROADWAY				
Curbing	LF	5,700.00	$ 45.00	$ 256,500.00
Base Material	CY	3,935.00	$ 40.00	$ 157,400.00
Asphaltic Concrete Pavement	TON	340.00	$ 175.00	$ 59,500.00
Concrete Sidewalk	SY	695.00	$ 80.00	$ 55,600.00
Transition Grading	SY	3,170.00	$ 15.00	$ 47,550.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	50.00	$ 150.00	$ 7,500.00
Sanitary Lateral Reconstruction	LF	100.00	$ 75.00	$ 7,500.00
Conflict Structure	EA	5.00	$ 10,000.00	$ 50,000.00
RESTORATION				
Sodding	SY	600.00	$ 10.00	$ 6,000.00
Pavement / Driveways	SY	475.00	$ 75.00	$ 35,625.00
Outfall	EA	2.00	$ 50,000.00	$ 100,000.00
			SUBTOTAL	$ 1,435,625.00
General Conditions			10%	$ 143,562.50
			SUBTOTAL	$ 1,579,187.50
Profit & Overhead			15%	$ 236,878.13
			SUBTOTAL	$ 1,816,065.63
Project Contingency			25%	$ 454,016.41
			TOTAL	**$ 2,270,082.03**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island				
Watershed Management Plan				
Sunshine Beach Stormwater Pump Station				
Pre-Design Opinion of Probable Cost				
DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 30,000.00	$ 30,000.00
Erosion & Sediment Control	LS	1.00	$ 10,000.00	$ 10,000.00
STORMWATER				
18" RCP	LF	100.00	$ 85.00	$ 8,500.00
36" RCP	LF	435.00	$ 150.00	$ 65,250.00
12" Stormwater Force Main	LF	500.00	$ 225.00	$ 112,500.00
Precast Concrete Wet Well	EA	1.00	$ 30,000.00	$ 30,000.00
Pumps, Piping & Electrical	LS	1.00	$ 285,000.00	$ 285,000.00
Grated Inlet	EA	4.00	$ 8,000.00	$ 32,000.00
Curb Inlet	EA	2.00	$ 13,500.00	$ 27,000.00
Manhole	EA	2.00	$ 6,500.00	$ 13,000.00
ROADWAY				
Curbing	LF	250.00	$ 45.00	$ 11,250.00
Concrete Sidewalk	SY	100.00	$ 80.00	$ 8,000.00
Transition Grading	SY	500.00	$ 15.00	$ 7,500.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	50.00	$ 150.00	$ 7,500.00
Sanitary Lateral Reconstruction	LF	100.00	$ 75.00	$ 7,500.00
Conflict Structure	EA	2.00	$ 10,000.00	$ 20,000.00
RESTORATION				
Sodding	SY	1,000.00	$ 10.00	$ 10,000.00
Pavement / Driveways	SY	2,650.00	$ 75.00	$ 198,750.00
Outfall	EA	1.00	$ 50,000.00	$ 50,000.00
			SUBTOTAL	$ 933,750.00
General Conditions			10%	$ 93,375.00
			SUBTOTAL	$ 1,027,125.00
Profit & Overhead			15%	$ 154,068.75
			SUBTOTAL	$ 1,181,193.75
Project Contingency			25%	$ 295,298.44
			TOTAL	**$ 1,476,492.19**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island
Watershed Management Plan
Sunset Beach Drainage Improvements
Pre-Design Opinion of Probable Cost

DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 75,000.00	$ 75,000.00
Erosion & Sediment Control	LS	1.00	$ 30,000.00	$ 30,000.00
STORMWATER				
14" x 23" ERCP	LF	760.00	$ 90.00	$ 68,400.00
24" x 38" ERCP	LF	145.00	$ 130.00	$ 18,850.00
29" x 45" ERCP	LF	480.00	$ 160.00	$ 76,800.00
38" x 60" ERCP	LF	230.00	$ 190.00	$ 43,700.00
18" RCP	LF	100.00	$ 85.00	$ 8,500.00
24" RCP	LF	190.00	$ 110.00	$ 20,900.00
30" RCP	LF	530.00	$ 130.00	$ 68,900.00
Grated Inlet	EA	6.00	$ 8,000.00	$ 48,000.00
Curb Inlet	EA	17.00	$ 13,500.00	$ 229,500.00
Manhole	EA	8.00	$ 6,500.00	$ 52,000.00
ROADWAY				
Curbing	LF	7,330.00	$ 45.00	$ 329,850.00
Base Material	CY	20,500.00	$ 40.00	$ 820,000.00
Asphaltic Concrete Pavement	TON	835.00	$ 175.00	$ 146,125.00
Concrete Sidewalk	SY	420.00	$ 80.00	$ 33,600.00
Transition Grading	SY	9,740.00	$ 15.00	$ 146,100.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	500.00	$ 150.00	$ 75,000.00
Sanitary Lateral Reconstruction	LF	1,700.00	$ 75.00	$ 127,500.00
Conflict Structure	EA	10.00	$ 10,000.00	$ 100,000.00
RESTORATION				
Sodding	SY	3,000.00	$ 10.00	$ 30,000.00
Pavement / Driveways	SY	6,740.00	$ 75.00	$ 505,500.00
Outfall	EA	2.00	$ 50,000.00	$ 100,000.00
			SUBTOTAL	$ 3,154,225.00
General Conditions			10%	$ 315,422.50
			SUBTOTAL	$ 3,469,647.50
Profit & Overhead			15%	$ 520,447.13
			SUBTOTAL	$ 3,990,094.63
Project Contingency			25%	$ 997,523.66
			TOTAL	**$ 4,987,618.28**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island				
Watershed Management Plan				
116th & 117th Avenue Drainage Improvements				
Pre-Design Opinion of Probable Cost				
DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 50,000.00	$ 50,000.00
Erosion & Sediment Control	LS	1.00	$ 15,000.00	$ 15,000.00
STORMWATER				
18" RCP	LF	75.00	$ 85.00	$ 6,375.00
24" RCP	LF	380.00	$ 110.00	$ 41,800.00
Stormwater Treatment Structure	EA	1.00	$ 50,000.00	$ 50,000.00
Grated Inlet	EA	2.00	$ 8,000.00	$ 16,000.00
Curb Inlet	EA	4.00	$ 13,500.00	$ 54,000.00
Manhole	EA	4.00	$ 6,500.00	$ 26,000.00
ROADWAY				
Curbing	LF	1,930.00	$ 45.00	$ 86,850.00
Base Material	CY	4,425.00	$ 40.00	$ 177,000.00
Asphaltic Concrete Pavement	TON	325.00	$ 175.00	$ 56,875.00
Concrete Sidewalk	SY	325.00	$ 80.00	$ 26,000.00
Transition Grading	SY	2,040.00	$ 15.00	$ 30,600.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	100.00	$ 150.00	$ 15,000.00
Sanitary Lateral Reconstruction	LF	100.00	$ 75.00	$ 7,500.00
Conflict Structure	EA	2.00	$ 10,000.00	$ 20,000.00
RESTORATION				
Sodding	SY	405.00	$ 10.00	$ 4,050.00
Pavement / Driveways	SY	1,635.00	$ 75.00	$ 122,625.00
Outfall	EA	1.00	$ 50,000.00	$ 50,000.00
			SUBTOTAL	$ 855,675.00
General Conditions			10%	$ 85,567.50
			SUBTOTAL	$ 941,242.50
Profit & Overhead			15%	$ 141,186.38
			SUBTOTAL	$ 1,082,428.88
Project Contingency			25%	$ 270,607.22
			TOTAL	**$ 1,353,036.09**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island				
Watershed Management Plan				
3rd Street East Drainage Improvements				
Pre-Design Opinion of Probable Cost				
DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 80,000.00	$ 80,000.00
Erosion & Sediment Control	LS	1.00	$ 30,000.00	$ 30,000.00
STORMWATER				
19" x 30" ERCP	LF	515.00	$ 120.00	$ 61,800.00
24" x 38" ERCP	LF	100.00	$ 130.00	$ 13,000.00
29" x 45" ERCP	LF	200.00	$ 160.00	$ 32,000.00
18" RCP	LF	250.00	$ 85.00	$ 21,250.00
Excavation	CY	950.00	$ 15.00	$ 14,250.00
Control Structure	EA	3.00	$ 15,000.00	$ 45,000.00
Grated Inlet	EA	6.00	$ 8,000.00	$ 48,000.00
Curb Inlet	EA	6.00	$ 13,500.00	$ 81,000.00
Manhole	EA	8.00	$ 6,500.00	$ 52,000.00
ROADWAY				
Curbing	LF	4,685.00	$ 45.00	$ 210,825.00
Base Material	CY	4,750.00	$ 40.00	$ 190,000.00
Asphaltic Concrete Pavement	TON	355.00	$ 175.00	$ 62,125.00
Concrete Sidewalk	SY	1,140.00	$ 80.00	$ 91,200.00
Transition Grading	SY	5,205.00	$ 15.00	$ 78,075.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	100.00	$ 150.00	$ 15,000.00
Sanitary Lateral Reconstruction	LF	500.00	$ 75.00	$ 37,500.00
Conflict Structure	EA	2.00	$ 10,000.00	$ 20,000.00
RESTORATION				
Sodding	SY	2,500.00	$ 10.00	$ 25,000.00
Pavement / Driveways	SY	2,705.00	$ 75.00	$ 202,875.00
Outfall	EA	3.00	$ 50,000.00	$ 150,000.00
			SUBTOTAL	$ 1,560,900.00
General Conditions			10%	$ 156,090.00
			SUBTOTAL	$ 1,716,990.00
Profit & Overhead			15%	$ 257,548.50
			SUBTOTAL	$ 1,974,538.50
Project Contingency			25%	$ 493,634.63
			TOTAL	**$ 2,468,173.13**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island				
Watershed Management Plan				
Paradise Blvd. Drainage Improvements				
Pre-Design Opinion of Probable Cost				
DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 52,500.00	$ 52,500.00
Erosion & Sediment Control	LS	1.00	$ 35,000.00	$ 35,000.00
STORMWATER				
18" RCP	LF	790.00	$ 85.00	$ 67,150.00
24" RCP	LF	280.00	$ 110.00	$ 30,800.00
30" RCP	LF	650.00	$ 130.00	$ 84,500.00
36" RCP	LF	895.00	$ 150.00	$ 134,250.00
Grated Inlet	EA	15.00	$ 8,000.00	$ 120,000.00
Curb Inlet	EA	4.00	$ 13,500.00	$ 54,000.00
Manhole	EA	10.00	$ 6,500.00	$ 65,000.00
ROADWAY				
Curbing	LF	5,625.00	$ 45.00	$ 253,125.00
Base Material	CY	4,250.00	$ 40.00	$ 170,000.00
Asphaltic Concrete Pavement	TON	800.00	$ 175.00	$ 140,000.00
Concrete Sidewalk	SY	1,205.00	$ 80.00	$ 96,400.00
Transition Grading	SY	7,250.00	$ 15.00	$ 108,750.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	100.00	$ 150.00	$ 15,000.00
Sanitary Lateral Reconstruction	LF	500.00	$ 75.00	$ 37,500.00
Conflict Structure	EA	5.00	$ 10,000.00	$ 50,000.00
RESTORATION				
Sodding	SY	2,905.00	$ 10.00	$ 29,050.00
Pavement / Driveways	SY	4,345.00	$ 75.00	$ 325,875.00
Outfall	EA	3.00	$ 50,000.00	$ 150,000.00
			SUBTOTAL	$ 2,018,900.00
General Conditions			10%	$ 201,890.00
			SUBTOTAL	$ 2,220,790.00
Profit & Overhead			15%	$ 333,118.50
			SUBTOTAL	$ 2,553,908.50
Project Contingency			25%	$ 638,477.13
			TOTAL	**$ 3,192,385.63**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island

Watershed Management Plan

120th Avenue Stormwater Pump Station

Pre-Design Opinion of Probable Cost

DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 40,000.00	$ 40,000.00
Erosion & Sediment Control	LS	1.00	$ 20,000.00	$ 20,000.00
STORMWATER				
18" RCP	LF	350.00	$ 85.00	$ 29,750.00
36" RCP	LF	505.00	$ 150.00	$ 75,750.00
16" Stormwater Force Main	LF	325.00	$ 275.00	$ 89,375.00
Precast Concrete Wet Well	EA	1.00	$ 37,500.00	$ 37,500.00
Pumps, Piping & Electrical	LS	1.00	$ 285,000.00	$ 285,000.00
Grated Inlet	EA	5.00	$ 8,000.00	$ 40,000.00
Curb Inlet	EA	4.00	$ 13,500.00	$ 54,000.00
Manhole	EA	4.00	$ 6,500.00	$ 26,000.00
ROADWAY				
Curbing	LF	1,125.00	$ 45.00	$ 50,625.00
Base Material	CY	795.00	$ 40.00	$ 31,800.00
Asphaltic Concrete Pavement	TON	165.00	$ 175.00	$ 28,875.00
Transition Grading	SY	1,135.00	$ 15.00	$ 17,025.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	50.00	$ 150.00	$ 7,500.00
Sanitary Lateral Reconstruction	LF	100.00	$ 75.00	$ 7,500.00
Conflict Structure	EA	2.00	$ 10,000.00	$ 20,000.00
RESTORATION				
Sodding	SY	225.00	$ 10.00	$ 2,250.00
Pavement / Driveways	SY	1,100.00	$ 75.00	$ 82,500.00
Outfall	EA	1.00	$ 50,000.00	$ 50,000.00
			SUBTOTAL	$ 995,450.00
General Conditions			10%	$ 99,545.00
			SUBTOTAL	$ 1,094,995.00
Profit & Overhead			15%	$ 164,249.25
			SUBTOTAL	$ 1,259,244.25
Project Contingency			25%	$ 314,811.06
			TOTAL	**$ 1,574,055.31**

Construction pricing represents present day values with no escalation factor.

City of Treasure Island				
Watershed Management Plan				
West Treasure Island Causeway BMPs				
Pre-Design Opinion of Probable Cost				
DESCRIPTION	*UNIT*	*QUANTITY*	*UNIT COST*	*TOTAL COST*
Maintenance of Traffic (Vehicular & Pedestrian)	LS	1.00	$ 225,000.00	$ 225,000.00
Erosion & Sediment Control	LS	1.00	$ 60,000.00	$ 60,000.00
STORMWATER				
18" RCP	LF	790.00	$ 85.00	$ 67,150.00
Grated Inlet	EA	9.00	$ 8,000.00	$ 72,000.00
Manhole	EA	4.00	$ 6,500.00	$ 26,000.00
ROADWAY				
Curbing	LF	5,035.00	$ 45.00	$ 226,575.00
Base Material	CY	23,750.00	$ 40.00	$ 950,000.00
Asphaltic Concrete Pavement	TON	1,960.00	$ 175.00	$ 343,000.00
Concrete Sidewalk	SY	500.00	$ 80.00	$ 40,000.00
Transition Grading	SY	13,885.00	$ 15.00	$ 208,275.00
Signalization Modifications	LS	1.00	$ 275,000.00	$ 275,000.00
SANITARY SEWER				
Gravity Sewer Removal & Replacement	LF	100.00	$ 150.00	$ 15,000.00
Sanitary Lateral Reconstruction	LF	150.00	$ 75.00	$ 11,250.00
Conflict Structure	EA	5.00	$ 10,000.00	$ 50,000.00
RESTORATION				
Sodding	SY	13,885.00	$ 10.00	$ 138,850.00
Pavement / Driveways	SY	2,775.00	$ 75.00	$ 208,125.00
			SUBTOTAL	$ 2,916,225.00
General Conditions			10%	$ 291,622.50
			SUBTOTAL	$ 3,207,847.50
Profit & Overhead			15%	$ 481,177.13
			SUBTOTAL	$ 3,689,024.63
Project Contingency			25%	$ 922,256.16
			TOTAL	**$ 4,611,280.78**

Construction pricing represents present day values with no escalation factor.

APPENDIX G

Pre-Design Water Quality Calculations

Complete Report (not including cost) Ver 3.1.1

Project: 115th Avenue Reconstruction
Date: 12/5/2020 5:24:54 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	115th Ave
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	13.48
Rational Coefficient (0-1)	0.50
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	55.60
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	29.658
Nitrogen Loading (kg/yr)	84.838
Phosphorus Loading (kg/yr)	12.433

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	13.48
Rational Coefficient (0-1)	0.47
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	51.80
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	27.982
Nitrogen Loading (kg/yr)	80.043
Phosphorus Loading (kg/yr)	11.731

Catchment Number: 1 Name: 115th Ave

Project: 115th Avenue Reconstruction
Date: 12/5/2020

Retention Design

Retention Depth (in)	0.250
Retention Volume (ac-ft)	0.281

Watershed Characteristics

Catchment Area (acres)	13.48
Contributing Area (acres)	13.480
Non-DCIA Curve Number	74.00
DCIA Percent	51.80
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	38
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	38

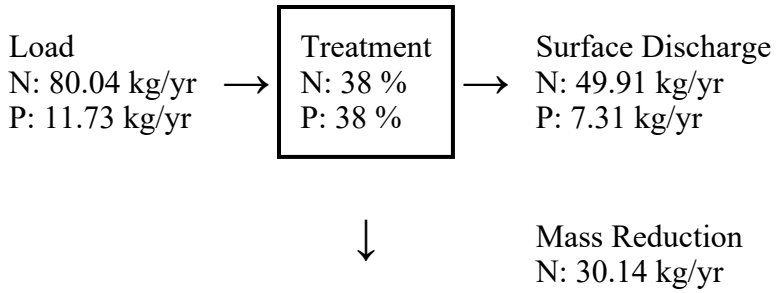
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

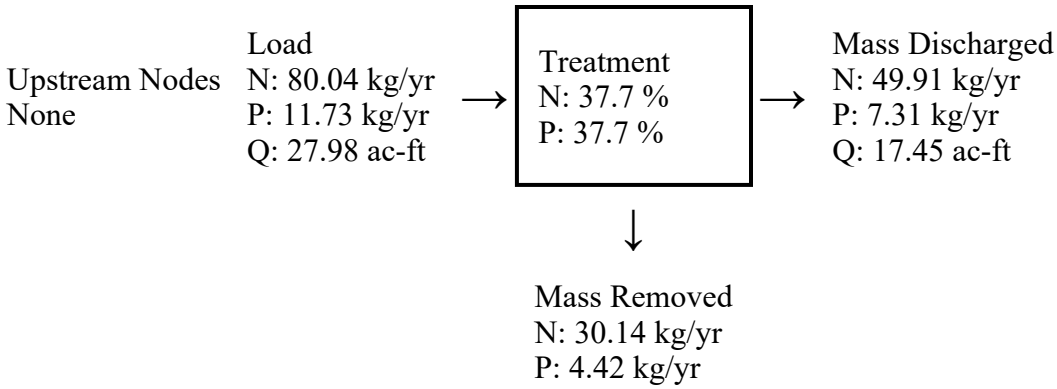
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	30.137
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	4.417
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 4.42 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: 115th Avenue Reconstruction

Date:12/5/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (115th Ave) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	80.04 kg/yr	
Percent N load reduction	38 %	
Provided N discharge load	49.91 kg/yr	110.04 lb/yr
Provided N load removed	30.14 kg/yr	66.45 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	11.731 kg/yr	
Percent P load reduction	38 %	
Provided P discharge load	7.314 kg/yr	16.13 lb/yr

Provided P load removed	4.417 kg/yr	9.739 lb/yr

From Pre-Condition Loads

Existing N Discharge	84.84 (kg/yr)
Existing P Discharge	12.433 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: 112th Avenue Drainage Improvements
Date: 12/5/2020 5:26:47 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	112th Ave
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	13.10
Rational Coefficient (0-1)	0.61
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	71.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	35.342
Nitrogen Loading (kg/yr)	101.098
Phosphorus Loading (kg/yr)	14.816

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	13.10
Rational Coefficient (0-1)	0.61
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	71.00
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	35.342
Nitrogen Loading (kg/yr)	101.098
Phosphorus Loading (kg/yr)	14.816

Catchment Number: 1 Name: 112th Ave

Project: 112th Avenue Drainage Improvements
Date: 12/5/2020

User Defined BMP Design

Contributing Catchment Area (acres)	13.100
Provided Nitrogen Treatment Efficiency (%)	20
Provided Phosphorus Treatment Efficiency (%)	19

Watershed Characteristics

Catchment Area (acres)	13.10
Contributing Area (acres)	13.100
Non-DCIA Curve Number	74.00
DCIA Percent	71.00
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	20
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	19

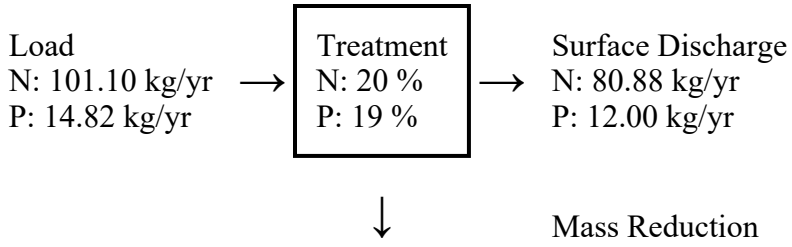
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

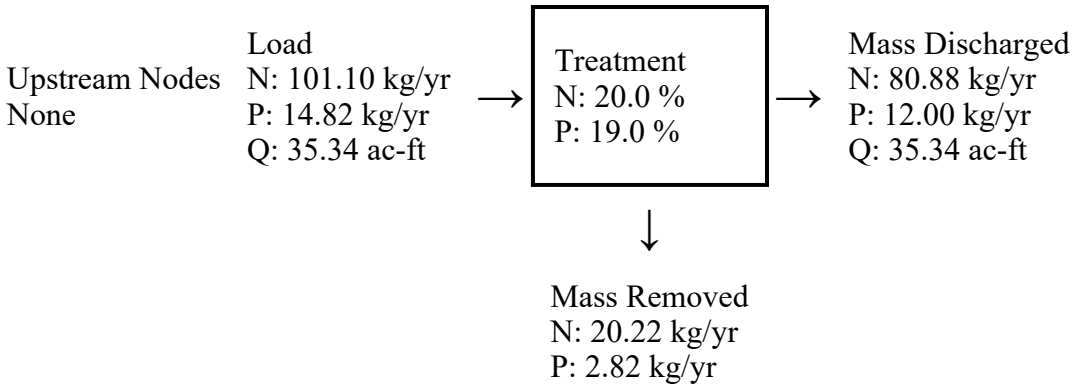
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for User Defined BMP (stand-alone)



N: 20.22 kg/yr
P: 2.82 kg/yr

Load Diagram for User Defined BMP (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: 112th Avenue Drainage Improvements

Date:12/5/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (112th Ave) User Defined BMP

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	101.1 kg/yr	
Percent N load reduction	20 %	
Provided N discharge load	80.88 kg/yr	178.34 lb/yr
Provided N load removed	20.22 kg/yr	44.58 lb/yr

Phosphorus

Surface Water Discharge	
Total P post load	14.816 kg/yr

Percent P load reduction	19 %	
Provided P discharge load	12.001 kg/yr	26.46 lb/yr
Provided P load removed	2.815 kg/yr	6.207 lb/yr

From Pre-Condition Loads

Existing N Discharge	101.1 (kg/yr)
Existing P Discharge	14.816 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: 116th & 117th Avenue Drainage Improvements
Date: 12/5/2020 5:28:44 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	116th _ 17th
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	3.03
Rational Coefficient (0-1)	0.65
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	76.90
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	8.751
Nitrogen Loading (kg/yr)	25.034
Phosphorus Loading (kg/yr)	3.669

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	3.03
Rational Coefficient (0-1)	0.65
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	76.90
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	8.751
Nitrogen Loading (kg/yr)	25.034
Phosphorus Loading (kg/yr)	3.669

Catchment Number: 1 Name: 116th _ 17th

Project: 116th & 117th Avenue Drainage Improvements
Date: 12/5/2020

User Defined BMP Design

Contributing Catchment Area (acres)	3.030
Provided Nitrogen Treatment Efficiency (%)	20
Provided Phosphorus Treatment Efficiency (%)	19

Watershed Characteristics

Catchment Area (acres)	3.03
Contributing Area (acres)	3.030
Non-DCIA Curve Number	74.00
DCIA Percent	76.90
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	20
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	19

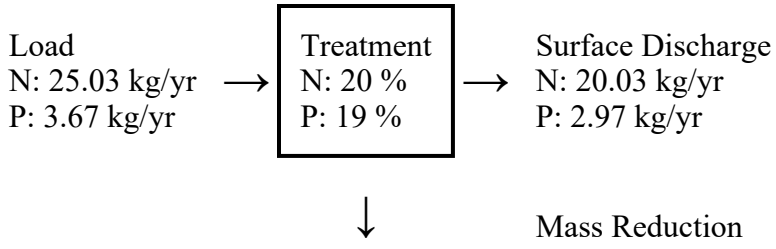
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

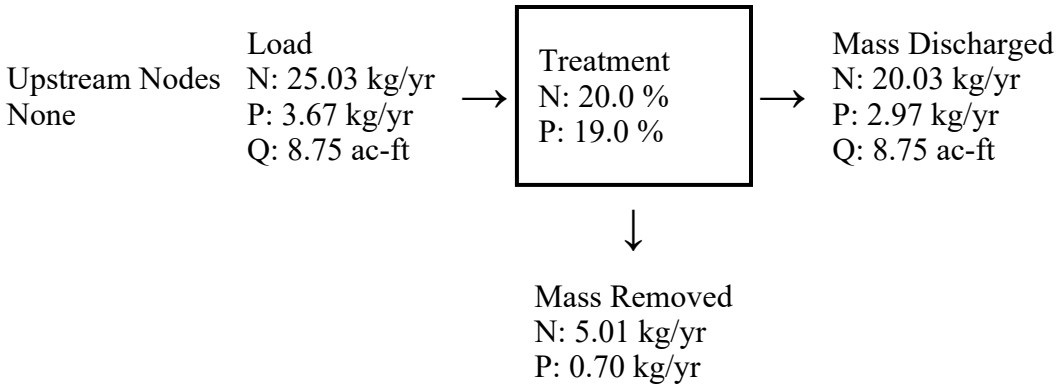
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for User Defined BMP (stand-alone)



N: 5.01 kg/yr
P: 0.70 kg/yr

Load Diagram for User Defined BMP (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: 116th & 117th Avenue Drainage Improvements

Date:12/5/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (116th _ 17th) User Defined BMP

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	25.03 kg/yr	
Percent N load reduction	20 %	
Provided N discharge load	20.03 kg/yr	44.16 lb/yr
Provided N load removed	5.01 kg/yr	11.04 lb/yr

Phosphorus

Surface Water Discharge	
Total P post load	3.669 kg/yr

Percent P load reduction	19 %	
Provided P discharge load	2.972 kg/yr	6.55 lb/yr
Provided P load removed	.697 kg/yr	1.537 lb/yr

From Pre-Condition Loads

Existing N Discharge	25.03 (kg/yr)
Existing P Discharge	3.669 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: 3rd Street East Drainage Improvements
Date: 12/5/2020 5:22:26 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	3rd Street E	Capri Blvd.
Rainfall Zone	Florida Zone 4	Florida Zone 4
Annual Mean Rainfall	53.00	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values	User Defined Values
Area (acres)	1.06	0.75
Rational Coefficient (0-1)	0.58	0.45
Non DCIA Curve Number	74.00	74.00
DCIA Percent (0-100)	66.40	48.80
Nitrogen EMC (mg/l)	2.320	2.320
Phosphorus EMC (mg/l)	0.340	0.340
Runoff Volume (ac-ft/yr)	2.700	1.484
Nitrogen Loading (kg/yr)	7.725	4.244
Phosphorus Loading (kg/yr)	1.132	0.622

Post-Condition Landuse Information

Landuse	User Defined Values	User Defined Values
Area (acres)	1.06	0.75
Rational Coefficient (0-1)	0.56	0.40
Non DCIA Curve Number	74.00	74.00
DCIA Percent (0-100)	63.50	42.50
Wet Pond Area (ac)	0.00	0.00
Nitrogen EMC (mg/l)	2.320	2.320
Phosphorus EMC (mg/l)	0.340	0.340
Runoff Volume (ac-ft/yr)	2.601	1.332
Nitrogen Loading (kg/yr)	7.439	3.811
Phosphorus Loading (kg/yr)	1.090	0.559

Catchment Number: 1 Name: 3rd Street E

Project: 3rd Street East Drainage Improvements
Date: 12/5/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.044

Watershed Characteristics

Catchment Area (acres)	1.06
Contributing Area (acres)	1.060
Non-DCIA Curve Number	74.00
DCIA Percent	63.50
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	54
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	54

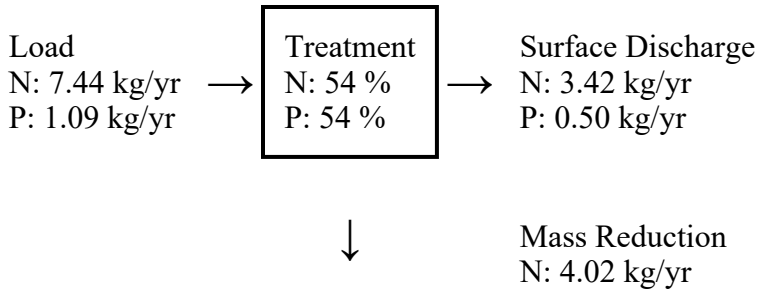
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

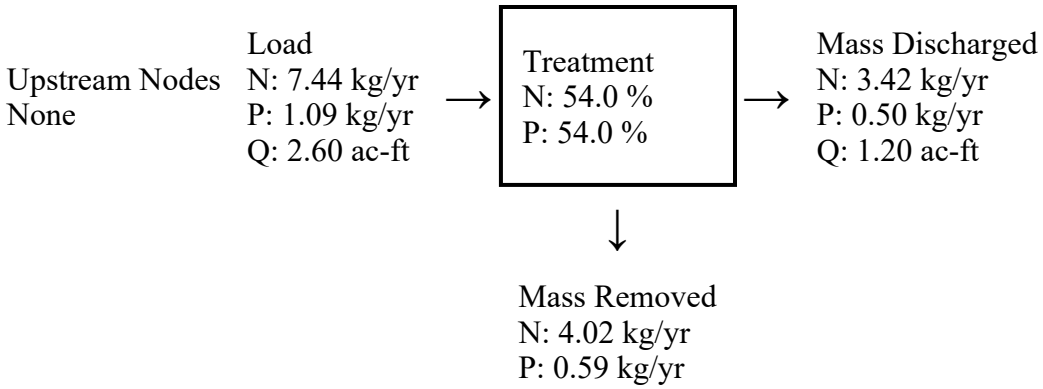
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	4.020
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.589
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 0.59 kg/yr

Load Diagram for Retention (As Used In Routing)



Catchment Number: 2 Name: Capri Blvd.

Project: 3rd Street East Drainage Improvements
Date: 12/5/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.031

Watershed Characteristics

Catchment Area (acres)	0.75
Contributing Area (acres)	0.750
Non-DCIA Curve Number	74.00
DCIA Percent	42.50
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	62
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	62

Media Mix Information

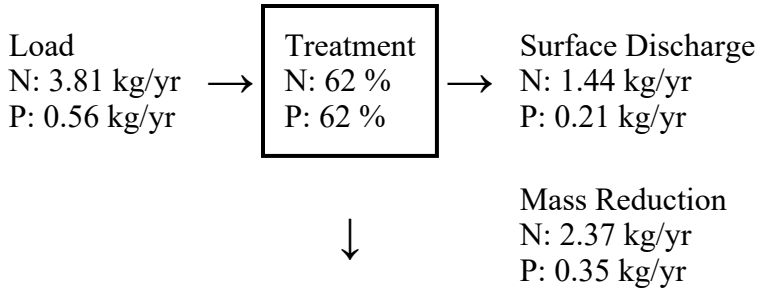
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)

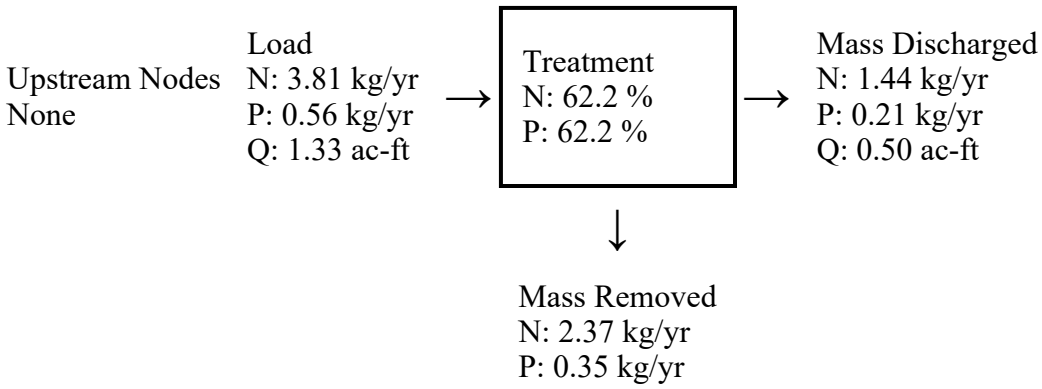
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.370
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.347
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: 3rd Street East Drainage Improvements

Date:12/5/2020

Analysis Type: BMP Analysis

BMP Types:
Catchment 1 - (3rd Street E) Retention
Catchment 2 - (Capri Blvd.) Retention

Routing Summary
Catchment 1 Routed to Outlet
Catchment 2 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	11.25 kg/yr	
Percent N load reduction	57 %	
Provided N discharge load	4.86 kg/yr	10.72 lb/yr
Provided N load removed	6.39 kg/yr	14.09 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	1.649 kg/yr	
Percent P load reduction	57 %	
Provided P discharge load	.712 kg/yr	1.57 lb/yr
Provided P load removed	.937 kg/yr	2.065 lb/yr

From Pre-Condition Loads	
Existing N Discharge	11.97 (kg/yr)
Existing P Discharge	1.754 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: Paradise Blvd. Drainage Improvements
Date: 12/5/2020 6:25:07 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	Paradise Blvd.
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	14.17
Rational Coefficient (0-1)	0.53
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	60.40
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	33.352
Nitrogen Loading (kg/yr)	95.405
Phosphorus Loading (kg/yr)	13.982

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	14.17
Rational Coefficient (0-1)	0.52
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	59.30
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	32.852
Nitrogen Loading (kg/yr)	93.976
Phosphorus Loading (kg/yr)	13.772

Catchment Number: 1 Name: Paradise Blvd.

Project: Paradise Blvd. Drainage Improvements
Date: 12/5/2020

Retention Design

Retention Depth (in)	0.250
Retention Volume (ac-ft)	0.295

Watershed Characteristics

Catchment Area (acres)	14.17
Contributing Area (acres)	14.170
Non-DCIA Curve Number	74.00
DCIA Percent	59.30
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	35
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	35

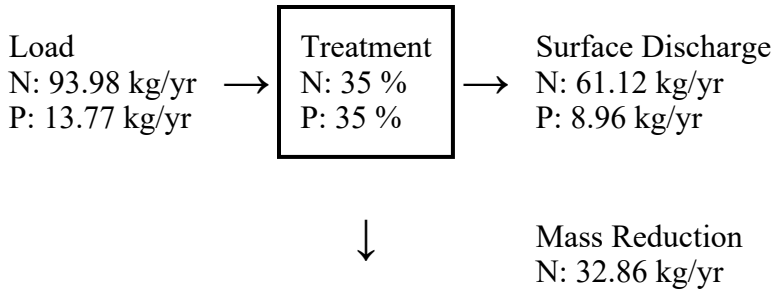
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

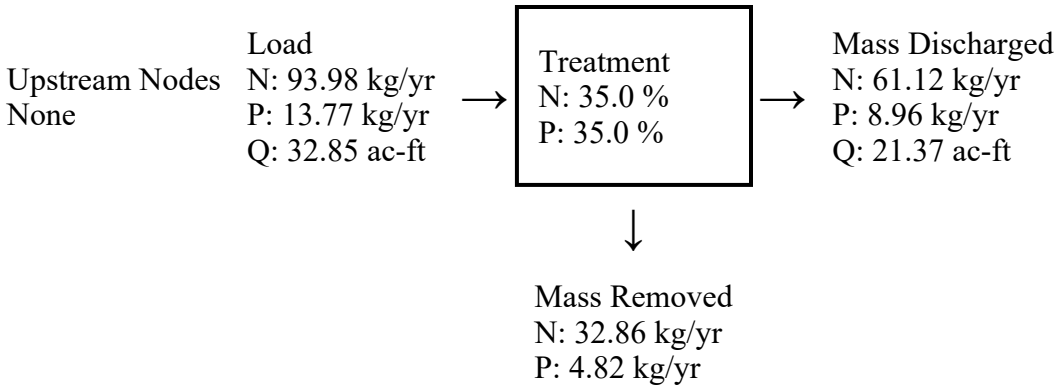
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	32.858
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	4.815
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 4.82 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Paradise Blvd. Drainage Improvements

Date:12/5/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (Paradise Blvd.) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	93.98 kg/yr	
Percent N load reduction	35 %	
Provided N discharge load	61.12 kg/yr	134.77 lb/yr
Provided N load removed	32.86 kg/yr	72.45 lb/yr

Phosphorus

Surface Water Discharge	
Total P post load	13.772 kg/yr
Percent P load reduction	35 %

Provided P discharge load	8.957 kg/yr	19.75 lb/yr
Provided P load removed	4.815 kg/yr	10.618 lb/yr

From Pre-Condition Loads

Existing N Discharge	95.4 (kg/yr)
Existing P Discharge	13.982 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: West Treasure Island Causeway BMPs (Northeast Pond)
Date: 10/2/2020 7:44:41 AM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	NE
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.08
Rational Coefficient (0-1)	0.43
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	45.70
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.029
Nitrogen Loading (kg/yr)	5.805
Phosphorus Loading (kg/yr)	0.851

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.08
Rational Coefficient (0-1)	0.43
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	45.70
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.029
Nitrogen Loading (kg/yr)	5.805
Phosphorus Loading (kg/yr)	0.851

Catchment Number: 1 Name: NE

Project: West Treasure Island Causeway BMPs (Northeast Pond)
Date: 10/2/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.045

Watershed Characteristics

Catchment Area (acres)	1.08
Contributing Area (acres)	1.080
Non-DCIA Curve Number	74.00
DCIA Percent	45.70
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	61
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	61

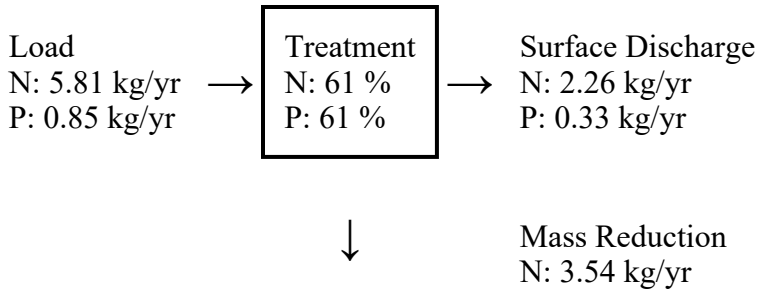
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

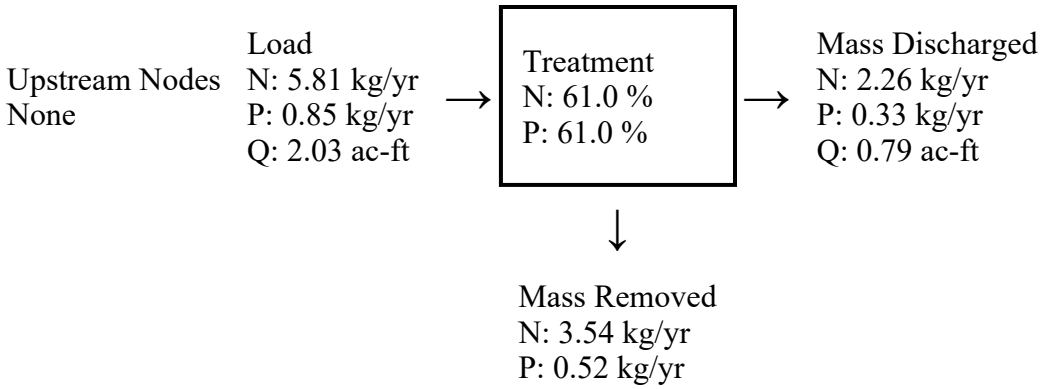
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	3.540
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.519
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 0.52 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Northeast Pond

Date:10/2/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (NE) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	5.81 kg/yr	
Percent N load reduction	61 %	
Provided N discharge load	2.26 kg/yr	4.99 lb/yr
Provided N load removed	3.54 kg/yr	7.81 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	.851 kg/yr	
Percent P load reduction	61 %	
Provided P discharge load	.332 kg/yr	.73 lb/yr
Provided P load removed	.519 kg/yr	1.144 lb/yr

From Pre-Condition Loads

Existing N Discharge	5.81 (kg/yr)
Existing P Discharge	.851 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: West Treasure Island Causeway BMPs (Northwest Pond)
Date: 10/2/2020 7:46:59 AM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	Pond
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.49
Rational Coefficient (0-1)	0.38
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	39.10
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.483
Nitrogen Loading (kg/yr)	7.103
Phosphorus Loading (kg/yr)	1.041

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.49
Rational Coefficient (0-1)	0.38
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	39.10
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.483
Nitrogen Loading (kg/yr)	7.103
Phosphorus Loading (kg/yr)	1.041

Catchment Number: 1 Name: Pond

Project: West Treasure Island Causeway BMPs (Northwest Pond)
Date: 10/2/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.062

Watershed Characteristics

Catchment Area (acres)	1.49
Contributing Area (acres)	1.490
Non-DCIA Curve Number	74.00
DCIA Percent	39.10
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	63
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	63

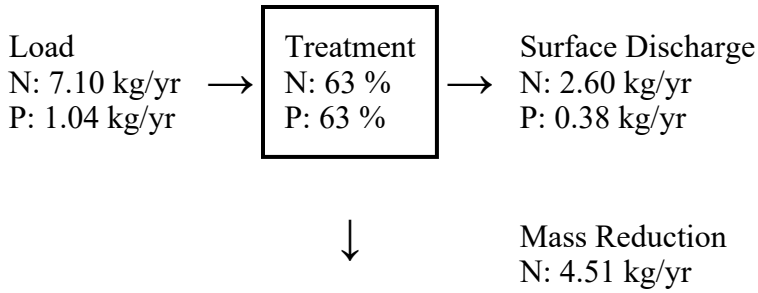
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

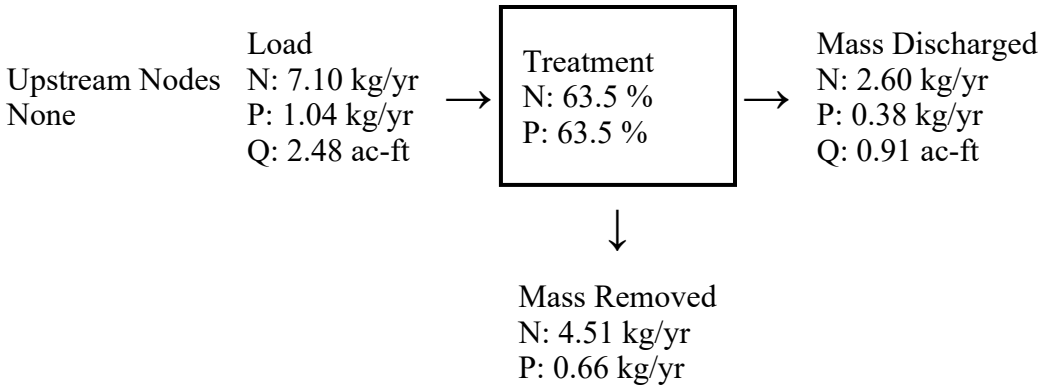
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	4.508
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.661
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 0.66 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Northwest Pond

Date:10/2/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (Pond) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	7.1 kg/yr	
Percent N load reduction	63 %	
Provided N discharge load	2.6 kg/yr	5.72 lb/yr
Provided N load removed	4.51 kg/yr	9.94 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	1.041 kg/yr	
Percent P load reduction	63 %	
Provided P discharge load	.38 kg/yr	.84 lb/yr
Provided P load removed	.661 kg/yr	1.457 lb/yr

From Pre-Condition Loads

Existing N Discharge	7.1 (kg/yr)
Existing P Discharge	1.041 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: West Treasure Island Causeway BMPs (Southeast Pond)
Date: 10/1/2020 5:40:16 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	Pond
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	0.77
Rational Coefficient (0-1)	0.38
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	39.20
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	1.286
Nitrogen Loading (kg/yr)	3.678
Phosphorus Loading (kg/yr)	0.539

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	0.77
Rational Coefficient (0-1)	0.38
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	39.20
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	1.286
Nitrogen Loading (kg/yr)	3.678
Phosphorus Loading (kg/yr)	0.539

Catchment Number: 1 Name: Pond

Project: West Treasure Island Causeway BMPs (Southeast Pond)
Date: 10/1/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.032

Watershed Characteristics

Catchment Area (acres)	0.77
Contributing Area (acres)	0.770
Non-DCIA Curve Number	74.00
DCIA Percent	39.20
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	63
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	63

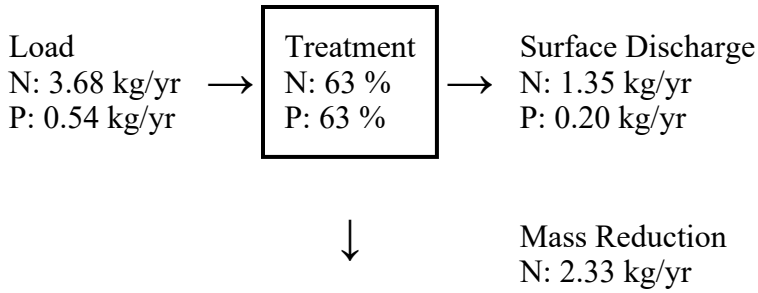
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

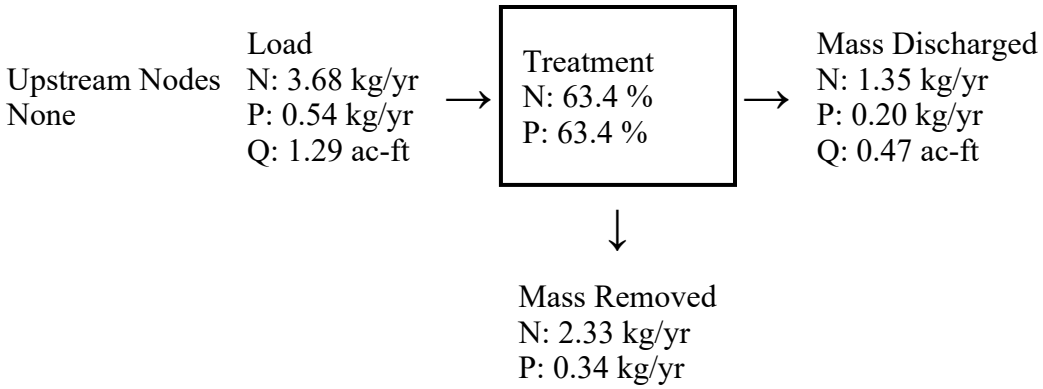
Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.333
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.342
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



P: 0.34 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Southeast Pond

Date:10/1/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (Pond) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	3.68 kg/yr	
Percent N load reduction	63 %	
Provided N discharge load	1.35 kg/yr	2.97 lb/yr
Provided N load removed	2.33 kg/yr	5.14 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	.539 kg/yr	
Percent P load reduction	63 %	
Provided P discharge load	.197 kg/yr	.43 lb/yr
Provided P load removed	.342 kg/yr	.754 lb/yr

From Pre-Condition Loads

Existing N Discharge	3.68 (kg/yr)
Existing P Discharge	.539 (kg/yr)

Complete Report (not including cost) Ver 3.1.1

Project: West Treasure Island Causeway BMPs (Southwest Pond)
Date: 10/1/2020 5:38:27 PM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	Pond
Rainfall Zone	Florida Zone 4
Annual Mean Rainfall	53.00

Pre-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.33
Rational Coefficient (0-1)	0.40
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	42.80
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.375
Nitrogen Loading (kg/yr)	6.795
Phosphorus Loading (kg/yr)	0.996

Post-Condition Landuse Information

Landuse	User Defined Values
Area (acres)	1.33
Rational Coefficient (0-1)	0.40
Non DCIA Curve Number	74.00
DCIA Percent (0-100)	42.80
Wet Pond Area (ac)	0.00
Nitrogen EMC (mg/l)	2.320
Phosphorus EMC (mg/l)	0.340
Runoff Volume (ac-ft/yr)	2.375
Nitrogen Loading (kg/yr)	6.795
Phosphorus Loading (kg/yr)	0.996

Catchment Number: 1 Name: Pond

Project: West Treasure Island Causeway BMPs (Southwest Pond)
Date: 10/1/2020

Retention Design

Retention Depth (in)	0.500
Retention Volume (ac-ft)	0.055

Watershed Characteristics

Catchment Area (acres)	1.33
Contributing Area (acres)	1.330
Non-DCIA Curve Number	74.00
DCIA Percent	42.80
Rainfall Zone	Florida Zone 4
Rainfall (in)	53.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	62
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	62

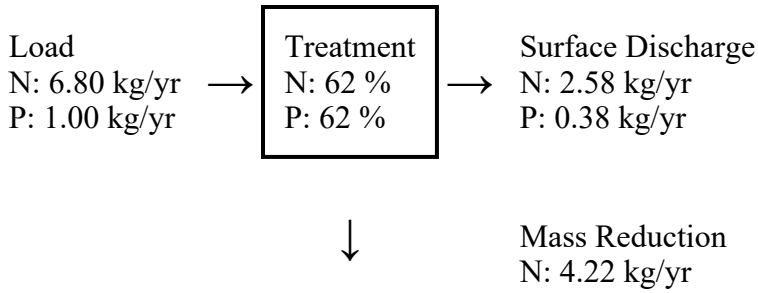
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

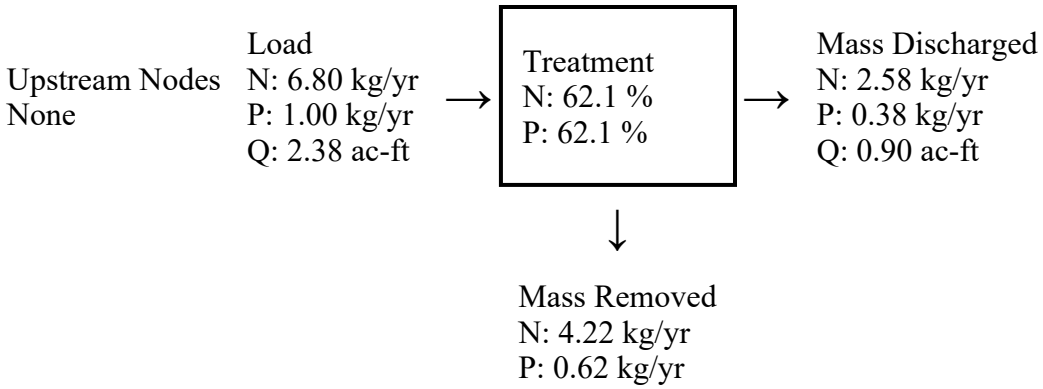
Treatment Rate (MG/yr)	0.481
TN Mass Load (kg/yr)	4.219
TN Concentration (mg/L)	2.320
TP Mass Load (kg/yr)	0.618
TP Concentration (mg/L)	0.340

Load Diagram for Retention (stand-alone)



P: 0.62 kg/yr

Load Diagram for Retention (As Used In Routing)



Summary Treatment Report Version: 3.1.1

Project: Southwest Pond

Date:10/1/2020

Analysis Type: BMP Analysis
BMP Types:
Catchment 1 - (Pond) Retention

Routing Summary
Catchment 1 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge		
Total N post load	6.8 kg/yr	
Percent N load reduction	62 %	
Provided N discharge load	2.58 kg/yr	5.68 lb/yr
Provided N load removed	4.22 kg/yr	9.3 lb/yr

Phosphorus

Surface Water Discharge		
Total P post load	.996 kg/yr	
Percent P load reduction	62 %	
Provided P discharge load	.378 kg/yr	.83 lb/yr
Provided P load removed	.618 kg/yr	1.363 lb/yr

From Pre-Condition Loads

Existing N Discharge	6.8 (kg/yr)
Existing P Discharge	.996 (kg/yr)

APPENDIX H

Responses to Report Commentary

ADVANCED
ENGINEERING & DESIGN, INC.
CIVIL•MUNICIPAL•SITE DESIGN•PERMITTING•PLANNING
3931 68TH AVENUE, PINELLAS PARK, FL 33781 • TEL(727)526-9158 • FAX(727)527-9683 • www.aed-fl.com

October 22, 2020

Stacy A. Boyles, P.E., LEED AP, ENV SP
Assistant Public Works Director
City of Treasure Island
120 108th Avenue
Treasure Island, Florida 33706

Re: City of Treasure Island Watershed Management Plan
Response to Report Commentary

Dear Ms. Boyles:

Please allow this letter to serve as Advanced Engineering & Design, Inc.'s (AED) formal response to commentary issued by the City of Treasure Island the Southwest Florida Water Management District (SWFWMD). Commentary has been restated with AED's response in bold text.

City of Treasure Island Commentary

1. Section 1.1 – Previous Studies

   Please address that the Master Drainage Plan (dated December, 1996) is now obsolete and that the City completed the projects previously identified within the report.

   Please note that this section has been revised to state that all improvements contained within the older report have been completed. This, coupled with certain assumptions that are not reflective of current stormwater evaluation standards, has rendered this report obsolete.

2. Section 3.0 – Topographic Information

   Please comment on the availability of more current LIDAR data from Pinellas County.

   It is believed that the County will be releasing updated LIDAR information in the near future. However, these updated records will not be a component of the WMP as using a new DEM would require restarting the evaluation process.

   Please note that, since the time of last submission, the DEM has been modified to incorporate significant developments not present at the time of LIDAR acquisition. Please see Page 3-5 of the report to view a list of locations where DEM modifications were made.

3. Section 5.3.2 – Rainfall Excess & Unit Hydrograph

Please comment on the impervious surface ratios (ISRs) within the City's Land Development Regulations. Can recommendations be made to improve ISRs?

Please note that AED correlated the City zoning designations with the FLUCCS Land Use classifications present throughout the City and utilized within the study. The predominant land uses were residential (medium and high density) and commercial. Please see the below summary table to view the correlation between the land uses referenced in the study (and used for hydrologic evaluation) and specific zoning districts.

City Zoning District	*Impervious Surface Ratio (ISR)*	*FLUCCS Description*	*Directly Connected Impervious Area (DCIA)*
RU-75 (Single Family Residential)	0.50	Residential, Medium Density	50%
RU-75 (Single Family Residential)	0.70	Residential, Medium Density	70%
RFM-30 (Resort Medium)	0.85	Commercial and Services	90%
RFM-30 (Resort High)	0.95	Commercial and Services	90%
CG (Commercial)	0.90	Commercial and Services	90%
PR-MU Core	0.90	Commercial and Services	90%
PR-MU Gulf Blvd	0.90	Commercial and Services	90%

Naturally, reducing ISRs throughout the various zoning districts would not only reduce pollutant loading but also reduce the volume of runoff which is routed to the City's stormwater systems. However, the reduction of ISRs should be undertaken by a land use / zoning professional who may be able to report on the benefits (and possible adverse impacts) of implementing a City-wide ISR reduction. With this being said, a brief review of other municipal codes found that the City's ISRs for residential and commercial type districts are within a "typical" range.

4. Section 5.3.6 – Boundary Conditions

Please note that CRS specifies the use of the NOAA intermediate-high projection.

AED is aware that CRS recognizes the intermediate-high projection based upon the NOAA curves developed in 2012. Please note that the WMP utilizes the NOAA curves developed in 2017. The Year 2100 projections assumed within the WMP complies with the year projections recommended within the CRS manual.

It shall be noted that there is a considerable difference between the 2012 and 2017 projections for the same SLR scenario. Using the 2012 projections would result in a tidal elevation of 4.42'. Conversely, the 2017 projections would result in a tidal elevation of 6.24'. The 2012 NOAA Intermediate-High projection is within 4" of the 2017 NOAA Intermediate projection which is recommended for planning by the Tampa Bay Regional Planning Council.

The City is currently receiving 30 points (not including impact adjustments) for Activity 450 (Stormwater Management). It is believed that the City received the 30 points under 452.c (Erosion and Sedimentation Control Regulations) for regulating sites greater than 0.5 acre. It is possible that this WMP will assist in receiving additional points under activity 452.b (Watershed Master Plan). However, since the City has no natural or constructed channels, we understand that evaluation of the impacts resulting from 2012 NOAA Intermediate-High projection is needed.

If acceptable to the City, we will be executing the model (using multiple storm events) with this elevated tailwater condition. Corresponding floodplain maps / depth grids would be included within a separate Appendix. Due to reasons stated within the body of the WMP, we do not believe designing projects using this tidal condition is prudent.

5. Section 6.2 – Comprehensive Plan Correlation

Include discussion of updates currently in progress. All references to the former Master Drainage Plan are being removed, so I'm not sure whether it should be referenced in this section. Might be better to say how this WMP will inform the Comp Plan updates to be adopted later this year.

With the Comprehensive Plan being valid at the time of report preparation, we believe discussion on how our LOS approach varies from the Comp Plan is worthwhile. The design storm recommendations (to be made in subsequent sections) will restate the design storm discussion included within this section.

This section has been revised to state that the Comp Plan is in the process of being updated.

6. Section 6.3 – Recommended Roadway Level of Service Revisions

Consider adding an additional LOS classification focusing on the upper limits needed for emergency vehicles.

It has been reported that police response vehicles can function with 12"-16" of standing water. Therefore, LOS "E" has be reclassified to replicate this condition for consideration as the lowest level of acceptable flooding for local roadways. LOS "F" will be assigned to basins where the 16" flooding depth threshold is exceeded.

7. Section 6.4 – Roadway Level of Service Methodology

Consider adding clarification that basin level of service, and the generalized performance rubric, should not be used for specific project design. Project design should focus on performance throughout the basin and not just the basin itself.

Clarification language has been added to state that project-specific design shall ensure that the desired LOS is met for all locations within the project limits.

8. Section 6.6 – Areas of Concern

Please provide recommendations for addressing Gulf Blvd. drainage issues with the FDOT (applicable to Subwatershed B, C & D)

Section 7 will present proposed improvements to address the identified (and other) areas of concern. Please note that Gulf Blvd. issues will attempt to be resolved by upsizing outfall piping. Improvements to FDOT-owned piping would not be considered.

9. Not Section Specific

Consider the incorporation of the East Causeway.

This area has been added to the WMP study limits.

10. Not Section Specific

Since we're in the process of updates the Comprehensive Plan and LDR's, please make recommendations where appropriate.

General recommendations can be provided on Comp Plan and Land Development regulations. This will be contained in subsequent sections of the report.

11. Not Section Specific

Please ensure that we're achieving CRS credits where feasible. Should we include a CRS section to address credits we're pursuing versus those that aren't applicable/feasible?

Additional commentary can be provided on possible CRS credit opportunities. This will be contained in subsequent sections of the report.

12. Not Section Specific

Should the plan reference floodable park spaces as a stormwater management best practice? This may be beneficial at the LS 4 park and Triangle Park. The Park Master Plan will be adopted in August and could incorporate these recommendations.

Floodable park spaces can serve to attenuate runoff or provide additional floodplain storage. However, we believe this may be a more prudent tool for inland areas where flooding more directly correlates to volume limitations within the floodplain. The City's floodplain hazards are associated with elevated tidal conditions; a scenario which essentially represents an infinite volume of water.

With this being said, depressing park surfaces to promote infiltration and improve water quality could certainly be considered. However, the high groundwater elevations coupled with low-lying roadways (which would drain to these flooded parks) may significantly impact the use of the land. Typically, floodable parks would be used as a secondary means of floodplain management rather than the primary means of water quality improvement.

It is possible that the City will consider elevating roadways. Should roadways surrounding a park be elevated, clearance between the parkland grades and water table would be less of a concern. Functionality of the park would still need to be considered.

13. Not Section Specific

Should this model be adapted for the City's vulnerability assessment?

The goal of this project is to provide the City with an executable stormwater model for future evaluation. Recommendations within this report will be based upon the SLR projections recommended within the report. Should the City desire to assesses stormwater system performance for more extreme tidal events, this model would be a suitable evaluation tool.

SWFWMD Commentary

Please note that the District provided additional commentary in the form of a geodatabase. Responses to these comments are included within the geodatabase.

1. Section 1.0 – Introduction

Please add development of a model for the existing conditions/ watershed management plan.

The requested reference to the development of a watershed model has been incorporated into this section.

2. Section 4.2 – Subwatershed Characteristics

Please add basin names to subwatershed maps.

Basin IDs have been added to the full size subwatershed maps located within Appendix A. Please note that, due to scaling limitations, basin designations have not been included in the report figures.

3. Section 5.4 – Model Calibration

Please expand on what exactly was considered and done for this effort. I understand you installed gauges before the start of the study, was that data used at all?

This section has been revised to expand on the efforts performed for model calibration and verification.

4. Section 6.6 – Areas of Concern

Please add road names and basin polygon to the images within this section.

Road names have been added as requested.

Sincerely,
Advanced Engineering & Design, Inc.



Justin Keller, P.E., CFM, ENV SP
Project Manager

Cc: Michael Helfrich, P.E., City of Treasure Island
Ahmed Hamed, P.E., MS, CFM, SWFWMD

ADVANCED
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February 22, 2021

Stacy A. Boyles, P.E., LEED AP, ENV SP
Assistant Public Works Director
City of Treasure Island
120 108th Avenue
Treasure Island, Florida 33706

Re: City of Treasure Island Watershed Management Plan
Response to Report Commentary
Final DRAFT Review

Dear Ms. Boyles:

Please allow this letter to serve as Advanced Engineering & Design, Inc.'s (AED) formal response to commentary issued by the City of Treasure Island the Southwest Florida Water Management District (SWFWMD). Commentary has been restated with AED's response in bold text.

City of Treasure Island Commentary (Legal)

1. General Comment

   Please note that "?" were present throughout the report in lieu of apostrophe's.

   The report has been corrected in locations where this discrepancy was noted.

2. Section 2.0 – Watershed Characteristics

   Figure 2-2 (Land Use Coverage and Classification Map) shows classifications that differ from the City's land use. For example, the current City Hall is listed as "Utilities". Please clarify.

   Please note that land usage is intended to represent the composition of the land in regard to impervious surface percentage and pollutant loading. While the City's zoning / land use designation may differ, we believe that the assigned Land Use is appropriate for stormwater evaluation.

3. Section 5.0 – Watershed Model Development

In the model - were the elevations used the ones from the new FIRM maps? I only ask because I understood many of the City's elevations were dropping on the new FIRM Maps and I was not sure if those decreases would further impact the modeling or the result.

Please note that elevations within this document pertain to rainfall-based flooding. FEMA's surge based flooding resides well above the strata which is being reviewed in this report.

City of Treasure Island Commentary (Public Works)

1. Section 8

Please note that all construction costs represent current values.

This notation has been added.

2. Section 8

Please add West Causeway BMPs as a 10th project.

This project has been added.

3. Section 8 – Downtown Drainage Improvements

Expand project limits to address flooding near 108th and 107th Avenue.

This expansion has been performed and the project cost revised accordingly.

4. Table of Contents

Please hyperlink the Table of Contents.

This task has been performed.

5. New Section

Add new section discussing implementation recommendations.

This section has been added to the report (see Section 10).

SWFWMD Commentary

Please note that the District provided additional commentary as summarized below:

1. Deliverable Folder Structure

Please organize the MXD and set the MXD settings to ensure links will not be disconnected.

The requested revision has been performed.

2. Deliverable Folder Structure

   Do not include all data into the MXD. Instead, consider providing separate MXDs for different phases (BMPs, LOS, etc.)

   The requested revision has been performed.

3. Section 8 – BMP Figures

   BMP figures appear to be compressed and resolution a bit low.

   BMP figures have been revised to improve resolution.

4. Section 8 – BMP Figures

   Basin names are covered by floodplain in certain figures. Consider improving appearance of pre- and post- floodplains.

   BMP figures have been revised to address display order. Additionally, appearance improvements have been made to the floodplains within the BMP figures.

5. Section 8 – Costs

   Please consider adding additional detail in how project costs were determined.

   The appendix including the cost breakdowns has been relocated within the report for clarity purposes (see Appendix F).

6. Section 8 – BMP Figures

   Please identify the names of proposed pipes within the report.

   BMP figures have been revised to depict the link name for all proposed piping.

7. Section 8 – 115th Avenue Reconstruction

   Model appears to be missing pipes presented within the report.

   Please note that these pipes are represented via drop structure. Naming designations have been added for ease of review.

8. Section 8 – 112th Avenue Drainage Improvements

   Figure depicts 15" RCP when it appears link data in the model differs. Please confirm.

   Link information has been confirmed to be correct.

9. Section 8 – Sunshine Beach Stormwater Improvements

Address typo located within Section 8.4; missing “to”.

This correction has been made.

10. Section 8 – Sunshine Beach Stormwater Improvements

Confirm stability of link associated with proposed force main.

It is recognized that a time series graph which appeared in this manner would reflect instability in a gravity-based system. However, this time series graph for the force main illustrates a system that turns on and off depending on the pump station’s operating levels. As such, AED does not consider this link unstable.

11. GWIS Geodatabase

Would you be able to connect the results to the nodes in GIS to allow someone to see the peak stages from each of the simulations from the nodes?

The related table associated with each node has been populated.

12. Section 8 – BMPs

Please consider including pre vs post results for the impacted nodes within your project area.

Section 8.11 has been added to document the performance benefits associated with each proposed project.

13. BMP Stormwater Models

Sunset beach drainage improvements model did not include any comments associated with the links to identify which of the links are proposed. Please add comments in the model to identify which links are proposed or have been revised for all models (3rd street etc).

Please note all BMP figures have been revised to identify which links are proposed and the corresponding link identifier. As such, we believe that this information allows for a determination of which pipes are proposed.

14. Section 8 – BMPs

Please consider including detailed information pertaining to the road improvements such as lengths and extents of elevation.

Please note that entire roadway segments will be elevated to be above the tailwater elevation recommended for use within the report. A minimum low road elevation has been established for each project by documenting the terrain modification goal proposed to be met. This approach may differ from more inland locations where defined “sags” may be present within a roadway allowing for segmental elevation.

15. Section 8 – BMPs

Please consider identifying the specific segments of roadway which are to be improved.

BMP figures have been revised to depict the limits of roadway improvement associated with each project.

16. Section 8 – BMPs

Please include a summary table of benefit vs cost of each of the projects.

Please note that a Benefit / Cost Analysis has been added in Appendix I.

Sincerely,
Advanced Engineering & Design, Inc.



Justin Keller, P.E., CFM, ENV SP
Project Manager

Cc: Michael Helfrich, P.E., City of Treasure Island
Ahmed Hamed, P.E., MS, CFM, SWFWMD

APPENDIX I

Benefit / Cost Analysis

City of Treasure Island

Watershed Management Plan

Benefit / Cost Analysis

Project Name	Roadway Type	Expected Annual Roadway Damage without Benefit			Present Value of Future Benefits	Opinion of Probable Cost	Benefit to Cost Ratio
		Annual Repair Costs	Annual Inundation Costs	Total Flood Costs			
Downtown Drainage Improvements	Minor Arterial	$ 196,923.00	$ 195,641.00	$ 392,564.00	$ 4,907,050.00	$ 7,638,662.00	0.64
115th Avenue Reconstruction	Minor Collector	$ 205,931.00	$ 205,297.00	$ 411,228.00	$ 5,140,350.00	$ 4,296,019.00	1.20
112th Avenue Drainage Improvements	Minor Collector	$ 17,779.00	$ 366,239.00	$ 384,018.00	$ 4,800,225.00	$ 2,270,082.00	2.11
Sunshine Beach Stormwater Pump Station	Local	$ 14,967.00	$ 35,280.00	$ 50,247.00	$ 628,087.50	$ 1,476,492.00	0.43
Sunset Beach Drainage Improvements	Local	$ 109,426.00	$ 392,563.00	$ 501,989.00	$ 6,274,862.50	$ 4,987,618.00	1.26
116th & 117th Avenue Drainage Improvements	Minor Collector	$ 16,241.00	$ 477,113.00	$ 493,354.00	$ 6,166,925.00	$ 1,353,036.00	4.56
3rd Street East Drainage Improvements	Minor Collector	$ 141,233.00	$ 8,052.00	$ 149,285.00	$ 1,866,062.50	$ 2,468,173.00	0.76
Paradise Blvd. Drainage Improvements	Minor Collector	$ 189,188.00	$ 72,547.00	$ 261,735.00	$ 3,271,687.50	$ 3,192,385.00	1.02
120th Avenue Stormwater Pump Station	Local	$ 39,903.00	$ 11,002.00	$ 50,905.00	$ 636,312.50	$ 1,574,055.00	0.40
West Treasure Island Causeway BMPs	Minor Arterial	$ 266,223.00	$ 19,901.00	$ 286,124.00	$ 3,576,550.00	$ 4,611,281.00	0.78

It shall be noted that roadway type referenced in this table differ from roadway classifications utilized within this report.

Roadway repair and inundation costs calculated using SWFWMD's Stormwater Improvement Flood Protection (SIFP) Benefit Cost Analysis Tool.

Roadway inundation considers rainfall in addition to sea level rise impacts. Significant vehicle delay and repair costs associated with long-duration tidal based flooding.

Vehicle trip calculations to be further refined during subsequent design stages.

Present value calculations assumed a 30-year service life with a 7% discount rate. Elevation component of project to have significantly longer service life.

Opinion of probable cost utilizes present day construction values with no escalation factor.

SWFWMD's FY22 CFI Program correlated project cost effectiveness to benefit to cost ratios as follows: < 0.7 (Low); 0.7 - 0.99 (Medium); > 1.0 (High)

Benefit to Cost ratio improvements may be realized as projects develop further.

APPENDIX J

Hydrologic & Hydraulic Model Input Parameters

Simple Basin: A00100

Scenario:	wmp
Node:	NA00100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7800 ac
Curve Number:	92.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00106

Scenario:	wmp
Node:	NA00106
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2000 ac
Curve Number:	92.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00110

Scenario:	wmp
Node:	NA00110
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4300 ac
Curve Number:	92.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00200

Scenario:	wmp
Node:	NA00200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5900 ac
Curve Number:	91.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00300

Scenario:	wmp
Node:	NA00300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2300 ac
Curve Number:	93.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00312

Scenario:	wmp
Node:	NA00312
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6000 ac
Curve Number:	93.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00314P

Scenario:	wmp
Node:	NA00314P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3600 ac
Curve Number:	91.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00335

Scenario:	wmp
Node:	NA00335
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.2000 ac
Curve Number:	93.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00360

Scenario:	wmp
Node:	NA00360
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5800 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00370

Scenario:	wmp
Node:	NA00370
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3900 ac
Curve Number:	94.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00375

Scenario:	wmp
Node:	NA00375
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5500 ac
Curve Number:	95.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00385

Scenario:	wmp
Node:	NA00385
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6700 ac
Curve Number:	94.7
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00510

Scenario:	wmp
Node:	NA00510
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9800 ac
Curve Number:	93.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00605

Scenario:	wmp
Node:	NA00605
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.4522 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6800 ac
Curve Number:	93.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00620

Scenario:	wmp
Node:	NA00620
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.5042 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5200 ac
Curve Number:	93.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00700

Scenario:	wmp
Node:	NA00700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	91.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00710

Scenario:	wmp
Node:	NA00710
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.5342 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.9900 ac
Curve Number:	93.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00735

Scenario:	wmp
Node:	NA00735
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3972 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4100 ac
Curve Number:	93.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00745

Scenario:	wmp
Node:	NA00745
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6900 ac
Curve Number:	93.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00750

Scenario:	wmp
Node:	NA00750
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6400 ac
Curve Number:	93.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00765

Scenario:	wmp
Node:	NA00765
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3332 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0900 ac
Curve Number:	93.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00800

Scenario:	wmp
Node:	NA00800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.6668 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9400 ac
Curve Number:	93.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A00900

Scenario:	wmp
Node:	NA00900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.3143 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9400 ac
Curve Number:	94.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01000

Scenario:	wmp
Node:	NA01000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1200 ac
Curve Number:	93.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01010

Scenario:	wmp
Node:	NA01010
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.7168 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2800 ac
Curve Number:	93.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01100

Scenario:	wmp
Node:	NA01100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0300 ac
Curve Number:	93.7
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01200

Scenario:	wmp
Node:	NA01200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0378 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4800 ac
Curve Number:	92.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01300

Scenario:	wmp
Node:	NA01300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.1004 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9800 ac
Curve Number:	85.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01325

Scenario:	wmp
Node:	NA01325
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.7000 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01600

Scenario:	wmp
Node:	NA01600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0598 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.8800 ac
Curve Number:	85.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01615

Scenario:	wmp
Node:	NA01615
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.3251 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.2000 ac
Curve Number:	86.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01700

Scenario:	wmp
Node:	NA01700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.8433 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1100 ac
Curve Number:	84.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01710

Scenario:	wmp
Node:	NA01710
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4200 ac
Curve Number:	88.4
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01720

Scenario:	wmp
Node:	NA01720
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.4879 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0300 ac
Curve Number:	83.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01800

Scenario:	wmp
Node:	NA01800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2600 ac
Curve Number:	83.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01816

Scenario:	wmp
Node:	NA01816
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.9505 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0000 ac
Curve Number:	87.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01825

Scenario:	wmp
Node:	NA01825
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.9052 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4100 ac
Curve Number:	84.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01835

Scenario:	wmp
Node:	NA01835
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.8908 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.5400 ac
Curve Number:	86.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01850

Scenario:	wmp
Node:	NA01850
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3000 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01855

Scenario:	wmp
Node:	NA01855
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.6348 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.1100 ac
Curve Number:	95.2
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A01900

Scenario:	wmp
Node:	NA01900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4300 ac
Curve Number:	83.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A02000

Scenario:	wmp
Node:	NA02000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4200 ac
Curve Number:	83.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A02100

Scenario:	wmp
Node:	NA02100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0600 ac
Curve Number:	89.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A02110

Scenario:	wmp
Node:	NA02110
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6600 ac
Curve Number:	83.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: A02120

Scenario:	wmp
Node:	NA02120
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6500 ac
Curve Number:	92.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02200

Scenario:	wmp
Node:	NB02200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4500 ac
Curve Number:	96.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02215

Scenario:	wmp
Node:	NB02215
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7400 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02235

Scenario:	wmp
Node:	NB02235
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3300 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02245

Scenario:	wmp
Node:	NB02245
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0600 ac
Curve Number:	80.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02260

Scenario:	wmp
Node:	NB02260
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.6669 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6200 ac
Curve Number:	88.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02270

Scenario:	wmp
Node:	NB02270
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1700 ac
Curve Number:	93.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02310

Scenario:	wmp
Node:	NB02310
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7000 ac
Curve Number:	89.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02315

Scenario:	wmp
Node:	NB02315
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.8800 ac
Curve Number:	90.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02316P

Scenario:	wmp
Node:	NB02316P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2200 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02320

Scenario:	wmp
Node:	NB02320
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4800 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02325

Scenario:	wmp
Node:	NB02325
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2400 ac
Curve Number:	96.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02400

Scenario:	wmp
Node:	NB02400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2500 ac
Curve Number:	87.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02410

Scenario:	wmp
Node:	NB02410
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7100 ac
Curve Number:	91.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02412

Scenario:	wmp
Node:	NB02412
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0100 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02425

Scenario:	wmp
Node:	NB02425
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2100 ac
Curve Number:	97.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02426

Scenario:	wmp
Node:	NB02426
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5400 ac
Curve Number:	96.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02427

Scenario:	wmp
Node:	NB02427
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7500 ac
Curve Number:	94.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02430

Scenario:	wmp
Node:	NB02430
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0100 ac
Curve Number:	93.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02435

Scenario:	wmp
Node:	NB02435
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5500 ac
Curve Number:	89.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02445

Scenario:	wmp
Node:	NB02445
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	97.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02455

Scenario:	wmp
Node:	NB02455
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9100 ac
Curve Number:	96.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02500

Scenario:	wmp
Node:	NB02500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1800 ac
Curve Number:	95.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02510

Scenario:	wmp
Node:	NB02510
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.7963 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8400 ac
Curve Number:	89.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02517P

Scenario:	wmp
Node:	NB02517P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2600 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02600

Scenario:	wmp
Node:	NB02600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0100 ac
Curve Number:	94.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02610

Scenario:	wmp
Node:	NB02610
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4700 ac
Curve Number:	94.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02615

Scenario:	wmp
Node:	NB02615
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0700 ac
Curve Number:	96.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02616

Scenario:	wmp
Node:	NB02616
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2300 ac
Curve Number:	95.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02617

Scenario:	wmp
Node:	NB02617
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1800 ac
Curve Number:	97.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02618

Scenario:	wmp
Node:	NB02618
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02620

Scenario:	wmp
Node:	NB02620
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.4119 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4300 ac
Curve Number:	95.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02622

Scenario:	wmp
Node:	NB02622
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5300 ac
Curve Number:	95.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02700

Scenario:	wmp
Node:	NB02700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1900 ac
Curve Number:	95.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02706

Scenario:	wmp
Node:	NB02706
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0800 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02707

Scenario:	wmp
Node:	NB02707
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4000 ac
Curve Number:	94.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02710

Scenario:	wmp
Node:	NB02710
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9100 ac
Curve Number:	95.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02800

Scenario:	wmp
Node:	NB02800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7500 ac
Curve Number:	94.2
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02900

Scenario:	wmp
Node:	NB02900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4200 ac
Curve Number:	83.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02910

Scenario:	wmp
Node:	NB02910
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6400 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02930

Scenario:	wmp
Node:	NB02930
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.4863 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1000 ac
Curve Number:	93.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: B02965

Scenario:	wmp
Node:	NB02965
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0000 ac
Curve Number:	91.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C002P

Scenario:	wmp
Node:	NC002P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4400 ac
Curve Number:	93.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C003P

Scenario:	wmp
Node:	NC003P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1400 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03000

Scenario:	wmp
Node:	NC03000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9100 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03031P

Scenario:	wmp
Node:	NC03031P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	95.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03040

Scenario:	wmp
Node:	NC03040
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3400 ac
Curve Number:	95.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03050

Scenario:	wmp
Node:	NC03050
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1600 ac
Curve Number:	95.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03055

Scenario:	wmp
Node:	NC03055
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4900 ac
Curve Number:	94.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03100

Scenario:	wmp
Node:	NC03100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.9253 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9200 ac
Curve Number:	82.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03120

Scenario:	wmp
Node:	NC03120
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3100 ac
Curve Number:	93.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03123P

Scenario:	wmp
Node:	NC03123P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7500 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03125

Scenario:	wmp
Node:	NC03125
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6100 ac
Curve Number:	96.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03135

Scenario:	wmp
Node:	NC03135
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7300 ac
Curve Number:	96.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03137

Scenario:	wmp
Node:	NC03137
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2100 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03160

Scenario:	wmp
Node:	NC03160
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6400 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03200

Scenario:	wmp
Node:	NC03200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.6954 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6600 ac
Curve Number:	89.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03210

Scenario:	wmp
Node:	NC03210
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4400 ac
Curve Number:	94.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03220

Scenario:	wmp
Node:	NC03220
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2700 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03222

Scenario:	wmp
Node:	NC03222
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	18.0744 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8900 ac
Curve Number:	74.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03235

Scenario:	wmp
Node:	NC03235
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1300 ac
Curve Number:	96.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03240

Scenario:	wmp
Node:	NC03240
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1600 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03300

Scenario:	wmp
Node:	NC03300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.4300 ac
Curve Number:	94.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03400

Scenario:	wmp
Node:	NC03400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6400 ac
Curve Number:	93.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03415

Scenario:	wmp
Node:	NC03415
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7300 ac
Curve Number:	96.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03500

Scenario:	wmp
Node:	NC03500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6300 ac
Curve Number:	94.3
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03600

Scenario:	wmp
Node:	NC03600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03610

Scenario:	wmp
Node:	NC03610
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3300 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03615

Scenario:	wmp
Node:	NC03615
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4100 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03625

Scenario:	wmp
Node:	NC03625
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4900 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03700

Scenario:	wmp
Node:	NC03700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7500 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03715

Scenario:	wmp
Node:	NC03715
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7100 ac
Curve Number:	96.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03716

Scenario:	wmp
Node:	NC03716
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9600 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03720

Scenario:	wmp
Node:	NC03720
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0200 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03723

Scenario:	wmp
Node:	NC03723
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	96.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03730

Scenario:	wmp
Node:	NC03730
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3700 ac
Curve Number:	96.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03737

Scenario:	wmp
Node:	NC03737
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7600 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03800

Scenario:	wmp
Node:	NC03800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4700 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03825

Scenario:	wmp
Node:	NC03825
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9500 ac
Curve Number:	96.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03830

Scenario:	wmp
Node:	NC03830
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.9672 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6800 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03833P

Scenario:	wmp
Node:	NC03833P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3100 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03835P

Scenario:	wmp
Node:	NC03835P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0500 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03837P

Scenario:	wmp
Node:	NC03837P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5400 ac
Curve Number:	92.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03845

Scenario:	wmp
Node:	NC03845
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6500 ac
Curve Number:	97.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03850

Scenario:	wmp
Node:	NC03850
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7300 ac
Curve Number:	97.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03855

Scenario:	wmp
Node:	NC03855
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6600 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C03856

Scenario:	wmp
Node:	NC03856
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	22.2111 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.5000 ac
Curve Number:	93.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C06000

Scenario:	wmp
Node:	NC06000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0900 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C06010

Scenario:	wmp
Node:	NC06010
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7300 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C06020

Scenario:	wmp
Node:	NC06020
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3600 ac
Curve Number:	96.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: C06400

Scenario:	wmp
Node:	NC06400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5600 ac
Curve Number:	95.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D03900

Scenario:	wmp
Node:	ND03900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.6945 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.6900 ac
Curve Number:	96.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04000

Scenario:	wmp
Node:	ND04000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7400 ac
Curve Number:	92.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04010

Scenario:	wmp
Node:	ND04010
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3900 ac
Curve Number:	95.3
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04012P

Scenario:	wmp
Node:	ND04012P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1700 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04014P

Scenario:	wmp
Node:	ND04014P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0800 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04015

Scenario:	wmp
Node:	ND04015
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.9282 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2600 ac
Curve Number:	96.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04016P

Scenario:	wmp
Node:	ND04016P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2300 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04030

Scenario:	wmp
Node:	ND04030
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8700 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04100

Scenario:	wmp
Node:	ND04100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.0413 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9100 ac
Curve Number:	92.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04200

Scenario:	wmp
Node:	ND04200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.2471 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9200 ac
Curve Number:	92.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04300

Scenario:	wmp
Node:	ND04300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3400 ac
Curve Number:	95.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04315

Scenario:	wmp
Node:	ND04315
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4200 ac
Curve Number:	96.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04316P

Scenario:	wmp
Node:	ND04316P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2800 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04318P

Scenario:	wmp
Node:	ND04318P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1600 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04400

Scenario:	wmp
Node:	ND04400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.3392 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6300 ac
Curve Number:	89.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04500

Scenario:	wmp
Node:	ND04500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2000 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04511

Scenario:	wmp
Node:	ND04511
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8700 ac
Curve Number:	94.3
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04512

Scenario:	wmp
Node:	ND04512
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6400 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04513

Scenario:	wmp
Node:	ND04513
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8400 ac
Curve Number:	96.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04515

Scenario:	wmp
Node:	ND04515
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3700 ac
Curve Number:	97.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04530

Scenario:	wmp
Node:	ND04530
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3300 ac
Curve Number:	97.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04542

Scenario:	wmp
Node:	ND04542
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.5103 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4900 ac
Curve Number:	96.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04550

Scenario:	wmp
Node:	ND04550
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.3352 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.2800 ac
Curve Number:	87.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04555

Scenario:	wmp
Node:	ND04555
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9300 ac
Curve Number:	97.5
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04565

Scenario:	wmp
Node:	ND04565
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.1928 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1500 ac
Curve Number:	92.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04571P

Scenario:	wmp
Node:	ND04571P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.3986 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7000 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04600

Scenario:	wmp
Node:	ND04600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.5335 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6000 ac
Curve Number:	85.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04700

Scenario:	wmp
Node:	ND04700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6300 ac
Curve Number:	85.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04715

Scenario:	wmp
Node:	ND04715
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.7559 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7400 ac
Curve Number:	85.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04800

Scenario:	wmp
Node:	ND04800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2600 ac
Curve Number:	93.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04815

Scenario:	wmp
Node:	ND04815
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3200 ac
Curve Number:	82.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04900

Scenario:	wmp
Node:	ND04900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5900 ac
Curve Number:	85.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04913

Scenario:	wmp
Node:	ND04913
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2000 ac
Curve Number:	82.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04915

Scenario:	wmp
Node:	ND04915
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1000 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04925

Scenario:	wmp
Node:	ND04925
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3600 ac
Curve Number:	88.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04930

Scenario:	wmp
Node:	ND04930
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6300 ac
Curve Number:	88.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04935

Scenario:	wmp
Node:	ND04935
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6900 ac
Curve Number:	86.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04947

Scenario:	wmp
Node:	ND04947
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.7560 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3900 ac
Curve Number:	87.2
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04949P

Scenario:	wmp
Node:	ND04949P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4400 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04951

Scenario:	wmp
Node:	ND04951
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5500 ac
Curve Number:	89.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04960

Scenario:	wmp
Node:	ND04960
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7000 ac
Curve Number:	85.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D04961

Scenario:	wmp
Node:	ND04961
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1700 ac
Curve Number:	92.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05000

Scenario:	wmp
Node:	ND05000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0900 ac
Curve Number:	89.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05100

Scenario:	wmp
Node:	ND05100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7600 ac
Curve Number:	90.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05200

Scenario:	wmp
Node:	ND05200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2400 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05300

Scenario:	wmp
Node:	ND05300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8200 ac
Curve Number:	93.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05310

Scenario:	wmp
Node:	ND05310
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4300 ac
Curve Number:	93.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05315

Scenario:	wmp
Node:	ND05315
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1400 ac
Curve Number:	96.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05316

Scenario:	wmp
Node:	ND05316
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3800 ac
Curve Number:	88.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05335

Scenario:	wmp
Node:	ND05335
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1100 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05337

Scenario:	wmp
Node:	ND05337
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1400 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05339

Scenario:	wmp
Node:	ND05339
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1900 ac
Curve Number:	95.2
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05345

Scenario:	wmp
Node:	ND05345
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1600 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05355

Scenario:	wmp
Node:	ND05355
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2100 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05360

Scenario:	wmp
Node:	ND05360
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0700 ac
Curve Number:	86.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05365

Scenario:	wmp
Node:	ND05365
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0600 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05375

Scenario:	wmp
Node:	ND05375
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1500 ac
Curve Number:	92.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05405

Scenario:	wmp
Node:	ND05405
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	83.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05500

Scenario:	wmp
Node:	ND05500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	24.7649 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	6.7000 ac
Curve Number:	89.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05600

Scenario:	wmp
Node:	ND05600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4500 ac
Curve Number:	91.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05700

Scenario:	wmp
Node:	ND05700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1800 ac
Curve Number:	79.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05800

Scenario:	wmp
Node:	ND05800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3900 ac
Curve Number:	96.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05900

Scenario:	wmp
Node:	ND05900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2400 ac
Curve Number:	97.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D05910

Scenario:	wmp
Node:	ND05910
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7200 ac
Curve Number:	97.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06105P

Scenario:	wmp
Node:	ND06105P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1800 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06110P

Scenario:	wmp
Node:	ND06110P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1900 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06115P

Scenario:	wmp
Node:	ND06115P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1300 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06210P

Scenario:	wmp
Node:	ND06210P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1100 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06215P

Scenario:	wmp
Node:	ND06215P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2200 ac
Curve Number:	96.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: D06300P

Scenario:	wmp
Node:	ND06300P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0400 ac
Curve Number:	95.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E020P

Scenario:	wmp
Node:	NE020P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	9.0900 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08000

Scenario:	wmp
Node:	NE08000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3300 ac
Curve Number:	93.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08100

Scenario:	wmp
Node:	NE08100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2900 ac
Curve Number:	92.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08200

Scenario:	wmp
Node:	NE08200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3250 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8800 ac
Curve Number:	92.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08300

Scenario:	wmp
Node:	NE08300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.0354 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9700 ac
Curve Number:	93.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08400

Scenario:	wmp
Node:	NE08400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.1271 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2800 ac
Curve Number:	92.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08500

Scenario:	wmp
Node:	NE08500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	27.0440 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8000 ac
Curve Number:	91.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08600

Scenario:	wmp
Node:	NE08600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3400 ac
Curve Number:	91.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08615

Scenario:	wmp
Node:	NE08615
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.0369 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9600 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08625

Scenario:	wmp
Node:	NE08625
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.9301 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6100 ac
Curve Number:	91.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08700

Scenario:	wmp
Node:	NE08700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2200 ac
Curve Number:	92.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08716

Scenario:	wmp
Node:	NE08716
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2900 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08717

Scenario:	wmp
Node:	NE08717
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2400 ac
Curve Number:	92.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08720

Scenario:	wmp
Node:	NE08720
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6500 ac
Curve Number:	92.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08735

Scenario:	wmp
Node:	NE08735
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.2445 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8300 ac
Curve Number:	91.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08745

Scenario:	wmp
Node:	NE08745
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4700 ac
Curve Number:	93.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08800

Scenario:	wmp
Node:	NE08800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9300 ac
Curve Number:	91.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E08900

Scenario:	wmp
Node:	NE08900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.4264 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1900 ac
Curve Number:	91.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09000

Scenario:	wmp
Node:	NE09000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9000 ac
Curve Number:	92.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09100

Scenario:	wmp
Node:	NE09100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3501 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3500 ac
Curve Number:	91.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09110

Scenario:	wmp
Node:	NE09110
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9100 ac
Curve Number:	93.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09125

Scenario:	wmp
Node:	NE09125
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.6100 ac
Curve Number:	91.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09200

Scenario:	wmp
Node:	NE09200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09210

Scenario:	wmp
Node:	NE09210
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5600 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09220

Scenario:	wmp
Node:	NE09220
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.4202 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	10.1600 ac
Curve Number:	91.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09300

Scenario:	wmp
Node:	NE09300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6900 ac
Curve Number:	93.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09400

Scenario:	wmp
Node:	NE09400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.1000 ac
Curve Number:	85.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09415

Scenario:	wmp
Node:	NE09415
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1500 ac
Curve Number:	84.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09500

Scenario:	wmp
Node:	NE09500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	31.1730 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.7200 ac
Curve Number:	84.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09600

Scenario:	wmp
Node:	NE09600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.7342 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1700 ac
Curve Number:	89.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09700

Scenario:	wmp
Node:	NE09700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.7840 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.7600 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09800

Scenario:	wmp
Node:	NE09800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6400 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E09900

Scenario:	wmp
Node:	NE09900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.8227 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4500 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10000

Scenario:	wmp
Node:	NE10000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.4158 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1500 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10100

Scenario:	wmp
Node:	NE10100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0752 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8900 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10200

Scenario:	wmp
Node:	NE10200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1800 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10300

Scenario:	wmp
Node:	NE10300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.2071 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.8100 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10400

Scenario:	wmp
Node:	NE10400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.6023 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.2000 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10500

Scenario:	wmp
Node:	NE10500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.4938 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9400 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10600

Scenario:	wmp
Node:	NE10600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.9758 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.8900 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10700

Scenario:	wmp
Node:	NE10700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0500 ac
Curve Number:	88.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10800

Scenario:	wmp
Node:	NE10800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.7228 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9900 ac
Curve Number:	88.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E10900

Scenario:	wmp
Node:	NE10900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6400 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11000

Scenario:	wmp
Node:	NE11000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.3264 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.2700 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11100

Scenario:	wmp
Node:	NE11100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6800 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11200

Scenario:	wmp
Node:	NE11200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.8845 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1600 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11300

Scenario:	wmp
Node:	NE11300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.4427 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9500 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11400

Scenario:	wmp
Node:	NE11400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7000 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11500

Scenario:	wmp
Node:	NE11500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4000 ac
Curve Number:	88.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11600

Scenario:	wmp
Node:	NE11600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.5915 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.6200 ac
Curve Number:	88.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11700

Scenario:	wmp
Node:	NE11700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.2967 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.5900 ac
Curve Number:	88.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11800

Scenario:	wmp
Node:	NE11800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.9097 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6000 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E11900

Scenario:	wmp
Node:	NE11900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.8578 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0400 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12000

Scenario:	wmp
Node:	NE12000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4300 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12100

Scenario:	wmp
Node:	NE12100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3670 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6200 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12200

Scenario:	wmp
Node:	NE12200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4000 ac
Curve Number:	88.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12300

Scenario:	wmp
Node:	NE12300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3902 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9100 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12400

Scenario:	wmp
Node:	NE12400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.4249 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4700 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12500

Scenario:	wmp
Node:	NE12500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.5060 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3100 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E12600

Scenario:	wmp
Node:	NE12600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1700 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E13100

Scenario:	wmp
Node:	NE13100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4000 ac
Curve Number:	94.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: E14000

Scenario:	wmp
Node:	NE14000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5100 ac
Curve Number:	94.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15000

Scenario:	wmp
Node:	NF15000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.9217 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	5.2100 ac
Curve Number:	92.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15010

Scenario:	wmp
Node:	NF15010
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.2451 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4400 ac
Curve Number:	80.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15100

Scenario:	wmp
Node:	NF15100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0300 ac
Curve Number:	92.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15200

Scenario:	wmp
Node:	NF15200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.5368 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2300 ac
Curve Number:	92.2
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15210

Scenario:	wmp
Node:	NF15210
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5800 ac
Curve Number:	83.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15215

Scenario:	wmp
Node:	NF15215
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.9110 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.3500 ac
Curve Number:	91.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15300

Scenario:	wmp
Node:	NF15300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.0143 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4900 ac
Curve Number:	90.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15315

Scenario:	wmp
Node:	NF15315
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.5486 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3400 ac
Curve Number:	82.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15330

Scenario:	wmp
Node:	NF15330
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.3025 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1800 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15400

Scenario:	wmp
Node:	NF15400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.6100 ac
Curve Number:	92.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15500

Scenario:	wmp
Node:	NF15500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.5818 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.3100 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15600

Scenario:	wmp
Node:	NF15600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.7700 ac
Curve Number:	89.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15700

Scenario:	wmp
Node:	NF15700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.2689 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4200 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15800

Scenario:	wmp
Node:	NF15800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.2253 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2800 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F15900

Scenario:	wmp
Node:	NF15900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.8017 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.0200 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16000

Scenario:	wmp
Node:	NF16000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7700 ac
Curve Number:	88.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16100

Scenario:	wmp
Node:	NF16100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.8470 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4400 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16200

Scenario:	wmp
Node:	NF16200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.7525 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.5900 ac
Curve Number:	88.7
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16300

Scenario:	wmp
Node:	NF16300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.8673 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2800 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16310

Scenario:	wmp
Node:	NF16310
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.1453 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2400 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16500

Scenario:	wmp
Node:	NF16500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.3114 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6500 ac
Curve Number:	88.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16510

Scenario:	wmp
Node:	NF16510
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.5086 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1300 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16700

Scenario:	wmp
Node:	NF16700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4200 ac
Curve Number:	88.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16800

Scenario:	wmp
Node:	NF16800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.9097 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3700 ac
Curve Number:	88.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F16900

Scenario:	wmp
Node:	NF16900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.8734 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1200 ac
Curve Number:	88.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17000

Scenario:	wmp
Node:	NF17000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4900 ac
Curve Number:	89.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17100

Scenario:	wmp
Node:	NF17100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.2400 ac
Curve Number:	89.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17200

Scenario:	wmp
Node:	NF17200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.7559 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9200 ac
Curve Number:	89.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17210

Scenario:	wmp
Node:	NF17210
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0206 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9500 ac
Curve Number:	89.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17300

Scenario:	wmp
Node:	NF17300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4100 ac
Curve Number:	87.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17400

Scenario:	wmp
Node:	NF17400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.8573 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1600 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17500

Scenario:	wmp
Node:	NF17500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.8535 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.5800 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17600

Scenario:	wmp
Node:	NF17600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.7802 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0500 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17700

Scenario:	wmp
Node:	NF17700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.0433 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.1100 ac
Curve Number:	87.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: F17800

Scenario:	wmp
Node:	NF17800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.0611 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9700 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20000

Scenario:	wmp
Node:	NG20000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1200 ac
Curve Number:	88.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20100

Scenario:	wmp
Node:	NG20100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.5733 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2900 ac
Curve Number:	88.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20200

Scenario:	wmp
Node:	NG20200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.2863 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8500 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20300

Scenario:	wmp
Node:	NG20300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.1846 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.5400 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20400

Scenario:	wmp
Node:	NG20400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0100 ac
Curve Number:	89.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20500

Scenario:	wmp
Node:	NG20500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.9647 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7900 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20600

Scenario:	wmp
Node:	NG20600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.8062 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4900 ac
Curve Number:	89.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20700

Scenario:	wmp
Node:	NG20700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.9705 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9600 ac
Curve Number:	88.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20800

Scenario:	wmp
Node:	NG20800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.3278 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6500 ac
Curve Number:	91.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20810

Scenario:	wmp
Node:	NG20810
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	18.1588 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.0900 ac
Curve Number:	88.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G20900

Scenario:	wmp
Node:	NG20900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3628 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4600 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21000

Scenario:	wmp
Node:	NG21000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.1368 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3300 ac
Curve Number:	90.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21010

Scenario:	wmp
Node:	NG21010
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8000 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21100

Scenario:	wmp
Node:	NG21100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8200 ac
Curve Number:	91.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21110

Scenario:	wmp
Node:	NG21110
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0459 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4100 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21200

Scenario:	wmp
Node:	NG21200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8000 ac
Curve Number:	92.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21300

Scenario:	wmp
Node:	NG21300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	26.3899 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	6.1100 ac
Curve Number:	87.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21400

Scenario:	wmp
Node:	NG21400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.5760 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.3500 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21415

Scenario:	wmp
Node:	NG21415
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.4285 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8200 ac
Curve Number:	87.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21500

Scenario:	wmp
Node:	NG21500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.5938 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9700 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21600

Scenario:	wmp
Node:	NG21600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.9606 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.4500 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21700

Scenario:	wmp
Node:	NG21700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3580 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.3800 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21715

Scenario:	wmp
Node:	NG21715
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3952 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4800 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21800

Scenario:	wmp
Node:	NG21800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9500 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21810

Scenario:	wmp
Node:	NG21810
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.0506 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	3.6100 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G21900

Scenario:	wmp
Node:	NG21900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.2842 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3500 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22000

Scenario:	wmp
Node:	NG22000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	21.2825 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	4.0700 ac
Curve Number:	78.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22000P

Scenario:	wmp
Node:	NG22000P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.5501 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0200 ac
Curve Number:	83.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22015P

Scenario:	wmp
Node:	NG22015P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	21.7101 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	6.4500 ac
Curve Number:	76.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22025

Scenario:	wmp
Node:	NG22025
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.4645 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6900 ac
Curve Number:	74.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22040

Scenario:	wmp
Node:	NG22040
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	21.4272 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2300 ac
Curve Number:	83.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22100

Scenario:	wmp
Node:	NG22100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.0000 ac
Curve Number:	86.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22300

Scenario:	wmp
Node:	NG22300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5700 ac
Curve Number:	92.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22400

Scenario:	wmp
Node:	NG22400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.1576 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4400 ac
Curve Number:	88.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22500

Scenario:	wmp
Node:	NG22500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	16.9468 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9400 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22600

Scenario:	wmp
Node:	NG22600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4700 ac
Curve Number:	88.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22700

Scenario:	wmp
Node:	NG22700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.9618 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1800 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22800

Scenario:	wmp
Node:	NG22800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.9571 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.4800 ac
Curve Number:	87.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G22900

Scenario:	wmp
Node:	NG22900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.3863 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7500 ac
Curve Number:	88.3
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23000

Scenario:	wmp
Node:	NG23000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1800 ac
Curve Number:	88.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23015

Scenario:	wmp
Node:	NG23015
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4200 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23100

Scenario:	wmp
Node:	NG23100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.1319 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2000 ac
Curve Number:	89.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23200

Scenario:	wmp
Node:	NG23200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.0799 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3400 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23300

Scenario:	wmp
Node:	NG23300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8500 ac
Curve Number:	90.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23315

Scenario:	wmp
Node:	NG23315
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4700 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23400

Scenario:	wmp
Node:	NG23400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6800 ac
Curve Number:	89.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23500

Scenario:	wmp
Node:	NG23500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4400 ac
Curve Number:	91.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23600

Scenario:	wmp
Node:	NG23600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1600 ac
Curve Number:	90.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23700

Scenario:	wmp
Node:	NG23700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.5699 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5500 ac
Curve Number:	91.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23800

Scenario:	wmp
Node:	NG23800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5100 ac
Curve Number:	92.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G23900

Scenario:	wmp
Node:	NG23900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8000 ac
Curve Number:	89.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24000

Scenario:	wmp
Node:	NG24000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6500 ac
Curve Number:	90.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24100

Scenario:	wmp
Node:	NG24100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1200 ac
Curve Number:	90.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24200

Scenario:	wmp
Node:	NG24200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7000 ac
Curve Number:	92.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24216

Scenario:	wmp
Node:	NG24216
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	95.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24225

Scenario:	wmp
Node:	NG24225
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3500 ac
Curve Number:	92.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24230

Scenario:	wmp
Node:	NG24230
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.1175 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6600 ac
Curve Number:	79.4
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24300

Scenario:	wmp
Node:	NG24300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.3490 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7500 ac
Curve Number:	86.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24320

Scenario:	wmp
Node:	NG24320
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2000 ac
Curve Number:	91.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24322

Scenario:	wmp
Node:	NG24322
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.3700 ac
Curve Number:	87.1
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24330

Scenario:	wmp
Node:	NG24330
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9600 ac
Curve Number:	93.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24335

Scenario:	wmp
Node:	NG24335
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1000 ac
Curve Number:	90.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24340

Scenario:	wmp
Node:	NG24340
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2700 ac
Curve Number:	92.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24341

Scenario:	wmp
Node:	NG24341
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.2000 ac
Curve Number:	94.7
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24400

Scenario:	wmp
Node:	NG24400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.0300 ac
Curve Number:	89.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24500P

Scenario:	wmp
Node:	NG24500P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	18.4404 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.7800 ac
Curve Number:	74.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24516P

Scenario:	wmp
Node:	NG24516P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3325 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0800 ac
Curve Number:	74.0
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24527P

Scenario:	wmp
Node:	NG24527P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	21.9533 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8300 ac
Curve Number:	74.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24530P

Scenario:	wmp
Node:	NG24530P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.5552 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8800 ac
Curve Number:	75.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24600P

Scenario:	wmp
Node:	NG24600P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3300 ac
Curve Number:	91.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: G24615P

Scenario:	wmp
Node:	NG24615P
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1800 ac
Curve Number:	86.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30000

Scenario:	wmp
Node:	NH30000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0300 ac
Curve Number:	87.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30030

Scenario:	wmp
Node:	NH30030
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	87.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30035

Scenario:	wmp
Node:	NH30035
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1600 ac
Curve Number:	95.7
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30040

Scenario:	wmp
Node:	NH30040
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0400 ac
Curve Number:	87.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30045

Scenario:	wmp
Node:	NH30045
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.0300 ac
Curve Number:	95.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30050

Scenario:	wmp
Node:	NH30050
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.1800 ac
Curve Number:	95.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: H30055

Scenario:	wmp
Node:	NH30055
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4400 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0100

Scenario:	wmp
Node:	NSP0100
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.3896 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9700 ac
Curve Number:	88.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0200

Scenario:	wmp
Node:	NSP0200
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.3666 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4500 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0215

Scenario:	wmp
Node:	NSP0215
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.5007 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1600 ac
Curve Number:	88.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0300

Scenario:	wmp
Node:	NSP0300
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.2349 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.9200 ac
Curve Number:	88.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0400

Scenario:	wmp
Node:	NSP0400
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	11.1522 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.7900 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0415

Scenario:	wmp
Node:	NSP0415
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3878 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3400 ac
Curve Number:	89.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0500

Scenario:	wmp
Node:	NSP0500
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.3100 ac
Curve Number:	89.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0600

Scenario:	wmp
Node:	NSP0600
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.7423 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.4900 ac
Curve Number:	88.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0700

Scenario:	wmp
Node:	NSP0700
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	12.7192 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.2500 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0715

Scenario:	wmp
Node:	NSP0715
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	36.8128 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.5200 ac
Curve Number:	88.9
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0800

Scenario:	wmp
Node:	NSP0800
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	14.2400 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.1400 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0815

Scenario:	wmp
Node:	NSP0815
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	24.8287 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.8100 ac
Curve Number:	89.3
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0900

Scenario:	wmp
Node:	NSP0900
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	13.3392 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.6300 ac
Curve Number:	87.9
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP0915

Scenario:	wmp
Node:	NSP0915
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	22.1269 min
Max Allowable Q:	0.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.3600 ac
Curve Number:	89.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: SP1000

Scenario:	wmp
Node:	NSP1000
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	17.8172 min
Max Allowable Q:	0.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.8900 ac
Curve Number:	87.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Node: BDRY

Scenario:	wmp
Type:	Time/Stage
Base Flow:	0.00 cfs
Initial Stage:	0.69 ft
Warning Stage:	5.00 ft
Boundary Stage:	

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	0.69
0	0	0	26.0000	0.69

Comment:

Node: NA00100

Scenario:	wmp
Type:	Stage/Area
Base Flow:	0.00 cfs
Initial Stage:	0.69 ft
Warning Stage:	2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.12	0.0001	4
2.70	0.0017	75
2.95	0.0092	400
3.20	0.0270	1175
3.45	0.0677	2950
3.70	0.1022	4450
3.95	0.1682	7325
4.20	0.1928	8400
4.45	0.2164	9425
4.70	0.2577	11225
4.95	0.3449	15025

Stage [ft]	Area [ac]	Area [ft2]
5.20	0.4270	18600
5.45	0.5883	25625
5.70	0.6910	30100
5.95	0.7467	32525
6.20	0.7691	33500
6.45	0.7771	33850
6.50	0.7811	34025

Comment:

Node: NA00106

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.15	0.0001	4
2.20	0.0011	50
2.45	0.0098	425
2.70	0.0166	725
2.95	0.0264	1150
3.20	0.0339	1475
3.45	0.0442	1925
3.70	0.0781	3400
3.95	0.1630	7100
4.20	0.1923	8375
4.40	0.1974	8600

Comment:

Node: NA00110

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.56	0.0001	4
3.30	0.0011	50
3.55	0.0080	350
3.80	0.0298	1300

Stage [ft]	Area [ac]	Area [ft2]
4.05	0.0970	4225
4.30	0.1492	6500
4.55	0.1992	8675
4.80	0.2210	9625
5.05	0.2611	11375
5.30	0.2875	12525
5.55	0.3444	15000
5.80	0.3771	16425
6.05	0.4121	17950
6.30	0.4230	18425
6.40	0.4253	18525

Comment:

Node: NA00200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4
1.90	0.0006	25
2.15	0.0155	675
2.40	0.0471	2050
2.65	0.0913	3975
2.90	0.1113	4850
3.15	0.1630	7100
3.40	0.1974	8600
3.65	0.2887	12575
3.90	0.3782	16475
4.15	0.5326	23200
4.40	0.5699	24825
4.60	0.5860	25525

Comment:

Node: NA00300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.66	0.0001	4
1.40	0.0006	25
1.65	0.0011	50
1.90	0.0121	525
2.15	0.1710	7450
2.40	0.3007	13100
2.65	0.4861	21175
2.90	0.6393	27850
3.15	0.9148	39850
3.40	1.1037	48075
3.65	1.4859	64725
3.90	1.7562	76500
4.15	1.9915	86750
4.40	2.0638	89900
4.65	2.1338	92950
4.90	2.1608	94125
5.15	2.1820	95050
5.40	2.1935	95550
5.65	2.2113	96325
5.90	2.2228	96825
6.15	2.2297	97125
6.40	2.2331	97275
6.65	2.2337	97300
6.90	2.2343	97325
7.15	2.2343	97325
7.20	2.2348	97350

Comment:

Node: NA00312

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.00	0.0001	4
2.30	0.0006	25
2.55	0.0069	300
2.80	0.0195	850
3.05	0.0568	2475
3.30	0.0999	4350
3.55	0.1756	7650
3.80	0.2273	9900

Stage [ft]	Area [ac]	Area [ft2]
4.05	0.2961	12900
4.30	0.3449	15025
4.55	0.3931	17125
4.80	0.4167	18150
5.05	0.4517	19675
5.30	0.4568	19900
5.55	0.4626	20150
5.80	0.4677	20375
6.05	0.4735	20625
6.30	0.4792	20875
6.55	0.4850	21125
6.80	0.4884	21275
7.05	0.4953	21575
7.30	0.4999	21775
7.55	0.5119	22300
7.80	0.5183	22575
8.05	0.5320	23175
8.30	0.5458	23775
8.55	0.5670	24700
8.80	0.5785	25200
9.05	0.5906	25725
9.30	0.5940	25875
9.30	0.5952	25925

Comment:

Node: NA00314P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.80	0.0001	4
1.20	0.0006	25
1.45	0.0143	625
1.70	0.0304	1325
1.95	0.0671	2925
2.20	0.0953	4150
2.45	0.1297	5650
2.70	0.1492	6500
2.95	0.1825	7950
3.20	0.2072	9025
3.45	0.4230	18425
3.70	0.7381	32150

Stage [ft]	Area [ac]	Area [ft2]
3.95	1.1524	50200
4.20	1.3705	59700
4.45	1.5955	69500
4.70	1.7080	74400
4.95	1.8463	80425
5.20	1.9869	86550
5.45	2.0977	91375
5.70	2.1459	93475
5.95	2.2056	96075
6.20	2.2280	97050
6.45	2.2475	97900
6.70	2.2624	98550
6.95	2.2813	99375
7.20	2.2997	100175
7.45	2.3290	101450
7.70	2.3485	102300
7.95	2.3554	102600
8.20	2.3571	102675
8.45	2.3600	102800
8.70	2.3617	102875
8.80	2.3623	102900

Comment:

Node: NA00335

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.51	0.0001	4
1.80	0.0023	100
2.05	0.0075	325
2.30	0.0430	1875
2.55	0.2537	11050
2.80	0.4419	19250
3.05	0.9774	42575
3.30	1.4027	61100
3.55	1.8033	78550
3.80	2.0288	88375
4.05	2.3887	104050
4.30	2.7152	118275
4.55	3.0515	132925
4.80	3.1503	137225

Stage [ft]	Area [ac]	Area [ft2]
5.05	3.1876	138850
5.30	3.1921	139050
5.55	3.1962	139225
5.80	3.1990	139350
5.80	3.1996	139375

Comment:

Node: NA00360

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.83	0.0001	4
1.70	0.0006	25
1.95	0.0011	50
2.20	0.0011	50
2.45	0.0126	550
2.70	0.0505	2200
2.95	0.1710	7450
3.20	0.2927	12750
3.45	0.4230	18425
3.70	0.4626	20150
3.95	0.5372	23400
4.20	0.5670	24700
4.45	0.5814	25325
4.50	0.5825	25375

Comment:

Node: NA00370

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.41	0.0001	4
3.70	0.0029	125
3.95	0.0453	1975

Stage [ft]	Area [ac]	Area [ft2]
4.20	0.0838	3650
4.45	0.1182	5150
4.70	0.1343	5850
4.95	0.2336	10175
5.20	0.2663	11600
5.45	0.2726	11875
5.70	0.2766	12050
5.95	0.2801	12200
6.20	0.2847	12400
6.45	0.2990	13025
6.70	0.3076	13400
6.95	0.3180	13850
7.20	0.3220	14025
7.45	0.3283	14300
7.70	0.3415	14875
7.95	0.3587	15625
8.20	0.3685	16050
8.45	0.3799	16550
8.70	0.3851	16775
8.95	0.3891	16950
9.20	0.3891	16950
9.40	0.3897	16975

Comment:

Node: NA00375

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.16	0.0001	4
3.20	0.0023	100
3.45	0.0103	450
3.70	0.0476	2075
3.95	0.2766	12050
4.20	0.4442	19350
4.45	0.6313	27500
4.70	0.7008	30525
4.95	0.7604	33125
5.20	0.7989	34800
5.45	0.8431	36725
5.70	0.8735	38050
5.95	0.9211	40125

Stage [ft]	Area [ac]	Area [ft2]
6.20	0.9539	41550
6.45	1.0078	43900
6.70	1.0704	46625
6.95	1.1622	50625
7.20	1.2368	53875
7.45	1.3504	58825
7.70	1.4050	61200
7.95	1.4537	63325
8.20	1.4756	64275
8.45	1.5238	66375
8.70	1.5352	66875
8.95	1.5444	67275
9.20	1.5484	67450
9.40	1.5519	67600

Comment:

Node: NA00385

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.06	0.0001	4
3.60	0.0011	50
3.85	0.0293	1275
4.10	0.1016	4425
4.35	0.2187	9525
4.60	0.2961	12900
4.85	0.3857	16800
5.10	0.4333	18875
5.35	0.4643	20225
5.60	0.4735	20625
5.85	0.4821	21000
6.10	0.4907	21375
6.35	0.5079	22125
6.60	0.5171	22525
6.85	0.5320	23175
7.10	0.5487	23900
7.35	0.5774	25150
7.60	0.5929	25825
7.85	0.6175	26900
8.10	0.6313	27500
8.35	0.6514	28375

Stage [ft]	Area [ac]	Area [ft2]
8.60	0.6600	28750
8.85	0.6675	29075
9.10	0.6686	29125
9.20	0.6698	29175

Comment:

Node: NA00510

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.81 ft
Warning Stage: 1.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.72	0.0001	4
1.50	0.0006	25
1.75	0.0006	25
2.00	0.0052	225
2.25	0.0694	3025
2.50	0.2146	9350
2.75	0.6261	27275
3.00	0.9298	40500
3.25	1.2873	56075
3.50	1.4618	63675
3.75	1.7229	75050
4.00	1.8566	80875
4.25	1.9485	84875
4.50	1.9651	85600
4.75	1.9726	85925
5.00	1.9772	86125
5.20	1.9795	86225

Comment:

Node: NA00605

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.21	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
1.70	0.0006	25
1.95	0.0029	125
2.20	0.0247	1075
2.45	0.1670	7275
2.70	0.3444	15000
2.95	0.7071	30800
3.20	1.0520	45825
3.45	1.4497	63150
3.70	1.6701	72750
3.95	1.9938	86850
4.20	2.1694	94500
4.45	2.3600	102800
4.70	2.4374	106175
4.95	2.4851	108250
5.20	2.5224	109875
5.45	2.5430	110775
5.70	2.5580	111425
5.95	2.5803	112400
6.20	2.6039	113425
6.45	2.6268	114425
6.70	2.6360	114825
6.95	2.6492	115400
7.20	2.6555	115675
7.45	2.6676	116200
7.70	2.6705	116325
7.95	2.6750	116525
8.20	2.6762	116575
8.45	2.6779	116650
8.50	2.6785	116675

Comment:

Node: NA00620

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4
1.90	0.0006	25
2.15	0.0063	275
2.40	0.0465	2025
2.65	0.3070	13375
2.90	0.5389	23475

Stage [ft]	Area [ac]	Area [ft2]
3.15	0.8706	37925
3.40	1.0199	44425
3.65	1.1484	50025
3.90	1.2276	53475
4.15	1.3194	57475
4.40	1.3912	60600
4.65	1.4979	65250
4.80	1.5238	66375

Comment:

Node: NA00700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.23	0.0001	4
1.90	0.0006	25
2.15	0.0011	50
2.40	0.0046	200
2.65	0.0132	575
2.90	0.0212	925
3.15	0.0321	1400
3.40	0.0344	1500
3.65	0.0356	1550
3.80	0.0362	1575

Comment:

Node: NA00710

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-3.14	0.0001	4
1.70	0.0011	50
1.95	0.0017	75
2.20	0.0155	675

Stage [ft]	Area [ac]	Area [ft2]
2.45	0.2307	10050
2.70	0.4850	21125
2.95	1.0727	46725
3.20	1.5548	67725
3.45	2.1040	91650
3.70	2.4202	105425
3.95	2.8782	125375
4.20	3.1239	136075
4.45	3.4183	148900
4.70	3.5256	153575
4.95	3.5847	156150
5.20	3.6048	157025
5.45	3.6490	158950
5.70	3.6725	159975
5.95	3.7219	162125
6.20	3.7603	163800
6.45	3.8189	166350
6.70	3.8533	167850
6.95	3.8803	169025
7.20	3.8963	169725
7.45	3.9233	170900
7.70	3.9365	171475
7.95	3.9457	171875
8.20	3.9503	172075
8.45	3.9578	172400
8.70	3.9652	172725
8.95	3.9784	173300
9.20	3.9819	173450
9.45	3.9870	173675
9.50	3.9888	173750

Comment:

Node: NA00735

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.99 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.99	0.0001	4
1.60	0.0006	25
1.85	0.0011	50
2.10	0.0017	75
2.35	0.0115	500

Stage [ft]	Area [ac]	Area [ft2]
2.60	0.1004	4375
2.85	0.5309	23125
3.10	0.8379	36500
3.35	1.2580	54800
3.60	1.5921	69350
3.85	1.9427	84625
4.10	2.1344	92975
4.35	2.3364	101775
4.60	2.3778	103575
4.70	2.4070	104850

Comment:

Node: NA00745

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.75	0.0001	4
3.70	0.0006	25
3.95	0.0459	2000
4.20	0.1033	4500
4.45	0.1561	6800
4.70	0.1854	8075
4.95	0.2135	9300
5.20	0.2365	10300
5.45	0.2738	11925
5.70	0.3013	13125
5.95	0.3587	15625
6.20	0.3862	16825
6.45	0.4350	18950
6.70	0.4660	20300
6.95	0.5085	22150
7.20	0.5240	22825
7.45	0.5475	23850
7.70	0.5670	24700
7.95	0.6020	26225
8.20	0.6204	27025
8.45	0.6480	28225
8.70	0.6726	29300
8.95	0.6927	30175
9.00	0.6944	30250

Comment:

Node: NA00750

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.95	0.0001	4
3.30	0.0029	125
3.55	0.0631	2750
3.80	0.2049	8925
4.05	0.4712	20525
4.30	0.5624	24500
4.55	0.6853	29850
4.80	0.7759	33800
5.05	0.8511	37075
5.30	0.8792	38300
5.55	0.9550	41600
5.80	1.0193	44400
6.05	1.1174	48675
6.30	1.1754	51200
6.55	1.2489	54400
6.80	1.2925	56300
7.05	1.3642	59425
7.30	1.4004	61000
7.55	1.4560	63425
7.80	1.4922	65000
8.05	1.5416	67150
8.30	1.5720	68475
8.55	1.6024	69800
8.80	1.6173	70450
9.05	1.6311	71050
9.30	1.6357	71250
9.30	1.6362	71275

Comment:

Node: NA00765

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 4.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.18	0.0001	4
4.30	0.0017	75
4.55	0.0121	525
4.80	0.0769	3350
5.05	0.2761	12025
5.30	0.3994	17400
5.55	0.5412	23575
5.80	0.6744	29375
6.05	0.9470	41250
6.30	1.1283	49150
6.55	1.4009	61025
6.80	1.5123	65875
7.05	1.6087	70075
7.30	1.6517	71950
7.55	1.7120	74575
7.80	1.7608	76700
8.05	1.8526	80700
8.30	1.9312	84125
8.55	1.9863	86525
8.80	2.0047	87325
9.05	2.0351	88650
9.30	2.0581	89650
9.55	2.0833	90750
9.80	2.0896	91025
10.00	2.0931	91175

Comment:

Node: NA00800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-3.40	0.0001	4
2.00	0.0006	25
2.25	0.0034	150
2.50	0.0178	775
2.75	0.1010	4400
3.00	0.1865	8125
3.25	0.4172	18175
3.50	0.6164	26850

Stage [ft]	Area [ac]	Area [ft2]
3.75	0.9246	40275
4.00	1.1369	49525
4.25	1.4549	63375
4.50	1.7132	74625
4.75	2.3204	101075
5.00	2.6406	115025
5.25	2.8202	122850
5.50	2.9000	126325
5.75	2.9333	127775
6.00	2.9350	127850
6.00	2.9362	127900

Comment:

Node: NA00900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.12 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.12	0.0001	4
2.80	0.0006	25
3.05	0.0172	750
3.30	0.0511	2225
3.55	0.0981	4275
3.80	0.1354	5900
4.05	0.1785	7775
4.30	0.2141	9325
4.55	0.2669	11625
4.80	0.3260	14200
5.05	0.5751	25050
5.30	0.7427	32350
5.55	0.9120	39725
5.80	0.9389	40900
6.00	0.9424	41050

Comment:

Node: NA01000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.42	0.0001	4
2.10	0.0011	50
2.35	0.0063	275
2.60	0.0241	1050
2.85	0.1016	4425
3.10	0.1877	8175
3.35	0.3811	16600
3.60	0.4798	20900
3.85	0.5963	25975
4.10	0.6657	29000
4.35	0.7530	32800
4.60	0.8041	35025
4.85	0.8982	39125
5.10	0.9584	41750
5.35	1.0704	46625
5.60	1.1105	48375
5.70	1.1214	48850

Comment:

Node: NA01010

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.68	0.0001	4
4.70	0.0011	50
4.95	0.0333	1450
5.20	0.1596	6950
5.45	0.4987	21725
5.70	0.9395	40925
5.95	1.5410	67125
6.20	1.7235	75075
6.45	1.9267	83925
6.70	2.0047	87325
6.95	2.0776	90500
7.20	2.1069	91775
7.45	2.1792	94925
7.70	2.2153	96500
7.95	2.2509	98050

Stage [ft]	Area [ac]	Area [ft2]
8.20	2.2618	98525
8.45	2.2727	99000
8.70	2.2750	99100
8.95	2.2785	99250
9.00	2.2790	99275

Comment:

Node: NA01100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.38	0.0001	4
2.60	0.0011	50
2.85	0.0126	550
3.10	0.0482	2100
3.35	0.1768	7700
3.60	0.2560	11150
3.85	0.3610	15725
4.10	0.4172	18175
4.35	0.4953	21575
4.60	0.5406	23550
4.85	0.6548	28525
5.10	0.7478	32575
5.35	0.9160	39900
5.60	1.0015	43625
5.85	1.0216	44500
6.10	1.0244	44625
6.20	1.0256	44675

Comment:

Node: NA01200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.34	0.0001	4
2.60	0.0011	50
2.85	0.0143	625
3.10	0.0815	3550
3.35	0.3862	16825
3.60	0.6520	28400
3.85	1.0853	47275
4.10	1.2735	55475
4.35	1.4262	62125
4.60	1.4664	63875
4.80	1.4756	64275

Comment:

Node: NA01300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.10	0.0001	4
1.80	0.0006	25
2.05	0.0034	150
2.30	0.0505	2200
2.55	0.2198	9575
2.80	0.3725	16225
3.05	0.5957	25950
3.30	0.6480	28225
3.55	0.7002	30500
3.80	0.7461	32500
4.05	0.8081	35200
4.30	0.8465	36875
4.55	0.8747	38100
4.80	0.8827	38450
5.05	0.8970	39075
5.30	0.9177	39975
5.55	0.9246	40275
5.80	0.9257	40325
6.05	0.9257	40325
6.30	0.9257	40325
6.55	0.9275	40400
6.80	0.9275	40400
7.05	0.9275	40400
7.30	0.9275	40400

Stage [ft]	Area [ac]	Area [ft2]
7.55	0.9280	40425
7.80	0.9280	40425
8.05	0.9280	40425
8.30	0.9292	40475
8.55	0.9326	40625
8.80	0.9372	40825
9.05	0.9452	41175
9.30	0.9470	41250
9.55	0.9487	41325
9.80	0.9510	41425
10.05	0.9527	41500
10.30	0.9567	41675
10.55	0.9659	42075
10.80	0.9682	42175
11.05	0.9722	42350
11.30	0.9745	42450
11.55	0.9751	42475
11.80	0.9751	42475
12.05	0.9751	42475
12.30	0.9762	42525
12.55	0.9768	42550
12.80	0.9768	42550
13.05	0.9774	42575
13.30	0.9774	42575
13.30	0.9780	42600

Comment:

Node: NA01325

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.39	0.0001	4
1.60	0.0006	25
1.85	0.0080	350
2.10	0.0746	3250
2.35	0.3025	13175
2.60	0.5607	24425
2.85	1.0187	44375
3.10	1.2695	55300
3.35	1.4514	63225
3.60	1.6024	69800

Stage [ft]	Area [ac]	Area [ft2]
3.85	1.9008	82800
4.10	2.0810	90650
4.35	2.2050	96050
4.60	2.2515	98075
4.85	2.3295	101475
5.10	2.3910	104150
5.35	2.4885	108400
5.60	2.5212	109825
5.85	2.5545	111275
6.10	2.5729	112075
6.35	2.6010	113300
6.60	2.6171	114000
6.85	2.6366	114850
7.10	2.6435	115150
7.35	2.6544	115625
7.60	2.6596	115850
7.85	2.6670	116175
8.10	2.6705	116325
8.35	2.6768	116600
8.60	2.6814	116800
8.85	2.6860	117000
9.10	2.6900	117175
9.35	2.6963	117450
9.50	2.6974	117500

Comment:

Node: NA01600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.56	0.0001	4
1.00	0.0006	25
1.25	0.0006	25
1.50	0.0011	50
1.75	0.0178	775
2.00	0.1194	5200
2.25	0.5062	22050
2.50	0.8374	36475
2.75	1.3321	58025
3.00	1.6144	70325
3.25	1.9823	86350

Stage [ft]	Area [ac]	Area [ft2]
3.50	2.1407	93250
3.75	2.3376	101825
4.00	2.4730	107725
4.25	2.5947	113025
4.50	2.6498	115425
4.75	2.7388	119300
5.00	2.8243	123025
5.25	3.0337	132150
5.50	3.1399	136775
5.75	3.2886	143250
6.00	3.3959	147925
6.25	3.5279	153675
6.50	3.5933	156525
6.75	3.6610	159475
7.00	3.6995	161150
7.25	3.7391	162875
7.50	3.7546	163550
7.75	3.7925	165200
8.00	3.8108	166000
8.25	3.8349	167050
8.50	3.8464	167550
8.75	3.8573	168025
9.00	3.8636	168300
9.25	3.8705	168600
9.50	3.8734	168725
9.70	3.8768	168875

Comment:

Node: NA01615

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.46	0.0001	4
1.30	0.0006	25
1.55	0.0006	25
1.80	0.0011	50
2.05	0.0849	3700
2.30	0.3202	13950
2.55	0.7300	31800
2.80	0.9699	42250
3.05	1.1943	52025

Stage [ft]	Area [ac]	Area [ft2]
3.30	1.3573	59125
3.55	1.6598	72300
3.80	1.8033	78550
4.05	1.9364	84350
4.30	1.9823	86350
4.55	2.0523	89400
4.80	2.1006	91500
5.05	2.2561	98275
5.30	2.3973	104425
5.55	2.6027	113375
5.80	2.7244	118675
6.05	2.8598	124575
6.30	2.9104	126775
6.55	2.9586	128875
6.80	2.9913	130300
7.05	3.0389	132375
7.30	3.0596	133275
7.55	3.0883	134525
7.80	3.1089	135425
8.05	3.1376	136675
8.30	3.1543	137400
8.55	3.1715	138150
8.80	3.1824	138625
9.05	3.1904	138975
9.30	3.1927	139075
9.40	3.1962	139225

Comment:

Node: NA01700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.04	0.0001	4
1.50	0.0006	25
1.75	0.0046	200
2.00	0.0253	1100
2.25	0.2043	8900
2.50	0.3587	15625
2.75	0.6158	26825
3.00	0.7197	31350
3.25	0.8873	38650

Stage [ft]	Area [ac]	Area [ft2]
3.50	0.9481	41300
3.75	0.9889	43075
4.00	1.0044	43750
4.25	1.0227	44550
4.50	1.0336	45025
4.75	1.0606	46200
5.00	1.0910	47525
5.25	1.1088	48300
5.40	1.1117	48425

Comment:

Node: NA01710

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.58	0.0001	4
1.40	0.0011	50
1.65	0.0011	50
1.90	0.0184	800
2.15	0.0970	4225
2.40	0.1452	6325
2.65	0.2135	9300
2.90	0.2686	11700
3.15	0.3093	13475
3.40	0.3277	14275
3.65	0.3564	15525
3.90	0.3765	16400
4.15	0.3994	17400
4.40	0.4098	17850
4.65	0.4178	18200
4.90	0.4213	18350
4.90	0.4218	18375

Comment:

Node: NA01720

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 0.69 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	0.0001	4
1.60	0.0006	25
1.85	0.0166	725
2.10	0.1062	4625
2.35	0.4454	19400
2.60	0.6382	27800
2.85	0.8322	36250
3.10	0.9332	40650
3.35	0.9998	43550
3.60	1.0135	44150
3.85	1.0233	44575
3.90	1.0250	44650

Comment:

Node: NA01800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: -5.72 ft
Warning Stage: 2.48 ft

Stage [ft]	Area [ac]	Area [ft2]
-5.72	0.0015	64
2.48	0.0015	64
2.85	0.0086	375
3.10	0.0350	1525
3.35	0.1423	6200
3.60	0.2904	12650
3.85	0.6583	28675
4.10	0.8649	37675
4.35	1.0445	45500
4.60	1.1364	49500
4.85	1.2247	53350
5.10	1.2506	54475
5.35	1.2598	54875
5.60	1.2638	55050
5.60	1.2649	55100

Comment:

Node: NA01816

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: -0.01 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.01	0.0001	4
2.40	0.0017	75
2.65	0.0224	975
2.90	0.0832	3625
3.15	0.2198	9575
3.40	0.2967	12925
3.65	0.4316	18800
3.90	0.5429	23650
4.15	0.7909	34450
4.40	0.9234	40225
4.65	1.2603	54900
4.90	1.5375	66975
5.15	1.7705	77125
5.40	1.8486	80525
5.65	1.9267	83925
5.90	1.9519	85025
6.15	1.9835	86400
6.40	2.0001	87125
6.40	2.0047	87325

Comment:

Node: NA01825

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: -1.31 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.31	0.0001	4
2.80	0.0023	100
3.05	0.0344	1500
3.30	0.0844	3675
3.55	0.3030	13200
3.80	0.5584	24325
4.05	0.9935	43275
4.30	1.1674	50850
4.55	1.2598	54875

Stage [ft]	Area [ac]	Area [ft2]
4.80	1.2712	55375
5.05	1.2965	56475
5.30	1.3326	58050
5.55	1.3809	60150
5.80	1.3992	60950
6.00	1.4061	61250

Comment:

Node: NA01835

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: -0.64 ft
Warning Stage: 1.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.64	0.0001	4
1.70	0.0006	25
1.95	0.0034	150
2.20	0.0293	1275
2.45	0.1159	5050
2.70	0.2135	9300
2.95	0.5751	25050
3.20	0.8787	38275
3.45	1.3235	57650
3.70	1.5456	67325
3.95	1.8670	81325
4.20	2.0168	87850
4.45	2.1740	94700
4.70	2.2486	97950
4.95	2.3961	104375
5.20	2.6154	113925
5.45	2.9471	128375
5.70	3.0366	132275
5.95	3.1715	138150
6.20	3.2283	140625
6.45	3.3351	145275
6.70	3.4011	148150
6.95	3.4481	150200
7.20	3.4665	151000
7.45	3.4900	152025
7.70	3.5067	152750
7.95	3.5244	153525
8.20	3.5325	153875
8.45	3.5359	154025

Stage [ft]	Area [ac]	Area [ft2]
8.70	3.5365	154050
8.70	3.5371	154075

Comment:

Node: NA01850

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: -0.89 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.89	0.0001	4
3.60	0.0006	25
3.85	0.0011	50
4.10	0.0046	200
4.35	0.0849	3700
4.60	0.1636	7125
4.85	0.2422	10550
5.10	0.2841	12375
5.35	0.2973	12950
5.40	0.2984	13000

Comment:

Node: NA01855

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.68 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.68	0.0001	4
3.80	0.0017	75
4.05	0.0212	925
4.30	0.0689	3000
4.55	0.2577	11225
4.80	0.4494	19575
5.05	0.8465	36875
5.30	1.2391	53975
5.55	1.8985	82700
5.80	2.2331	97275

Stage [ft]	Area [ac]	Area [ft2]
6.05	2.7525	119900
6.30	3.1583	137575
6.55	3.5394	154175
6.80	3.6771	160175
7.05	3.8171	166275
7.30	3.8774	168900
7.55	3.9360	171450
7.80	3.9658	172750
8.05	3.9951	174025
8.30	4.0152	174900
8.55	4.0421	176075
8.80	4.0542	176600
9.05	4.0662	177125
9.30	4.0760	177550
9.55	4.0938	178325
9.80	4.1024	178700
10.05	4.1081	178950
10.30	4.1098	179025
10.55	4.1110	179075
10.80	4.1116	179100
11.00	4.1133	179175

Comment:

Node: NA01900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.00 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
2.10	0.0006	25
2.35	0.0098	425
2.60	0.0453	1975
2.85	0.1670	7275
3.10	0.2697	11750
3.35	0.4373	19050
3.60	0.5424	23625
3.85	0.7409	32275
4.10	0.8902	38775
4.35	1.0279	44775
4.60	1.1186	48725
4.85	1.2483	54375
5.10	1.3143	57250

Stage [ft]	Area [ac]	Area [ft2]
5.35	1.3740	59850
5.60	1.4308	62325
5.70	1.4325	62400

Comment:

Node: NA02000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.76	0.0001	4
1.80	0.0006	25
2.05	0.0092	400
2.30	0.0482	2100
2.55	0.1550	6750
2.80	0.2852	12425
3.05	0.5263	22925
3.30	0.7220	31450
3.55	0.9211	40125
3.80	1.0107	44025
4.05	1.1111	48400
4.30	1.1708	51000
4.55	1.2477	54350
4.80	1.2930	56325
5.05	1.3292	57900
5.30	1.3602	59250
5.55	1.4107	61450
5.70	1.4187	61800

Comment:

Node: NA02100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.22	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0011	50
1.65	0.0080	350
1.90	0.0298	1300
2.15	0.1567	6825
2.40	0.3002	13075
2.65	0.5424	23625
2.90	0.6939	30225
3.15	0.8586	37400
3.40	0.9837	42850
3.65	1.1806	51425
3.90	1.3017	56700
4.15	1.4784	64400
4.40	1.5272	66525
4.65	1.5634	68100
4.90	1.5789	68775
5.15	1.6024	69800
5.40	1.6190	70525
5.65	1.6919	73700
5.90	1.7774	77425
6.15	1.8905	82350
6.40	1.9427	84625
6.65	2.0173	87875
6.90	2.0449	89075
7.15	2.0506	89325
7.40	2.0518	89375
7.65	2.0541	89475
7.90	2.0541	89475
8.15	2.0546	89500
8.40	2.0546	89500
8.65	2.0552	89525
8.90	2.0552	89525
9.15	2.0558	89550
9.40	2.0558	89550
9.65	2.0564	89575
9.90	2.0564	89575
10.15	2.0564	89575
10.40	2.0564	89575
10.65	2.0569	89600
10.90	2.0592	89700
11.00	2.0598	89725

Comment:

Node: NA02110

Scenario: wmp

Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.18	0.0001	4
1.50	0.0006	25
1.75	0.0052	225
2.00	0.0143	625
2.25	0.0861	3750
2.50	0.1928	8400
2.75	0.3702	16125
3.00	0.5142	22400
3.25	0.7507	32700
3.50	0.9320	40600
3.75	1.1278	49125
4.00	1.2368	53875
4.25	1.3269	57800
4.50	1.3648	59450
4.75	1.4337	62450
5.00	1.4698	64025
5.25	1.5255	66450
5.50	1.5771	68700
5.75	1.6167	70425
6.00	1.6437	71600
6.20	1.6638	72475

Comment:

Node: NA02120

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.00 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
3.30	0.0011	50
3.55	0.0143	625
3.80	0.0379	1650
4.05	0.0826	3600
4.30	0.1125	4900
4.55	0.1928	8400
4.80	0.2508	10925
5.05	0.3306	14400
5.30	0.3771	16425

Stage [ft]	Area [ac]	Area [ft2]
5.55	0.4287	18675
5.80	0.4695	20450
6.05	0.5326	23200
6.30	0.5653	24625
6.55	0.5894	25675
6.80	0.6210	27050
7.05	0.6439	28050
7.20	0.6451	28100

Comment:

Node: NB02200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.68	0.0001	4
4.10	0.0006	25
4.35	0.0143	625
4.60	0.0545	2375
4.85	0.1435	6250
5.10	0.2135	9300
5.35	0.2979	12975
5.60	0.3289	14325
5.85	0.3518	15325
6.10	0.3627	15800
6.35	0.3771	16425
6.60	0.3851	16775
6.85	0.3983	17350
7.10	0.4069	17725
7.35	0.4172	18175
7.60	0.4241	18475
7.85	0.4327	18850
8.10	0.4402	19175
8.35	0.4465	19450
8.60	0.4505	19625
8.85	0.4511	19650
9.10	0.4511	19650
9.35	0.4517	19675
9.60	0.4517	19675
9.85	0.4522	19700
10.10	0.4522	19700
10.35	0.4522	19700

Stage [ft]	Area [ac]	Area [ft2]
10.50	0.4528	19725

Comment:

Node: NB02215

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.07	0.0001	4
4.30	0.0006	25
4.55	0.0080	350
4.80	0.0442	1925
5.05	0.1326	5775
5.30	0.1796	7825
5.55	0.3134	13650
5.80	0.3943	17175
6.05	0.5022	21875
6.30	0.5624	24500
6.55	0.6382	27800
6.80	0.6652	28975
7.05	0.6904	30075
7.30	0.6967	30350
7.55	0.7065	30775
7.80	0.7128	31050
8.05	0.7237	31525
8.30	0.7289	31750
8.55	0.7352	32025
8.80	0.7375	32125
9.05	0.7375	32125
9.30	0.7375	32125
9.55	0.7375	32125
9.80	0.7375	32125
10.05	0.7375	32125
10.30	0.7375	32125
10.50	0.7381	32150

Comment:

Node: NB02235

Scenario: wmp

Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.74 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.53	0.0001	4
3.90	0.0006	25
4.15	0.0046	200
4.40	0.0103	450
4.65	0.0310	1350
4.90	0.0499	2175
5.15	0.0878	3825
5.40	0.1125	4900
5.65	0.1412	6150
5.90	0.1590	6925
6.15	0.1871	8150
6.40	0.2072	9025
6.65	0.2399	10450
6.90	0.2577	11225
7.15	0.2893	12600
7.40	0.3082	13425
7.65	0.3289	14325
7.70	0.3294	14350

Comment:

Node: NB02245

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.33 ft
Warning Stage: 7.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.33	0.0001	4
7.60	0.0006	25
7.85	0.0040	175
8.10	0.0092	400
8.35	0.0224	975
8.60	0.0281	1225
8.85	0.0350	1525
9.10	0.0390	1700
9.35	0.0436	1900
9.60	0.0499	2175
9.85	0.0562	2450
9.90	0.0568	2475

Comment:

Node: NB02260

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.69 ft
Warning Stage: 5.60 ft

Stage [ft]	Area [ac]	Area [ft2]
2.69	0.0001	4
5.60	0.0006	25
5.85	0.0046	200
6.10	0.0075	325
6.35	0.0253	1100
6.60	0.0775	3375
6.85	0.1286	5600
7.10	0.1532	6675
7.35	0.2181	9500
7.60	0.2657	11575
7.85	0.3438	14975
8.10	0.3880	16900
8.35	0.4500	19600
8.60	0.4901	21350
8.85	0.5429	23650
9.10	0.5590	24350
9.35	0.5802	25275
9.60	0.5997	26125
9.85	0.6124	26675
10.10	0.6141	26750
10.35	0.6164	26850
10.60	0.6181	26925
10.80	0.6204	27025

Comment:

Node: NB02270

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.04 ft
Warning Stage: 5.50 ft

Stage [ft]	Area [ac]	Area [ft2]
3.04	0.0001	4
5.50	0.0017	75
5.75	0.0034	150
6.00	0.0109	475
6.25	0.0310	1350
6.50	0.0545	2375
6.75	0.1090	4750
7.00	0.1240	5400
7.25	0.1400	6100
7.50	0.1441	6275
7.75	0.1509	6575
8.00	0.1578	6875
8.25	0.1641	7150
8.50	0.1670	7275
8.75	0.1682	7325
8.80	0.1687	7350

Comment:

Node: NB02310

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.73	0.0001	4
2.30	0.0011	50
2.55	0.0201	875
2.80	0.0752	3275
3.05	0.2043	8900
3.30	0.3145	13700
3.55	0.4695	20450
3.80	0.5286	23025
4.05	0.5911	25750
4.30	0.6600	28750
4.55	0.6990	30450
4.80	0.7031	30625
4.80	0.7036	30650

Comment:

Node: NB02315

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.65	0.0001	4
1.90	0.0006	25
2.15	0.0069	300
2.40	0.0706	3075
2.65	0.3243	14125
2.90	0.6485	28250
3.15	1.2431	54150
3.40	1.9387	84450
3.65	2.7273	118800
3.90	3.0160	131375
4.15	3.4280	149325
4.40	3.7121	161700
4.65	4.1001	178600
4.90	4.3044	187500
5.15	4.5518	198275
5.40	4.6872	204175
5.65	4.7670	207650
5.90	4.7986	209025
6.15	4.8267	210250
6.40	4.8445	211025
6.65	4.8669	212000
6.90	4.8795	212550
7.10	4.8823	212675

Comment:

Node: NB02316P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.12 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0006	25
1.65	0.0161	700
1.90	0.0488	2125
2.15	0.0539	2350
2.40	0.0620	2700
2.65	0.0712	3100

Stage [ft]	Area [ac]	Area [ft2]
2.90	0.0763	3325
3.15	0.0815	3550
3.40	0.0867	3775
3.65	0.1079	4700
3.90	0.1291	5625
4.15	0.1716	7475
4.40	0.1842	8025
4.65	0.2037	8875
4.80	0.2158	9400

Comment:

Node: NB02320

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.80 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.80	0.0001	4
4.00	0.0006	25
4.25	0.0063	275
4.50	0.0258	1125
4.75	0.0597	2600
5.00	0.0752	3275
5.25	0.1222	5325
5.50	0.1590	6925
5.75	0.2233	9725
6.00	0.2835	12350
6.25	0.3541	15425
6.50	0.3891	16950
6.75	0.4385	19100
7.00	0.4551	19825
7.25	0.4695	20450
7.50	0.4746	20675
7.60	0.4758	20725

Comment:

Node: NB02325

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 1.20 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.20	0.0001	4
4.20	0.0006	25
4.45	0.0017	75
4.70	0.0034	150
4.95	0.0040	175
5.20	0.0069	300
5.45	0.0218	950
5.70	0.0505	2200
5.95	0.1079	4700
6.20	0.1412	6150
6.45	0.1659	7225
6.70	0.1854	8075
6.95	0.1997	8700
7.20	0.2141	9325
7.45	0.2365	10300
7.70	0.2393	10425
7.70	0.2399	10450

Comment:

Node: NB02400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.09	0.0001	4
0.40	0.0006	25
0.65	0.0006	25
0.90	0.0011	50
1.15	0.0011	50
1.40	0.0011	50
1.65	0.0023	100
1.90	0.0023	100
2.15	0.0040	175
2.40	0.0275	1200
2.65	0.0987	4300
2.90	0.2233	9725
3.15	0.4735	20625
3.40	0.7249	31575
3.65	0.9797	42675

Stage [ft]	Area [ac]	Area [ft2]
3.90	1.0784	46975
4.15	1.1932	51975
4.40	1.2299	53575
4.65	1.2391	53975
4.90	1.2437	54175
5.15	1.2483	54375
5.40	1.2483	54375
5.65	1.2483	54375
5.90	1.2483	54375
6.15	1.2483	54375
6.40	1.2483	54375
6.65	1.2483	54375
6.90	1.2483	54375
7.15	1.2483	54375
7.40	1.2483	54375
7.65	1.2483	54375
7.90	1.2483	54375
8.15	1.2483	54375
8.40	1.2483	54375
8.65	1.2483	54375
8.90	1.2483	54375
9.15	1.2483	54375
9.40	1.2483	54375
9.65	1.2483	54375
9.90	1.2483	54375
10.15	1.2483	54375
10.40	1.2483	54375
10.65	1.2483	54375
10.90	1.2483	54375
11.15	1.2483	54375
11.40	1.2483	54375
11.65	1.2483	54375
11.90	1.2483	54375
12.15	1.2483	54375
12.40	1.2483	54375
12.65	1.2483	54375
12.90	1.2483	54375
13.15	1.2483	54375
13.40	1.2483	54375
13.65	1.2483	54375
13.90	1.2483	54375
14.15	1.2483	54375
14.40	1.2483	54375
14.65	1.2483	54375
14.90	1.2483	54375
15.15	1.2483	54375
15.40	1.2483	54375
15.65	1.2483	54375
15.90	1.2483	54375

Stage [ft]	Area [ac]	Area [ft2]
16.15	1.2483	54375
16.40	1.2483	54375
16.65	1.2483	54375
16.90	1.2483	54375
17.15	1.2483	54375
17.40	1.2483	54375
17.65	1.2483	54375
17.90	1.2483	54375
18.15	1.2483	54375
18.40	1.2483	54375
18.65	1.2483	54375
18.90	1.2483	54375
19.15	1.2483	54375
19.40	1.2483	54375
19.65	1.2483	54375
19.90	1.2483	54375
20.15	1.2483	54375
20.40	1.2483	54375
20.65	1.2483	54375
20.90	1.2483	54375
21.15	1.2483	54375
21.40	1.2483	54375
21.65	1.2483	54375
21.90	1.2483	54375
22.15	1.2483	54375
22.40	1.2483	54375
22.65	1.2483	54375
22.90	1.2483	54375
23.15	1.2483	54375
23.40	1.2483	54375
23.65	1.2483	54375
23.90	1.2483	54375
24.15	1.2483	54375
24.40	1.2483	54375
24.65	1.2483	54375
24.90	1.2483	54375
25.01	1.2546	54650

Comment:

Node: NB02410

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.08	0.0001	4
2.30	0.0006	25
2.55	0.0023	100
2.80	0.0224	975
3.05	0.0964	4200
3.30	0.1337	5825
3.55	0.2020	8800
3.80	0.2629	11450
4.05	0.3530	15375
4.30	0.3966	17275
4.55	0.4654	20275
4.80	0.5033	21925
5.05	0.5596	24375
5.30	0.6020	26225
5.55	0.6583	28675
5.80	0.6910	30100
6.05	0.7059	30750
6.10	0.7071	30800

Comment:

Node: NB02412

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.26	0.0001	4
1.60	0.0011	50
1.85	0.0029	125
2.10	0.0057	250
2.35	0.0201	875
2.60	0.0362	1575
2.85	0.0947	4125
3.10	0.1630	7100
3.35	0.2979	12975
3.60	0.3633	15825
3.85	0.4809	20950
4.10	0.5699	24825
4.35	0.6669	29050
4.60	0.7031	30625
4.85	0.7438	32400
5.10	0.7777	33875

Stage [ft]	Area [ac]	Area [ft2]
5.35	0.8368	36450
5.60	0.8890	38725
5.85	0.9544	41575
6.10	0.9946	43325
6.30	1.0141	44175

Comment:

Node: NB02425

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
4.20	0.0006	25
4.45	0.0023	100
4.70	0.0126	550
4.95	0.0528	2300
5.20	0.0884	3850
5.45	0.1745	7600
5.70	0.2032	8850
5.90	0.2124	9250

Comment:

Node: NB02426

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.00 ft
Warning Stage: 4.70 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0001	4
4.70	0.0040	175
4.95	0.0218	950
5.20	0.0574	2500
5.45	0.1762	7675
5.70	0.3220	14025
5.95	0.4683	20400
6.20	0.5033	21925

Stage [ft]	Area [ac]	Area [ft2]
6.45	0.5263	22925
6.70	0.5372	23400
6.90	0.5435	23675

Comment:

Node: NB02427

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.05 ft
Warning Stage: 4.80 ft

Stage [ft]	Area [ac]	Area [ft2]
3.05	0.0001	4
4.80	0.0011	50
5.05	0.0270	1175
5.30	0.0815	3550
5.55	0.1946	8475
5.80	0.2129	9275
6.05	0.2479	10800
6.30	0.2663	11600
6.55	0.2743	11950
6.80	0.2841	12375
7.05	0.3455	15050
7.30	0.4597	20025
7.55	0.6198	27000
7.80	0.6388	27825
8.05	0.6548	28525
8.30	0.6669	29050
8.55	0.6944	30250
8.80	0.7076	30825
9.05	0.7226	31475
9.30	0.7340	31975
9.55	0.7421	32325
9.80	0.7478	32575
10.00	0.7524	32775

Comment:

Node: NB02430

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 1.00 ft
Warning Stage: 4.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
4.50	0.0011	50
4.75	0.0126	550
5.00	0.0482	2100
5.25	0.1469	6400
5.50	0.2468	10750
5.75	0.4069	17725
6.00	0.4987	21725
6.25	0.5762	25100
6.50	0.6078	26475
6.75	0.6640	28925
7.00	0.7094	30900
7.25	0.7823	34075
7.50	0.8236	35875
7.75	0.8787	38275
8.00	0.8959	39025
8.25	0.9223	40175
8.50	0.9315	40575
8.75	0.9510	41425
9.00	0.9636	41975
9.25	0.9768	42550
9.50	0.9860	42950
9.75	0.9940	43300
10.00	0.9975	43450
10.25	1.0015	43625
10.50	1.0032	43700
10.75	1.0061	43825
11.00	1.0078	43900
11.10	1.0084	43925

Comment:

Node: NB02435

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.34	0.0001	4
2.10	0.0006	25
2.35	0.0034	150

Stage [ft]	Area [ac]	Area [ft2]
2.60	0.0172	750
2.85	0.1113	4850
3.10	0.2256	9825
3.35	0.4465	19450
3.60	0.6738	29350
3.85	0.9056	39450
4.10	1.0313	44925
4.35	1.1191	48750
4.60	1.1501	50100
4.85	1.1926	51950
5.10	1.2293	53550
5.35	1.2936	56350
5.60	1.3539	58975
5.85	1.4819	64550
6.10	1.5306	66675
6.30	1.5530	67650

Comment:

Node: NB02445

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.75 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.75	0.0001	4
3.10	0.0006	25
3.35	0.0017	75
3.60	0.0052	225
3.85	0.0155	675
4.10	0.0241	1050
4.35	0.0430	1875
4.60	0.0614	2675
4.85	0.1090	4750
5.10	0.1492	6500
5.35	0.1928	8400
5.60	0.2089	9100
5.85	0.2336	10175
6.10	0.2428	10575
6.35	0.2623	11425
6.60	0.2715	11825
6.85	0.2875	12525
7.10	0.3019	13150
7.35	0.3220	14025

Stage [ft]	Area [ac]	Area [ft2]
7.60	0.3386	14750
7.85	0.3794	16525
8.10	0.3840	16725
8.35	0.4023	17525
8.60	0.4098	17850
8.80	0.4121	17950

Comment:

Node: NB02455

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.49 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.49	0.0001	4
4.20	0.0011	50
4.45	0.0103	450
4.70	0.0373	1625
4.95	0.1010	4400
5.20	0.1544	6725
5.45	0.2359	10275
5.70	0.2938	12800
5.95	0.4339	18900
6.20	0.5085	22150
6.45	0.5659	24650
6.70	0.6382	27800
6.95	0.6910	30100
7.20	0.7312	31850
7.45	0.8035	35000
7.70	0.8328	36275
7.95	0.8609	37500
8.20	0.8747	38100
8.45	0.8913	38825
8.70	0.8947	38975
8.95	0.8999	39200
9.20	0.9034	39350
9.45	0.9045	39400
9.50	0.9051	39425

Comment:

Node: NB02500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.51	0.0001	4
4.00	0.0011	50
4.25	0.0075	325
4.50	0.0138	600
4.75	0.0241	1050
5.00	0.0321	1400
5.25	0.0465	2025
5.50	0.0712	3100
5.75	0.1102	4800
6.00	0.1429	6225
6.25	0.1750	7625
6.30	0.1796	7825

Comment:

Node: NB02510

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.26 ft
Warning Stage: 4.10 ft

Stage [ft]	Area [ac]	Area [ft2]
2.26	0.0001	4
4.10	0.0006	25
4.35	0.0075	325
4.60	0.0608	2650
4.85	0.2319	10100
5.10	0.3851	16775
5.35	0.6198	27000
5.60	0.7966	34700
5.85	1.1765	51250
6.10	1.4704	64050
6.35	2.0208	88025
6.60	2.2555	98250
6.85	2.4570	107025
7.10	2.5465	110925
7.35	2.6148	113900
7.60	2.6400	115000

Stage [ft]	Area [ac]	Area [ft2]
7.85	2.6693	116275
8.10	2.6900	117175
8.35	2.7365	119200
8.60	2.7583	120150
8.85	2.7812	121150
9.10	2.7944	121725
9.35	2.8059	122225
9.60	2.8122	122500
9.85	2.8220	122925
10.10	2.8237	123000
10.35	2.8266	123125
10.60	2.8289	123225
10.85	2.8306	123300
11.10	2.8312	123325
11.35	2.8329	123400
11.60	2.8334	123425
11.85	2.8346	123475
11.90	2.8352	123500

Comment:

Node: NB02517P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.77 ft
Warning Stage: 5.10 ft

Stage [ft]	Area [ac]	Area [ft2]
2.77	0.0001	4
5.10	0.0006	25
5.35	0.0103	450
5.60	0.0304	1325
5.85	0.0740	3225
6.10	0.1234	5375
6.35	0.1951	8500
6.60	0.2468	10750
6.80	0.2617	11400

Comment:

Node: NB02600

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.36	0.0001	4
2.60	0.0006	25
2.85	0.0023	100
3.00	0.0092	400

Comment:

Node: NB02610

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.15	0.0001	4
1.90	0.0011	50
2.15	0.0218	950
2.40	0.0551	2400
2.65	0.1085	4725
2.90	0.1567	6825
3.15	0.2405	10475
3.40	0.3019	13150
3.65	0.3639	15850
3.90	0.3897	16975
4.15	0.4236	18450
4.40	0.4488	19550
4.60	0.4683	20400

Comment:

Node: NB02615

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.31	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0029	125
3.25	0.0149	650
3.50	0.0373	1625
3.75	0.0551	2400
4.00	0.0631	2750
4.20	0.0740	3225

Comment:

Node: NB02616

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.58 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.58	0.0001	4
3.80	0.0092	400
4.05	0.0218	950
4.30	0.0396	1725
4.55	0.0958	4175
4.80	0.1406	6125
5.05	0.2118	9225
5.30	0.2267	9875
5.30	0.2290	9975

Comment:

Node: NB02617

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.43 ft
Warning Stage: 4.40 ft

Stage [ft]	Area [ac]	Area [ft2]
2.43	0.0001	4
4.40	0.0034	150
4.65	0.0218	950
4.90	0.0482	2100
5.15	0.0935	4075
5.40	0.1314	5725
5.65	0.1733	7550

Stage [ft]	Area [ac]	Area [ft2]
5.80	0.1808	7875

Comment:

Node: NB02618

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.45 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.45	0.0001	4
2.70	0.0017	75
2.95	0.0350	1525
3.20	0.0981	4275
3.45	0.1969	8575
3.70	0.2588	11275
3.95	0.3598	15675
4.20	0.3782	16475
4.45	0.3840	16725
4.70	0.3868	16850
4.95	0.3908	17025
5.20	0.3937	17150
5.45	0.3983	17350
5.70	0.3994	17400
5.95	0.4035	17575
6.20	0.4058	17675
6.30	0.4069	17725

Comment:

Node: NB02620

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
3.50	0.0006	25
3.75	0.0178	775
4.00	0.0499	2175
4.25	0.1263	5500

Stage [ft]	Area [ac]	Area [ft2]
4.50	0.1756	7650
4.75	0.2416	10525
5.00	0.2961	12900
5.25	0.4230	18425
5.50	0.5292	23050
5.75	0.7140	31100
6.00	0.8643	37650
6.25	1.0554	45975
6.50	1.1559	50350
6.75	1.2804	55775
7.00	1.3189	57450
7.25	1.3837	60275
7.50	1.4090	61375
7.75	1.4205	61875
8.00	1.4245	62050
8.25	1.4268	62150
8.50	1.4285	62225
8.75	1.4291	62250
8.80	1.4296	62275

Comment:

Node: NB02622

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.97 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.97	0.0001	4
3.20	0.0006	25
3.45	0.0195	850
3.70	0.0821	3575
3.95	0.1624	7075
4.20	0.1831	7975
4.45	0.2037	8875
4.70	0.2261	9850
4.95	0.2571	11200
5.20	0.2761	12025
5.45	0.3053	13300
5.70	0.3220	14025
5.95	0.3507	15275
6.20	0.3742	16300
6.45	0.4109	17900
6.70	0.4408	19200

Stage [ft]	Area [ac]	Area [ft2]
6.95	0.4878	21250
7.20	0.5091	22175
7.45	0.5263	22925
7.70	0.5286	23025
7.95	0.5286	23025
8.00	0.5292	23050

Comment:

Node: NB02700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.01	0.0001	4
2.90	0.0029	125
3.15	0.0396	1725
3.40	0.0712	3100
3.65	0.1309	5700
3.90	0.1682	7325
4.15	0.1865	8125
4.30	0.1888	8225

Comment:

Node: NB02706

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.20 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
1.20	0.0001	4
2.90	0.0023	100
3.15	0.0195	850
3.40	0.0310	1350
3.65	0.0574	2500
3.90	0.0735	3200
4.15	0.0769	3350
4.30	0.0792	3450

Comment:

Node: NB02707

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.45 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.45	0.0001	4
2.60	0.0006	25
2.85	0.0258	1125
3.10	0.0838	3650
3.35	0.2112	9200
3.60	0.2720	11850
3.85	0.3323	14475
4.10	0.3392	14775
4.35	0.3438	14975
4.60	0.3449	15025
4.85	0.3495	15225
5.10	0.3512	15300
5.35	0.3570	15550
5.60	0.3633	15825
5.85	0.3771	16425
6.10	0.3885	16925
6.35	0.3994	17400
6.40	0.4012	17475

Comment:

Node: NB02710

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.36	0.0001	4
2.80	0.0063	275
3.05	0.0746	3250
3.30	0.1934	8425
3.55	0.4017	17500

Stage [ft]	Area [ac]	Area [ft2]
3.80	0.5389	23475
4.05	0.6279	27350
4.30	0.6738	29350
4.55	0.7851	34200
4.80	0.8752	38125
5.05	1.0399	45300
5.30	1.2322	53675
5.55	1.4572	63475
5.80	1.5880	69175
6.05	1.7309	75400
6.30	1.7866	77825
6.55	1.8463	80425
6.80	1.8647	81225
7.05	1.8853	82125
7.30	1.8911	82375
7.55	1.9008	82800
7.80	1.9043	82950
8.05	1.9066	83050
8.20	1.9089	83150

Comment:

Node: NB02800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.25	0.0001	4
2.70	0.0011	50
2.95	0.0430	1875
3.20	0.1085	4725
3.45	0.2537	11050
3.70	0.3776	16450
3.95	0.5085	22150
4.20	0.5636	24550
4.45	0.6307	27475
4.70	0.6640	28925
4.95	0.7220	31450
5.20	0.7375	32125
5.45	0.7449	32450
5.70	0.7449	32450
5.70	0.7455	32475

Comment:

Node: NB02900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.31	0.0001	4
2.30	0.0006	25
2.55	0.0034	150
2.80	0.0115	500
3.05	0.0373	1625
3.30	0.0591	2575
3.55	0.0924	4025
3.80	0.1090	4750
4.05	0.1343	5850
4.30	0.1544	6725
4.55	0.2261	9850
4.80	0.2835	12350
5.05	0.3725	16225
5.30	0.4006	17450
5.55	0.4224	18400
5.70	0.4247	18500

Comment:

Node: NB02910

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.20	0.0001	4
2.60	0.0011	50
2.85	0.0367	1600
3.10	0.1268	5525
3.35	0.3421	14900
3.60	0.5366	23375
3.85	0.7065	30775
4.10	0.7581	33025

Stage [ft]	Area [ac]	Area [ft2]
4.35	0.8110	35325
4.60	0.8787	38275
4.85	1.0319	44950
5.10	1.1524	50200
5.35	1.2856	56000
5.60	1.3642	59425
5.85	1.4842	64650
6.10	1.5077	65675
6.35	1.5140	65950
6.60	1.5174	66100
6.85	1.5215	66275
7.10	1.5215	66275
7.35	1.5243	66400
7.60	1.5289	66600
7.85	1.5347	66850
8.10	1.5398	67075
8.35	1.5421	67175
8.60	1.5433	67225
8.85	1.5496	67500
9.10	1.5525	67625
9.35	1.5576	67850
9.60	1.5834	68975
9.85	1.5932	69400
10.10	1.5932	69400
10.35	1.5932	69400
10.60	1.5932	69400
10.85	1.5932	69400
11.10	1.5932	69400
11.35	1.5932	69400
11.60	1.5932	69400
11.85	1.5932	69400
12.10	1.5932	69400
12.35	1.5932	69400
12.60	1.5932	69400
12.85	1.5938	69425
13.10	1.5938	69425
13.35	1.5938	69425
13.60	1.5938	69425
13.85	1.5938	69425
14.10	1.5938	69425
14.35	1.5938	69425
14.60	1.5938	69425
14.85	1.5938	69425
15.10	1.5938	69425
15.35	1.5938	69425
15.60	1.5938	69425
15.85	1.5938	69425
16.10	1.6328	71125
16.35	1.6328	71125

Stage [ft]	Area [ac]	Area [ft2]
16.60	1.6328	71125
16.85	1.6328	71125
17.10	1.6328	71125
17.35	1.6328	71125
17.60	1.6328	71125
17.85	1.6328	71125
18.10	1.6328	71125
18.35	1.6328	71125
18.60	1.6328	71125
18.85	1.6328	71125
19.10	1.6328	71125
19.35	1.6328	71125
19.60	1.6328	71125
19.85	1.6328	71125
20.01	1.6443	71625

Comment:

Node: NB02930

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.27	0.0001	4
2.30	0.0011	50
2.55	0.0017	75
2.80	0.0046	200
3.05	0.1073	4675
3.30	0.2370	10325
3.55	0.4649	20250
3.80	0.6170	26875
4.05	0.7266	31650
4.30	0.7995	34825
4.55	0.9034	39350
4.80	0.9963	43400
5.05	1.1461	49925
5.30	1.2701	55325
5.55	1.4612	63650
5.80	1.5961	69525
6.05	1.8262	79550
6.30	1.9071	83075
6.55	2.0380	88775
6.80	2.0696	90150

Stage [ft]	Area [ac]	Area [ft2]
7.05	2.0833	90750
7.30	2.0868	90900
7.55	2.0954	91275
7.70	2.0988	91425

Comment:

Node: NB02965

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.94 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.94	0.0001	4
2.30	0.0006	25
2.55	0.0006	25
2.80	0.0040	175
3.05	0.0407	1775
3.30	0.0999	4350
3.55	0.1992	8675
3.80	0.2520	10975
4.05	0.3231	14075
4.30	0.3616	15750
4.55	0.4345	18925
4.80	0.5205	22675
5.05	0.6250	27225
5.30	0.6881	29975
5.55	0.8081	35200
5.80	0.8683	37825
6.05	0.9475	41275
6.30	0.9711	42300
6.55	0.9831	42825
6.80	0.9860	42950
7.05	0.9900	43125
7.30	0.9929	43250
7.55	0.9935	43275
7.80	0.9940	43300
8.05	0.9980	43475
8.30	0.9986	43500
8.55	0.9998	43550
8.80	1.0003	43575
9.05	1.0009	43600
9.10	1.0015	43625

Comment:

Node: NC002P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.20	0.0001	4
3.00	0.0057	250
3.25	0.0075	325
3.50	0.0103	450
3.75	0.0143	625
4.00	0.0224	975
4.25	0.0379	1650
4.50	0.0620	2700
4.75	0.1527	6650
5.00	0.2542	11075
5.25	0.3656	15925
5.50	0.4081	17775
5.75	0.4322	18825
6.00	0.4356	18975
6.25	0.4408	19200
6.50	0.4425	19275
6.60	0.4436	19325

Comment:

Node: NC003P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.50	0.0001	4
3.00	0.0195	850
3.25	0.0207	900
3.50	0.0230	1000
3.75	0.0281	1225
4.00	0.0316	1375
4.25	0.0356	1550

Stage [ft]	Area [ac]	Area [ft2]
4.50	0.0385	1675
4.75	0.0425	1850
5.00	0.0488	2125
5.25	0.0821	3575
5.50	0.0999	4350
5.75	0.1027	4475
6.00	0.1033	4500
6.25	0.1033	4500
6.50	0.1039	4525
6.75	0.1050	4575
7.00	0.1062	4625
7.25	0.1062	4625
7.50	0.1062	4625
7.75	0.1062	4625
8.00	0.1062	4625
8.25	0.1062	4625
8.50	0.1062	4625
8.75	0.1062	4625
9.00	0.1062	4625
9.25	0.1062	4625
9.50	0.1062	4625
9.75	0.1062	4625
10.00	0.1062	4625
10.25	0.1062	4625
10.50	0.1062	4625
10.75	0.1062	4625
11.00	0.1062	4625
11.25	0.1062	4625
11.50	0.1062	4625
11.75	0.1062	4625
12.00	0.1062	4625
12.25	0.1062	4625
12.50	0.1062	4625
12.75	0.1062	4625
13.00	0.1062	4625
13.25	0.1062	4625
13.50	0.1062	4625
13.75	0.1062	4625
14.00	0.1062	4625
14.25	0.1062	4625
14.50	0.1062	4625
14.75	0.1062	4625
15.00	0.1062	4625
15.25	0.1418	6175
15.50	0.1418	6175
15.75	0.1418	6175
16.00	0.1418	6175
16.25	0.1418	6175
16.50	0.1418	6175

Stage [ft]	Area [ac]	Area [ft2]
16.75	0.1418	6175
17.00	0.1418	6175
17.25	0.1418	6175
17.50	0.1418	6175
17.75	0.1418	6175
18.00	0.1418	6175
18.25	0.1418	6175
18.50	0.1418	6175
18.75	0.1418	6175
19.00	0.1418	6175
19.10	0.1423	6200

Comment:

Node: NC03000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.98 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.98	0.0001	4
3.30	0.0029	125
3.55	0.0201	875
3.80	0.0494	2150
4.05	0.1154	5025
4.30	0.2600	11325
4.55	0.4700	20475
4.80	0.5401	23525
5.05	0.6698	29175
5.30	0.7478	32575
5.55	0.8534	37175
5.80	0.8781	38250
6.05	0.8896	38750
6.30	0.8902	38775
6.55	0.8907	38800
6.80	0.8907	38800
7.05	0.8919	38850
7.30	0.8919	38850
7.55	0.8919	38850
7.80	0.8919	38850
8.05	0.8919	38850
8.30	0.8919	38850
8.55	0.8924	38875
8.80	0.8924	38875

Stage [ft]	Area [ac]	Area [ft2]
9.05	0.8924	38875
9.30	0.8930	38900
9.55	0.8930	38900
9.80	0.8930	38900
10.05	0.8930	38900
10.30	0.8930	38900
10.55	0.8930	38900
10.80	0.8930	38900
11.05	0.8930	38900
11.30	0.8930	38900
11.55	0.8930	38900
11.80	0.8930	38900
12.05	0.8930	38900
12.30	0.8930	38900
12.55	0.8930	38900
12.80	0.8930	38900
13.05	0.8930	38900
13.30	0.8930	38900
13.55	0.8930	38900
13.80	0.8930	38900
14.05	0.8930	38900
14.30	0.8930	38900
14.55	0.8930	38900
14.80	0.8930	38900
15.05	0.8930	38900
15.30	0.8942	38950
15.55	0.8953	39000
15.80	0.8959	39025
16.05	0.8976	39100
16.30	0.8976	39100
16.55	0.8976	39100
16.80	0.8976	39100
17.05	0.8976	39100
17.30	0.8976	39100
17.55	0.8976	39100
17.80	0.8976	39100
18.05	0.8976	39100
18.30	0.8976	39100
18.55	0.8976	39100
18.80	0.8976	39100
19.05	0.8982	39125
19.30	0.9016	39275
19.55	0.9074	39525
19.80	0.9114	39700
19.91	0.9137	39800

Comment:

Node: NC03031P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.98 ft
Warning Stage: 4.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.98	0.0001	4
4.60	0.0006	25
4.85	0.0098	425
5.10	0.0666	2900
5.35	0.1992	8675
5.60	0.2554	11125
5.85	0.3214	14000
6.10	0.3593	15650
6.35	0.4006	17450
6.60	0.4058	17675
6.60	0.4069	17725

Comment:

Node: NC03040

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.67 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.67	0.0001	4
3.30	0.0011	50
3.55	0.0103	450
3.80	0.0385	1675
4.05	0.0913	3975
4.30	0.1372	5975
4.55	0.1917	8350
4.80	0.2101	9150
5.05	0.2456	10700
5.30	0.2669	11625
5.55	0.3134	13650
5.80	0.3254	14175
6.05	0.3380	14725
6.30	0.3403	14825
6.40	0.3426	14925

Comment:

Node: NC03050

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.67 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.67	0.0001	4
3.00	0.0006	25
3.25	0.0006	25
3.50	0.0069	300
3.75	0.0585	2550
4.00	0.0821	3575
4.25	0.1045	4550
4.50	0.1102	4800
4.75	0.1159	5050
5.00	0.1217	5300
5.25	0.1286	5600
5.50	0.1326	5775
5.75	0.1389	6050
6.00	0.1429	6225
6.25	0.1475	6425
6.50	0.1475	6425
6.75	0.1475	6425
7.00	0.1475	6425
7.25	0.1475	6425
7.50	0.1475	6425
7.75	0.1475	6425
8.00	0.1475	6425
8.25	0.1475	6425
8.50	0.1475	6425
8.75	0.1475	6425
9.00	0.1475	6425
9.25	0.1475	6425
9.50	0.1481	6450
9.75	0.1481	6450
10.00	0.1481	6450
10.25	0.1486	6475
10.50	0.1486	6475
10.75	0.1492	6500
11.00	0.1492	6500
11.25	0.1492	6500
11.50	0.1492	6500
11.75	0.1492	6500
12.00	0.1492	6500
12.25	0.1492	6500
12.50	0.1492	6500
12.75	0.1492	6500
13.00	0.1492	6500

Stage [ft]	Area [ac]	Area [ft2]
13.25	0.1492	6500
13.50	0.1492	6500
13.75	0.1498	6525
14.00	0.1498	6525
14.25	0.1498	6525
14.50	0.1498	6525
14.75	0.1498	6525
15.00	0.1498	6525
15.25	0.1498	6525
15.50	0.1498	6525
15.75	0.1498	6525
16.00	0.1509	6575
16.25	0.1544	6725
16.50	0.1544	6725
16.75	0.1544	6725
17.00	0.1544	6725
17.25	0.1544	6725
17.50	0.1544	6725
17.75	0.1544	6725
18.00	0.1544	6725
18.25	0.1544	6725
18.50	0.1544	6725
18.75	0.1544	6725
19.00	0.1544	6725
19.25	0.1544	6725
19.50	0.1544	6725
19.75	0.1544	6725
20.00	0.1550	6750
20.01	0.1555	6775

Comment:

Node: NC03055

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.68 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
2.68	0.0001	4
3.50	0.0063	275
3.75	0.0293	1275
4.00	0.0781	3400
4.25	0.1791	7800
4.50	0.2187	9525

Stage [ft]	Area [ac]	Area [ft2]
4.75	0.2686	11700
5.00	0.3002	13075
5.25	0.3541	15425
5.50	0.3880	16900
5.75	0.4482	19525
6.00	0.4764	20750
6.20	0.4941	21525

Comment:

Node: NC03100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.19	0.0001	4
3.30	0.0006	25
3.55	0.0063	275
3.80	0.0310	1350
4.05	0.1940	8450
4.30	0.5119	22300
4.55	1.0199	44425
4.80	1.4113	61475
5.05	2.1769	94825
5.30	2.4535	106875
5.55	2.7192	118450
5.80	2.8271	123150
6.05	2.8874	125775
6.30	2.9046	126525
6.55	2.9132	126900
6.80	2.9155	127000
6.80	2.9161	127025

Comment:

Node: NC03120

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.55	0.0001	4
3.00	0.0006	25
3.25	0.0132	575
3.50	0.0591	2575
3.75	0.2043	8900
4.00	0.3708	16150
4.25	0.7421	32325
4.50	1.0021	43650
4.75	1.2540	54625
5.00	1.4210	61900
5.25	1.7080	74400
5.50	1.8457	80400
5.75	1.9949	86900
6.00	2.0610	89775
6.25	2.1895	95375
6.50	2.2308	97175
6.75	2.2503	98025
7.00	2.2744	99075
7.10	2.3135	100775

Comment:

Node: NC03123P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.20 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
2.20	0.0001	4
3.10	0.0006	25
3.35	0.0029	125
3.60	0.0057	250
3.85	0.0723	3150
4.10	0.1090	4750
4.35	0.1481	6450
4.60	0.1871	8150
4.85	0.2588	11275
5.10	0.2933	12775
5.35	0.3644	15875
5.60	0.4207	18325
5.85	0.5653	24625
6.10	0.6646	28950
6.35	0.7438	32400

Stage [ft]	Area [ac]	Area [ft2]
6.60	0.7507	32700
6.70	0.7541	32850

Comment:

Node: NC03125

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.35	0.0001	4
1.90	0.0011	50
2.15	0.0075	325
2.40	0.0247	1075
2.65	0.1337	5825
2.90	0.2353	10250
3.15	0.4500	19600
3.40	0.5601	24400
3.65	0.7185	31300
3.90	0.8287	36100
4.15	1.0267	44725
4.40	1.1530	50225
4.65	1.3768	59975
4.90	1.5622	68050
5.15	1.8733	81600
5.40	2.0478	89200
5.65	2.2205	96725
5.90	2.3347	101700
6.15	2.4811	108075
6.40	2.5643	111700
6.65	2.6131	113825
6.80	2.6136	113850

Comment:

Node: NC03135

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.10	0.0001	4
2.20	0.0011	50
2.45	0.0075	325
2.70	0.0419	1825
2.95	0.1004	4375
3.20	0.1469	6400
3.45	0.2101	9150
3.70	0.2542	11075
3.95	0.2904	12650
4.20	0.3151	13725
4.45	0.3553	15475
4.70	0.4012	17475
4.95	0.5699	24825
5.20	0.6594	28725
5.45	0.7277	31700
5.60	0.7300	31800

Comment:

Node: NC03137

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.17	0.0001	4
3.20	0.0006	25
3.45	0.0029	125
3.70	0.0052	225
3.95	0.0098	425
4.20	0.0132	575
4.45	0.0281	1225
4.70	0.0505	2200
4.95	0.0838	3650
5.20	0.0947	4125
5.45	0.1108	4825
5.70	0.1205	5250
5.95	0.1377	6000
6.20	0.1618	7050
6.45	0.2106	9175
6.50	0.2112	9200

Comment:

Node: NC03160

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.18	0.0001	4
2.30	0.0006	25
2.55	0.0023	100
2.80	0.0149	650
3.05	0.1062	4625
3.30	0.2043	8900
3.55	0.3369	14675
3.80	0.4528	19725
4.05	0.6428	28000
4.30	0.7340	31975
4.55	0.9016	39275
4.80	1.0531	45875
5.05	1.3619	59325
5.30	1.4744	64225
5.55	1.6116	70200
5.80	1.6242	70750
6.05	1.6357	71250
6.30	1.6397	71425
6.50	1.6431	71575

Comment:

Node: NC03200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.45	0.0001	4
3.10	0.0006	25
3.35	0.0086	375
3.60	0.0195	850
3.85	0.0803	3500
4.10	0.1808	7875
4.35	0.4500	19600
4.60	0.6348	27650
4.85	0.9355	40750

Stage [ft]	Area [ac]	Area [ft2]
5.10	1.1651	50750
5.35	1.5215	66275
5.60	1.6047	69900
5.85	1.6328	71125
6.10	1.6489	71825
6.35	1.6581	72225
6.50	1.6604	72325

Comment:

Node: NC03210

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.51	0.0001	4
3.00	0.0006	25
3.25	0.0011	50
3.50	0.0040	175
3.75	0.0379	1650
4.00	0.1360	5925
4.25	0.4930	21475
4.50	0.6577	28650
4.75	0.8712	37950
5.00	1.0015	43625
5.25	1.1834	51550
5.50	1.2976	56525
5.75	1.3745	59875
6.00	1.4159	61675
6.25	1.4325	62400
6.50	1.4382	62650
6.60	1.4417	62800

Comment:

Node: NC03220

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.23 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.23	0.0001	4
3.30	0.0006	25
3.55	0.0011	50
3.80	0.0092	400
4.05	0.1320	5750
4.30	0.3558	15500
4.55	0.8385	36525
4.80	1.1542	50275
5.05	1.4440	62900
5.30	1.5857	69075
5.55	1.9112	83250
5.80	2.0552	89525
6.05	2.1310	92825
6.30	2.1660	94350
6.55	2.1935	95550
6.80	2.2033	95975
7.05	2.2601	98450
7.10	2.2739	99050

Comment:

Node: NC03222

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.70	0.0001	4
3.80	0.0011	50
4.05	0.0115	500
4.30	0.0517	2250
4.55	0.1567	6825
4.80	0.3283	14300
5.05	0.5688	24775
5.30	0.6239	27175
5.55	0.6755	29425
5.80	0.6962	30325
6.05	0.7145	31125
6.30	0.7312	31850
6.55	0.7495	32650
6.80	0.7926	34525
7.05	0.8781	38250
7.10	0.8896	38750

Comment:

Node: NC03235

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.77 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.77	0.0001	4
3.80	0.0006	25
4.05	0.0201	875
4.30	0.0913	3975
4.55	0.2887	12575
4.80	0.4448	19375
5.05	0.8196	35700
5.30	1.0480	45650
5.55	1.1266	49075
5.60	1.1272	49100

Comment:

Node: NC03240

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.29 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.29	0.0001	4
3.50	0.0006	25
3.75	0.0046	200
4.00	0.0402	1750
4.25	0.2072	9025
4.50	0.3369	14675
4.75	0.4683	20400
5.00	0.5366	23375
5.25	0.6657	29000
5.50	0.7576	33000
5.75	0.9992	43525
6.00	1.0629	46300
6.25	1.1002	47925

Stage [ft]	Area [ac]	Area [ft2]
6.50	1.1237	48950
6.75	1.1461	49925
7.00	1.1565	50375
7.00	1.1593	50500

Comment:

Node: NC03300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.12	0.0001	4
2.80	0.0006	25
3.05	0.0057	250
3.30	0.0310	1350
3.55	0.1486	6475
3.80	0.3564	15525
4.05	1.0354	45100
4.30	1.5048	65550
4.55	2.2458	97825
4.80	2.5637	111675
5.05	2.8639	124750
5.30	3.0802	134175
5.55	3.2243	140450
5.80	3.2604	142025
6.05	3.3196	144600
6.30	3.3729	146925
6.55	3.4108	148575
6.80	3.4223	149075
7.05	3.4309	149450
7.10	3.4315	149475

Comment:

Node: NC03400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.63	0.0001	4
3.30	0.0011	50
3.55	0.0057	250
3.80	0.0201	875
4.05	0.1165	5075
4.30	0.1997	8700
4.55	0.2984	13000
4.80	0.3840	16725
5.05	0.6032	26275
5.30	0.6371	27750
5.55	0.6416	27950
5.80	0.6416	27950
6.05	0.6416	27950
6.30	0.6416	27950
6.55	0.6416	27950
6.80	0.6416	27950
7.05	0.6416	27950
7.30	0.6416	27950
7.55	0.6416	27950
7.80	0.6428	28000
7.80	0.6434	28025

Comment:

Node: NC03415

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.93 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.93	0.0001	4
3.50	0.0006	25
3.75	0.0057	250
4.00	0.0425	1850
4.25	0.2416	10525
4.50	0.3730	16250
4.75	0.5521	24050
5.00	0.6256	27250
5.25	0.6973	30375
5.50	0.7185	31300
5.75	0.7272	31675
6.00	0.7272	31675
6.25	0.7272	31675

Stage [ft]	Area [ac]	Area [ft2]
6.50	0.7272	31675
6.75	0.7272	31675
7.00	0.7272	31675
7.25	0.7272	31675
7.50	0.7272	31675
7.70	0.7289	31750

Comment:

Node: NC03500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.96 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.96	0.0001	4
2.80	0.0006	25
3.05	0.0023	100
3.30	0.0132	575
3.55	0.0838	3650
3.80	0.1486	6475
4.05	0.3949	17200
4.30	0.6439	28050
4.55	0.9286	40450
4.80	1.0554	45975
5.05	1.2115	52775
5.30	1.3556	59050
5.55	1.4824	64575
5.80	1.5438	67250
6.05	1.6196	70550
6.10	1.6299	71000

Comment:

Node: NC03600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.75 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.75	0.0001	4
3.50	0.0011	50
3.75	0.0057	250
4.00	0.0212	925
4.25	0.0838	3650
4.50	0.1641	7150
4.75	0.3134	13650
5.00	0.3593	15650
5.25	0.4046	17625
5.50	0.4098	17850
5.50	0.4109	17900

Comment:

Node: NC03610

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.92 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.92	0.0001	4
3.10	0.0006	25
3.35	0.0138	600
3.60	0.0448	1950
3.85	0.1263	5500
4.10	0.2422	10550
4.35	0.4930	21475
4.60	0.6399	27875
4.85	0.8695	37875
5.10	1.0101	44000
5.35	1.2138	52875
5.60	1.2994	56600
5.85	1.3246	57700
6.00	1.3258	57750

Comment:

Node: NC03615

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.49 ft

Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.49	0.0001	4
3.50	0.0040	175
3.75	0.0310	1350
4.00	0.1222	5325
4.25	0.3673	16000
4.50	0.5670	24700
4.75	0.8138	35450
5.00	0.9160	39900
5.25	1.1467	49950
5.50	1.2615	54950
5.75	1.3527	58925
6.00	1.3694	59650
6.25	1.3820	60200
6.50	1.3952	60775
6.60	1.4130	61550

Comment:

Node: NC03625

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.25 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
2.25	0.0001	4
3.60	0.0040	175
3.85	0.0293	1275
4.10	0.0803	3500
4.35	0.1963	8550
4.60	0.2761	12025
4.85	0.3403	14825
5.10	0.3828	16675
5.35	0.4213	18350
5.60	0.4408	19200
5.85	0.4557	19850
6.10	0.4614	20100
6.35	0.4764	20750
6.60	0.4838	21075
6.70	0.4867	21200

Comment:

Node: NC03700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.84 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.84	0.0001	4
3.20	0.0006	25
3.45	0.0075	325
3.70	0.0700	3050
3.95	0.3564	15525
4.20	0.5751	25050
4.45	1.0376	45200
4.70	1.3080	56975
4.95	1.6351	71225
5.20	1.7068	74350
5.45	1.7200	74925
5.70	1.7223	75025
5.95	1.7246	75125
6.20	1.7292	75325
6.45	1.7390	75750
6.60	1.7545	76425

Comment:

Node: NC03715

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.00 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
3.60	0.0017	75
3.85	0.0103	450
4.10	0.0557	2425
4.35	0.2250	9800
4.60	0.3903	17000
4.85	0.6055	26375
5.10	0.6887	30000
5.30	0.7117	31000

Comment:

Node: NC03716

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.82 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.82	0.0001	4
3.50	0.0006	25
3.75	0.0115	500
4.00	0.0442	1925
4.25	0.2485	10825
4.50	0.4258	18550
4.75	0.8087	35225
5.00	0.9102	39650
5.25	0.9372	40825
5.50	0.9430	41075
5.75	0.9481	41300
6.00	0.9493	41350
6.25	0.9544	41575
6.50	0.9562	41650
6.70	0.9596	41800

Comment:

Node: NC03720

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.57 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.57	0.0001	4
3.40	0.0023	100
3.65	0.0430	1875
3.90	0.1383	6025
4.15	0.4333	18875
4.40	0.6101	26575
4.65	0.7639	33275
4.90	0.9395	40925
5.15	0.9831	42825
5.40	0.9975	43450
5.65	1.0147	44200
5.90	1.0170	44300
5.90	1.0176	44325

Comment:

Node: NC03723

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.86 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.86	0.0001	4
3.50	0.0017	75
3.75	0.0063	275
4.00	0.0235	1025
4.25	0.0861	3750
4.50	0.1377	6000
4.75	0.1963	8550
5.00	0.2290	9975
5.25	0.2772	12075
5.50	0.3283	14300
5.75	0.3937	17150
6.00	0.4092	17825
6.00	0.4098	17850

Comment:

Node: NC03730

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.66 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.66	0.0001	4
3.30	0.0011	50
3.55	0.0063	275
3.80	0.0298	1300
4.05	0.1188	5175
4.30	0.2118	9225
4.55	0.3093	13475
4.80	0.3369	14675
5.00	0.3742	16300

Comment:

Node: NC03737

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.79 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.79	0.0001	4
3.30	0.0011	50
3.55	0.0126	550
3.80	0.0287	1250
4.05	0.1113	4850
4.30	0.2124	9250
4.55	0.3478	15150
4.80	0.4488	19550
5.05	0.5716	24900
5.30	0.6348	27650
5.55	0.7312	31850
5.80	0.7449	32450
6.05	0.7547	32875
6.20	0.7553	32900

Comment:

Node: NC03800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.33	0.0001	4
2.60	0.0006	25
2.85	0.0034	150
3.10	0.0166	725
3.35	0.0832	3625
3.60	0.1458	6350
3.85	0.2674	11650
4.10	0.3093	13475
4.35	0.3547	15450
4.60	0.3828	16675

Stage [ft]	Area [ac]	Area [ft2]
4.85	0.4109	17900
5.10	0.4247	18500
5.35	0.4689	20425
5.40	0.4700	20475

Comment:

Node: NC03825

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.22	0.0001	4
2.00	0.0006	25
2.25	0.0023	100
2.50	0.0034	150
2.75	0.0557	2425
3.00	0.1274	5550
3.25	0.3157	13750
3.50	0.4609	20075
3.75	0.7610	33150
4.00	0.9487	41325
4.25	1.1312	49275
4.50	1.2334	53725
4.75	1.5014	65400
5.00	1.6586	72250
5.25	1.7332	75500
5.50	1.7556	76475
5.75	1.7763	77375
6.00	1.7895	77950
6.25	1.8107	78875
6.50	1.8463	80425
6.75	1.9381	84425
6.90	1.9485	84875

Comment:

Node: NC03830

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 0.69 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.25	0.0001	4
2.40	0.0006	25
2.65	0.0121	525
2.90	0.0499	2175
3.15	0.1670	7275
3.40	0.3116	13575
3.65	0.5309	23125
3.90	0.6652	28975
4.15	0.8339	36325
4.40	0.9183	40000
4.65	1.1404	49675
4.90	1.5157	66025
5.15	2.2239	96875
5.40	2.4558	106975
5.65	2.5448	110850
5.90	2.5562	111350
6.15	2.5729	112075
6.40	2.5907	112850
6.65	2.6205	114150
6.90	2.6389	114950
7.15	2.6647	116075
7.40	2.6693	116275
7.65	2.6693	116275
7.90	2.6693	116275
8.15	2.6693	116275
8.40	2.6693	116275
8.65	2.6693	116275
8.90	2.6693	116275
9.15	2.6693	116275
9.40	2.6693	116275
9.65	2.6693	116275
9.90	2.6693	116275
10.15	2.6693	116275
10.40	2.6693	116275
10.65	2.6693	116275
10.90	2.6693	116275
11.15	2.6693	116275
11.40	2.6693	116275
11.65	2.6693	116275
11.90	2.6693	116275
12.15	2.6693	116275
12.40	2.6693	116275
12.65	2.6693	116275
12.90	2.6693	116275
13.15	2.6693	116275
13.40	2.6693	116275

Stage [ft]	Area [ac]	Area [ft2]
13.65	2.6693	116275
13.90	2.6693	116275
14.00	2.6785	116675

Comment:

Node: NC03833P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 6.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.24	0.0001	4
3.00	0.0456	1986
5.33	0.0456	1986
6.25	0.0534	2325
6.50	0.1045	4550
6.75	0.1728	7525
7.00	0.1842	8025
7.25	0.1860	8100
7.50	0.1882	8200
7.75	0.1882	8200
8.00	0.1882	8200
8.25	0.1882	8200
8.50	0.1882	8200
8.75	0.1882	8200
9.00	0.1882	8200
9.25	0.1882	8200
9.50	0.1882	8200
9.75	0.1882	8200
10.00	0.1882	8200
10.25	0.1882	8200
10.50	0.1882	8200
10.75	0.1882	8200
11.00	0.1882	8200
11.25	0.1882	8200
11.50	0.1882	8200
11.75	0.1882	8200
12.00	0.1882	8200
12.25	0.1882	8200
12.50	0.1882	8200
12.75	0.1882	8200
13.00	0.1882	8200
13.25	0.1882	8200

Stage [ft]	Area [ac]	Area [ft2]
13.50	0.1882	8200
13.75	0.1882	8200
14.00	0.1882	8200
14.00	0.3053	13300

Comment:

Node: NC03835P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.89 ft
Warning Stage: 6.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.89	0.0001	4
6.00	0.0006	25
6.25	0.0046	200
6.50	0.0138	600
6.75	0.0224	975
7.00	0.0224	975
7.25	0.0224	975
7.50	0.0224	975
7.75	0.0224	975
8.00	0.0224	975
8.25	0.0224	975
8.50	0.0224	975
8.75	0.0224	975
9.00	0.0224	975
9.25	0.0224	975
9.50	0.0224	975
9.75	0.0224	975
10.00	0.0224	975
10.25	0.0224	975
10.50	0.0224	975
10.75	0.0224	975
11.00	0.0224	975
11.25	0.0224	975
11.50	0.0224	975
11.75	0.0224	975
12.00	0.0224	975
12.25	0.0224	975
12.50	0.0224	975
12.75	0.0224	975
13.00	0.0224	975
13.25	0.0224	975

Stage [ft]	Area [ac]	Area [ft2]
13.50	0.0224	975
13.75	0.0224	975
14.00	0.0224	975
14.00	0.0522	2275

Comment:

Node: NC03837P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.77	0.0010	44
3.00	0.0332	1446
5.33	0.0332	1446
5.55	0.1469	6400
5.80	0.1659	7225
6.05	0.2003	8725
6.30	0.2342	10200
6.55	0.3082	13425
6.80	0.3828	16675
7.05	0.4270	18600
7.30	0.4471	19475
7.55	0.4660	20300
7.80	0.4781	20825
8.05	0.4919	21425
8.30	0.4936	21500
8.55	0.4953	21575
8.80	0.4953	21575
9.05	0.4953	21575
9.30	0.4953	21575
9.55	0.4953	21575
9.80	0.4953	21575
10.05	0.4953	21575
10.30	0.4953	21575
10.55	0.4953	21575
10.80	0.4953	21575
11.05	0.4953	21575
11.30	0.4953	21575
11.55	0.4953	21575
11.80	0.4953	21575
12.05	0.4953	21575
12.30	0.4953	21575

Stage [ft]	Area [ac]	Area [ft2]
12.55	0.4953	21575
12.80	0.4953	21575
13.05	0.4953	21575
13.30	0.4953	21575
13.55	0.4953	21575
13.80	0.4953	21575
14.00	0.5372	23400

Comment:

Node: NC03845

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.30	0.0001	4
2.40	0.0011	50
2.65	0.0109	475
2.90	0.0253	1100
3.15	0.0735	3200
3.40	0.1314	5725
3.65	0.2250	9800
3.90	0.2898	12625
4.15	0.3593	15650
4.40	0.3966	17275
4.65	0.5320	23175
4.90	0.6233	27150
5.00	0.6520	28400

Comment:

Node: NC03850

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.07	0.0001	4
2.20	0.0011	50

Stage [ft]	Area [ac]	Area [ft2]
2.45	0.0040	175
2.70	0.0161	700
2.95	0.0603	2625
3.20	0.1125	4900
3.45	0.2187	9525
3.70	0.3013	13125
3.95	0.4213	18350
4.20	0.4821	21000
4.45	0.5475	23850
4.70	0.5762	25100
4.95	0.6416	27950
5.20	0.7254	31600
5.20	0.7283	31725

Comment:

Node: NC03855

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.33	0.0001	4
2.30	0.0011	50
2.55	0.0080	350
2.80	0.0339	1475
3.05	0.1159	5050
3.30	0.2324	10125
3.55	0.4941	21525
3.80	0.7111	30975
4.05	0.9487	41325
4.30	1.0830	47175
4.55	1.2793	55725
4.80	1.3424	58475
5.05	1.4956	65150
5.30	1.6190	70525
5.55	1.6632	72450
5.60	1.6644	72500

Comment:

Node: NC03856

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.97	0.0001	4
2.50	0.0057	250
2.75	0.0218	950
3.00	0.0683	2975
3.25	0.2267	9875
3.50	0.3817	16625
3.75	0.5997	26125
4.00	0.6916	30125
4.25	0.8396	36575
4.50	0.9699	42250
4.75	1.1926	51950
5.00	1.3080	56975
5.25	1.4922	65000
5.50	1.5588	67900
5.75	1.6506	71900
6.00	1.7275	75250
6.25	1.8647	81225
6.50	1.9823	86350
6.75	2.1884	95325
7.00	2.2963	100025
7.25	2.3703	103250
7.50	2.3921	104200
7.75	2.4162	105250
8.00	2.4329	105975
8.25	2.4449	106500
8.50	2.4506	106750
8.75	2.4552	106950
9.00	2.4564	107000
9.25	2.4564	107000
9.50	2.4570	107025
9.75	2.4570	107025
10.00	2.4570	107025
10.25	2.4570	107025
10.50	2.4570	107025
10.75	2.4570	107025
11.00	2.4570	107025
11.25	2.4570	107025
11.50	2.4570	107025
11.75	2.4570	107025
12.00	2.4570	107025
12.25	2.4570	107025
12.50	2.4570	107025
12.75	2.4570	107025

Stage [ft]	Area [ac]	Area [ft2]
13.00	2.4570	107025
13.25	2.4570	107025
13.50	2.4570	107025
13.75	2.4570	107025
14.00	2.4570	107025
14.00	2.4983	108825

Comment:

Node: NC06000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-3.39	0.0001	4
2.80	0.0017	75
3.05	0.0172	750
3.30	0.0385	1675
3.55	0.0706	3075
3.80	0.0769	3350
4.05	0.0849	3700
4.30	0.0890	3875
4.55	0.0935	4075
4.60	0.0947	4125

Comment:

Node: NC06010

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.64	0.0001	4
2.70	0.0006	25
2.95	0.0230	1000
3.20	0.1090	4750
3.45	0.2560	11150
3.70	0.3237	14100

Stage [ft]	Area [ac]	Area [ft2]
3.95	0.3817	16625
4.20	0.4436	19325
4.45	0.5412	23575
4.70	0.6284	27375
4.95	0.7036	30650
5.20	0.7168	31225
5.45	0.7249	31575
5.50	0.7272	31675

Comment:

Node: NC06020

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.05	0.0001	4
2.80	0.0011	50
3.05	0.0098	425
3.30	0.0184	800
3.55	0.0654	2850
3.80	0.1136	4950
4.05	0.2043	8900
4.30	0.2428	10575
4.55	0.3145	13700
4.80	0.3444	15000
5.05	0.3621	15775
5.10	0.3627	15800

Comment:

Node: NC06400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.09 ft
Warning Stage: 4.80 ft

Stage [ft]	Area [ac]	Area [ft2]
3.09	0.0001	4
4.80	0.0006	25

Stage [ft]	Area [ac]	Area [ft2]
5.05	0.0201	875
5.30	0.0671	2925
5.55	0.2611	11375
5.80	0.5108	22250
6.05	0.5515	24025
6.30	0.5567	24250
6.50	0.5584	24325

Comment:

Node: ND03900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.70	0.0001	4
2.30	0.0006	25
2.55	0.0075	325
2.80	0.0494	2150
3.05	0.2169	9450
3.30	0.4046	17625
3.55	0.8144	35475
3.80	1.0950	47700
4.05	1.5152	66000
4.30	1.9628	85500
4.55	2.6728	116425
4.80	3.1434	136925
5.05	3.6685	159800
5.30	4.0771	177600
5.55	4.3578	189825
5.80	4.4289	192925
6.05	4.5782	199425
6.30	4.6304	201700
6.55	4.6488	202500
6.80	4.6556	202800
7.05	4.6643	203175
7.30	4.6723	203525
7.55	4.6803	203875
7.80	4.6855	204100
8.05	4.6861	204125
8.30	4.6861	204125
8.55	4.6878	204200
8.70	4.6884	204225

Comment:

Node: ND04000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.00	0.0001	4
2.90	0.0006	25
3.15	0.0080	350
3.40	0.0247	1075
3.65	0.0706	3075
3.90	0.1113	4850
4.15	0.1561	6800
4.40	0.1951	8500
4.65	0.2950	12850
4.90	0.3570	15550
5.15	0.4637	20200
5.40	0.5458	23775
5.65	0.6680	29100
5.90	0.7094	30900
6.15	0.7266	31650
6.40	0.7323	31900
6.65	0.7358	32050
6.70	0.7369	32100

Comment:

Node: ND04010

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.69	0.0001	4
2.80	0.0006	25
3.05	0.0017	75
3.30	0.0052	225
3.55	0.0253	1100

Stage [ft]	Area [ac]	Area [ft2]
3.80	0.0723	3150
4.05	0.1808	7875
4.30	0.2319	10100
4.55	0.2887	12575
4.80	0.3231	14075
5.05	0.3564	15525
5.30	0.3667	15975
5.55	0.3794	16525
5.80	0.3834	16700
5.90	0.3914	17050

Comment:

Node: ND04012P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 4.50 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0017	75
3.25	0.0046	200
3.50	0.0052	225
3.75	0.0069	300
4.00	0.0075	325
4.25	0.0080	350
4.50	0.0086	375
4.75	0.0149	650
5.00	0.0212	925
5.25	0.0425	1850
5.50	0.0694	3025
5.75	0.1039	4525
6.00	0.1286	5600
6.25	0.1590	6925
6.50	0.1647	7175
6.50	0.1659	7225

Comment:

Node: ND04014P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 3.02 ft
Warning Stage: 4.38 ft

Stage [ft]	Area [ac]	Area [ft2]
2.97	0.0001	4
3.00	0.0040	175
3.25	0.0046	200
3.50	0.0063	275
3.75	0.0063	275
4.00	0.0075	325
4.25	0.0086	375
4.50	0.0103	450
4.75	0.0121	525
5.00	0.0149	650
5.25	0.0207	900
5.50	0.0275	1200
5.75	0.0316	1375
6.00	0.0333	1450
6.25	0.0528	2300
6.50	0.0568	2475
6.75	0.0591	2575
7.00	0.0654	2850
7.00	0.0844	3675

Comment:

Node: ND04015

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.57	0.0001	4
2.90	0.0006	25
3.15	0.0034	150
3.40	0.0172	750
3.65	0.1085	4725
3.90	0.2330	10150
4.15	0.5435	23675
4.40	0.7668	33400
4.65	0.9768	42550
4.90	1.0612	46225
5.15	1.2569	54750
5.40	1.5272	66525
5.65	1.8331	79850

Stage [ft]	Area [ac]	Area [ft2]
5.90	2.0104	87575
6.15	2.1775	94850
6.40	2.2377	97475
6.65	2.2526	98125
6.90	2.2555	98250
7.00	2.2607	98475

Comment:

Node: ND04016P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.00 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0001	4
3.00	0.0155	675
3.25	0.0172	750
3.50	0.0212	925
3.75	0.0247	1075
4.00	0.0270	1175
4.25	0.0321	1400
4.50	0.0339	1475
4.75	0.0390	1700
5.00	0.0419	1825
5.25	0.0935	4075
5.50	0.1228	5350
5.75	0.1349	5875
6.00	0.1423	6200
6.25	0.1452	6325
6.50	0.1463	6375
6.75	0.1699	7400
7.00	0.1992	8675
7.00	0.2342	10200

Comment:

Node: ND04030

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.06	0.0001	4
3.00	0.0040	175
3.25	0.0287	1250
3.50	0.1108	4825
3.75	0.4006	17450
4.00	0.6864	29900
4.25	1.0141	44175
4.50	1.1346	49425
4.75	1.3745	59875
5.00	1.6047	69900
5.25	2.1287	92725
5.50	2.3978	104450
5.75	2.5935	112975
6.00	2.6969	117475
6.25	2.7703	120675
6.50	2.8013	122025
6.75	2.8432	123850
7.00	2.8644	124775
7.20	2.8685	124950

Comment:

Node: ND04100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.16	0.0001	4
2.50	0.0029	125
2.75	0.0207	900
3.00	0.0735	3200
3.25	0.2583	11250
3.50	0.4023	17525
3.75	0.6072	26450
4.00	0.8408	36625
4.25	1.2615	54950
4.50	1.4480	63075
4.75	1.7229	75050
5.00	1.8325	79825
5.25	1.8991	82725
5.50	1.9048	82975

Stage [ft]	Area [ac]	Area [ft2]
5.50	1.9054	83000

Comment:

Node: ND04200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.08	0.0001	4
2.50	0.0006	25
2.75	0.0057	250
3.00	0.0574	2500
3.25	0.2600	11325
3.50	0.4379	19075
3.75	0.6973	30375
4.00	0.9349	40725
4.25	1.4572	63475
4.50	1.6707	72775
4.75	1.8159	79100
5.00	1.8475	80475
5.25	1.8761	81725
5.50	1.8842	82075
5.75	1.8939	82500
6.00	1.9100	83200
6.20	1.9215	83700

Comment:

Node: ND04300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.47	0.0001	4
2.30	0.0006	25
2.55	0.0126	550
2.80	0.0459	2000

Stage [ft]	Area [ac]	Area [ft2]
3.05	0.1796	7825
3.30	0.2422	10550
3.55	0.3426	14925
3.80	0.4350	18950
4.05	0.5705	24850
4.30	0.6497	28300
4.55	0.8959	39025
4.80	0.9940	43300
5.05	1.1410	49700
5.30	1.2144	52900
5.55	1.3039	56800
5.80	1.3338	58100
5.90	1.3447	58575

Comment:

Node: ND04315

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4
3.40	0.0011	50
3.65	0.0080	350
3.90	0.0316	1375
4.15	0.1182	5150
4.40	0.1768	7700
4.65	0.2319	10100
4.90	0.2646	11525
5.15	0.2893	12600
5.40	0.3093	13475
5.65	0.3300	14375
5.90	0.3489	15200
6.15	0.3857	16800
6.40	0.4132	18000
6.65	0.4161	18125
6.90	0.4161	18125
7.00	0.4167	18150

Comment:

Node: ND04316P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 4.51 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
3.00	0.0126	550
3.25	0.0161	700
3.50	0.0201	875
3.75	0.0224	975
4.00	0.0253	1100
4.25	0.0316	1375
4.50	0.0333	1450
4.75	0.0379	1650
5.00	0.0522	2275
5.25	0.0803	3500
5.50	0.1108	4825
5.75	0.1435	6250
6.00	0.1750	7625
6.25	0.2152	9375
6.50	0.2221	9675
6.75	0.2307	10050
7.00	0.2462	10725
7.00	0.2801	12200

Comment:

Node: ND04318P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.90 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
2.90	0.0001	4
3.00	0.0080	350
3.25	0.0086	375
3.50	0.0098	425
3.75	0.0132	575
4.00	0.0172	750
4.25	0.0230	1000
4.50	0.0258	1125
4.75	0.0275	1200
5.00	0.0350	1525

Stage [ft]	Area [ac]	Area [ft2]
5.25	0.0723	3150
5.50	0.0867	3775
5.75	0.0993	4325
6.00	0.1050	4575
6.25	0.1056	4600
6.50	0.1056	4600
6.75	0.1177	5125
7.00	0.1274	5550
7.00	0.1641	7150

Comment:

Node: ND04400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.71	0.0001	4
2.10	0.0006	25
2.35	0.0098	425
2.60	0.0373	1625
2.85	0.1802	7850
3.10	0.3317	14450
3.35	0.5263	22925
3.60	0.5865	25550
3.85	0.6141	26750
4.10	0.6216	27075
4.30	0.6261	27275

Comment:

Node: ND04500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.45	0.0001	4
2.90	0.0046	200

Stage [ft]	Area [ac]	Area [ft2]
3.15	0.0247	1075
3.40	0.0539	2350
3.65	0.1274	5550
3.90	0.1659	7225
4.15	0.1894	8250
4.40	0.1917	8350
4.65	0.1963	8550
4.90	0.1969	8575
4.90	0.1974	8600

Comment:

Node: ND04511

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.64	0.0001	4
2.90	0.0017	75
3.15	0.0109	475
3.40	0.0425	1850
3.65	0.0935	4075
3.90	0.1682	7325
4.15	0.2560	11150
4.40	0.2996	13050
4.65	0.3897	16975
4.90	0.4964	21625
5.15	0.7140	31100
5.40	0.8500	37025
5.65	0.8724	38000
5.70	0.8735	38050

Comment:

Node: ND04512

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.76	0.0001	4
2.50	0.0057	250
2.75	0.0362	1575
3.00	0.0666	2900
3.25	0.1286	5600
3.50	0.1630	7100
3.75	0.2514	10950
4.00	0.3570	15550
4.25	0.4178	18200
4.50	0.4477	19500
4.75	0.4970	21650
5.00	0.5527	24075
5.25	0.6359	27700
5.30	0.6376	27775

Comment:

Node: ND04513

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.36	0.0001	4
2.40	0.0006	25
2.65	0.0046	200
2.90	0.0327	1425
3.15	0.0654	2850
3.40	0.0918	4000
3.65	0.1515	6600
3.90	0.1957	8525
4.15	0.2875	12525
4.40	0.3782	16475
4.65	0.5148	22425
4.90	0.5957	25950
5.15	0.7317	31875
5.40	0.7897	34400
5.65	0.8345	36350
5.90	0.8419	36675
5.90	0.8425	36700

Comment:

Node: ND04515

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.29	0.0001	4
3.40	0.0017	75
3.65	0.0069	300
3.90	0.0258	1125
4.15	0.0763	3325
4.40	0.1240	5400
4.65	0.1676	7300
4.90	0.1888	8225
5.15	0.2715	11825
5.40	0.3484	15175
5.60	0.3662	15950

Comment:

Node: ND04530

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.60	0.0001	4
3.00	0.0006	25
3.25	0.0052	225
3.50	0.0327	1425
3.75	0.1326	5775
4.00	0.2520	10975
4.25	0.5148	22425
4.50	0.6376	27775
4.75	0.7978	34750
5.00	0.8959	39025
5.25	1.1863	51675
5.50	1.2649	55100
5.75	1.3131	57200
6.00	1.3298	57925
6.00	1.3303	57950

Comment:

Node: ND04542

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.72	0.0001	4
2.90	0.0006	25
3.15	0.0017	75
3.40	0.0109	475
3.65	0.0660	2875
3.90	0.1469	6400
4.15	0.3633	15825
4.40	0.6204	27025
4.65	1.2357	53825
4.90	1.6839	73350
5.15	2.2171	96575
5.40	2.4024	104650
5.65	2.4644	107350
5.90	2.4673	107475
6.15	2.4707	107625
6.40	2.4725	107700
6.65	2.4759	107850
6.90	2.4770	107900
7.15	2.4868	108325
7.20	2.4897	108450

Comment:

Node: ND04550

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.85	0.0001	4
3.00	0.0017	75
3.25	0.0207	900
3.50	0.0752	3275
3.75	0.2497	10875
4.00	0.5022	21875
4.25	1.0991	47875
4.50	1.5152	66000

Stage [ft]	Area [ac]	Area [ft2]
4.75	2.1648	94300
5.00	2.5895	112800
5.25	3.0854	134400
5.50	3.2691	142400
5.75	3.2805	142900
5.90	3.2823	142975

Comment:

Node: ND04555

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.77	0.0001	4
2.90	0.0011	50
3.15	0.0052	225
3.40	0.0344	1500
3.65	0.1234	5375
3.90	0.2210	9625
4.15	0.4132	18000
4.40	0.5337	23250
4.65	0.6566	28600
4.90	0.7495	32650
5.15	0.8483	36950
5.40	0.8603	37475
5.65	0.8747	38100
5.90	0.8890	38725
6.15	0.9188	40025
6.40	0.9269	40375
6.65	0.9326	40625
6.70	0.9332	40650

Comment:

Node: ND04565

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.87 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.87	0.0001	4
2.80	0.0006	25
3.05	0.0011	50
3.30	0.0161	700
3.55	0.1136	4950
3.80	0.2520	10975
4.05	0.5636	24550
4.30	0.7754	33775
4.55	1.1237	48950
4.80	1.3699	59675
5.05	1.7608	76700
5.30	2.0242	88175
5.55	2.5476	110975
5.80	2.7078	117950
6.05	2.8627	124700
6.30	2.9098	126750
6.55	2.9586	128875
6.80	2.9861	130075
7.05	3.0378	132325
7.30	3.0659	133550
7.55	3.1135	135625
7.80	3.1313	136400
8.05	3.1428	136900
8.30	3.1474	137100
8.55	3.1503	137225
8.80	3.1503	137225
8.90	3.1514	137275

Comment:

Node: ND04571P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 4.30 ft
Warning Stage: 4.80 ft

Stage [ft]	Area [ac]	Area [ft2]
2.00	0.0597	2600
2.25	0.0597	2600
2.50	0.0597	2600
2.75	0.0597	2600
3.00	0.0614	2675
3.25	0.0660	2875
3.50	0.0712	3100

Stage [ft]	Area [ac]	Area [ft2]
3.75	0.0763	3325
4.00	0.0832	3625
4.25	0.0947	4125
4.50	0.0987	4300
4.75	0.1067	4650
5.00	0.1148	5000
5.25	0.1418	6175
5.50	0.1756	7650
5.75	0.2215	9650
6.00	0.2445	10650
6.25	0.2875	12525
6.50	0.4230	18425
6.75	0.6652	28975
7.00	0.6824	29725
7.20	0.6985	30425

Comment:

Node: ND04600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.02	0.0001	4
2.50	0.0155	675
2.75	0.0798	3475
3.00	0.1624	7075
3.25	0.2967	12925
3.50	0.4454	19400
3.75	0.6824	29725
4.00	0.8259	35975
4.25	0.9217	40150
4.50	0.9998	43550
4.75	1.1639	50700
5.00	1.2925	56300
5.25	1.4859	64725
5.50	1.6012	69750
5.50	1.6030	69825

Comment:

Node: ND04700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.66	0.0001	4
3.20	0.0011	50
3.45	0.0098	425
3.70	0.0264	1150
3.95	0.0809	3525
4.20	0.1486	6475
4.45	0.2766	12050
4.70	0.3444	15000
4.95	0.4936	21500
5.20	0.5751	25050
5.45	0.6112	26625
5.70	0.6204	27025
5.90	0.6261	27275

Comment:

Node: ND04715

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.66 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
2.66	0.0001	4
3.20	0.0011	50
3.45	0.0086	375
3.70	0.0304	1325
3.95	0.2319	10100
4.20	0.5286	23025
4.45	0.9900	43125
4.70	1.2133	52850
4.95	1.4905	64925
5.20	1.6638	72475
5.45	1.7252	75150
5.70	1.7361	75625
5.90	1.7424	75900

Comment:

Node: ND04800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.35	0.0001	4
3.00	0.0006	25
3.25	0.0052	225
3.50	0.0155	675
3.75	0.0419	1825
4.00	0.0694	3025
4.25	0.1182	5150
4.50	0.1475	6425
4.75	0.1733	7550
5.00	0.1923	8375
5.25	0.2210	9625
5.50	0.2284	9950
5.75	0.2428	10575
6.00	0.2514	10950
6.20	0.2571	11200

Comment:

Node: ND04815

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.00 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
3.40	0.0011	50
3.65	0.0046	200
3.90	0.0270	1175
4.15	0.1280	5575
4.40	0.2910	12675
4.65	0.5647	24600
4.90	0.7495	32650
5.15	1.0704	46625
5.40	1.1771	51275
5.65	1.2437	54175
5.90	1.2764	55600
6.15	1.3166	57350

Stage [ft]	Area [ac]	Area [ft2]
6.30	1.3212	57550

Comment:

Node: ND04900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-3.00	0.0001	4
3.40	0.0052	225
3.65	0.0356	1550
3.90	0.0700	3050
4.15	0.1314	5725
4.40	0.1785	7775
4.65	0.2726	11875
4.90	0.3489	15200
5.15	0.4787	20850
5.40	0.5269	22950
5.65	0.5538	24125
5.90	0.5699	24825
6.15	0.5929	25825
6.20	0.5940	25875

Comment:

Node: ND04913

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.62 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
2.62	0.0001	4
3.90	0.0023	100
4.15	0.0218	950
4.40	0.0562	2450
4.65	0.0981	4275
4.90	0.1515	6600
5.15	0.1882	8200

Stage [ft]	Area [ac]	Area [ft2]
5.40	0.1928	8400
5.65	0.1957	8525
5.90	0.1963	8550
6.15	0.1969	8575
6.40	0.1969	8575
6.40	0.1974	8600

Comment:

Node: ND04915

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.58	0.0001	4
4.20	0.0023	100
4.45	0.0109	475
4.70	0.0333	1450
4.95	0.0752	3275
5.20	0.0821	3575
5.45	0.0953	4150
5.70	0.0987	4300
5.95	0.1004	4375
6.00	0.1016	4425

Comment:

Node: ND04925

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.11	0.0001	4
3.20	0.0011	50
3.45	0.0304	1325
3.70	0.0953	4150
3.95	0.2629	11450
4.20	0.4241	18475

Stage [ft]	Area [ac]	Area [ft2]
4.45	0.6261	27275
4.70	0.8167	35575
4.95	1.1014	47975
5.20	1.2844	55950
5.45	1.3550	59025
5.70	1.3613	59300
5.95	1.3636	59400
6.20	1.3636	59400
6.20	1.3642	59425

Comment:

Node: ND04930

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.11	0.0001	4
3.60	0.0011	50
3.85	0.0069	300
4.10	0.0356	1550
4.35	0.0884	3850
4.60	0.1957	8525
4.85	0.3937	17150
5.10	0.4815	20975
5.35	0.6830	29750
5.60	0.8603	37475
5.85	1.1909	51875
6.10	1.3631	59375
6.35	1.5467	67375
6.60	1.5961	69525
6.85	1.6248	70775
7.10	1.6265	70850
7.35	1.6276	70900
7.40	1.6282	70925

Comment:

Node: ND04935

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.43	0.0001	4
3.20	0.0006	25
3.45	0.0258	1125
3.70	0.1102	4800
3.95	0.3197	13925
4.20	0.5756	25075
4.45	1.0015	43625
4.70	1.2379	53925
4.95	1.5737	68550
5.20	1.8170	79150
5.45	2.0965	91325
5.70	2.2228	96825
5.95	2.4237	105575
6.20	2.5149	109550
6.45	2.5803	112400
6.70	2.6251	114350
6.95	2.6819	116825
7.20	2.6934	117325
7.30	2.6946	117375

Comment:

Node: ND04947

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.85 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.60	0.0001	4
3.70	0.0017	75
3.95	0.0189	825
4.20	0.0562	2450
4.45	0.1676	7300
4.70	0.2864	12475
4.95	0.5756	25075
5.20	0.8310	36200
5.45	1.1421	49750
5.70	1.2402	54025
5.95	1.3194	57475
6.20	1.3499	58800

Stage [ft]	Area [ac]	Area [ft2]
6.45	1.3740	59850
6.70	1.3797	60100
6.95	1.3854	60350
7.20	1.3872	60425
7.45	1.3872	60425
7.60	1.3877	60450

Comment:

Node: ND04949P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 4.91 ft
Warning Stage: 4.93 ft

Stage [ft]	Area [ac]	Area [ft2]
2.00	0.0987	4300
2.25	0.0987	4300
2.50	0.0987	4300
2.75	0.1027	4475
3.00	0.1268	5525
3.25	0.1607	7000
3.50	0.1860	8100
3.75	0.2278	9925
4.00	0.2606	11350
4.25	0.3151	13725
4.50	0.3696	16100
4.75	0.5010	21825
5.00	0.6170	26875
5.25	0.8270	36025
5.50	0.9894	43100
5.75	1.1869	51700
6.00	1.3039	56800
6.25	1.4652	63825
6.50	1.6282	70925
6.75	2.1993	95800
7.00	2.3083	100550
7.25	2.3657	103050
7.50	2.3795	103650
7.75	2.4013	104600
8.00	2.4099	104975
8.25	2.4174	105300
8.50	2.4237	105575
8.75	2.4317	105925
9.00	2.4329	105975

Stage [ft]	Area [ac]	Area [ft2]
9.25	2.4340	106025
9.50	2.4346	106050
9.60	2.4357	106100

Comment:

Node: ND04951

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.46	0.0001	4
2.90	0.0006	25
3.15	0.0006	25
3.40	0.0046	200
3.65	0.0620	2700
3.90	0.1337	5825
4.15	0.3180	13850
4.40	0.4609	20075
4.65	0.6393	27850
4.90	0.7214	31425
5.15	0.8460	36850
5.40	0.9630	41950
5.65	1.1783	51325
5.90	1.3883	60475
6.15	1.5249	66425
6.40	1.5375	66975
6.65	1.5438	67250
6.90	1.5456	67325
7.00	1.5467	67375

Comment:

Node: ND04960

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.27	0.0001	4
3.50	0.0006	25
3.75	0.0293	1275
4.00	0.1027	4475
4.25	0.2479	10800
4.50	0.3885	16925
4.75	0.5515	24025
5.00	0.6468	28175
5.25	0.6985	30425
5.30	0.6990	30450

Comment:

Node: ND04961

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.23	0.0001	4
3.60	0.0017	75
3.85	0.0063	275
4.10	0.0430	1875
4.35	0.1016	4425
4.60	0.1423	6200
4.85	0.1653	7200
5.00	0.1664	7250

Comment:

Node: ND05000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.61	0.0001	4
2.50	0.0006	25
2.75	0.0201	875
3.00	0.0614	2675

Stage [ft]	Area [ac]	Area [ft2]
3.25	0.1429	6225
3.50	0.2152	9375
3.75	0.3621	15775
4.00	0.5119	22300
4.25	0.7955	34650
4.50	0.9166	39925
4.75	1.0038	43725
5.00	1.0566	46025
5.25	1.0859	47300
5.30	1.0864	47325

Comment:

Node: ND05100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.30	0.0001	4
1.90	0.0006	25
2.15	0.0052	225
2.40	0.0339	1475
2.65	0.1073	4675
2.90	0.2060	8975
3.15	0.4459	19425
3.40	0.6216	27075
3.65	0.9349	40725
3.90	1.1679	50875
4.15	1.4532	63300
4.40	1.5685	68325
4.65	1.6718	72825
4.90	1.7206	74950
5.15	1.7562	76500
5.40	1.7596	76650
5.65	1.7596	76650
5.70	1.7602	76675

Comment:

Node: ND05200

Scenario: wmp

Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.49	0.0001	4
2.60	0.0006	25
2.85	0.0494	2150
3.10	0.1573	6850
3.35	0.3438	14975
3.60	0.4850	21125
3.85	0.6439	28050
4.10	0.8012	34900
4.35	0.9108	39675
4.60	0.9848	42900
4.85	1.1329	49350
5.10	1.1863	51675
5.35	1.2144	52900
5.60	1.2219	53225
5.85	1.2316	53650
6.10	1.2351	53800
6.30	1.2368	53875

Comment:

Node: ND05300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.30	0.0001	4
2.70	0.0006	25
2.95	0.0230	1000
3.20	0.0671	2925
3.45	0.1848	8050
3.70	0.2875	12525
3.95	0.4580	19950
4.20	0.5682	24750
4.45	0.6858	29875
4.70	0.7398	32225
4.95	0.8075	35175
5.20	0.8230	35850
5.30	0.8242	35900

Comment:

Node: ND05310

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.11	0.0001	4
2.60	0.0006	25
2.85	0.0075	325
3.10	0.0293	1275
3.35	0.0953	4150
3.60	0.1762	7675
3.85	0.2875	12525
4.10	0.3386	14750
4.35	0.3851	16775
4.60	0.3914	17050
4.85	0.3943	17175
5.10	0.3949	17200
5.35	0.3989	17375
5.60	0.4017	17500
5.85	0.4046	17625
6.10	0.4063	17700
6.35	0.4092	17825
6.60	0.4098	17850
6.85	0.4144	18050
7.10	0.4172	18175
7.35	0.4195	18275
7.60	0.4213	18350
7.85	0.4218	18375
8.10	0.4224	18400
8.35	0.4224	18400
8.60	0.4224	18400
8.85	0.4224	18400
9.10	0.4224	18400
9.35	0.4224	18400
9.60	0.4224	18400
9.85	0.4224	18400
10.10	0.4224	18400
10.35	0.4230	18425
10.60	0.4236	18450
10.85	0.4253	18525
11.00	0.4258	18550

Comment:

Node: ND05315

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-2.02	0.0001	4
3.30	0.0029	125
3.55	0.0161	700
3.80	0.0471	2050
4.05	0.0683	2975
4.30	0.0821	3575
4.55	0.0981	4275
4.80	0.1039	4525
5.05	0.1119	4875
5.30	0.1171	5100
5.55	0.1240	5400
5.80	0.1280	5575
6.05	0.1303	5675
6.30	0.1314	5725
6.55	0.1337	5825
6.80	0.1360	5925
7.05	0.1372	5975
7.20	0.1383	6025

Comment:

Node: ND05316

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.75	0.0001	4
3.20	0.0017	75
3.45	0.0126	550
3.70	0.0442	1925
3.95	0.1257	5475

Stage [ft]	Area [ac]	Area [ft2]
4.20	0.2066	9000
4.45	0.3432	14950
4.70	0.3794	16525
4.90	0.3840	16725

Comment:

Node: ND05335

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 12.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.64	0.0001	4
12.20	0.0006	25
12.45	0.0017	75
12.70	0.0052	225
12.95	0.0126	550
13.20	0.0166	725
13.45	0.0241	1050
13.70	0.0298	1300
13.95	0.0396	1725
14.20	0.0448	1950
14.45	0.0539	2350
14.70	0.0608	2650
14.95	0.0683	2975
15.20	0.0735	3200
15.45	0.0826	3600
15.70	0.0895	3900
15.95	0.0958	4175
16.20	0.0987	4300
16.45	0.1039	4525
16.70	0.1067	4650
16.95	0.1102	4800
17.20	0.1119	4875
17.40	0.1136	4950

Comment:

Node: ND05337

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 2.22 ft
Warning Stage: 13.65 ft

Stage [ft]	Area [ac]	Area [ft2]
2.22	0.0001	4
11.90	0.0006	25
12.15	0.0017	75
12.40	0.0034	150
12.65	0.0092	400
12.90	0.0109	475
13.15	0.0230	1000
13.40	0.0310	1350
13.65	0.0407	1775
13.90	0.0494	2150
14.15	0.0545	2375
14.40	0.0620	2700
14.65	0.0746	3250
14.90	0.0809	3525
15.15	0.0901	3925
15.40	0.0935	4075
15.65	0.1039	4525
15.90	0.1090	4750
16.15	0.1159	5050
16.40	0.1199	5225
16.65	0.1234	5375
16.90	0.1268	5525
17.15	0.1303	5675
17.40	0.1331	5800
17.65	0.1354	5900
17.90	0.1354	5900
17.90	0.1360	5925

Comment:

Node: ND05339

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.04	0.0001	4
2.10	0.0006	25
2.35	0.0023	100
2.60	0.0023	100

Stage [ft]	Area [ac]	Area [ft2]
2.85	0.0155	675
3.10	0.0499	2175
3.35	0.1159	5050
3.60	0.2083	9075
3.85	0.4052	17650
4.10	0.5653	24625
4.35	0.7903	34425
4.60	0.8557	37275
4.85	0.9269	40375
5.10	0.9452	41175
5.35	0.9745	42450
5.60	0.9848	42900
5.85	0.9923	43225
6.10	0.9946	43325
6.35	1.0009	43600
6.60	1.0015	43625
6.85	1.0044	43750
7.10	1.0049	43775
7.35	1.0107	44025
7.60	1.0118	44075
7.85	1.0135	44150
8.10	1.0170	44300
8.35	1.0204	44450
8.60	1.0210	44475
8.85	1.0262	44700
9.10	1.0273	44750
9.35	1.0308	44900
9.60	1.0331	45000
9.85	1.0354	45100
10.10	1.0371	45175
10.35	1.0388	45250
10.60	1.0417	45375
10.85	1.0434	45450
11.10	1.0434	45450
11.35	1.0463	45575
11.60	1.0474	45625
11.85	1.0491	45700
12.10	1.0497	45725
12.35	1.0526	45850
12.60	1.0531	45875
12.85	1.0549	45950
13.10	1.0566	46025
13.35	1.0572	46050
13.60	1.0589	46125
13.85	1.0612	46225
14.10	1.0623	46275
14.35	1.0658	46425
14.60	1.0663	46450
14.85	1.0663	46450

Stage [ft]	Area [ac]	Area [ft2]
15.10	1.0663	46450
15.35	1.0681	46525
15.60	1.0704	46625
15.85	1.0738	46775
16.10	1.0767	46900
16.35	1.0813	47100
16.60	1.0853	47275
16.85	1.0922	47575
17.10	1.0962	47750
17.35	1.1037	48075
17.60	1.1088	48300
17.85	1.1191	48750
18.10	1.1232	48925
18.35	1.1335	49375
18.60	1.1404	49675
18.85	1.1507	50125
19.10	1.1547	50300
19.35	1.1656	50775
19.60	1.1708	51000
19.85	1.1765	51250
20.10	1.1800	51400
20.35	1.1857	51650
20.60	1.1874	51725
20.85	1.1897	51825
21.10	1.1909	51875
21.11	1.1915	51900

Comment:

Node: ND05345

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 5.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.91	0.0001	4
5.90	0.0006	25
6.15	0.0023	100
6.40	0.0046	200
6.65	0.0109	475
6.90	0.0138	600
7.15	0.0212	925
7.40	0.0264	1150
7.65	0.0344	1500

Stage [ft]	Area [ac]	Area [ft2]
7.90	0.0396	1725
8.15	0.0465	2025
8.40	0.0488	2125
8.65	0.0562	2450
8.90	0.0614	2675
9.15	0.0694	3025
9.40	0.0729	3175
9.65	0.0809	3525
9.90	0.0861	3750
10.15	0.0935	4075
10.40	0.0981	4275
10.65	0.1045	4550
10.90	0.1096	4775
11.15	0.1171	5100
11.40	0.1222	5325
11.65	0.1297	5650
11.90	0.1349	5875
12.15	0.1429	6225
12.40	0.1458	6350
12.65	0.1504	6550
12.90	0.1521	6625
13.15	0.1544	6725
13.40	0.1555	6775
13.65	0.1584	6900
13.90	0.1590	6925
14.00	0.1596	6950

Comment:

Node: ND05355

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 5.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.84	0.0001	4
5.20	0.0006	25
5.45	0.0023	100
5.70	0.0034	150
5.95	0.0092	400
6.20	0.0138	600
6.45	0.0195	850
6.70	0.0275	1200
6.95	0.0356	1550

Stage [ft]	Area [ac]	Area [ft2]
7.20	0.0419	1825
7.45	0.0528	2300
7.70	0.0534	2325
7.95	0.0631	2750
8.20	0.0677	2950
8.45	0.0786	3425
8.70	0.0844	3675
8.95	0.0913	3975
9.20	0.0970	4225
9.45	0.1067	4650
9.70	0.1165	5075
9.95	0.1240	5400
10.20	0.1286	5600
10.45	0.1389	6050
10.70	0.1441	6275
10.95	0.1550	6750
11.20	0.1613	7025
11.45	0.1728	7525
11.70	0.1750	7625
11.95	0.1865	8125
12.20	0.1905	8300
12.45	0.1980	8625
12.70	0.2009	8750
12.95	0.2037	8875
13.20	0.2055	8950
13.45	0.2072	9025
13.70	0.2078	9050
13.95	0.2078	9050
14.20	0.2078	9050
14.30	0.2083	9075

Comment:

Node: ND05360

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.50	0.0001	4
2.40	0.0011	50
2.65	0.0017	75
2.90	0.0023	100
3.15	0.0057	250

Stage [ft]	Area [ac]	Area [ft2]
3.40	0.0063	275
3.65	0.0138	600
3.90	0.0281	1225
4.15	0.0758	3300
4.40	0.1217	5300
4.65	0.1756	7650
4.90	0.2313	10075
5.15	0.3553	15475
5.40	0.4637	20200
5.65	0.6973	30375
5.90	0.8345	36350
6.15	0.8976	39100
6.40	0.9137	39800
6.65	0.9246	40275
6.90	0.9320	40600
7.15	0.9361	40775
7.40	0.9395	40925
7.65	0.9452	41175
7.90	0.9504	41400
8.15	0.9607	41850
8.40	0.9688	42200
8.65	0.9762	42525
8.90	0.9803	42700
9.15	0.9860	42950
9.40	0.9883	43050
9.65	0.9923	43225
9.90	0.9935	43275
10.15	0.9963	43400
10.40	0.9980	43475
10.65	0.9992	43525
10.90	1.0003	43575
11.15	1.0015	43625
11.40	1.0026	43675
11.65	1.0061	43825
11.90	1.0072	43875
12.15	1.0107	44025
12.40	1.0118	44075
12.65	1.0141	44175
12.90	1.0158	44250
13.15	1.0170	44300
13.40	1.0193	44400
13.65	1.0199	44425
13.90	1.0210	44475
14.15	1.0233	44575
14.40	1.0244	44625
14.65	1.0256	44675
14.90	1.0279	44775
15.15	1.0296	44850
15.40	1.0319	44950

Stage [ft]	Area [ac]	Area [ft2]
15.65	1.0342	45050
15.90	1.0371	45175
16.15	1.0422	45400
16.40	1.0434	45450
16.65	1.0480	45650
16.90	1.0503	45750
17.15	1.0549	45950
17.40	1.0572	46050
17.65	1.0618	46250
17.90	1.0623	46275
18.15	1.0652	46400
18.40	1.0658	46425
18.40	1.0669	46475

Comment:

Node: ND05365

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.50	0.0001	4
3.00	0.0034	150
3.25	0.0166	725
3.50	0.0993	4325
3.75	0.3874	16875
4.00	0.6480	28225
4.25	1.1616	50600
4.50	1.4876	64800
4.75	1.8520	80675
5.00	2.1143	92100
5.25	2.4403	106300
5.50	2.5849	112600
5.75	2.6963	117450
6.00	2.7692	120625
6.25	2.8966	126175
6.50	2.9620	129025
6.75	3.0320	132075
7.00	3.0481	132775
7.20	3.0590	133250

Comment:

Node: ND05375

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.00 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.0001	4
3.50	0.0011	50
3.75	0.0034	150
4.00	0.0155	675
4.25	0.0511	2225
4.50	0.0775	3375
4.75	0.1067	4650
5.00	0.1165	5075
5.25	0.1222	5325
5.50	0.1280	5575
5.75	0.1389	6050
6.00	0.1452	6325
6.25	0.1458	6350
6.50	0.1458	6350
6.60	0.1463	6375

Comment:

Node: ND05405

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 4.21 ft
Warning Stage: 5.80 ft

Stage [ft]	Area [ac]	Area [ft2]
4.21	0.0001	4
5.80	0.0006	25
6.05	0.0121	525
6.30	0.0304	1325
6.55	0.0344	1500
6.80	0.0356	1550
7.05	0.0379	1650
7.20	0.0385	1675

Comment:

Node: ND05500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.40 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
2.40	0.0001	4
3.00	0.0017	75
3.25	0.0373	1625
3.50	0.0918	4000
3.75	0.1808	7875
4.00	0.2531	11025
4.25	0.4901	21350
4.50	0.7863	34250
4.75	1.4583	63525
5.00	2.0162	87825
5.25	2.8667	124875
5.50	3.5899	156375
5.75	4.4680	194625
6.00	4.8416	210900
6.25	5.3082	231225
6.50	5.5108	240050
6.75	5.8333	254100
7.00	6.0399	263100
7.25	6.2615	272750
7.50	6.3390	276125
7.75	6.3992	278750
8.00	6.4394	280500
8.25	6.4979	283050
8.50	6.5295	284425
8.75	6.5823	286725
9.00	6.6225	288475
9.25	6.6655	290350
9.50	6.6856	291225
9.75	6.6942	291600
9.80	6.6954	291650

Comment:

Node: ND05600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.40 ft
Warning Stage: 4.40 ft

Stage [ft]	Area [ac]	Area [ft2]
2.40	0.0001	4
4.40	0.0006	25
4.65	0.0109	475
4.90	0.0442	1925
5.15	0.0941	4100
5.40	0.1532	6675
5.65	0.2841	12375
5.90	0.3369	14675
6.15	0.4058	17675
6.40	0.4230	18425
6.65	0.4373	19050
6.90	0.4448	19375
6.90	0.4454	19400

Comment:

Node: ND05700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.40 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
2.40	0.0001	4
3.90	0.0011	50
4.15	0.0166	725
4.40	0.0385	1675
4.65	0.1159	5050
4.90	0.1573	6850
5.15	0.2342	10200
5.40	0.3243	14125
5.65	0.5779	25175
5.90	0.7691	33500
6.15	0.9826	42800
6.40	1.0600	46175
6.65	1.1301	49225
6.90	1.1599	50525
7.15	1.1708	51000
7.40	1.1754	51200
7.65	1.1777	51300
7.90	1.1783	51325
8.15	1.1800	51400
8.40	1.1806	51425
8.65	1.1806	51425

Stage [ft]	Area [ac]	Area [ft2]
8.80	1.1811	51450

Comment:

Node: ND05800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.35	0.0001	4
3.00	0.0006	25
3.25	0.0034	150
3.50	0.0092	400
3.75	0.0241	1050
4.00	0.0574	2500
4.25	0.1085	4725
4.50	0.1199	5225
4.75	0.1349	5875
5.00	0.1596	6950
5.25	0.2806	12225
5.50	0.3243	14125
5.75	0.3598	15675
6.00	0.3817	16625
6.00	0.3868	16850

Comment:

Node: ND05900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.77 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
2.77	0.0001	4
3.80	0.0006	25
4.05	0.0143	625
4.30	0.0436	1900
4.55	0.0924	4025
4.80	0.1108	4825

Stage [ft]	Area [ac]	Area [ft2]
5.05	0.1515	6600
5.30	0.1682	7325
5.55	0.2060	8975
5.80	0.2198	9575
6.05	0.2278	9925
6.30	0.2330	10150
6.55	0.2370	10325
6.80	0.2399	10450
7.05	0.2410	10500
7.30	0.2410	10500
7.55	0.2428	10575
7.60	0.2433	10600

Comment:

Node: ND05910

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.95 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.95	0.0001	4
3.00	0.0006	25
3.25	0.0052	225
3.50	0.0218	950
3.75	0.0964	4200
4.00	0.1716	7475
4.25	0.2611	11375
4.50	0.3334	14525
4.75	0.4448	19375
5.00	0.4792	20875
5.25	0.5406	23550
5.50	0.5722	24925
5.75	0.6353	27675
6.00	0.6927	30175
6.20	0.7226	31475

Comment:

Node: ND06105P

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 3.10 ft
Warning Stage: 5.20 ft

Stage [ft]	Area [ac]	Area [ft2]
3.10	0.0001	4
5.20	0.0017	75
5.45	0.0103	450
5.70	0.0321	1400
5.95	0.0637	2775
6.20	0.0781	3400
6.45	0.1119	4875
6.70	0.1693	7375
6.95	0.1808	7875
7.00	0.1819	7925

Comment:

Node: ND06110P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.20 ft
Warning Stage: 5.30 ft

Stage [ft]	Area [ac]	Area [ft2]
3.20	0.0001	4
5.30	0.0046	200
5.55	0.0121	525
5.80	0.0247	1075
6.05	0.0465	2025
6.30	0.0614	2675
6.55	0.1245	5425
6.80	0.1802	7850
7.05	0.1888	8225
7.20	0.1894	8250

Comment:

Node: ND06115P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.27 ft
Warning Stage: 5.30 ft

Stage [ft]	Area [ac]	Area [ft2]
3.27	0.0001	4
5.30	0.0017	75
5.55	0.0086	375
5.80	0.0189	825
6.05	0.0385	1675
6.30	0.0494	2150
6.55	0.0918	4000
6.80	0.1199	5225
7.00	0.1268	5525

Comment:

Node: ND06210P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.37 ft
Warning Stage: 5.50 ft

Stage [ft]	Area [ac]	Area [ft2]
3.37	0.0001	4
5.50	0.0029	125
5.75	0.0132	575
6.00	0.0241	1050
6.25	0.0494	2150
6.50	0.0603	2625
6.70	0.1125	4900

Comment:

Node: ND06215P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.54 ft
Warning Stage: 4.90 ft

Stage [ft]	Area [ac]	Area [ft2]
3.54	0.0001	4
4.90	0.0011	50
5.15	0.0046	200
5.40	0.0086	375
5.65	0.0224	975

Stage [ft]	Area [ac]	Area [ft2]
5.90	0.0339	1475
6.15	0.0499	2175
6.40	0.0660	2875
6.65	0.1705	7425
6.90	0.2003	8725
7.15	0.2146	9350
7.20	0.2152	9375

Comment:

Node: ND06300P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.70	0.0001	4
2.70	0.0034	150
2.95	0.0230	1000
3.20	0.0861	3750
3.45	0.2296	10000
3.70	0.3162	13775
3.95	0.4580	19950
4.20	0.5768	25125
4.45	0.8557	37275
4.70	1.1490	50050
4.95	1.5393	67050
5.20	1.8015	78475
5.45	1.9714	85875
5.70	2.0156	87800
5.95	2.0328	88550
6.20	2.0368	88725
6.45	2.0409	88900
6.70	2.0420	88950
6.80	2.0443	89050

Comment:

Node: NE020P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 3.16 ft
Warning Stage: 3.98 ft

Stage [ft]	Area [ac]	Area [ft2]
0.70	0.0953	4150
0.95	0.2210	9625
1.20	0.2296	10000
1.45	0.3180	13850
1.70	0.3300	14375
1.95	0.3501	15250
2.20	0.3656	15925
2.45	0.8351	36375
2.70	0.8666	37750
2.95	0.9188	40025
3.20	0.9625	41925
3.45	1.0508	45775
3.70	1.1232	48925
3.95	1.2850	55975
4.20	1.4836	64625
4.45	2.3118	100700
4.70	3.1807	138550
4.95	5.3151	231525
5.20	7.3864	321750
5.45	8.8625	386050
5.70	8.9692	390700
5.95	9.0220	393000
6.20	9.0473	394100
6.45	9.0737	395250
6.70	9.0806	395550
6.95	9.0898	395950
7.20	9.0921	396050
7.30	9.0938	396125

Comment:

Node: NE08000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.89 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.89	0.0001	4
3.30	0.0046	200
3.55	0.0310	1350
3.80	0.1119	4875

Stage [ft]	Area [ac]	Area [ft2]
4.05	0.4236	18450
4.30	0.6571	28625
4.55	0.8924	38875
4.80	1.0233	44575
5.05	1.1754	51200
5.30	1.2695	55300
5.55	1.3183	57425
5.80	1.3229	57625
6.05	1.3263	57775
6.30	1.3286	57875
6.55	1.3292	57900
6.80	1.3292	57900
6.80	1.3298	57925

Comment:

Node: NE08100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.90	0.0001	4
3.10	0.0006	25
3.35	0.0098	425
3.60	0.0522	2275
3.85	0.2692	11725
4.10	0.4809	20950
4.35	0.9039	39375
4.60	1.0652	46400
4.85	1.1748	51175
5.10	1.2230	53275
5.35	1.2764	55600
5.60	1.2839	55925
5.85	1.2885	56125
6.10	1.2902	56200
6.35	1.2913	56250
6.60	1.2925	56300
6.80	1.2942	56375

Comment:

Node: NE08200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.22	0.0001	4
2.60	0.0006	25
2.85	0.0040	175
3.10	0.0178	775
3.35	0.1584	6900
3.60	0.4040	17600
3.85	1.0359	45125
4.10	1.5192	66175
4.35	2.1430	93350
4.60	2.3686	103175
4.85	2.6613	115925
5.10	2.7938	121700
5.35	2.8530	124275
5.60	2.8650	124800
5.85	2.8759	125275
6.10	2.8788	125400
6.35	2.8834	125600
6.40	2.8845	125650

Comment:

Node: NE08300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.15	0.0001	4
3.20	0.0011	50
3.45	0.0184	800
3.70	0.0781	3400
3.95	0.2858	12450
4.20	0.4310	18775
4.45	0.5791	25225
4.70	0.6462	28150
4.95	0.8173	35600
5.20	0.9263	40350

Stage [ft]	Area [ac]	Area [ft2]
5.45	0.9711	42300
5.60	0.9745	42450

Comment:

Node: NE08400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.50	0.0001	4
3.30	0.0011	50
3.55	0.0178	775
3.80	0.0568	2475
4.05	0.2129	9275
4.30	0.4040	17600
4.55	0.7610	33150
4.80	1.0882	47400
5.05	1.4480	63075
5.30	1.6552	72100
5.55	1.9203	83650
5.80	2.0644	89925
6.05	2.2699	98875
6.20	2.2785	99250

Comment:

Node: NE08500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.37	0.0001	4
3.10	0.0006	25
3.35	0.0017	75
3.60	0.0224	975
3.85	0.1636	7125
4.10	0.3421	14900

Stage [ft]	Area [ac]	Area [ft2]
4.35	0.6956	30300
4.60	1.0331	45000
4.85	1.7688	77050
5.10	2.1775	94850
5.35	2.6045	113450
5.60	2.7491	119750
5.85	2.7961	121800
6.00	2.7973	121850

Comment:

Node: NE08600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.20	0.0001	4
3.40	0.0006	25
3.65	0.0063	275
3.90	0.0620	2700
4.15	0.2278	9925
4.40	0.3478	15150
4.65	0.6612	28800
4.90	0.8649	37675
5.15	1.1760	51225
5.40	1.2621	54975
5.65	1.3309	57975
5.70	1.3401	58375

Comment:

Node: NE08615

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.26	0.0001	4
2.70	0.0006	25

Stage [ft]	Area [ac]	Area [ft2]
2.95	0.0011	50
3.20	0.0109	475
3.45	0.0631	2750
3.70	0.1544	6725
3.95	0.3719	16200
4.20	0.5848	25475
4.45	0.9229	40200
4.70	1.1599	50525
4.95	1.6294	70975
5.20	2.0305	88450
5.45	2.4552	106950
5.70	2.6441	115175
5.95	2.9035	126475
6.20	2.9534	128650
6.30	2.9574	128825

Comment:

Node: NE08625

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
3.10	0.0023	100
3.35	0.0212	925
3.60	0.0930	4050
3.85	0.2221	9675
4.10	0.3449	15025
4.35	0.5647	24600
4.60	0.6881	29975
4.85	0.9734	42400
5.10	1.3258	57750
5.35	1.8010	78450
5.60	2.1310	92825
5.85	2.4357	106100
6.10	2.5735	112100
6.35	2.6136	113850
6.40	2.6148	113900

Comment:

Node: NE08700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.82 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.82	0.0001	4
3.00	0.0006	25
3.25	0.0006	25
3.50	0.0046	200
3.75	0.0287	1250
4.00	0.0930	4050
4.25	0.3225	14050
4.50	0.5383	23450
4.75	0.8850	38550
5.00	0.9912	43175
5.25	1.0807	47075
5.50	1.1209	48825
5.75	1.1542	50275
6.00	1.1691	50925
6.25	1.1920	51925
6.50	1.2104	52725
6.75	1.2236	53300
6.80	1.2242	53325

Comment:

Node: NE08716

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.24 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
2.24	0.0001	4
4.20	0.0006	25
4.45	0.0011	50
4.70	0.0040	175
4.95	0.0356	1550
5.20	0.0551	2400
5.45	0.0855	3725
5.70	0.1050	4575
5.95	0.1486	6475
6.20	0.1802	7850

Stage [ft]	Area [ac]	Area [ft2]
6.45	0.2330	10150
6.70	0.2640	11500
6.95	0.2881	12550
7.10	0.2921	12725

Comment:

Node: NE08717

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.98 ft
Warning Stage: 4.50 ft

Stage [ft]	Area [ac]	Area [ft2]
2.98	0.0001	4
4.50	0.0006	25
4.75	0.0115	500
5.00	0.0287	1250
5.25	0.0683	2975
5.50	0.0901	3925
5.75	0.1286	5600
6.00	0.1395	6075
6.25	0.1682	7325
6.50	0.1928	8400
6.75	0.2365	10300
6.80	0.2388	10400

Comment:

Node: NE08720

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4
3.50	0.0011	50
3.75	0.0080	350
4.00	0.0373	1625
4.25	0.1171	5100
4.50	0.1532	6675

Stage [ft]	Area [ac]	Area [ft2]
4.75	0.2313	10075
5.00	0.3065	13350
5.25	0.4253	18525
5.50	0.4632	20175
5.75	0.5177	22550
6.00	0.5510	24000
6.25	0.5854	25500
6.50	0.6089	26525
6.75	0.6382	27800
7.00	0.6411	27925
7.25	0.6491	28275
7.50	0.6503	28325
7.50	0.6508	28350

Comment:

Node: NE08735

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.64	0.0001	4
3.70	0.0023	100
3.95	0.0143	625
4.20	0.0407	1775
4.45	0.0907	3950
4.70	0.1722	7500
4.95	0.3007	13100
5.20	0.4132	18000
5.45	0.6365	27725
5.70	0.7656	33350
5.95	0.8167	35575
6.10	0.8264	36000

Comment:

Node: NE08745

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft

Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
3.50	0.0017	75
3.75	0.0063	275
4.00	0.0178	775
4.25	0.0758	3300
4.50	0.1085	4725
4.75	0.1831	7975
5.00	0.2433	10600
5.25	0.3593	15650
5.50	0.4138	18025
5.75	0.4557	19850
6.00	0.4609	20075
6.25	0.4654	20275
6.50	0.4683	20400
6.75	0.4718	20550
6.90	0.4729	20600

Comment:

Node: NE08800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.68	0.0001	4
3.90	0.0017	75
4.15	0.0425	1850
4.40	0.1946	8475
4.65	0.5584	24325
4.90	0.8465	36875
5.15	1.2247	53350
5.40	1.3556	59050
5.65	1.4773	64350
5.90	1.5306	66675
6.15	1.7585	76600
6.40	1.8813	81950
6.65	1.9106	83225
6.90	1.9192	83600
7.15	1.9255	83875
7.20	1.9267	83925

Comment:

Node: NE08900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.90	0.0001	4
3.50	0.0006	25
3.75	0.0172	750
4.00	0.0832	3625
4.25	0.2893	12600
4.50	0.5946	25900
4.75	1.2173	53025
5.00	1.5255	66450
5.25	1.7929	78100
5.50	1.8721	81550
5.75	1.9559	85200
6.00	1.9944	86875
6.25	2.0661	90000
6.50	2.1442	93400
6.75	2.1895	95375
7.00	2.1907	95425
7.25	2.1912	95450
7.40	2.1918	95475

Comment:

Node: NE09000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.22 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.22	0.0001	4
4.00	0.0023	100
4.25	0.0172	750
4.50	0.0545	2375
4.75	0.2083	9075
5.00	0.3312	14425

Stage [ft]	Area [ac]	Area [ft2]
5.25	0.4901	21350
5.50	0.5504	23975
5.75	0.6175	26900
6.00	0.6675	29075
6.25	0.7920	34500
6.50	0.8517	37100
6.75	0.8764	38175
7.00	0.8833	38475
7.25	0.8930	38900
7.50	0.8959	39025
7.60	0.8976	39100

Comment:

Node: NE09100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.30	0.0001	4
3.10	0.0011	50
3.35	0.0149	650
3.60	0.0373	1625
3.85	0.1079	4700
4.10	0.1584	6900
4.35	0.3048	13275
4.60	0.5389	23475
4.85	1.7051	74275
5.10	2.1574	93975
5.35	2.2704	98900
5.60	2.2848	99525
5.85	2.2957	100000
6.10	2.3008	100225
6.35	2.3083	100550
6.60	2.3140	100800
6.85	2.3278	101400
7.10	2.3376	101825
7.20	2.3456	102175

Comment:

Node: NE09110

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.92 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.92	0.0001	4
3.80	0.0006	25
4.05	0.0006	25
4.30	0.0258	1125
4.55	0.1527	6650
4.80	0.2795	12175
5.05	0.4637	20200
5.30	0.5429	23650
5.55	0.6416	27950
5.80	0.6870	29925
6.05	0.7541	32850
6.30	0.8184	35650
6.55	0.9045	39400
6.70	0.9074	39525

Comment:

Node: NE09125

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.09 ft
Warning Stage: 4.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.00	0.2106	9175
0.15	0.2112	9200
0.40	0.2129	9275
0.65	0.2141	9325
0.90	0.2158	9400
1.15	0.2192	9550
1.40	0.2227	9700
1.65	0.2313	10075
1.90	0.2365	10300
2.15	0.2462	10725
2.40	0.2542	11075
2.65	0.2669	11625
2.90	0.2761	12025
3.15	0.2910	12675

Stage [ft]	Area [ac]	Area [ft2]
3.40	0.3007	13100
3.65	0.3168	13800
3.90	0.3271	14250
4.15	0.3553	15475
4.40	0.4069	17725
4.65	0.6307	27475
4.90	0.8965	39050
5.15	1.4451	62950
5.40	1.7304	75375
5.65	2.1315	92850
5.90	2.4311	105900
6.15	3.2260	140525
6.40	4.1041	178775
6.65	4.5414	197825
6.90	4.5977	200275
7.15	4.6057	200625
7.30	4.6063	200650

Comment:

Node: NE09200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.10	0.0001	4
4.40	0.0011	50
4.65	0.0069	300
4.90	0.0149	650
5.15	0.0241	1050
5.40	0.0310	1350
5.65	0.0402	1750
5.80	0.0430	1875

Comment:

Node: NE09210

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.02	0.0001	4
3.80	0.0017	75
4.05	0.0034	150
4.30	0.0212	925
4.55	0.0821	3575
4.80	0.2290	9975
5.05	0.4568	19900
5.30	0.5160	22475
5.55	0.5452	23750
5.80	0.5533	24100
6.05	0.5567	24250
6.10	0.5573	24275

Comment:

Node: NE09220

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.75 ft
Warning Stage: 4.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.5148	22425
1.25	0.5177	22550
1.50	0.5211	22700
1.75	0.6233	27150
2.00	0.6267	27300
2.25	0.6411	27925
2.50	0.6566	28600
2.75	0.6864	29900
3.00	0.8396	36575
3.25	0.9011	39250
3.50	0.9435	41100
3.75	1.0790	47000
4.00	1.2999	56625
4.25	1.8612	81075
4.50	2.3651	103025
4.75	3.4188	148925
5.00	4.3113	187800
5.25	6.6190	288325
5.50	8.5015	370325
5.75	9.7228	423525
6.00	9.9742	434475

Stage [ft]	Area [ac]	Area [ft2]
6.25	10.1022	440050
6.50	10.1286	441200
6.75	10.1475	442025
7.00	10.1573	442450
7.25	10.1613	442625
7.50	10.1630	442700
7.50	10.1636	442725

Comment:

Node: NE09300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.78 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.78	0.0001	4
3.00	0.0006	25
3.25	0.0006	25
3.50	0.0063	275
3.75	0.0694	3025
4.00	0.1773	7725
4.25	0.3679	16025
4.50	0.4838	21075
4.75	0.7639	33275
5.00	0.9625	41925
5.25	1.3355	58175
5.50	1.4842	64650
5.75	1.5444	67275
6.00	1.5565	67800
6.25	1.5674	68275
6.50	1.5702	68400
6.75	1.5771	68700
7.00	1.5834	68975
7.25	1.5886	69200
7.50	1.5921	69350
7.75	1.5944	69450
8.00	1.5966	69550
8.25	1.6030	69825
8.50	1.6064	69975
8.75	1.6081	70050
9.00	1.6116	70200
9.25	1.6173	70450
9.50	1.6196	70550

Stage [ft]	Area [ac]	Area [ft2]
9.75	1.6259	70825
10.00	1.6311	71050
10.25	1.6414	71500
10.50	1.6638	72475
10.70	1.6931	73750

Comment:

Node: NE09400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.03	0.0001	4
2.90	0.0006	25
3.15	0.0109	475
3.40	0.0585	2550
3.65	0.2950	12850
3.90	0.5205	22675
4.15	1.0267	44725
4.40	1.6575	72200
4.65	2.6951	117400
4.90	3.2404	141150
5.15	3.6214	157750
5.40	3.7621	163875
5.65	3.8143	166150
5.90	3.8258	166650
6.15	3.8372	167150
6.40	3.8453	167500
6.65	3.8510	167750
6.90	3.8562	167975
7.15	3.8636	168300
7.40	3.8699	168575
7.65	3.8740	168750
7.90	3.8791	168975
8.15	3.8866	169300
8.40	3.8918	169525
8.65	3.8969	169750
8.90	3.9015	169950
9.15	3.9061	170150
9.40	3.9107	170350
9.65	3.9176	170650
9.90	3.9319	171275

Stage [ft]	Area [ac]	Area [ft2]
10.15	3.9457	171875
10.40	3.9566	172350
10.65	4.0192	175075
10.90	4.0634	177000
11.00	4.1018	178675

Comment:

Node: NE09415

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.92 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.92	0.0001	4
3.10	0.0006	25
3.35	0.0029	125
3.60	0.0138	600
3.85	0.0781	3400
4.10	0.1515	6600
4.35	0.3891	16950
4.60	0.6141	26750
4.85	1.0618	46250
5.10	1.3430	58500
5.35	1.5542	67700
5.60	1.6225	70675
5.85	1.6770	73050
6.10	1.6936	73775
6.35	1.7040	74225
6.60	1.7126	74600
6.85	1.7269	75225
7.10	1.7355	75600
7.35	1.7459	76050
7.60	1.7505	76250
7.85	1.7614	76725
8.10	1.7660	76925
8.35	1.7746	77300
8.60	1.7792	77500
8.85	1.7866	77825
9.10	1.7912	78025
9.35	1.7992	78375
9.60	1.8084	78775
9.85	1.8205	79300
10.10	1.8371	80025

Stage [ft]	Area [ac]	Area [ft2]
10.35	1.8825	82000
10.60	1.9508	84975
10.85	2.1189	92300
11.10	2.1482	93575
11.30	2.1511	93700

Comment:

Node: NE09500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.12	0.0001	4
2.80	0.0011	50
3.05	0.0046	200
3.30	0.0304	1325
3.55	0.1521	6625
3.80	0.2806	12225
4.05	0.5378	23425
4.30	0.8930	38900
4.55	1.5020	65425
4.80	2.0432	89000
5.05	2.4524	106825
5.30	2.5935	112975
5.55	2.6980	117525
5.80	2.7026	117725
6.05	2.7106	118075
6.30	2.7158	118300
6.55	2.7221	118575
6.80	2.7227	118600
7.05	2.7227	118600
7.20	2.7250	118700

Comment:

Node: NE09600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.50	0.0001	4
2.80	0.0006	25
3.05	0.0029	125
3.30	0.0298	1300
3.55	0.1808	7875
3.80	0.4253	18525
4.05	0.9016	39275
4.30	1.2058	52525
4.55	1.6041	69875
4.80	1.9399	84500
5.05	2.5098	109325
5.30	2.8059	122225
5.55	3.0051	130900
5.80	3.0510	132900
6.05	3.1135	135625
6.30	3.1531	137350
6.40	3.1652	137875

Comment:

Node: NE09700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.63	0.0001	4
3.00	0.0006	25
3.25	0.0098	425
3.50	0.0700	3050
3.75	0.3197	13925
4.00	0.5693	24800
4.25	1.0313	44925
4.50	1.3361	58200
4.75	2.1424	93325
5.00	2.4346	106050
5.25	2.6796	116725
5.50	2.7388	119300
5.75	2.7588	120175
6.00	2.7594	120200
6.00	2.7600	120225

Comment:

Node: NE09800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.20	0.0001	4
3.10	0.0006	25
3.35	0.0126	550
3.60	0.0511	2225
3.85	0.1567	6825
4.10	0.3002	13075
4.35	0.5033	21925
4.60	0.5808	25300
4.85	0.6239	27175
5.10	0.6319	27525
5.35	0.6371	27750
5.40	0.6376	27775

Comment:

Node: NE09900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.72	0.0001	4
3.20	0.0011	50
3.45	0.0109	475
3.70	0.0614	2675
3.95	0.2112	9200
4.20	0.3403	14825
4.45	0.6244	27200
4.70	0.8546	37225
4.95	1.1834	51550
5.20	1.3424	58475
5.45	1.4222	61950
5.70	1.4457	62975

Stage [ft]	Area [ac]	Area [ft2]
5.80	1.4480	63075

Comment:

Node: NE10000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.63	0.0001	4
3.10	0.0017	75
3.35	0.0098	425
3.60	0.0608	2650
3.85	0.3053	13300
4.10	0.6175	26900
4.35	1.1255	49025
4.60	1.4916	64975
4.85	1.9370	84375
5.10	2.0816	90675
5.35	2.1424	93325
5.40	2.1459	93475

Comment:

Node: NE10100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.98 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.98	0.0001	4
2.70	0.0006	25
2.95	0.0052	225
3.20	0.0230	1000
3.45	0.0643	2800
3.70	0.1263	5500
3.95	0.3495	15225
4.20	0.6359	27700
4.45	0.8546	37225

Stage [ft]	Area [ac]	Area [ft2]
4.60	0.8867	38625

Comment:

Node: NE10200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.65	0.0001	4
3.00	0.0011	50
3.25	0.0149	650
3.50	0.1010	4400
3.75	0.3845	16750
4.00	0.6210	27050
4.25	0.9366	40800
4.50	1.2070	52575
4.75	1.5794	68800
5.00	1.7728	77225
5.25	1.9496	84925
5.50	2.0460	89125
5.75	2.1281	92700
6.00	2.1430	93350
6.25	2.1637	94250
6.50	2.1706	94550
6.75	2.1763	94800
7.00	2.1815	95025
7.20	2.1832	95100

Comment:

Node: NE10300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.47	0.0001	4
3.10	0.0006	25

Stage [ft]	Area [ac]	Area [ft2]
3.35	0.0040	175
3.60	0.0413	1800
3.85	0.2296	10000
4.10	0.3903	17000
4.35	0.5774	25150
4.60	0.8787	38275
4.85	1.4405	62750
5.10	1.6276	70900
5.35	1.7637	76825
5.60	1.7809	77575
5.85	1.7969	78275
6.10	1.8033	78550
6.35	1.8073	78725
6.50	1.8079	78750

Comment:

Node: NE10400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.30	0.0001	4
3.10	0.0034	150
3.35	0.0287	1250
3.60	0.1159	5050
3.85	0.4006	17450
4.10	0.6876	29950
4.35	1.4021	61075
4.60	2.0443	89050
4.85	2.7743	120850
5.10	3.0234	131700
5.35	3.1944	139150
5.50	3.1985	139325

Comment:

Node: NE10500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.07	0.0001	4
3.30	0.0006	25
3.55	0.0201	875
3.80	0.0941	4100
4.05	0.3134	13650
4.30	0.4580	19950
4.55	0.7622	33200
4.80	1.1742	51150
5.05	1.7097	74475
5.30	1.8635	81175
5.55	1.9083	83125
5.80	1.9255	83875
6.05	1.9318	84150
6.30	1.9353	84300
6.55	1.9393	84475
6.80	1.9404	84525
7.00	1.9427	84625

Comment:

Node: NE10600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.71 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
0.71	0.0001	4
3.40	0.0017	75
3.65	0.0212	925
3.90	0.0976	4250
4.15	0.3277	14275
4.40	0.4993	21750
4.65	1.0095	43975
4.90	1.4543	63350
5.15	1.7688	77050
5.40	1.8475	80475
5.65	1.8727	81575
5.90	1.8761	81725
6.15	1.8802	81900
6.40	1.8813	81950
6.65	1.8842	82075

Stage [ft]	Area [ac]	Area [ft2]
6.80	1.8859	82150

Comment:

Node: NE10700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.66	0.0001	4
2.80	0.0006	25
3.05	0.0063	275
3.30	0.0224	975
3.55	0.0849	3700
3.80	0.1613	7025
4.05	0.3943	17175
4.30	0.5297	23075
4.55	0.7455	32475
4.80	0.8603	37475
5.05	0.9803	42700
5.30	1.0204	44450
5.55	1.0256	44675
5.80	1.0302	44875
6.05	1.0325	44975
6.30	1.0359	45125
6.55	1.0405	45325
6.80	1.0417	45375
7.05	1.0463	45575
7.30	1.0474	45625
7.55	1.0514	45800
7.80	1.0526	45850
8.05	1.0531	45875
8.10	1.0537	45900

Comment:

Node: NE10800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.15	0.0001	4
3.20	0.0011	50
3.45	0.0115	500
3.70	0.0677	2950
3.95	0.2674	11650
4.20	0.4838	21075
4.45	0.8879	38675
4.70	1.1794	51375
4.95	1.6185	70500
5.20	1.7889	77925
5.45	1.9462	84775
5.70	1.9800	86250
5.95	1.9846	86450
6.00	1.9852	86475

Comment:

Node: NE10900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.20	0.0001	4
3.20	0.0006	25
3.45	0.0092	400
3.70	0.0562	2450
3.95	0.2267	9875
4.20	0.3610	15725
4.45	0.6084	26500
4.70	0.9085	39575
4.95	1.3826	60225
5.20	1.5352	66875
5.45	1.6064	69975
5.70	1.6368	71300
5.70	1.6426	71550

Comment:

Node: NE11000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.41	0.0001	4
2.80	0.0006	25
3.05	0.0040	175
3.30	0.0350	1525
3.55	0.2158	9400
3.80	0.3765	16400
4.05	0.7151	31150
4.30	1.0554	45975
4.55	1.7769	77400
4.80	2.3313	101550
5.05	2.9764	129650
5.30	3.2163	140100
5.55	3.2685	142375
5.70	3.2696	142425

Comment:

Node: NE11100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.29	0.0001	4
3.00	0.0017	75
3.25	0.0155	675
3.50	0.0608	2650
3.75	0.1699	7400
4.00	0.2818	12275
4.25	0.5051	22000
4.50	0.6881	29975
4.75	1.0038	43725
5.00	1.1737	51125
5.25	1.3860	60375
5.50	1.4532	63300
5.75	1.5031	65475
6.00	1.5261	66475
6.25	1.5691	68350

Stage [ft]	Area [ac]	Area [ft2]
6.50	1.6087	70075
6.75	1.6581	72225
7.00	1.6724	72850
7.00	1.6758	73000

Comment:

Node: NE11200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.55	0.0001	4
2.80	0.0006	25
3.05	0.0126	550
3.30	0.0643	2800
3.55	0.2313	10075
3.80	0.3903	17000
4.05	0.6089	26525
4.30	0.7610	33150
4.55	1.0428	45425
4.80	1.2707	55350
5.05	1.8698	81450
5.30	2.0787	90550
5.55	2.1620	94175
5.70	2.1648	94300

Comment:

Node: NE11300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.15	0.0001	4
2.90	0.0006	25
3.15	0.0155	675
3.40	0.0436	1900

Stage [ft]	Area [ac]	Area [ft2]
3.65	0.1194	5200
3.90	0.2014	8775
4.15	0.3931	17125
4.40	0.5797	25250
4.65	0.8110	35325
4.90	0.8936	38925
5.15	0.9257	40325
5.40	0.9361	40775
5.65	0.9493	41350
5.80	0.9544	41575

Comment:

Node: NE11400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.09	0.0001	4
2.80	0.0006	25
3.05	0.0006	25
3.30	0.0017	75
3.55	0.0224	975
3.80	0.0838	3650
4.05	0.2479	10800
4.30	0.3862	16825
4.55	0.6216	27075
4.80	0.8110	35325
5.05	1.0618	46250
5.30	1.2730	55450
5.55	1.6202	70575
5.80	1.6638	72475
6.05	1.6718	72825
6.30	1.6747	72950
6.55	1.6868	73475
6.80	1.6982	73975
7.00	1.7005	74075

Comment:

Node: NE11500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
0.11	0.0001	4
3.40	0.0006	25
3.65	0.0086	375
3.90	0.0568	2475
4.15	0.2789	12150
4.40	0.4832	21050
4.65	0.7472	32550
4.90	0.9200	40075
5.15	1.2844	55950
5.40	1.5622	68050
5.65	1.9617	85450
5.90	2.1562	93925
6.15	2.3382	101850
6.40	2.3760	103500
6.65	2.3881	104025
6.90	2.3933	104250
7.15	2.3996	104525
7.40	2.4036	104700
7.50	2.4047	104750

Comment:

Node: NE11600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.55	0.0001	4
3.40	0.0046	200
3.65	0.0407	1775
3.90	0.1406	6125
4.15	0.3805	16575
4.40	0.5802	25275
4.65	0.9613	41875
4.90	1.3281	57850
5.15	1.9921	86775
5.40	2.4001	104550

Stage [ft]	Area [ac]	Area [ft2]
5.65	2.8283	123200
5.90	3.0142	131300
6.15	3.2134	139975
6.40	3.4871	151900
6.65	3.6146	157450
6.90	3.6180	157600
7.15	3.6203	157700
7.40	3.6203	157700
7.40	3.6209	157725

Comment:

Node: NE11700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.04	0.0001	4
3.30	0.0006	25
3.55	0.0080	350
3.80	0.0304	1325
4.05	0.1050	4575
4.30	0.2026	8825
4.55	0.4035	17575
4.80	0.5980	26050
5.05	0.9263	40350
5.30	1.2747	55525
5.55	1.6351	71225
5.80	1.8934	82475
6.05	2.1218	92425
6.30	2.3003	100200
6.55	2.5534	111225
6.70	2.5935	112975

Comment:

Node: NE11800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.45	0.0001	4
3.30	0.0011	50
3.55	0.0034	150
3.80	0.0178	775
4.05	0.0895	3900
4.30	0.1710	7450
4.55	0.3438	14975
4.80	0.4477	19500
5.05	0.5877	25600
5.30	0.7777	33875
5.55	1.1737	51125
5.80	1.4360	62550
6.05	1.5806	68850
6.20	1.6001	69700

Comment:

Node: NE11900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.02	0.0001	4
3.30	0.0017	75
3.55	0.0212	925
3.80	0.0993	4325
4.05	0.3180	13850
4.30	0.4838	21075
4.55	0.7168	31225
4.80	0.8597	37450
5.05	1.0658	46425
5.30	1.2357	53825
5.55	1.7327	75475
5.80	2.1447	93425
6.05	2.8512	124200
6.30	2.9924	130350
6.55	3.0366	132275
6.80	3.0429	132550
6.90	3.0441	132600

Comment:

Node: NE12000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.69	0.0001	4
3.30	0.0006	25
3.55	0.0143	625
3.80	0.0545	2375
4.05	0.1613	7025
4.30	0.2755	12000
4.55	0.4339	18900
4.80	0.5791	25225
5.05	0.7857	34225
5.30	0.9114	39700
5.55	1.1829	51525
5.80	1.2936	56350
6.05	1.3556	59050
6.30	1.4027	61100
6.50	1.4302	62300

Comment:

Node: NE12100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.23	0.0001	4
3.20	0.0011	50
3.45	0.0138	600
3.70	0.0626	2725
3.95	0.2301	10025
4.20	0.3644	15875
4.45	0.6107	26600
4.70	0.7312	31850
4.95	0.9068	39500
5.20	1.0244	44625
5.45	1.2615	54950
5.70	1.5272	66525
5.95	1.9083	83125

Stage [ft]	Area [ac]	Area [ft2]
6.20	2.1092	91875
6.45	2.4420	106375
6.70	2.5350	110425
6.95	2.5878	112725
7.20	2.6016	113325
7.45	2.6113	113750
7.70	2.6142	113875
7.80	2.6188	114075

Comment:

Node: NE12200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4
3.20	0.0006	25
3.45	0.0046	200
3.70	0.0321	1400
3.95	0.1785	7775
4.20	0.3214	14000
4.45	0.6055	26375
4.70	0.7782	33900
4.95	1.1427	49775
5.20	1.4130	61550
5.45	1.7855	77775
5.70	1.9754	86050
5.95	2.1694	94500
6.20	2.2366	97425
6.45	2.3175	100950
6.70	2.3674	103125
6.80	2.4030	104675

Comment:

Node: NE12300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.56	0.0001	4
3.20	0.0017	75
3.45	0.0103	450
3.70	0.0436	1900
3.95	0.1888	8225
4.20	0.3243	14125
4.45	0.4936	21500
4.70	0.5464	23800
4.95	0.6657	29000
5.20	0.7593	33075
5.45	0.9671	42125
5.70	1.1473	49975
5.95	1.4210	61900
6.20	1.5898	69250
6.45	1.8635	81175
6.70	1.9066	83050
6.90	1.9100	83200

Comment:

Node: NE12400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.72 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.72	0.0001	4
3.20	0.0011	50
3.45	0.0178	775
3.70	0.0700	3050
3.95	0.2858	12450
4.20	0.4695	20450
4.45	0.7570	32975
4.70	0.9808	42725
4.95	1.4021	61075
5.20	1.5892	69225
5.45	1.7660	76925
5.70	1.8980	82675
5.95	2.1706	94550
6.20	2.2842	99500
6.45	2.3881	104025
6.70	2.4535	106875

Stage [ft]	Area [ac]	Area [ft2]
6.90	2.4742	107775

Comment:

Node: NE12500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.63	0.0001	4
3.10	0.0011	50
3.35	0.0103	450
3.60	0.0545	2375
3.85	0.2433	10600
4.10	0.4115	17925
4.35	0.7691	33500
4.60	0.9550	41600
4.85	1.2420	54100
5.10	1.5140	65950
5.35	1.9106	83225
5.60	2.0874	90925
5.85	2.2532	98150
6.10	2.2940	99925
6.35	2.3100	100625
6.40	2.3112	100675

Comment:

Node: NE12600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.54	0.0001	4
3.30	0.0006	25
3.55	0.0098	425
3.80	0.0333	1450
4.05	0.1056	4600

Stage [ft]	Area [ac]	Area [ft2]
4.30	0.2124	9250
4.55	0.3398	14800
4.80	0.4609	20075
5.05	0.7673	33425
5.30	0.9826	42800
5.55	1.1387	49600
5.80	1.1616	50600
6.05	1.1725	51075
6.10	1.1737	51125

Comment:

Node: NE13100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.80 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.64	0.0001	4
3.00	0.0006	25
3.25	0.0017	75
3.50	0.0046	200
3.75	0.0425	1850
4.00	0.1119	4875
4.25	0.3174	13825
4.50	0.4408	19200
4.75	0.5705	24850
5.00	0.6686	29125
5.25	0.8396	36575
5.50	0.9435	41100
5.75	1.0199	44425
6.00	1.0474	45625
6.25	1.0841	47225
6.50	1.0985	47850
6.75	1.1174	48675
7.00	1.1243	48975
7.25	1.1346	49425
7.50	1.1415	49725
7.75	1.1536	50250
8.00	1.1605	50550
8.25	1.1691	50925
8.50	1.1748	51175
8.75	1.1874	51725
9.00	1.1932	51975

Stage [ft]	Area [ac]	Area [ft2]
9.25	1.2064	52550
9.50	1.2156	52950
9.75	1.2305	53600
10.00	1.2500	54450
10.25	1.2942	56375
10.50	1.3143	57250
10.75	1.3728	59800
11.00	1.3929	60675
11.25	1.3975	60875
11.40	1.3986	60925

Comment:

Node: NE14000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.20 ft
Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.20	0.0001	4
2.00	0.0006	25
2.25	0.0006	25
2.50	0.0011	50
2.75	0.0011	50
3.00	0.0011	50
3.25	0.0011	50
3.50	0.0017	75
3.75	0.0046	200
4.00	0.0166	725
4.25	0.0924	4025
4.50	0.1865	8125
4.75	0.2887	12575
5.00	0.3312	14425
5.25	0.3627	15800
5.50	0.3788	16500
5.75	0.3983	17350
6.00	0.4109	17900
6.25	0.4201	18300
6.50	0.4247	18500
6.75	0.4304	18750
7.00	0.4333	18875
7.25	0.4379	19075
7.50	0.4396	19150
7.75	0.4413	19225

Stage [ft]	Area [ac]	Area [ft2]
8.00	0.4454	19400
8.25	0.4482	19525
8.50	0.4505	19625
8.75	0.4528	19725
9.00	0.4551	19825
9.25	0.4574	19925
9.50	0.4597	20025
9.75	0.4626	20150
10.00	0.4654	20275
10.25	0.4729	20600
10.50	0.4775	20800
10.75	0.4930	21475
11.00	0.5062	22050
11.20	0.5114	22275

Comment:

Node: NF15000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.94	0.0001	4
3.10	0.0006	25
3.35	0.0166	725
3.60	0.0849	3700
3.85	0.3581	15600
4.10	0.6881	29975
4.35	1.1840	51575
4.60	1.5817	68900
4.85	2.1843	95150
5.10	2.6251	114350
5.35	3.5015	152525
5.60	4.3119	187825
5.85	5.0568	220275
6.10	5.1733	225350
6.35	5.2124	227050
6.40	5.2146	227150

Comment:

Node: NF15010

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.41	0.0001	4
3.00	0.0006	25
3.25	0.0017	75
3.50	0.0063	275
3.75	0.0499	2175
4.00	0.1096	4775
4.25	0.1601	6975
4.50	0.1848	8050
4.75	0.2233	9725
5.00	0.2479	10800
5.25	0.3070	13375
5.50	0.3621	15775
5.75	0.4281	18650
6.00	0.4350	18950
6.25	0.4379	19075
6.30	0.4385	19100

Comment:

Node: NF15100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.71 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.71	0.0001	4
3.70	0.0006	25
3.95	0.0040	175
4.20	0.0270	1175
4.45	0.1986	8650
4.70	0.4867	21200
4.95	0.8414	36650
5.20	1.1639	50700
5.45	1.9416	84575
5.70	2.3984	104475
5.95	2.7847	121300
6.20	2.8650	124800

Stage [ft]	Area [ac]	Area [ft2]
6.45	3.0286	131925
6.50	3.0332	132125

Comment:

Node: NF15200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.18	0.0001	4
3.30	0.0006	25
3.55	0.0052	225
3.80	0.0350	1525
4.05	0.1354	5900
4.30	0.2399	10450
4.55	0.4086	17800
4.80	0.5854	25500
5.05	0.7846	34175
5.30	0.9200	40075
5.55	1.0830	47175
5.80	1.1553	50325
6.05	1.2253	53375
6.30	1.2334	53725
6.40	1.2339	53750

Comment:

Node: NF15210

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.84 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.84	0.0001	4
3.20	0.0006	25
3.45	0.0046	200
3.70	0.0241	1050
3.95	0.1326	5775

Stage [ft]	Area [ac]	Area [ft2]
4.20	0.2393	10425
4.45	0.2921	12725
4.70	0.3168	13800
4.95	0.3667	15975
5.20	0.4247	18500
5.45	0.5424	23625
5.70	0.5699	24825
5.90	0.5802	25275

Comment:

Node: NF15215

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.84 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.84	0.0001	4
3.30	0.0011	50
3.55	0.0121	525
3.80	0.0517	2250
4.05	0.2238	9750
4.30	0.4195	18275
4.55	0.7495	32650
4.80	0.9780	42600
5.05	1.7103	74500
5.30	2.3376	101825
5.55	3.1876	138850
5.80	3.3115	144250
6.05	3.3396	145475
6.30	3.3494	145900
6.40	3.3540	146100

Comment:

Node: NF15300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.79	0.0001	4
3.20	0.0006	25
3.45	0.0103	450
3.70	0.0430	1875
3.95	0.1911	8325
4.20	0.3593	15650
4.45	0.5814	25325
4.70	0.7570	32975
4.95	1.0009	43600
5.20	1.1295	49200
5.45	1.3596	59225
5.70	1.4503	63175
5.95	1.4836	64625
6.00	1.4865	64750

Comment:

Node: NF15315

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.00	0.0001	4
3.30	0.0006	25
3.55	0.0069	300
3.80	0.0396	1725
4.05	0.1131	4925
4.30	0.1550	6750
4.55	0.1963	8550
4.80	0.2278	9925
5.05	0.2852	12425
5.30	0.3202	13950
5.55	0.3340	14550
5.80	0.3392	14775
5.80	0.3403	14825

Comment:

Node: NF15330

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 0.77 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.77	0.0001	4
3.20	0.0006	25
3.45	0.0126	550
3.70	0.0620	2700
3.95	0.2577	11225
4.20	0.4126	17975
4.45	0.6583	28675
4.70	0.8282	36075
4.95	1.0577	46075
5.20	1.3183	57425
5.45	2.0965	91325
5.70	2.7227	118600
5.95	3.0498	132850
6.20	3.1606	137675
6.45	3.1818	138600
6.50	3.1824	138625

Comment:

Node: NF15400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.20 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.78	0.0001	4
3.00	0.0006	25
3.25	0.0017	75
3.50	0.0080	350
3.75	0.0654	2850
4.00	0.2060	8975
4.25	0.5751	25050
4.50	0.8362	36425
4.75	1.1961	52100
5.00	1.4055	61225
5.25	1.9221	83725
5.50	2.2767	99175
5.75	2.5890	112775
6.00	2.6108	113725
6.10	2.6136	113850

Comment:

Node: NF15500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.96 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
0.96	0.0001	4
3.40	0.0006	25
3.65	0.0023	100
3.90	0.0161	700
4.15	0.2146	9350
4.40	0.4500	19600
4.65	0.8500	37025
4.90	1.0497	45725
5.15	1.5898	69250
5.40	2.4024	104650
5.65	3.1330	136475
5.90	3.2530	141700
6.15	3.2995	143725
6.40	3.3046	143950
6.60	3.3052	143975

Comment:

Node: NF15600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.14	0.0001	4
2.20	0.0011	50
2.45	0.0052	225
2.70	0.0298	1300
2.95	0.3168	13800
3.20	0.7346	32000
3.45	1.5261	66475
3.70	2.0742	90350

Stage [ft]	Area [ac]	Area [ft2]
3.95	2.9408	128100
4.20	3.3678	146700
4.45	3.6037	156975
4.70	3.6565	159275
4.95	3.7259	162300
5.20	3.7425	163025
5.45	3.7586	163725
5.70	3.7655	164025
5.95	3.7707	164250
6.00	3.7718	164300

Comment:

Node: NF15700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.14	0.0001	4
2.60	0.0029	125
2.85	0.0385	1675
3.10	0.1199	5225
3.35	0.4017	17500
3.60	0.6129	26700
3.85	1.0342	45050
4.10	1.6288	70950
4.35	2.2515	98075
4.60	2.3542	102550
4.85	2.4122	105075
5.10	2.4168	105275
5.10	2.4174	105300

Comment:

Node: NF15800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.40 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.31	0.0001	4
2.40	0.0006	25
2.65	0.0052	225
2.90	0.0459	2000
3.15	0.2141	9325
3.40	0.3541	15425
3.65	0.5975	26025
3.90	0.7599	33100
4.15	1.1335	49375
4.40	1.4928	65025
4.65	1.9967	86975
4.90	2.1413	93275
5.15	2.2354	97375
5.40	2.2555	98250
5.50	2.2756	99125

Comment:

Node: NF15900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.38	0.0001	4
2.20	0.0006	25
2.45	0.0040	175
2.70	0.0270	1175
2.95	0.1383	6025
3.20	0.3323	14475
3.45	0.6887	30000
3.70	0.9206	40100
3.95	1.5559	67775
4.20	2.0787	90550
4.45	2.7405	119375
4.70	3.1239	136075
4.95	3.7064	161450
5.20	3.9268	171050
5.45	4.0163	174950
5.70	4.0220	175200
5.70	4.0232	175250

Comment:

Node: NF16000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.55	0.0001	4
4.00	0.0023	100
4.25	0.0339	1475
4.50	0.1182	5150
4.75	0.2772	12075
5.00	0.3834	16700
5.25	0.6135	26725
5.50	0.7185	31300
5.75	0.7713	33600
5.80	0.7731	33675

Comment:

Node: NF16100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.34	0.0001	4
2.80	0.0006	25
3.05	0.0057	250
3.30	0.0339	1475
3.55	0.2548	11100
3.80	0.4574	19925
4.05	0.8201	35725
4.30	1.1461	49925
4.55	1.6466	71725
4.80	1.8710	81500
5.05	2.0764	90450
5.30	2.2211	96750
5.55	2.3858	103925
5.80	2.4242	105600
6.05	2.4420	106375
6.10	2.4438	106450

Comment:

Node: NF16200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.58	0.0001	4
2.00	0.0023	100
2.25	0.0212	925
2.50	0.0901	3925
2.75	0.3386	14750
3.00	0.5848	25475
3.25	0.9085	39575
3.50	1.1674	50850
3.75	1.6672	72625
4.00	1.9399	84500
4.25	2.2348	97350
4.50	2.4099	104975
4.75	2.5143	109525
5.00	2.5413	110700
5.25	2.5557	111325
5.50	2.5637	111675
5.75	2.5735	112100
6.00	2.5792	112350
6.25	2.5861	112650
6.50	2.5907	112850
6.60	2.5918	112900

Comment:

Node: NF16300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.21	0.0001	4
2.20	0.0006	25
2.45	0.0132	575
2.70	0.0597	2600
2.95	0.1974	8600
3.20	0.2789	12150
3.45	0.4126	17975

Stage [ft]	Area [ac]	Area [ft2]
3.70	0.6020	26225
3.95	0.9676	42150
4.20	1.0945	47675
4.45	1.1484	50025
4.70	1.1863	51675
4.95	1.2649	55100
5.10	1.2764	55600

Comment:

Node: NF16310

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.22	0.0001	4
2.10	0.0017	75
2.35	0.0172	750
2.60	0.0562	2450
2.85	0.1578	6875
3.10	0.2542	11075
3.35	0.4477	19500
3.60	0.6606	28775
3.85	1.0273	44750
4.10	1.1857	51650
4.35	1.2322	53675
4.50	1.2379	53925

Comment:

Node: NF16500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.28	0.0001	4
2.10	0.0029	125
2.35	0.0115	500

Stage [ft]	Area [ac]	Area [ft2]
2.60	0.0488	2125
2.85	0.1917	8350
3.10	0.2674	11650
3.35	0.4500	19600
3.60	0.5906	25725
3.85	0.8150	35500
4.10	0.9636	41975
4.35	1.2902	56200
4.60	1.4997	65325
4.85	1.6368	71300
5.00	1.6517	71950

Comment:

Node: NF16510

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.01	0.0001	4
2.10	0.0006	25
2.35	0.0103	450
2.60	0.0350	1525
2.85	0.1641	7150
3.10	0.2451	10675
3.35	0.3593	15650
3.60	0.4620	20125
3.85	0.7478	32575
4.10	0.9108	39675
4.35	1.0629	46300
4.60	1.1169	48650
4.85	1.1255	49025
5.00	1.1272	49100

Comment:

Node: NF16700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.09 ft

Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.09	0.0001	4
2.80	0.0006	25
3.05	0.0017	75
3.30	0.0080	350
3.55	0.0402	1750
3.80	0.0781	3400
4.05	0.1372	5975
4.30	0.2479	10800
4.55	0.3989	17375
4.70	0.4218	18375

Comment:

Node: NF16800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.04	0.0001	4
1.70	0.0006	25
1.95	0.0218	950
2.20	0.0740	3225
2.45	0.2726	11875
2.70	0.4402	19175
2.95	0.7404	32250
3.20	0.9211	40125
3.45	1.4514	63225
3.70	1.7246	75125
3.95	1.9341	84250
4.20	2.0162	87825
4.45	2.1379	93125
4.70	2.1820	95050
4.95	2.2538	98175
5.20	2.3049	100400
5.45	2.3554	102600
5.60	2.3720	103325

Comment:

Node: NF16900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.11	0.0001	4
1.60	0.0011	50
1.85	0.0080	350
2.10	0.0511	2225
2.35	0.1946	8475
2.60	0.3185	13875
2.85	0.5366	23375
3.10	0.6503	28325
3.35	0.9252	40300
3.60	1.1415	49725
3.85	1.5794	68800
4.10	1.9645	85575
4.35	2.5568	111375
4.60	2.8518	124225
4.85	3.0607	133325
5.10	3.1072	135350
5.35	3.1198	135900
5.50	3.1221	136000

Comment:

Node: NF17000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.06	0.0001	4
1.80	0.0011	50
2.05	0.0115	500
2.30	0.0459	2000
2.55	0.1596	6950
2.80	0.2669	11625
3.05	0.5820	25350
3.30	0.8615	37525
3.55	1.1656	50775
3.80	1.2666	55175

Stage [ft]	Area [ac]	Area [ft2]
4.05	1.4038	61150
4.30	1.4618	63675
4.55	1.4910	64950
4.70	1.4939	65075

Comment:

Node: NF17100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.28	0.0001	4
1.90	0.0017	75
2.15	0.0155	675
2.40	0.0517	2250
2.65	0.1383	6025
2.90	0.2066	9000
3.15	0.3070	13375
3.40	0.4126	17975
3.65	0.6623	28850
3.90	0.8729	38025
4.15	1.1272	49100
4.40	1.2179	53050
4.65	1.2357	53825
4.80	1.2362	53850

Comment:

Node: NF17200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.45	0.0001	4
2.60	0.0017	75
2.85	0.0298	1300
3.10	0.1125	4900

Stage [ft]	Area [ac]	Area [ft2]
3.35	0.2881	12550
3.60	0.4092	17825
3.85	0.6244	27200
4.10	0.8574	37350
4.35	1.2379	53925
4.60	1.4348	62500
4.85	1.6954	73850
5.10	1.8262	79550
5.35	1.9003	82775
5.60	1.9140	83375
5.60	1.9192	83600

Comment:

Node: NF17210

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.67	0.0001	4
2.20	0.0006	25
2.45	0.0075	325
2.70	0.0293	1275
2.95	0.1182	5150
3.20	0.2118	9225
3.45	0.3553	15475
3.70	0.4551	19825
3.95	0.6824	29725
4.20	0.8741	38075
4.45	1.1404	49675
4.70	1.2902	56200
4.95	1.6420	71525
5.20	1.8641	81200
5.45	1.9525	85050
5.60	1.9536	85100

Comment:

Node: NF17300

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 1.11 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.11	0.0001	4
3.20	0.0006	25
3.45	0.0080	350
3.70	0.0407	1775
3.95	0.0781	3400
4.20	0.1004	4375
4.45	0.1860	8100
4.70	0.2749	11975
4.95	0.3788	16500
5.20	0.3949	17200
5.40	0.4086	17800

Comment:

Node: NF17400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.30	0.0001	4
2.20	0.0006	25
2.45	0.0006	25
2.70	0.0034	150
2.95	0.0482	2100
3.20	0.1452	6325
3.45	0.3811	16600
3.70	0.6026	26250
3.95	0.9475	41275
4.20	1.2242	53325
4.45	2.0472	89175
4.70	2.5494	111050
4.95	3.0607	133325
5.20	3.1359	136600
5.45	3.1537	137375
5.70	3.1554	137450
5.70	3.1560	137475

Comment:

Node: NF17500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.63	0.0001	4
2.70	0.0011	50
2.95	0.0046	200
3.20	0.0350	1525
3.45	0.1831	7975
3.70	0.3403	14825
3.95	0.5934	25850
4.20	0.8299	36150
4.45	1.3470	58675
4.70	1.6982	73975
4.95	2.1660	94350
5.20	2.4564	107000
5.45	2.5654	111750
5.70	2.5752	112175
5.95	2.5786	112325
6.10	2.5803	112400

Comment:

Node: NF17600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.38	0.0001	4
2.20	0.0017	75
2.45	0.0178	775
2.70	0.0786	3425
2.95	0.2468	10750
3.20	0.4069	17725
3.45	0.7398	32225
3.70	0.9487	41325
3.95	1.5152	66000
4.20	1.8865	82175
4.45	2.4093	104950
4.70	2.7284	118850

Stage [ft]	Area [ac]	Area [ft2]
4.95	2.9723	129475
5.20	3.0355	132225
5.30	3.0533	133000

Comment:

Node: NF17700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.19	0.0001	4
2.30	0.0011	50
2.55	0.0098	425
2.80	0.0430	1875
3.05	0.1819	7925
3.30	0.3254	14175
3.55	0.5900	25700
3.80	0.7616	33175
4.05	1.1220	48875
4.30	1.5352	66875
4.55	2.2452	97800
4.80	2.6974	117500
5.05	3.0131	131250
5.30	3.0843	134350
5.50	3.1101	135475

Comment:

Node: NF17800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
2.80	0.0017	75
3.05	0.0172	750
3.30	0.0717	3125

Stage [ft]	Area [ac]	Area [ft2]
3.55	0.2674	11650
3.80	0.4270	18600
4.05	0.6767	29475
4.30	0.8580	37375
4.55	1.3171	57375
4.80	1.8182	79200
5.05	2.3014	100250
5.30	2.5482	111000
5.55	2.7720	120750
5.80	2.8421	123800
6.05	2.8949	126100
6.30	2.9241	127375
6.55	2.9528	128625
6.80	2.9637	129100
6.80	2.9666	129225

Comment:

Node: NG20000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.39	0.0001	4
3.30	0.0006	25
3.55	0.0046	200
3.80	0.0241	1050
4.05	0.0930	4050
4.30	0.1785	7775
4.55	0.2697	11750
4.80	0.3403	14825
5.05	0.4276	18625
5.30	0.5114	22275
5.55	0.7157	31175
5.80	0.8603	37475
6.05	1.0296	44850
6.30	1.0939	47650
6.55	1.1203	48800
6.80	1.1237	48950
7.05	1.1237	48950
7.10	1.1243	48975

Comment:

Node: NG20100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.85 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.85	0.0001	4
2.90	0.0006	25
3.15	0.0011	50
3.40	0.0029	125
3.65	0.0459	2000
3.90	0.1194	5200
4.15	0.2898	12625
4.40	0.4373	19050
4.65	0.6715	29250
4.90	0.8155	35525
5.15	1.0927	47600
5.40	1.3946	60750
5.65	1.7855	77775
5.90	1.9651	85600
6.15	2.1826	95075
6.40	2.2624	98550
6.65	2.2911	99800
6.80	2.2934	99900

Comment:

Node: NG20200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
0.31	0.0001	4
3.40	0.0006	25
3.65	0.0121	525
3.90	0.1004	4375
4.15	0.3444	15000
4.40	0.4873	21225
4.65	0.6531	28450
4.90	0.7541	32850
5.15	0.9338	40675
5.40	1.0882	47400

Stage [ft]	Area [ac]	Area [ft2]
5.65	1.4273	62175
5.90	1.8457	80400
6.15	2.3468	102225
6.40	2.6016	113325
6.65	2.7646	120425
6.90	2.8289	123225
7.15	2.8438	123875
7.40	2.8472	124025
7.65	2.8495	124125
7.80	2.8507	124175

Comment:

Node: NG20300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.35	0.0001	4
3.20	0.0006	25
3.45	0.0017	75
3.70	0.0235	1025
3.95	0.2221	9675
4.20	0.3461	15075
4.45	0.4689	20425
4.70	0.5315	23150
4.95	0.6336	27600
5.20	0.7117	31000
5.45	0.8689	37850
5.70	1.0233	44575
5.95	1.4589	63550
6.20	1.9106	83225
6.45	2.4065	104825
6.70	2.4977	108800
6.95	2.5385	110575
7.00	2.5402	110650

Comment:

Node: NG20400

Scenario: wmp

Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.16	0.0001	4
3.10	0.0006	25
3.35	0.0086	375
3.60	0.0293	1275
3.85	0.1498	6525
4.10	0.3076	13400
4.35	0.6015	26200
4.60	0.7650	33325
4.85	0.9969	43425
5.10	1.1639	50700
5.35	1.3900	60550
5.60	1.5249	66425
5.85	1.7057	74300
6.10	1.7964	78250
6.35	1.9427	84625
6.60	1.9967	86975
6.80	2.0122	87650

Comment:

Node: NG20500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.32 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.32	0.0001	4
3.20	0.0006	25
3.45	0.0115	500
3.70	0.0649	2825
3.95	0.3036	13225
4.20	0.5670	24700
4.45	1.0371	45175
4.70	1.3516	58875
4.95	1.6902	73625
5.20	1.7556	76475
5.45	1.7889	77925
5.70	1.7924	78075
5.70	1.7929	78100

Comment:

Node: NG20600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.02	0.0001	4
3.30	0.0006	25
3.55	0.0161	700
3.80	0.0913	3975
4.05	0.3392	14775
4.30	0.5561	24225
4.55	0.8362	36425
4.80	1.0635	46325
5.05	1.4767	64325
5.30	1.7619	76750
5.55	2.1878	95300
5.80	2.3410	101975
6.05	2.4707	107625
6.20	2.4914	108525

Comment:

Node: NG20700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.23	0.0001	4
2.90	0.0006	25
3.15	0.0046	200
3.40	0.0511	2225
3.65	0.2703	11775
3.90	0.5165	22500
4.15	0.9125	39750
4.40	1.2695	55300
4.65	2.0701	90175

Stage [ft]	Area [ac]	Area [ft2]
4.90	2.6045	113450
5.15	2.8851	125675
5.40	2.9339	127800
5.65	2.9557	128750
5.70	2.9563	128775

Comment:

Node: NG20800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.29	0.0001	4
3.30	0.0034	150
3.55	0.0264	1150
3.80	0.0999	4350
4.05	0.3128	13625
4.30	0.5200	22650
4.55	0.8207	35750
4.80	0.9894	43100
5.05	1.2580	54800
5.30	1.4067	61275
5.55	1.5702	68400
5.80	1.5995	69675
6.05	1.6368	71300
6.30	1.6483	71800
6.55	1.6523	71975
6.60	1.6529	72000

Comment:

Node: NG20810

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.48	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
3.10	0.0006	25
3.35	0.0057	250
3.60	0.0482	2100
3.85	0.3180	13850
4.10	0.6261	27275
4.35	1.2632	55025
4.60	1.9215	83700
4.85	2.5913	112875
5.10	2.8598	124575
5.35	3.0360	132250
5.60	3.0825	134275
5.80	3.0894	134575

Comment:

Node: NG20900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.93 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.93	0.0001	4
3.10	0.0006	25
3.35	0.0006	25
3.60	0.0121	525
3.85	0.1389	6050
4.10	0.2950	12850
4.35	0.5596	24375
4.60	0.7725	33650
4.85	1.2230	53275
5.10	1.5295	66625
5.35	1.9467	84800
5.60	2.1757	94775
5.85	2.3898	104100
6.10	2.4374	106175
6.35	2.4552	106950
6.60	2.4558	106975
6.80	2.4564	107000

Comment:

Node: NG21000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.16	0.0001	4
3.00	0.0011	50
3.25	0.0178	775
3.50	0.0689	3000
3.75	0.1773	7725
4.00	0.2514	10950
4.25	0.3794	16525
4.50	0.4769	20775
4.75	0.6261	27275
5.00	0.7335	31950
5.25	0.9229	40200
5.50	1.0686	46550
5.75	1.2299	53575
6.00	1.2575	54775
6.25	1.2942	56375
6.50	1.3183	57425
6.70	1.3281	57850

Comment:

Node: NG21010

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.58	0.0001	4
3.30	0.0011	50
3.55	0.0115	500
3.80	0.0442	1925
4.05	0.1228	5350
4.30	0.2072	9025
4.55	0.3977	17325
4.80	0.6084	26500
5.05	0.7203	31375
5.30	0.7593	33075
5.55	0.7903	34425
5.70	0.7955	34650

Comment:

Node: NG21100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.72 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
0.72	0.0001	4
3.10	0.0023	100
3.35	0.0057	250
3.60	0.0195	850
3.85	0.0723	3150
4.10	0.1452	6325
4.35	0.2916	12700
4.60	0.4035	17575
4.85	0.6365	27725
5.10	0.7599	33100
5.35	0.8161	35550
5.60	0.8190	35675
5.80	0.8207	35750

Comment:

Node: NG21110

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.91 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.91	0.0001	4
3.20	0.0006	25
3.45	0.0057	250
3.70	0.0436	1900
3.95	0.1716	7475
4.20	0.3977	17325
4.45	0.9452	41175
4.70	1.1777	51300
4.95	1.3596	59225
5.20	1.3912	60600

Stage [ft]	Area [ac]	Area [ft2]
5.45	1.4078	61325
5.70	1.4090	61375
5.70	1.4107	61450

Comment:

Node: NG21200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.49 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.49	0.0001	4
3.40	0.0006	25
3.65	0.0212	925
3.90	0.0826	3600
4.15	0.2904	12650
4.40	0.4213	18350
4.65	0.5515	24025
4.90	0.6267	27300
5.15	0.7237	31525
5.40	0.7725	33650
5.65	0.7886	34350
5.90	0.7937	34575
6.10	0.7978	34750

Comment:

Node: NG21300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.50	0.0001	4
2.80	0.0011	50
3.05	0.0092	400
3.30	0.0482	2100
3.55	0.2652	11550
3.80	0.5986	26075

Stage [ft]	Area [ac]	Area [ft2]
4.05	1.4279	62200
4.30	2.2498	98000
4.55	4.1575	181100
4.80	5.2462	228525
5.05	5.9797	260475
5.30	6.0732	264550
5.55	6.1077	266050
5.60	6.1088	266100

Comment:

Node: NG21400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.57	0.0001	4
3.00	0.0011	50
3.25	0.0115	500
3.50	0.0654	2850
3.75	0.3466	15100
4.00	0.7317	31875
4.25	1.2190	53100
4.50	1.5289	66600
4.75	2.1442	93400
5.00	2.7215	118550
5.25	3.2404	141150
5.50	3.3276	144950
5.75	3.3471	145800
6.00	3.3500	145925
6.00	3.3506	145950

Comment:

Node: NG21415

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.15 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.15	0.0001	4
3.40	0.0011	50
3.65	0.0178	775
3.90	0.0913	3975
4.15	0.3759	16375
4.40	0.8069	35150
4.65	1.6018	69775
4.90	2.0879	90950
5.15	2.5562	111350
5.40	2.7290	118875
5.65	2.8116	122475
5.90	2.8157	122650
6.10	2.8174	122725

Comment:

Node: NG21500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.44	0.0001	4
2.60	0.0006	25
2.85	0.0006	25
3.10	0.0069	300
3.35	0.0626	2725
3.60	0.1331	5800
3.85	0.3616	15750
4.10	0.5418	23600
4.35	0.8798	38325
4.60	1.2075	52600
4.85	1.9783	86175
5.10	2.4931	108600
5.35	2.9006	126350
5.60	2.9609	128975
5.85	2.9666	129225
6.00	2.9672	129250

Comment:

Node: NG21600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.62	0.0001	4
2.70	0.0006	25
2.95	0.0023	100
3.20	0.0339	1475
3.45	0.1888	8225
3.70	0.3880	16900
3.95	0.7117	31000
4.20	0.9550	41600
4.45	1.6087	70075
4.70	2.3841	103850
4.95	3.6146	157450
5.20	4.1781	182000
5.45	4.4324	193075
5.70	4.4479	193750
5.70	4.4496	193825

Comment:

Node: NG21700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.82 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.82	0.0001	4
3.00	0.0006	25
3.25	0.0115	500
3.50	0.0717	3125
3.75	0.3082	13425
4.00	0.5825	25375
4.25	1.0508	45775
4.50	1.4652	63825
4.75	2.6957	117425
5.00	3.5394	154175
5.25	4.2258	184075
5.50	4.3543	189675
5.75	4.3790	190750
5.90	4.3813	190850

Comment:

Node: NG21715

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.60 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.30	0.0001	4
3.30	0.0029	125
3.55	0.0270	1175
3.80	0.1136	4950
4.05	0.3736	16275
4.30	0.6078	26475
4.55	0.9912	43175
4.80	1.2305	53600
5.05	1.4176	61750
5.30	1.4618	63675
5.55	1.4767	64325
5.60	1.4773	64350

Comment:

Node: NG21800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.40 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0001	4
3.40	0.0029	125
3.65	0.0212	925
3.90	0.0671	2925
4.15	0.2904	12650
4.40	0.4787	20850
4.65	0.8150	35500
4.90	0.9068	39500
5.15	0.9452	41175
5.40	0.9493	41350
5.50	0.9504	41400

Comment:

Node: NG21810

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.49 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.49	0.0001	4
3.20	0.0011	50
3.45	0.0057	250
3.70	0.0362	1575
3.95	0.3248	14150
4.20	0.7369	32100
4.45	1.6081	70050
4.70	2.5557	111325
4.95	3.3758	147050
5.20	3.5417	154275
5.45	3.5979	156725
5.70	3.6065	157100
5.80	3.6071	157125

Comment:

Node: NG21900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.43 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
1.43	0.0001	4
2.90	0.0006	25
3.15	0.0086	375
3.40	0.0310	1350
3.65	0.1228	5350
3.90	0.2439	10625
4.15	0.6244	27200
4.40	0.9108	39675
4.65	1.1932	51975
4.90	1.2896	56175

Stage [ft]	Area [ac]	Area [ft2]
5.15	1.3453	58600
5.40	1.3510	58850
5.65	1.3539	58975
5.70	1.3545	59000

Comment:

Node: NG22000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
-1.07	0.0001	4
3.80	0.0006	25
4.05	0.0063	275
4.30	0.1188	5175
4.55	0.9183	40000
4.80	2.0420	88950
5.05	3.0957	134850
5.30	3.4045	148300
5.55	3.6467	158850
5.80	3.7793	164625
6.05	3.8585	168075
6.30	3.8854	169250
6.55	3.9176	170650
6.80	3.9348	171400
7.05	3.9669	172800
7.30	3.9882	173725
7.55	4.0140	174850
7.80	4.0215	175175
8.05	4.0381	175900
8.30	4.0438	176150
8.55	4.0548	176625
8.80	4.0593	176825
9.05	4.0634	177000
9.30	4.0662	177125
9.55	4.0697	177275
9.60	4.0702	177300

Comment:

Node: NG22000P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.98 ft
Warning Stage: 4.28 ft

Stage [ft]	Area [ac]	Area [ft2]
0.60	0.6870	29925
0.85	0.6939	30225
1.10	0.6973	30375
1.35	0.7065	30775
1.60	0.7145	31125
1.85	0.7317	31875
2.10	0.7369	32100
2.35	0.7467	32525
2.60	0.7541	32850
2.85	0.7713	33600
3.10	0.7851	34200
3.35	0.8155	35525
3.60	0.8328	36275
3.85	0.8741	38075
4.10	0.9034	39350
4.35	0.9613	41875
4.60	0.9998	43550
4.85	1.0669	46475
5.10	1.1157	48600
5.35	1.1915	51900
5.60	1.2489	54400
5.85	1.3401	58375
6.10	1.4480	63075
6.35	1.6730	72875
6.60	1.7264	75200
6.85	1.7809	77575
7.10	1.8130	78975
7.35	1.8641	81200
7.60	1.8974	82650
7.85	1.9404	84525
8.10	1.9645	85575
8.35	1.9904	86700
8.60	1.9978	87025
8.85	2.0047	87325
9.10	2.0087	87500
9.35	2.0127	87675
9.60	2.0162	87825
9.80	2.0196	87975

Comment:

Node: NG22015P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.60 ft
Warning Stage: 3.31 ft

Stage [ft]	Area [ac]	Area [ft2]
1.00	0.5653	24625
1.25	0.5762	25100
1.50	0.5900	25700
1.75	0.6043	26325
2.00	0.6141	26750
2.25	0.6302	27450
2.50	0.6462	28150
2.75	0.7622	33200
3.00	1.1014	47975
3.25	1.7482	76150
3.50	2.2337	97300
3.75	2.9718	129450
4.00	3.2650	142225
4.25	3.7207	162075
4.50	3.9377	171525
4.75	4.2097	183375
5.00	4.3813	190850
5.25	4.6338	201850
5.50	4.8301	210400
5.75	5.1418	223975
6.00	5.3334	232325
6.25	5.5940	243675
6.50	5.7306	249625
6.75	5.8695	255675
7.00	5.9372	258625
7.25	6.0428	263225
7.50	6.1117	266225
7.75	6.1840	269375
8.00	6.2391	271775
8.25	6.3108	274900
8.50	6.3717	277550
8.75	6.4090	279175
9.00	6.4187	279600
9.25	6.4319	280175
9.50	6.4405	280550
9.75	6.4526	281075
9.80	6.4549	281175

Comment:

Node: NG22025

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.58 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.58	0.0001	4
4.20	0.0011	50
4.45	0.0373	1625
4.70	0.1739	7575
4.95	0.3994	17400
5.20	0.4936	21500
5.45	0.5934	25850
5.70	0.6508	28350
5.95	0.6864	29900
6.20	0.6881	29975
6.45	0.6887	30000
6.70	0.6887	30000
6.70	0.6893	30025

Comment:

Node: NG22040

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.63 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.91	0.0001	4
2.90	0.0046	200
3.15	0.0161	700
3.40	0.0413	1800
3.65	0.1894	8250
3.90	0.4178	18200
4.15	0.7725	33650
4.40	0.9252	40300
4.65	1.2448	54225
4.90	1.5961	69525
5.15	2.0018	87200
5.40	2.1298	92775
5.65	2.2102	96275
5.90	2.2211	96750
6.00	2.2257	96950

Comment:

Node: NG22100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.74 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.74	0.0001	4
2.30	0.0006	25
2.55	0.0029	125
2.80	0.0115	500
3.05	0.0580	2525
3.30	0.1825	7950
3.55	0.5223	22750
3.80	0.7960	34675
4.05	1.2540	54625
4.30	1.5708	68425
4.55	1.8899	82325
4.80	1.9749	86025
5.05	2.0007	87150
5.10	2.0013	87175

Comment:

Node: NG22300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.16 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.16	0.0001	4
3.30	0.0011	50
3.55	0.0218	950
3.80	0.0815	3550
4.05	0.2640	11500
4.30	0.3576	15575
4.55	0.5337	23250
4.80	0.5665	24675
4.90	0.5739	25000

Comment:

Node: NG22400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.31	0.0001	4
2.50	0.0017	75
2.75	0.0080	350
3.00	0.0344	1500
3.25	0.2215	9650
3.50	0.4390	19125
3.75	0.8293	36125
4.00	0.9682	42175
4.25	1.2081	52625
4.50	1.3240	57675
4.75	1.4273	62175
5.00	1.4405	62750
5.00	1.4417	62800

Comment:

Node: NG22500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.97 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.97	0.0001	4
2.60	0.0017	75
2.85	0.0402	1750
3.10	0.1865	8125
3.35	0.5234	22800
3.60	0.6876	29950
3.85	1.0026	43675
4.10	1.4073	61300
4.35	2.1292	92750
4.60	2.5844	112575

Stage [ft]	Area [ac]	Area [ft2]
4.85	2.8954	126125
5.10	2.9362	127900
5.20	2.9419	128150

Comment:

Node: NG22600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.35	0.0001	4
2.80	0.0006	25
3.05	0.0052	225
3.30	0.0287	1250
3.55	0.1148	5000
3.80	0.1762	7675
4.05	0.2858	12450
4.30	0.3673	16000
4.55	0.4373	19050
4.80	0.4603	20050
5.00	0.4718	20550

Comment:

Node: NG22700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.44	0.0001	4
2.70	0.0011	50
2.95	0.0138	600
3.20	0.1050	4575
3.45	0.3725	16225
3.70	0.5567	24250
3.95	0.9854	42925
4.20	1.2925	56300

Stage [ft]	Area [ac]	Area [ft2]
4.45	1.6322	71100
4.70	1.8584	80950
4.95	2.1361	93050
5.20	2.1734	94675
5.40	2.1798	94950

Comment:

Node: NG22800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.12	0.0001	4
2.70	0.0006	25
2.95	0.0149	650
3.20	0.0867	3775
3.45	0.4104	17875
3.70	0.7260	31625
3.95	1.3349	58150
4.20	1.8159	79100
4.45	2.2819	99400
4.70	2.3709	103275
4.95	2.4621	107250
5.20	2.4776	107925
5.40	2.4822	108125

Comment:

Node: NG22900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.94 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.94	0.0001	4
2.90	0.0011	50
3.15	0.0494	2150
3.40	0.1848	8050

Stage [ft]	Area [ac]	Area [ft2]
3.65	0.4230	18425
3.90	0.5579	24300
4.15	0.8879	38675
4.40	1.1369	49525
4.65	1.5071	65650
4.90	1.6632	72450
5.15	1.7464	76075
5.30	1.7505	76250

Comment:

Node: NG23000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.90	0.0001	4
2.50	0.0006	25
2.75	0.0057	250
3.00	0.0293	1275
3.25	0.1940	8450
3.50	0.4190	18250
3.75	0.9120	39725
4.00	1.0600	46175
4.25	1.1507	50125
4.50	1.1674	50850
4.75	1.1742	51150
5.00	1.1777	51300
5.25	1.1788	51350
5.30	1.1794	51375

Comment:

Node: NG23015

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.68 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
1.68	0.0001	4
2.90	0.0011	50
3.15	0.0103	450
3.40	0.0517	2250
3.65	0.2278	9925
3.90	0.3197	13925
4.15	0.3891	16950
4.40	0.4058	17675
4.65	0.4121	17950
4.90	0.4144	18050
5.15	0.4167	18150
5.20	0.4178	18200

Comment:

Node: NG23100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.99 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.99	0.0001	4
2.60	0.0006	25
2.85	0.0316	1375
3.10	0.1768	7700
3.35	0.7455	32475
3.60	1.1846	51600
3.85	1.6994	74025
4.10	1.9324	84175
4.35	2.0764	90450
4.60	2.1419	93300
4.85	2.1958	95650
5.10	2.1993	95800
5.10	2.1998	95825

Comment:

Node: NG23200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft

Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.67	0.0001	4
2.50	0.0006	25
2.75	0.0069	300
3.00	0.0528	2300
3.25	0.3788	16500
3.50	0.7065	30775
3.75	1.1111	48400
4.00	1.2328	53700
4.25	1.2833	55900
4.50	1.3017	56700
4.75	1.3275	57825
5.00	1.3332	58075
5.10	1.3367	58225

Comment:

Node: NG23300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.25	0.0001	4
2.60	0.0017	75
2.85	0.0539	2350
3.10	0.1544	6725
3.35	0.3845	16750
3.60	0.4735	20625
3.85	0.5963	25975
4.10	0.6589	28700
4.35	0.7369	32100
4.60	0.7627	33225
4.85	0.7966	34700
5.10	0.8081	35200
5.35	0.8247	35925
5.60	0.8333	36300
5.85	0.8419	36675
6.10	0.8454	36825
6.35	0.8500	37025
6.60	0.8511	37075
6.85	0.8511	37075
7.10	0.8511	37075

Stage [ft]	Area [ac]	Area [ft2]
7.35	0.8511	37075
7.60	0.8511	37075
7.85	0.8511	37075
8.10	0.8511	37075
8.35	0.8511	37075
8.60	0.8517	37100
8.85	0.8523	37125
8.90	0.8528	37150

Comment:

Node: NG23315

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.38	0.0001	4
2.30	0.0006	25
2.55	0.0006	25
2.80	0.0063	275
3.05	0.0235	1025
3.30	0.0425	1850
3.55	0.1113	4850
3.80	0.2072	9025
4.05	0.2898	12625
4.30	0.3254	14175
4.55	0.3771	16425
4.80	0.3977	17325
5.05	0.4241	18475
5.30	0.4322	18825
5.55	0.4448	19375
5.80	0.4551	19825
6.05	0.4654	20275
6.30	0.4677	20375
6.40	0.4706	20500

Comment:

Node: NG23400

Scenario: wmp
Type: Stage/Area

Base Flow: 0.00 cfs
Initial Stage: 1.64 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.64	0.0001	4
2.30	0.0006	25
2.55	0.0017	75
2.80	0.0149	650
3.05	0.0832	3625
3.30	0.1555	6775
3.55	0.3530	15375
3.80	0.4677	20375
4.05	0.5883	25625
4.30	0.6244	27200
4.55	0.6554	28550
4.80	0.6709	29225
5.05	0.6807	29650
5.30	0.6835	29775
5.30	0.6841	29800

Comment:

Node: NG23500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.69 ft
Warning Stage: 2.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.69	0.0001	4
2.60	0.0023	100
2.85	0.0166	725
3.10	0.0551	2400
3.35	0.1475	6425
3.60	0.2261	9850
3.85	0.3266	14225
4.10	0.3673	16000
4.35	0.3966	17275
4.60	0.4167	18150
4.85	0.4379	19075
5.10	0.4413	19225
5.35	0.4431	19300
5.50	0.4436	19325

Comment:

Node: NG23600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.58	0.0001	4
2.30	0.0029	125
2.55	0.0092	400
2.80	0.0430	1875
3.05	0.1682	7325
3.30	0.2824	12300
3.55	0.5682	24750
3.80	0.7937	34575
4.05	1.0176	44325
4.30	1.0790	47000
4.55	1.1467	49950
4.80	1.1559	50350
5.00	1.1616	50600

Comment:

Node: NG23700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.42	0.0001	4
2.30	0.0011	50
2.55	0.0201	875
2.80	0.0769	3350
3.05	0.2095	9125
3.30	0.3616	15750
3.55	0.6738	29350
3.80	0.9361	40775
4.05	1.2483	54375
4.30	1.3596	59225
4.55	1.4710	64075
4.80	1.5255	66450
5.05	1.5461	67350
5.30	1.5490	67475
5.30	1.5496	67500

Comment:

Node: NG23800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.56	0.0001	4
2.30	0.0011	50
2.55	0.0132	575
2.80	0.0465	2025
3.05	0.0987	4300
3.30	0.1458	6350
3.55	0.2359	10275
3.80	0.3380	14725
4.05	0.4574	19925
4.30	0.4827	21025
4.55	0.4964	21625
4.80	0.5010	21825
5.00	0.5073	22100

Comment:

Node: NG23900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.09	0.0001	4
2.30	0.0011	50
2.55	0.0132	575
2.80	0.0407	1775
3.05	0.0861	3750
3.30	0.1377	6000
3.55	0.3444	15000
3.80	0.4850	21125
4.05	0.6709	29225
4.30	0.7317	31875

Stage [ft]	Area [ac]	Area [ft2]
4.55	0.7656	33350
4.80	0.7777	33875
5.05	0.7920	34500
5.20	0.7983	34775

Comment:

Node: NG24000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft
Warning Stage: 1.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
1.90	0.0006	25
2.15	0.0109	475
2.40	0.0511	2225
2.65	0.1773	7725
2.90	0.3524	15350
3.15	0.6996	30475
3.40	0.9355	40750
3.65	1.2747	55525
3.90	1.4354	62525
4.15	1.5628	68075
4.40	1.5995	69675
4.65	1.6397	71425
4.90	1.6472	71750
5.15	1.6500	71875
5.20	1.6506	71900

Comment:

Node: NG24100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 1.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.25	0.0001	4
1.50	0.0006	25

Stage [ft]	Area [ac]	Area [ft2]
1.75	0.0006	25
2.00	0.0023	100
2.25	0.0115	500
2.50	0.0195	850
2.75	0.0304	1325
3.00	0.0390	1700
3.25	0.0568	2475
3.50	0.0671	2925
3.75	0.0849	3700
4.00	0.0964	4200
4.25	0.1079	4700
4.50	0.1096	4775
4.75	0.1102	4800
5.00	0.1102	4800
5.25	0.1102	4800
5.50	0.1102	4800
5.75	0.1102	4800
6.00	0.1102	4800
6.25	0.1102	4800
6.50	0.1102	4800
6.75	0.1102	4800
7.00	0.1102	4800
7.25	0.1113	4850
7.50	0.1131	4925
7.75	0.1159	5050
8.00	0.1182	5150
8.00	0.1194	5200

Comment:

Node: NG24200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.22	0.0001	4
2.00	0.0029	125
2.25	0.0184	800
2.50	0.0436	1900
2.75	0.1096	4775
3.00	0.1854	8075
3.25	0.3042	13250
3.50	0.3857	16800

Stage [ft]	Area [ac]	Area [ft2]
3.75	0.4850	21125
4.00	0.5412	23575
4.25	0.5986	26075
4.50	0.6227	27125
4.75	0.6382	27800
5.00	0.6491	28275
5.25	0.6657	29000
5.50	0.6715	29250
5.75	0.6801	29625
6.00	0.6847	29825
6.25	0.6881	29975
6.50	0.6921	30150
6.75	0.6944	30250
7.00	0.6979	30400
7.20	0.7019	30575

Comment:

Node: NG24216

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.10	0.0001	4
2.50	0.0011	50
2.75	0.0011	50
3.00	0.0029	125
3.25	0.0109	475
3.50	0.0189	825
3.75	0.0327	1425
4.00	0.0385	1675
4.00	0.0390	1700

Comment:

Node: NG24225

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.21	0.0001	4
2.70	0.0011	50
2.95	0.0034	150
3.20	0.0155	675
3.45	0.0471	2050
3.70	0.0947	4125
3.95	0.1647	7175
4.20	0.1928	8400
4.45	0.2158	9400
4.70	0.2284	9950
4.95	0.2502	10900
5.20	0.2669	11625
5.45	0.2806	12225
5.70	0.2904	12650
5.95	0.3025	13175
6.20	0.3099	13500
6.45	0.3277	14275
6.70	0.3352	14600
6.95	0.3432	14950
7.20	0.3449	15025
7.45	0.3455	15050
7.70	0.3478	15150
7.95	0.3489	15200
8.20	0.3489	15200
8.45	0.3512	15300
8.50	0.3518	15325

Comment:

Node: NG24230

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.35	0.0001	4
2.80	0.0011	50
3.05	0.0034	150
3.30	0.0172	750
3.55	0.1366	5950
3.80	0.2634	11475
4.05	0.4390	19125
4.30	0.5079	22125

Stage [ft]	Area [ac]	Area [ft2]
4.55	0.5762	25100
4.80	0.6049	26350
5.05	0.6267	27300
5.30	0.6319	27525
5.55	0.6382	27800
5.80	0.6411	27925
6.05	0.6497	28300
6.30	0.6554	28550
6.55	0.6606	28775
6.60	0.6617	28825

Comment:

Node: NG24300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.10 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.76	0.0001	4
3.10	0.0057	250
3.35	0.0706	3075
3.60	0.2520	10975
3.85	0.4970	21650
4.10	0.5292	23050
4.35	0.6967	30350
4.60	1.0704	46625
4.85	1.4784	64400
5.10	1.6667	72600
5.35	1.7304	75375
5.60	1.7321	75450
5.85	1.7338	75525
6.10	1.7338	75525
6.35	1.7338	75525
6.60	1.7338	75525
6.85	1.7338	75525
7.10	1.7338	75525
7.35	1.7378	75700
7.60	1.7390	75750
7.85	1.7413	75850
8.10	1.7419	75875
8.35	1.7436	75950
8.60	1.7436	75950
8.85	1.7441	75975

Stage [ft]	Area [ac]	Area [ft2]
9.10	1.7459	76050
9.10	1.7464	76075

Comment:

Node: NG24320

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.96 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
0.97	0.0001	4
3.00	0.0006	25
3.25	0.0034	150
3.50	0.0178	775
3.75	0.0700	3050
4.00	0.0964	4200
4.25	0.1366	5950
4.50	0.1498	6525
4.75	0.1630	7100
5.00	0.1733	7550
5.25	0.1808	7875
5.50	0.1819	7925
5.75	0.1819	7925
6.00	0.1819	7925
6.25	0.1837	8000
6.50	0.1860	8100
6.75	0.1905	8300
7.00	0.1911	8325
7.25	0.1923	8375
7.50	0.1969	8575
7.75	0.1997	8700
8.00	0.2003	8725
8.25	0.2003	8725
8.50	0.2003	8725
8.75	0.2003	8725
8.80	0.2009	8750

Comment:

Node: NG24322

Scenario: wmp

Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.49 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
2.49	0.0001	4
2.90	0.0034	150
3.15	0.0195	850
3.40	0.0614	2675
3.65	0.1481	6450
3.90	0.2175	9475
4.15	0.2738	11925
4.40	0.2921	12725
4.65	0.3231	14075
4.90	0.3340	14550
5.15	0.3369	14675
5.40	0.3369	14675
5.65	0.3392	14775
5.90	0.3449	15025
6.15	0.3656	15925
6.40	0.3702	16125
6.40	0.3713	16175

Comment:

Node: NG24330

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 2.30 ft

Stage [ft]	Area [ac]	Area [ft2]
0.64	0.0001	4
2.30	0.0011	50
2.55	0.0115	500
2.80	0.0275	1200
3.05	0.0591	2575
3.30	0.1090	4750
3.55	0.2324	10125
3.80	0.4052	17650
4.05	0.6554	28550
4.30	0.7220	31450
4.55	0.7960	34675
4.80	0.8419	36675
5.05	0.9401	40950

Stage [ft]	Area [ac]	Area [ft2]
5.30	0.9602	41825
5.55	0.9607	41850
5.70	0.9613	41875

Comment:

Node: NG24335

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.08 ft
Warning Stage: 3.00 ft

Stage [ft]	Area [ac]	Area [ft2]
1.54	0.0001	4
3.00	0.0023	100
3.25	0.0172	750
3.50	0.0258	1125
3.75	0.0436	1900
4.00	0.0591	2575
4.25	0.0953	4150
4.50	0.1360	5925
4.75	0.3581	15600
5.00	0.5051	22000
5.25	0.7053	30725
5.50	0.8437	36750
5.75	1.0084	43925
6.00	1.0698	46600
6.25	1.0847	47250
6.50	1.0859	47300
6.75	1.0859	47300
7.00	1.0859	47300
7.25	1.0876	47375
7.50	1.0899	47475
7.75	1.0933	47625
8.00	1.0991	47875
8.20	1.1025	48025

Comment:

Node: NG24340

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs

Initial Stage: 2.08 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
2.08	0.0001	4
2.90	0.0006	25
3.15	0.0046	200
3.40	0.0264	1150
3.65	0.1067	4650
3.90	0.1527	6650
4.15	0.2146	9350
4.40	0.2273	9900
4.65	0.2416	10525
4.90	0.2479	10800
5.15	0.2525	11000
5.40	0.2525	11000
5.65	0.2525	11000
5.90	0.2525	11000
6.15	0.2531	11025
6.40	0.2537	11050
6.65	0.2542	11075
6.90	0.2554	11125
7.15	0.2623	11425
7.40	0.2663	11600
7.65	0.2703	11775
7.70	0.2715	11825

Comment:

Node: NG24341

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.84 ft
Warning Stage: 2.80 ft

Stage [ft]	Area [ac]	Area [ft2]
1.84	0.0001	4
2.80	0.0006	25
3.05	0.0109	475
3.30	0.0298	1300
3.55	0.0913	3975
3.80	0.1211	5275
4.05	0.1309	5700
4.30	0.1343	5850
4.55	0.1452	6325
4.80	0.1636	7125

Stage [ft]	Area [ac]	Area [ft2]
5.05	0.1762	7675
5.30	0.1871	8150
5.55	0.1905	8300
5.80	0.1911	8325
6.05	0.1911	8325
6.30	0.1911	8325
6.55	0.1911	8325
6.80	0.1911	8325
7.05	0.1951	8500
7.30	0.1974	8600
7.55	0.1997	8700
7.60	0.2003	8725

Comment:

Node: NG24400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.93 ft
Warning Stage: 2.90 ft

Stage [ft]	Area [ac]	Area [ft2]
0.93	0.0001	4
2.90	0.0006	25
3.15	0.0086	375
3.40	0.0786	3425
3.65	0.2634	11475
3.90	0.3977	17325
4.15	0.6319	27525
4.40	0.7438	32400
4.65	0.9269	40375
4.90	0.9946	43325
5.15	1.0210	44475
5.40	1.0244	44625
5.60	1.0262	44700

Comment:

Node: NG24500P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft

Warning Stage: 2.00 ft

Stage [ft]	Area [ac]	Area [ft2]
-0.03	0.0001	4
2.00	0.0034	150
2.25	0.0098	425
2.50	0.0189	825
2.75	0.0407	1775
3.00	0.0482	2100
3.25	0.0574	2500
3.50	0.0677	2950
3.75	0.2141	9325
4.00	0.5274	22975
4.25	1.3269	57800
4.50	1.8503	80600
4.75	2.3393	101900
5.00	2.4019	104625
5.25	2.4736	107750
5.50	2.5603	111525
5.75	2.7278	118825
6.00	2.7686	120600
6.25	2.7732	120800
6.50	2.7738	120825
6.75	2.7738	120825
7.00	2.7738	120825
7.25	2.7738	120825
7.50	2.7743	120850
7.75	2.7818	121175
7.90	2.7841	121275

Comment:

Node: NG24516P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 3.54 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
3.54	0.0001	4
4.20	0.0006	25
4.45	0.0293	1275
4.70	0.0712	3100
4.90	0.0769	3350

Comment:

Node: NG24527P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.25 ft
Warning Stage: 4.00 ft

Stage [ft]	Area [ac]	Area [ft2]
2.25	0.0001	4
4.00	0.0046	200
4.25	0.0947	4125
4.50	0.4626	20150
4.75	0.7622	33200
5.00	0.7926	34525
5.25	0.8287	36100
5.30	0.8322	36250

Comment:

Node: NG24530P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.18 ft
Warning Stage: 1.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.18	0.0001	4
1.60	0.0006	25
1.85	0.0006	25
2.10	0.0006	25
2.35	0.0011	50
2.60	0.0017	75
2.85	0.0023	100
3.10	0.0029	125
3.35	0.0040	175
3.60	0.0212	925
3.85	0.1085	4725
4.10	0.2152	9375
4.35	0.3972	17300
4.60	0.4758	20725
4.85	0.5779	25175
5.10	0.6348	27650
5.35	0.6893	30025
5.60	0.7237	31525
5.85	0.8574	37350
6.10	0.8752	38125

Stage [ft]	Area [ac]	Area [ft2]
6.35	0.8787	38275
6.40	0.8798	38325

Comment:

Node: NG24600P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.06 ft
Warning Stage: 3.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.06	0.0001	4
3.30	0.0006	25
3.55	0.0172	750
3.80	0.0626	2725
4.05	0.2261	9850
4.30	0.4017	17500
4.55	0.6158	26825
4.80	0.7031	30625
5.05	0.7874	34300
5.30	0.8190	35675
5.55	0.8999	39200
5.80	1.0124	44100
6.05	1.1719	51050
6.30	1.2540	54625
6.55	1.3166	57350
6.80	1.3338	58100
6.80	1.3344	58125

Comment:

Node: NG24615P

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.46 ft
Warning Stage: 3.20 ft

Stage [ft]	Area [ac]	Area [ft2]
1.46	0.0001	4
3.20	0.0034	150
3.45	0.0253	1100

Stage [ft]	Area [ac]	Area [ft2]
3.70	0.0907	3950
3.95	0.2766	12050
4.20	0.4379	19075
4.45	0.7857	34225
4.70	0.8821	38425
4.95	0.9475	41275
5.20	0.9739	42425
5.45	1.0095	43975
5.70	1.0371	45175
5.95	1.1105	48375
6.20	1.1610	50575
6.45	1.1765	51250
6.50	1.1771	51275

Comment:

Node: NH30000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
0.15	0.0001	4
3.70	0.0011	50
3.95	0.0052	225
4.20	0.0080	350
4.45	0.0121	525
4.70	0.0149	650
4.95	0.0189	825
5.20	0.0212	925
5.45	0.0253	1100
5.70	0.0258	1125
5.95	0.0264	1150
6.20	0.0264	1150
6.45	0.0264	1150
6.70	0.0264	1150
6.95	0.0264	1150
7.20	0.0264	1150
7.45	0.0264	1150
7.70	0.0264	1150
7.95	0.0264	1150
8.20	0.0270	1175
8.40	0.0293	1275

Comment:

Node: NH30030

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.83 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.83	0.0001	4
4.20	0.0006	25
4.45	0.0029	125
4.70	0.0069	300
4.95	0.0121	525
5.20	0.0189	825
5.45	0.0287	1250
5.70	0.0339	1475
5.95	0.0356	1550
6.20	0.0367	1600
6.45	0.0367	1600
6.70	0.0367	1600
6.95	0.0367	1600
7.20	0.0367	1600
7.45	0.0367	1600
7.70	0.0367	1600
7.95	0.0367	1600
8.20	0.0367	1600
8.45	0.0367	1600
8.70	0.0373	1625
8.95	0.0379	1650
9.20	0.0379	1650
9.20	0.0385	1675

Comment:

Node: NH30035

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.92 ft
Warning Stage: 4.20 ft

Stage [ft]	Area [ac]	Area [ft2]
0.92	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
4.20	0.0023	100
4.45	0.0143	625
4.70	0.0379	1650
4.95	0.0838	3650
5.20	0.1108	4825
5.45	0.1297	5650
5.70	0.1429	6225
5.95	0.1538	6700
6.20	0.1618	7050
6.30	0.1630	7100

Comment:

Node: NH30040

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.04 ft
Warning Stage: 4.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.04	0.0001	4
4.30	0.0017	75
4.55	0.0132	575
4.80	0.0287	1250
5.05	0.0350	1525
5.10	0.0362	1575

Comment:

Node: NH30045

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.39 ft
Warning Stage: 4.30 ft

Stage [ft]	Area [ac]	Area [ft2]
1.39	0.0001	4
4.30	0.0006	25
4.55	0.0069	300
4.80	0.0207	900
5.05	0.0316	1375
5.10	0.0321	1400

Comment:

Node: NH30050

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.32	0.0001	4
3.60	0.0017	75
3.85	0.0034	150
4.10	0.0086	375
4.35	0.0367	1600
4.60	0.0614	2675
4.85	0.1067	4650
5.10	0.1286	5600
5.35	0.1532	6675
5.60	0.1647	7175
5.85	0.1733	7550
6.10	0.1779	7750
6.35	0.1825	7950
6.60	0.1825	7950
6.85	0.1825	7950
7.10	0.1825	7950
7.35	0.1825	7950
7.60	0.1825	7950
7.85	0.1825	7950
8.10	0.1825	7950
8.35	0.1825	7950
8.40	0.1831	7975

Comment:

Node: NH30055

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.69 ft
Warning Stage: 3.80 ft

Stage [ft]	Area [ac]	Area [ft2]
0.44	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
3.80	0.0034	150
4.05	0.0321	1400
4.30	0.1022	4450
4.55	0.2112	9200
4.80	0.2784	12125
5.05	0.3788	16500
5.30	0.4132	18000
5.55	0.4396	19150
5.60	0.4408	19200

Comment:

Node: NSP0100

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.40 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0001	4
3.50	0.0011	50
3.75	0.0155	675
4.00	0.0631	2750
4.25	0.2600	11325
4.50	0.4247	18500
4.75	0.6933	30200
5.00	0.8437	36750
5.25	1.0577	46075
5.50	1.2362	53850
5.75	1.4933	65050
6.00	1.6758	73000
6.25	1.9226	83750
6.50	1.9611	85425
6.75	1.9645	85575
6.90	1.9657	85625

Comment:

Node: NSP0200

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft

Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.35	0.0001	4
3.50	0.0023	100
3.75	0.0189	825
4.00	0.0585	2550
4.25	0.2106	9175
4.50	0.3007	13100
4.75	0.4058	17675
5.00	0.4752	20700
5.25	0.6451	28100
5.50	0.8213	35775
5.75	1.1163	48625
6.00	1.2770	55625
6.25	1.3757	59925
6.50	1.4325	62400
6.75	1.4474	63050
7.00	1.4503	63175
7.00	1.4509	63200

Comment:

Node: NSP0215

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
2.10	0.0001	4
3.70	0.0011	50
3.95	0.0327	1425
4.20	0.1590	6925
4.45	0.5412	23575
4.70	0.7008	30525
4.95	0.9567	41675
5.20	1.1507	50125
5.45	1.4922	65000
5.70	1.7860	77800
5.95	2.0885	90975
6.20	2.1361	93050
6.30	2.1574	93975

Comment:

Node: NSP0300

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 3.40 ft

Stage [ft]	Area [ac]	Area [ft2]
1.35	0.0001	4
3.40	0.0023	100
3.65	0.0161	700
3.90	0.0574	2500
4.15	0.2256	9825
4.40	0.3914	17050
4.65	0.5584	24325
4.90	0.6485	28250
5.15	0.8494	37000
5.40	1.0939	47650
5.65	1.5318	66725
5.90	1.7034	74200
6.15	1.8538	80750
6.40	1.8934	82475
6.65	1.9152	83425
6.70	1.9157	83450

Comment:

Node: NSP0400

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.35	0.0001	4
3.60	0.0006	25
3.85	0.0034	150
4.10	0.0396	1725
4.35	0.1900	8275
4.60	0.3151	13725
4.85	0.4477	19500
5.10	0.5412	23575
5.35	0.6870	29925
5.60	0.8213	35775
5.85	1.0675	46500
6.10	1.2661	55150

Stage [ft]	Area [ac]	Area [ft2]
6.35	1.5812	68875
6.60	1.6822	73275
6.85	1.7516	76300
7.10	1.7694	77075
7.35	1.7866	77825
7.40	1.7901	77975

Comment:

Node: NSP0415

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 2.10 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
2.10	0.0001	4
3.70	0.0006	25
3.95	0.0040	175
4.20	0.0333	1450
4.45	0.2847	12400
4.70	0.6216	27075
4.95	0.9619	41900
5.20	1.1731	51100
5.45	1.4509	63200
5.70	1.6259	70825
5.95	1.8871	82200
6.20	2.0805	90625
6.45	2.2762	99150
6.70	2.3169	100925
6.90	2.3382	101850

Comment:

Node: NSP0500

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.35 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
1.35	0.0001	4

Stage [ft]	Area [ac]	Area [ft2]
3.90	0.0006	25
4.15	0.0080	350
4.40	0.0373	1625
4.65	0.1429	6225
4.90	0.2238	9750
5.15	0.3461	15075
5.40	0.4258	18550
5.65	0.5630	24525
5.90	0.6824	29725
6.15	0.9860	42950
6.40	1.1427	49775
6.65	1.2638	55050
6.90	1.2907	56225
7.15	1.3022	56725
7.40	1.3028	56750
7.65	1.3028	56750
7.90	1.3028	56750
8.15	1.3028	56750
8.40	1.3028	56750
8.65	1.3028	56750
8.90	1.3028	56750
9.15	1.3028	56750
9.40	1.3028	56750
9.65	1.3045	56825
9.90	1.3045	56825
10.00	1.3051	56850

Comment:

Node: NSP0600

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.30 ft
Warning Stage: 3.70 ft

Stage [ft]	Area [ac]	Area [ft2]
1.30	0.0001	4
3.70	0.0006	25
3.95	0.0149	650
4.20	0.0740	3225
4.45	0.2634	11475
4.70	0.4207	18325
4.95	0.6939	30225
5.20	0.8488	36975
5.45	1.0750	46825

Stage [ft]	Area [ac]	Area [ft2]
5.70	1.2202	53150
5.95	1.3470	58675
6.20	1.4210	61900
6.45	1.4750	64250
6.70	1.4865	64750
6.95	1.4916	64975
7.20	1.4922	65000
7.45	1.4922	65000
7.70	1.4922	65000
7.95	1.4922	65000
8.20	1.4922	65000
8.45	1.4922	65000
8.70	1.4922	65000
8.95	1.4922	65000
9.20	1.4922	65000
9.30	1.4928	65025

Comment:

Node: NSP0700

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.80 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.80	0.0001	4
3.50	0.0057	250
3.75	0.0281	1225
4.00	0.1067	4650
4.25	0.2933	12775
4.50	0.4522	19700
4.75	0.7122	31025
5.00	0.9579	41725
5.25	1.4526	63275
5.50	1.7751	77325
5.75	2.0908	91075
6.00	2.1884	95325
6.25	2.2440	97750
6.50	2.2532	98150
6.50	2.2538	98175

Comment:

Node: NSP0715

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 3.90 ft

Stage [ft]	Area [ac]	Area [ft2]
1.70	0.0001	4
3.90	0.0006	25
4.15	0.0166	725
4.40	0.0746	3250
4.65	0.4459	19425
4.90	0.6261	27275
5.15	0.8850	38550
5.40	1.0514	45800
5.65	1.3028	56750
5.90	1.3946	60750
6.15	1.4893	64875
6.40	1.5146	65975
6.50	1.5192	66175

Comment:

Node: NSP0800

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.80 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
0.80	0.0001	4
3.60	0.0109	475
3.85	0.0740	3225
4.10	0.2278	9925
4.35	0.4511	19650
4.60	0.6405	27900
4.85	1.1025	48025
5.10	1.4962	65175
5.35	1.9307	84100
5.60	2.0650	89950
5.85	2.1218	92425
6.10	2.1384	93150
6.30	2.1407	93250

Comment:

Node: NSP0815

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.70 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.70	0.0001	4
3.60	0.0006	25
3.85	0.0103	450
4.10	0.0712	3100
4.35	0.3857	16800
4.60	0.6726	29300
4.85	1.1318	49300
5.10	1.3533	58950
5.35	1.5989	69650
5.60	1.6827	73300
5.85	1.7780	77450
6.10	1.8027	78525
6.35	1.8061	78675
6.40	1.8067	78700

Comment:

Node: NSP0900

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 0.90 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
0.90	0.0001	4
3.50	0.0011	50
3.75	0.0235	1025
4.00	0.0844	3675
4.25	0.3093	13475
4.50	0.4919	21425
4.75	0.8879	38675
5.00	1.1794	51375
5.25	1.4819	64550
5.50	1.5697	68375
5.75	1.6185	70500
5.90	1.6276	70900

Comment:

Node: NSP0915

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.40 ft
Warning Stage: 3.50 ft

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0001	4
3.50	0.0023	100
3.75	0.0264	1150
4.00	0.1079	4700
4.25	0.4568	19900
4.50	0.7421	32325
4.75	1.3143	57250
5.00	1.7378	75700
5.25	2.1608	94125
5.50	2.3049	100400
5.75	2.3491	102325
6.00	2.3588	102750
6.20	2.3617	102875

Comment:

Node: NSP1000

Scenario: wmp
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 1.40 ft
Warning Stage: 3.60 ft

Stage [ft]	Area [ac]	Area [ft2]
1.40	0.0001	4
3.60	0.0023	100
3.85	0.0385	1675
4.10	0.1182	5150
4.35	0.3828	16675
4.60	0.6548	28525
4.85	1.3573	59125
5.10	2.0346	88625
5.35	2.6509	115475
5.60	2.7956	121775
5.85	2.8501	124150
6.10	2.8696	125000
6.35	2.8857	125700
6.50	2.8868	125750

Comment:

Weir Link: RA00100O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.26 ft	Discharge Coefficients	
Control Elevation:	3.26 ft	Weir Default:	2.800
Cross Section:	XA00100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.12 ft	Invert:	-0.02 ft
From Node:	NA00100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	62.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00106O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00106	Default:	0.00 ft
To Node:	NA00200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft

Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.34 ft
Control Elevation:	2.34 ft
Cross Section:	XA00106O

Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00106O2

Scenario:	wmp
From Node:	NA00106
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XA00106O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00106O3

Scenario:	wmp
From Node:	NA00106
To Node:	NA00110
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XA00106O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00106O4			
Scenario:	wmp	Bottom Clip	
From Node:	NA00106	Default:	0.00 ft
To Node:	NA00100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	Discharge Coefficients	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XA00106O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00106P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.15 ft	Invert:	0.12 ft
From Node:	NA00106	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00100	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	73.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00110O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00110	Default:	0.00 ft
To Node:	NA00100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.85 ft	Discharge Coefficients	
Control Elevation:	3.85 ft	Weir Default:	2.800
Cross Section:	XA00110O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00110O2

Scenario:	wmp
From Node:	NA00110
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.35 ft
Control Elevation:	5.35 ft
Cross Section:	XA00110O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00110P

Scenario:	wmp
From Node:	NA00110
To Node:	NA00100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	23.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.56 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.48 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA00200O

Scenario:	wmp
From Node:	NA00200
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XA00200O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00200O2

Scenario:	wmp
From Node:	NA00200
To Node:	NA00110
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.18 ft
Control Elevation:	4.18 ft
Cross Section:	XA00200O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00200P

Scenario:	wmp
From Node:	NA00200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	104.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.48 ft	Invert:	0.35 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Max Depth:	2.42 ft	Max Depth:	2.42 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00300O

Scenario:	wmp
From Node:	NA00300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.36 ft
Control Elevation:	3.36 ft
Cross Section:	XA00300O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00300O2

Scenario:	wmp
From Node:	NA00300
To Node:	NA00314P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.50 ft
Control Elevation:	3.50 ft
Cross Section:	XA00300O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00300O3

Scenario:	wmp
From Node:	NA00300
To Node:	NA00200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.20 ft
Control Elevation:	3.20 ft
Cross Section:	XA00300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA00300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.66 ft	Invert:	-2.73 ft
From Node:	NA00300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	145.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00312O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00312	Default:	0.00 ft
To Node:	NA00300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.58 ft	Discharge Coefficients	
Control Elevation:	2.58 ft	Weir Default:	2.800
Cross Section:	XA00312O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00312O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00312	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.85 ft
Control Elevation:	8.85 ft
Cross Section:	XA00312O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00312P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.00 ft	Invert:	-2.46 ft
From Node:	NA00312	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	185.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00314PO	
Scenario:	wmp
From Node:	NA00314P
To Node:	NA00312
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.25 ft
Control Elevation:	3.25 ft
Cross Section:	XA00314PO

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00314PO2

Scenario:	wmp
From Node:	NA00314P
To Node:	NA00200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.54 ft
Control Elevation:	3.54 ft
Cross Section:	XA00314PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00314PO3

Scenario:	wmp
From Node:	NA00314P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.45 ft
Control Elevation:	3.45 ft
Cross Section:	XA00314PO3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00314PO4

Scenario:	wmp
From Node:	NA00314P
To Node:	NA00110
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XA00314PO4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA00314PP		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.80 ft	Invert:	-1.00 ft
From Node:	NA00314P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00312	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	71.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00335O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00335	Default:	0.00 ft
To Node:	NA00300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.12 ft	Discharge Coefficients	
Control Elevation:	2.12 ft	Weir Default:	2.800
Cross Section:	XA00335O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00335O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00335	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XA00335O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00335O3

Scenario:	wmp
From Node:	NA00335
To Node:	NA00312
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.60 ft
Control Elevation:	3.60 ft
Cross Section:	XA00335O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00335P

Scenario:	wmp
From Node:	NA00335
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	171.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.68 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.44 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Pipe Link: RA00335P2		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.51 ft	Invert:	-2.52 ft
From Node:	NA00335	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00300	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	35.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00360O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00360	Default:	0.00 ft
To Node:	NA00335	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.65 ft	Discharge Coefficients	
Control Elevation:	2.65 ft	Weir Default:	2.800
Cross Section:	XA00360O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00360P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.83 ft	Invert:	-2.95 ft
From Node:	NA00360	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00335	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	53.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00370O

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00370	Default:	0.00 ft
To Node:	NA00360	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	**Discharge Coefficients**	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XA00370O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00370O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00370	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.93 ft	**Discharge Coefficients**	
Control Elevation:	7.93 ft	Weir Default:	2.800
Cross Section:	XA00370O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00370O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00370	Default:	0.00 ft
To Node:	NA00335	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.28 ft
Control Elevation:	4.28 ft
Cross Section:	XA00370O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00370P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.41 ft	Invert:	-2.73 ft
From Node:	NA00370	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00360	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	1.58 ft	Max Depth:	1.58 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	365.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00375O	
Scenario:	wmp
From Node:	NA00375
To Node:	NA00370
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XA00375O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00375O2

Scenario:	wmp	Bottom Clip	
From Node:	NA00375	Default:	0.00 ft
To Node:	NA00335	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	Discharge Coefficients	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XA00375O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00375O3

Scenario:	wmp	Bottom Clip	
From Node:	NA00375	Default:	0.00 ft
To Node:	NA00312	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.70 ft	Discharge Coefficients	
Control Elevation:	4.70 ft	Weir Default:	2.800
Cross Section:	XA00375O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00375O4

Scenario:	wmp	Bottom Clip	
From Node:	NA00375	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.55 ft	Discharge Coefficients	
Control Elevation:	6.55 ft	Weir Default:	2.800
Cross Section:	XA00375O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA00375P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.16 ft	Invert:	-0.40 ft
From Node:	NA00375	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00370	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	81.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00385O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00385	Default:	0.00 ft
To Node:	NA00605	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.02 ft	Discharge Coefficients	
Control Elevation:	4.02 ft	Weir Default:	2.800
Cross Section:	XA00385O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00385O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00385	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	7.48 ft
Control Elevation:	7.48 ft
Cross Section:	XA00385O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00385O3

Scenario:	wmp
From Node:	NA00385
To Node:	NA00370
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.90 ft
Control Elevation:	4.90 ft
Cross Section:	XA00385O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00385P

Scenario:	wmp
From Node:	NA00385
To Node:	NA00370
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	219.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.06 ft
Manning's N:	0.0130

Geometry: Circular	
Max Depth:	1.25 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.41 ft
Manning's N:	0.0130

Geometry: Circular	
Max Depth:	1.25 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA00510O

Scenario:	wmp
From Node:	NA00510
To Node:	NA00360
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.50 ft
Control Elevation:	2.50 ft
Cross Section:	XA00510O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00510O2

Scenario:	wmp
From Node:	NA00510
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.53 ft
Control Elevation:	2.53 ft
Cross Section:	XA00510O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00510O3

Scenario:	wmp
From Node:	NA00510
To Node:	NA00335
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.62 ft
Control Elevation:	2.62 ft
Cross Section:	XA00510O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RA00510O4

Scenario:	wmp
From Node:	NA00510
To Node:	NA00385
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.98 ft
Control Elevation:	3.98 ft
Cross Section:	XA00510O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00510O5

Scenario:	wmp
From Node:	NA00510
To Node:	NA00370
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XA00510O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00510P

Scenario:	wmp
From Node:	NA00510
To Node:	NA00360
Link Count:	1
Flow Direction:	Both

Upstream

Invert:	0.72 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Downstream

Invert:	0.01 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	84.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00605O

Scenario:	wmp	Bottom Clip	
From Node:	NA00605	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.78 ft	Discharge Coefficients	
Control Elevation:	2.78 ft	Weir Default:	2.800
Cross Section:	XA00605O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00605O2

Scenario:	wmp	Bottom Clip	
From Node:	NA00605	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.91 ft	Discharge Coefficients	
Control Elevation:	6.91 ft	Weir Default:	2.800
Cross Section:	XA00605O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00605P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.21 ft	Invert:	-2.46 ft
From Node:	NA00605	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	137.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00620O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00620	Default:	0.00 ft
To Node:	NA00605	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.28 ft	Discharge Coefficients	
Control Elevation:	2.28 ft	Weir Default:	2.800
Cross Section:	XA00620O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00620O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00620	Default:	0.00 ft
To Node:	NA00510	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.38 ft	Discharge Coefficients	
Control Elevation:	2.38 ft	Weir Default:	2.800
Cross Section:	XA00620O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00620O3

Scenario:	wmp
From Node:	NA00620
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.55 ft
Control Elevation:	2.55 ft
Cross Section:	XA00620O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00620O4

Scenario:	wmp
From Node:	NA00620
To Node:	NA00385
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.91 ft
Control Elevation:	3.91 ft
Cross Section:	XA00620O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00620P

Scenario:	wmp
From Node:	NA00620
To Node:	NA00605
Link Count:	1

Upstream

Invert:	0.48 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.67 ft

Downstream

Invert:	-0.21 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.67 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	169.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00700O

Scenario:	wmp	Bottom Clip	
From Node:	NA00700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.90 ft	Discharge Coefficients	
Control Elevation:	2.90 ft	Weir Default:	2.800
Cross Section:	XA00700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00700P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.23 ft	Invert:	-1.44 ft
From Node:	NA00700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	141.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00710O

Scenario:	wmp
From Node:	NA00710
To Node:	NA00735
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.53 ft
Control Elevation:	2.53 ft
Cross Section:	XA00710O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00710O2

Scenario:	wmp
From Node:	NA00710
To Node:	NA00700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.26 ft
Control Elevation:	2.26 ft
Cross Section:	XA00710O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00710O3

Scenario:	wmp
From Node:	NA00710
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.90 ft
Control Elevation:	2.90 ft
Cross Section:	XA00710O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RA00710O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00710	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.72 ft	**Discharge Coefficients**	
Control Elevation:	2.72 ft	Weir Default:	2.800
Cross Section:	XA00710O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00710O5

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00710	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	8.75 ft	**Discharge Coefficients**	
Control Elevation:	8.75 ft	Weir Default:	2.800
Cross Section:	XA00710O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00710O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00710	Default:	0.00 ft
To Node:	NA00745	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft		
Weir Type:	Paved Road Vertical	Default:	0.00 ft
Geometry Type:	Irregular	Op Table:	
Invert:	3.88 ft	Ref Node:	
Control Elevation:	3.88 ft	**Discharge Coefficients**	
Cross Section:	XA00710O6	Weir Default:	2.800
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00710P		Upstream		Downstream	
Scenario:	wmp	Invert:	-3.14 ft	Invert:	-3.40 ft
From Node:	NA00710	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00800	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	120.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: RA00710P2		Upstream		Downstream	
Scenario:	wmp	Invert:	-3.14 ft	Invert:	-2.70 ft
From Node:	NA00710	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00700	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	1.17 ft	Max Depth:	1.17 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	24.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00735O

Scenario:	wmp
From Node:	NA00735
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.60 ft
Control Elevation:	2.60 ft
Cross Section:	XA00735O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00735O2

Scenario:	wmp
From Node:	NA00735
To Node:	NA00605
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.58 ft
Control Elevation:	2.58 ft
Cross Section:	XA00735O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00735O4

Scenario:	wmp
From Node:	NA00735
To Node:	NA00750
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.86 ft
Control Elevation:	3.86 ft
Cross Section:	XA00735O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA00735P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.99 ft	Invert:	-1.76 ft
From Node:	NA00735	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00710	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	208.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00745O			
Scenario:	wmp	Bottom Clip	
From Node:	NA00745	Default:	0.00 ft
To Node:	NA00735	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	Discharge Coefficients	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XA00745O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00745O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00745	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.08 ft
Control Elevation:	8.08 ft
Cross Section:	XA00745O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00745P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.75 ft	Invert:	-3.00 ft
From Node:	NA00745	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00710	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	427.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00750O	
Scenario:	wmp
From Node:	NA00750
To Node:	NA00745
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XA00750O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00750O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00750	Default:	0.00 ft
To Node:	NA00605	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	Discharge Coefficients	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XA00750O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00750O3			
Scenario:	wmp	Bottom Clip	
From Node:	NA00750	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.13 ft	Discharge Coefficients	
Control Elevation:	7.13 ft	Weir Default:	2.800
Cross Section:	XA00750O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00750P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.95 ft	Invert:	-1.81 ft
From Node:	NA00750	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA00745	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	129.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: RA00765O

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00765	Default:	0.00 ft
To Node:	NA00710	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.36 ft	**Discharge Coefficients**	
Control Elevation:	4.36 ft	Weir Default:	2.800
Cross Section:	XA00765O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00765O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00765	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.23 ft	**Discharge Coefficients**	
Control Elevation:	5.23 ft	Weir Default:	2.800
Cross Section:	XA00765O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00765O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00765	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	7.68 ft
Control Elevation:	7.68 ft
Cross Section:	XA00765O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA00765P

Scenario:	wmp
From Node:	NA00765
To Node:	NA00745
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	352.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.18 ft	Invert:	-1.81 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00800O

Scenario:	wmp
From Node:	NA00800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.40 ft
Control Elevation:	2.40 ft
Cross Section:	XA00800O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA00800O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA00800	Default:	0.00 ft
To Node:	NA00765	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.61 ft	Discharge Coefficients	
Control Elevation:	4.61 ft	Weir Default:	2.800
Cross Section:	XA00800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00800O3			
Scenario:	wmp	Bottom Clip	
From Node:	NA00800	Default:	0.00 ft
To Node:	NA00710	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.53 ft	Discharge Coefficients	
Control Elevation:	2.53 ft	Weir Default:	2.800
Cross Section:	XA00800O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-3.40 ft	Invert:	-3.75 ft
From Node:	NA00800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	145.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA00900O

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.50 ft	**Discharge Coefficients**	
Control Elevation:	3.50 ft	Weir Default:	2.800
Cross Section:	XA00900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA00900O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NA00900	Default:	0.00 ft
To Node:	NA00765	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.55 ft	**Discharge Coefficients**	
Control Elevation:	5.55 ft	Weir Default:	2.800
Cross Section:	XA00900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA00900P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	1.12 ft	Invert:	-0.29 ft
From Node:	NA00900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	110.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01000O

Scenario:	wmp	Bottom Clip	
From Node:	NA01000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.05 ft	Discharge Coefficients	
Control Elevation:	3.05 ft	Weir Default:	2.800
Cross Section:	XA01000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01000O2

Scenario:	wmp	Bottom Clip	
From Node:	NA01000	Default:	0.00 ft
To Node:	NA00900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.21 ft	Discharge Coefficients	
Control Elevation:	3.21 ft	Weir Default:	2.800
Cross Section:	XA01000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA01000P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.42 ft	Invert:	-1.48 ft
From Node:	NA01000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	123.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01010O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01010	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.15 ft	Discharge Coefficients	
Control Elevation:	5.15 ft	Weir Default:	2.800
Cross Section:	XA01010O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01010O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01010	Default:	0.00 ft
To Node:	NA00900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.23 ft	Discharge Coefficients	
Control Elevation:	5.23 ft	Weir Default:	2.800
Cross Section:	XA01010O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01010O3

Scenario:	wmp
From Node:	NA01010
To Node:	NA00765
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XA01010O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01010P

Scenario:	wmp
From Node:	NA01010
To Node:	NA01000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	146.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.68 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.42 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA01100O

Scenario:	wmp
From Node:	NA01100
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.15 ft
Control Elevation:	3.15 ft
Cross Section:	XA01100O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01100O2

Scenario:	wmp
From Node:	NA01100
To Node:	NA01010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.28 ft
Control Elevation:	5.28 ft
Cross Section:	XA01100O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01100O3

Scenario:	wmp
From Node:	NA01100
To Node:	NA01000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XA01100O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01100O4			
Scenario:	wmp	Bottom Clip	
From Node:	NA01100	Default:	0.00 ft
To Node:	NA00900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.08 ft	Discharge Coefficients	
Control Elevation:	5.08 ft	Weir Default:	2.800
Cross Section:	XA01100O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA01100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.38 ft	Invert:	0.00 ft
From Node:	NA01100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	123.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01200O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.33 ft	Discharge Coefficients	
Control Elevation:	3.33 ft	Weir Default:	2.800
Cross Section:	XA01200O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.34 ft	Invert:	-1.11 ft
From Node:	NA01200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	91.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01300O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.74 ft	Discharge Coefficients	
Control Elevation:	3.74 ft	Weir Default:	2.800
Cross Section:	XA01300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA01300P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.10 ft	Invert:	-0.18 ft
From Node:	NA01300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	155.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01325O

Scenario:	wmp	Bottom Clip	
From Node:	NA01325	Default:	0.00 ft
To Node:	NA01300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.25 ft	Discharge Coefficients	
Control Elevation:	2.25 ft	Weir Default:	2.800
Cross Section:	XA01325O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01325O2

Scenario:	wmp	Bottom Clip	
From Node:	NA01325	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.61 ft	Discharge Coefficients	
Control Elevation:	3.61 ft	Weir Default:	2.800
Cross Section:	XA01325O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01325O3

Scenario:	wmp
From Node:	NA01325
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.15 ft
Control Elevation:	5.15 ft
Cross Section:	XA01325O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01325O4

Scenario:	wmp
From Node:	NA01325
To Node:	NA01200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.45 ft
Control Elevation:	3.45 ft
Cross Section:	XA01325O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01325O5

Scenario:	wmp
From Node:	NA01325
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XA01325O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA01325P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.39 ft	Invert:	0.10 ft
From Node:	NA01325	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	166.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01600O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.42 ft	Discharge Coefficients	
Control Elevation:	7.42 ft	Weir Default:	2.800
Cross Section:	XA01600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.48 ft
Control Elevation:	3.48 ft
Cross Section:	XA01600O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01600O3

Scenario:	wmp
From Node:	NA01600
To Node:	NA01615
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.22 ft
Control Elevation:	2.22 ft
Cross Section:	XA01600O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01600P

Scenario:	wmp
From Node:	NA01600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	194.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-1.56 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.60 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA01615O

Scenario:	wmp
From Node:	NA01615
To Node:	NA01325
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.06 ft
Control Elevation:	2.06 ft
Cross Section:	XA01615O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01615O2

Scenario:	wmp
From Node:	NA01615
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.18 ft
Control Elevation:	3.18 ft
Cross Section:	XA01615O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01615O3

Scenario:	wmp
From Node:	NA01615
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.05 ft
Control Elevation:	8.05 ft
Cross Section:	XA01615O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA01615P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.46 ft	Invert:	-1.56 ft
From Node:	NA01615	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01600	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	118.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01700O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.51 ft	Discharge Coefficients	
Control Elevation:	2.51 ft	Weir Default:	2.800
Cross Section:	XA01700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01700	Default:	0.00 ft
To Node:	NA01710	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.10 ft
Control Elevation:	2.10 ft
Cross Section:	XA01700O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01700O3

Scenario:	wmp
From Node:	NA01700
To Node:	NA01600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.96 ft
Control Elevation:	2.96 ft
Cross Section:	XA01700O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01700P

Scenario:	wmp
From Node:	NA01700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	100.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-2.04 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-2.70 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA01710O

Scenario:	wmp
From Node:	NA01710
To Node:	NA01600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.02 ft
Control Elevation:	2.02 ft
Cross Section:	XA01710O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01710O2

Scenario:	wmp
From Node:	NA01710
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.55 ft
Control Elevation:	2.55 ft
Cross Section:	XA01710O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01710O3

Scenario:	wmp
From Node:	NA01710
To Node:	NA01720
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.16 ft
Control Elevation:	2.16 ft
Cross Section:	XA01710O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA01710P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.58 ft	Invert:	-0.75 ft
From Node:	NA01710	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	117.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01720O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01720	Default:	0.00 ft
To Node:	NA01700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.05 ft	Discharge Coefficients	
Control Elevation:	2.05 ft	Weir Default:	2.800
Cross Section:	XA01720O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01720O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01720	Default:	0.00 ft
To Node:	NA01600	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.06 ft
Control Elevation:	2.06 ft
Cross Section:	XA01720O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01720P

Scenario:	wmp
From Node:	NA01720
To Node:	NA01710
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	55.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.00 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.58 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RA01800O

Scenario:	wmp
From Node:	NA01800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.01 ft
Control Elevation:	3.01 ft
Cross Section:	XA01800O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01800O2

Scenario:	wmp
From Node:	NA01800
To Node:	NA01825
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.65 ft
Control Elevation:	3.65 ft
Cross Section:	XA01800O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Rating Curve Link: RA01800RC

Scenario:	wmp
From Node:	NA01800
To Node:	BDRY
Link Count:	1
Flow Direction:	Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
Pump1	-3.00		-3.01	
Pump2	-2.50		-2.51	

Comment:

Weir Link: RA01816O

Scenario:	wmp
From Node:	NA01816
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.73 ft
Control Elevation:	2.73 ft
Cross Section:	XA01816O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01816O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01816	Default:	0.00 ft
To Node:	NA01850	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.33 ft	Discharge Coefficients	
Control Elevation:	4.33 ft	Weir Default:	2.800
Cross Section:	XA01816O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01816O3			
Scenario:	wmp	Bottom Clip	
From Node:	NA01816	Default:	0.00 ft
To Node:	NA01800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.08 ft	Discharge Coefficients	
Control Elevation:	3.08 ft	Weir Default:	2.800
Cross Section:	XA01816O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA01816P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.01 ft	Invert:	-1.45 ft
From Node:	NA01816	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	110.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01825O

Scenario:	wmp
From Node:	NA01825
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XA01825O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01825P

Scenario:	wmp
From Node:	NA01825
To Node:	NA01800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	118.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.31 ft	Invert:	-1.45 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01835O

Scenario:	wmp
From Node:	NA01835
To Node:	NA01825
Link Count:	1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.28 ft
Control Elevation:	3.28 ft
Cross Section:	XA01835O

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01835O2

Scenario:	wmp
From Node:	NA01835
To Node:	NA01700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.47 ft
Control Elevation:	2.47 ft
Cross Section:	XA01835O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01835O3

Scenario:	wmp
From Node:	NA01835
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.80 ft
Control Elevation:	2.80 ft
Cross Section:	XA01835O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01835O4			
Scenario:	wmp	Bottom Clip	
From Node:	NA01835	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.48 ft	Discharge Coefficients	
Control Elevation:	6.48 ft	Weir Default:	2.800
Cross Section:	XA01835O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	
Comment:			

Weir Link: RA01835O5			
Scenario:	wmp	Bottom Clip	
From Node:	NA01835	Default:	0.00 ft
To Node:	NA01600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	Discharge Coefficients	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XA01835O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	
Comment:			

Pipe Link: RA01835P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.64 ft	Invert:	-1.31 ft
From Node:	NA01835	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01825	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	177.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01850O

Scenario:	wmp	**Bottom Clip**	
From Node:	NA01850	Default:	0.00 ft
To Node:	NA01800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.41 ft	**Discharge Coefficients**	
Control Elevation:	4.41 ft	Weir Default:	2.800
Cross Section:	XA01850O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01850O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NA01850	Default:	0.00 ft
To Node:	NA01825	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	**Discharge Coefficients**	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XA01850O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA01850P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.89 ft	Invert:	-1.25 ft
From Node:	NA01850	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA01800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	117.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01855O

Scenario:	wmp	Bottom Clip	
From Node:	NA01855	Default:	0.00 ft
To Node:	NA01850	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.22 ft	Discharge Coefficients	
Control Elevation:	4.22 ft	Weir Default:	2.800
Cross Section:	XA01855O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01855O2

Scenario:	wmp	Bottom Clip	
From Node:	NA01855	Default:	0.00 ft
To Node:	NA01816	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.48 ft	Discharge Coefficients	
Control Elevation:	4.48 ft	Weir Default:	2.800
Cross Section:	XA01855O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01855O3

Scenario:	wmp
From Node:	NA01855
To Node:	NA01825
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XA01855O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01855O4

Scenario:	wmp
From Node:	NA01855
To Node:	NA01835
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.00 ft
Control Elevation:	5.00 ft
Cross Section:	XA01855O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA01855O5

Scenario:	wmp
From Node:	NA01855
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.83 ft
Control Elevation:	5.83 ft
Cross Section:	XA01855O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA01855P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.68 ft	Invert:	-0.89 ft
From Node:	NA01855	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NA01850	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	72.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA01900O			
Scenario:	wmp	Bottom Clip	
From Node:	NA01900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XA01900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA01900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NA01900	Default:	0.00 ft
To Node:	NA01816	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.11 ft
Control Elevation:	3.11 ft
Cross Section:	XA01900O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA01900P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.00 ft	Invert:	-1.37 ft
From Node:	NA01900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	181.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA02000O	
Scenario:	wmp
From Node:	NA02000
To Node:	NA02110
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.10 ft
Control Elevation:	2.10 ft
Cross Section:	XA02000O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA02000O2

Scenario:	wmp
From Node:	NA02000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.05 ft
Control Elevation:	3.05 ft
Cross Section:	XA02000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA02000O3

Scenario:	wmp
From Node:	NA02000
To Node:	NA01816
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.20 ft
Control Elevation:	5.20 ft
Cross Section:	XA02000O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA02000O4

Scenario:	wmp
From Node:	NA02000
To Node:	NA01900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.05 ft
Control Elevation:	3.05 ft
Cross Section:	XA02000O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RA02000P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.76 ft	Invert:	-1.05 ft
From Node:	NA02000	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	137.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA02100O			
Scenario:	wmp	Bottom Clip	
From Node:	NA02100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.13 ft	Discharge Coefficients	
Control Elevation:	3.13 ft	Weir Default:	2.800
Cross Section:	XA02100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA02100P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.22 ft	Invert:	-0.79 ft
From Node:	NA02100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	117.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RA02110O

		Bottom Clip	
Scenario:	wmp		
From Node:	NA02110	Default:	0.00 ft
To Node:	NA02100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.48 ft	Discharge Coefficients	
Control Elevation:	2.48 ft	Weir Default:	2.800
Cross Section:	XA02110O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA02110O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NA02110	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.15 ft	Discharge Coefficients	
Control Elevation:	3.15 ft	Weir Default:	2.800
Cross Section:	XA02110O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA02110O3			
Scenario:	wmp	**Bottom Clip**	
From Node:	NA02110	Default:	0.00 ft
To Node:	NA01855	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.10 ft	**Discharge Coefficients**	
Control Elevation:	6.10 ft	Weir Default:	2.800
Cross Section:	XA02110O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RA02110O4			
Scenario:	wmp	**Bottom Clip**	
From Node:	NA02110	Default:	0.00 ft
To Node:	NA01816	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.40 ft	**Discharge Coefficients**	
Control Elevation:	5.40 ft	Weir Default:	2.800
Cross Section:	XA02110O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RA02110P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.18 ft	Invert:	-0.22 ft
From Node:	NA02110	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NA02100	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	**Bottom Clip**			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	62.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	**Top Clip**			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	
		Manning's N:	0.0000
		Ref Node:	
		Manning's N:	0.0000

Comment:

Weir Link: RA02120O

Scenario:	wmp
From Node:	NA02120
To Node:	NA02100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.40 ft
Control Elevation:	3.40 ft
Cross Section:	XA02120O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA02120O2

Scenario:	wmp
From Node:	NA02120
To Node:	NA01855
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.45 ft
Control Elevation:	5.45 ft
Cross Section:	XA02120O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RA02120O3

Scenario:	wmp
From Node:	NA02120
To Node:	NA02110
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XA02120O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RA02120P

Scenario:	wmp
From Node:	NA02120
To Node:	NA02100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	350.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	1.00 ft	Invert:	-0.22 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02200O

Scenario:	wmp
From Node:	NB02200
To Node:	NB02315
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.37 ft
Control Elevation:	4.37 ft
Cross Section:	XB02200O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.88 ft	Discharge Coefficients	
Control Elevation:	4.88 ft	Weir Default:	2.800
Cross Section:	XB02200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02200O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02200	Default:	0.00 ft
To Node:	NB02320	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.64 ft	Discharge Coefficients	
Control Elevation:	5.64 ft	Weir Default:	2.800
Cross Section:	XB02200O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.68 ft	Invert:	-1.13 ft
From Node:	NB02200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	126.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch: Energy | Ref Node: | Manning's N: 0.0000 | Ref Node: | Manning's N: 0.0000

Comment:

Weir Link: RB02215O

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02215	Default:	0.00 ft
To Node:	NB02200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.85 ft	**Discharge Coefficients**	
Control Elevation:	4.85 ft	Weir Default:	2.800
Cross Section:	XB02215O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02215O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02215	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	8.25 ft	**Discharge Coefficients**	
Control Elevation:	8.25 ft	Weir Default:	2.800
Cross Section:	XB02215O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02215O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02215	Default:	0.00 ft
To Node:	NA02100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.50 ft
Control Elevation:	5.50 ft
Cross Section:	XB02215O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02215O4

Scenario:	wmp
From Node:	NB02215
To Node:	NB02320
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.57 ft
Control Elevation:	5.57 ft
Cross Section:	XB02215O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02215P

Scenario:	wmp
From Node:	NB02215
To Node:	NB02200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	67.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.07 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.68 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RB02235O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02235	Default:	0.00 ft
To Node:	NB02315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XB02235O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02235O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02235	Default:	0.00 ft
To Node:	NA01855	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.50 ft	Discharge Coefficients	
Control Elevation:	7.50 ft	Weir Default:	2.800
Cross Section:	XB02235O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02235O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02235	Default:	0.00 ft
To Node:	NB02325	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.12 ft	Discharge Coefficients	
Control Elevation:	7.12 ft	Weir Default:	2.800
Cross Section:	XB02235O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RB02235O4

Scenario:	wmp
From Node:	NB02235
To Node:	NB02320
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.75 ft
Control Elevation:	6.75 ft
Cross Section:	XB02235O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02235P

Scenario:	wmp
From Node:	NB02235
To Node:	NB02200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	164.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.53 ft	Invert:	-0.68 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		**Geometry: Circular**	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02245O

Scenario:	wmp
From Node:	NB02245
To Node:	NA01855
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.48 ft
Control Elevation:	8.48 ft
Cross Section:	XB02245O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02245P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.33 ft	Invert:	0.53 ft
From Node:	NB02245	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02235	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	85.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02260O	
Scenario:	wmp
From Node:	NB02260
To Node:	NB02245
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.35 ft
Control Elevation:	8.35 ft
Cross Section:	XB02260O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02260O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02260	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.22 ft	**Discharge Coefficients**	
Control Elevation:	7.22 ft	Weir Default:	2.800
Cross Section:	XB02260O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02260O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02260	Default:	0.00 ft
To Node:	NB02445	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	8.33 ft	**Discharge Coefficients**	
Control Elevation:	8.33 ft	Weir Default:	2.800
Cross Section:	XB02260O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02260O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02260	Default:	0.00 ft
To Node:	NA01855	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	9.50 ft	**Discharge Coefficients**	
Control Elevation:	9.50 ft	Weir Default:	2.800
Cross Section:	XB02260O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RB02260P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.69 ft	Invert:	1.33 ft
From Node:	NB02260	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02245	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	244.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02270O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02270	Default:	0.00 ft
To Node:	NB02260	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.30 ft	Discharge Coefficients	
Control Elevation:	6.30 ft	Weir Default:	2.800
Cross Section:	XB02270O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02270O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02270	Default:	0.00 ft
To Node:	NB02455	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.00 ft
Control Elevation:	6.00 ft
Cross Section:	XB02270O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02270O3

Scenario:	wmp
From Node:	NB02270
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	7.35 ft
Control Elevation:	7.35 ft
Cross Section:	XB02270O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02270P

Scenario:	wmp
From Node:	NB02270
To Node:	NB02260
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	60.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	3.04 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	2.69 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RB02310O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02310	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XB02310O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02310O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02310	Default:	0.00 ft
To Node:	NB02435	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.20 ft	Discharge Coefficients	
Control Elevation:	3.20 ft	Weir Default:	2.800
Cross Section:	XB02310O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02310P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.73 ft	Invert:	-1.20 ft
From Node:	NB02310	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	239.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02315O

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02315	Default:	0.00 ft
To Node:	NB02310	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.62 ft	**Discharge Coefficients**	
Control Elevation:	2.62 ft	Weir Default:	2.800
Cross Section:	XB02315O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02315O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02315	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.18 ft	**Discharge Coefficients**	
Control Elevation:	3.18 ft	Weir Default:	2.800
Cross Section:	XB02315O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02315O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02315	Default:	0.00 ft
To Node:	NB02445	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.65 ft
Control Elevation:	4.65 ft
Cross Section:	XB02315O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02315O4

Scenario:	wmp
From Node:	NB02315
To Node:	NB02320
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.68 ft
Control Elevation:	5.68 ft
Cross Section:	XB02315O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02315P

Scenario:	wmp
From Node:	NB02315
To Node:	NB02310
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	148.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.65 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.73 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Drop Structure Link: RB02316PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	2.11 ft	Invert:	0.20 ft
From Node:	NB02316P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02315	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	48.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	3.12 ft	Ref Node:	
Control Elevation:	3.12 ft	Discharge Coefficients	
Max Depth:	2.00 ft	Weir Default:	3.200
Max Width:	3.08 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RB02316PO		Bottom Clip	
Scenario:	wmp	Default:	0.00 ft
From Node:	NB02316P	Op Table:	
To Node:	NB02315	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Paved Road Vertical	Ref Node:	
Geometry Type:	Irregular	Discharge Coefficients	
Invert:	2.75 ft		

Control Elevation:	2.75 ft
Cross Section:	XB02316PO

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02320O

Scenario:	wmp
From Node:	NB02320
To Node:	NA02120
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XB02320O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02320O2

Scenario:	wmp
From Node:	NB02320
To Node:	NA02100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.65 ft
Control Elevation:	6.65 ft
Cross Section:	XB02320O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02320P

Scenario:	wmp
From Node:	NB02320

Upstream	
Invert:	0.80 ft
Manning's N:	0.0130

Downstream	
Invert:	-0.65 ft
Manning's N:	0.0130

To Node:	NB02315	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	389.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02325O

Scenario:	wmp	Bottom Clip	
From Node:	NB02325	Default:	0.00 ft
To Node:	NA01855	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.31 ft	Discharge Coefficients	
Control Elevation:	5.31 ft	Weir Default:	2.800
Cross Section:	XB02325O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02325O2

Scenario:	wmp	Bottom Clip	
From Node:	NB02325	Default:	0.00 ft
To Node:	NB02320	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.71 ft	Discharge Coefficients	
Control Elevation:	5.71 ft	Weir Default:	2.800
Cross Section:	XB02325O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02325O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02325	Default:	0.00 ft
To Node:	NA02120	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.73 ft	Discharge Coefficients	
Control Elevation:	6.73 ft	Weir Default:	2.800
Cross Section:	XB02325O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02325P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.20 ft	Invert:	0.80 ft
From Node:	NB02325	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NB02320	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.83 ft	Max Depth:	0.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	147.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02400O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.30 ft	Discharge Coefficients	
Control Elevation:	2.30 ft	Weir Default:	2.800
Cross Section:	XB02400O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02400O2

Scenario:	wmp
From Node:	NB02400
To Node:	NB02410
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.00 ft
Control Elevation:	3.00 ft
Cross Section:	XB02400O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02400O3

Scenario:	wmp
From Node:	NB02400
To Node:	NB02310
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.93 ft
Control Elevation:	2.93 ft
Cross Section:	XB02400O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02400O4

Scenario:	wmp
From Node:	NB02400
To Node:	NB02435
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.13 ft
Control Elevation:	3.13 ft
Cross Section:	XB02400O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02400P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.09 ft	Invert:	-2.15 ft
From Node:	NB02400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.42 ft	Max Depth:	2.42 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	21.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02410O	
Scenario:	wmp
From Node:	NB02410
To Node:	NB02427
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.60 ft
Control Elevation:	5.60 ft
Cross Section:	XB02410O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02410P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.08 ft	Invert:	-2.09 ft
From Node:	NB02410	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02400	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	225.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02412O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02412	Default:	0.00 ft
To Node:	NB02410	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.90 ft	Discharge Coefficients	
Control Elevation:	2.90 ft	Weir Default:	2.800
Cross Section:	XB02412O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02412O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02412	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.18 ft	Discharge Coefficients	
Control Elevation:	3.18 ft	Weir Default:	2.800
Cross Section:	XB02412O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02412O3

Scenario:	wmp
From Node:	NB02412
To Node:	NB02400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.25 ft
Control Elevation:	3.25 ft
Cross Section:	XB02412O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02412O4

Scenario:	wmp
From Node:	NB02412
To Node:	NB02426
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.25 ft
Control Elevation:	5.25 ft
Cross Section:	XB02412O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02412P

Scenario:	wmp
From Node:	NB02412
To Node:	NB02410
Link Count:	1

Upstream	
Invert:	-0.26 ft
Manning's N:	0.0130
Geometry: Horizontal Ellipse	
Max Depth:	1.00 ft

Downstream	
Invert:	-1.08 ft
Manning's N:	0.0130
Geometry: Horizontal Ellipse	
Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	106.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02425O

		Bottom Clip	
Scenario:	wmp		
From Node:	NB02425	Default:	0.00 ft
To Node:	NB02410	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.45 ft	Discharge Coefficients	
Control Elevation:	4.45 ft	Weir Default:	2.800
Cross Section:	XB02425O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02425O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NB02425	Default:	0.00 ft
To Node:	NB02427	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.15 ft	Discharge Coefficients	
Control Elevation:	5.15 ft	Weir Default:	2.800
Cross Section:	XB02425O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02425P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	-1.08 ft
From Node:	NB02425	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02410	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	155.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02426O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02426	Default:	0.00 ft
To Node:	NB02425	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.83 ft	Discharge Coefficients	
Control Elevation:	4.83 ft	Weir Default:	2.800
Cross Section:	XB02426O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02426O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02426	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.53 ft	Discharge Coefficients	
Control Elevation:	5.53 ft	Weir Default:	2.800
Cross Section:	XB02426O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02426O3

Scenario:	wmp
From Node:	NB02426
To Node:	NB02430
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.50 ft
Control Elevation:	5.50 ft
Cross Section:	XB02426O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02426O4

Scenario:	wmp
From Node:	NB02426
To Node:	NB02410
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.53 ft
Control Elevation:	5.53 ft
Cross Section:	XB02426O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02426P

Scenario:	wmp
From Node:	NB02426
To Node:	NB02425
Link Count:	1

Upstream	
Invert:	3.00 ft
Manning's N:	0.0110
Geometry:	Circular
Max Depth:	0.67 ft

Downstream	
Invert:	2.14 ft
Manning's N:	0.0110
Geometry:	Circular
Max Depth:	0.67 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	105.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02427O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02427	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	8.18 ft	Discharge Coefficients	
Control Elevation:	8.18 ft	Weir Default:	2.800
Cross Section:	XB02427O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02427P		Upstream		Downstream	
Scenario:	wmp	Invert:	3.05 ft	Invert:	0.83 ft
From Node:	NB02427	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02425	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	163.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02430O

Scenario:	wmp
From Node:	NB02430
To Node:	NB02425
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.25 ft
Control Elevation:	5.25 ft
Cross Section:	XB02430O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02430O2

Scenario:	wmp
From Node:	NB02430
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.70 ft
Control Elevation:	8.70 ft
Cross Section:	XB02430O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02430O3

Scenario:	wmp
From Node:	NB02430
To Node:	NB02427
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.31 ft
Control Elevation:	5.31 ft
Cross Section:	XB02430O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RB02430P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.00 ft	Invert:	0.83 ft
From Node:	NB02430	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02425	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	53.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02435O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02435	Default:	0.00 ft
To Node:	NB02410	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XB02435O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02435O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02435	Default:	0.00 ft
To Node:	NB02427	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.80 ft
Control Elevation:	5.80 ft
Cross Section:	XB02435O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02435O3

Scenario:	wmp
From Node:	NB02435
To Node:	NB02315
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.20 ft
Control Elevation:	3.20 ft
Cross Section:	XB02435O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02435O4

Scenario:	wmp
From Node:	NB02435
To Node:	NB02455
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XB02435O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02435P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.34 ft	Invert:	-1.08 ft
From Node:	NB02435	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02410	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	242.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02445O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02445	Default:	0.00 ft
To Node:	NB02435	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.50 ft	Discharge Coefficients	
Control Elevation:	3.50 ft	Weir Default:	2.800
Cross Section:	XB02445O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02445O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02445	Default:	0.00 ft
To Node:	NB02427	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.90 ft	Discharge Coefficients	
Control Elevation:	4.90 ft	Weir Default:	2.800
Cross Section:	XB02445O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02445O3

Scenario:	wmp
From Node:	NB02445
To Node:	NB02235
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.91 ft
Control Elevation:	4.91 ft
Cross Section:	XB02445O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02445O4

Scenario:	wmp
From Node:	NB02445
To Node:	NB02245
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	8.18 ft
Control Elevation:	8.18 ft
Cross Section:	XB02445O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02445O5

Scenario:	wmp
From Node:	NB02445
To Node:	NA01855
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	7.60 ft
Control Elevation:	7.60 ft
Cross Section:	XB02445O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02445P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.75 ft	Invert:	-0.34 ft
From Node:	NB02445	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02435	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	236.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02455O	
Scenario:	wmp
From Node:	NB02455
To Node:	NB02445
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XB02455O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02455O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02455	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.74 ft	Discharge Coefficients	
Control Elevation:	7.74 ft	Weir Default:	2.800
Cross Section:	XB02455O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02455O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02455	Default:	0.00 ft
To Node:	NB02260	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.25 ft	Discharge Coefficients	
Control Elevation:	7.25 ft	Weir Default:	2.800
Cross Section:	XB02455O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02455P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.49 ft	Invert:	0.62 ft
From Node:	NB02455	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02445	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	177.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02500O

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	**Discharge Coefficients**	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XB02500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02500O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02500	Default:	0.00 ft
To Node:	NB02510	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.05 ft	**Discharge Coefficients**	
Control Elevation:	6.05 ft	Weir Default:	2.800
Cross Section:	XB02500O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02500P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	0.51 ft	Invert:	-1.19 ft
From Node:	NB02500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02510O

Scenario:	wmp	Bottom Clip	
From Node:	NB02510	Default:	0.00 ft
To Node:	NB02430	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.46 ft	Discharge Coefficients	
Control Elevation:	5.46 ft	Weir Default:	2.800
Cross Section:	XB02510O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02510O2

Scenario:	wmp	Bottom Clip	
From Node:	NB02510	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.00 ft	Discharge Coefficients	
Control Elevation:	6.00 ft	Weir Default:	2.800
Cross Section:	XB02510O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02510O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02510	Default:	0.00 ft
To Node:	NB02426	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.53 ft	Discharge Coefficients	
Control Elevation:	5.53 ft	Weir Default:	2.800
Cross Section:	XB02510O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02510O4			
Scenario:	wmp	Bottom Clip	
From Node:	NB02510	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.03 ft	Discharge Coefficients	
Control Elevation:	6.03 ft	Weir Default:	2.800
Cross Section:	XB02510O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02510P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.26 ft	Invert:	0.51 ft
From Node:	NB02510	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NB02500	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	54.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02517PO

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02517P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.43 ft	**Discharge Coefficients**	
Control Elevation:	6.43 ft	Weir Default:	2.800
Cross Section:	XB02517PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02517PO2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02517P	Default:	0.00 ft
To Node:	NB02510	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.00 ft	**Discharge Coefficients**	
Control Elevation:	6.00 ft	Weir Default:	2.800
Cross Section:	XB02517PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02517PP

		Upstream		Downstream	
Scenario:	wmp	Invert:	2.77 ft	Invert:	2.26 ft
From Node:	NB02517P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NB02510	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	102.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02600O

Scenario:	wmp	Bottom Clip	
From Node:	NB02600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.71 ft	Discharge Coefficients	
Control Elevation:	2.71 ft	Weir Default:	2.800
Cross Section:	XB02600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02600O2

Scenario:	wmp	Bottom Clip	
From Node:	NB02600	Default:	0.00 ft
To Node:	NB02610	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XB02600O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02600P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.36 ft	Invert:	-0.38 ft
From Node:	NB02600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	13.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02610O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02610	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.22 ft	Discharge Coefficients	
Control Elevation:	2.22 ft	Weir Default:	2.800
Cross Section:	XB02610O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02610O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02610	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XB02610O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02610O3

Scenario:	wmp
From Node:	NB02610
To Node:	NB02620
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.15 ft
Control Elevation:	4.15 ft
Cross Section:	XB02610O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02610P

Scenario:	wmp
From Node:	NB02610
To Node:	NB02600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	51.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.15 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.10 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RB02615O

Scenario:	wmp
From Node:	NB02615
To Node:	NB02610

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.05 ft
Control Elevation:	3.05 ft
Cross Section:	XB02615O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02615O2

Scenario:	wmp
From Node:	NB02615
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.34 ft
Control Elevation:	3.34 ft
Cross Section:	XB02615O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02615O3

Scenario:	wmp
From Node:	NB02615
To Node:	NB02620
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.04 ft
Control Elevation:	4.04 ft
Cross Section:	XB02615O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02615P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.31 ft	Invert:	-0.34 ft
From Node:	NB02615	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02610	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	73.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02616O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02616	Default:	0.00 ft
To Node:	NB02610	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.99 ft	Discharge Coefficients	
Control Elevation:	3.99 ft	Weir Default:	2.800
Cross Section:	XB02616O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02616O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02616	Default:	0.00 ft
To Node:	NB02617	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.59 ft	Discharge Coefficients	
Control Elevation:	4.59 ft	Weir Default:	2.800
Cross Section:	XB02616O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02616O3

Scenario:	wmp
From Node:	NB02616
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XB02616O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02616P

Scenario:	wmp
From Node:	NB02616
To Node:	NB02615
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	193.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.58 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.31 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RB02617O

Scenario:	wmp
From Node:	NB02617
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XB02617O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02617P

		Upstream		Downstream	
Scenario:	wmp	Invert:	2.43 ft	Invert:	1.58 ft
From Node:	NB02617	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02616	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	209.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02618O

Scenario:	wmp
From Node:	NB02618
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.86 ft
Control Elevation:	2.86 ft
Cross Section:	XB02618O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02618O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02618	Default:	0.00 ft
To Node:	NB02615	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.22 ft	Discharge Coefficients	
Control Elevation:	3.22 ft	Weir Default:	2.800
Cross Section:	XB02618O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02618P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.45 ft	Invert:	-0.31 ft
From Node:	NB02618	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NB02615	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	177.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02620O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02620	Default:	0.00 ft
To Node:	NB02517P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.43 ft	Discharge Coefficients	
Control Elevation:	5.43 ft	Weir Default:	2.800
Cross Section:	XB02620O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O2

Scenario:	wmp
From Node:	NB02620
To Node:	NB02616
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XB02620O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O3

Scenario:	wmp
From Node:	NB02620
To Node:	NB02617
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.13 ft
Control Elevation:	5.13 ft
Cross Section:	XB02620O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O4

Scenario:	wmp
From Node:	NB02620
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.67 ft
Control Elevation:	5.67 ft
Cross Section:	XB02620O4

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O5

Scenario:	wmp
From Node:	NB02620
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.23 ft
Control Elevation:	4.23 ft
Cross Section:	XB02620O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O6

Scenario:	wmp
From Node:	NB02620
To Node:	NB02500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.00 ft
Control Elevation:	6.00 ft
Cross Section:	XB02620O6

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02620O7			
Scenario:	wmp	**Bottom Clip**	
From Node:	NB02620	Default:	0.00 ft
To Node:	NB02510	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.60 ft	**Discharge Coefficients**	
Control Elevation:	5.60 ft	Weir Default:	2.800
Cross Section:	XB02620O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02620P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.28 ft	Invert:	-0.31 ft
From Node:	NB02620	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02615	**Geometry: Horizontal Ellipse**		**Geometry: Horizontal Ellipse**	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	**Bottom Clip**			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	56.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	**Top Clip**			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02622O			
Scenario:	wmp	**Bottom Clip**	
From Node:	NB02622	Default:	0.00 ft
To Node:	NB02620	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	**Discharge Coefficients**	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XB02622O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02622O2

Scenario:	wmp
From Node:	NB02622
To Node:	NB02618
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.65 ft
Control Elevation:	3.65 ft
Cross Section:	XB02622O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02622O3

Scenario:	wmp
From Node:	NB02622
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.38 ft
Control Elevation:	6.38 ft
Cross Section:	XB02622O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02622O4

Scenario:	wmp
From Node:	NB02622
To Node:	NB02615
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.00 ft
Control Elevation:	4.00 ft
Cross Section:	XB02622O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02622P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.97 ft	Invert:	-1.70 ft
From Node:	NB02622	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NB02620	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	216.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02700O	
Scenario:	wmp
From Node:	NB02700
To Node:	NB02710
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.58 ft
Control Elevation:	3.58 ft
Cross Section:	XB02700O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.15 ft	Discharge Coefficients	
Control Elevation:	3.15 ft	Weir Default:	2.800
Cross Section:	XB02700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.01 ft	Invert:	0.06 ft
From Node:	NB02700	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	122.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02706O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02706	Default:	0.00 ft
To Node:	NB02700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XB02706O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02706O2

Scenario:	wmp
From Node:	NB02706
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.50 ft
Control Elevation:	3.50 ft
Cross Section:	XB02706O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02706P

Scenario:	wmp
From Node:	NB02706
To Node:	NB02700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	76.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.20 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.01 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RB02707O

Scenario:	wmp
From Node:	NB02707
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.95 ft
Control Elevation:	2.95 ft
Cross Section:	XB02707O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02707O2

Scenario:	wmp
From Node:	NB02707
To Node:	NB02706
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.93 ft
Control Elevation:	2.93 ft
Cross Section:	XB02707O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02707O3

Scenario:	wmp
From Node:	NB02707
To Node:	NB02618
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.16 ft
Control Elevation:	3.16 ft
Cross Section:	XB02707O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02707P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.45 ft	Invert:	1.20 ft
From Node:	NB02707	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02706	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	99.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02710O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02710	Default:	0.00 ft
To Node:	NB02622	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.40 ft	Discharge Coefficients	
Control Elevation:	3.40 ft	Weir Default:	2.800
Cross Section:	XB02710O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02710O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02710	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.93 ft	Discharge Coefficients	
Control Elevation:	4.93 ft	Weir Default:	2.800
Cross Section:	XB02710O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02710O3

Scenario:	wmp
From Node:	NB02710
To Node:	NB02706
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.62 ft
Control Elevation:	3.62 ft
Cross Section:	XB02710O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02710O4

Scenario:	wmp
From Node:	NB02710
To Node:	NB02707
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.55 ft
Control Elevation:	3.55 ft
Cross Section:	XB02710O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02710O5

Scenario:	wmp
From Node:	NB02710
To Node:	NB02618
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.65 ft
Control Elevation:	3.65 ft
Cross Section:	XB02710O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02710P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.36 ft	Invert:	0.01 ft
From Node:	NB02710	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02800O	
Scenario:	wmp
From Node:	NB02800
To Node:	NB02910
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.13 ft
Control Elevation:	3.13 ft
Cross Section:	XB02800O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02800O2

Scenario:	wmp
From Node:	NB02800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.20 ft
Control Elevation:	3.20 ft
Cross Section:	XB02800O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02800O3

Scenario:	wmp
From Node:	NB02800
To Node:	NB02710
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.58 ft
Control Elevation:	3.58 ft
Cross Section:	XB02800O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02800O4

Scenario:	wmp
From Node:	NB02800
To Node:	NB02700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XB02800O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RB02800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.25 ft	Invert:	-1.13 ft
From Node:	NB02800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	159.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02900O			
Scenario:	wmp	Bottom Clip	
From Node:	NB02900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.70 ft	Discharge Coefficients	
Control Elevation:	2.70 ft	Weir Default:	2.800
Cross Section:	XB02900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02900	Default:	0.00 ft
To Node:	NB02910	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.48 ft
Control Elevation:	3.48 ft
Cross Section:	XB02900O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02900P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.31 ft	Invert:	-0.44 ft
From Node:	NB02900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	43.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02910O	
Scenario:	wmp
From Node:	NB02910
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XB02910O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02910O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02910	Default:	0.00 ft
To Node:	NB02930	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XB02910O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02910O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02910	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XB02910O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02910P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.20 ft	Invert:	-0.31 ft
From Node:	NB02910	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02900	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	170.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02930O

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02930	Default:	0.00 ft
To Node:	NB02710	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.17 ft	**Discharge Coefficients**	
Control Elevation:	3.17 ft	Weir Default:	2.800
Cross Section:	XB02930O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02930O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02930	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.38 ft	**Discharge Coefficients**	
Control Elevation:	5.38 ft	Weir Default:	2.800
Cross Section:	XB02930O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02930O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NB02930	Default:	0.00 ft
To Node:	NB02800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.55 ft
Control Elevation:	3.55 ft
Cross Section:	XB02930O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RB02930P

Scenario:	wmp
From Node:	NB02930
To Node:	NB02910
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	53.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.27 ft	Invert:	0.20 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RB02965O

Scenario:	wmp
From Node:	NB02965
To Node:	NB02930
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.13 ft
Control Elevation:	3.13 ft
Cross Section:	XB02965O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RB02965O2			
Scenario:	wmp	Bottom Clip	
From Node:	NB02965	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.45 ft	Discharge Coefficients	
Control Elevation:	5.45 ft	Weir Default:	2.800
Cross Section:	XB02965O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RB02965O3			
Scenario:	wmp	Bottom Clip	
From Node:	NB02965	Default:	0.00 ft
To Node:	NB02910	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.40 ft	Discharge Coefficients	
Control Elevation:	3.40 ft	Weir Default:	2.800
Cross Section:	XB02965O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RB02965P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.94 ft	Invert:	0.20 ft
From Node:	NB02965	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NB02910	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	106.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC002PO

Scenario:	wmp
From Node:	NC002P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.13 ft
Control Elevation:	3.13 ft
Cross Section:	XC002PO

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC002PP

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.20 ft	Invert:	-0.50 ft
From Node:	NC002P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	48.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC003PO

Scenario:	wmp
From Node:	NC003P
To Node:	NC002P
Link Count:	1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.20 ft
Control Elevation:	5.20 ft
Cross Section:	XC003PO

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC003PO2

Scenario:	wmp
From Node:	NC003P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.60 ft
Control Elevation:	6.60 ft
Cross Section:	XC003PO2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC003PP

Scenario:	wmp
From Node:	NC003P
To Node:	NC002P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	99.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.50 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.20 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RC03000O

Scenario:	wmp
From Node:	NC03000
To Node:	NC003P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XC03000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03000O2

Scenario:	wmp
From Node:	NC03000
To Node:	NC002P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XC03000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03000O3

Scenario:	wmp
From Node:	NC03000
To Node:	NC03040
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XC03000O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RC03000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.98 ft	Invert:	0.68 ft
From Node:	NC03000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	192.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03031PO			
Scenario:	wmp	Bottom Clip	
From Node:	NC03031P	Default:	0.00 ft
To Node:	NC03000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.18 ft	Discharge Coefficients	
Control Elevation:	5.18 ft	Weir Default:	2.800
Cross Section:	XC03031PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03031PO2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03031P	Default:	0.00 ft
To Node:	NC03040	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.26 ft
Control Elevation:	5.26 ft
Cross Section:	XC03031PO2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03031PP		Upstream		Downstream	
Scenario:	wmp	Invert:	1.98 ft	Invert:	1.46 ft
From Node:	NC03031P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	68.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03040O	
Scenario:	wmp
From Node:	NC03040
To Node:	NC03055
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.08 ft
Control Elevation:	4.08 ft
Cross Section:	XC03040O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03040P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.67 ft	Invert:	0.98 ft
From Node:	NC03040	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	65.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03050O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03050	Default:	0.00 ft
To Node:	NC03000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.69 ft	Discharge Coefficients	
Control Elevation:	3.69 ft	Weir Default:	2.800
Cross Section:	XC03050O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03050O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03050	Default:	0.00 ft
To Node:	NC03040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.60 ft	Discharge Coefficients	
Control Elevation:	3.60 ft	Weir Default:	2.800
Cross Section:	XC03050O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03050O3

Scenario:	wmp
From Node:	NC03050
To Node:	NB02910
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.55 ft
Control Elevation:	3.55 ft
Cross Section:	XC03050O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03050O4

Scenario:	wmp
From Node:	NC03050
To Node:	NC03055
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.00 ft
Control Elevation:	4.00 ft
Cross Section:	XC03050O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03050P

Scenario:	wmp
From Node:	NC03050
To Node:	NC03040
Link Count:	1

Upstream

Invert:	1.67 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Downstream

Invert:	1.67 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	50.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03055O

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03055	Default:	0.00 ft
To Node:	NB02965	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.60 ft	Discharge Coefficients	
Control Elevation:	3.60 ft	Weir Default:	2.800
Cross Section:	XC03055O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03055O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03055	Default:	0.00 ft
To Node:	NB02910	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.88 ft	Discharge Coefficients	
Control Elevation:	3.88 ft	Weir Default:	2.800
Cross Section:	XC03055O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03055O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03055	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.50 ft	Discharge Coefficients	
Control Elevation:	5.50 ft	Weir Default:	2.800
Cross Section:	XC03055O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03055P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.68 ft	Invert:	1.67 ft
From Node:	NC03055	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NC03050	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	76.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03100O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03100	Default:	0.00 ft
To Node:	NC03000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XC03100O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03100O2

Scenario:	wmp
From Node:	NC03100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XC03100O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03100O3

Scenario:	wmp
From Node:	NC03100
To Node:	NC03120
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.91 ft
Control Elevation:	4.91 ft
Cross Section:	XC03100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03100O4

Scenario:	wmp
From Node:	NC03100
To Node:	NC002P
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.40 ft
Control Elevation:	5.40 ft
Cross Section:	XC03100O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03100P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.19 ft	Invert:	-1.19 ft
From Node:	NC03100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	183.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03120O	
Scenario:	wmp
From Node:	NC03120
To Node:	NC03123P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.98 ft
Control Elevation:	4.98 ft
Cross Section:	XC03120O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03120O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03120	Default:	0.00 ft
To Node:	NC03031P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.82 ft	Discharge Coefficients	
Control Elevation:	5.82 ft	Weir Default:	2.800
Cross Section:	XC03120O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03120O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03120	Default:	0.00 ft
To Node:	NC03000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.26 ft	Discharge Coefficients	
Control Elevation:	4.26 ft	Weir Default:	2.800
Cross Section:	XC03120O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03120P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.55 ft	Invert:	-0.95 ft
From Node:	NC03120	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03100	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	224.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03123PO

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03123P	Default:	0.00 ft
To Node:	NC03125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	**Discharge Coefficients**	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XC03123PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03123PO2

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03123P	Default:	0.00 ft
To Node:	NC03031P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.75 ft	**Discharge Coefficients**	
Control Elevation:	5.75 ft	Weir Default:	2.800
Cross Section:	XC03123PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03123PO3

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03123P	Default:	0.00 ft
To Node:	NC03040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.93 ft
Control Elevation:	5.93 ft
Cross Section:	XC03123PO3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03123PP

Scenario:	wmp
From Node:	NC03123P
To Node:	NC03120
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	64.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	2.20 ft	Invert:	2.00 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03125O

Scenario:	wmp
From Node:	NC03125
To Node:	NC03120
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XC03125O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03125O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03125	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.25 ft	**Discharge Coefficients**	
Control Elevation:	5.25 ft	Weir Default:	2.800
Cross Section:	XC03125O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03125O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03125	Default:	0.00 ft
To Node:	NC06400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.65 ft	**Discharge Coefficients**	
Control Elevation:	5.65 ft	Weir Default:	2.800
Cross Section:	XC03125O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03125O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03125	Default:	0.00 ft
To Node:	NC03040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.28 ft	**Discharge Coefficients**	
Control Elevation:	4.28 ft	Weir Default:	2.800
Cross Section:	XC03125O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RC03125O5

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03125	Default:	0.00 ft
To Node:	NC03055	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.42 ft	**Discharge Coefficients**	
Control Elevation:	4.42 ft	Weir Default:	2.800
Cross Section:	XC03125O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03125P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.10 ft	Invert:	-0.32 ft
From Node:	NC03125	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03120	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	282.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03135O

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03135	Default:	0.00 ft
To Node:	NC03125	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.50 ft
Control Elevation:	2.50 ft
Cross Section:	XC03135O

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03135O2

Scenario:	wmp
From Node:	NC03135
To Node:	NC03137
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XC03135O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03135O3

Scenario:	wmp
From Node:	NC03135
To Node:	NC03160
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.10 ft
Control Elevation:	3.10 ft
Cross Section:	XC03135O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03135P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.10 ft	Invert:	-0.65 ft
From Node:	NC03135	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03125	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	191.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03137O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03137	Default:	0.00 ft
To Node:	NC03125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XC03137O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03137O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03137	Default:	0.00 ft
To Node:	NC03120	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.20 ft	Discharge Coefficients	
Control Elevation:	6.20 ft	Weir Default:	2.800
Cross Section:	XC03137O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03137P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.17 ft	Invert:	-0.10 ft
From Node:	NC03137	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03135	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	103.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03160O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03160	Default:	0.00 ft
To Node:	NC03125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	Discharge Coefficients	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XC03160O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03160O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03160	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.75 ft
Control Elevation:	4.75 ft
Cross Section:	XC03160O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03160P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.18 ft	Invert:	-0.50 ft
From Node:	NC03160	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03125	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	110.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03200O

Scenario:	wmp
From Node:	NC03200
To Node:	NC03220
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.85 ft
Control Elevation:	4.85 ft
Cross Section:	XC03200O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03200O2

Scenario:	wmp
From Node:	NC03200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.90 ft
Control Elevation:	4.90 ft
Cross Section:	XC03200O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03200O3

Scenario:	wmp
From Node:	NC03200
To Node:	NC03222
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.77 ft
Control Elevation:	4.77 ft
Cross Section:	XC03200O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03200O4

Scenario:	wmp
From Node:	NC03200
To Node:	NC03100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XC03200O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RC03200P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.45 ft	Invert:	-0.55 ft
From Node:	NC03200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	177.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03210O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03210	Default:	0.00 ft
To Node:	NC03200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XC03210O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03210P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.51 ft	Invert:	0.45 ft
From Node:	NC03210	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03200	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	92.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03220O

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03220	Default:	0.00 ft
To Node:	NC03210	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XC03220O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03220O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03220	Default:	0.00 ft
To Node:	NC03222	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.65 ft	Discharge Coefficients	
Control Elevation:	4.65 ft	Weir Default:	2.800
Cross Section:	XC03220O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03220O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03220	Default:	0.00 ft
To Node:	NC03120	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.40 ft	Discharge Coefficients	
Control Elevation:	4.40 ft	Weir Default:	2.800
Cross Section:	XC03220O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03220O4			
Scenario:	wmp	Bottom Clip	
From Node:	NC03220	Default:	0.00 ft
To Node:	NC03137	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.70 ft	Discharge Coefficients	
Control Elevation:	4.70 ft	Weir Default:	2.800
Cross Section:	XC03220O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03220P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.23 ft	Invert:	0.51 ft
From Node:	NC03220	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03210	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	233.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03222O

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03222	Default:	0.00 ft
To Node:	NC03100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	**Discharge Coefficients**	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XC03222O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03222O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03222	Default:	0.00 ft
To Node:	NC03120	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.22 ft	**Discharge Coefficients**	
Control Elevation:	5.22 ft	Weir Default:	2.800
Cross Section:	XC03222O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03222P

		Upstream		Downstream	
Scenario:	wmp	Invert:	1.70 ft	Invert:	1.23 ft
From Node:	NC03222	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03220	Geometry: Circular		Geometry: Circular	
Link Count:	2	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	95.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03235O

Scenario:	wmp	Bottom Clip	
From Node:	NC03235	Default:	0.00 ft
To Node:	NC03220	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XC03235O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03235O2

Scenario:	wmp	Bottom Clip	
From Node:	NC03235	Default:	0.00 ft
To Node:	NC03135	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.28 ft	Discharge Coefficients	
Control Elevation:	4.28 ft	Weir Default:	2.800
Cross Section:	XC03235O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03235O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03235	Default:	0.00 ft
To Node:	NC03137	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.83 ft	Discharge Coefficients	
Control Elevation:	4.83 ft	Weir Default:	2.800
Cross Section:	XC03235O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03235P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.77 ft	Invert:	1.72 ft
From Node:	NC03235	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03220	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	101.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03240O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03240	Default:	0.00 ft
To Node:	NC03210	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	Discharge Coefficients	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XC03240O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03240O2

Scenario:	wmp
From Node:	NC03240
To Node:	NC03720
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	XC03240O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03240O3

Scenario:	wmp
From Node:	NC03240
To Node:	NC03723
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.19 ft
Control Elevation:	4.19 ft
Cross Section:	XC03240O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03240O4

Scenario:	wmp
From Node:	NC03240
To Node:	NC03220
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.60 ft
Control Elevation:	5.60 ft
Cross Section:	XC03240O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03240P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.29 ft	Invert:	0.51 ft
From Node:	NC03240	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03210	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	289.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03300O	
Scenario:	wmp
From Node:	NC03300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.64 ft
Control Elevation:	3.64 ft
Cross Section:	XC03300O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03300O2

Scenario:	wmp
From Node:	NC03300
To Node:	NC03200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XC03300O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03300O3

Scenario:	wmp
From Node:	NC03300
To Node:	NC03400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XC03300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03300O4

Scenario:	wmp
From Node:	NC03300
To Node:	NC03615
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XC03300O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RC03300O5

Scenario:	wmp
From Node:	NC03300
To Node:	NC03240
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.41 ft
Control Elevation:	4.41 ft
Cross Section:	XC03300O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03300O6

Scenario:	wmp
From Node:	NC03300
To Node:	NC03210
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XC03300O6

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03300P

Scenario:	wmp
From Node:	NC03300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both

Upstream

Invert:	0.12 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Downstream

Invert:	-1.23 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	209.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03400O

Scenario:	wmp	Bottom Clip	
From Node:	NC03400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.62 ft	Discharge Coefficients	
Control Elevation:	4.62 ft	Weir Default:	2.800
Cross Section:	XC03400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03400P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.63 ft	Invert:	-0.30 ft
From Node:	NC03400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	210.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03415O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03415	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.36 ft	Discharge Coefficients	
Control Elevation:	4.36 ft	Weir Default:	2.800
Cross Section:	XC03415O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03415O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03415	Default:	0.00 ft
To Node:	NC03400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XC03415O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03415O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03415	Default:	0.00 ft
To Node:	NC03300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.70 ft	Discharge Coefficients	
Control Elevation:	4.70 ft	Weir Default:	2.800
Cross Section:	XC03415O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RC03415P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.93 ft	Invert:	0.63 ft
From Node:	NC03415	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03400	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	82.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03500O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.82 ft	Discharge Coefficients	
Control Elevation:	3.82 ft	Weir Default:	2.800
Cross Section:	XC03500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03500	Default:	0.00 ft
To Node:	NC03415	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XC03500O2

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03500O3

Scenario:	wmp
From Node:	NC03500
To Node:	NC03300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XC03500O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03500O4

Scenario:	wmp
From Node:	NC03500
To Node:	NC03615
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.98 ft
Control Elevation:	3.98 ft
Cross Section:	XC03500O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.96 ft	Invert:	-0.37 ft
From Node:	NC03500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	253.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03600O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03600	Default:	0.00 ft
To Node:	NC03500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.20 ft	Discharge Coefficients	
Control Elevation:	4.20 ft	Weir Default:	2.800
Cross Section:	XC03600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.66 ft	Discharge Coefficients	
Control Elevation:	4.66 ft	Weir Default:	2.800
Cross Section:	XC03600O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03600P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.06 ft	Invert:	-0.31 ft
From Node:	NC03600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	189.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03610O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03610	Default:	0.00 ft
To Node:	NC03700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.67 ft	Discharge Coefficients	
Control Elevation:	3.67 ft	Weir Default:	2.800
Cross Section:	XC03610O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03610O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03610	Default:	0.00 ft
To Node:	NC03500	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.98 ft
Control Elevation:	3.98 ft
Cross Section:	XC03610O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03610O3

Scenario:	wmp
From Node:	NC03610
To Node:	NC03600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.32 ft
Control Elevation:	4.32 ft
Cross Section:	XC03610O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03610P

Scenario:	wmp
From Node:	NC03610
To Node:	NC03600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	50.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.92 ft	Invert:	1.06 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03615O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03615	Default:	0.00 ft
To Node:	NC03610	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.88 ft	Discharge Coefficients	
Control Elevation:	3.88 ft	Weir Default:	2.800
Cross Section:	XC03615O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03615O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03615	Default:	0.00 ft
To Node:	NC03240	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XC03615O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03615P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.49 ft	Invert:	0.92 ft
From Node:	NC03615	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03610	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	305.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03625O

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03625	Default:	0.00 ft
To Node:	NC03615	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	**Discharge Coefficients**	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XC03625O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03625O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03625	Default:	0.00 ft
To Node:	NC03240	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	**Discharge Coefficients**	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XC03625O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03625P

		Upstream		Downstream	
Scenario:	wmp	Invert:	2.25 ft	Invert:	1.51 ft
From Node:	NC03625	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NC03615	Geometry: Circular		Geometry: Circular	
Link Count:	2	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	68.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03700O

Scenario:	wmp	Bottom Clip	
From Node:	NC03700	Default:	0.00 ft
To Node:	NC03600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.18 ft	Discharge Coefficients	
Control Elevation:	4.18 ft	Weir Default:	2.800
Cross Section:	XC03700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03700O2

Scenario:	wmp	Bottom Clip	
From Node:	NC03700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.55 ft	Discharge Coefficients	
Control Elevation:	4.55 ft	Weir Default:	2.800
Cross Section:	XC03700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03700O3

Scenario:	wmp
From Node:	NC03700
To Node:	NC03615
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XC03700O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03700O4

Scenario:	wmp
From Node:	NC03700
To Node:	NC06010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XC03700O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03700O5

Scenario:	wmp
From Node:	NC03700
To Node:	NC03715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.52 ft
Control Elevation:	4.52 ft
Cross Section:	XC03700O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RC03700O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03700	Default:	0.00 ft
To Node:	NC06020	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.78 ft	**Discharge Coefficients**	
Control Elevation:	3.78 ft	Weir Default:	2.800
Cross Section:	XC03700O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03700O7

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03700	Default:	0.00 ft
To Node:	NC03825	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	**Discharge Coefficients**	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XC03700O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03700P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.84 ft	Invert:	-0.32 ft
From Node:	NC03700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	191.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03715O

Scenario:	wmp	Bottom Clip	
From Node:	NC03715	Default:	0.00 ft
To Node:	NC03615	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XC03715O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03715O2

Scenario:	wmp	Bottom Clip	
From Node:	NC03715	Default:	0.00 ft
To Node:	NC03625	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.90 ft	Discharge Coefficients	
Control Elevation:	4.90 ft	Weir Default:	2.800
Cross Section:	XC03715O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03715O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03715	Default:	0.00 ft
To Node:	NC03720	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	Discharge Coefficients	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XC03715O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03715P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.00 ft	Invert:	0.84 ft
From Node:	NC03715	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	140.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03716O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03716	Default:	0.00 ft
To Node:	NC03700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	Discharge Coefficients	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XC03716O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03716O2

Scenario:	wmp
From Node:	NC03716
To Node:	NC03715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.18 ft
Control Elevation:	4.18 ft
Cross Section:	XC03716O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03716O3

Scenario:	wmp
From Node:	NC03716
To Node:	NC03720
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XC03716O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03716O4

Scenario:	wmp
From Node:	NC03716
To Node:	NC03730
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.58 ft
Control Elevation:	4.58 ft
Cross Section:	XC03716O4

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03716O5

Scenario:	wmp
From Node:	NC03716
To Node:	NC03825
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XC03716O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03716O6

Scenario:	wmp
From Node:	NC03716
To Node:	NC03845
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XC03716O6

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03716P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.82 ft	Invert:	1.00 ft
From Node:	NC03716	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03715	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	257.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03720O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03720	Default:	0.00 ft
To Node:	NC03625	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.80 ft	Discharge Coefficients	
Control Elevation:	3.80 ft	Weir Default:	2.800
Cross Section:	XC03720O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03720O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03720	Default:	0.00 ft
To Node:	NC03723	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.46 ft	Discharge Coefficients	
Control Elevation:	4.46 ft	Weir Default:	2.800
Cross Section:	XC03720O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03720O3

Scenario:	wmp
From Node:	NC03720
To Node:	NC03730
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.97 ft
Control Elevation:	3.97 ft
Cross Section:	XC03720O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03720O4

Scenario:	wmp
From Node:	NC03720
To Node:	NC03737
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.38 ft
Control Elevation:	4.38 ft
Cross Section:	XC03720O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03720P

Scenario:	wmp
From Node:	NC03720
To Node:	NC03715
Link Count:	1

Upstream

Invert:	1.57 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Downstream

Invert:	1.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	223.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03723O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03723	Default:	0.00 ft
To Node:	NC03220	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.54 ft	Discharge Coefficients	
Control Elevation:	5.54 ft	Weir Default:	2.800
Cross Section:	XC03723O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03723P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.86 ft	Invert:	1.76 ft
From Node:	NC03723	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NC03720	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	82.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03730O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03730	Default:	0.00 ft
To Node:	NC03737	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XC03730O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03730P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.66 ft	Invert:	1.57 ft
From Node:	NC03730	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03720	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	205.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03737O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03737	Default:	0.00 ft
To Node:	NC03723	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.02 ft	Discharge Coefficients	
Control Elevation:	4.02 ft	Weir Default:	2.800
Cross Section:	XC03737O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03737O2

Scenario:	wmp
From Node:	NC03737
To Node:	NC03220
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.40 ft
Control Elevation:	5.40 ft
Cross Section:	XC03737O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03737O3

Scenario:	wmp
From Node:	NC03737
To Node:	NC03235
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.00 ft
Control Elevation:	5.00 ft
Cross Section:	XC03737O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03737P

Scenario:	wmp
From Node:	NC03737
To Node:	NC03730
Link Count:	1

Upstream	
Invert:	1.79 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft

Downstream	
Invert:	1.66 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	81.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03800O

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.66 ft	Discharge Coefficients	
Control Elevation:	3.66 ft	Weir Default:	2.800
Cross Section:	XC03800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03800O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03800	Default:	0.00 ft
To Node:	NC06010	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XC03800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03800O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03800	Default:	0.00 ft
To Node:	NC03825	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.40 ft	Discharge Coefficients	
Control Elevation:	3.40 ft	Weir Default:	2.800
Cross Section:	XC03800O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.33 ft	Invert:	-2.85 ft
From Node:	NC03800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	3.17 ft	Max Depth:	3.17 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	300.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03825O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03825	Default:	0.00 ft
To Node:	NC03830	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.30 ft	Discharge Coefficients	
Control Elevation:	3.30 ft	Weir Default:	2.800
Cross Section:	XC03825O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03825P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.22 ft	Invert:	-2.46 ft
From Node:	NC03825	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03800	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.42 ft	Max Depth:	2.42 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	1.04 ft
Length:	280.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0130
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0130

Comment:

Weir Link: RC03830O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03830	Default:	0.00 ft
To Node:	NC03160	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.28 ft	Discharge Coefficients	
Control Elevation:	3.28 ft	Weir Default:	2.800
Cross Section:	XC03830O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03830O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03830	Default:	0.00 ft
To Node:	NC03845	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.86 ft
Control Elevation:	3.86 ft
Cross Section:	XC03830O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03830O3

Scenario:	wmp
From Node:	NC03830
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.75 ft
Control Elevation:	4.75 ft
Cross Section:	XC03830O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03830O4

Scenario:	wmp
From Node:	NC03830
To Node:	NC03850
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XC03830O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03830P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.25 ft	Invert:	-1.53 ft
From Node:	NC03830	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03825	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	71.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03833PO			
Scenario:	wmp	Bottom Clip	
From Node:	NC03833P	Default:	0.00 ft
To Node:	NC03830	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.17 ft	Discharge Coefficients	
Control Elevation:	6.17 ft	Weir Default:	2.800
Cross Section:	XC03833PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03833PO2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03833P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	14.00 ft	Discharge Coefficients	
Control Elevation:	14.00 ft	Weir Default:	2.800
Cross Section:	XC03833PO2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03833PP		Upstream		Downstream	
Scenario:	wmp	Invert:	0.96 ft	Invert:	2.53 ft
From Node:	NC03833P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NC03830	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	55.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03835PO			
Scenario:	wmp	Bottom Clip	
From Node:	NC03835P	Default:	0.00 ft
To Node:	NC03830	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.28 ft	Discharge Coefficients	
Control Elevation:	6.28 ft	Weir Default:	2.800
Cross Section:	XC03835PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03835PO2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03835P	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.38 ft
Control Elevation:	6.38 ft
Cross Section:	XC03835PO2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03835PP

Scenario:	wmp
From Node:	NC03835P
To Node:	NC03833P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	61.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.89 ft	Invert:	0.72 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		**Geometry: Circular**	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03837PO

Scenario:	wmp
From Node:	NC03837P
To Node:	NC03856
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.99 ft
Control Elevation:	4.99 ft
Cross Section:	XC03837PO

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03837PO2			
Scenario:	wmp	Bottom Clip	
From Node:	NC03837P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.08 ft	Discharge Coefficients	
Control Elevation:	5.08 ft	Weir Default:	2.800
Cross Section:	XC03837PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03837PP		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.77 ft	Invert:	-0.81 ft
From Node:	NC03837P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NC03833P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	48.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03845O			
Scenario:	wmp	Bottom Clip	
From Node:	NC03845	Default:	0.00 ft
To Node:	NC03825	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	Discharge Coefficients	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XC03845O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03845O2

Scenario:	wmp
From Node:	NC03845
To Node:	NC03730
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XC03845O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03845O3

Scenario:	wmp
From Node:	NC03845
To Node:	NC03850
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.16 ft
Control Elevation:	3.16 ft
Cross Section:	XC03845O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03845P

Scenario:	wmp
From Node:	NC03845
To Node:	NC03825
Link Count:	1

Upstream

Invert:	-1.30 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Downstream

Invert:	-2.22 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	298.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03850O

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03850	Default:	0.00 ft
To Node:	NC03135	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.70 ft	Discharge Coefficients	
Control Elevation:	2.70 ft	Weir Default:	2.800
Cross Section:	XC03850O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03850O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NC03850	Default:	0.00 ft
To Node:	NC03737	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.80 ft	Discharge Coefficients	
Control Elevation:	3.80 ft	Weir Default:	2.800
Cross Section:	XC03850O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03850O3			
Scenario:	wmp	Bottom Clip	
From Node:	NC03850	Default:	0.00 ft
To Node:	NC03235	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.91 ft	Discharge Coefficients	
Control Elevation:	4.91 ft	Weir Default:	2.800
Cross Section:	XC03850O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03850O4			
Scenario:	wmp	Bottom Clip	
From Node:	NC03850	Default:	0.00 ft
To Node:	NC03160	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	Discharge Coefficients	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XC03850O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03850P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.07 ft	Invert:	-1.30 ft
From Node:	NC03850	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03845	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	102.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC03855O

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03855	Default:	0.00 ft
To Node:	NC03800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.05 ft	**Discharge Coefficients**	
Control Elevation:	3.05 ft	Weir Default:	2.800
Cross Section:	XC03855O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03855O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NC03855	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.18 ft	**Discharge Coefficients**	
Control Elevation:	4.18 ft	Weir Default:	2.800
Cross Section:	XC03855O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC03855P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.33 ft	Invert:	-2.73 ft
From Node:	NC03855	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC03800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	2.17 ft
Length:	192.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0130
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0130

Comment:

Weir Link: RC03856O

Scenario:	wmp	Bottom Clip	
From Node:	NC03856	Default:	0.00 ft
To Node:	NC03855	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XC03856O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03856O2

Scenario:	wmp	Bottom Clip	
From Node:	NC03856	Default:	0.00 ft
To Node:	ND03900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.30 ft	Discharge Coefficients	
Control Elevation:	3.30 ft	Weir Default:	2.800
Cross Section:	XC03856O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC03856O3

Scenario:	wmp
From Node:	NC03856
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.02 ft
Control Elevation:	4.02 ft
Cross Section:	XC03856O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03856O4

Scenario:	wmp
From Node:	NC03856
To Node:	NC03800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.68 ft
Control Elevation:	3.68 ft
Cross Section:	XC03856O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03856O5

Scenario:	wmp
From Node:	NC03856
To Node:	NC03825
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XC03856O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RC03856O7

Scenario:	wmp
From Node:	NC03856
To Node:	NC03830
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XC03856O7

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03856O8

Scenario:	wmp
From Node:	NC03856
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	14.00 ft
Control Elevation:	14.00 ft
Cross Section:	XC03856O8

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC03856O9

Scenario:	wmp
From Node:	NC03856
To Node:	NC03833P
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.53 ft
Control Elevation:	6.53 ft
Cross Section:	XC03856O9

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC03856P

Scenario:	wmp
From Node:	NC03856
To Node:	NC03855
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	84.00 ft
FHWA Code:	0
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.97 ft	Invert:	-1.07 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Max Depth:	1.58 ft	Max Depth:	1.58 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC06000O

Scenario:	wmp
From Node:	NC06000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.10 ft
Control Elevation:	3.10 ft
Cross Section:	XC06000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC06000P		Upstream		Downstream	
Scenario:	wmp	Invert:	-3.39 ft	Invert:	-3.81 ft
From Node:	NC06000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	43.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC06010O			
Scenario:	wmp	Bottom Clip	
From Node:	NC06010	Default:	0.00 ft
To Node:	NC06000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.25 ft	Discharge Coefficients	
Control Elevation:	3.25 ft	Weir Default:	2.800
Cross Section:	XC06010O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC06010O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC06010	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XC06010O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC06010O3

Scenario:	wmp
From Node:	NC06010
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XC06010O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RC06010O4

Scenario:	wmp
From Node:	NC06010
To Node:	NC03825
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.63 ft
Control Elevation:	4.63 ft
Cross Section:	XC06010O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RC06010P

Scenario:	wmp
From Node:	NC06010
To Node:	NC06000
Link Count:	1

Upstream

Invert:	-2.64 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

Downstream

Invert:	-3.39 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	63.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC06020O

		Bottom Clip	
Scenario:	wmp		
From Node:	NC06020	Default:	0.00 ft
To Node:	NC06010	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.55 ft	Discharge Coefficients	
Control Elevation:	3.55 ft	Weir Default:	2.800
Cross Section:	XC06020O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC06020O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NC06020	Default:	0.00 ft
To Node:	NC03825	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.80 ft	Discharge Coefficients	
Control Elevation:	3.80 ft	Weir Default:	2.800
Cross Section:	XC06020O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RC06020P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.05 ft	Invert:	-0.90 ft
From Node:	NC06020	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NC06010	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	95.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RC06400O			
Scenario:	wmp	Bottom Clip	
From Node:	NC06400	Default:	0.00 ft
To Node:	NC03055	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.38 ft	Discharge Coefficients	
Control Elevation:	5.38 ft	Weir Default:	2.800
Cross Section:	XC06400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RC06400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NC06400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.48 ft	Discharge Coefficients	
Control Elevation:	5.48 ft	Weir Default:	2.800
Cross Section:	XC06400O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Rating Curve Link: RC06400RC

Scenario: wmp
From Node: NC06400
To Node: BDRY
Link Count: 1
Flow Direction: Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
RCC06400	3.10		3.09	

Comment:

Weir Link: RD03900O

Scenario: wmp
From Node: ND03900
To Node: BDRY
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Paved Road Vertical
Geometry Type: Irregular
Invert: 4.10 ft
Control Elevation: 4.10 ft
Cross Section: XD03900O

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Weir Link: RD03900O2

Scenario: wmp
From Node: ND03900
To Node: BDRY
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Paved Road Vertical
Geometry Type: Irregular
Invert: 4.78 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients

Control Elevation:	4.78 ft
Cross Section:	XD03900O2

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD03900O3

Scenario:	wmp
From Node:	ND03900
To Node:	NC03855
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.46 ft
Control Elevation:	3.46 ft
Cross Section:	XD03900O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD03900P

Scenario:	wmp
From Node:	ND03900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	241.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.70 ft	Invert:	-2.24 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	2.50 ft	Max Depth:	2.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04000O

Scenario:	wmp

Bottom Clip

From Node:	ND04000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XD04000O

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04000O2

Scenario:	wmp
From Node:	ND04000
To Node:	ND04015
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.15 ft
Control Elevation:	4.15 ft
Cross Section:	XD04000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04000P

Scenario:	wmp
From Node:	ND04000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	153.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	-2.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	3.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Downstream

Invert:	-2.10 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	3.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

	Manning's N:	0.0000	Manning's N: 0.0000

Comment:

Weir Link: RD04010O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04010	Default:	0.00 ft
To Node:	ND04100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.48 ft	Discharge Coefficients	
Control Elevation:	3.48 ft	Weir Default:	2.800
Cross Section:	XD04010O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04010O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04010	Default:	0.00 ft
To Node:	ND04000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.78 ft	Discharge Coefficients	
Control Elevation:	3.78 ft	Weir Default:	2.800
Cross Section:	XD04010O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04010P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.69 ft	Invert:	-2.00 ft
From Node:	ND04010	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft

Length:	45.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RD04012PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	2.52 ft	Invert:	1.73 ft
From Node:	ND04012P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04010	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	18.20 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	5.00 ft	Ref Node:	
Control Elevation:	5.00 ft	Discharge Coefficients	
Max Depth:	2.00 ft	Weir Default:	3.200
Max Width:	3.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip
Weir:	2	

Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Max Depth:	8333.25 ft
Max Width:	1.50 ft
Fillet:	0.00 ft

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RD04012PO

Scenario:	wmp
From Node:	ND04012P
To Node:	ND04010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.38 ft
Control Elevation:	4.38 ft
Cross Section:	XD04012PO

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04012PO2

Scenario:	wmp
From Node:	ND04012P
To Node:	ND04014P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XD04012PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04014PO

Scenario:	wmp
From Node:	ND04014P
To Node:	ND04010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XD04014PO

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04014PO2

Scenario:	wmp
From Node:	ND04014P
To Node:	ND04016P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.13 ft
Control Elevation:	6.13 ft
Cross Section:	XD04014PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04014PP

Scenario:	wmp
From Node:	ND04014P
To Node:	ND04012P
Link Count:	1

Upstream

Invert:	2.97 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Downstream

Invert:	2.96 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	56.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04015O

		Bottom Clip	
Scenario:	wmp		
From Node:	ND04015	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XD04015O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04015O2

		Bottom Clip	
Scenario:	wmp		
From Node:	ND04015	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.78 ft	Discharge Coefficients	
Control Elevation:	5.78 ft	Weir Default:	2.800
Cross Section:	XD04015O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04015P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.57 ft	Invert:	-3.00 ft
From Node:	ND04015	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	257.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04016PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND04016P	Default:	0.00 ft
To Node:	ND04000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.88 ft	Discharge Coefficients	
Control Elevation:	4.88 ft	Weir Default:	2.800
Cross Section:	XD04016PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04016PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04016P	Default:	0.00 ft
To Node:	ND04015	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.10 ft	Discharge Coefficients	
Control Elevation:	5.10 ft	Weir Default:	2.800
Cross Section:	XD04016PO2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04016PP		Upstream		Downstream	
Scenario:	wmp	Invert:	3.00 ft	Invert:	3.02 ft
From Node:	ND04016P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04014P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	33.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04030O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04030	Default:	0.00 ft
To Node:	ND04015	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.53 ft	Discharge Coefficients	
Control Elevation:	3.53 ft	Weir Default:	2.800
Cross Section:	XD04030O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04030O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04030	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.15 ft
Control Elevation:	4.15 ft
Cross Section:	XD04030O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04030O3

Scenario:	wmp
From Node:	ND04030
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XD04030O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04030O4

Scenario:	wmp
From Node:	ND04030
To Node:	ND03900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.62 ft
Control Elevation:	3.62 ft
Cross Section:	XD04030O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04030P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.06 ft	Invert:	-2.57 ft
From Node:	ND04030	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04015	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	519.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04100O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04100	Default:	0.00 ft
To Node:	ND04200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.01 ft	Discharge Coefficients	
Control Elevation:	3.01 ft	Weir Default:	2.800
Cross Section:	XD04100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04100O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04100	Default:	0.00 ft
To Node:	ND04000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.32 ft	Discharge Coefficients	
Control Elevation:	3.32 ft	Weir Default:	2.800
Cross Section:	XD04100O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04100O3

Scenario:	wmp
From Node:	ND04100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.35 ft
Control Elevation:	4.35 ft
Cross Section:	XD04100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04100P

Scenario:	wmp
From Node:	ND04100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	137.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.16 ft	Invert:	-0.27 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04200O

Scenario:	wmp
From Node:	ND04200
To Node:	ND04315

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.75 ft
Control Elevation:	3.75 ft
Cross Section:	XD04200O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04200O2

Scenario:	wmp
From Node:	ND04200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.50 ft
Control Elevation:	3.50 ft
Cross Section:	XD04200O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04200O3

Scenario:	wmp
From Node:	ND04200
To Node:	ND04300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.60 ft
Control Elevation:	3.60 ft
Cross Section:	XD04200O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04200O4			
Scenario:	wmp	Bottom Clip	
From Node:	ND04200	Default:	0.00 ft
To Node:	ND04316P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.70 ft	Discharge Coefficients	
Control Elevation:	4.70 ft	Weir Default:	2.800
Cross Section:	XD04200O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04200O5			
Scenario:	wmp	Bottom Clip	
From Node:	ND04200	Default:	0.00 ft
To Node:	ND04010	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	Discharge Coefficients	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XD04200O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04200O6			
Scenario:	wmp	Bottom Clip	
From Node:	ND04200	Default:	0.00 ft
To Node:	ND04012P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.83 ft	Discharge Coefficients	
Control Elevation:	5.83 ft	Weir Default:	2.800
Cross Section:	XD04200O6	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RD04200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.08 ft	Invert:	-0.86 ft
From Node:	ND04200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	132.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04300O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XD04300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.47 ft	Invert:	-1.01 ft
From Node:	ND04300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	175.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04315O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04315	Default:	0.00 ft
To Node:	ND04300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	Discharge Coefficients	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XD04315O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04315P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.48 ft	Invert:	-0.47 ft
From Node:	ND04315	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	192.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RD04316PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	2.50 ft	Invert:	0.48 ft
From Node:	ND04316P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	31.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	5.01 ft	Ref Node:	
Control Elevation:	5.01 ft	Discharge Coefficients	
Max Depth:	3.00 ft	Weir Default:	3.200
Max Width:	2.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	4.51 ft	Ref Node:	
Control Elevation:	4.51 ft	Discharge Coefficients	
Max Depth:	8333.25 ft	Weir Default:	3.200
Max Width:	1.50 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RD04316PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND04316P	Default:	0.00 ft
To Node:	ND04315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.60 ft	Discharge Coefficients	
Control Elevation:	4.60 ft	Weir Default:	2.800
Cross Section:	XD04316PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04316PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04316P	Default:	0.00 ft
To Node:	ND04318P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.62 ft	Discharge Coefficients	
Control Elevation:	6.62 ft	Weir Default:	2.800
Cross Section:	XD04316PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04316PO3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04316P	Default:	0.00 ft
To Node:	ND04012P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft

Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.25 ft
Control Elevation:	6.25 ft
Cross Section:	XD04316PO3

Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04316PO4

Scenario:	wmp
From Node:	ND04316P
To Node:	ND04014P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.23 ft
Control Elevation:	6.23 ft
Cross Section:	XD04316PO4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04316PO5

Scenario:	wmp
From Node:	ND04316P
To Node:	ND04016P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.56 ft
Control Elevation:	6.56 ft
Cross Section:	XD04316PO5

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04318PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND04318P	Default:	0.00 ft
To Node:	ND04315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.68 ft	Discharge Coefficients	
Control Elevation:	4.68 ft	Weir Default:	2.800
Cross Section:	XD04318PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04318PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04318P	Default:	0.00 ft
To Node:	ND04015	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.18 ft	Discharge Coefficients	
Control Elevation:	5.18 ft	Weir Default:	2.800
Cross Section:	XD04318PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04318PP		Upstream		Downstream	
Scenario:	wmp	Invert:	2.90 ft	Invert:	3.04 ft
From Node:	ND04318P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04316P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	37.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04400O

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.59 ft	**Discharge Coefficients**	
Control Elevation:	2.59 ft	Weir Default:	2.800
Cross Section:	XD04400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04400O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04400	Default:	0.00 ft
To Node:	ND04300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.82 ft	**Discharge Coefficients**	
Control Elevation:	2.82 ft	Weir Default:	2.800
Cross Section:	XD04400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04400P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	-0.71 ft	Invert:	-2.49 ft
From Node:	ND04400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	147.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04500O

Scenario:	wmp	Bottom Clip	
From Node:	ND04500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.99 ft	Discharge Coefficients	
Control Elevation:	2.99 ft	Weir Default:	2.800
Cross Section:	XD04500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04500O2

Scenario:	wmp	Bottom Clip	
From Node:	ND04500	Default:	0.00 ft
To Node:	ND04511	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XD04500O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04500O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04500	Default:	0.00 ft
To Node:	ND04400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.25 ft	Discharge Coefficients	
Control Elevation:	3.25 ft	Weir Default:	2.800
Cross Section:	XD04500O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04500P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.45 ft	Invert:	-2.61 ft
From Node:	ND04500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	192.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04511O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04511	Default:	0.00 ft
To Node:	ND04400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XD04511O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04511O2

Scenario:	wmp
From Node:	ND04511
To Node:	ND04550
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.08 ft
Control Elevation:	5.08 ft
Cross Section:	XD04511O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04511O3

Scenario:	wmp
From Node:	ND04511
To Node:	ND04515
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XD04511O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04511O4

Scenario:	wmp
From Node:	ND04511
To Node:	ND04530
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XD04511O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04511P

Scenario:	wmp
From Node:	ND04511
To Node:	ND04500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	35.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.64 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.55 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD04512O

Scenario:	wmp
From Node:	ND04512
To Node:	ND04511
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.00 ft
Control Elevation:	3.00 ft
Cross Section:	XD04512O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04512O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04512	Default:	0.00 ft
To Node:	ND04400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.68 ft	Discharge Coefficients	
Control Elevation:	2.68 ft	Weir Default:	2.800
Cross Section:	XD04512O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04512O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04512	Default:	0.00 ft
To Node:	ND04513	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XD04512O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04512O4			
Scenario:	wmp	Bottom Clip	
From Node:	ND04512	Default:	0.00 ft
To Node:	ND04530	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.40 ft	Discharge Coefficients	
Control Elevation:	4.40 ft	Weir Default:	2.800
Cross Section:	XD04512O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RD04512P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.76 ft	Invert:	-0.64 ft
From Node:	ND04512	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04511	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	200.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04513O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04513	Default:	0.00 ft
To Node:	ND04400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.68 ft	Discharge Coefficients	
Control Elevation:	2.68 ft	Weir Default:	2.800
Cross Section:	XD04513O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04513O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04513	Default:	0.00 ft
To Node:	ND04300	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.88 ft
Control Elevation:	2.88 ft
Cross Section:	XD04513O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04513O3

Scenario:	wmp
From Node:	ND04513
To Node:	ND04530
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.33 ft
Control Elevation:	4.33 ft
Cross Section:	XD04513O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04513P

Scenario:	wmp
From Node:	ND04513
To Node:	ND04512
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	32.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.36 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.76 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD04515O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04515	Default:	0.00 ft
To Node:	ND04530	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.91 ft	Discharge Coefficients	
Control Elevation:	3.91 ft	Weir Default:	2.800
Cross Section:	XD04515O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04515O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04515	Default:	0.00 ft
To Node:	ND04542	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XD04515O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04515P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.29 ft	Invert:	-2.45 ft
From Node:	ND04515	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04500	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	362.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04530O

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04530	Default:	0.00 ft
To Node:	ND04300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	**Discharge Coefficients**	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XD04530O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04530O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04530	Default:	0.00 ft
To Node:	ND04315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.18 ft	**Discharge Coefficients**	
Control Elevation:	4.18 ft	Weir Default:	2.800
Cross Section:	XD04530O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04530O3

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04530	Default:	0.00 ft
To Node:	ND04318P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.13 ft
Control Elevation:	5.13 ft
Cross Section:	XD04530O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04530O4

Scenario:	wmp
From Node:	ND04530
To Node:	ND04015
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XD04530O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04530P

Scenario:	wmp
From Node:	ND04530
To Node:	ND04515
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	217.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.60 ft	Invert:	-2.29 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	2.00 ft	Max Depth:	2.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04542O

Scenario:	wmp
From Node:	ND04542
To Node:	ND04530
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.73 ft
Control Elevation:	3.73 ft
Cross Section:	XD04542O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04542O2

Scenario:	wmp
From Node:	ND04542
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XD04542O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04542O3

Scenario:	wmp
From Node:	ND04542
To Node:	ND04015
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.22 ft
Control Elevation:	4.22 ft
Cross Section:	XD04542O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RD04542P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.72 ft	Invert:	-1.60 ft
From Node:	ND04542	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04530	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	36.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04550O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04550	Default:	0.00 ft
To Node:	ND04515	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.55 ft	Discharge Coefficients	
Control Elevation:	3.55 ft	Weir Default:	2.800
Cross Section:	XD04550O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04550O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04550	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.90 ft
Control Elevation:	4.90 ft
Cross Section:	XD04550O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04550O3

Scenario:	wmp
From Node:	ND04550
To Node:	ND04555
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XD04550O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04550P

Scenario:	wmp
From Node:	ND04550
To Node:	ND04515
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	235.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-1.85 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.67 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-2.29 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.67 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD04555O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04555	Default:	0.00 ft
To Node:	ND06110P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.07 ft	Discharge Coefficients	
Control Elevation:	6.07 ft	Weir Default:	2.800
Cross Section:	XD04555O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04555O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04555	Default:	0.00 ft
To Node:	ND04515	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.38 ft	Discharge Coefficients	
Control Elevation:	4.38 ft	Weir Default:	2.800
Cross Section:	XD04555O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04555O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04555	Default:	0.00 ft
To Node:	ND06300P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.48 ft	Discharge Coefficients	
Control Elevation:	4.48 ft	Weir Default:	2.800
Cross Section:	XD04555O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RD04555O4

Scenario:	wmp
From Node:	ND04555
To Node:	ND04542
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.01 ft
Control Elevation:	4.01 ft
Cross Section:	XD04555O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04555P

Scenario:	wmp
From Node:	ND04555
To Node:	ND04550
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	90.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	-0.77 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-1.12 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD04565O

Scenario:	wmp
From Node:	ND04565
To Node:	ND04555
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.40 ft
Control Elevation:	3.40 ft
Cross Section:	XD04565O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04565O2

Scenario:	wmp
From Node:	ND04565
To Node:	ND06300P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.65 ft
Control Elevation:	3.65 ft
Cross Section:	XD04565O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04565O3

Scenario:	wmp
From Node:	ND04565
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.65 ft
Control Elevation:	4.65 ft
Cross Section:	XD04565O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04565P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.87 ft	Invert:	-0.77 ft
From Node:	ND04565	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04555	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	57.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RD04571PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	2.75 ft	Invert:	0.87 ft
From Node:	ND04571P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04565	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	297.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	4.30 ft	Ref Node:	
Control Elevation:	4.30 ft	Discharge Coefficients	
Max Depth:	8333.25 ft	Weir Default:	3.200
Max Width:	4.00 ft		

Fillet:	0.00 ft

Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	4.95 ft
Control Elevation:	4.95 ft
Max Depth:	3.00 ft
Max Width:	2.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: RD04571PDS2

Scenario:	wmp
From Node:	ND04571P
To Node:	ND04565
Link Count:	1
Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	3
Damping:	0.0000 ft
Length:	68.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream Pipe

Invert:	3.37 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream Pipe

Invert:	3.50 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	0.67 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	

Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	5.15 ft
Control Elevation:	5.15 ft
Max Depth:	3.00 ft
Max Width:	2.00 ft
Fillet:	0.00 ft

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Max Depth:	8333.25 ft
Max Width:	4.00 ft
Fillet:	0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RD04571PO

Scenario:	wmp
From Node:	ND04571P
To Node:	ND04565
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.93 ft
Control Elevation:	4.93 ft
Cross Section:	XD04571PO

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04600O

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.66 ft	**Discharge Coefficients**	
Control Elevation:	2.66 ft	Weir Default:	2.800
Cross Section:	XD04600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04600O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04600	Default:	0.00 ft
To Node:	ND04500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.04 ft	**Discharge Coefficients**	
Control Elevation:	3.04 ft	Weir Default:	2.800
Cross Section:	XD04600O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04600O3

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04600	Default:	0.00 ft
To Node:	ND04550	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.23 ft	**Discharge Coefficients**	
Control Elevation:	4.23 ft	Weir Default:	2.800
Cross Section:	XD04600O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RD04600O4

Scenario:	wmp
From Node:	ND04600
To Node:	ND04511
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XD04600O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04600P

Scenario:	wmp
From Node:	ND04600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	114.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-1.02 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.52 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	2.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD04700O

Scenario:	wmp
From Node:	ND04700
To Node:	BDRY
Link Count:	1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.29 ft
Control Elevation:	3.29 ft
Cross Section:	XD04700O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04700O2

Scenario:	wmp
From Node:	ND04700
To Node:	ND04715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XD04700O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04700O3

Scenario:	wmp
From Node:	ND04700
To Node:	ND04550
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.58 ft
Control Elevation:	4.58 ft
Cross Section:	XD04700O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.66 ft	Invert:	-2.00 ft
From Node:	ND04700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	150.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04715O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04715	Default:	0.00 ft
To Node:	ND04550	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.97 ft	Discharge Coefficients	
Control Elevation:	3.97 ft	Weir Default:	2.800
Cross Section:	XD04715O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04715O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04715	Default:	0.00 ft
To Node:	ND04555	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.58 ft	Discharge Coefficients	
Control Elevation:	4.58 ft	Weir Default:	2.800
Cross Section:	XD04715O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04715P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.66 ft	Invert:	0.66 ft
From Node:	ND04715	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	267.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04800O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.15 ft	Discharge Coefficients	
Control Elevation:	3.15 ft	Weir Default:	2.800
Cross Section:	XD04800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04800O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04800	Default:	0.00 ft
To Node:	ND04700	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.25 ft
Control Elevation:	4.25 ft
Cross Section:	XD04800O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04800O3

Scenario:	wmp
From Node:	ND04800
To Node:	ND04815
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.77 ft
Control Elevation:	4.77 ft
Cross Section:	XD04800O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04800P

Scenario:	wmp
From Node:	ND04800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	138.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.35 ft	Invert:	-0.97 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04815O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04815	Default:	0.00 ft
To Node:	ND04700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.70 ft	Discharge Coefficients	
Control Elevation:	4.70 ft	Weir Default:	2.800
Cross Section:	XD04815O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04815O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04815	Default:	0.00 ft
To Node:	ND04715	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XD04815O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04815P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.00 ft	Invert:	-0.35 ft
From Node:	ND04815	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	212.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04900O

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	**Discharge Coefficients**	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XD04900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04900O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04900	Default:	0.00 ft
To Node:	ND04915	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.63 ft	**Discharge Coefficients**	
Control Elevation:	4.63 ft	Weir Default:	2.800
Cross Section:	XD04900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04900O3

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04900	Default:	0.00 ft
To Node:	ND04800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.16 ft
Control Elevation:	4.16 ft
Cross Section:	XD04900O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04900O4

Scenario:	wmp
From Node:	ND04900
To Node:	ND04815
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XD04900O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04900P

Scenario:	wmp
From Node:	ND04900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	121.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-3.00 ft	Invert:	-4.00 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	3.00 ft	Max Depth:	3.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04913O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04913	Default:	0.00 ft
To Node:	ND05000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XD04913O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04913O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04913	Default:	0.00 ft
To Node:	ND04900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XD04913O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04913O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04913	Default:	0.00 ft
To Node:	ND04915	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.86 ft	Discharge Coefficients	
Control Elevation:	4.86 ft	Weir Default:	2.800
Cross Section:	XD04913O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:

Comment:

Pipe Link: RD04913P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.62 ft	Invert:	2.18 ft
From Node:	ND04913	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04915	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.67 ft	Max Depth:	0.67 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	82.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: RD04915P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.58 ft	Invert:	-3.00 ft
From Node:	ND04915	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04900	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	112.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04925O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04925	Default:	0.00 ft
To Node:	ND04915	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XD04925O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04925O2

Scenario:	wmp
From Node:	ND04925
To Node:	ND04913
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.62 ft
Control Elevation:	4.62 ft
Cross Section:	XD04925O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04925O3

Scenario:	wmp
From Node:	ND04925
To Node:	ND04900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.28 ft
Control Elevation:	5.28 ft
Cross Section:	XD04925O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04925O4			
Scenario:	wmp	Bottom Clip	
From Node:	ND04925	Default:	0.00 ft
To Node:	ND04815	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.10 ft	Discharge Coefficients	
Control Elevation:	5.10 ft	Weir Default:	2.800
Cross Section:	XD04925O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04925O5			
Scenario:	wmp	Bottom Clip	
From Node:	ND04925	Default:	0.00 ft
To Node:	ND04930	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XD04925O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04925O6			
Scenario:	wmp	Bottom Clip	
From Node:	ND04925	Default:	0.00 ft
To Node:	ND04935	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XD04925O6	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RD04925P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.10 ft	Invert:	-1.80 ft
From Node:	ND04925	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04915	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	236.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04930O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04930	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.33 ft	Discharge Coefficients	
Control Elevation:	5.33 ft	Weir Default:	2.800
Cross Section:	XD04930O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04930P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.11 ft	Invert:	-2.36 ft
From Node:	ND04930	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04915	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	67.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04935O

		Bottom Clip	
Scenario:	wmp		
From Node:	ND04935	Default:	0.00 ft
To Node:	ND04815	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.50 ft	Discharge Coefficients	
Control Elevation:	3.50 ft	Weir Default:	2.800
Cross Section:	XD04935O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04935O2

		Bottom Clip	
Scenario:	wmp		
From Node:	ND04935	Default:	0.00 ft
To Node:	ND04715	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	Discharge Coefficients	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XD04935O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04935O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND04935	Default:	0.00 ft
To Node:	ND04930	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.76 ft	Discharge Coefficients	
Control Elevation:	3.76 ft	Weir Default:	2.800
Cross Section:	XD04935O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04935O4			
Scenario:	wmp	Bottom Clip	
From Node:	ND04935	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.50 ft	Discharge Coefficients	
Control Elevation:	5.50 ft	Weir Default:	2.800
Cross Section:	XD04935O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04935P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.43 ft	Invert:	-2.11 ft
From Node:	ND04935	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04930	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	222.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	
		Manning's N:	0.0000
		Ref Node:	
		Manning's N:	0.0000

Comment:

Weir Link: RD04947O

Scenario:	wmp
From Node:	ND04947
To Node:	ND04935
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XD04947O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04947O2

Scenario:	wmp
From Node:	ND04947
To Node:	ND04715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.37 ft
Control Elevation:	4.37 ft
Cross Section:	XD04947O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04947O3

Scenario:	wmp
From Node:	ND04947
To Node:	ND04555
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.02 ft
Control Elevation:	4.02 ft
Cross Section:	XD04947O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04947O4

Scenario:	wmp
From Node:	ND04947
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.28 ft
Control Elevation:	5.28 ft
Cross Section:	XD04947O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04947O5

Scenario:	wmp
From Node:	ND04947
To Node:	ND06215P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.60 ft
Control Elevation:	5.60 ft
Cross Section:	XD04947O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04947O6			
Scenario:	wmp	Bottom Clip	
From Node:	ND04947	Default:	0.00 ft
To Node:	ND04949P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.20 ft	Discharge Coefficients	
Control Elevation:	5.20 ft	Weir Default:	2.800
Cross Section:	XD04947O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04947P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.60 ft	Invert:	-1.43 ft
From Node:	ND04947	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04935	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	293.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RD04949PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	3.08 ft	Invert:	1.85 ft
From Node:	ND04949P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04947	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	180.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft

Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	5.56 ft
Control Elevation:	5.56 ft
Max Depth:	3.00 ft
Max Width:	2.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	4.91 ft
Control Elevation:	4.91 ft
Max Depth:	8333.25 ft
Max Width:	4.00 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RD04949PO

Scenario:	wmp
From Node:	ND04949P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.80 ft
Control Elevation:	4.80 ft
Cross Section:	XD04949PO

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04949PO2

Scenario:	wmp
From Node:	ND04949P
To Node:	ND06105P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.50 ft
Control Elevation:	6.50 ft
Cross Section:	XD04949PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04949PO3

Scenario:	wmp
From Node:	ND04949P
To Node:	ND06110P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.70 ft
Control Elevation:	6.70 ft
Cross Section:	XD04949PO3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04949PO4

Scenario:	wmp
From Node:	ND04949P
To Node:	ND04571P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.33 ft
Control Elevation:	6.33 ft
Cross Section:	XD04949PO4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04949PO5

Scenario:	wmp
From Node:	ND04949P
To Node:	ND04565
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XD04949PO5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD04951O

Scenario:	wmp
From Node:	ND04951
To Node:	ND04930
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.83 ft
Control Elevation:	3.83 ft
Cross Section:	XD04951O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RD04951O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04951	Default:	0.00 ft
To Node:	ND04925	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.96 ft	**Discharge Coefficients**	
Control Elevation:	3.96 ft	Weir Default:	2.800
Cross Section:	XD04951O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04951O3

Scenario:	wmp	**Bottom Clip**	
From Node:	ND04951	Default:	0.00 ft
To Node:	ND05600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.20 ft	**Discharge Coefficients**	
Control Elevation:	5.20 ft	Weir Default:	2.800
Cross Section:	XD04951O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04951P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.46 ft	Invert:	-1.10 ft
From Node:	ND04951	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04925	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	66.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04960O

Scenario:	wmp	Bottom Clip	
From Node:	ND04960	Default:	0.00 ft
To Node:	ND04925	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.73 ft	Discharge Coefficients	
Control Elevation:	3.73 ft	Weir Default:	2.800
Cross Section:	XD04960O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04960O2

Scenario:	wmp	Bottom Clip	
From Node:	ND04960	Default:	0.00 ft
To Node:	ND04961	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.31 ft	Discharge Coefficients	
Control Elevation:	4.31 ft	Weir Default:	2.800
Cross Section:	XD04960O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD04960P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.27 ft	Invert:	-1.10 ft
From Node:	ND04960	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04925	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	195.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD04961O			
Scenario:	wmp	Bottom Clip	
From Node:	ND04961	Default:	0.00 ft
To Node:	ND04951	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XD04961O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD04961O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND04961	Default:	0.00 ft
To Node:	ND04925	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XD04961O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD04961P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.23 ft	Invert:	-0.27 ft
From Node:	ND04961	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND04960	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	66.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05000O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.10 ft	Discharge Coefficients	
Control Elevation:	3.10 ft	Weir Default:	2.800
Cross Section:	XD05000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05000O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05000	Default:	0.00 ft
To Node:	ND04925	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.76 ft
Control Elevation:	3.76 ft
Cross Section:	XD05000O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05000O3

Scenario:	wmp
From Node:	ND05000
To Node:	ND04900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XD05000O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05000P

Scenario:	wmp
From Node:	ND05000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	135.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.61 ft	Invert:	-1.21 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	2.00 ft	Max Depth:	2.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05100O

Scenario:	wmp
From Node:	ND05100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.42 ft
Control Elevation:	2.42 ft
Cross Section:	XD05100O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05100O2

Scenario:	wmp
From Node:	ND05100
To Node:	ND04960
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.98 ft
Control Elevation:	3.98 ft
Cross Section:	XD05100O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05100O3

Scenario:	wmp
From Node:	ND05100
To Node:	ND05000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.13 ft
Control Elevation:	3.13 ft
Cross Section:	XD05100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RD05100O4

Scenario:	wmp
From Node:	ND05100
To Node:	ND04925
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.95 ft
Control Elevation:	4.95 ft
Cross Section:	XD05100O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05100P

Scenario:	wmp
From Node:	ND05100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	73.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.30 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.50 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD05200O

Scenario:	wmp
From Node:	ND05200
To Node:	BDRY
Link Count:	1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.90 ft
Control Elevation:	2.90 ft
Cross Section:	XD05200O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05200O2

Scenario:	wmp
From Node:	ND05200
To Node:	ND05100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.07 ft
Control Elevation:	3.07 ft
Cross Section:	XD05200O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05200O3

Scenario:	wmp
From Node:	ND05200
To Node:	ND05365
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XD05200O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.49 ft	Invert:	-0.71 ft
From Node:	ND05200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	34.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05300O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.35 ft	Discharge Coefficients	
Control Elevation:	3.35 ft	Weir Default:	2.800
Cross Section:	XD05300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05300O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05300	Default:	0.00 ft
To Node:	ND05310	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.40 ft	Discharge Coefficients	
Control Elevation:	3.40 ft	Weir Default:	2.800
Cross Section:	XD05300O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05300O3

Scenario:	wmp
From Node:	ND05300
To Node:	ND05316
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.70 ft
Control Elevation:	3.70 ft
Cross Section:	XD05300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05300O4

Scenario:	wmp
From Node:	ND05300
To Node:	ND05200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.48 ft
Control Elevation:	3.48 ft
Cross Section:	XD05300O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05300O5

Scenario:	wmp
From Node:	ND05300
To Node:	ND05365
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.43 ft
Control Elevation:	4.43 ft
Cross Section:	XD05300O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.30 ft	Invert:	-2.56 ft
From Node:	ND05300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	114.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05310O	
Scenario:	wmp
From Node:	ND05310
To Node:	ND05316
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.68 ft
Control Elevation:	3.68 ft
Cross Section:	XD05310O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05310P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.11 ft	Invert:	-2.30 ft
From Node:	ND05310	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	118.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05315O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05315	Default:	0.00 ft
To Node:	ND05310	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XD05315O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05315O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05315	Default:	0.00 ft
To Node:	ND05360	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XD05315O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05315P		Upstream		Downstream	
Scenario:	wmp	Invert:	-2.02 ft	Invert:	-2.30 ft
From Node:	ND05315	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05310	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	54.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05316O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05316	Default:	0.00 ft
To Node:	ND05315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.62 ft	Discharge Coefficients	
Control Elevation:	3.62 ft	Weir Default:	2.800
Cross Section:	XD05316O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05316O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05316	Default:	0.00 ft
To Node:	ND05365	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.65 ft
Control Elevation:	3.65 ft
Cross Section:	XD05316O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05316O3

Scenario:	wmp
From Node:	ND05316
To Node:	ND05360
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.28 ft
Control Elevation:	4.28 ft
Cross Section:	XD05316O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05316P

Scenario:	wmp
From Node:	ND05316
To Node:	ND05315
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	48.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.75 ft	Invert:	-2.02 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05335O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05335	Default:	0.00 ft
To Node:	ND05345	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	12.66 ft	Discharge Coefficients	
Control Elevation:	12.66 ft	Weir Default:	2.800
Cross Section:	XD05335O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD05335P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.64 ft	Invert:	-2.02 ft
From Node:	ND05335	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND05315	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	238.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05337O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05337	Default:	0.00 ft
To Node:	ND05355	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	11.90 ft	Discharge Coefficients	
Control Elevation:	11.90 ft	Weir Default:	2.800
Cross Section:	XD05337O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05337P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.22 ft	Invert:	-1.64 ft
From Node:	ND05337	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND05335	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	79.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05339O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05339	Default:	0.00 ft
To Node:	ND05310	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.03 ft	Discharge Coefficients	
Control Elevation:	3.03 ft	Weir Default:	2.800
Cross Section:	XD05339O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05339O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05339	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XD05339O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05339O3

Scenario:	wmp
From Node:	ND05339
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.89 ft
Control Elevation:	3.89 ft
Cross Section:	XD05339O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05339O4

Scenario:	wmp
From Node:	ND05339
To Node:	ND05300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XD05339O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05339P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.04 ft	Invert:	-1.64 ft
From Node:	ND05339	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05335	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	91.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05345O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05345	Default:	0.00 ft
To Node:	ND05310	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.03 ft	Discharge Coefficients	
Control Elevation:	6.03 ft	Weir Default:	2.800
Cross Section:	XD05345O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05345O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05345	Default:	0.00 ft
To Node:	ND05315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.25 ft	Discharge Coefficients	
Control Elevation:	6.25 ft	Weir Default:	2.800
Cross Section:	XD05345O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05345P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.91 ft	Invert:	-2.02 ft
From Node:	ND05345	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05315	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	39.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: RD05355P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.84 ft	Invert:	-2.02 ft
From Node:	ND05355	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND05345	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	79.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05360O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05360	Default:	0.00 ft

To Node:	ND05355
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.58 ft
Control Elevation:	5.58 ft
Cross Section:	XD05360O

Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05360O2

Scenario:	wmp
From Node:	ND05360
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.45 ft
Control Elevation:	5.45 ft
Cross Section:	XD05360O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05360P

Scenario:	wmp
From Node:	ND05360
To Node:	ND05355
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	105.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.50 ft	Invert:	-1.84 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	2.00 ft	Max Depth:	2.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05365O

Scenario:	wmp
From Node:	ND05365
To Node:	ND05360
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.54 ft
Control Elevation:	3.54 ft
Cross Section:	XD05365O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05365O2

Scenario:	wmp
From Node:	ND05365
To Node:	ND05100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.00 ft
Control Elevation:	5.00 ft
Cross Section:	XD05365O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05365O3

Scenario:	wmp
From Node:	ND05365
To Node:	ND05500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	

Geometry Type:	Irregular
Invert:	6.15 ft
Control Elevation:	6.15 ft
Cross Section:	XD05365O3

Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05365O4

Scenario:	wmp
From Node:	ND05365
To Node:	ND04960
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.00 ft
Control Elevation:	4.00 ft
Cross Section:	XD05365O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05365O5

Scenario:	wmp
From Node:	ND05365
To Node:	ND04961
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.75 ft
Control Elevation:	4.75 ft
Cross Section:	XD05365O5

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05365O6

Scenario:	wmp
From Node:	ND05365
To Node:	ND05500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.85 ft
Control Elevation:	5.85 ft
Cross Section:	XD05365O6

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05365P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.50 ft	Invert:	-1.60 ft
From Node:	ND05365	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05360	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	206.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05375O	
Scenario:	wmp
From Node:	ND05375
To Node:	ND05365
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XD05375O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05375O2

Scenario:	wmp
From Node:	ND05375
To Node:	ND04961
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.96 ft
Control Elevation:	3.96 ft
Cross Section:	XD05375O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05375O3

Scenario:	wmp
From Node:	ND05375
To Node:	ND04951
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.67 ft
Control Elevation:	4.67 ft
Cross Section:	XD05375O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05375O4

Scenario:	wmp
From Node:	ND05375
To Node:	ND05500
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.58 ft
Control Elevation:	5.58 ft
Cross Section:	XD05375O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD05375P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.00 ft	Invert:	-0.50 ft
From Node:	ND05375	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05365	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	202.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05405O	
Scenario:	wmp
From Node:	ND05405
To Node:	ND05365
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.05 ft
Control Elevation:	6.05 ft
Cross Section:	XD05405O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05405O2			
Scenario:	wmp	Bottom Clip	
From Node:	ND05405	Default:	0.00 ft
To Node:	ND05500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.07 ft	Discharge Coefficients	
Control Elevation:	6.07 ft	Weir Default:	2.800
Cross Section:	XD05405O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD05405P		Upstream		Downstream	
Scenario:	wmp	Invert:	4.21 ft	Invert:	2.13 ft
From Node:	ND05405	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND05365	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	190.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05500O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05500	Default:	0.00 ft
To Node:	ND05600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.63 ft	Discharge Coefficients	
Control Elevation:	4.63 ft	Weir Default:	2.800
Cross Section:	XD05500O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05500O2

Scenario:	wmp
From Node:	ND05500
To Node:	ND04951
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.50 ft
Control Elevation:	5.50 ft
Cross Section:	XD05500O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05500O3

Scenario:	wmp
From Node:	ND05500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.27 ft
Control Elevation:	5.27 ft
Cross Section:	XD05500O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Rating Curve Link: RD05500RC

Scenario:	wmp
From Node:	ND05500
To Node:	BDRY
Link Count:	1

Flow Direction: Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
RCD05500	2.41		2.40	

Comment:

Weir Link: RD05600O

Scenario: wmp
From Node: ND05600
To Node: ND04930
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Paved Road Vertical
Geometry Type: Irregular
Invert: 5.85 ft
Control Elevation: 5.85 ft
Cross Section: XD05600O

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Weir Link: RD05600O2

Scenario: wmp
From Node: ND05600
To Node: BDRY
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Paved Road Vertical
Geometry Type: Irregular
Invert: 6.53 ft
Control Elevation: 6.53 ft
Cross Section: XD05600O2

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Rating Curve Link: RD05600RC

Scenario: wmp
From Node: ND05600
To Node: BDRY

Link Count: 1
Flow Direction: Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
RCD05600	2.41		2.40	

Comment:

Weir Link: RD05700O

Scenario:	wmp	**Bottom Clip**	
From Node:	ND05700	Default:	0.00 ft
To Node:	ND05360	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.22 ft	**Discharge Coefficients**	
Control Elevation:	5.22 ft	Weir Default:	2.800
Cross Section:	XD05700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05700O2

Scenario:	wmp	**Bottom Clip**	
From Node:	ND05700	Default:	0.00 ft
To Node:	ND05365	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.90 ft	**Discharge Coefficients**	
Control Elevation:	5.90 ft	Weir Default:	2.800
Cross Section:	XD05700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05700O3

Scenario:	wmp	**Bottom Clip**	
From Node:	ND05700	Default:	0.00 ft

To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.45 ft
Control Elevation:	5.45 ft
Cross Section:	XD05700O3

Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05700O4

Scenario:	wmp
From Node:	ND05700
To Node:	ND05500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.68 ft
Control Elevation:	6.68 ft
Cross Section:	XD05700O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Rating Curve Link: RD05700RC

Scenario:	wmp
From Node:	ND05700
To Node:	BDRY
Link Count:	1
Flow Direction:	Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
RCD05700	2.41		2.40	

Comment:

Weir Link: RD05800O

Scenario:	wmp
From Node:	ND05800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.28 ft
Control Elevation:	5.28 ft
Cross Section:	XD05800O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05800O2

Scenario:	wmp
From Node:	ND05800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XD05800O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD05800O3

Scenario:	wmp
From Node:	ND05800
To Node:	ND05339
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.75 ft
Control Elevation:	3.75 ft
Cross Section:	XD05800O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RD05800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.35 ft	Invert:	0.68 ft
From Node:	ND05800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	262.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05900O			
Scenario:	wmp	Bottom Clip	
From Node:	ND05900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.68 ft	Discharge Coefficients	
Control Elevation:	4.68 ft	Weir Default:	2.800
Cross Section:	XD05900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD05900P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.77 ft	Invert:	1.69 ft
From Node:	ND05900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	29.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD05910O

		Bottom Clip	
Scenario:	wmp		
From Node:	ND05910	Default:	0.00 ft
To Node:	ND05900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.23 ft	Discharge Coefficients	
Control Elevation:	4.23 ft	Weir Default:	2.800
Cross Section:	XD05910O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05910O2

		Bottom Clip	
Scenario:	wmp		
From Node:	ND05910	Default:	0.00 ft
To Node:	ND05800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.73 ft	Discharge Coefficients	
Control Elevation:	3.73 ft	Weir Default:	2.800
Cross Section:	XD05910O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05910O3			
Scenario:	wmp	Bottom Clip	
From Node:	ND05910	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.98 ft	Discharge Coefficients	
Control Elevation:	4.98 ft	Weir Default:	2.800
Cross Section:	XD05910O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD05910O4			
Scenario:	wmp	Bottom Clip	
From Node:	ND05910	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.78 ft	Discharge Coefficients	
Control Elevation:	3.78 ft	Weir Default:	2.800
Cross Section:	XD05910O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD05910P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.69 ft	Invert:	0.95 ft
From Node:	ND05910	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05900	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	114.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: RD05910P2		Upstream		Downstream	
Scenario:	wmp	Invert:	0.95 ft	Invert:	-0.35 ft
From Node:	ND05910	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	ND05800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	123.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD06105PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND06105P	Default:	0.00 ft
To Node:	ND04565	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.58 ft	Discharge Coefficients	
Control Elevation:	5.58 ft	Weir Default:	2.800
Cross Section:	XD06105PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD06105PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND06105P	Default:	0.00 ft
To Node:	ND04571P	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.80 ft
Control Elevation:	5.80 ft
Cross Section:	XD06105PO2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD06105PP		Upstream		Downstream	
Scenario:	wmp	Invert:	3.10 ft	Invert:	2.90 ft
From Node:	ND06105P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04571P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	113.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD06110PO	
Scenario:	wmp
From Node:	ND06110P
To Node:	ND04565
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.68 ft
Control Elevation:	5.68 ft
Cross Section:	XD06110PO

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06110PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND06110P	Default:	0.00 ft
To Node:	ND06105P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.80 ft	Discharge Coefficients	
Control Elevation:	5.80 ft	Weir Default:	2.800
Cross Section:	XD06110PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RD06110PP		Upstream		Downstream	
Scenario:	wmp	Invert:	3.20 ft	Invert:	3.10 ft
From Node:	ND06110P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND06105P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	92.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD06115PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND06115P	Default:	0.00 ft
To Node:	ND04555	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.73 ft	Discharge Coefficients	
Control Elevation:	5.73 ft	Weir Default:	2.800
Cross Section:	XD06115PO	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06115PO2

Scenario:	wmp
From Node:	ND06115P
To Node:	ND06110P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.07 ft
Control Elevation:	6.07 ft
Cross Section:	XD06115PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD06115PP

Scenario:	wmp
From Node:	ND06115P
To Node:	ND06110P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	62.00 ft
FHWA Code:	0
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	3.27 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	3.20 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RD06210PO

Scenario:	wmp
From Node:	ND06210P
To Node:	ND04947

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.70 ft
Control Elevation:	5.70 ft
Cross Section:	XD06210PO

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06210PO2

Scenario:	wmp
From Node:	ND06210P
To Node:	ND06215P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.27 ft
Control Elevation:	6.27 ft
Cross Section:	XD06210PO2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06210PO3

Scenario:	wmp
From Node:	ND06210P
To Node:	ND04949P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.18 ft
Control Elevation:	6.18 ft
Cross Section:	XD06210PO3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD06210PP		Upstream		Downstream	
Scenario:	wmp	Invert:	3.37 ft	Invert:	3.08 ft
From Node:	ND06210P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	ND04949P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	103.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD06215PO			
Scenario:	wmp	Bottom Clip	
From Node:	ND06215P	Default:	0.00 ft
To Node:	ND04555	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.35 ft	Discharge Coefficients	
Control Elevation:	5.35 ft	Weir Default:	2.800
Cross Section:	XD06215PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD06215PO2			
Scenario:	wmp	Bottom Clip	
From Node:	ND06215P	Default:	0.00 ft
To Node:	ND04949P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.60 ft	Discharge Coefficients	
Control Elevation:	6.60 ft	Weir Default:	2.800
Cross Section:	XD06215PO2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06215PO3

Scenario:	wmp
From Node:	ND06215P
To Node:	ND06115P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.40 ft
Control Elevation:	6.40 ft
Cross Section:	XD06215PO3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RD06215PO4

Scenario:	wmp
From Node:	ND06215P
To Node:	ND06110P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.85 ft
Control Elevation:	6.85 ft
Cross Section:	XD06215PO4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RD06215PP

Scenario:	wmp
From Node:	ND06215P
To Node:	ND06210P
Link Count:	1

Upstream

Invert:	3.54 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Downstream

Invert:	3.37 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	72.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RD06300PO

		Bottom Clip	
Scenario:	wmp		
From Node:	ND06300P	Default:	0.00 ft
To Node:	ND04542	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.29 ft	Discharge Coefficients	
Control Elevation:	4.29 ft	Weir Default:	2.800
Cross Section:	XD06300PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RD06300PO2

		Bottom Clip	
Scenario:	wmp		
From Node:	ND06300P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.46 ft	Discharge Coefficients	
Control Elevation:	4.46 ft	Weir Default:	2.800
Cross Section:	XD06300PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Rating Curve Link: RD06300PRC	
Scenario:	wmp
From Node:	ND06300P
To Node:	BDRY
Link Count:	1
Flow Direction:	Positive

Table	Elev On [ft]	Elev On Node	Elev Off [ft]	Elev Off Node
RCD06300P	2.51		2.50	

Comment:

Drop Structure Link: RE020PDS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	-0.13 ft	Invert:	-0.62 ft
From Node:	NE020P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE09220	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	99.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	3.16 ft	Ref Node:	
Control Elevation:	3.16 ft	Discharge Coefficients	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	3.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RE020PO

Scenario:	wmp
From Node:	NE020P
To Node:	NE09415
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XE020PO

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE020PO2

Scenario:	wmp
From Node:	NE020P
To Node:	NE09500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XE020PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE020PO3

Scenario:	wmp
From Node:	NE020P
To Node:	NE08100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.01 ft
Control Elevation:	4.01 ft
Cross Section:	XE020PO3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RE020PO4

Scenario:	wmp	**Bottom Clip**	
From Node:	NE020P	Default:	0.00 ft
To Node:	NE08000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.40 ft	**Discharge Coefficients**	
Control Elevation:	4.40 ft	Weir Default:	2.800
Cross Section:	XE020PO4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08000O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.10 ft	**Discharge Coefficients**	
Control Elevation:	4.10 ft	Weir Default:	2.800
Cross Section:	XE08000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08000P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	0.89 ft	Invert:	-0.32 ft
From Node:	NE08000	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	137.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08100O

Scenario:	wmp	Bottom Clip	
From Node:	NE08100	Default:	0.00 ft
To Node:	NE08000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XE08100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08100O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XE08100O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.90 ft	Invert:	-0.19 ft
From Node:	NE08100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	160.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08200O			
Scenario:	wmp	Bottom Clip	
From Node:	NE08200	Default:	0.00 ft
To Node:	NE020P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.60 ft	Discharge Coefficients	
Control Elevation:	3.60 ft	Weir Default:	2.800
Cross Section:	XE08200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE08200	Default:	0.00 ft
To Node:	NE08100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.67 ft	Discharge Coefficients	
Control Elevation:	3.67 ft	Weir Default:	2.800
Cross Section:	XE08200O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08200O3

Scenario:	wmp
From Node:	NE08200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.08 ft
Control Elevation:	4.08 ft
Cross Section:	XE08200O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE08200P

Scenario:	wmp
From Node:	NE08200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	162.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.22 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.34 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE08300O

Scenario:	wmp
From Node:	NE08300
To Node:	NE09220

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.68 ft
Control Elevation:	3.68 ft
Cross Section:	XE08300O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08300O2

Scenario:	wmp
From Node:	NE08300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.28 ft
Control Elevation:	4.28 ft
Cross Section:	XE08300O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE08300P

Scenario:	wmp
From Node:	NE08300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	156.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.15 ft	Invert:	-0.71 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		**Geometry: Circular**	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08400O			
Scenario:	wmp	Bottom Clip	
From Node:	NE08400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.60 ft	Discharge Coefficients	
Control Elevation:	4.60 ft	Weir Default:	2.800
Cross Section:	XE08400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE08400	Default:	0.00 ft
To Node:	NE08300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XE08400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.50 ft	Invert:	-0.34 ft
From Node:	NE08400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	155.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08500O

Scenario:	wmp
From Node:	NE08500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XE08500O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08500O2

Scenario:	wmp
From Node:	NE08500
To Node:	NE08400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XE08500O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08500O3

Scenario:	wmp
From Node:	NE08500
To Node:	NE08615
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.79 ft
Control Elevation:	4.79 ft
Cross Section:	XE08500O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE08500P

Scenario:	wmp
From Node:	NE08500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	154.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.37 ft	Invert:	-0.45 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08600O

Scenario:	wmp
From Node:	NE08600
To Node:	NE08720
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XE08600O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08600O2

Scenario:	wmp
From Node:	NE08600
To Node:	NE08500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XE08600O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08600O3

Scenario:	wmp
From Node:	NE08600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XE08600O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE08600O4

Scenario:	wmp
From Node:	NE08600
To Node:	NE08700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.08 ft
Control Elevation:	5.08 ft
Cross Section:	XE08600O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RE08600O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08600	Default:	0.00 ft
To Node:	NE08615	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.66 ft	**Discharge Coefficients**	
Control Elevation:	4.66 ft	Weir Default:	2.800
Cross Section:	XE08600O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08600O7

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08600	Default:	0.00 ft
To Node:	NE08735	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.36 ft	**Discharge Coefficients**	
Control Elevation:	5.36 ft	Weir Default:	2.800
Cross Section:	XE08600O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08600P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	-0.20 ft	Invert:	-0.94 ft
From Node:	NE08600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	154.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08615O

Scenario:	wmp	Bottom Clip	
From Node:	NE08615	Default:	0.00 ft
To Node:	NE08400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.12 ft	Discharge Coefficients	
Control Elevation:	4.12 ft	Weir Default:	2.800
Cross Section:	XE08615O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08615O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08615	Default:	0.00 ft
To Node:	NE08735	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.40 ft	Discharge Coefficients	
Control Elevation:	5.40 ft	Weir Default:	2.800
Cross Section:	XE08615O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08615O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE08615	Default:	0.00 ft
To Node:	NE08625	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.58 ft	Discharge Coefficients	
Control Elevation:	4.58 ft	Weir Default:	2.800
Cross Section:	XE08615O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08615O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE08615	Default:	0.00 ft
To Node:	NE08745	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.08 ft	Discharge Coefficients	
Control Elevation:	5.08 ft	Weir Default:	2.800
Cross Section:	XE08615O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08615P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.26 ft	Invert:	-0.20 ft
From Node:	NE08615	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08600	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	1.17 ft	Max Depth:	1.17 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	203.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08625O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08625	Default:	0.00 ft
To Node:	NE08400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	**Discharge Coefficients**	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XE08625O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08625O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08625	Default:	0.00 ft
To Node:	NE09220	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.79 ft	**Discharge Coefficients**	
Control Elevation:	4.79 ft	Weir Default:	2.800
Cross Section:	XE08625O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08625P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	0.26 ft
From Node:	NE08625	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08615	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	244.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08700O

Scenario:	wmp	Bottom Clip	
From Node:	NE08700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.55 ft	Discharge Coefficients	
Control Elevation:	4.55 ft	Weir Default:	2.800
Cross Section:	XE08700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08700O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08700	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.20 ft	Discharge Coefficients	
Control Elevation:	6.20 ft	Weir Default:	2.800
Cross Section:	XE08700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.82 ft	Invert:	-0.78 ft
From Node:	NE08700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	154.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08716O			
Scenario:	wmp	Bottom Clip	
From Node:	NE08716	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.31 ft	Discharge Coefficients	
Control Elevation:	6.31 ft	Weir Default:	2.800
Cross Section:	XE08716O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08716O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE08716	Default:	0.00 ft
To Node:	NE08717	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.03 ft	Discharge Coefficients	
Control Elevation:	5.03 ft	Weir Default:	2.800
Cross Section:	XE08716O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE08716P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.24 ft	Invert:	1.73 ft
From Node:	NE08716	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	155.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08717O			
Scenario:	wmp	Bottom Clip	
From Node:	NE08717	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.40 ft	Discharge Coefficients	
Control Elevation:	5.40 ft	Weir Default:	2.800
Cross Section:	XE08717O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08717P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.98 ft	Invert:	2.24 ft
From Node:	NE08717	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08716	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	180.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08720O

Scenario:	wmp	Bottom Clip	
From Node:	NE08720	Default:	0.00 ft
To Node:	NE08716	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.81 ft	Discharge Coefficients	
Control Elevation:	4.81 ft	Weir Default:	2.800
Cross Section:	XE08720O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08720O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08720	Default:	0.00 ft
To Node:	NE08700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	Discharge Coefficients	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XE08720O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08720O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE08720	Default:	0.00 ft
To Node:	NE08735	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.68 ft	Discharge Coefficients	
Control Elevation:	4.68 ft	Weir Default:	2.800
Cross Section:	XE08720O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08720O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE08720	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.98 ft	Discharge Coefficients	
Control Elevation:	5.98 ft	Weir Default:	2.800
Cross Section:	XE08720O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08720P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.48 ft	Invert:	0.81 ft
From Node:	NE08720	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	54.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08735O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08735	Default:	0.00 ft
To Node:	NE08716	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.08 ft	**Discharge Coefficients**	
Control Elevation:	5.08 ft	Weir Default:	2.800
Cross Section:	XE08735O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08735O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08735	Default:	0.00 ft
To Node:	NE08717	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	**Discharge Coefficients**	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XE08735O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08735P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.64 ft	Invert:	0.48 ft
From Node:	NE08735	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08720	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	219.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08745O

Scenario:	wmp	Bottom Clip	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE08625	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.07 ft	Discharge Coefficients	
Control Elevation:	4.07 ft	Weir Default:	2.800
Cross Section:	XE08745O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08745O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE08735	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XE08745O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08745O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE08717	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.80 ft	Discharge Coefficients	
Control Elevation:	4.80 ft	Weir Default:	2.800
Cross Section:	XE08745O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08745O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.33 ft	Discharge Coefficients	
Control Elevation:	6.33 ft	Weir Default:	2.800
Cross Section:	XE08745O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08745O5			
Scenario:	wmp	Bottom Clip	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE09110	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	Discharge Coefficients	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XE08745O5	Weir Table:	
		Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RE08745O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE09210	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.23 ft	**Discharge Coefficients**	
Control Elevation:	5.23 ft	Weir Default:	2.800
Cross Section:	XE08745O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08745O7

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08745	Default:	0.00 ft
To Node:	NE09220	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.85 ft	**Discharge Coefficients**	
Control Elevation:	4.85 ft	Weir Default:	2.800
Cross Section:	XE08745O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08745P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	0.64 ft
From Node:	NE08745	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE08735	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	250.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08800O

Scenario:	wmp	Bottom Clip	
From Node:	NE08800	Default:	0.00 ft
To Node:	NE08700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	Discharge Coefficients	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XE08800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08800O2

Scenario:	wmp	Bottom Clip	
From Node:	NE08800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.67 ft	Discharge Coefficients	
Control Elevation:	4.67 ft	Weir Default:	2.800
Cross Section:	XE08800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08800O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE08800	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.87 ft	Discharge Coefficients	
Control Elevation:	5.87 ft	Weir Default:	2.800
Cross Section:	XE08800O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08800O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE08800	Default:	0.00 ft
To Node:	NE08900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.71 ft	Discharge Coefficients	
Control Elevation:	4.71 ft	Weir Default:	2.800
Cross Section:	XE08800O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE08800P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.68 ft	Invert:	-0.36 ft
From Node:	NE08800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	147.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE08900O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	**Discharge Coefficients**	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XE08900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08900O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08900	Default:	0.00 ft
To Node:	NE09125	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.55 ft	**Discharge Coefficients**	
Control Elevation:	4.55 ft	Weir Default:	2.800
Cross Section:	XE08900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE08900O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE08900	Default:	0.00 ft
To Node:	NE09000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	XE08900O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE08900P

Scenario:	wmp
From Node:	NE08900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	149.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.90 ft	Invert:	-0.53 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09000O

Scenario:	wmp
From Node:	NE09000
To Node:	NE09100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.85 ft
Control Elevation:	4.85 ft
Cross Section:	XE09000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09000O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	7.20 ft	Discharge Coefficients	
Control Elevation:	7.20 ft	Weir Default:	2.800
Cross Section:	XE09000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE09000P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.22 ft	Invert:	-0.06 ft
From Node:	NE09000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	190.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09100O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.84 ft	Discharge Coefficients	
Control Elevation:	3.84 ft	Weir Default:	2.800
Cross Section:	XE09100O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.30 ft	Invert:	0.19 ft
From Node:	NE09100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	2	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	20.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09110O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09110	Default:	0.00 ft
To Node:	NE09100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.63 ft	Discharge Coefficients	
Control Elevation:	4.63 ft	Weir Default:	2.800
Cross Section:	XE09110O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09110O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09110	Default:	0.00 ft
To Node:	NE09210	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.85 ft
Control Elevation:	4.85 ft
Cross Section:	XE09110O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09110O3

Scenario:	wmp
From Node:	NE09110
To Node:	NE09000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.76 ft
Control Elevation:	4.76 ft
Cross Section:	XE09110O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09110P

Scenario:	wmp
From Node:	NE09110
To Node:	NE09100
Link Count:	2
Flow Direction:	Both
Damping:	0.0000 ft
Length:	140.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	1.04 ft	Invert:	0.30 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		Geometry: Circular	
Max Depth:	2.00 ft	Max Depth:	2.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RE09125DS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	1.25 ft	Invert:	0.95 ft
From Node:	NE09125	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE09110	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	174.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	4.38 ft	Ref Node:	
Control Elevation:	4.38 ft	Discharge Coefficients	
Max Depth:	3.33 ft	Weir Default:	3.200
Max Width:	6.50 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	3.09 ft	Ref Node:	
Control Elevation:	3.09 ft	Discharge Coefficients	
Max Depth:	8333.25 ft	Weir Default:	3.200
Max Width:	2.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RE09125O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09125	Default:	0.00 ft
To Node:	NE09000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.50 ft	Discharge Coefficients	
Control Elevation:	5.50 ft	Weir Default:	2.800
Cross Section:	XE09125O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09125O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09125	Default:	0.00 ft
To Node:	NE09110	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.11 ft	Discharge Coefficients	
Control Elevation:	5.11 ft	Weir Default:	2.800
Cross Section:	XE09125O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09200O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft

Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XE09200O

Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.10 ft	Invert:	-0.17 ft
From Node:	NE09200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	15.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09210O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09210	Default:	0.00 ft
To Node:	NE09100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.64 ft	Discharge Coefficients	
Control Elevation:	4.64 ft	Weir Default:	2.800
Cross Section:	XE09210O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09210O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09210	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.75 ft	Discharge Coefficients	
Control Elevation:	4.75 ft	Weir Default:	2.800
Cross Section:	XE09210O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09210O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE09210	Default:	0.00 ft
To Node:	NE09200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.03 ft	Discharge Coefficients	
Control Elevation:	5.03 ft	Weir Default:	2.800
Cross Section:	XE09210O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE09210P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.02 ft	Invert:	-0.28 ft
From Node:	NE09210	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE09200	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.83 ft	Max Depth:	2.83 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	123.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Drop Structure Link: RE09220DS		Upstream Pipe		Downstream Pipe	
Scenario:	wmp	Invert:	0.77 ft	Invert:	1.20 ft
From Node:	NE09220	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NE09210	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.42 ft	Max Depth:	2.42 ft
Flow Direction:	Both	Bottom Clip			
Solution:	Combine	Default:	0.00 ft	Default:	0.00 ft
Increments:	0	Op Table:		Op Table:	
Pipe Count:	1	Ref Node:		Ref Node:	
Damping:	0.0000 ft	Manning's N:	0.0000	Manning's N:	0.0000
Length:	359.00 ft	Top Clip			
FHWA Code:	1	Default:	0.00 ft	Default:	0.00 ft
Entr Loss Coef:	0.50	Op Table:		Op Table:	
Exit Loss Coef:	1.00	Ref Node:		Ref Node:	
Bend Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	4.05 ft	Ref Node:	
Control Elevation:	4.05 ft	Discharge Coefficients	
Max Depth:	2.33 ft	Weir Default:	3.200
Max Width:	2.33 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component		Bottom Clip	
Weir:	2	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	2.75 ft		

Control Elevation:	2.75 ft
Max Depth:	0.83 ft
Max Width:	3.08 ft
Fillet:	0.00 ft

Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: RE09220O

Scenario:	wmp
From Node:	NE09220
To Node:	NE08400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XE09220O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09220O2

Scenario:	wmp
From Node:	NE09220
To Node:	NE09210
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XE09220O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09220O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE09220	Default:	0.00 ft
To Node:	NE08200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XE09220O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09220O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE09220	Default:	0.00 ft
To Node:	NE13100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.42 ft	Discharge Coefficients	
Control Elevation:	4.42 ft	Weir Default:	2.800
Cross Section:	XE09220O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09220O5			
Scenario:	wmp	Bottom Clip	
From Node:	NE09220	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.09 ft	Discharge Coefficients	
Control Elevation:	5.09 ft	Weir Default:	2.800
Cross Section:	XE09220O5	Weir Table:	
		Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RE09220O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NE09220	Default:	0.00 ft
To Node:	NE020P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	**Discharge Coefficients**	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XE09220O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09220O7

Scenario:	wmp	**Bottom Clip**	
From Node:	NE09220	Default:	0.00 ft
To Node:	NE14000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.37 ft	**Discharge Coefficients**	
Control Elevation:	4.37 ft	Weir Default:	2.800
Cross Section:	XE09220O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09300O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE09300	Default:	0.00 ft
To Node:	NE09400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XE09300O2

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09300O3

Scenario:	wmp
From Node:	NE09300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.41 ft
Control Elevation:	4.41 ft
Cross Section:	XE09300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09300P

Scenario:	wmp
From Node:	NE09300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	249.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.78 ft	Invert:	-0.81 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09400O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XE09400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE09400P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.03 ft	Invert:	-2.02 ft
From Node:	NE09400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	160.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09415O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09415	Default:	0.00 ft
To Node:	NE09500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XE09415O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09415O2

Scenario:	wmp
From Node:	NE09415
To Node:	NE09400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.63 ft
Control Elevation:	4.63 ft
Cross Section:	XE09415O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09415P

Scenario:	wmp
From Node:	NE09415
To Node:	NE09400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	330.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.92 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.91 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE09500O

Scenario:	wmp
From Node:	NE09500
To Node:	NE09400

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.62 ft
Control Elevation:	3.62 ft
Cross Section:	XE09500O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09500O2

Scenario:	wmp
From Node:	NE09500
To Node:	NE08000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XE09500O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09500O3

Scenario:	wmp
From Node:	NE09500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.22 ft
Control Elevation:	4.22 ft
Cross Section:	XE09500O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.12 ft	Invert:	-1.08 ft
From Node:	NE09500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	156.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09600O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09600	Default:	0.00 ft
To Node:	NE08300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.84 ft	Discharge Coefficients	
Control Elevation:	3.84 ft	Weir Default:	2.800
Cross Section:	XE09600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.12 ft	Discharge Coefficients	
Control Elevation:	4.12 ft	Weir Default:	2.800
Cross Section:	XE09600O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09600O3

Scenario:	wmp
From Node:	NE09600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.85 ft
Control Elevation:	4.85 ft
Cross Section:	XE09600O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09600O4

Scenario:	wmp
From Node:	NE09600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XE09600O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09600O5

Scenario:	wmp
From Node:	NE09600
To Node:	NE09700
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	XE09600O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09600O6

Scenario:	wmp
From Node:	NE09600
To Node:	NE08200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.98 ft
Control Elevation:	3.98 ft
Cross Section:	XE09600O6

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09600O7

Scenario:	wmp
From Node:	NE09600
To Node:	NE09220
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XE09600O7

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09600P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.50 ft	Invert:	-0.24 ft
From Node:	NE09600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09700O			
Scenario:	wmp	Bottom Clip	
From Node:	NE09700	Default:	0.00 ft
To Node:	NE09800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.62 ft	Discharge Coefficients	
Control Elevation:	3.62 ft	Weir Default:	2.800
Cross Section:	XE09700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	Discharge Coefficients	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XE09700O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09700O3

Scenario:	wmp
From Node:	NE09700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XE09700O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09700P

Scenario:	wmp
From Node:	NE09700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	136.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.63 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.70 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE09800O

Scenario:	wmp
From Node:	NE09800
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XE09800O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09800P

		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.20 ft	Invert:	-0.27 ft
From Node:	NE09800	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	116.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE09900O

Scenario:	wmp
From Node:	NE09900
To Node:	NE10000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.71 ft
Control Elevation:	3.71 ft
Cross Section:	XE09900O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE09900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE09900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.80 ft	Discharge Coefficients	
Control Elevation:	4.80 ft	Weir Default:	2.800
Cross Section:	XE09900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09900O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE09900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XE09900O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE09900O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE09900	Default:	0.00 ft
To Node:	NE10200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.31 ft	Discharge Coefficients	
Control Elevation:	4.31 ft	Weir Default:	2.800
Cross Section:	XE09900O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RE09900O5

Scenario:	wmp
From Node:	NE09900
To Node:	NE09600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XE09900O5

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE09900P

Scenario:	wmp
From Node:	NE09900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	135.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.72 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.26 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE10000O

Scenario:	wmp
From Node:	NE10000
To Node:	NE10100
Link Count:	1

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.57 ft
Control Elevation:	3.57 ft
Cross Section:	XE10000O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10000O2

Scenario:	wmp
From Node:	NE10000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XE10000O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10000O3

Scenario:	wmp
From Node:	NE10000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XE10000O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE10000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.63 ft	Invert:	-0.75 ft
From Node:	NE10000	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10100O			
Scenario:	wmp	Bottom Clip	
From Node:	NE10100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	Discharge Coefficients	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XE10100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE10100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.98 ft	Invert:	-0.46 ft
From Node:	NE10100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	115.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10200O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10200	Default:	0.00 ft
To Node:	NE10300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	**Discharge Coefficients**	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XE10200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10200O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.82 ft	**Discharge Coefficients**	
Control Elevation:	3.82 ft	Weir Default:	2.800
Cross Section:	XE10200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10200O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10200	Default:	0.00 ft
To Node:	NE09600	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.00 ft
Control Elevation:	4.00 ft
Cross Section:	XE10200O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10200O4

Scenario:	wmp
From Node:	NE10200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XE10200O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE10200P

Scenario:	wmp
From Node:	NE10200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	139.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.65 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.92 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE10300O

Scenario:	wmp
From Node:	NE10300
To Node:	NE10400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XE10300O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10300O2

Scenario:	wmp
From Node:	NE10300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XE10300O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10300O3

Scenario:	wmp
From Node:	NE10300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XE10300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RE10300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.47 ft	Invert:	-0.35 ft
From Node:	NE10300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10400O			
Scenario:	wmp	Bottom Clip	
From Node:	NE10400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XE10400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE10400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.30 ft	Invert:	-1.23 ft
From Node:	NE10400	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10500O

		Bottom Clip	
Scenario:	wmp		
From Node:	NE10500	Default:	0.00 ft
To Node:	NE10200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.77 ft	Discharge Coefficients	
Control Elevation:	3.77 ft	Weir Default:	2.800
Cross Section:	XE10500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10500O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NE10500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.85 ft	Discharge Coefficients	
Control Elevation:	4.85 ft	Weir Default:	2.800
Cross Section:	XE10500O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10500O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	**Discharge Coefficients**	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XE10500O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10500O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10500	Default:	0.00 ft
To Node:	NE10800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.10 ft	**Discharge Coefficients**	
Control Elevation:	4.10 ft	Weir Default:	2.800
Cross Section:	XE10500O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10500O5

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10500	Default:	0.00 ft
To Node:	NE10300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	**Discharge Coefficients**	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XE10500O5	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RE10500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.07 ft	Invert:	-0.13 ft
From Node:	NE10500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10600O			
Scenario:	wmp	Bottom Clip	
From Node:	NE10600	Default:	0.00 ft
To Node:	NE10700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.91 ft	Discharge Coefficients	
Control Elevation:	3.91 ft	Weir Default:	2.800
Cross Section:	XE10600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE10600	Default:	0.00 ft
To Node:	NE10500	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XE10600O2

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10600O3

Scenario:	wmp
From Node:	NE10600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XE10600O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10600O4

Scenario:	wmp
From Node:	NE10600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XE10600O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE10600P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.71 ft	Invert:	-0.57 ft
From Node:	NE10600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10700O			
Scenario:	wmp	Bottom Clip	
From Node:	NE10700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	Discharge Coefficients	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XE10700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE10700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.66 ft	Invert:	-1.65 ft
From Node:	NE10700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	116.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE10800O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10800	Default:	0.00 ft
To Node:	NE10300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.91 ft	**Discharge Coefficients**	
Control Elevation:	3.91 ft	Weir Default:	2.800
Cross Section:	XE10800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10800O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10800	Default:	0.00 ft
To Node:	NE10900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	**Discharge Coefficients**	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XE10800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE10800O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE10800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XE10800O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10800O4

Scenario:	wmp
From Node:	NE10800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.60 ft
Control Elevation:	4.60 ft
Cross Section:	XE10800O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE10800P

Scenario:	wmp
From Node:	NE10800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	138.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.15 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.54 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE10900O

Scenario:	wmp
From Node:	NE10900
To Node:	NE11000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XE10900O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10900O2

Scenario:	wmp
From Node:	NE10900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.75 ft
Control Elevation:	4.75 ft
Cross Section:	XE10900O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE10900O3

Scenario:	wmp
From Node:	NE10900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.50 ft
Control Elevation:	4.50 ft
Cross Section:	XE10900O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RE10900P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.20 ft	Invert:	-1.21 ft
From Node:	NE10900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11000O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.29 ft	Discharge Coefficients	
Control Elevation:	4.29 ft	Weir Default:	2.800
Cross Section:	XE11000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE11000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.41 ft	Invert:	-1.18 ft
From Node:	NE11000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11100O

		Bottom Clip	
Scenario:	wmp		
From Node:	NE11100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.23 ft	Discharge Coefficients	
Control Elevation:	4.23 ft	Weir Default:	2.800
Cross Section:	XE11100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11100O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NE11100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.91 ft	Discharge Coefficients	
Control Elevation:	4.91 ft	Weir Default:	2.800
Cross Section:	XE11100O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11100O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE11100	Default:	0.00 ft
To Node:	NE11400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.11 ft	Discharge Coefficients	
Control Elevation:	4.11 ft	Weir Default:	2.800
Cross Section:	XE11100O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11100O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE11100	Default:	0.00 ft
To Node:	NE10800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.02 ft	Discharge Coefficients	
Control Elevation:	4.02 ft	Weir Default:	2.800
Cross Section:	XE11100O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11100O5			
Scenario:	wmp	Bottom Clip	
From Node:	NE11100	Default:	0.00 ft
To Node:	NE10900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.40 ft	Discharge Coefficients	
Control Elevation:	4.40 ft	Weir Default:	2.800
Cross Section:	XE11100O5	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RE11100P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.29 ft	Invert:	-0.41 ft
From Node:	NE11100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	114.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11200O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11200	Default:	0.00 ft
To Node:	NE11300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.60 ft	Discharge Coefficients	
Control Elevation:	3.60 ft	Weir Default:	2.800
Cross Section:	XE11200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE11200	Default:	0.00 ft
To Node:	NE11100	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XE11200O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11200O3

Scenario:	wmp
From Node:	NE11200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.58 ft
Control Elevation:	4.58 ft
Cross Section:	XE11200O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11200O4

Scenario:	wmp
From Node:	NE11200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.43 ft
Control Elevation:	4.43 ft
Cross Section:	XE11200O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE11200P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.55 ft	Invert:	-0.29 ft
From Node:	NE11200	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11300O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XE11300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE11300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.15 ft	Invert:	-2.20 ft
From Node:	NE11300	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	117.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11400O

Scenario:	wmp
From Node:	NE11400
To Node:	NE10900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.07 ft
Control Elevation:	4.07 ft
Cross Section:	XE11400O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11400O2

Scenario:	wmp
From Node:	NE11400
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.25 ft
Control Elevation:	5.25 ft
Cross Section:	XE11400O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11400O3

Scenario:	wmp
From Node:	NE11400
To Node:	NE11500
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.36 ft
Control Elevation:	4.36 ft
Cross Section:	XE11400O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11400O4

Scenario:	wmp
From Node:	NE11400
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.61 ft
Control Elevation:	4.61 ft
Cross Section:	XE11400O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE11400P

Scenario:	wmp
From Node:	NE11400
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	140.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.09 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.14 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE11500O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.40 ft	Discharge Coefficients	
Control Elevation:	5.40 ft	Weir Default:	2.800
Cross Section:	XE11500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE11500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	Discharge Coefficients	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XE11500O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE11500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.11 ft	Invert:	-2.65 ft
From Node:	NE11500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	151.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11600O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE11600	Default:	0.00 ft
To Node:	NE11500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.24 ft	**Discharge Coefficients**	
Control Elevation:	4.24 ft	Weir Default:	2.800
Cross Section:	XE11600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11600O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE11600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.80 ft	**Discharge Coefficients**	
Control Elevation:	4.80 ft	Weir Default:	2.800
Cross Section:	XE11600O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11600O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE11600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.90 ft
Control Elevation:	4.90 ft
Cross Section:	XE11600O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE11600P

Scenario:	wmp
From Node:	NE11600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	151.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.55 ft	Invert:	-0.98 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11700O

Scenario:	wmp
From Node:	NE11700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.38 ft
Control Elevation:	4.38 ft
Cross Section:	XE11700O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE11700	Default:	0.00 ft
To Node:	NE11600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.30 ft	Discharge Coefficients	
Control Elevation:	5.30 ft	Weir Default:	2.800
Cross Section:	XE11700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE11700P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.04 ft	Invert:	-0.37 ft
From Node:	NE11700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	138.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11800O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.05 ft	Discharge Coefficients	
Control Elevation:	5.05 ft	Weir Default:	2.800
Cross Section:	XE11800O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE11800P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.45 ft	Invert:	-0.12 ft
From Node:	NE11800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	115.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE11900O			
Scenario:	wmp	Bottom Clip	
From Node:	NE11900	Default:	0.00 ft
To Node:	NE11500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XE11900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE11900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE11900	Default:	0.00 ft
To Node:	NE11800	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.53 ft
Control Elevation:	4.53 ft
Cross Section:	XE11900O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11900O3

Scenario:	wmp
From Node:	NE11900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.61 ft
Control Elevation:	5.61 ft
Cross Section:	XE11900O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11900O4

Scenario:	wmp
From Node:	NE11900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.45 ft
Control Elevation:	5.45 ft
Cross Section:	XE11900O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE11900O5			
Scenario:	wmp	Bottom Clip	
From Node:	NE11900	Default:	0.00 ft
To Node:	NE11600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.22 ft	Discharge Coefficients	
Control Elevation:	4.22 ft	Weir Default:	2.800
Cross Section:	XE11900O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE11900P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.02 ft	Invert:	-0.72 ft
From Node:	NE11900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	132.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12000O			
Scenario:	wmp	Bottom Clip	
From Node:	NE12000	Default:	0.00 ft
To Node:	NE12100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.38 ft	Discharge Coefficients	
Control Elevation:	4.38 ft	Weir Default:	2.800
Cross Section:	XE12000O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12000O2

Scenario:	wmp
From Node:	NE12000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.61 ft
Control Elevation:	4.61 ft
Cross Section:	XE12000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE12000P

Scenario:	wmp
From Node:	NE12000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	113.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.69 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.28 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RE12100O

Scenario:	wmp
From Node:	NE12100
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.60 ft
Control Elevation:	5.60 ft
Cross Section:	XE12100O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12100O2

Scenario:	wmp
From Node:	NE12100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.31 ft
Control Elevation:	5.31 ft
Cross Section:	XE12100O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12100O3

Scenario:	wmp
From Node:	NE12100
To Node:	NE11500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.58 ft
Control Elevation:	4.58 ft
Cross Section:	XE12100O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE12100P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.23 ft	Invert:	-1.32 ft
From Node:	NE12100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	132.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12200O			
Scenario:	wmp	Bottom Clip	
From Node:	NE12200	Default:	0.00 ft
To Node:	NE12500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	Discharge Coefficients	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XE12200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE12200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE12200	Default:	0.00 ft
To Node:	NE12400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.03 ft	Discharge Coefficients	
Control Elevation:	4.03 ft	Weir Default:	2.800
Cross Section:	XE12200O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12200O3

Scenario:	wmp
From Node:	NE12200
To Node:	NE12100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XE12200O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12200O4

Scenario:	wmp
From Node:	NE12200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.91 ft
Control Elevation:	4.91 ft
Cross Section:	XE12200O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12200O5

Scenario:	wmp
From Node:	NE12200
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.25 ft
Control Elevation:	5.25 ft
Cross Section:	XE12200O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12200O6

Scenario:	wmp
From Node:	NE12200
To Node:	NE11500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.80 ft
Control Elevation:	4.80 ft
Cross Section:	XE12200O6

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12200O7

Scenario:	wmp
From Node:	NE12200
To Node:	NE11400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XE12200O7

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE12200P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.48 ft	Invert:	-0.45 ft
From Node:	NE12200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	151.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12300O			
Scenario:	wmp	Bottom Clip	
From Node:	NE12300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.31 ft	Discharge Coefficients	
Control Elevation:	5.31 ft	Weir Default:	2.800
Cross Section:	XE12300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE12300P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.56 ft	Invert:	0.03 ft
From Node:	NE12300	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	115.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12400O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE12400	Default:	0.00 ft
To Node:	NE12300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.21 ft	**Discharge Coefficients**	
Control Elevation:	4.21 ft	Weir Default:	2.800
Cross Section:	XE12400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE12400O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE12400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.73 ft	**Discharge Coefficients**	
Control Elevation:	4.73 ft	Weir Default:	2.800
Cross Section:	XE12400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE12400O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NE12400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XE12400O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE12400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.72 ft	Invert:	0.20 ft
From Node:	NE12400	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	133.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12500O	
Scenario:	wmp
From Node:	NE12500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.88 ft
Control Elevation:	4.88 ft
Cross Section:	XE12500O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE12500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NE12500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.67 ft	Discharge Coefficients	
Control Elevation:	4.67 ft	Weir Default:	2.800
Cross Section:	XE12500O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE12500O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE12500	Default:	0.00 ft
To Node:	NE12400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XE12500O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE12500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.63 ft	Invert:	-0.24 ft
From Node:	NE12500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	149.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE12600O

Scenario:	wmp	**Bottom Clip**	
From Node:	NE12600	Default:	0.00 ft
To Node:	NE12500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.09 ft	**Discharge Coefficients**	
Control Elevation:	4.09 ft	Weir Default:	2.800
Cross Section:	XE12600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE12600O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NE12600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.80 ft	**Discharge Coefficients**	
Control Elevation:	4.80 ft	Weir Default:	2.800
Cross Section:	XE12600O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE12600P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.54 ft	Invert:	-0.67 ft
From Node:	NE12600	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RE13100O

Scenario:	wmp	Bottom Clip	
From Node:	NE13100	Default:	0.00 ft
To Node:	NE09300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XE13100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE13100O2

Scenario:	wmp	Bottom Clip	
From Node:	NE13100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	Discharge Coefficients	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XE13100O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE13100O3			
Scenario:	wmp	Bottom Clip	
From Node:	NE13100	Default:	0.00 ft
To Node:	NE09415	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	10.65 ft	Discharge Coefficients	
Control Elevation:	10.65 ft	Weir Default:	2.800
Cross Section:	XE13100O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RE13100O4			
Scenario:	wmp	Bottom Clip	
From Node:	NE13100	Default:	0.00 ft
To Node:	NE09400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	10.70 ft	Discharge Coefficients	
Control Elevation:	10.70 ft	Weir Default:	2.800
Cross Section:	XE13100O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RE13100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.64 ft	Invert:	-0.62 ft
From Node:	NE13100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	251.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: RE14000O

Scenario:	wmp
From Node:	NE14000
To Node:	NE13100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XE14000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE14000O2

Scenario:	wmp
From Node:	NE14000
To Node:	NE020P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.80 ft
Control Elevation:	4.80 ft
Cross Section:	XE14000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RE14000O3

Scenario:	wmp
From Node:	NE14000
To Node:	NE09415
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XE14000O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RE14000P

Scenario:	wmp
From Node:	NE14000
To Node:	NE09210
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	40.00 ft
FHWA Code:	0
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	1.20 ft	Invert:	0.80 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		Geometry: Circular	
Max Depth:	0.67 ft	Max Depth:	0.67 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15000O

Scenario:	wmp
From Node:	NF15000
To Node:	NF15100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.68 ft
Control Elevation:	4.68 ft
Cross Section:	XF15000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15000O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.62 ft	Discharge Coefficients	
Control Elevation:	4.62 ft	Weir Default:	2.800
Cross Section:	XF15000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15000P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.94 ft	Invert:	-1.20 ft
From Node:	NF15000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	240.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15010O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15010	Default:	0.00 ft
To Node:	NF15000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.65 ft	Discharge Coefficients	
Control Elevation:	3.65 ft	Weir Default:	2.800
Cross Section:	XF15010O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15010P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.41 ft	Invert:	-0.94 ft
From Node:	NF15010	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NF15000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	135.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15100O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.15 ft	Discharge Coefficients	
Control Elevation:	5.15 ft	Weir Default:	2.800
Cross Section:	XF15100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15100P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.71 ft	Invert:	-0.50 ft
From Node:	NF15100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	

Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	163.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15200O

Scenario:	wmp	Bottom Clip	
From Node:	NF15200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.58 ft	Discharge Coefficients	
Control Elevation:	4.58 ft	Weir Default:	2.800
Cross Section:	XF15200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15200O2

Scenario:	wmp	Bottom Clip	
From Node:	NF15200	Default:	0.00 ft
To Node:	NF15215	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.98 ft	Discharge Coefficients	
Control Elevation:	3.98 ft	Weir Default:	2.800
Cross Section:	XF15200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15200O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF15200	Default:	0.00 ft
To Node:	NF15100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.45 ft	Discharge Coefficients	
Control Elevation:	4.45 ft	Weir Default:	2.800
Cross Section:	XF15200O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15200P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.18 ft	Invert:	-2.65 ft
From Node:	NF15200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	109.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15210O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15210	Default:	0.00 ft
To Node:	NF15200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XF15210O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15210O2

Scenario:	wmp
From Node:	NF15210
To Node:	NF15010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XF15210O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15210O3

Scenario:	wmp
From Node:	NF15210
To Node:	NF15000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XF15210O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15210P

Scenario:	wmp
From Node:	NF15210
To Node:	NF15200
Link Count:	1

Upstream	
Invert:	0.84 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

Downstream	
Invert:	0.28 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	76.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15215O

		Bottom Clip	
Scenario:	wmp		
From Node:	NF15215	Default:	0.00 ft
To Node:	NF15210	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.55 ft	Discharge Coefficients	
Control Elevation:	3.55 ft	Weir Default:	2.800
Cross Section:	XF15215O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15215O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NF15215	Default:	0.00 ft
To Node:	NF15100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.41 ft	Discharge Coefficients	
Control Elevation:	4.41 ft	Weir Default:	2.800
Cross Section:	XF15215O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15215O3			
Scenario:	wmp	**Bottom Clip**	
From Node:	NF15215	Default:	0.00 ft
To Node:	NF15000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.00 ft	**Discharge Coefficients**	
Control Elevation:	5.00 ft	Weir Default:	2.800
Cross Section:	XF15215O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15215P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.84 ft	Invert:	0.28 ft
From Node:	NF15215	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NF15210	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	**Bottom Clip**			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	55.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	**Top Clip**			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15300O			
Scenario:	wmp	**Bottom Clip**	
From Node:	NF15300	Default:	0.00 ft
To Node:	NF15200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	**Discharge Coefficients**	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XF15300O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15300O2

Scenario:	wmp
From Node:	NF15300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XF15300O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15300O3

Scenario:	wmp
From Node:	NF15300
To Node:	NF15330
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XF15300O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15300O4

Scenario:	wmp
From Node:	NF15300
To Node:	NF15210
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XF15300O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15300O5

Scenario:	wmp
From Node:	NF15300
To Node:	NF15010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.20 ft
Control Elevation:	5.20 ft
Cross Section:	XF15300O5

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15300P

Scenario:	wmp
From Node:	NF15300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	128.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.79 ft
Manning's N:	0.0240
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.98 ft
Manning's N:	0.0240
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RF15315O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15315	Default:	0.00 ft
To Node:	NF15300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.65 ft	Discharge Coefficients	
Control Elevation:	3.65 ft	Weir Default:	2.800
Cross Section:	XF15315O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15315O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15315	Default:	0.00 ft
To Node:	NF15330	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.85 ft	Discharge Coefficients	
Control Elevation:	3.85 ft	Weir Default:	2.800
Cross Section:	XF15315O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15315O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF15315	Default:	0.00 ft
To Node:	NF15010	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XF15315O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF15315P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.00 ft	Invert:	-0.32 ft
From Node:	NF15315	Manning's N:	0.0240	Manning's N:	0.0240
To Node:	NF15300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	56.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15330O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15330	Default:	0.00 ft
To Node:	NF15000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.67 ft	Discharge Coefficients	
Control Elevation:	3.67 ft	Weir Default:	2.800
Cross Section:	XF15330O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15330O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15330	Default:	0.00 ft
To Node:	NF15010	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XF15330O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15330P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	1.07 ft
From Node:	NF15330	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NF15315	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15400O	
Scenario:	wmp
From Node:	NF15400
To Node:	NF15300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.00 ft
Control Elevation:	4.00 ft
Cross Section:	XF15400O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15400O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF15400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XF15400O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15400O4			
Scenario:	wmp	Bottom Clip	
From Node:	NF15400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.23 ft	Discharge Coefficients	
Control Elevation:	4.23 ft	Weir Default:	2.800
Cross Section:	XF15400O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15400O5			
Scenario:	wmp	Bottom Clip	
From Node:	NF15400	Default:	0.00 ft
To Node:	NF15330	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.16 ft	Discharge Coefficients	
Control Elevation:	5.16 ft	Weir Default:	2.800
Cross Section:	XF15400O5	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF15400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.78 ft	Invert:	-1.22 ft
From Node:	NF15400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	104.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15500O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15500	Default:	0.00 ft
To Node:	NF15400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.19 ft	Discharge Coefficients	
Control Elevation:	4.19 ft	Weir Default:	2.800
Cross Section:	XF15500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.67 ft
Control Elevation:	4.67 ft
Cross Section:	XF15500O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15500O3

Scenario:	wmp
From Node:	NF15500
To Node:	NF15330
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XF15500O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15500O4

Scenario:	wmp
From Node:	NF15500
To Node:	NF15000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.41 ft
Control Elevation:	4.41 ft
Cross Section:	XF15500O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.96 ft	Invert:	-0.17 ft
From Node:	NF15500	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	111.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15600O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15600	Default:	0.00 ft
To Node:	NF15900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.79 ft	Discharge Coefficients	
Control Elevation:	2.79 ft	Weir Default:	2.800
Cross Section:	XF15600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	Discharge Coefficients	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XF15600O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15600O3

Scenario:	wmp
From Node:	NF15600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.33 ft
Control Elevation:	3.33 ft
Cross Section:	XF15600O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15600O4

Scenario:	wmp
From Node:	NF15600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.25 ft
Control Elevation:	3.25 ft
Cross Section:	XF15600O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15600O5

Scenario:	wmp
From Node:	NF15600
To Node:	NF15400
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.01 ft
Control Elevation:	4.01 ft
Cross Section:	XF15600O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF15600P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.14 ft	Invert:	-0.99 ft
From Node:	NF15600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	128.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15700O	
Scenario:	wmp
From Node:	NF15700
To Node:	NF15800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.50 ft
Control Elevation:	3.50 ft
Cross Section:	XF15700O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF15700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF15700	Default:	0.00 ft
To Node:	NF15600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.02 ft	Discharge Coefficients	
Control Elevation:	3.02 ft	Weir Default:	2.800
Cross Section:	XF15700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15700O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF15700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.65 ft	Discharge Coefficients	
Control Elevation:	3.65 ft	Weir Default:	2.800
Cross Section:	XF15700O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15700O4			
Scenario:	wmp	Bottom Clip	
From Node:	NF15700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	Discharge Coefficients	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XF15700O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF15700P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.14 ft	Invert:	-0.92 ft
From Node:	NF15700	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15800O			
Scenario:	wmp	Bottom Clip	
From Node:	NF15800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XF15800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.31 ft	Invert:	-0.97 ft
From Node:	NF15800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF15900O

		Bottom Clip	
Scenario:	wmp		
From Node:	NF15900	Default:	0.00 ft
To Node:	NF16000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XF15900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15900O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NF15900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.68 ft	Discharge Coefficients	
Control Elevation:	3.68 ft	Weir Default:	2.800
Cross Section:	XF15900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15900O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF15900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.81 ft	Discharge Coefficients	
Control Elevation:	3.81 ft	Weir Default:	2.800
Cross Section:	XF15900O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF15900O4			
Scenario:	wmp	Bottom Clip	
From Node:	NF15900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	Discharge Coefficients	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XF15900O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF15900P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.38 ft	Invert:	-0.68 ft
From Node:	NF15900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	118.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: RF16000O

Scenario:	wmp
From Node:	NF16000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.08 ft
Control Elevation:	5.08 ft
Cross Section:	XF16000O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16000O2

Scenario:	wmp
From Node:	NF16000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.00 ft
Control Elevation:	5.00 ft
Cross Section:	XF16000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16000O3

Scenario:	wmp
From Node:	NF16000
To Node:	NF16100
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XF16000O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16000P

Scenario:	wmp
From Node:	NF16000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	129.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.55 ft	Invert:	-0.58 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16100O

Scenario:	wmp
From Node:	NF16100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.73 ft
Control Elevation:	3.73 ft
Cross Section:	XF16100O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.34 ft	Invert:	0.08 ft
From Node:	NF16100	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16200O			
Scenario:	wmp	Bottom Clip	
From Node:	NF16200	Default:	0.00 ft
To Node:	NF16800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.45 ft	Discharge Coefficients	
Control Elevation:	2.45 ft	Weir Default:	2.800
Cross Section:	XF16200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF16200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.58 ft	Discharge Coefficients	
Control Elevation:	3.58 ft	Weir Default:	2.800
Cross Section:	XF16200O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16200O3

Scenario:	wmp
From Node:	NF16200
To Node:	NF15900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XF16200O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16200O4

Scenario:	wmp
From Node:	NF16200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.72 ft
Control Elevation:	3.72 ft
Cross Section:	XF16200O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16200P

Scenario:	wmp
From Node:	NF16200
To Node:	BDRY
Link Count:	1

Upstream	
Invert:	-0.58 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

Downstream	
Invert:	-0.84 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	119.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16300O

		Bottom Clip	
Scenario:	wmp		
From Node:	NF16300	Default:	0.00 ft
To Node:	NF16200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.73 ft	Discharge Coefficients	
Control Elevation:	2.73 ft	Weir Default:	2.800
Cross Section:	XF16300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16300O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NF16300	Default:	0.00 ft
To Node:	NF16510	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.85 ft	Discharge Coefficients	
Control Elevation:	2.85 ft	Weir Default:	2.800
Cross Section:	XF16300O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16300O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF16300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.58 ft	Discharge Coefficients	
Control Elevation:	3.58 ft	Weir Default:	2.800
Cross Section:	XF16300O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16300O4			
Scenario:	wmp	Bottom Clip	
From Node:	NF16300	Default:	0.00 ft
To Node:	NF16500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.78 ft	Discharge Coefficients	
Control Elevation:	2.78 ft	Weir Default:	2.800
Cross Section:	XF16300O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF16300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.21 ft	Invert:	-1.44 ft
From Node:	NF16300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	132.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: RF16310O

Scenario:	wmp
From Node:	NF16310
To Node:	NF16200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.48 ft
Control Elevation:	2.48 ft
Cross Section:	XF16310O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16310O2

Scenario:	wmp
From Node:	NF16310
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.62 ft
Control Elevation:	3.62 ft
Cross Section:	XF16310O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16310O3

Scenario:	wmp
From Node:	NF16310
To Node:	NF16300
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.78 ft
Control Elevation:	2.78 ft
Cross Section:	XF16310O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16310O4

Scenario:	wmp
From Node:	NF16310
To Node:	NF16510
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.90 ft
Control Elevation:	2.90 ft
Cross Section:	XF16310O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16310P

Scenario:	wmp
From Node:	NF16310
To Node:	NF16300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	31.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	-0.22 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.21 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RF16500O

Scenario:	wmp
From Node:	NF16500
To Node:	NF16700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XF16500O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16500O2

Scenario:	wmp
From Node:	NF16500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.16 ft
Control Elevation:	3.16 ft
Cross Section:	XF16500O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16500O3

Scenario:	wmp
From Node:	NF16500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.15 ft
Control Elevation:	4.15 ft
Cross Section:	XF16500O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF16500P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.28 ft	Invert:	-1.15 ft
From Node:	NF16500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16510O			
Scenario:	wmp	Bottom Clip	
From Node:	NF16510	Default:	0.00 ft
To Node:	NF16500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.45 ft	Discharge Coefficients	
Control Elevation:	2.45 ft	Weir Default:	2.800
Cross Section:	XF16510O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16510O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF16510	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.68 ft
Control Elevation:	3.68 ft
Cross Section:	XF16510O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16510P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.01 ft	Invert:	-0.28 ft
From Node:	NF16510	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NF16500	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	32.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16700O	
Scenario:	wmp
From Node:	NF16700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.07 ft
Control Elevation:	4.07 ft
Cross Section:	XF16700O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16700P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.09 ft	Invert:	-0.18 ft
From Node:	NF16700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	119.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16800O			
Scenario:	wmp	Bottom Clip	
From Node:	NF16800	Default:	0.00 ft
To Node:	NF16900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.15 ft	Discharge Coefficients	
Control Elevation:	2.15 ft	Weir Default:	2.800
Cross Section:	XF16800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16800O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF16800	Default:	0.00 ft
To Node:	NF17000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.62 ft	Discharge Coefficients	
Control Elevation:	2.62 ft	Weir Default:	2.800
Cross Section:	XF16800O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16800O3

Scenario:	wmp
From Node:	NF16800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.08 ft
Control Elevation:	4.08 ft
Cross Section:	XF16800O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16800O4

Scenario:	wmp
From Node:	NF16800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.20 ft
Control Elevation:	3.20 ft
Cross Section:	XF16800O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16800O5

Scenario:	wmp
From Node:	NF16800
To Node:	NF16310
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XF16800O5

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.04 ft	Invert:	-1.33 ft
From Node:	NF16800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	122.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF16900O	
Scenario:	wmp
From Node:	NF16900
To Node:	NF17400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.55 ft
Control Elevation:	3.55 ft
Cross Section:	XF16900O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF16900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF16900	Default:	0.00 ft
To Node:	NF17100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.45 ft	Discharge Coefficients	
Control Elevation:	2.45 ft	Weir Default:	2.800
Cross Section:	XF16900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16900O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF16900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	Discharge Coefficients	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XF16900O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF16900O4			
Scenario:	wmp	Bottom Clip	
From Node:	NF16900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.70 ft	Discharge Coefficients	
Control Elevation:	3.70 ft	Weir Default:	2.800
Cross Section:	XF16900O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RF16900O5

Scenario:	wmp
From Node:	NF16900
To Node:	NF17000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.38 ft
Control Elevation:	3.38 ft
Cross Section:	XF16900O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF16900P

Scenario:	wmp
From Node:	NF16900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	118.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	-1.11 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-1.21 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RF17000O

Scenario:	wmp
From Node:	NF17000
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.00 ft
Control Elevation:	3.00 ft
Cross Section:	XF17000O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17000O2

Scenario:	wmp
From Node:	NF17000
To Node:	NF17210
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XF17000O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF17000P

Scenario:	wmp
From Node:	NF17000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	136.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	-0.06 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.33 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RF17100O

Scenario:	wmp
From Node:	NF17100
To Node:	NF17210
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.23 ft
Control Elevation:	3.23 ft
Cross Section:	XF17100O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17100O2

Scenario:	wmp
From Node:	NF17100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.48 ft
Control Elevation:	3.48 ft
Cross Section:	XF17100O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17100O3

Scenario:	wmp
From Node:	NF17100
To Node:	NF17000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.70 ft
Control Elevation:	2.70 ft
Cross Section:	XF17100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF17100P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.28 ft	Invert:	-1.15 ft
From Node:	NF17100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	134.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17200O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17200	Default:	0.00 ft
To Node:	NF17000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.28 ft	Discharge Coefficients	
Control Elevation:	3.28 ft	Weir Default:	2.800
Cross Section:	XF17200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF17200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF17200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XF17200O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17200O3

Scenario:	wmp
From Node:	NF17200
To Node:	NF17300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.60 ft
Control Elevation:	3.60 ft
Cross Section:	XF17200O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF17200P

Scenario:	wmp
From Node:	NF17200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	134.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.45 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.66 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RF17210O

Scenario:	wmp
From Node:	NF17210
To Node:	NF17300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.51 ft
Control Elevation:	3.51 ft
Cross Section:	XF17210O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17210O2

Scenario:	wmp
From Node:	NF17210
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XF17210O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17210O3

Scenario:	wmp
From Node:	NF17210
To Node:	NF17200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.38 ft
Control Elevation:	3.38 ft
Cross Section:	XF17210O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RF17210P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.67 ft	Invert:	0.45 ft
From Node:	NF17210	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NF17200	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	72.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17300O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	Discharge Coefficients	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XF17300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF17300P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.11 ft	Invert:	0.03 ft
From Node:	NF17300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	104.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17400O

		Bottom Clip	
Scenario:	wmp		
From Node:	NF17400	Default:	0.00 ft
To Node:	NF17500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.58 ft	Discharge Coefficients	
Control Elevation:	3.58 ft	Weir Default:	2.800
Cross Section:	XF17400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF17400O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NF17400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.20 ft	Discharge Coefficients	
Control Elevation:	4.20 ft	Weir Default:	2.800
Cross Section:	XF17400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF17400O3			
Scenario:	wmp	Bottom Clip	
From Node:	NF17400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.85 ft	Discharge Coefficients	
Control Elevation:	3.85 ft	Weir Default:	2.800
Cross Section:	XF17400O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF17400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.30 ft	Invert:	-0.26 ft
From Node:	NF17400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17500O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XF17500O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF17500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.63 ft	Invert:	-0.18 ft
From Node:	NF17500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17600O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.73 ft	Discharge Coefficients	
Control Elevation:	3.73 ft	Weir Default:	2.800
Cross Section:	XF17600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF17600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF17600	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XF17600O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17600O3

Scenario:	wmp
From Node:	NF17600
To Node:	NF16900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.37 ft
Control Elevation:	3.37 ft
Cross Section:	XF17600O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17600O4

Scenario:	wmp
From Node:	NF17600
To Node:	NF17400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.60 ft
Control Elevation:	3.60 ft
Cross Section:	XF17600O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF17600P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.38 ft	Invert:	-0.42 ft
From Node:	NF17600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	118.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17700O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17700	Default:	0.00 ft
To Node:	NF17600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.25 ft	Discharge Coefficients	
Control Elevation:	3.25 ft	Weir Default:	2.800
Cross Section:	XF17700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RF17700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NF17700	Default:	0.00 ft
To Node:	NF17800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.56 ft	Discharge Coefficients	
Control Elevation:	3.56 ft	Weir Default:	2.800
Cross Section:	XF17700O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17700O3

Scenario:	wmp
From Node:	NF17700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XF17700O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RF17700O4

Scenario:	wmp
From Node:	NF17700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XF17700O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RF17700P

Scenario:	wmp
From Node:	NF17700
To Node:	BDRY
Link Count:	1

Upstream	
Invert:	0.19 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft

Downstream	
Invert:	-0.70 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft

Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RF17800O			
Scenario:	wmp	Bottom Clip	
From Node:	NF17800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.38 ft	Discharge Coefficients	
Control Elevation:	4.38 ft	Weir Default:	2.800
Cross Section:	XF17800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RF17800P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	-0.62 ft
From Node:	NF17800	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	131.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20000O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.41 ft	Discharge Coefficients	
Control Elevation:	5.41 ft	Weir Default:	2.800
Cross Section:	XG20000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG20000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.39 ft	Invert:	0.36 ft
From Node:	NG20000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	122.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20100O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20100	Default:	0.00 ft
To Node:	NG20000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	Discharge Coefficients	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XG20100O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20100O2

Scenario:	wmp
From Node:	NG20100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XG20100O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20100O3

Scenario:	wmp
From Node:	NG20100
To Node:	NG20200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.43 ft
Control Elevation:	4.43 ft
Cross Section:	XG20100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20100O4

Scenario:	wmp
From Node:	NG20100
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XG20100O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.85 ft	Invert:	-0.08 ft
From Node:	NG20100	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	142.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20200O	
Scenario:	wmp
From Node:	NG20200
To Node:	NG20300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XG20200O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20200O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG20200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.58 ft	Discharge Coefficients	
Control Elevation:	5.58 ft	Weir Default:	2.800
Cross Section:	XG20200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG20200P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.31 ft	Invert:	-1.17 ft
From Node:	NG20200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	154.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20300O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.50 ft	Discharge Coefficients	
Control Elevation:	5.50 ft	Weir Default:	2.800
Cross Section:	XG20300O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20300P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.35 ft	Invert:	-0.87 ft
From Node:	NG20300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	149.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20400O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.22 ft	Discharge Coefficients	
Control Elevation:	4.22 ft	Weir Default:	2.800
Cross Section:	XG20400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG20400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG20400	Default:	0.00 ft
To Node:	NG20300	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.31 ft
Control Elevation:	4.31 ft
Cross Section:	XG20400O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20400O3

Scenario:	wmp
From Node:	NG20400
To Node:	NG20100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.98 ft
Control Elevation:	4.98 ft
Cross Section:	XG20400O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20400O4

Scenario:	wmp
From Node:	NG20400
To Node:	NG20200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.63 ft
Control Elevation:	4.63 ft
Cross Section:	XG20400O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.16 ft	Invert:	-1.27 ft
From Node:	NG20400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	154.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20500O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20500	Default:	0.00 ft
To Node:	NG20600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.07 ft	Discharge Coefficients	
Control Elevation:	4.07 ft	Weir Default:	2.800
Cross Section:	XG20500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG20500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG20500	Default:	0.00 ft
To Node:	NG20400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	Discharge Coefficients	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XG20500O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20500O3

Scenario:	wmp
From Node:	NG20500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XG20500O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20500P

Scenario:	wmp
From Node:	NG20500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	154.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.32 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.90 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG20600O

Scenario:	wmp
From Node:	NG20600
To Node:	NG20100

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.08 ft
Control Elevation:	4.08 ft
Cross Section:	XG20600O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20600O2

Scenario:	wmp
From Node:	NG20600
To Node:	NG20700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.23 ft
Control Elevation:	4.23 ft
Cross Section:	XG20600O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20600O3

Scenario:	wmp
From Node:	NG20600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.85 ft
Control Elevation:	4.85 ft
Cross Section:	XG20600O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20600O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG20600	Default:	0.00 ft
To Node:	NG20400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.20 ft	Discharge Coefficients	
Control Elevation:	4.20 ft	Weir Default:	2.800
Cross Section:	XG20600O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG20600P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.02 ft	Invert:	-1.17 ft
From Node:	NG20600	Manning's N:	0.0240	Manning's N:	0.0240
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	145.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20700O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XG20700O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.23 ft	Invert:	-0.34 ft
From Node:	NG20700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	139.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20800O			
Scenario:	wmp	Bottom Clip	
From Node:	NG20800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.10 ft	Discharge Coefficients	
Control Elevation:	4.10 ft	Weir Default:	2.800
Cross Section:	XG20800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG20800O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG20800	Default:	0.00 ft
To Node:	NG20600	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.23 ft
Control Elevation:	4.23 ft
Cross Section:	XG20800O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20800O3

Scenario:	wmp
From Node:	NG20800
To Node:	NG20700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.33 ft
Control Elevation:	4.33 ft
Cross Section:	XG20800O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20800P

Scenario:	wmp
From Node:	NG20800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	143.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-1.29 ft	Invert:	-1.33 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.25 ft	Max Depth:	1.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG20810O

Scenario:	wmp
From Node:	NG20810
To Node:	NG20500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XG20810O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20810O2

Scenario:	wmp
From Node:	NG20810
To Node:	NG21810
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.32 ft
Control Elevation:	4.32 ft
Cross Section:	XG20810O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20810O3

Scenario:	wmp
From Node:	NG20810
To Node:	NG20800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.12 ft
Control Elevation:	4.12 ft
Cross Section:	XG20810O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RG20810O4

Scenario:	wmp
From Node:	NG20810
To Node:	NG20600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.10 ft
Control Elevation:	5.10 ft
Cross Section:	XG20810O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20810P

Scenario:	wmp
From Node:	NG20810
To Node:	NG20800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	68.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.48 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.20 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG20900O

Scenario:	wmp
From Node:	NG20900
To Node:	NG20800
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XG20900O

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG20900O2

Scenario:	wmp
From Node:	NG20900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XG20900O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG20900P

Scenario:	wmp
From Node:	NG20900
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	139.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.93 ft
Manning's N:	0.0110
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-1.68 ft
Manning's N:	0.0110
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG21000O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21000	Default:	0.00 ft
To Node:	NG21100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.51 ft	**Discharge Coefficients**	
Control Elevation:	3.51 ft	Weir Default:	2.800
Cross Section:	XG21000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21000O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21000	Default:	0.00 ft
To Node:	NG20900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.25 ft	**Discharge Coefficients**	
Control Elevation:	4.25 ft	Weir Default:	2.800
Cross Section:	XG21000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21000O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.10 ft	**Discharge Coefficients**	
Control Elevation:	5.10 ft	Weir Default:	2.800
Cross Section:	XG21000O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RG21000O4

Scenario:	wmp
From Node:	NG21000
To Node:	NG20810
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.24 ft
Control Elevation:	4.24 ft
Cross Section:	XG21000O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21000O5

Scenario:	wmp
From Node:	NG21000
To Node:	NG20800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.40 ft
Control Elevation:	4.40 ft
Cross Section:	XG21000O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21000P

Scenario:	wmp
From Node:	NG21000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both

Upstream

Invert:	-0.16 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Downstream

Invert:	-1.51 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	141.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21010O

Scenario:	wmp	Bottom Clip	
From Node:	NG21010	Default:	0.00 ft
To Node:	NG21000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.55 ft	Discharge Coefficients	
Control Elevation:	4.55 ft	Weir Default:	2.800
Cross Section:	XG21010O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21010O2

Scenario:	wmp	Bottom Clip	
From Node:	NG21010	Default:	0.00 ft
To Node:	NG20810	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.97 ft	Discharge Coefficients	
Control Elevation:	3.97 ft	Weir Default:	2.800
Cross Section:	XG21010O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21010P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.58 ft	Invert:	-0.16 ft
From Node:	NG21010	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG21000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	69.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21100O			
Scenario:	wmp	Bottom Clip	
From Node:	NG21100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.45 ft	Discharge Coefficients	
Control Elevation:	4.45 ft	Weir Default:	2.800
Cross Section:	XG21100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.72 ft	Invert:	-1.00 ft
From Node:	NG21100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	162.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21110O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21110	Default:	0.00 ft
To Node:	NG21010	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.50 ft	**Discharge Coefficients**	
Control Elevation:	3.50 ft	Weir Default:	2.800
Cross Section:	XG21110O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21110O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21110	Default:	0.00 ft
To Node:	NG21100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	**Discharge Coefficients**	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XG21110O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21110O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21110	Default:	0.00 ft
To Node:	NG21000	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.61 ft
Control Elevation:	4.61 ft
Cross Section:	XG21110O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21110P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.91 ft	Invert:	0.72 ft
From Node:	NG21110	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG21100	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	81.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21200O	
Scenario:	wmp
From Node:	NG21200
To Node:	NG22040
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.83 ft
Control Elevation:	3.83 ft
Cross Section:	XG21200O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21200O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	**Discharge Coefficients**	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XG21200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21200O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21200	Default:	0.00 ft
To Node:	NG21110	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.13 ft	**Discharge Coefficients**	
Control Elevation:	5.13 ft	Weir Default:	2.800
Cross Section:	XG21200O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21200O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21200	Default:	0.00 ft
To Node:	NG21100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	**Discharge Coefficients**	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XG21200O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG21200P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.49 ft	Invert:	0.00 ft
From Node:	NG21200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	40.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21300O			
Scenario:	wmp	Bottom Clip	
From Node:	NG21300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XG21300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21300O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG21300	Default:	0.00 ft
To Node:	NG21110	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XG21300O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21300O3

Scenario:	wmp
From Node:	NG21300
To Node:	NG21010
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XG21300O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21300O4

Scenario:	wmp
From Node:	NG21300
To Node:	NG21715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.65 ft
Control Elevation:	4.65 ft
Cross Section:	XG21300O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21300O5			
Scenario:	wmp	Bottom Clip	
From Node:	NG21300	Default:	0.00 ft
To Node:	NG20810	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.35 ft	Discharge Coefficients	
Control Elevation:	4.35 ft	Weir Default:	2.800
Cross Section:	XG21300O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21300O6			
Scenario:	wmp	Bottom Clip	
From Node:	NG21300	Default:	0.00 ft
To Node:	NG21810	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	Discharge Coefficients	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XG21300O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21300P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.50 ft	Invert:	-0.22 ft
From Node:	NG21300	Manning's N:	0.0240	Manning's N:	0.0240
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	150.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21400O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21400	Default:	0.00 ft
To Node:	NG21500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.85 ft	**Discharge Coefficients**	
Control Elevation:	3.85 ft	Weir Default:	2.800
Cross Section:	XG21400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21400O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	**Discharge Coefficients**	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XG21400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21400O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21400	Default:	0.00 ft
To Node:	NG21300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.94 ft
Control Elevation:	3.94 ft
Cross Section:	XG21400O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21400O4

Scenario:	wmp
From Node:	NG21400
To Node:	NG21415
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.07 ft
Control Elevation:	4.07 ft
Cross Section:	XG21400O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21400O5

Scenario:	wmp
From Node:	NG21400
To Node:	NG21700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.90 ft
Control Elevation:	3.90 ft
Cross Section:	XG21400O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.57 ft	Invert:	0.16 ft
From Node:	NG21400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	144.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21415O			
Scenario:	wmp	Bottom Clip	
From Node:	NG21415	Default:	0.00 ft
To Node:	NG21300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.50 ft	Discharge Coefficients	
Control Elevation:	3.50 ft	Weir Default:	2.800
Cross Section:	XG21415O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21415O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG21415	Default:	0.00 ft
To Node:	NG21700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.73 ft	Discharge Coefficients	
Control Elevation:	4.73 ft	Weir Default:	2.800
Cross Section:	XG21415O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21415O3

Scenario:	wmp
From Node:	NG21415
To Node:	NG21715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.15 ft
Control Elevation:	4.15 ft
Cross Section:	XG21415O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21415P

Scenario:	wmp
From Node:	NG21415
To Node:	NG21400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	281.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.15 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.95 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG21500O

Scenario:	wmp
From Node:	NG21500
To Node:	NG21600

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.84 ft
Control Elevation:	3.84 ft
Cross Section:	XG21500O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21500O2

Scenario:	wmp
From Node:	NG21500
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XG21500O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21500O3

Scenario:	wmp
From Node:	NG21500
To Node:	NG21700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.29 ft
Control Elevation:	4.29 ft
Cross Section:	XG21500O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.44 ft	Invert:	0.32 ft
From Node:	NG21500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	147.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21600O			
Scenario:	wmp	Bottom Clip	
From Node:	NG21600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.27 ft	Discharge Coefficients	
Control Elevation:	4.27 ft	Weir Default:	2.800
Cross Section:	XG21600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21600P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.62 ft	Invert:	0.29 ft
From Node:	NG21600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	146.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21700O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.89 ft	**Discharge Coefficients**	
Control Elevation:	3.89 ft	Weir Default:	2.800
Cross Section:	XG21700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21700O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21700	Default:	0.00 ft
To Node:	NG21600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.39 ft	**Discharge Coefficients**	
Control Elevation:	4.39 ft	Weir Default:	2.800
Cross Section:	XG21700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.82 ft	Invert:	0.00 ft
From Node:	NG21700	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	151.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21715O

		Bottom Clip	
Scenario:	wmp		
From Node:	NG21715	Default:	0.00 ft
To Node:	NG21700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.58 ft	Discharge Coefficients	
Control Elevation:	3.58 ft	Weir Default:	2.800
Cross Section:	XG21715O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21715O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NG21715	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.25 ft	Discharge Coefficients	
Control Elevation:	4.25 ft	Weir Default:	2.800
Cross Section:	XG21715O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21715O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG21715	Default:	0.00 ft
To Node:	NG21810	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XG21715O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21715O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG21715	Default:	0.00 ft
To Node:	NG21800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	Discharge Coefficients	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XG21715O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21715P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.30 ft	Invert:	1.01 ft
From Node:	NG21715	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG21700	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	313.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21800O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	**Discharge Coefficients**	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XG21800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21800O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG21800	Default:	0.00 ft
To Node:	NG20500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	**Discharge Coefficients**	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XG21800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21800P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.40 ft	Invert:	0.58 ft
From Node:	NG21800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	149.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21810O

Scenario:	wmp	Bottom Clip	
From Node:	NG21810	Default:	0.00 ft
To Node:	NG21800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XG21810O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21810O2

Scenario:	wmp	Bottom Clip	
From Node:	NG21810	Default:	0.00 ft
To Node:	NG20500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.10 ft	Discharge Coefficients	
Control Elevation:	4.10 ft	Weir Default:	2.800
Cross Section:	XG21810O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG21810P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.49 ft	Invert:	1.40 ft
From Node:	NG21810	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG21800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	28.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG21900O			
Scenario:	wmp	Bottom Clip	
From Node:	NG21900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.20 ft	Discharge Coefficients	
Control Elevation:	4.20 ft	Weir Default:	2.800
Cross Section:	XG21900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG21900O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG21900	Default:	0.00 ft
To Node:	NG21200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.08 ft	Discharge Coefficients	
Control Elevation:	4.08 ft	Weir Default:	2.800
Cross Section:	XG21900O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21900O3

Scenario:	wmp
From Node:	NG21900
To Node:	NG21300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XG21900O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG21900O4

Scenario:	wmp
From Node:	NG21900
To Node:	NG21110
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.05 ft
Control Elevation:	4.05 ft
Cross Section:	XG21900O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG21900P

Scenario:	wmp
From Node:	NG21900
To Node:	BDRY
Link Count:	1

Upstream

Invert:	1.43 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Downstream

Invert:	0.00 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	199.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22000O

		Bottom Clip	
Scenario:	wmp		
From Node:	NG22000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.26 ft	Discharge Coefficients	
Control Elevation:	4.26 ft	Weir Default:	2.800
Cross Section:	XG22000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22000O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NG22000	Default:	0.00 ft
To Node:	NG22015P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.83 ft	Discharge Coefficients	
Control Elevation:	4.83 ft	Weir Default:	2.800
Cross Section:	XG22000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22000O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG22000	Default:	0.00 ft
To Node:	NG22040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	Discharge Coefficients	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XG22000O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22000O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG22000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.47 ft	Discharge Coefficients	
Control Elevation:	4.47 ft	Weir Default:	2.800
Cross Section:	XG22000O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG22000P		Upstream		Downstream	
Scenario:	wmp	Invert:	-1.07 ft	Invert:	0.25 ft
From Node:	NG22000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	174.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22000PO

Scenario:	wmp
From Node:	NG22000P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.28 ft
Control Elevation:	4.28 ft
Cross Section:	XG22000PO

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22000PP

Scenario:	wmp
From Node:	NG22000P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	84.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.98 ft
Manning's N:	0.0240

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.87 ft
Manning's N:	0.0240

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG22015PO

Scenario:	wmp
From Node:	NG22015P
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.35 ft
Control Elevation:	3.35 ft
Cross Section:	XG22015PO

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22015PO2

Scenario:	wmp
From Node:	NG22015P
To Node:	NG22000P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.80 ft
Control Elevation:	4.80 ft
Cross Section:	XG22015PO2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22015PP

Scenario:	wmp
From Node:	NG22015P
To Node:	NG22000P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	55.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	1.60 ft
Manning's N:	0.0240
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	1.00 ft
Manning's N:	0.0240
Geometry: Circular	
Max Depth:	1.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG22025O			
Scenario:	wmp	Bottom Clip	
From Node:	NG22025	Default:	0.00 ft
To Node:	NG22000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	Discharge Coefficients	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XG22025O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22025O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG22025	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.68 ft	Discharge Coefficients	
Control Elevation:	4.68 ft	Weir Default:	2.800
Cross Section:	XG22025O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22025O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG22025	Default:	0.00 ft
To Node:	NG22040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	Discharge Coefficients	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XG22025O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG22025P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.58 ft	Invert:	0.03 ft
From Node:	NG22025	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG22000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	487.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22040O			
Scenario:	wmp	Bottom Clip	
From Node:	NG22040	Default:	0.00 ft
To Node:	NG24400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XG22040O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22040O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG22040	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.02 ft
Control Elevation:	4.02 ft
Cross Section:	XG22040O2

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22040O3

Scenario:	wmp
From Node:	NG22040
To Node:	NG21900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.85 ft
Control Elevation:	3.85 ft
Cross Section:	XG22040O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22040O4

Scenario:	wmp
From Node:	NG22040
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.82 ft
Control Elevation:	4.82 ft
Cross Section:	XG22040O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22040P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.91 ft	Invert:	0.76 ft
From Node:	NG22040	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG22025	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.17 ft	Max Depth:	1.17 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	286.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22100O			
Scenario:	wmp	Bottom Clip	
From Node:	NG22100	Default:	0.00 ft
To Node:	NG21900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XG22100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22100O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG22100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.62 ft	Discharge Coefficients	
Control Elevation:	3.62 ft	Weir Default:	2.800
Cross Section:	XG22100O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22100O3

Scenario:	wmp
From Node:	NG22100
To Node:	NG22040
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.33 ft
Control Elevation:	4.33 ft
Cross Section:	XG22100O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22100P

Scenario:	wmp
From Node:	NG22100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	235.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.01 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.18 ft
Manning's N:	0.0110

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG22300O

Scenario:	wmp
From Node:	NG22300
To Node:	NG24330

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XG22300O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22300O2

Scenario:	wmp
From Node:	NG22300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.88 ft
Control Elevation:	3.88 ft
Cross Section:	XG22300O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22300O3

Scenario:	wmp
From Node:	NG22300
To Node:	NG22100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.20 ft
Control Elevation:	4.20 ft
Cross Section:	XG22300O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22300P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.16 ft	Invert:	-0.29 ft
From Node:	NG22300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	221.00 ft	Op Table:		Op Table:	
FHWA Code:	0	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22400O			
Scenario:	wmp	Bottom Clip	
From Node:	NG22400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.45 ft	Discharge Coefficients	
Control Elevation:	3.45 ft	Weir Default:	2.800
Cross Section:	XG22400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG22400	Default:	0.00 ft
To Node:	NG22300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.22 ft	Discharge Coefficients	
Control Elevation:	4.22 ft	Weir Default:	2.800
Cross Section:	XG22400O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22400O3

Scenario:	wmp
From Node:	NG22400
To Node:	NG22100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.40 ft
Control Elevation:	3.40 ft
Cross Section:	XG22400O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22400P

Scenario:	wmp
From Node:	NG22400
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	159.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.31 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	-0.98 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG22500O

Scenario:	wmp
From Node:	NG22500
To Node:	NG22900

Bottom Clip	
Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.18 ft
Control Elevation:	3.18 ft
Cross Section:	XG22500O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22500O2

Scenario:	wmp
From Node:	NG22500
To Node:	NG22100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.20 ft
Control Elevation:	3.20 ft
Cross Section:	XG22500O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22500O3

Scenario:	wmp
From Node:	NG22500
To Node:	NG22400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.08 ft
Control Elevation:	3.08 ft
Cross Section:	XG22500O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22500O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG22500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.22 ft	Discharge Coefficients	
Control Elevation:	4.22 ft	Weir Default:	2.800
Cross Section:	XG22500O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22500O5			
Scenario:	wmp	Bottom Clip	
From Node:	NG22500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.93 ft	Discharge Coefficients	
Control Elevation:	3.93 ft	Weir Default:	2.800
Cross Section:	XG22500O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG22500P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.97 ft	Invert:	0.01 ft
From Node:	NG22500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	162.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	
		Manning's N:	0.0000
		Ref Node:	
		Manning's N:	0.0000

Comment:

Weir Link: RG22600O

Scenario:	wmp
From Node:	NG22600
To Node:	NG22700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.24 ft
Control Elevation:	3.24 ft
Cross Section:	XG22600O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22600O2

Scenario:	wmp
From Node:	NG22600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.93 ft
Control Elevation:	3.93 ft
Cross Section:	XG22600O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22600O3

Scenario:	wmp
From Node:	NG22600
To Node:	NG22900
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.42 ft
Control Elevation:	3.42 ft
Cross Section:	XG22600O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG22600O4

Scenario:	wmp
From Node:	NG22600
To Node:	NG22500
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XG22600O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG22600P

Scenario:	wmp
From Node:	NG22600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	163.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	1.35 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	-0.35 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG22700O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG22700	Default:	0.00 ft
To Node:	NG22800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.28 ft	**Discharge Coefficients**	
Control Elevation:	3.28 ft	Weir Default:	2.800
Cross Section:	XG22700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22700O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG22700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.58 ft	**Discharge Coefficients**	
Control Elevation:	3.58 ft	Weir Default:	2.800
Cross Section:	XG22700O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22700O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG22700	Default:	0.00 ft
To Node:	NG22900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	**Discharge Coefficients**	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XG22700O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG22700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.44 ft	Invert:	-0.28 ft
From Node:	NG22700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	154.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22800O			
Scenario:	wmp	Bottom Clip	
From Node:	NG22800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.65 ft	Discharge Coefficients	
Control Elevation:	3.65 ft	Weir Default:	2.800
Cross Section:	XG22800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG22800P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.12 ft	Invert:	-0.52 ft
From Node:	NG22800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	166.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG22900O

		Bottom Clip	
Scenario:	wmp		
From Node:	NG22900	Default:	0.00 ft
To Node:	NG22800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.38 ft	Discharge Coefficients	
Control Elevation:	3.38 ft	Weir Default:	2.800
Cross Section:	XG22900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG22900O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NG22900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.82 ft	Discharge Coefficients	
Control Elevation:	3.82 ft	Weir Default:	2.800
Cross Section:	XG22900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG22900P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.94 ft	Invert:	-0.41 ft
From Node:	NG22900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	167.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23000O			
Scenario:	wmp	Bottom Clip	
From Node:	NG23000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.35 ft	Discharge Coefficients	
Control Elevation:	3.35 ft	Weir Default:	2.800
Cross Section:	XG23000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23000O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG23000	Default:	0.00 ft
To Node:	NG24330	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.77 ft	Discharge Coefficients	
Control Elevation:	3.77 ft	Weir Default:	2.800
Cross Section:	XG23000O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23000O3

Scenario:	wmp
From Node:	NG23000
To Node:	NG22400
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.28 ft
Control Elevation:	3.28 ft
Cross Section:	XG23000O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23000P

Scenario:	wmp
From Node:	NG23000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	193.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.90 ft	Invert:	0.17 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23015O

Scenario:	wmp
From Node:	NG23015
To Node:	NG24341

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.30 ft
Control Elevation:	3.30 ft
Cross Section:	XG23015O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23015O2

Scenario:	wmp
From Node:	NG23015
To Node:	NG24340
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.45 ft
Control Elevation:	3.45 ft
Cross Section:	XG23015O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23015O3

Scenario:	wmp
From Node:	NG23015
To Node:	NG23000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.35 ft
Control Elevation:	3.35 ft
Cross Section:	XG23015O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23015O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG23015	Default:	0.00 ft
To Node:	NG24330	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.60 ft	Discharge Coefficients	
Control Elevation:	3.60 ft	Weir Default:	2.800
Cross Section:	XG23015O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG23015P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.68 ft	Invert:	1.34 ft
From Node:	NG23015	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG23000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	39.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23100O			
Scenario:	wmp	Bottom Clip	
From Node:	NG23100	Default:	0.00 ft
To Node:	NG23000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.08 ft	Discharge Coefficients	
Control Elevation:	3.08 ft	Weir Default:	2.800
Cross Section:	XG23100O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23100O2

Scenario:	wmp
From Node:	NG23100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.15 ft
Control Elevation:	3.15 ft
Cross Section:	XG23100O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23100P

Scenario:	wmp
From Node:	NG23100
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	166.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.99 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.34 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG23200O

Scenario:	wmp
From Node:	NG23200
To Node:	NG23100

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.05 ft
Control Elevation:	3.05 ft
Cross Section:	XG23200O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23200O2

Scenario:	wmp
From Node:	NG23200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.28 ft
Control Elevation:	3.28 ft
Cross Section:	XG23200O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23200P

Scenario:	wmp
From Node:	NG23200
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	193.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.67 ft	Invert:	-0.35 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23300O			
Scenario:	wmp	Bottom Clip	
From Node:	NG23300	Default:	0.00 ft
To Node:	NG23200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.82 ft	Discharge Coefficients	
Control Elevation:	2.82 ft	Weir Default:	2.800
Cross Section:	XG23300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23300O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG23300	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	Discharge Coefficients	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XG23300O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG23300P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.25 ft	Invert:	-0.25 ft
From Node:	NG23300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	130.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23315O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23315	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.36 ft	**Discharge Coefficients**	
Control Elevation:	3.36 ft	Weir Default:	2.800
Cross Section:	XG23315O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23315O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23315	Default:	0.00 ft
To Node:	NG23300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.31 ft	**Discharge Coefficients**	
Control Elevation:	4.31 ft	Weir Default:	2.800
Cross Section:	XG23315O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG23315P		**Upstream**		**Downstream**	
Scenario:	wmp	Invert:	0.38 ft	Invert:	0.28 ft
From Node:	NG23315	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG23300	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	**Bottom Clip**			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	62.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23400O

Scenario:	wmp	Bottom Clip	
From Node:	NG23400	Default:	0.00 ft
To Node:	NG23315	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.60 ft	Discharge Coefficients	
Control Elevation:	2.60 ft	Weir Default:	2.800
Cross Section:	XG23400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23400O2

Scenario:	wmp	Bottom Clip	
From Node:	NG23400	Default:	0.00 ft
To Node:	NG23500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.87 ft	Discharge Coefficients	
Control Elevation:	2.87 ft	Weir Default:	2.800
Cross Section:	XG23400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23400O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG23400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.35 ft	Discharge Coefficients	
Control Elevation:	3.35 ft	Weir Default:	2.800
Cross Section:	XG23400O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23400O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG23400	Default:	0.00 ft
To Node:	NG23200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.21 ft	Discharge Coefficients	
Control Elevation:	4.21 ft	Weir Default:	2.800
Cross Section:	XG23400O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23400O5			
Scenario:	wmp	Bottom Clip	
From Node:	NG23400	Default:	0.00 ft
To Node:	NG23300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.30 ft	Discharge Coefficients	
Control Elevation:	4.30 ft	Weir Default:	2.800
Cross Section:	XG23400O5	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG23400P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.64 ft	Invert:	0.84 ft
From Node:	NG23400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23500O			
Scenario:	wmp	Bottom Clip	
From Node:	NG23500	Default:	0.00 ft
To Node:	NG23600	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.90 ft	Discharge Coefficients	
Control Elevation:	2.90 ft	Weir Default:	2.800
Cross Section:	XG23500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG23500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.28 ft
Control Elevation:	3.28 ft
Cross Section:	XG23500O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23500O3

Scenario:	wmp
From Node:	NG23500
To Node:	NG23200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.35 ft
Control Elevation:	4.35 ft
Cross Section:	XG23500O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23500O4

Scenario:	wmp
From Node:	NG23500
To Node:	NG23100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.34 ft
Control Elevation:	4.34 ft
Cross Section:	XG23500O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23500P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.69 ft	Invert:	-0.50 ft
From Node:	NG23500	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23600O			
Scenario:	wmp	Bottom Clip	
From Node:	NG23600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.30 ft	Discharge Coefficients	
Control Elevation:	3.30 ft	Weir Default:	2.800
Cross Section:	XG23600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23600O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG23600	Default:	0.00 ft
To Node:	NG23700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	Discharge Coefficients	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XG23600O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23600O3

Scenario:	wmp
From Node:	NG23600
To Node:	NG23100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.16 ft
Control Elevation:	4.16 ft
Cross Section:	XG23600O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23600P

Scenario:	wmp
From Node:	NG23600
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	136.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.58 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.23 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG23700O

Scenario:	wmp
From Node:	NG23700
To Node:	NG23800

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.72 ft
Control Elevation:	2.72 ft
Cross Section:	XG23700O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23700O2

Scenario:	wmp
From Node:	NG23700
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.28 ft
Control Elevation:	3.28 ft
Cross Section:	XG23700O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23700O3

Scenario:	wmp
From Node:	NG23700
To Node:	NG23100
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.29 ft
Control Elevation:	4.29 ft
Cross Section:	XG23700O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23700O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG23700	Default:	0.00 ft
To Node:	NG23015	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XG23700O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23700O5			
Scenario:	wmp	Bottom Clip	
From Node:	NG23700	Default:	0.00 ft
To Node:	NG23000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.73 ft	Discharge Coefficients	
Control Elevation:	4.73 ft	Weir Default:	2.800
Cross Section:	XG23700O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG23700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.42 ft	Invert:	-0.66 ft
From Node:	NG23700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	133.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:	
		Manning's N:	0.0000
		Ref Node:	
		Manning's N:	0.0000

Comment:

Weir Link: RG23800O

Scenario:	wmp
From Node:	NG23800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.39 ft
Control Elevation:	3.39 ft
Cross Section:	XG23800O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23800O2

Scenario:	wmp
From Node:	NG23800
To Node:	NG23015
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.94 ft
Control Elevation:	3.94 ft
Cross Section:	XG23800O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23800O3

Scenario:	wmp
From Node:	NG23800
To Node:	NG24340
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.95 ft
Control Elevation:	3.95 ft
Cross Section:	XG23800O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG23800P

Scenario:	wmp
From Node:	NG23800
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	138.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.56 ft	Invert:	-0.15 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG23900O

Scenario:	wmp
From Node:	NG23900
To Node:	NG24000
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.68 ft
Control Elevation:	2.68 ft
Cross Section:	XG23900O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG23900O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.21 ft	**Discharge Coefficients**	
Control Elevation:	3.21 ft	Weir Default:	2.800
Cross Section:	XG23900O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23900O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23900	Default:	0.00 ft
To Node:	NG23800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	**Discharge Coefficients**	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XG23900O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG23900O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23900	Default:	0.00 ft
To Node:	NG24320	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.57 ft	**Discharge Coefficients**	
Control Elevation:	4.57 ft	Weir Default:	2.800
Cross Section:	XG23900O4	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Weir Link: RG23900O5

Scenario:	wmp	**Bottom Clip**	
From Node:	NG23900	Default:	0.00 ft
To Node:	NG24340	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.65 ft	**Discharge Coefficients**	
Control Elevation:	4.65 ft	Weir Default:	2.800
Cross Section:	XG23900O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG23900P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.09 ft	Invert:	-0.63 ft
From Node:	NG23900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	**Bottom Clip**			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	136.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	**Top Clip**			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24000O

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24000	Default:	0.00 ft
To Node:	NG24200	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.48 ft
Control Elevation:	2.48 ft
Cross Section:	XG24000O

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24000O2

Scenario:	wmp
From Node:	NG24000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	2.95 ft
Control Elevation:	2.95 ft
Cross Section:	XG24000O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24000O3

Scenario:	wmp
From Node:	NG24000
To Node:	NG24216
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.00 ft
Control Elevation:	3.00 ft
Cross Section:	XG24000O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24000O4

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24000	Default:	0.00 ft
To Node:	NG24320	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.15 ft	**Discharge Coefficients**	
Control Elevation:	5.15 ft	Weir Default:	2.800
Cross Section:	XG24000O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24000O5

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24000	Default:	0.00 ft
To Node:	NG24322	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.00 ft	**Discharge Coefficients**	
Control Elevation:	4.00 ft	Weir Default:	2.800
Cross Section:	XG24000O5	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24000O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24000	Default:	0.00 ft
To Node:	NG24230	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.75 ft	**Discharge Coefficients**	
Control Elevation:	3.75 ft	Weir Default:	2.800
Cross Section:	XG24000O6	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG24000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	-0.99 ft
From Node:	NG24000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	134.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24100O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.02 ft	Discharge Coefficients	
Control Elevation:	3.02 ft	Weir Default:	2.800
Cross Section:	XG24100O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG24100P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.25 ft	Invert:	0.21 ft
From Node:	NG24100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	86.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24200O

		Bottom Clip	
Scenario:	wmp		
From Node:	NG24200	Default:	0.00 ft
To Node:	NG24100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.21 ft	Discharge Coefficients	
Control Elevation:	2.21 ft	Weir Default:	2.800
Cross Section:	XG24200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24200O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NG24200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.00 ft	Discharge Coefficients	
Control Elevation:	3.00 ft	Weir Default:	2.800
Cross Section:	XG24200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24200O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG24200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	6.40 ft	Discharge Coefficients	
Control Elevation:	6.40 ft	Weir Default:	2.800
Cross Section:	XG24200O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24200O4			
Scenario:	wmp	Bottom Clip	
From Node:	NG24200	Default:	0.00 ft
To Node:	NG24225	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.03 ft	Discharge Coefficients	
Control Elevation:	4.03 ft	Weir Default:	2.800
Cross Section:	XG24200O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24200O5			
Scenario:	wmp	Bottom Clip	
From Node:	NG24200	Default:	0.00 ft
To Node:	NG24230	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.80 ft	Discharge Coefficients	
Control Elevation:	3.80 ft	Weir Default:	2.800
Cross Section:	XG24200O5	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG24200P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.22 ft	Invert:	0.10 ft
From Node:	NG24200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	108.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24216O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24216	Default:	0.00 ft
To Node:	NG24200	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.80 ft	Discharge Coefficients	
Control Elevation:	2.80 ft	Weir Default:	2.800
Cross Section:	XG24216O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24216O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24216	Default:	0.00 ft
To Node:	NG24230	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XG24216O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24216P

Scenario:	wmp
From Node:	NG24216
To Node:	NG24200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	170.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	0.10 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	0.15 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.50 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG24225O

Scenario:	wmp
From Node:	NG24225
To Node:	NG24615P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.77 ft
Control Elevation:	4.77 ft
Cross Section:	XG24225O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24225O2			
Scenario:	wmp	**Bottom Clip**	
From Node:	NG24225	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.49 ft	**Discharge Coefficients**	
Control Elevation:	4.49 ft	Weir Default:	2.800
Cross Section:	XG24225O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG24225P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.21 ft	Invert:	0.15 ft
From Node:	NG24225	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24200	**Geometry: Circular**		**Geometry: Circular**	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	**Bottom Clip**			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	73.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.00	**Top Clip**			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24230O			
Scenario:	wmp	**Bottom Clip**	
From Node:	NG24230	Default:	0.00 ft
To Node:	NG24225	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	2.75 ft	**Discharge Coefficients**	
Control Elevation:	2.75 ft	Weir Default:	2.800
Cross Section:	XG24230O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24230P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.35 ft	Invert:	0.21 ft
From Node:	NG24230	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24225	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	171.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24300O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24300	Default:	0.00 ft
To Node:	NG24500P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.23 ft	Discharge Coefficients	
Control Elevation:	5.23 ft	Weir Default:	2.800
Cross Section:	XG24300O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24300O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24300	Default:	0.00 ft
To Node:	NG24527P	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.25 ft
Control Elevation:	4.25 ft
Cross Section:	XG24300O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24300O3

Scenario:	wmp
From Node:	NG24300
To Node:	NG24516P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.48 ft
Control Elevation:	4.48 ft
Cross Section:	XG24300O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24300O4

Scenario:	wmp
From Node:	NG24300
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.25 ft
Control Elevation:	4.25 ft
Cross Section:	XG24300O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24300P		Upstream		Downstream	
Scenario:	wmp	Invert:	-0.76 ft	Invert:	-1.30 ft
From Node:	NG24300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Horizontal Ellipse		Geometry: Horizontal Ellipse	
Link Count:	1	Max Depth:	1.58 ft	Max Depth:	1.58 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	347.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24320O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24320	Default:	0.00 ft
To Node:	NG24322	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.73 ft	Discharge Coefficients	
Control Elevation:	3.73 ft	Weir Default:	2.800
Cross Section:	XG24320O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24320O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24320	Default:	0.00 ft
To Node:	NG24335	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.43 ft	Discharge Coefficients	
Control Elevation:	5.43 ft	Weir Default:	2.800
Cross Section:	XG24320O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24320O3

Scenario:	wmp
From Node:	NG24320
To Node:	NG24500P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.20 ft
Control Elevation:	5.20 ft
Cross Section:	XG24320O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24320P

Scenario:	wmp
From Node:	NG24320
To Node:	NG24300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	220.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	0.97 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	0.26 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.25 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG24322O

Scenario:	wmp
From Node:	NG24322
To Node:	NG24230

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.60 ft
Control Elevation:	3.60 ft
Cross Section:	XG24322O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24322O2

Scenario:	wmp
From Node:	NG24322
To Node:	NG24500P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.86 ft
Control Elevation:	4.86 ft
Cross Section:	XG24322O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24322P

Scenario:	wmp
From Node:	NG24322
To Node:	NG24320
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	382.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	2.49 ft	Invert:	1.96 ft
Manning's N:	0.0110	Manning's N:	0.0110
Geometry: Circular		Geometry: Circular	
Max Depth:	0.50 ft	Max Depth:	0.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24330O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24330	Default:	0.00 ft
To Node:	NG24300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.47 ft	Discharge Coefficients	
Control Elevation:	3.47 ft	Weir Default:	2.800
Cross Section:	XG24330O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24330O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24330	Default:	0.00 ft
To Node:	NG22400	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XG24330O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24330O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG24330	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XG24330O3	Weir Table:	
		Orifice Default:	0.600

Orifice Table:	

Comment:

Pipe Link: RG24330P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.64 ft	Invert:	0.25 ft
From Node:	NG24330	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24300	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	153.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24335O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24335	Default:	0.00 ft
To Node:	NG24341	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.35 ft	Discharge Coefficients	
Control Elevation:	4.35 ft	Weir Default:	2.800
Cross Section:	XG24335O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24335O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24335	Default:	0.00 ft
To Node:	NG24500P	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.00 ft
Control Elevation:	6.00 ft
Cross Section:	XG24335O2

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24335O3

Scenario:	wmp
From Node:	NG24335
To Node:	NG24330
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.61 ft
Control Elevation:	4.61 ft
Cross Section:	XG24335O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24335O4

Scenario:	wmp
From Node:	NG24335
To Node:	NG24300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.70 ft
Control Elevation:	4.70 ft
Cross Section:	XG24335O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24335P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.54 ft	Invert:	0.98 ft
From Node:	NG24335	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24330	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	230.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24340O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24340	Default:	0.00 ft
To Node:	NG24320	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.55 ft	Discharge Coefficients	
Control Elevation:	3.55 ft	Weir Default:	2.800
Cross Section:	XG24340O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24340O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24340	Default:	0.00 ft
To Node:	NG24335	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.78 ft	Discharge Coefficients	
Control Elevation:	4.78 ft	Weir Default:	2.800
Cross Section:	XG24340O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24340P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.08 ft	Invert:	1.63 ft
From Node:	NG24340	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24335	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	23.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24341O			
Scenario:	wmp	Bottom Clip	
From Node:	NG24341	Default:	0.00 ft
To Node:	NG24340	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.21 ft	Discharge Coefficients	
Control Elevation:	3.21 ft	Weir Default:	2.800
Cross Section:	XG24341O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24341O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24341	Default:	0.00 ft
To Node:	NG24330	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.02 ft
Control Elevation:	3.02 ft
Cross Section:	XG24341O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24341P

		Upstream		Downstream	
Scenario:	wmp	Invert:	1.84 ft	Invert:	2.08 ft
From Node:	NG24341	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NG24340	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	79.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24400O

Scenario:	wmp
From Node:	NG24400
To Node:	NG22300
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.91 ft
Control Elevation:	3.91 ft
Cross Section:	XG24400O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NG24400	Default:	0.00 ft
To Node:	NG22100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.35 ft	Discharge Coefficients	
Control Elevation:	3.35 ft	Weir Default:	2.800
Cross Section:	XG24400O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24400O3			
Scenario:	wmp	Bottom Clip	
From Node:	NG24400	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.85 ft	Discharge Coefficients	
Control Elevation:	3.85 ft	Weir Default:	2.800
Cross Section:	XG24400O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG24400P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.93 ft	Invert:	0.87 ft
From Node:	NG24400	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	240.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24500PO

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24500P	Default:	0.00 ft
To Node:	NG24230	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.10 ft	**Discharge Coefficients**	
Control Elevation:	4.10 ft	Weir Default:	2.800
Cross Section:	XG24500PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24500PO2

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24500P	Default:	0.00 ft
To Node:	NG24530P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	**Discharge Coefficients**	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XG24500PO2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RG24500PO3

Scenario:	wmp	**Bottom Clip**	
From Node:	NG24500P	Default:	0.00 ft
To Node:	NG24516P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.46 ft
Control Elevation:	4.46 ft
Cross Section:	XG24500PO3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24500PO4

Scenario:	wmp
From Node:	NG24500P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.35 ft
Control Elevation:	4.35 ft
Cross Section:	XG24500PO4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24500PP

Scenario:	wmp
From Node:	NG24500P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	132.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	-0.03 ft	Invert:	-0.29 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		**Geometry: Circular**	
Max Depth:	2.00 ft	Max Depth:	2.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24516PO			
Scenario:	wmp	Bottom Clip	
From Node:	NG24516P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.45 ft	Discharge Coefficients	
Control Elevation:	4.45 ft	Weir Default:	2.800
Cross Section:	XG24516PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG24516PP		Upstream		Downstream	
Scenario:	wmp	Invert:	3.54 ft	Invert:	3.45 ft
From Node:	NG24516P	Manning's N:	0.0110	Manning's N:	0.0110
To Node:	NG24500P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	0.50 ft	Max Depth:	0.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	76.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24527PO			
Scenario:	wmp	Bottom Clip	
From Node:	NG24527P	Default:	0.00 ft
To Node:	NG24500P	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.13 ft	Discharge Coefficients	
Control Elevation:	4.13 ft	Weir Default:	2.800
Cross Section:	XG24527PO	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24527PO2

Scenario:	wmp
From Node:	NG24527P
To Node:	NG24516P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.35 ft
Control Elevation:	4.35 ft
Cross Section:	XG24527PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24527PP

Scenario:	wmp
From Node:	NG24527P
To Node:	NG24500P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	100.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream

Invert:	2.25 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream

Invert:	1.60 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RG24530PO

Scenario:	wmp
From Node:	NG24530P
To Node:	NG24230

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.06 ft
Control Elevation:	4.06 ft
Cross Section:	XG24530PO

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24530PO2

Scenario:	wmp
From Node:	NG24530P
To Node:	NG24600P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XG24530PO2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24530PO3

Scenario:	wmp
From Node:	NG24530P
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.00 ft
Control Elevation:	5.00 ft
Cross Section:	XG24530PO3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24530PP		Upstream		Downstream	
Scenario:	wmp	Invert:	1.18 ft	Invert:	0.90 ft
From Node:	NG24530P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24500P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	109.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24600PO			
Scenario:	wmp	Bottom Clip	
From Node:	NG24600P	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	Discharge Coefficients	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XG24600PO	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RG24600PP		Upstream		Downstream	
Scenario:	wmp	Invert:	1.06 ft	Invert:	0.25 ft
From Node:	NG24600P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	205.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RG24615PO

Scenario:	wmp
From Node:	NG24615P
To Node:	NG24600P
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XG24615PO

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24615PO2

Scenario:	wmp
From Node:	NG24615P
To Node:	NG24230
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XG24615PO2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RG24615PO3

Scenario:	wmp
From Node:	NG24615P
To Node:	BDRY
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.30 ft
Control Elevation:	4.30 ft
Cross Section:	XG24615PO3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RG24615PP		Upstream		Downstream	
Scenario:	wmp	Invert:	1.46 ft	Invert:	1.06 ft
From Node:	NG24615P	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NG24600P	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	199.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30000O	
Scenario:	wmp
From Node:	NH30000
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.80 ft
Control Elevation:	3.80 ft
Cross Section:	XH30000O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RH30000P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.15 ft	Invert:	-0.02 ft
From Node:	NH30000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	45.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30030O			
Scenario:	wmp	Bottom Clip	
From Node:	NH30030	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.50 ft	Discharge Coefficients	
Control Elevation:	4.50 ft	Weir Default:	2.800
Cross Section:	XH30030O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RH30030O2			
Scenario:	wmp	Bottom Clip	
From Node:	NH30030	Default:	0.00 ft
To Node:	NH30035	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.90 ft	Discharge Coefficients	
Control Elevation:	4.90 ft	Weir Default:	2.800
Cross Section:	XH30030O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RH30030P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.83 ft	Invert:	0.50 ft
From Node:	NH30030	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NH30000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	116.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30035O			
Scenario:	wmp	Bottom Clip	
From Node:	NH30035	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.45 ft	Discharge Coefficients	
Control Elevation:	4.45 ft	Weir Default:	2.800
Cross Section:	XH30035O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RH30035O2			
Scenario:	wmp	Bottom Clip	
From Node:	NH30035	Default:	0.00 ft
To Node:	BDRY	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.17 ft
Control Elevation:	6.17 ft
Cross Section:	XH30035O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RH30035P

		Upstream		Downstream	
Scenario:	wmp	Invert:	0.92 ft	Invert:	0.83 ft
From Node:	NH30035	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NH30030	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	53.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30040O

Scenario:	wmp
From Node:	NH30040
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.41 ft
Control Elevation:	4.41 ft
Cross Section:	XH30040O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RH30040O2			
Scenario:	wmp	Bottom Clip	
From Node:	NH30040	Default:	0.00 ft
To Node:	NH30045	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.72 ft	Discharge Coefficients	
Control Elevation:	4.72 ft	Weir Default:	2.800
Cross Section:	XH30040O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RH30040P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.04 ft	Invert:	0.92 ft
From Node:	NH30040	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NH30035	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	97.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30045O			
Scenario:	wmp	Bottom Clip	
From Node:	NH30045	Default:	0.00 ft
To Node:	NH30035	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XH30045O	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RH30045O2

Scenario:	wmp
From Node:	NH30045
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.78 ft
Control Elevation:	4.78 ft
Cross Section:	XH30045O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RH30045O3

Scenario:	wmp
From Node:	NH30045
To Node:	NH30055
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.73 ft
Control Elevation:	4.73 ft
Cross Section:	XH30045O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RH30045O4

Scenario:	wmp
From Node:	NH30045
To Node:	NH30050
Link Count:	1

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.80 ft
Control Elevation:	4.80 ft
Cross Section:	XH30045O4

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RH30045P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.39 ft	Invert:	1.04 ft
From Node:	NH30045	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NH30040	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	17.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30050O	
Scenario:	wmp
From Node:	NH30050
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	3.82 ft
Control Elevation:	3.82 ft
Cross Section:	XH30050O

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RH30050O2			
Scenario:	wmp	Bottom Clip	
From Node:	NH30050	Default:	0.00 ft
To Node:	NH30000	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.23 ft	Discharge Coefficients	
Control Elevation:	5.23 ft	Weir Default:	2.800
Cross Section:	XH30050O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RH30050O3			
Scenario:	wmp	Bottom Clip	
From Node:	NH30050	Default:	0.00 ft
To Node:	NH30035	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.80 ft	Discharge Coefficients	
Control Elevation:	4.80 ft	Weir Default:	2.800
Cross Section:	XH30050O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RH30050P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.32 ft	Invert:	0.15 ft
From Node:	NH30050	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NH30000	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	89.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RH30055O

Scenario:	wmp	**Bottom Clip**	
From Node:	NH30055	Default:	0.00 ft
To Node:	NSP0915	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.90 ft	**Discharge Coefficients**	
Control Elevation:	3.90 ft	Weir Default:	2.800
Cross Section:	XH30055O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RH30055O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NH30055	Default:	0.00 ft
To Node:	NH30050	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.25 ft	**Discharge Coefficients**	
Control Elevation:	4.25 ft	Weir Default:	2.800
Cross Section:	XH30055O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RH30055O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NH30055	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.55 ft
Control Elevation:	4.55 ft
Cross Section:	XH30055O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RH30055P

Scenario:	wmp
From Node:	NH30055
To Node:	NH30050
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	139.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	0.44 ft	Invert:	0.32 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.50 ft	Max Depth:	1.50 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0100O

Scenario:	wmp
From Node:	NSP0100
To Node:	NSP0200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.10 ft
Control Elevation:	4.10 ft
Cross Section:	XSP0100O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0100O3			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0100	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.13 ft	Discharge Coefficients	
Control Elevation:	5.13 ft	Weir Default:	2.800
Cross Section:	XSP0100O3	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0100O4			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0100	Default:	0.00 ft
To Node:	NH30040	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.48 ft	Discharge Coefficients	
Control Elevation:	4.48 ft	Weir Default:	2.800
Cross Section:	XSP0100O4	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0100O5			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0100	Default:	0.00 ft
To Node:	NH30045	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.56 ft	Discharge Coefficients	
Control Elevation:	4.56 ft	Weir Default:	2.800
Cross Section:	XSP0100O5	Weir Table:	
		Orifice Default:	0.600

	Orifice Table:

Comment:

Weir Link: RSP0100O6

Scenario:	wmp	**Bottom Clip**	
From Node:	NSP0100	Default:	0.00 ft
To Node:	NH30055	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.61 ft	**Discharge Coefficients**	
Control Elevation:	4.61 ft	Weir Default:	2.800
Cross Section:	XSP0100O6	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0100O7

Scenario:	wmp	**Bottom Clip**	
From Node:	NSP0100	Default:	0.00 ft
To Node:	NSP0915	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.55 ft	**Discharge Coefficients**	
Control Elevation:	4.55 ft	Weir Default:	2.800
Cross Section:	XSP0100O7	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0100P

		Upstream		Downstream	
Scenario:	wmp	Invert:	1.40 ft	Invert:	0.11 ft
From Node:	NSP0100	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	129.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0200O

Scenario:	wmp	Bottom Clip	
From Node:	NSP0200	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.62 ft	Discharge Coefficients	
Control Elevation:	5.62 ft	Weir Default:	2.800
Cross Section:	XSP0200O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0200O2

Scenario:	wmp	Bottom Clip	
From Node:	NSP0200	Default:	0.00 ft
To Node:	NSP0215	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.38 ft	Discharge Coefficients	
Control Elevation:	5.38 ft	Weir Default:	2.800
Cross Section:	XSP0200O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0200P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.35 ft	Invert:	0.06 ft
From Node:	NSP0200	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	122.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0215O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0215	Default:	0.00 ft
To Node:	NSP0100	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.05 ft	Discharge Coefficients	
Control Elevation:	4.05 ft	Weir Default:	2.800
Cross Section:	XSP0215O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0215O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0215	Default:	0.00 ft
To Node:	NSP0415	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.15 ft	Discharge Coefficients	
Control Elevation:	4.15 ft	Weir Default:	2.800
Cross Section:	XSP0215O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0215O3

Scenario:	wmp
From Node:	NSP0215
To Node:	NSP0915
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XSP0215O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0215P

Scenario:	wmp
From Node:	NSP0215
To Node:	NSP0200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	120.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	2.10 ft	Invert:	1.40 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0300O

Scenario:	wmp
From Node:	NSP0300
To Node:	BDRY

Bottom Clip

Default:	0.00 ft
Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.35 ft
Control Elevation:	5.35 ft
Cross Section:	XSP0300O

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0300O2

Scenario:	wmp
From Node:	NSP0300
To Node:	NSP0200
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.18 ft
Control Elevation:	4.18 ft
Cross Section:	XSP0300O2

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0300O3

Scenario:	wmp
From Node:	NSP0300
To Node:	NSP0215
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.30 ft
Control Elevation:	5.30 ft
Cross Section:	XSP0300O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0300P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.35 ft	Invert:	0.06 ft
From Node:	NSP0300	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0400O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0400	Default:	0.00 ft
To Node:	NSP0300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.21 ft	Discharge Coefficients	
Control Elevation:	4.21 ft	Weir Default:	2.800
Cross Section:	XSP0400O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0400O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0400	Default:	0.00 ft
To Node:	NSP0500	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.72 ft	Discharge Coefficients	
Control Elevation:	4.72 ft	Weir Default:	2.800
Cross Section:	XSP0400O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0400O3

Scenario:	wmp
From Node:	NSP0400
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.65 ft
Control Elevation:	5.65 ft
Cross Section:	XSP0400O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0400O4

Scenario:	wmp
From Node:	NSP0400
To Node:	NSP0415
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.73 ft
Control Elevation:	5.73 ft
Cross Section:	XSP0400O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0400P

Scenario:	wmp
From Node:	NSP0400
To Node:	BDRY
Link Count:	1

Upstream

Invert:	1.35 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Downstream

Invert:	0.06 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0415O

		Bottom Clip	
Scenario:	wmp		
From Node:	NSP0415	Default:	0.00 ft
To Node:	NSP0300	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.95 ft	Discharge Coefficients	
Control Elevation:	3.95 ft	Weir Default:	2.800
Cross Section:	XSP0415O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0415O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NSP0415	Default:	0.00 ft
To Node:	NSP0715	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.91 ft	Discharge Coefficients	
Control Elevation:	4.91 ft	Weir Default:	2.800
Cross Section:	XSP0415O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0415P		Upstream		Downstream	
Scenario:	wmp	Invert:	2.10 ft	Invert:	1.90 ft
From Node:	NSP0415	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NSP0400	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	120.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0500O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0500	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.72 ft	Discharge Coefficients	
Control Elevation:	5.72 ft	Weir Default:	2.800
Cross Section:	XSP0500O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0500O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0500	Default:	0.00 ft
To Node:	NSP0415	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.85 ft	Discharge Coefficients	
Control Elevation:	4.85 ft	Weir Default:	2.800
Cross Section:	XSP0500O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0500O3

Scenario:	wmp
From Node:	NSP0500
To Node:	NSP0715
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	6.15 ft
Control Elevation:	6.15 ft
Cross Section:	XSP0500O3

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0500O4

Scenario:	wmp
From Node:	NSP0500
To Node:	NSP0600
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.41 ft
Control Elevation:	5.41 ft
Cross Section:	XSP0500O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0500P

Scenario:	wmp
From Node:	NSP0500
To Node:	BDRY
Link Count:	1

Upstream

Invert:	1.35 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

Downstream

Invert:	0.06 ft
Manning's N:	0.0130

Geometry: Circular

Max Depth:	1.50 ft

		Bottom Clip			
Flow Direction:	Both				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	122.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0600O

		Bottom Clip	
Scenario:	wmp		
From Node:	NSP0600	Default:	0.00 ft
To Node:	NSP0700	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.43 ft	Discharge Coefficients	
Control Elevation:	4.43 ft	Weir Default:	2.800
Cross Section:	XSP0600O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0600O2

		Bottom Clip	
Scenario:	wmp		
From Node:	NSP0600	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.53 ft	Discharge Coefficients	
Control Elevation:	4.53 ft	Weir Default:	2.800
Cross Section:	XSP0600O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0600P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.30 ft	Invert:	1.00 ft
From Node:	NSP0600	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	124.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0700O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0700	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.25 ft	Discharge Coefficients	
Control Elevation:	4.25 ft	Weir Default:	2.800
Cross Section:	XSP0700O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0700O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0700	Default:	0.00 ft
To Node:	NSP0800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.66 ft	Discharge Coefficients	
Control Elevation:	4.66 ft	Weir Default:	2.800
Cross Section:	XSP0700O2	Weir Table:	

Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0700P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.80 ft	Invert:	0.00 ft
From Node:	NSP0700	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	113.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0715O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0715	Default:	0.00 ft
To Node:	NSP0815	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.44 ft	Discharge Coefficients	
Control Elevation:	4.44 ft	Weir Default:	2.800
Cross Section:	XSP0715O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0715O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0715	Default:	0.00 ft
To Node:	NSP0600	Op Table:	

Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.88 ft
Control Elevation:	4.88 ft
Cross Section:	XSP0715O2

Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0715O3

Scenario:	wmp
From Node:	NSP0715
To Node:	NSP0700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	5.40 ft
Control Elevation:	5.40 ft
Cross Section:	XSP0715O3

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0715P

Scenario:	wmp
From Node:	NSP0715
To Node:	NSP0700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	111.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream		Downstream	
Invert:	1.70 ft	Invert:	1.50 ft
Manning's N:	0.0130	Manning's N:	0.0130
Geometry: Circular		Geometry: Circular	
Max Depth:	1.00 ft	Max Depth:	1.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0800O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0800	Default:	0.00 ft
To Node:	NSP0900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.37 ft	Discharge Coefficients	
Control Elevation:	4.37 ft	Weir Default:	2.800
Cross Section:	XSP0800O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0800O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0800	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.44 ft	Discharge Coefficients	
Control Elevation:	4.44 ft	Weir Default:	2.800
Cross Section:	XSP0800O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0800P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.80 ft	Invert:	0.50 ft
From Node:	NSP0800	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	114.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0815O

Scenario:	wmp
From Node:	NSP0815
To Node:	NSP0915
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.35 ft
Control Elevation:	4.35 ft
Cross Section:	XSP0815O

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0815O2

Scenario:	wmp
From Node:	NSP0815
To Node:	NSP0215
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.73 ft
Control Elevation:	4.73 ft
Cross Section:	XSP0815O2

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0815O3

Scenario:	wmp
From Node:	NSP0815
To Node:	NSP0415
Link Count:	1
Flow Direction:	Both

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.51 ft
Control Elevation:	4.51 ft
Cross Section:	XSP0815O3

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0815O4

Scenario:	wmp
From Node:	NSP0815
To Node:	NSP0800
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.45 ft
Control Elevation:	4.45 ft
Cross Section:	XSP0815O4

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0815O5

Scenario:	wmp
From Node:	NSP0815
To Node:	NSP0700
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.61 ft
Control Elevation:	4.61 ft
Cross Section:	XSP0815O5

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0815P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.70 ft	Invert:	1.50 ft
From Node:	NSP0815	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	NSP0800	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.00 ft	Max Depth:	1.00 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	111.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0900O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP0900	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.40 ft	Discharge Coefficients	
Control Elevation:	4.40 ft	Weir Default:	2.800
Cross Section:	XSP0900O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP0900P		Upstream		Downstream	
Scenario:	wmp	Invert:	0.90 ft	Invert:	0.60 ft
From Node:	NSP0900	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	115.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft

Bend Location:	0.00 dec	Op Table:		Op Table:	
Energy Switch:	Energy	Ref Node:		Ref Node:	
		Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: RSP0915O

Scenario:	wmp	**Bottom Clip**	
From Node:	NSP0915	Default:	0.00 ft
To Node:	NSP0900	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	3.73 ft	**Discharge Coefficients**	
Control Elevation:	3.73 ft	Weir Default:	2.800
Cross Section:	XSP0915O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0915O2

Scenario:	wmp	**Bottom Clip**	
From Node:	NSP0915	Default:	0.00 ft
To Node:	NSP0800	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	**Top Clip**	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	5.25 ft	**Discharge Coefficients**	
Control Elevation:	5.25 ft	Weir Default:	2.800
Cross Section:	XSP0915O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP0915O3

Scenario:	wmp	**Bottom Clip**	
From Node:	NSP0915	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	

Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.65 ft
Control Elevation:	4.65 ft
Cross Section:	XSP0915O3

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Weir Link: RSP0915O4

Scenario:	wmp
From Node:	NSP0915
To Node:	BDRY
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Paved Road Vertical
Geometry Type:	Irregular
Invert:	4.95 ft
Control Elevation:	4.95 ft
Cross Section:	XSP0915O4

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment:

Pipe Link: RSP0915P

Scenario:	wmp
From Node:	NSP0915
To Node:	NSP0900
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Length:	90.00 ft
FHWA Code:	1
Entr Loss Coef:	0.20
Exit Loss Coef:	1.00
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream	
Invert:	1.40 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream	
Invert:	1.20 ft
Manning's N:	0.0130
Geometry: Circular	
Max Depth:	1.25 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Comment:

Weir Link: RSP1000O			
Scenario:	wmp	Bottom Clip	
From Node:	NSP1000	Default:	0.00 ft
To Node:	NSP0915	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.36 ft	Discharge Coefficients	
Control Elevation:	4.36 ft	Weir Default:	2.800
Cross Section:	XSP1000O	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Weir Link: RSP1000O2			
Scenario:	wmp	Bottom Clip	
From Node:	NSP1000	Default:	0.00 ft
To Node:	BDRY	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default:	0.00 ft
Weir Type:	Paved Road Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	4.68 ft	Discharge Coefficients	
Control Elevation:	4.68 ft	Weir Default:	2.800
Cross Section:	XSP1000O2	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: RSP1000P		Upstream		Downstream	
Scenario:	wmp	Invert:	1.40 ft	Invert:	1.20 ft
From Node:	NSP1000	Manning's N:	0.0130	Manning's N:	0.0130
To Node:	BDRY	Geometry: Circular		Geometry: Circular	
Link Count:	1	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Flow Direction:	Both	Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	114.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	0.20	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	1.00	Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:	

Energy Switch: Energy | Ref Node: | Manning's N: 0.0000 | Ref Node: | Manning's N: 0.0000

Comment:

Simulation: 100y24h

Scenario: wmp
Run Date/Time: 11/23/2020 4:04:30 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	26.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.0000	0.0500
Max Calculation Time:		10.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0001 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0000 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	12.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 10y24h

Scenario: wmp
Run Date/Time: 11/23/2020 4:19:09 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	26.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.0000	0.0500
Max Calculation Time:		10.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0001 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0000 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.50 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 233y24h

Scenario: wmp
Run Date/Time: 11/23/2020 4:31:54 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000

End Time:	0	0	0	26.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.0000	0.0500
Max Calculation Time:		10.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0001 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0000 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	4.50 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 25y24h

Scenario: wmp
Run Date/Time: 11/23/2020 4:42:15 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	26.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.0000	0.0500
Max Calculation Time:		10.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0001 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0000 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	9.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

Simulation: 50y24h

Scenario: wmp
Run Date/Time: 11/23/2020 4:55:50 PM
Program Version: ICPR4 4.07.01

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	26.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	30.0000	0.0500
Max Calculation Time:		10.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:

Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set:
Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6		
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0001 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft		
Link Optimizer Tol:	0.0000 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	10.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
		Dflt Damping (1D):	0.0050 ft
		Min Node Srf Area (1D):	100 ft2
		Energy Switch (1D):	Energy

Comment:

APPENDIX K

Hydrologic & Hydraulic Model Results (Current Conditions)

Node Max Conditions [wmp]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BDRY	100y24h	5.00	0.69	0.0000	2464.87	0.00	0
NA00100	100y24h	2.70	2.06	0.0001	9.95	9.94	206
NA00106	100y24h	2.20	2.12	0.0000	1.41	1.41	100
NA00110	100y24h	3.30	2.22	0.0001	3.04	3.03	100
NA00200	100y24h	1.90	1.30	0.0000	4.16	4.15	375
NA00300	100y24h	1.40	2.10	0.0002	65.46	64.42	6154
NA00312	100y24h	2.30	2.97	0.0001	13.84	13.83	1929
NA00314P	100y24h	1.20	3.60	0.0004	16.62	13.07	26428
NA00335	100y24h	1.80	2.32	0.0001	55.18	54.65	2476
NA00360	100y24h	1.70	2.55	0.0001	32.06	32.07	1228
NA00370	100y24h	3.70	3.62	0.0008	12.68	12.76	309
NA00375	100y24h	3.20	4.15	0.0025	11.08	9.54	17817
NA00385	100y24h	3.60	4.01	0.0006	4.78	4.71	3282
NA00510	100y24h	1.50	2.80	0.0003	23.18	22.25	30026
NA00605	100y24h	1.70	2.85	0.0003	21.35	20.17	24583
NA00620	100y24h	1.90	2.85	0.0001	24.43	23.98	21370
NA00700	100y24h	1.90	2.68	0.0002	10.41	10.31	626
NA00710	100y24h	1.70	2.69	0.0004	60.38	56.97	20546
NA00735	100y24h	1.60	2.78	0.0001	18.60	18.26	17505
NA00745	100y24h	3.70	3.51	0.0004	17.47	17.54	100
NA00750	100y24h	3.30	3.94	0.0017	11.66	10.75	15283
NA00765	100y24h	4.30	4.79	0.0003	14.17	14.12	3269
NA00800	100y24h	2.00	2.15	0.0002	68.44	68.44	117
NA00900	100y24h	2.80	3.54	0.0004	11.12	11.01	4226
NA01000	100y24h	2.10	3.21	0.0015	14.28	12.87	11956
NA01010	100y24h	4.70	5.39	0.0001	15.29	15.24	18169
NA01100	100y24h	2.60	3.34	0.0006	12.16	11.95	7408
NA01200	100y24h	2.60	3.21	0.0011	10.46	8.58	9368
NA01300	100y24h	1.80	2.88	0.0004	12.38	8.56	19448
NA01325	100y24h	1.60	2.88	0.0004	18.64	13.97	45851
NA01600	100y24h	1.00	2.88	0.0003	43.54	27.43	64477
NA01615	100y24h	1.30	2.88	0.0009	28.86	22.62	45489
NA01700	100y24h	1.50	2.88	0.0014	35.77	33.08	29136
NA01710	100y24h	1.40	2.88	0.0006	9.65	9.68	11499
NA01720	100y24h	1.60	2.88	0.0012	15.28	13.83	36769
NA01800	100y24h	2.48	3.29	0.0018	26.28	26.25	4982
NA01816	100y24h	2.40	3.10	0.0002	31.00	30.96	8312
NA01825	100y24h	2.80	3.42	0.0002	11.40	11.32	8189
NA01835	100y24h	1.70	2.88	0.0002	29.08	28.91	20668
NA01850	100y24h	3.60	4.67	0.0002	25.09	25.01	8016
NA01855	100y24h	3.80	4.69	0.0005	26.10	25.85	15990
NA01900	100y24h	2.10	2.99	0.0004	9.49	7.57	9797
NA02000	100y24h	1.80	3.08	0.0013	12.98	8.32	23797
NA02100	100y24h	1.40	3.08	0.0002	20.41	8.05	35312
NA02110	100y24h	1.50	3.08	0.0005	11.11	5.26	25567
NA02120	100y24h	3.30	3.62	0.0001	4.61	4.59	898

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02200	100y24h	4.10	1.90	0.0001	16.40	16.39	340
NB02215	100y24h	4.30	2.23	0.0001	5.28	5.25	100
NB02235	100y24h	3.90	2.95	0.0001	7.99	8.01	189
NB02245	100y24h	7.60	3.39	0.0001	5.73	5.72	253
NB02260	100y24h	5.60	4.14	0.0001	5.36	5.34	237
NB02270	100y24h	5.50	4.15	0.0001	1.21	1.23	100
NB02310	100y24h	2.30	3.16	0.0005	43.05	42.95	10952
NB02315	100y24h	1.90	3.18	0.0070	42.41	37.10	58123
NB02316P	100y24h	3.50	3.18	0.0003	1.55	24.22	3581
NB02320	100y24h	4.00	4.17	0.0006	5.01	4.95	330
NB02325	100y24h	4.20	4.92	0.0003	1.72	1.64	173
NB02400	100y24h	2.30	1.80	0.0001	53.56	53.56	109
NB02410	100y24h	2.30	3.22	0.0008	33.90	33.73	5344
NB02412	100y24h	1.60	3.23	0.0010	7.06	6.25	10104
NB02425	100y24h	4.20	4.75	0.0002	12.41	12.39	905
NB02426	100y24h	4.70	5.10	0.0002	3.87	3.85	1868
NB02427	100y24h	4.80	5.23	0.0003	5.34	5.31	2862
NB02430	100y24h	4.50	5.18	0.0002	7.18	6.35	5169
NB02435	100y24h	2.10	3.39	0.0014	24.16	22.53	21016
NB02445	100y24h	3.10	3.91	0.0004	13.44	13.43	771
NB02455	100y24h	4.20	4.71	0.0004	6.52	6.21	1779
NB02500	100y24h	4.00	2.81	0.0005	10.11	10.11	141
NB02510	100y24h	4.10	5.43	0.0017	16.46	9.43	29319
NB02517P	100y24h	5.10	5.55	0.0004	1.85	1.82	1163
NB02600	100y24h	2.60	1.33	0.0000	6.64	6.64	100
NB02610	100y24h	1.90	2.39	0.0001	12.65	12.64	2351
NB02615	100y24h	3.00	3.09	0.0001	7.56	7.56	312
NB02616	100y24h	3.80	4.21	0.0001	2.84	2.82	1449
NB02617	100y24h	4.40	4.74	0.0001	1.29	1.26	1377
NB02618	100y24h	2.70	3.11	0.0002	3.70	3.61	3297
NB02620	100y24h	3.50	3.96	0.0002	10.09	10.05	1922
NB02622	100y24h	3.20	3.72	0.0002	7.80	7.59	3824
NB02700	100y24h	2.90	3.33	0.0004	15.79	15.67	2739
NB02706	100y24h	2.90	3.29	0.0001	3.75	3.70	1132
NB02707	100y24h	2.60	3.20	0.0003	8.25	8.06	5859
NB02710	100y24h	2.80	3.70	0.0007	20.65	18.82	21124
NB02800	100y24h	2.70	3.51	0.0021	37.94	37.59	12385
NB02900	100y24h	2.30	2.61	0.0002	12.28	12.26	236
NB02910	100y24h	2.60	3.70	0.0005	35.79	24.79	26345
NB02930	100y24h	2.30	3.70	0.0007	19.96	13.86	24263
NB02965	100y24h	2.30	3.70	0.0005	15.06	12.45	10081
NC002P	100y24h	3.00	1.72	0.0000	3.91	3.89	154
NC003P	100y24h	3.00	1.81	0.0000	1.00	1.05	448
NC03000	100y24h	3.30	3.79	0.0001	9.31	9.20	2151
NC03031P	100y24h	4.60	4.51	0.0001	2.93	2.92	100
NC03040	100y24h	3.30	3.78	0.0001	3.46	3.42	1574
NC03050	100y24h	3.00	3.77	0.0001	5.12	5.08	2638

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03055	100y24h	3.50	3.84	0.0000	3.50	3.48	2016
NC03100	100y24h	3.30	4.00	0.0001	26.29	24.83	6930
NC03120	100y24h	3.00	4.10	0.0003	17.36	13.00	22693
NC03123P	100y24h	3.10	3.95	0.0001	5.70	5.66	3798
NC03125	100y24h	1.90	3.95	0.0005	28.90	20.75	37720
NC03135	100y24h	2.20	3.95	0.0004	13.73	9.93	12624
NC03137	100y24h	3.20	3.95	0.0004	1.51	1.39	425
NC03160	100y24h	2.30	3.95	0.0004	24.19	22.97	24519
NC03200	100y24h	3.10	4.42	0.0002	29.74	28.05	21897
NC03210	100y24h	3.00	4.42	0.0002	33.99	32.14	26480
NC03220	100y24h	3.30	4.44	0.0003	23.17	21.15	27535
NC03222	100y24h	3.80	4.76	0.0004	4.14	3.80	13198
NC03235	100y24h	3.80	4.46	0.0003	8.10	7.67	9501
NC03240	100y24h	3.50	4.43	0.0006	8.32	7.13	13011
NC03300	100y24h	2.80	4.16	0.0025	45.22	41.19	54075
NC03400	100y24h	3.30	4.12	0.0004	8.77	7.18	6048
NC03415	100y24h	3.50	4.13	0.0006	5.23	4.75	6394
NC03500	100y24h	2.80	4.13	0.0014	25.45	21.87	20530
NC03600	100y24h	3.50	2.76	0.0001	7.37	7.36	320
NC03610	100y24h	3.10	4.13	0.0001	18.33	18.10	11855
NC03615	100y24h	3.50	4.21	0.0002	11.79	11.41	14072
NC03625	100y24h	3.60	4.27	0.0002	3.51	2.97	6816
NC03700	100y24h	3.20	4.12	0.0006	26.84	26.31	22131
NC03715	100y24h	3.60	4.30	0.0004	5.86	5.89	8317
NC03716	100y24h	3.50	4.29	0.0003	7.50	7.22	12160
NC03720	100y24h	3.40	4.26	0.0003	10.28	8.51	22361
NC03723	100y24h	3.50	4.32	0.0002	7.18	7.12	4378
NC03730	100y24h	3.30	4.26	0.0002	10.87	10.73	8559
NC03737	100y24h	3.30	4.25	0.0003	11.58	11.36	8275
NC03800	100y24h	2.60	2.72	0.0002	87.52	87.52	129
NC03825	100y24h	2.00	3.92	0.0014	65.50	64.14	38668
NC03830	100y24h	2.40	3.92	0.0037	39.70	38.73	29585
NC03833P	100y24h	6.00	4.01	0.0000	5.81	5.13	2067
NC03835P	100y24h	6.00	4.01	0.0000	0.36	0.32	100
NC03837P	100y24h	3.80	4.03	0.0000	3.83	3.29	1447
NC03845	100y24h	2.40	3.94	0.0005	36.27	33.40	13107
NC03850	100y24h	2.20	3.94	0.0011	26.12	21.86	18203
NC03855	100y24h	2.30	3.69	0.0002	26.25	25.62	26935
NC03856	100y24h	2.50	3.70	0.0002	27.07	26.72	24033
NC06000	100y24h	2.80	3.36	0.0006	21.02	21.01	1984
NC06010	100y24h	2.70	3.52	0.0011	21.26	20.96	11959
NC06020	100y24h	2.80	3.88	0.0013	16.82	16.63	6214
NC06400	100y24h	4.80	5.36	0.0001	4.00	3.33	4810
ND03900	100y24h	2.30	3.25	0.0026	37.06	34.08	16077
ND04000	100y24h	2.90	2.24	0.0002	46.05	46.05	282
ND04010	100y24h	2.80	2.59	0.0002	6.27	6.16	100
ND04012P	100y24h	3.00	4.62	0.0004	2.16	3.07	508

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04014P	100y24h	4.38	4.68	0.0008	2.84	2.07	504
ND04015	100y24h	2.90	2.95	0.0003	27.77	27.65	100
ND04016P	100y24h	3.00	4.79	0.0001	1.65	1.53	1721
ND04030	100y24h	3.00	3.91	0.0016	20.57	15.73	25212
ND04100	100y24h	2.50	3.64	0.0009	15.31	14.70	22597
ND04200	100y24h	2.50	3.65	0.0012	13.83	11.03	25632
ND04300	100y24h	2.30	2.98	0.0004	14.93	14.82	6134
ND04315	100y24h	3.40	3.89	0.0006	6.74	6.74	1338
ND04316P	100y24h	3.00	4.75	0.0001	2.67	3.37	1648
ND04318P	100y24h	3.00	4.77	0.0017	3.37	1.14	1226
ND04400	100y24h	2.10	2.96	0.0008	15.84	15.26	10734
ND04500	100y24h	2.90	2.41	0.0002	46.22	46.21	205
ND04511	100y24h	2.90	3.00	0.0002	6.28	6.20	235
ND04512	100y24h	2.50	2.96	0.0002	5.09	4.80	2700
ND04513	100y24h	2.40	2.96	0.0002	6.28	6.04	1783
ND04515	100y24h	3.40	4.37	0.0007	41.42	41.24	5206
ND04530	100y24h	3.00	4.38	0.0010	21.51	20.41	25210
ND04542	100y24h	2.90	4.38	0.0027	18.31	16.18	26205
ND04550	100y24h	3.00	4.39	0.0017	54.74	33.21	57694
ND04555	100y24h	2.90	4.39	0.0008	36.56	33.25	22986
ND04565	100y24h	2.80	4.39	0.0020	32.18	26.95	39229
ND04571P	100y24h	4.80	5.04	0.0000	8.20	7.07	5207
ND04600	100y24h	2.50	1.16	0.0000	10.66	10.65	424
ND04700	100y24h	3.20	3.49	0.0002	6.00	6.00	532
ND04715	100y24h	3.20	4.38	0.0000	15.11	14.47	37079
ND04800	100y24h	3.00	2.55	0.0009	10.02	10.02	254
ND04815	100y24h	3.40	4.36	0.0014	10.68	8.86	11646
ND04900	100y24h	3.40	2.00	0.0002	45.04	45.04	187
ND04913	100y24h	3.90	3.93	0.0001	1.32	1.25	185
ND04915	100y24h	4.20	3.07	0.0003	41.70	41.71	113
ND04925	100y24h	3.20	4.11	0.0010	25.63	25.41	15858
ND04930	100y24h	3.60	4.12	0.0005	26.28	26.33	1726
ND04935	100y24h	3.20	4.37	0.0025	32.46	32.04	37379
ND04947	100y24h	3.70	4.38	0.0019	12.66	12.28	6019
ND04949P	100y24h	4.93	5.30	0.0000	19.23	17.56	37405
ND04951	100y24h	2.90	4.12	0.0015	10.82	10.31	12754
ND04960	100y24h	3.50	4.11	0.0008	6.10	4.60	7271
ND04961	100y24h	3.60	4.12	0.0006	2.66	2.48	2049
ND05000	100y24h	2.50	1.89	0.0002	16.39	16.39	212
ND05100	100y24h	1.90	2.89	0.0005	12.39	11.77	8769
ND05200	100y24h	2.60	1.85	0.0001	10.24	10.23	100
ND05300	100y24h	2.70	1.75	0.0001	40.95	40.94	100
ND05310	100y24h	2.60	2.56	0.0001	35.78	35.79	100
ND05315	100y24h	3.30	3.27	0.0002	26.77	26.86	132
ND05316	100y24h	3.20	3.77	0.0006	10.48	10.50	2893
ND05335	100y24h	12.20	3.31	0.0002	5.81	5.70	100
ND05337	100y24h	13.65	3.32	0.0001	1.01	0.95	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND05339	100y24h	2.10	3.39	0.0006	8.50	7.78	5644
ND05345	100y24h	5.90	3.45	0.0002	15.40	15.55	100
ND05355	100y24h	5.20	3.62	0.0003	14.98	15.10	100
ND05360	100y24h	2.40	4.10	0.0006	14.38	14.59	2921
ND05365	100y24h	3.00	4.11	0.0016	23.23	17.79	38426
ND05375	100y24h	3.50	4.12	0.0011	2.45	2.30	1398
ND05405	100y24h	5.80	4.58	0.0000	0.27	0.26	100
ND05500	100y24h	3.00	5.41	0.0001	31.38	9.70	145282
ND05600	100y24h	4.40	5.41	0.0005	6.31	6.30	6900
ND05700	100y24h	3.90	5.28	0.0009	7.59	3.35	12261
ND05800	100y24h	3.00	3.73	0.0001	4.97	4.59	1032
ND05900	100y24h	3.80	3.74	0.0007	2.79	2.79	100
ND05910	100y24h	3.00	3.89	0.0007	5.17	4.83	5997
ND06105P	100y24h	5.20	5.36	0.0011	3.34	3.26	310
ND06110P	100y24h	5.30	5.47	0.0005	2.19	2.07	427
ND06115P	100y24h	5.30	5.52	0.0006	1.15	0.84	338
ND06210P	100y24h	5.50	5.39	0.0017	3.76	2.16	120
ND06215P	100y24h	4.90	5.45	0.0011	2.16	1.57	495
ND06300P	100y24h	2.70	4.39	0.0001	14.60	10.23	34440
NE020P	100y24h	3.98	4.33	0.0000	67.01	61.35	83623
NE08000	100y24h	3.30	4.33	0.0015	30.27	20.93	29949
NE08100	100y24h	3.10	4.33	0.0018	36.43	22.30	37832
NE08200	100y24h	2.60	4.33	0.0018	71.45	69.94	90976
NE08300	100y24h	3.20	4.44	0.0029	38.19	37.63	24870
NE08400	100y24h	3.30	4.44	0.0011	39.19	33.79	26372
NE08500	100y24h	3.10	4.35	0.0013	21.19	12.70	30466
NE08600	100y24h	3.40	4.35	0.0002	19.62	18.32	14126
NE08615	100y24h	2.70	4.68	0.0003	19.52	10.24	49721
NE08625	100y24h	3.10	4.45	0.0009	24.62	23.22	26663
NE08700	100y24h	3.00	4.35	0.0003	14.27	14.84	17664
NE08716	100y24h	4.20	4.95	0.0003	2.62	2.46	1527
NE08717	100y24h	4.50	4.99	0.0001	1.70	1.65	1221
NE08720	100y24h	3.50	4.35	0.0004	7.90	8.23	5724
NE08735	100y24h	3.70	4.63	0.0003	5.43	4.57	6544
NE08745	100y24h	3.50	4.45	0.0006	6.20	6.11	4443
NE08800	100y24h	3.90	4.34	0.0015	14.41	13.10	6856
NE08900	100y24h	3.50	4.37	0.0025	18.82	13.74	19127
NE09000	100y24h	4.00	4.69	0.0009	6.37	4.67	7507
NE09100	100y24h	3.10	3.26	0.0001	40.17	40.15	447
NE09110	100y24h	3.80	3.88	0.0002	25.74	25.77	291
NE09125	100y24h	4.80	4.82	0.0000	32.46	26.66	35487
NE09200	100y24h	4.40	1.93	0.0002	23.90	23.90	354
NE09210	100y24h	3.80	2.14	0.0000	23.70	23.70	314
NE09220	100y24h	4.70	4.44	0.0000	75.08	59.28	97607
NE09300	100y24h	3.00	4.37	0.0020	16.69	10.86	18452
NE09400	100y24h	2.90	4.37	0.0002	28.70	17.83	69067
NE09415	100y24h	3.10	4.45	0.0005	14.43	13.80	20770

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE09500	100y24h	2.80	4.37	0.0019	28.52	26.21	46253
NE09600	100y24h	2.80	4.28	0.0024	42.03	40.90	51535
NE09700	100y24h	3.00	3.99	0.0011	15.45	14.01	24280
NE09800	100y24h	3.10	3.77	0.0010	10.77	9.46	5365
NE09900	100y24h	3.20	4.17	0.0016	25.07	24.68	14093
NE10000	100y24h	3.10	4.05	0.0024	25.36	23.15	24042
NE10100	100y24h	2.70	3.98	0.0016	11.77	9.48	16487
NE10200	100y24h	3.00	4.07	0.0026	21.86	20.12	30651
NE10300	100y24h	3.10	4.13	0.0023	18.11	12.09	17911
NE10400	100y24h	3.10	4.13	0.0016	20.21	16.43	33698
NE10500	100y24h	3.30	3.79	0.0007	12.15	11.59	3912
NE10600	100y24h	3.40	4.05	0.0011	11.78	10.64	10115
NE10700	100y24h	2.80	3.93	0.0013	8.00	5.16	12341
NE10800	100y24h	3.20	4.13	0.0023	13.44	9.27	18230
NE10900	100y24h	3.20	4.12	0.0025	17.17	13.73	13875
NE11000	100y24h	2.80	4.23	0.0012	19.61	14.62	42037
NE11100	100y24h	3.00	3.89	0.0019	11.61	8.95	10109
NE11200	100y24h	2.80	3.97	0.0015	14.44	11.12	23418
NE11300	100y24h	2.90	3.97	0.0017	9.40	5.84	10956
NE11400	100y24h	2.80	4.15	0.0018	11.78	8.41	13274
NE11500	100y24h	3.40	4.62	0.0029	17.91	13.83	30942
NE11600	100y24h	3.40	4.62	0.0012	21.00	15.71	39719
NE11700	100y24h	3.30	4.61	0.0012	15.14	13.89	19539
NE11800	100y24h	3.30	4.63	0.0016	10.70	7.05	16378
NE11900	100y24h	3.30	4.62	0.0026	23.06	11.21	32869
NE12000	100y24h	3.30	4.39	0.0016	9.88	5.69	14490
NE12100	100y24h	3.20	3.99	0.0017	16.71	13.57	10988
NE12200	100y24h	3.20	4.33	0.0024	16.61	13.21	20182
NE12300	100y24h	3.20	4.09	0.0017	11.79	9.52	11574
NE12400	100y24h	3.20	4.32	0.0022	16.79	11.47	26227
NE12500	100y24h	3.10	4.32	0.0022	16.83	10.11	31428
NE12600	100y24h	3.30	4.29	0.0015	8.08	5.95	9042
NE13100	100y24h	3.00	4.37	0.0017	12.84	8.03	16350
NE14000	100y24h	2.00	4.37	0.0008	3.87	3.01	5924
NF15000	100y24h	3.10	4.61	0.0012	32.80	23.39	69957
NF15010	100y24h	3.00	4.61	0.0008	6.89	6.96	8782
NF15100	100y24h	3.70	4.78	0.0010	21.40	20.68	26093
NF15200	100y24h	3.30	4.61	0.0007	22.53	20.11	19590
NF15210	100y24h	3.20	4.61	0.0009	14.98	14.29	13405
NF15215	100y24h	3.30	4.61	0.0010	26.60	19.47	35017
NF15300	100y24h	3.20	4.61	0.0008	57.75	57.44	30071
NF15315	100y24h	3.30	4.61	0.0002	13.38	11.30	8862
NF15330	100y24h	3.20	4.61	0.0003	23.90	23.19	33341
NF15400	100y24h	3.00	4.43	0.0022	56.11	55.82	33344
NF15500	100y24h	3.40	4.58	0.0023	21.44	18.90	31772
NF15600	100y24h	2.20	3.68	0.0020	63.18	61.71	88421
NF15700	100y24h	2.60	3.68	0.0011	14.79	10.53	32657

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF15800	100y24h	2.40	3.68	0.0023	15.61	8.63	26959
NF15900	100y24h	2.20	3.68	0.0019	28.20	26.14	39195
NF16000	100y24h	4.00	4.12	0.0002	5.33	5.10	781
NF16100	100y24h	2.80	3.99	0.0012	16.36	13.02	31609
NF16200	100y24h	2.00	3.28	0.0018	38.51	29.99	40684
NF16300	100y24h	2.20	3.27	0.0009	16.50	15.32	13887
NF16310	100y24h	2.10	3.28	0.0011	12.54	12.09	16984
NF16500	100y24h	2.10	3.27	0.0006	12.03	9.97	17192
NF16510	100y24h	2.10	3.28	0.0011	7.44	6.88	14160
NF16700	100y24h	2.80	2.30	0.0000	2.90	2.90	116
NF16800	100y24h	1.70	3.27	0.0018	36.62	26.03	46825
NF16900	100y24h	1.60	3.27	0.0014	25.86	22.53	36543
NF17000	100y24h	1.80	3.26	0.0020	37.79	37.48	35374
NF17100	100y24h	1.90	3.27	0.0020	21.95	21.78	15540
NF17200	100y24h	2.60	3.61	0.0004	17.74	14.28	18361
NF17210	100y24h	2.20	3.62	0.0009	13.59	11.65	18449
NF17300	100y24h	3.20	2.37	0.0000	3.06	3.05	111
NF17400	100y24h	2.20	3.94	0.0019	27.53	20.90	40885
NF17500	100y24h	2.70	3.95	0.0010	16.20	13.80	25755
NF17600	100y24h	2.20	3.73	0.0020	24.31	12.98	44314
NF17700	100y24h	2.30	3.73	0.0035	23.90	17.61	31059
NF17800	100y24h	2.80	3.92	0.0017	19.12	15.70	23597
NG20000	100y24h	3.30	3.83	0.0002	7.75	7.35	1368
NG20100	100y24h	2.90	4.37	0.0023	15.54	10.56	18145
NG20200	100y24h	3.40	4.54	0.0025	18.77	14.09	25245
NG20300	100y24h	3.20	4.54	0.0026	20.99	13.64	21372
NG20400	100y24h	3.10	4.36	0.0023	17.22	12.47	26324
NG20500	100y24h	3.20	4.35	0.0016	21.76	14.43	37015
NG20600	100y24h	3.30	4.35	0.0014	15.51	11.69	26827
NG20700	100y24h	2.90	3.96	0.0026	18.53	12.44	26562
NG20800	100y24h	3.30	4.35	0.0009	17.33	10.67	25164
NG20810	100y24h	3.10	4.35	0.0011	20.86	15.87	55086
NG20900	100y24h	3.10	4.03	0.0014	15.68	12.85	10797
NG21000	100y24h	3.00	4.28	0.0008	15.95	8.86	17055
NG21010	100y24h	3.30	4.29	0.0017	12.17	12.06	8894
NG21100	100y24h	3.10	4.28	0.0003	15.63	14.13	10989
NG21110	100y24h	3.20	4.29	0.0007	21.64	21.40	25642
NG21200	100y24h	3.40	4.14	0.0012	10.80	10.26	12189
NG21300	100y24h	2.80	4.34	0.0004	42.32	39.97	112659
NG21400	100y24h	3.00	4.34	0.0002	38.44	37.30	58069
NG21415	100y24h	3.40	4.35	0.0002	18.82	15.28	31121
NG21500	100y24h	2.60	4.35	0.0015	28.59	20.96	38133
NG21600	100y24h	2.70	4.37	0.0015	30.91	17.96	61161
NG21700	100y24h	3.00	4.35	0.0006	26.98	22.57	52641
NG21715	100y24h	3.30	4.35	0.0005	13.77	10.64	29602
NG21800	100y24h	3.40	4.35	0.0002	18.24	17.09	19051
NG21810	100y24h	3.20	4.35	0.0004	23.23	19.47	54332

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG21900	100y24h	2.90	4.13	0.0004	44.06	43.59	25737
NG22000	100y24h	3.80	4.54	0.0006	18.83	16.51	37931
NG22000P	100y24h	4.28	3.08	0.0000	13.99	1.95	34172
NG22015P	100y24h	3.31	3.52	0.0000	28.39	17.09	99956
NG22025	100y24h	4.20	4.54	0.0004	3.11	2.75	3753
NG22040	100y24h	2.90	3.96	0.0001	25.17	24.77	22010
NG22100	100y24h	2.30	3.82	0.0007	60.62	60.03	36125
NG22300	100y24h	3.30	3.50	0.0002	4.04	3.79	777
NG22400	100y24h	2.50	3.75	0.0021	61.42	61.31	36014
NG22500	100y24h	2.60	3.81	0.0007	41.43	40.41	41424
NG22600	100y24h	2.80	3.81	0.0012	12.08	9.34	7808
NG22700	100y24h	2.70	3.81	0.0011	17.84	9.94	32162
NG22800	100y24h	2.70	3.81	0.0022	20.78	9.93	42982
NG22900	100y24h	2.90	3.81	0.0012	15.65	10.94	22145
NG23000	100y24h	2.50	3.66	0.0004	37.64	37.34	32333
NG23015	100y24h	2.90	3.67	0.0004	12.94	12.53	10201
NG23100	100y24h	2.60	3.42	0.0007	30.64	30.50	37423
NG23200	100y24h	2.50	3.30	0.0005	15.11	14.34	19145
NG23300	100y24h	2.60	3.16	0.0008	13.92	13.81	9134
NG23315	100y24h	2.30	3.22	0.0006	4.16	3.64	1599
NG23400	100y24h	2.30	3.22	0.0002	5.98	3.82	5845
NG23500	100y24h	2.60	3.22	0.0004	5.70	4.70	4377
NG23600	100y24h	2.30	3.23	0.0004	8.14	7.15	10818
NG23700	100y24h	2.30	3.22	0.0007	11.50	8.69	13683
NG23800	100y24h	2.30	3.22	0.0014	7.89	6.81	5694
NG23900	100y24h	2.30	2.81	0.0006	7.38	6.87	1868
NG24000	100y24h	1.90	2.86	0.0005	11.56	10.63	14048
NG24100	100y24h	1.50	1.50	0.0001	3.22	3.21	147
NG24200	100y24h	2.00	2.47	0.0001	20.95	20.88	1961
NG24216	100y24h	2.50	2.48	0.0001	0.29	0.35	147
NG24225	100y24h	2.70	3.43	0.0003	11.49	11.43	1959
NG24230	100y24h	2.80	3.45	0.0002	10.19	9.59	3833
NG24300	100y24h	3.10	3.11	0.0004	16.64	16.60	419
NG24320	100y24h	3.00	3.38	0.0010	2.08	2.65	472
NG24322	100y24h	2.90	3.77	0.0000	2.54	2.02	7901
NG24330	100y24h	2.30	3.67	0.0005	9.62	8.01	13747
NG24335	100y24h	3.00	4.04	0.0002	7.73	7.01	2801
NG24340	100y24h	2.90	3.67	0.0002	6.46	6.17	4818
NG24341	100y24h	2.80	3.67	0.0001	7.80	7.44	4595
NG24400	100y24h	2.90	3.82	0.0005	28.43	28.21	15528
NG24500P	100y24h	2.00	3.46	0.0005	20.37	19.41	2929
NG24516P	100y24h	4.20	4.31	0.0000	0.43	0.38	587
NG24527P	100y24h	4.00	4.22	0.0002	3.51	3.33	3691
NG24530P	100y24h	1.60	3.53	0.0001	4.74	4.57	706
NG24600P	100y24h	3.30	3.99	0.0003	11.15	9.39	8270
NG24615P	100y24h	3.20	4.05	0.0007	8.07	6.67	14928
NH30000	100y24h	3.70	2.09	0.0002	10.54	10.53	254

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NH30030	100y24h	4.20	2.13	0.0001	1.68	1.67	135
NH30035	100y24h	4.20	2.16	0.0001	1.48	1.48	141
NH30040	100y24h	4.30	2.16	0.0002	0.79	0.68	107
NH30045	100y24h	4.30	2.17	0.0001	0.21	0.51	100
NH30050	100y24h	3.60	3.16	0.0004	9.01	9.01	192
NH30055	100y24h	3.80	4.41	0.0010	9.61	8.61	6554
NSP0100	100y24h	3.50	4.56	0.0029	22.93	16.07	21339
NSP0200	100y24h	3.50	4.47	0.0012	18.03	12.91	12636
NSP0215	100y24h	3.70	4.56	0.0006	17.31	13.13	26717
NSP0300	100y24h	3.40	4.47	0.0017	21.60	21.22	19178
NSP0400	100y24h	3.60	4.29	0.0003	13.41	12.34	6645
NSP0415	100y24h	3.70	4.56	0.0001	14.56	13.44	18894
NSP0500	100y24h	3.90	3.41	0.0001	9.12	9.11	193
NSP0600	100y24h	3.70	4.43	0.0010	9.44	7.24	10860
NSP0700	100y24h	3.50	4.21	0.0004	15.95	13.12	11601
NSP0715	100y24h	3.90	4.68	0.0005	5.73	6.09	20435
NSP0800	100y24h	3.60	4.24	0.0002	14.56	11.76	15369
NSP0815	100y24h	3.60	4.67	0.0009	10.13	9.30	34478
NSP0900	100y24h	3.50	4.41	0.0007	14.40	11.97	18634
NSP0915	100y24h	3.50	4.41	0.0005	17.87	14.95	28045
NSP1000	100y24h	3.60	4.65	0.0011	15.63	11.68	34006
BDRY	10y24h	5.00	0.69	0.0000	1588.03	0.00	0
NA00100	10y24h	2.70	1.53	0.0000	6.08	6.07	206
NA00106	10y24h	2.20	1.56	0.0000	0.86	0.86	100
NA00110	10y24h	3.30	1.60	0.0000	1.85	1.85	100
NA00200	10y24h	1.90	1.11	0.0000	2.54	2.53	349
NA00300	10y24h	1.40	1.21	0.0002	39.19	39.19	100
NA00312	10y24h	2.30	2.02	0.0001	6.44	6.47	100
NA00314P	10y24h	1.20	3.39	0.0006	10.11	5.13	16078
NA00335	10y24h	1.80	1.33	0.0001	34.87	34.87	251
NA00360	10y24h	1.70	1.44	0.0001	21.87	21.89	100
NA00370	10y24h	3.70	2.61	0.0001	11.38	11.35	309
NA00375	10y24h	3.20	3.22	0.0001	6.86	6.79	131
NA00385	10y24h	3.60	3.16	0.0001	2.96	2.90	141
NA00510	10y24h	1.50	2.68	0.0004	12.35	10.98	22437
NA00605	10y24h	1.70	2.76	0.0005	10.47	9.31	18683
NA00620	10y24h	1.90	2.76	0.0001	10.38	10.06	17645
NA00700	10y24h	1.90	1.48	0.0001	6.50	6.50	100
NA00710	10y24h	1.70	1.83	0.0001	42.97	42.97	112
NA00735	10y24h	1.60	2.71	0.0001	10.06	9.97	12497
NA00745	10y24h	3.70	2.74	0.0001	16.70	16.76	100
NA00750	10y24h	3.30	3.50	0.0004	7.17	6.90	2226
NA00765	10y24h	4.30	4.66	0.0002	8.63	8.54	1744
NA00800	10y24h	2.00	1.44	0.0001	49.21	49.21	100
NA00900	10y24h	2.80	3.37	0.0004	6.27	5.88	2829
NA01000	10y24h	2.10	2.25	0.0001	6.14	6.10	188
NA01010	10y24h	4.70	5.37	0.0002	9.40	9.34	16910

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA01100	10y24h	2.60	3.09	0.0003	7.18	6.56	2016
NA01200	10y24h	2.60	2.08	0.0001	6.40	6.38	100
NA01300	10y24h	1.80	2.53	0.0003	9.83	7.43	9048
NA01325	10y24h	1.60	2.54	0.0005	11.10	9.05	21513
NA01600	10y24h	1.00	2.53	0.0003	25.60	18.12	39316
NA01615	10y24h	1.30	2.54	0.0011	14.67	13.31	30802
NA01700	10y24h	1.50	2.53	0.0008	27.34	21.87	16904
NA01710	10y24h	1.40	2.53	0.0006	6.73	5.36	7891
NA01720	10y24h	1.60	2.53	0.0013	11.16	8.76	25484
NA01800	10y24h	2.48	3.23	0.0018	17.88	17.87	3966
NA01816	10y24h	2.40	3.03	0.0005	17.81	17.78	6659
NA01825	10y24h	2.80	3.32	0.0005	6.01	5.73	4580
NA01835	10y24h	1.70	2.75	0.0005	15.30	15.23	12416
NA01850	10y24h	3.60	4.58	0.0005	16.04	15.91	6784
NA01855	10y24h	3.80	4.63	0.0006	16.15	15.88	13848
NA01900	10y24h	2.10	2.54	0.0000	5.44	5.17	1574
NA02000	10y24h	1.80	2.60	0.0011	8.75	7.30	7901
NA02100	10y24h	1.40	2.60	0.0002	11.90	7.03	21627
NA02110	10y24h	1.50	2.60	0.0005	6.42	4.76	11575
NA02120	10y24h	3.30	3.53	0.0001	2.82	2.80	577
NB02200	10y24h	4.10	1.12	0.0000	10.15	10.14	340
NB02215	10y24h	4.30	1.23	0.0000	3.26	3.25	100
NB02235	10y24h	3.90	1.80	0.0001	4.91	4.91	189
NB02245	10y24h	7.60	2.35	0.0000	3.46	3.45	253
NB02260	10y24h	5.60	3.67	0.0000	3.25	3.25	237
NB02270	10y24h	5.50	3.68	0.0000	0.74	0.73	100
NB02310	10y24h	2.30	2.97	0.0005	21.37	20.77	6989
NB02315	10y24h	1.90	3.02	0.0070	24.22	18.93	40165
NB02316P	10y24h	3.50	3.12	0.0003	1.16	24.22	3523
NB02320	10y24h	4.00	3.38	0.0006	3.14	3.11	335
NB02325	10y24h	4.20	3.68	0.0004	1.07	1.04	100
NB02400	10y24h	2.30	1.08	0.0000	31.67	31.67	100
NB02410	10y24h	2.30	2.53	0.0001	26.82	26.83	404
NB02412	10y24h	1.60	2.86	0.0004	4.25	4.72	4284
NB02425	10y24h	4.20	4.62	0.0002	8.26	8.25	406
NB02426	10y24h	4.70	5.03	0.0002	2.41	2.38	1425
NB02427	10y24h	4.80	5.16	0.0002	3.29	3.25	2236
NB02430	10y24h	4.50	4.82	0.0002	4.41	4.30	965
NB02435	10y24h	2.10	2.90	0.0002	14.92	13.63	5838
NB02445	10y24h	3.10	3.79	0.0003	8.44	8.42	563
NB02455	10y24h	4.20	4.14	0.0003	4.05	4.04	148
NB02500	10y24h	4.00	2.50	0.0002	8.82	8.82	141
NB02510	10y24h	4.10	4.90	0.0007	10.37	8.30	11323
NB02517P	10y24h	5.10	5.39	0.0003	1.15	0.98	572
NB02600	10y24h	2.60	1.31	0.0000	6.54	6.54	100
NB02610	10y24h	1.90	2.35	0.0001	9.17	9.16	2087
NB02615	10y24h	3.00	2.95	0.0001	6.94	6.94	128

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02616	10y24h	3.80	4.11	0.0001	1.58	1.43	1144
NB02617	10y24h	4.40	4.64	0.0001	0.80	0.59	916
NB02618	10y24h	2.70	3.03	0.0002	1.81	1.75	2388
NB02620	10y24h	3.50	3.66	0.0001	5.66	5.61	501
NB02622	10y24h	3.20	3.58	0.0002	2.56	2.53	2252
NB02700	10y24h	2.90	2.84	0.0004	9.37	9.37	266
NB02706	10y24h	2.90	3.07	0.0001	1.04	1.12	606
NB02707	10y24h	2.60	3.07	0.0003	1.76	1.62	3373
NB02710	10y24h	2.80	3.54	0.0008	14.96	8.26	17170
NB02800	10y24h	2.70	1.57	0.0001	6.57	6.56	115
NB02900	10y24h	2.30	2.00	0.0003	9.53	9.53	194
NB02910	10y24h	2.60	3.48	0.0007	14.26	12.85	19311
NB02930	10y24h	2.30	3.54	0.0011	10.57	7.33	19973
NB02965	10y24h	2.30	3.54	0.0006	5.89	5.67	8521
NC002P	10y24h	3.00	1.12	0.0000	2.51	2.50	118
NC003P	10y24h	3.00	1.16	0.0000	0.62	0.64	257
NC03000	10y24h	3.30	3.60	0.0001	7.61	7.41	1161
NC03031P	10y24h	4.60	3.86	0.0001	1.82	1.80	100
NC03040	10y24h	3.30	3.64	0.0001	2.49	2.61	888
NC03050	10y24h	3.00	3.64	0.0001	1.55	1.56	1584
NC03055	10y24h	3.50	3.78	0.0000	2.16	2.13	1530
NC03100	10y24h	3.30	2.85	0.0002	20.08	20.08	207
NC03120	10y24h	3.00	3.58	0.0003	12.36	11.87	4569
NC03123P	10y24h	3.10	3.82	0.0001	3.33	3.06	2775
NC03125	10y24h	1.90	3.63	0.0006	15.02	10.39	30739
NC03135	10y24h	2.20	3.63	0.0005	7.23	5.25	10524
NC03137	10y24h	3.20	3.63	0.0005	0.94	1.03	199
NC03160	10y24h	2.30	3.63	0.0006	7.31	5.46	16259
NC03200	10y24h	3.10	4.33	0.0002	22.09	18.46	18434
NC03210	10y24h	3.00	4.33	0.0003	22.67	21.80	23780
NC03220	10y24h	3.30	4.35	0.0005	14.52	13.54	19605
NC03222	10y24h	3.80	4.70	0.0005	2.16	1.53	11208
NC03235	10y24h	3.80	4.40	0.0004	5.03	4.79	7225
NC03240	10y24h	3.50	4.33	0.0008	5.17	4.46	10897
NC03300	10y24h	2.80	3.98	0.0026	22.02	18.63	36223
NC03400	10y24h	3.30	3.20	0.0001	5.93	5.89	311
NC03415	10y24h	3.50	3.52	0.0001	3.25	3.16	100
NC03500	10y24h	2.80	3.24	0.0001	8.36	8.15	529
NC03600	10y24h	3.50	2.59	0.0001	6.38	6.37	320
NC03610	10y24h	3.10	4.05	0.0002	11.09	10.40	9591
NC03615	10y24h	3.50	4.13	0.0003	6.67	6.31	10813
NC03625	10y24h	3.60	4.18	0.0003	2.18	1.69	5181
NC03700	10y24h	3.20	4.04	0.0006	19.08	16.36	19028
NC03715	10y24h	3.60	4.19	0.0004	5.91	5.95	5000
NC03716	10y24h	3.50	4.24	0.0004	4.28	3.95	10450
NC03720	10y24h	3.40	4.18	0.0004	6.41	5.26	19862
NC03723	10y24h	3.50	4.21	0.0003	3.07	2.96	3344

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03730	10y24h	3.30	4.16	0.0002	6.59	6.46	6981
NC03737	10y24h	3.30	4.13	0.0004	5.75	5.59	6184
NC03800	10y24h	2.60	1.17	0.0002	42.38	42.38	100
NC03825	10y24h	2.00	3.52	0.0013	39.67	31.69	20873
NC03830	10y24h	2.40	3.52	0.0034	16.59	15.04	18132
NC03833P	10y24h	6.00	3.56	0.0000	3.32	3.22	2067
NC03835P	10y24h	6.00	3.56	0.0000	0.22	0.18	100
NC03837P	10y24h	3.80	3.57	0.0000	2.35	1.92	1447
NC03845	10y24h	2.40	3.62	0.0005	19.54	18.94	9274
NC03850	10y24h	2.20	3.63	0.0013	12.85	11.98	12056
NC03855	10y24h	2.30	3.49	0.0002	11.05	10.21	18685
NC03856	10y24h	2.50	3.49	0.0002	7.78	7.33	16341
NC06000	10y24h	2.80	1.84	0.0002	7.13	7.13	100
NC06010	10y24h	2.70	3.15	0.0005	7.98	6.89	3952
NC06020	10y24h	2.80	3.66	0.0011	6.46	5.66	3768
NC06400	10y24h	4.80	5.06	0.0001	2.48	2.38	924
ND03900	10y24h	2.30	1.57	0.0000	20.01	20.01	100
ND04000	10y24h	2.90	1.27	0.0000	28.10	28.10	282
ND04010	10y24h	2.80	1.41	0.0001	3.76	3.75	100
ND04012P	10y24h	3.00	4.59	0.0004	1.48	3.07	479
ND04014P	10y24h	4.38	4.63	0.0008	2.84	1.31	489
ND04015	10y24h	2.90	1.70	0.0001	21.18	21.19	100
ND04016P	10y24h	3.00	4.67	0.0001	1.02	0.97	1632
ND04030	10y24h	3.00	3.38	0.0004	12.79	11.98	3070
ND04100	10y24h	2.50	3.42	0.0010	8.36	4.76	15440
ND04200	10y24h	2.50	3.42	0.0012	7.99	5.01	16533
ND04300	10y24h	2.30	2.62	0.0002	9.68	9.41	973
ND04315	10y24h	3.40	3.24	0.0002	3.32	3.27	124
ND04316P	10y24h	3.00	4.73	0.0001	1.78	3.37	1633
ND04318P	10y24h	3.00	4.74	0.0017	3.37	0.71	1198
ND04400	10y24h	2.10	2.69	0.0004	7.59	6.82	3750
ND04500	10y24h	2.90	1.99	0.0002	40.25	40.25	190
ND04511	10y24h	2.90	2.39	0.0001	5.42	5.38	100
ND04512	10y24h	2.50	2.84	0.0001	3.56	3.51	2050
ND04513	10y24h	2.40	2.86	0.0001	3.74	3.73	1251
ND04515	10y24h	3.40	3.54	0.0004	36.12	36.13	221
ND04530	10y24h	3.00	4.01	0.0008	14.83	11.22	11266
ND04542	10y24h	2.90	4.01	0.0019	10.20	9.23	10533
ND04550	10y24h	3.00	4.01	0.0009	29.70	25.93	22432
ND04555	10y24h	2.90	4.10	0.0009	20.33	20.01	16204
ND04565	10y24h	2.80	4.10	0.0022	17.99	17.01	26351
ND04571P	10y24h	4.80	4.77	0.0000	5.22	4.70	4674
ND04600	10y24h	2.50	0.84	0.0000	6.25	6.25	379
ND04700	10y24h	3.20	3.29	0.0001	4.22	4.19	196
ND04715	10y24h	3.20	4.05	0.0000	6.49	5.56	15349
ND04800	10y24h	3.00	2.23	0.0007	9.14	9.14	254
ND04815	10y24h	3.40	3.92	0.0010	9.48	8.21	1448

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04900	10y24h	3.40	1.54	0.0002	36.36	36.36	172
ND04913	10y24h	3.90	3.25	0.0000	0.76	0.75	100
ND04915	10y24h	4.20	2.27	0.0003	34.08	34.08	107
ND04925	10y24h	3.20	3.18	0.0002	13.61	13.59	100
ND04930	10y24h	3.60	2.88	0.0005	19.49	19.51	100
ND04935	10y24h	3.20	3.92	0.0018	19.95	18.98	12783
ND04947	10y24h	3.70	4.17	0.0019	7.28	7.20	2279
ND04949P	10y24h	4.93	5.22	0.0000	12.26	10.31	34966
ND04951	10y24h	2.90	3.85	0.0010	6.52	6.02	5190
ND04960	10y24h	3.50	3.46	0.0002	3.47	3.45	155
ND04961	10y24h	3.60	3.47	0.0002	0.74	0.74	100
ND05000	10y24h	2.50	0.77	0.0000	4.54	4.54	212
ND05100	10y24h	1.90	2.69	0.0004	7.43	6.83	5291
ND05200	10y24h	2.60	0.92	0.0000	5.09	5.09	100
ND05300	10y24h	2.70	1.18	0.0001	27.91	27.91	100
ND05310	10y24h	2.60	1.56	0.0001	24.39	24.40	100
ND05315	10y24h	3.30	2.12	0.0001	22.61	22.62	106
ND05316	10y24h	3.20	2.17	0.0001	1.58	1.56	100
ND05335	10y24h	12.20	2.29	0.0001	5.76	5.77	100
ND05337	10y24h	13.65	2.59	0.0000	0.63	0.63	100
ND05339	10y24h	2.10	3.05	0.0002	5.26	4.78	1861
ND05345	10y24h	5.90	2.34	0.0002	14.90	14.96	100
ND05355	10y24h	5.20	2.55	0.0002	14.38	14.44	100
ND05360	10y24h	2.40	3.24	0.0004	13.73	13.82	265
ND05365	10y24h	3.00	3.74	0.0009	13.32	11.49	16566
ND05375	10y24h	3.50	3.75	0.0007	0.65	1.66	153
ND05405	10y24h	5.80	4.48	0.0000	0.15	0.15	100
ND05500	10y24h	3.00	5.00	0.0001	18.81	7.34	87280
ND05600	10y24h	4.40	4.99	0.0005	4.96	3.30	2724
ND05700	10y24h	3.90	4.52	0.0003	4.24	3.30	3298
ND05800	10y24h	3.00	3.12	0.0001	3.67	3.66	289
ND05900	10y24h	3.80	3.53	0.0007	1.89	1.88	100
ND05910	10y24h	3.00	3.62	0.0007	3.22	3.00	2532
ND06105P	10y24h	5.20	4.90	0.0011	2.45	2.15	146
ND06110P	10y24h	5.30	4.96	0.0005	1.77	1.37	170
ND06115P	10y24h	5.30	4.98	0.0006	1.15	0.56	100
ND06210P	10y24h	5.50	5.27	0.0017	3.76	2.16	118
ND06215P	10y24h	4.90	5.34	0.0011	2.16	0.94	330
ND06300P	10y24h	2.70	4.10	0.0001	9.06	5.85	23087
NE020P	10y24h	3.98	4.18	0.0000	38.78	33.42	63771
NE08000	10y24h	3.30	2.31	0.0001	5.81	5.79	293
NE08100	10y24h	3.10	4.17	0.0020	20.54	10.32	26142
NE08200	10y24h	2.60	4.17	0.0022	42.61	24.10	74070
NE08300	10y24h	3.20	4.18	0.0030	29.80	19.51	18211
NE08400	10y24h	3.30	4.19	0.0016	19.44	19.19	13989
NE08500	10y24h	3.10	3.91	0.0010	9.88	8.15	8871
NE08600	10y24h	3.40	4.04	0.0003	10.88	10.44	6768

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE08615	10y24h	2.70	4.40	0.0004	12.98	7.81	37483
NE08625	10y24h	3.10	4.30	0.0011	13.24	11.53	22660
NE08700	10y24h	3.00	4.07	0.0001	9.78	8.28	6670
NE08716	10y24h	4.20	4.68	0.0001	2.06	2.02	232
NE08717	10y24h	4.50	4.81	0.0001	1.04	0.94	692
NE08720	10y24h	3.50	4.08	0.0001	4.90	4.72	2696
NE08735	10y24h	3.70	4.38	0.0003	3.30	3.45	3359
NE08745	10y24h	3.50	4.33	0.0005	2.70	2.63	3767
NE08800	10y24h	3.90	2.57	0.0001	8.31	8.33	235
NE08900	10y24h	3.50	2.75	0.0000	8.17	8.17	217
NE09000	10y24h	4.00	3.59	0.0001	3.89	3.85	202
NE09100	10y24h	3.10	2.48	0.0001	25.80	25.80	381
NE09110	10y24h	3.80	2.75	0.0001	17.71	17.73	291
NE09125	10y24h	4.80	4.54	0.0000	19.74	14.71	23150
NE09200	10y24h	4.40	1.55	0.0002	16.64	16.64	354
NE09210	10y24h	3.80	1.70	0.0001	16.54	16.54	313
NE09220	10y24h	4.70	4.18	0.0000	43.50	35.36	74252
NE09300	10y24h	3.00	4.02	0.0017	8.44	6.93	8517
NE09400	10y24h	2.90	4.14	0.0003	17.39	13.96	43554
NE09415	10y24h	3.10	4.38	0.0006	8.36	7.63	18119
NE09500	10y24h	2.80	4.14	0.0021	21.31	9.69	28874
NE09600	10y24h	2.80	4.01	0.0025	13.93	9.64	35992
NE09700	10y24h	3.00	3.84	0.0011	9.17	7.13	17693
NE09800	10y24h	3.10	1.18	0.0000	3.38	3.38	137
NE09900	10y24h	3.20	2.16	0.0001	5.76	5.74	100
NE10000	10y24h	3.10	2.59	0.0001	8.70	8.69	186
NE10100	10y24h	2.70	2.50	0.0000	3.66	3.65	100
NE10200	10y24h	3.00	3.50	0.0007	9.04	7.83	4319
NE10300	10y24h	3.10	3.02	0.0001	6.91	6.88	119
NE10400	10y24h	3.10	3.76	0.0010	12.00	9.28	13154
NE10500	10y24h	3.30	2.25	0.0001	6.68	6.68	211
NE10600	10y24h	3.40	2.87	0.0001	6.98	6.96	144
NE10700	10y24h	2.80	2.93	0.0001	4.35	4.29	155
NE10800	10y24h	3.20	3.41	0.0002	8.03	7.87	437
NE10900	10y24h	3.20	1.79	0.0000	6.75	6.75	117
NE11000	10y24h	2.80	4.05	0.0014	11.65	6.56	31387
NE11100	10y24h	3.00	2.65	0.0001	6.91	6.88	131
NE11200	10y24h	2.80	3.68	0.0014	8.59	5.47	13772
NE11300	10y24h	2.90	2.01	0.0001	3.72	3.70	100
NE11400	10y24h	2.80	3.35	0.0001	7.05	7.01	247
NE11500	10y24h	3.40	4.03	0.0010	9.94	8.34	7339
NE11600	10y24h	3.40	4.21	0.0009	12.50	8.51	18586
NE11700	10y24h	3.30	4.47	0.0012	9.01	6.69	14838
NE11800	10y24h	3.30	4.06	0.0007	6.37	5.26	4088
NE11900	10y24h	3.30	3.92	0.0011	10.38	8.57	8979
NE12000	10y24h	3.30	3.77	0.0004	5.89	5.18	2130
NE12100	10y24h	3.20	2.46	0.0001	9.95	9.93	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE12200	10y24h	3.20	3.92	0.0010	9.92	8.20	6878
NE12300	10y24h	3.20	2.86	0.0001	7.02	7.01	167
NE12400	10y24h	3.20	3.75	0.0007	9.35	8.22	5089
NE12500	10y24h	3.10	3.71	0.0007	8.78	7.57	5825
NE12600	10y24h	3.30	3.10	0.0001	4.82	4.76	100
NE13100	10y24h	3.00	3.40	0.0001	6.17	6.11	233
NE14000	10y24h	2.00	3.31	0.0001	2.24	2.18	100
NF15000	10y24h	3.10	4.40	0.0015	20.94	11.37	54904
NF15010	10y24h	3.00	4.40	0.0009	4.12	2.63	7610
NF15100	10y24h	3.70	4.70	0.0012	13.07	11.61	21345
NF15200	10y24h	3.30	4.40	0.0008	18.01	11.67	13253
NF15210	10y24h	3.20	4.40	0.0010	10.28	8.81	12229
NF15215	10y24h	3.30	4.40	0.0012	14.99	12.30	23846
NF15300	10y24h	3.20	4.39	0.0010	18.67	18.18	23155
NF15315	10y24h	3.30	4.40	0.0003	12.62	10.92	7437
NF15330	10y24h	3.20	4.40	0.0005	14.60	10.61	26379
NF15400	10y24h	3.00	4.26	0.0022	16.90	16.28	25305
NF15500	10y24h	3.40	4.30	0.0017	13.08	9.94	15383
NF15600	10y24h	2.20	3.39	0.0022	18.13	11.40	58251
NF15700	10y24h	2.60	3.39	0.0012	8.63	6.96	18935
NF15800	10y24h	2.40	3.11	0.0010	9.29	7.45	8083
NF15900	10y24h	2.20	3.39	0.0020	13.86	9.79	26213
NF16000	10y24h	4.00	2.01	0.0001	3.19	3.16	100
NF16100	10y24h	2.80	3.81	0.0014	9.74	5.66	20812
NF16200	10y24h	2.00	2.71	0.0009	11.31	9.93	12842
NF16300	10y24h	2.20	2.58	0.0002	6.85	6.55	1632
NF16310	10y24h	2.10	2.78	0.0005	4.70	4.21	5700
NF16500	10y24h	2.10	2.89	0.0004	9.13	7.68	8901
NF16510	10y24h	2.10	2.89	0.0008	4.10	3.24	7756
NF16700	10y24h	2.80	1.92	0.0000	1.73	1.73	116
NF16800	10y24h	1.70	2.63	0.0014	11.52	7.46	17031
NF16900	10y24h	1.60	2.63	0.0009	10.46	8.16	14826
NF17000	10y24h	1.80	2.22	0.0002	6.23	5.82	1496
NF17100	10y24h	1.90	2.34	0.0004	6.40	6.09	1873
NF17200	10y24h	2.60	3.34	0.0005	9.88	7.75	12172
NF17210	10y24h	2.20	3.49	0.0012	8.18	5.34	16108
NF17300	10y24h	3.20	1.92	0.0000	1.67	1.66	111
NF17400	10y24h	2.20	3.61	0.0018	12.11	8.02	22782
NF17500	10y24h	2.70	3.76	0.0012	9.64	7.27	17323
NF17600	10y24h	2.20	3.10	0.0015	11.06	7.59	14915
NF17700	10y24h	2.30	2.79	0.0001	11.50	10.93	1833
NF17800	10y24h	2.80	3.59	0.0012	11.38	8.55	12698
NG20000	10y24h	3.30	2.59	0.0001	4.63	4.62	159
NG20100	10y24h	2.90	3.71	0.0004	9.28	8.47	2814
NG20200	10y24h	3.40	4.11	0.0016	11.14	8.32	13063
NG20300	10y24h	3.20	3.89	0.0010	9.62	8.16	7567
NG20400	10y24h	3.10	3.65	0.0004	8.43	7.75	2279

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG20500	10y24h	3.20	4.15	0.0016	10.55	6.87	22463
NG20600	10y24h	3.30	4.13	0.0012	7.81	5.13	17594
NG20700	10y24h	2.90	3.30	0.0002	11.04	10.70	1456
NG20800	10y24h	3.30	3.73	0.0004	8.91	8.07	3429
NG20810	10y24h	3.10	4.16	0.0013	9.93	8.35	33971
NG20900	10y24h	3.10	3.03	0.0001	9.33	9.32	100
NG21000	10y24h	3.00	3.70	0.0007	9.86	8.07	6782
NG21010	10y24h	3.30	4.13	0.0016	5.54	5.77	6557
NG21100	10y24h	3.10	3.71	0.0003	5.23	5.15	1813
NG21110	10y24h	3.20	4.13	0.0006	5.84	5.46	14691
NG21200	10y24h	3.40	2.92	0.0000	3.48	3.47	100
NG21300	10y24h	2.80	4.23	0.0006	26.05	17.77	88379
NG21400	10y24h	3.00	4.17	0.0004	18.68	17.19	46319
NG21415	10y24h	3.40	4.24	0.0003	9.63	7.13	22763
NG21500	10y24h	2.60	4.16	0.0018	15.48	11.61	27368
NG21600	10y24h	2.70	4.16	0.0017	14.77	7.87	39851
NG21700	10y24h	3.00	4.23	0.0008	17.52	11.54	44266
NG21715	10y24h	3.30	4.23	0.0006	7.35	3.99	23734
NG21800	10y24h	3.40	4.23	0.0003	11.44	11.24	15271
NG21810	10y24h	3.20	4.23	0.0005	12.79	10.43	36902
NG21900	10y24h	2.90	3.81	0.0005	11.62	11.33	8752
NG22000	10y24h	3.80	4.02	0.0001	10.16	10.13	518
NG22000P	10y24h	4.28	2.70	0.0000	8.22	1.64	33183
NG22015P	10y24h	3.31	3.26	0.0000	15.24	2.60	76951
NG22025	10y24h	4.20	4.03	0.0001	2.73	2.75	421
NG22040	10y24h	2.90	3.76	0.0001	7.60	7.31	12797
NG22100	10y24h	2.30	3.56	0.0007	16.17	15.76	23150
NG22300	10y24h	3.30	1.91	0.0000	2.47	2.46	185
NG22400	10y24h	2.50	3.49	0.0019	13.84	11.26	18680
NG22500	10y24h	2.60	3.50	0.0008	14.79	13.15	27020
NG22600	10y24h	2.80	2.65	0.0000	3.15	3.15	127
NG22700	10y24h	2.70	3.43	0.0009	7.82	6.40	15040
NG22800	10y24h	2.70	3.34	0.0011	8.93	7.28	11777
NG22900	10y24h	2.90	3.49	0.0012	6.88	5.98	11957
NG23000	10y24h	2.50	3.37	0.0005	8.07	7.62	13283
NG23015	10y24h	2.90	3.51	0.0004	3.95	3.81	5746
NG23100	10y24h	2.60	3.30	0.0007	10.23	9.77	27728
NG23200	10y24h	2.50	2.95	0.0002	6.75	6.57	1909
NG23300	10y24h	2.60	1.84	0.0001	5.83	5.78	267
NG23315	10y24h	2.30	1.90	0.0001	2.32	2.29	100
NG23400	10y24h	2.30	2.79	0.0000	2.86	2.81	683
NG23500	10y24h	2.60	2.57	0.0000	1.91	1.91	128
NG23600	10y24h	2.30	3.01	0.0003	4.93	3.83	6413
NG23700	10y24h	2.30	2.90	0.0005	6.53	6.15	5628
NG23800	10y24h	2.30	2.54	0.0002	4.19	3.96	563
NG23900	10y24h	2.30	1.20	0.0000	3.35	3.34	129
NG24000	10y24h	1.90	2.72	0.0005	6.99	5.76	9942

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG24100	10y24h	1.50	0.75	0.0000	0.51	0.51	134
NG24200	10y24h	2.00	1.50	0.0000	7.86	7.84	566
NG24216	10y24h	2.50	1.51	0.0000	0.18	0.16	147
NG24225	10y24h	2.70	1.58	0.0000	3.27	3.24	202
NG24230	10y24h	2.80	1.65	0.0000	1.95	1.98	147
NG24300	10y24h	3.10	2.08	0.0004	12.57	12.56	356
NG24320	10y24h	3.00	2.15	0.0010	1.15	2.65	148
NG24322	10y24h	2.90	3.70	0.0000	1.50	0.75	7067
NG24330	10y24h	2.30	3.52	0.0005	9.20	6.20	9446
NG24335	10y24h	3.00	3.64	0.0002	4.68	4.36	1547
NG24340	10y24h	2.90	3.52	0.0002	3.94	3.76	2882
NG24341	10y24h	2.80	3.52	0.0001	4.61	3.64	3651
NG24400	10y24h	2.90	3.56	0.0005	10.54	10.49	8677
NG24500P	10y24h	2.00	2.19	0.0005	11.15	11.12	648
NG24516P	10y24h	4.20	3.97	0.0000	0.22	0.22	100
NG24527P	10y24h	4.00	3.11	0.0000	1.83	1.83	180
NG24530P	10y24h	1.60	2.23	0.0000	2.52	2.45	196
NG24600P	10y24h	3.30	3.58	0.0003	8.48	8.33	1006
NG24615P	10y24h	3.20	3.83	0.0005	4.76	4.47	8164
NH30000	10y24h	3.70	1.26	0.0000	4.35	4.34	254
NH30030	10y24h	4.20	1.38	0.0000	1.16	1.16	131
NH30035	10y24h	4.20	1.49	0.0000	1.00	1.00	129
NH30040	10y24h	4.30	1.51	0.0000	0.30	0.30	100
NH30045	10y24h	4.30	1.56	0.0000	0.13	0.13	100
NH30050	10y24h	3.60	1.46	0.0000	3.23	3.23	192
NH30055	10y24h	3.80	1.62	0.0000	2.60	2.61	146
NSP0100	10y24h	3.50	4.14	0.0009	13.37	11.69	7460
NSP0200	10y24h	3.50	3.28	0.0001	8.55	8.54	275
NSP0215	10y24h	3.70	4.32	0.0006	9.58	9.20	14622
NSP0300	10y24h	3.40	3.81	0.0001	11.20	10.72	1880
NSP0400	10y24h	3.60	3.53	0.0001	9.64	9.64	255
NSP0415	10y24h	3.70	4.37	0.0001	8.73	8.55	8847
NSP0500	10y24h	3.90	2.72	0.0000	5.48	5.47	193
NSP0600	10y24h	3.70	3.66	0.0001	5.65	5.64	164
NSP0700	10y24h	3.50	3.36	0.0001	10.73	10.66	326
NSP0715	10y24h	3.90	4.28	0.0002	3.41	3.66	2030
NSP0800	10y24h	3.60	3.61	0.0001	9.88	9.80	611
NSP0815	10y24h	3.60	4.42	0.0007	5.06	4.01	20060
NSP0900	10y24h	3.50	3.94	0.0001	11.09	10.51	3047
NSP0915	10y24h	3.50	4.05	0.0004	6.96	6.78	7664
NSP1000	10y24h	3.60	4.32	0.0007	9.21	6.83	15103
BDRY	233y24h	5.00	0.69	0.0000	1027.67	0.00	0
NA00100	233y24h	2.70	1.09	0.0000	3.45	3.44	206
NA00106	233y24h	2.20	1.10	0.0000	0.49	0.49	100
NA00110	233y24h	3.30	1.17	0.0000	1.05	1.05	100
NA00200	233y24h	1.90	0.93	0.0000	1.44	1.43	321
NA00300	233y24h	1.40	0.89	0.0000	24.33	24.33	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA00312	233y24h	2.30	1.39	0.0001	4.71	4.72	100
NA00314P	233y24h	1.20	2.46	0.0006	5.69	3.73	5697
NA00335	233y24h	1.80	0.93	0.0000	21.23	21.23	251
NA00360	233y24h	1.70	0.97	0.0000	13.20	13.20	100
NA00370	233y24h	3.70	1.39	0.0000	6.71	6.71	309
NA00375	233y24h	3.20	1.60	0.0001	4.02	4.00	100
NA00385	233y24h	3.60	1.58	0.0001	1.72	1.71	141
NA00510	233y24h	1.50	2.33	0.0001	5.94	5.43	5048
NA00605	233y24h	1.70	2.66	0.0006	6.66	4.60	13825
NA00620	233y24h	1.90	2.66	0.0002	3.61	3.32	13798
NA00700	233y24h	1.90	0.96	0.0000	3.88	3.88	100
NA00710	233y24h	1.70	1.08	0.0000	25.29	25.29	112
NA00735	233y24h	1.60	2.56	0.0001	5.61	5.05	3740
NA00745	233y24h	3.70	1.46	0.0000	10.69	10.70	100
NA00750	233y24h	3.30	1.76	0.0001	4.14	4.12	100
NA00765	233y24h	4.30	2.36	0.0001	4.89	4.89	183
NA00800	233y24h	2.00	0.95	0.0000	28.76	28.76	100
NA00900	233y24h	2.80	2.43	0.0001	3.18	3.17	100
NA01000	233y24h	2.10	1.26	0.0000	3.70	3.70	100
NA01010	233y24h	4.70	5.35	0.0003	5.43	5.24	15488
NA01100	233y24h	2.60	1.84	0.0001	3.67	3.65	172
NA01200	233y24h	2.60	1.14	0.0000	3.65	3.64	100
NA01300	233y24h	1.80	1.72	0.0001	4.87	4.86	324
NA01325	233y24h	1.60	2.38	0.0006	5.99	4.63	14604
NA01600	233y24h	1.00	2.16	0.0003	10.95	10.38	16236
NA01615	233y24h	1.30	2.38	0.0011	7.63	5.17	19717
NA01700	233y24h	1.50	1.42	0.0001	13.78	13.78	100
NA01710	233y24h	1.40	1.95	0.0003	3.95	4.03	1486
NA01720	233y24h	1.60	2.00	0.0004	1.87	2.12	3130
NA01800	233y24h	2.48	3.15	0.0018	10.35	10.37	2403
NA01816	233y24h	2.40	2.94	0.0005	6.24	6.23	4598
NA01825	233y24h	2.80	3.14	0.0006	3.37	3.27	2312
NA01835	233y24h	1.70	2.70	0.0006	9.16	9.10	9316
NA01850	233y24h	3.60	4.33	0.0006	9.05	8.48	3459
NA01855	233y24h	3.80	4.53	0.0006	9.45	8.41	10388
NA01900	233y24h	2.10	1.97	0.0000	2.74	2.74	100
NA02000	233y24h	1.80	1.43	0.0001	4.56	4.55	100
NA02100	233y24h	1.40	2.17	0.0002	7.55	6.05	7330
NA02110	233y24h	1.50	2.24	0.0003	3.28	3.06	3680
NA02120	233y24h	3.30	2.88	0.0001	1.61	1.57	174
NB02200	233y24h	4.10	0.83	0.0000	5.81	5.81	340
NB02215	233y24h	4.30	0.86	0.0001	1.90	1.89	100
NB02235	233y24h	3.90	1.42	0.0001	2.76	2.75	189
NB02245	233y24h	7.60	2.04	0.0000	1.90	1.89	253
NB02260	233y24h	5.60	3.39	0.0000	1.80	1.79	236
NB02270	233y24h	5.50	3.40	0.0000	0.43	0.42	100
NB02310	233y24h	2.30	1.48	0.0005	11.17	11.17	408

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02315	233y24h	1.90	2.78	0.0070	24.22	10.06	21349
NB02316P	233y24h	3.50	3.12	0.0003	0.54	24.22	3523
NB02320	233y24h	4.00	2.86	0.0006	2.21	2.15	335
NB02325	233y24h	4.20	2.95	0.0004	0.63	0.87	100
NB02400	233y24h	2.30	0.84	0.0000	19.72	19.72	100
NB02410	233y24h	2.30	1.42	0.0000	17.00	17.00	404
NB02412	233y24h	1.60	1.62	0.0000	2.36	2.33	100
NB02425	233y24h	4.20	3.00	0.0001	5.65	5.64	203
NB02426	233y24h	4.70	4.22	0.0001	1.43	1.37	128
NB02427	233y24h	4.80	5.04	0.0002	1.91	1.83	1113
NB02430	233y24h	4.50	3.06	0.0001	2.55	2.49	100
NB02435	233y24h	2.10	1.53	0.0000	7.36	7.36	508
NB02445	233y24h	3.10	2.56	0.0001	3.89	3.88	283
NB02455	233y24h	4.20	2.67	0.0001	2.39	2.29	148
NB02500	233y24h	4.00	2.00	0.0000	6.18	6.18	141
NB02510	233y24h	4.10	3.96	0.0000	5.77	5.77	100
NB02517P	233y24h	5.10	4.19	0.0000	0.67	0.60	100
NB02600	233y24h	2.60	1.27	0.0000	6.32	6.32	100
NB02610	233y24h	1.90	2.24	0.0001	6.59	6.32	1490
NB02615	233y24h	3.00	2.60	0.0001	5.46	5.43	125
NB02616	233y24h	3.80	3.34	0.0001	0.97	0.85	320
NB02617	233y24h	4.40	3.56	0.0001	0.48	0.39	100
NB02618	233y24h	2.70	2.95	0.0002	1.05	0.91	1496
NB02620	233y24h	3.50	2.97	0.0001	3.99	3.95	100
NB02622	233y24h	3.20	3.49	0.0001	1.38	1.33	1246
NB02700	233y24h	2.90	2.22	0.0000	6.76	6.75	266
NB02706	233y24h	2.90	2.62	0.0001	0.99	1.03	100
NB02707	233y24h	2.60	2.96	0.0002	1.03	0.89	2197
NB02710	233y24h	2.80	2.54	0.0001	5.61	5.52	247
NB02800	233y24h	2.70	0.77	0.0000	1.91	1.91	115
NB02900	233y24h	2.30	1.80	0.0002	8.48	8.48	194
NB02910	233y24h	2.60	3.13	0.0006	8.93	7.91	6712
NB02930	233y24h	2.30	3.22	0.0008	5.15	4.24	8597
NB02965	233y24h	2.30	3.21	0.0006	2.50	2.29	3454
NC002P	233y24h	3.00	0.84	0.0000	1.47	1.47	118
NC003P	233y24h	3.00	0.88	0.0000	0.37	0.37	180
NC03000	233y24h	3.30	2.93	0.0001	5.50	5.46	420
NC03031P	233y24h	4.60	3.02	0.0001	1.07	1.04	100
NC03040	233y24h	3.30	2.99	0.0001	2.33	2.35	109
NC03050	233y24h	3.00	3.01	0.0001	1.54	1.55	100
NC03055	233y24h	3.50	3.63	0.0000	1.26	1.18	793
NC03100	233y24h	3.30	2.06	0.0002	15.96	15.96	207
NC03120	233y24h	3.00	2.90	0.0003	11.69	11.70	502
NC03123P	233y24h	3.10	3.19	0.0000	1.97	1.95	100
NC03125	233y24h	1.90	3.16	0.0006	9.60	8.83	19856
NC03135	233y24h	2.20	3.16	0.0005	4.27	2.91	6110
NC03137	233y24h	3.20	3.17	0.0005	0.55	1.02	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03160	233y24h	2.30	3.17	0.0005	4.32	3.34	6604
NC03200	233y24h	3.10	3.61	0.0002	11.18	11.00	958
NC03210	233y24h	3.00	4.24	0.0003	12.24	9.97	20571
NC03220	233y24h	3.30	4.25	0.0006	8.33	7.31	13531
NC03222	233y24h	3.80	4.48	0.0006	0.93	1.50	5512
NC03235	233y24h	3.80	4.32	0.0005	2.97	2.65	4491
NC03240	233y24h	3.50	4.24	0.0009	3.06	2.60	8725
NC03300	233y24h	2.80	2.62	0.0001	8.82	8.80	170
NC03400	233y24h	3.30	1.78	0.0000	3.52	3.50	311
NC03415	233y24h	3.50	1.89	0.0000	1.92	1.91	100
NC03500	233y24h	2.80	2.10	0.0000	4.16	4.15	380
NC03600	233y24h	3.50	2.43	0.0001	5.48	5.48	320
NC03610	233y24h	3.10	3.86	0.0001	6.19	5.51	5769
NC03615	233y24h	3.50	4.04	0.0003	3.73	3.08	6888
NC03625	233y24h	3.60	4.06	0.0003	1.55	1.37	3149
NC03700	233y24h	3.20	3.44	0.0001	9.72	9.69	396
NC03715	233y24h	3.60	3.82	0.0001	5.79	5.84	417
NC03716	233y24h	3.50	4.16	0.0004	2.53	1.92	7544
NC03720	233y24h	3.40	4.06	0.0005	4.81	3.92	14192
NC03723	233y24h	3.50	4.09	0.0003	1.09	0.82	1969
NC03730	233y24h	3.30	3.99	0.0003	1.64	2.02	4297
NC03737	233y24h	3.30	3.99	0.0005	2.00	1.81	3974
NC03800	233y24h	2.60	0.81	0.0001	21.84	21.84	100
NC03825	233y24h	2.00	1.48	0.0001	16.63	16.63	100
NC03830	233y24h	2.40	1.60	0.0001	6.02	6.03	100
NC03833P	233y24h	6.00	3.12	0.0000	1.35	1.02	2067
NC03835P	233y24h	6.00	3.12	0.0000	0.13	0.07	100
NC03837P	233y24h	3.80	3.12	0.0000	1.34	0.64	1447
NC03845	233y24h	2.40	2.68	0.0005	6.18	6.26	546
NC03850	233y24h	2.20	3.16	0.0010	6.28	4.76	4555
NC03855	233y24h	2.30	3.35	0.0002	6.32	5.82	12320
NC03856	233y24h	2.50	3.35	0.0002	4.49	3.71	12597
NC06000	233y24h	2.80	0.91	0.0000	3.08	3.08	100
NC06010	233y24h	2.70	1.13	0.0000	2.85	2.85	100
NC06020	233y24h	2.80	1.16	0.0000	0.95	0.95	100
NC06400	233y24h	4.80	4.80	0.0001	1.45	1.45	100
ND03900	233y24h	2.30	0.99	0.0000	11.61	11.61	100
ND04000	233y24h	2.90	0.90	0.0000	17.16	17.16	282
ND04010	233y24h	2.80	0.95	0.0001	2.20	2.20	100
ND04012P	233y24h	3.00	4.57	0.0004	0.96	3.07	450
ND04014P	233y24h	4.38	4.59	0.0008	2.84	0.89	476
ND04015	233y24h	2.90	1.06	0.0000	13.13	13.13	100
ND04016P	233y24h	3.00	4.60	0.0001	0.89	0.57	1566
ND04030	233y24h	3.00	1.75	0.0001	7.56	7.55	137
ND04100	233y24h	2.50	2.86	0.0002	4.54	4.05	1898
ND04200	233y24h	2.50	2.95	0.0003	4.57	4.10	2030
ND04300	233y24h	2.30	1.40	0.0001	5.70	5.70	186

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04315	233y24h	3.40	1.58	0.0000	1.81	1.81	124
ND04316P	233y24h	3.00	4.71	0.0001	1.13	3.37	1617
ND04318P	233y24h	3.00	4.72	0.0017	3.37	0.41	1190
ND04400	233y24h	2.10	1.11	0.0001	2.97	2.96	100
ND04500	233y24h	2.90	1.40	0.0001	29.74	29.74	168
ND04511	233y24h	2.90	1.81	0.0001	4.50	4.47	100
ND04512	233y24h	2.50	2.77	0.0001	2.96	2.60	1670
ND04513	233y24h	2.40	2.82	0.0001	2.21	2.18	1032
ND04515	233y24h	3.40	2.14	0.0001	24.93	24.94	100
ND04530	233y24h	3.00	2.68	0.0001	9.48	9.43	100
ND04542	233y24h	2.90	3.01	0.0001	6.03	6.00	100
ND04550	233y24h	3.00	2.48	0.0001	15.19	15.22	100
ND04555	233y24h	2.90	3.72	0.0006	11.32	11.08	6621
ND04565	233y24h	2.80	3.73	0.0013	10.01	9.22	9212
ND04571P	233y24h	4.80	4.62	0.0000	3.09	2.92	4474
ND04600	233y24h	2.50	0.73	0.0000	3.27	3.27	379
ND04700	233y24h	3.20	2.56	0.0001	3.56	3.55	171
ND04715	233y24h	3.20	3.86	0.0000	3.39	2.76	6873
ND04800	233y24h	3.00	0.86	0.0007	3.35	3.16	254
ND04815	233y24h	3.40	2.00	0.0010	2.52	3.35	175
ND04900	233y24h	3.40	1.05	0.0002	23.48	23.48	154
ND04913	233y24h	3.90	3.02	0.0000	0.38	0.38	100
ND04915	233y24h	4.20	1.36	0.0003	22.28	22.28	100
ND04925	233y24h	3.20	1.70	0.0002	8.42	8.41	100
ND04930	233y24h	3.60	1.64	0.0005	13.28	13.28	100
ND04935	233y24h	3.20	2.22	0.0018	9.66	9.67	100
ND04947	233y24h	3.70	3.54	0.0019	4.04	4.07	129
ND04949P	233y24h	4.93	5.14	0.0000	7.23	5.55	31966
ND04951	233y24h	2.90	2.06	0.0001	3.61	3.57	100
ND04960	233y24h	3.50	1.78	0.0001	1.85	1.87	155
ND04961	233y24h	3.60	1.79	0.0001	0.42	0.45	100
ND05000	233y24h	2.50	0.72	0.0000	2.49	2.49	212
ND05100	233y24h	1.90	2.14	0.0001	4.13	4.07	220
ND05200	233y24h	2.60	0.75	0.0000	2.75	2.75	100
ND05300	233y24h	2.70	0.90	0.0001	18.35	18.35	100
ND05310	233y24h	2.60	1.07	0.0001	16.31	16.31	100
ND05315	233y24h	3.30	1.33	0.0001	15.25	15.26	100
ND05316	233y24h	3.20	1.34	0.0000	0.86	0.85	100
ND05335	233y24h	12.20	1.40	0.0000	3.72	3.70	100
ND05337	233y24h	13.65	2.50	0.0000	0.37	0.37	100
ND05339	233y24h	2.10	1.71	0.0000	3.08	3.05	100
ND05345	233y24h	5.90	1.43	0.0000	10.34	10.34	100
ND05355	233y24h	5.20	1.54	0.0000	9.93	9.92	100
ND05360	233y24h	2.40	1.89	0.0001	9.38	9.37	100
ND05365	233y24h	3.00	2.19	0.0001	7.17	7.12	383
ND05375	233y24h	3.50	2.19	0.0001	0.37	0.44	144
ND05405	233y24h	5.80	4.39	0.0000	0.08	0.08	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND05500	233y24h	3.00	4.66	0.0001	10.29	3.32	53434
ND05600	233y24h	4.40	3.26	0.0001	1.10	1.09	100
ND05700	233y24h	3.90	3.68	0.0001	2.03	2.03	100
ND05800	233y24h	3.00	2.68	0.0001	2.97	2.96	289
ND05900	233y24h	3.80	3.16	0.0007	0.64	1.31	100
ND05910	233y24h	3.00	3.16	0.0007	1.99	1.94	151
ND06105P	233y24h	5.20	4.67	0.0011	2.45	1.77	146
ND06110P	233y24h	5.30	4.69	0.0005	1.77	1.15	161
ND06115P	233y24h	5.30	4.70	0.0006	1.15	0.33	100
ND06210P	233y24h	5.50	5.15	0.0017	3.76	2.16	118
ND06215P	233y24h	4.90	5.17	0.0011	2.16	0.56	215
ND06300P	233y24h	2.70	3.85	0.0001	5.33	3.18	17444
NE020P	233y24h	3.98	3.91	0.0000	21.76	11.63	54708
NE08000	233y24h	3.30	1.89	0.0000	3.35	3.34	279
NE08100	233y24h	3.10	1.98	0.0000	3.21	3.21	204
NE08200	233y24h	2.60	3.81	0.0022	14.06	8.12	40750
NE08300	233y24h	3.20	1.68	0.0001	6.41	6.41	210
NE08400	233y24h	3.30	2.76	0.0001	6.14	6.13	192
NE08500	233y24h	3.10	1.61	0.0000	4.34	4.34	135
NE08600	233y24h	3.40	3.36	0.0003	7.37	7.37	237
NE08615	233y24h	2.70	4.00	0.0004	8.19	6.00	18136
NE08625	233y24h	3.10	4.14	0.0013	6.14	3.98	16478
NE08700	233y24h	3.00	3.48	0.0001	7.57	7.52	191
NE08716	233y24h	4.20	3.70	0.0001	1.23	1.21	234
NE08717	233y24h	4.50	3.76	0.0001	0.59	0.55	100
NE08720	233y24h	3.50	3.79	0.0001	3.93	4.03	571
NE08735	233y24h	3.70	4.11	0.0002	2.71	3.05	1351
NE08745	233y24h	3.50	4.15	0.0003	1.18	1.61	2275
NE08800	233y24h	3.90	1.92	0.0000	4.72	4.71	235
NE08900	233y24h	3.50	2.12	0.0000	4.62	4.61	217
NE09000	233y24h	4.00	2.20	0.0000	2.22	2.21	202
NE09100	233y24h	3.10	1.71	0.0000	12.76	12.76	381
NE09110	233y24h	3.80	2.04	0.0001	8.36	8.36	291
NE09125	233y24h	4.80	4.14	0.0000	11.12	6.85	15406
NE09200	233y24h	4.40	1.28	0.0002	12.17	12.17	354
NE09210	233y24h	3.80	1.40	0.0001	12.11	12.10	313
NE09220	233y24h	4.70	3.88	0.0000	24.51	15.61	52069
NE09300	233y24h	3.00	2.09	0.0000	4.22	4.22	194
NE09400	233y24h	2.90	3.83	0.0004	9.66	7.09	19991
NE09415	233y24h	3.10	4.30	0.0008	4.29	2.77	14954
NE09500	233y24h	2.80	3.20	0.0002	7.30	7.09	854
NE09600	233y24h	2.80	2.73	0.0001	6.19	6.19	166
NE09700	233y24h	3.00	3.19	0.0001	4.93	4.84	331
NE09800	233y24h	3.10	0.78	0.0000	1.45	1.45	137
NE09900	233y24h	3.20	1.12	0.0000	3.09	3.09	100
NE10000	233y24h	3.10	1.86	0.0000	4.69	4.69	186
NE10100	233y24h	2.70	1.89	0.0000	1.98	1.98	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE10200	233y24h	3.00	2.12	0.0000	4.93	4.92	105
NE10300	233y24h	3.10	1.38	0.0000	3.73	3.72	119
NE10400	233y24h	3.10	2.23	0.0001	6.46	6.45	108
NE10500	233y24h	3.30	1.27	0.0000	3.59	3.58	211
NE10600	233y24h	3.40	1.91	0.0000	3.74	3.74	144
NE10700	233y24h	2.80	1.69	0.0000	2.37	2.36	100
NE10800	233y24h	3.20	1.53	0.0000	4.37	4.36	145
NE10900	233y24h	3.20	1.25	0.0000	3.65	3.65	117
NE11000	233y24h	2.80	3.57	0.0008	6.26	4.59	9963
NE11100	233y24h	3.00	1.27	0.0000	3.73	3.73	131
NE11200	233y24h	2.80	2.84	0.0001	4.62	4.58	118
NE11300	233y24h	2.90	1.08	0.0000	2.01	2.01	100
NE11400	233y24h	2.80	1.78	0.0001	3.84	3.82	181
NE11500	233y24h	3.40	2.10	0.0001	5.41	5.39	100
NE11600	233y24h	3.40	2.86	0.0001	6.75	6.69	177
NE11700	233y24h	3.30	3.66	0.0002	4.86	4.63	791
NE11800	233y24h	3.30	2.30	0.0001	3.44	3.41	118
NE11900	233y24h	3.30	2.04	0.0001	5.55	5.54	110
NE12000	233y24h	3.30	2.01	0.0000	3.18	3.18	100
NE12100	233y24h	3.20	1.18	0.0000	5.37	5.37	100
NE12200	233y24h	3.20	2.08	0.0000	5.38	5.38	171
NE12300	233y24h	3.20	1.77	0.0000	3.79	3.78	167
NE12400	233y24h	3.20	2.41	0.0001	5.04	5.03	183
NE12500	233y24h	3.10	2.13	0.0000	4.77	4.75	193
NE12600	233y24h	3.30	1.65	0.0000	2.60	2.60	100
NE13100	233y24h	3.00	1.81	0.0000	3.60	3.60	233
NE14000	233y24h	2.00	2.03	0.0002	1.31	1.30	100
NF15000	233y24h	3.10	4.04	0.0015	14.36	7.83	26213
NF15010	233y24h	3.00	4.04	0.0009	1.62	1.97	5082
NF15100	233y24h	3.70	4.53	0.0012	7.42	5.30	12590
NF15200	233y24h	3.30	3.11	0.0003	7.94	7.93	100
NF15210	233y24h	3.20	4.02	0.0007	6.99	6.25	7071
NF15215	233y24h	3.30	4.02	0.0008	6.83	5.86	8933
NF15300	233y24h	3.20	4.03	0.0008	8.92	6.38	10602
NF15315	233y24h	3.30	4.03	0.0003	6.17	6.05	4696
NF15330	233y24h	3.20	4.04	0.0005	6.39	5.82	13530
NF15400	233y24h	3.00	2.70	0.0003	6.44	6.43	100
NF15500	233y24h	3.40	3.24	0.0001	7.42	7.41	145
NF15600	233y24h	2.20	2.85	0.0008	8.63	7.16	8992
NF15700	233y24h	2.60	2.74	0.0001	4.63	4.43	966
NF15800	233y24h	2.40	1.78	0.0001	5.01	5.00	100
NF15900	233y24h	2.20	2.75	0.0002	7.54	7.12	2133
NF16000	233y24h	4.00	1.38	0.0000	1.73	1.73	100
NF16100	233y24h	2.80	3.33	0.0003	5.27	4.73	2588
NF16200	233y24h	2.00	1.71	0.0000	5.01	5.00	100
NF16300	233y24h	2.20	1.82	0.0001	5.08	5.08	100
NF16310	233y24h	2.10	2.16	0.0001	2.52	2.49	235

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF16500	233y24h	2.10	2.04	0.0001	5.57	5.55	125
NF16510	233y24h	2.10	2.29	0.0001	2.19	2.22	355
NF16700	233y24h	2.80	1.66	0.0000	0.94	0.94	116
NF16800	233y24h	1.70	1.55	0.0001	4.56	4.55	100
NF16900	233y24h	1.60	1.94	0.0001	5.68	5.54	994
NF17000	233y24h	1.80	1.21	0.0000	3.42	3.41	100
NF17100	233y24h	1.90	1.06	0.0000	2.87	2.87	100
NF17200	233y24h	2.60	2.72	0.0003	6.83	6.75	645
NF17210	233y24h	2.20	3.01	0.0006	4.52	3.88	6135
NF17300	233y24h	3.20	1.66	0.0000	0.89	0.89	111
NF17400	233y24h	2.20	2.68	0.0001	6.15	6.12	165
NF17500	233y24h	2.70	3.31	0.0005	5.20	4.40	4446
NF17600	233y24h	2.20	2.17	0.0000	5.95	5.94	157
NF17700	233y24h	2.30	1.68	0.0000	6.18	6.17	183
NF17800	233y24h	2.80	2.65	0.0000	6.14	6.13	137
NG20000	233y24h	3.30	1.73	0.0000	2.52	2.51	159
NG20100	233y24h	2.90	2.35	0.0000	5.05	5.04	186
NG20200	233y24h	3.40	2.44	0.0001	5.98	5.96	100
NG20300	233y24h	3.20	1.96	0.0000	5.16	5.14	112
NG20400	233y24h	3.10	1.75	0.0001	4.64	4.63	100
NG20500	233y24h	3.20	2.87	0.0001	3.65	3.64	203
NG20600	233y24h	3.30	3.05	0.0001	4.28	4.24	100
NG20700	233y24h	2.90	1.71	0.0000	5.97	5.94	213
NG20800	233y24h	3.30	2.93	0.0003	6.94	6.92	142
NG20810	233y24h	3.10	3.86	0.0009	5.35	4.48	14477
NG20900	233y24h	3.10	2.22	0.0000	5.03	5.03	100
NG21000	233y24h	3.00	2.21	0.0001	5.77	5.74	100
NG21010	233y24h	3.30	2.42	0.0001	2.76	2.72	100
NG21100	233y24h	3.10	3.27	0.0002	4.08	4.04	203
NG21110	233y24h	3.20	3.67	0.0002	3.18	3.08	1697
NG21200	233y24h	3.40	2.39	0.0000	1.99	1.99	100
NG21300	233y24h	2.80	4.10	0.0007	12.95	6.18	69615
NG21400	233y24h	3.00	3.91	0.0004	7.71	4.51	25535
NG21415	233y24h	3.40	4.10	0.0003	5.13	4.95	14064
NG21500	233y24h	2.60	3.21	0.0001	5.99	5.74	1413
NG21600	233y24h	2.70	3.43	0.0005	7.34	6.24	7680
NG21700	233y24h	3.00	4.03	0.0010	10.93	5.62	27479
NG21715	233y24h	3.30	4.03	0.0007	3.07	2.41	15252
NG21800	233y24h	3.40	4.06	0.0003	5.35	4.97	9020
NG21810	233y24h	3.20	4.08	0.0006	6.32	5.12	23267
NG21900	233y24h	2.90	2.81	0.0001	3.01	2.98	205
NG22000	233y24h	3.80	2.93	0.0001	6.99	6.99	518
NG22000P	233y24h	4.28	1.96	0.0000	3.70	1.01	32052
NG22015P	233y24h	3.31	2.47	0.0000	6.83	1.80	28098
NG22025	233y24h	4.20	3.22	0.0001	2.76	2.79	421
NG22040	233y24h	2.90	3.59	0.0001	3.05	2.76	6640
NG22100	233y24h	2.30	2.49	0.0001	4.28	4.23	310

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG22300	233y24h	3.30	1.66	0.0000	1.42	1.41	185
NG22400	233y24h	2.50	1.29	0.0000	2.75	2.75	116
NG22500	233y24h	2.60	3.15	0.0006	5.21	3.85	11277
NG22600	233y24h	2.80	1.96	0.0000	1.07	1.07	127
NG22700	233y24h	2.70	2.97	0.0001	4.19	3.97	974
NG22800	233y24h	2.70	1.75	0.0001	4.62	4.61	155
NG22900	233y24h	2.90	2.88	0.0001	3.73	3.68	123
NG23000	233y24h	2.50	3.02	0.0001	3.48	3.06	1954
NG23015	233y24h	2.90	3.06	0.0001	0.94	0.86	311
NG23100	233y24h	2.60	3.10	0.0005	4.33	3.24	7747
NG23200	233y24h	2.50	1.51	0.0000	2.81	2.81	230
NG23300	233y24h	2.60	1.20	0.0000	3.10	3.09	267
NG23315	233y24h	2.30	1.24	0.0000	1.13	1.12	100
NG23400	233y24h	2.30	2.42	0.0000	1.58	1.57	173
NG23500	233y24h	2.60	2.30	0.0000	1.06	1.05	128
NG23600	233y24h	2.30	2.35	0.0001	2.75	2.71	205
NG23700	233y24h	2.30	2.43	0.0001	3.69	3.59	466
NG23800	233y24h	2.30	1.24	0.0000	1.25	1.24	142
NG23900	233y24h	2.30	0.86	0.0000	1.84	1.84	129
NG24000	233y24h	1.90	2.34	0.0001	3.89	3.48	1773
NG24100	233y24h	1.50	0.71	0.0000	0.29	0.29	132
NG24200	233y24h	2.00	0.98	0.0000	3.45	3.43	560
NG24216	233y24h	2.50	0.98	0.0000	0.10	0.11	147
NG24225	233y24h	2.70	1.04	0.0000	1.69	1.69	202
NG24230	233y24h	2.80	1.10	0.0000	0.88	0.89	146
NG24300	233y24h	3.10	1.45	0.0004	9.32	9.31	356
NG24320	233y24h	3.00	1.96	0.0010	0.74	2.65	148
NG24322	233y24h	2.90	3.50	0.0000	0.80	0.29	4156
NG24330	233y24h	2.30	2.82	0.0005	5.74	5.41	1331
NG24335	233y24h	3.00	3.28	0.0002	2.99	2.77	794
NG24340	233y24h	2.90	3.28	0.0002	0.80	0.96	695
NG24341	233y24h	2.80	3.16	0.0001	0.79	0.78	836
NG24400	233y24h	2.90	2.41	0.0001	2.36	2.31	304
NG24500P	233y24h	2.00	1.11	0.0005	4.84	4.82	484
NG24516P	233y24h	4.20	3.80	0.0000	0.10	0.09	100
NG24527P	233y24h	4.00	2.76	0.0000	0.78	0.78	111
NG24530P	233y24h	1.60	1.69	0.0000	1.11	1.11	195
NG24600P	233y24h	3.30	2.51	0.0000	5.62	5.53	467
NG24615P	233y24h	3.20	2.64	0.0000	2.52	2.45	223
NH30000	233y24h	3.70	0.84	0.0000	2.15	2.15	240
NH30030	233y24h	4.20	1.24	0.0000	0.66	0.66	119
NH30035	233y24h	4.20	1.34	0.0000	0.57	0.57	116
NH30040	233y24h	4.30	1.35	0.0000	0.16	0.16	100
NH30045	233y24h	4.30	1.51	0.0000	0.08	0.08	100
NH30050	233y24h	3.60	0.99	0.0000	1.44	1.43	189
NH30055	233y24h	3.80	1.09	0.0000	0.98	0.98	136
NSP0100	233y24h	3.50	2.53	0.0000	4.09	4.08	215

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NSP0200	233y24h	3.50	2.84	0.0001	6.19	6.19	275
NSP0215	233y24h	3.70	4.16	0.0005	4.54	3.75	6048
NSP0300	233y24h	3.40	2.65	0.0000	5.09	5.07	235
NSP0400	233y24h	3.60	2.98	0.0000	6.98	6.98	255
NSP0415	233y24h	3.70	4.24	0.0001	4.78	4.71	3199
NSP0500	233y24h	3.90	2.28	0.0000	3.01	3.00	193
NSP0600	233y24h	3.70	2.61	0.0000	3.08	3.07	164
NSP0700	233y24h	3.50	2.23	0.0000	5.84	5.83	326
NSP0715	233y24h	3.90	2.91	0.0000	1.85	1.84	120
NSP0800	233y24h	3.60	2.74	0.0001	6.58	6.55	425
NSP0815	233y24h	3.60	3.62	0.0001	2.76	2.77	120
NSP0900	233y24h	3.50	2.91	0.0001	6.80	6.79	247
NSP0915	233y24h	3.50	3.39	0.0001	3.78	3.80	101
NSP1000	233y24h	3.60	3.47	0.0001	4.88	4.88	181
BDRY	25y24h	5.00	0.69	0.0000	1812.01	0.00	0
NA00100	25y24h	2.70	1.71	0.0000	7.37	7.37	206
NA00106	25y24h	2.20	1.74	0.0000	1.05	1.05	100
NA00110	25y24h	3.30	1.80	0.0000	2.25	2.24	100
NA00200	25y24h	1.90	1.18	0.0000	3.08	3.07	360
NA00300	25y24h	1.40	1.45	0.0001	47.10	47.10	100
NA00312	25y24h	2.30	2.76	0.0001	9.27	9.33	768
NA00314P	25y24h	1.20	3.52	0.0006	12.29	7.45	22041
NA00335	25y24h	1.80	1.63	0.0001	42.91	42.92	251
NA00360	25y24h	1.70	1.79	0.0001	27.23	27.25	100
NA00370	25y24h	3.70	3.13	0.0002	12.21	12.12	309
NA00375	25y24h	3.20	3.78	0.0005	8.27	7.49	5342
NA00385	25y24h	3.60	3.80	0.0002	3.57	3.27	1046
NA00510	25y24h	1.50	2.73	0.0003	15.57	14.36	25738
NA00605	25y24h	1.70	2.79	0.0004	12.67	11.66	20443
NA00620	25y24h	1.90	2.78	0.0001	13.64	13.34	18759
NA00700	25y24h	1.90	1.75	0.0001	7.53	7.53	100
NA00710	25y24h	1.70	2.22	0.0001	48.58	48.55	1468
NA00735	25y24h	1.60	2.73	0.0001	12.42	12.33	14291
NA00745	25y24h	3.70	3.09	0.0003	17.28	17.35	100
NA00750	25y24h	3.30	3.79	0.0013	8.67	7.99	8633
NA00765	25y24h	4.30	4.73	0.0003	10.48	10.44	2520
NA00800	25y24h	2.00	1.73	0.0001	57.87	57.87	100
NA00900	25y24h	2.80	3.45	0.0004	7.90	7.72	3487
NA01000	25y24h	2.10	2.90	0.0009	9.05	7.26	5142
NA01010	25y24h	4.70	5.38	0.0002	11.37	11.31	17393
NA01100	25y24h	2.60	3.26	0.0006	8.84	8.21	5701
NA01200	25y24h	2.60	2.71	0.0001	7.76	7.68	302
NA01300	25y24h	1.80	2.68	0.0004	10.96	7.92	13175
NA01325	25y24h	1.60	2.69	0.0005	13.63	10.70	31326
NA01600	25y24h	1.00	2.69	0.0003	34.01	19.05	52435
NA01615	25y24h	1.30	2.69	0.0010	20.49	18.03	37531
NA01700	25y24h	1.50	2.68	0.0014	29.56	24.00	23759

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA01710	25y24h	1.40	2.68	0.0006	6.85	5.73	9624
NA01720	25y24h	1.60	2.68	0.0013	12.77	10.49	30624
NA01800	25y24h	2.48	3.25	0.0018	20.92	20.90	4365
NA01816	25y24h	2.40	3.05	0.0003	22.40	22.37	7282
NA01825	25y24h	2.80	3.37	0.0003	7.87	7.74	6447
NA01835	25y24h	1.70	2.78	0.0003	19.93	19.76	14217
NA01850	25y24h	3.60	4.61	0.0003	19.13	19.04	7275
NA01855	25y24h	3.80	4.65	0.0006	19.47	19.26	14649
NA01900	25y24h	2.10	2.74	0.0001	6.80	5.86	4890
NA02000	25y24h	1.80	2.78	0.0012	9.90	7.63	11972
NA02100	25y24h	1.40	2.78	0.0002	15.84	7.20	27097
NA02110	25y24h	1.50	2.78	0.0005	7.99	4.83	16920
NA02120	25y24h	3.30	3.57	0.0001	3.42	3.40	690
NB02200	25y24h	4.10	1.37	0.0000	12.30	12.30	340
NB02215	25y24h	4.30	1.55	0.0001	3.93	3.92	100
NB02235	25y24h	3.90	1.99	0.0001	5.99	5.99	189
NB02245	25y24h	7.60	2.48	0.0000	4.24	4.23	253
NB02260	25y24h	5.60	3.80	0.0000	3.97	3.97	237
NB02270	25y24h	5.50	3.81	0.0000	0.90	0.89	100
NB02310	25y24h	2.30	3.05	0.0005	26.87	26.77	8868
NB02315	25y24h	1.90	3.08	0.0070	29.38	23.95	46725
NB02316P	25y24h	3.50	3.12	0.0003	1.31	24.22	3523
NB02320	25y24h	4.00	3.63	0.0006	3.78	3.76	333
NB02325	25y24h	4.20	4.07	0.0004	1.29	1.25	100
NB02400	25y24h	2.30	1.18	0.0001	35.76	35.76	100
NB02410	25y24h	2.30	2.88	0.0006	29.21	28.99	2043
NB02412	25y24h	1.60	3.05	0.0009	5.19	5.38	6444
NB02425	25y24h	4.20	4.68	0.0002	9.74	9.73	515
NB02426	25y24h	4.70	5.06	0.0002	2.90	2.88	1596
NB02427	25y24h	4.80	5.19	0.0002	3.98	3.94	2486
NB02430	25y24h	4.50	4.96	0.0002	5.34	5.09	1838
NB02435	25y24h	2.10	3.24	0.0010	18.19	15.39	15185
NB02445	25y24h	3.10	3.84	0.0003	10.27	10.25	662
NB02455	25y24h	4.20	4.36	0.0003	4.87	4.84	299
NB02500	25y24h	4.00	2.61	0.0004	9.33	9.33	141
NB02510	25y24h	4.10	5.11	0.0011	12.46	8.77	17117
NB02517P	25y24h	5.10	5.51	0.0003	1.38	1.26	991
NB02600	25y24h	2.60	1.32	0.0000	6.58	6.58	100
NB02610	25y24h	1.90	2.37	0.0001	10.51	10.50	2202
NB02615	25y24h	3.00	3.03	0.0001	7.25	7.25	186
NB02616	25y24h	3.80	4.16	0.0001	1.98	1.95	1289
NB02617	25y24h	4.40	4.70	0.0001	0.97	0.85	1164
NB02618	25y24h	2.70	3.05	0.0002	2.18	2.12	2664
NB02620	25y24h	3.50	3.84	0.0001	7.08	7.03	1251
NB02622	25y24h	3.20	3.63	0.0002	3.98	3.92	2806
NB02700	25y24h	2.90	2.91	0.0004	9.66	9.66	266
NB02706	25y24h	2.90	3.09	0.0001	1.03	1.12	666

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02707	25y24h	2.60	3.09	0.0003	2.13	2.06	3555
NB02710	25y24h	2.80	3.63	0.0008	17.89	10.95	19301
NB02800	25y24h	2.70	3.33	0.0019	14.58	13.25	7928
NB02900	25y24h	2.30	2.20	0.0002	10.61	10.61	194
NB02910	25y24h	2.60	3.62	0.0006	25.42	19.37	23982
NB02930	25y24h	2.30	3.62	0.0010	12.79	10.35	22215
NB02965	25y24h	2.30	3.62	0.0006	11.09	10.12	9349
NC002P	25y24h	3.00	1.30	0.0000	3.00	2.99	121
NC003P	25y24h	3.00	1.35	0.0000	0.75	0.77	301
NC03000	25y24h	3.30	3.69	0.0001	7.95	7.69	1641
NC03031P	25y24h	4.60	4.09	0.0001	2.19	2.18	100
NC03040	25y24h	3.30	3.70	0.0001	2.58	2.79	1193
NC03050	25y24h	3.00	3.70	0.0001	2.14	2.10	2085
NC03055	25y24h	3.50	3.80	0.0000	2.61	2.59	1720
NC03100	25y24h	3.30	3.27	0.0002	21.94	21.94	207
NC03120	25y24h	3.00	3.75	0.0003	14.12	12.44	8853
NC03123P	25y24h	3.10	3.86	0.0001	4.01	3.80	3219
NC03125	25y24h	1.90	3.76	0.0006	18.53	10.35	33355
NC03135	25y24h	2.20	3.76	0.0005	9.69	7.36	11428
NC03137	25y24h	3.20	3.76	0.0005	1.13	1.07	273
NC03160	25y24h	2.30	3.76	0.0005	11.88	10.71	18820
NC03200	25y24h	3.10	4.36	0.0002	26.33	21.75	20054
NC03210	25y24h	3.00	4.37	0.0003	27.67	26.26	24852
NC03220	25y24h	3.30	4.38	0.0004	17.50	16.43	22510
NC03222	25y24h	3.80	4.73	0.0005	2.82	2.29	12114
NC03235	25y24h	3.80	4.42	0.0003	6.05	5.83	8045
NC03240	25y24h	3.50	4.37	0.0007	6.22	5.56	11736
NC03300	25y24h	2.80	4.07	0.0026	30.32	26.09	46339
NC03400	25y24h	3.30	3.70	0.0003	6.66	6.61	630
NC03415	25y24h	3.50	3.99	0.0003	3.91	3.57	1750
NC03500	25y24h	2.80	3.89	0.0011	13.34	9.78	10169
NC03600	25y24h	3.50	2.65	0.0001	6.73	6.72	320
NC03610	25y24h	3.10	4.09	0.0002	13.51	13.00	10298
NC03615	25y24h	3.50	4.16	0.0002	8.36	7.98	12074
NC03625	25y24h	3.60	4.22	0.0002	2.63	2.12	5808
NC03700	25y24h	3.20	4.08	0.0006	22.10	20.23	20467
NC03715	25y24h	3.60	4.24	0.0004	5.91	5.94	6609
NC03716	25y24h	3.50	4.26	0.0004	5.15	4.89	10999
NC03720	25y24h	3.40	4.21	0.0004	8.02	6.59	20820
NC03723	25y24h	3.50	4.26	0.0002	4.34	4.29	3818
NC03730	25y24h	3.30	4.20	0.0002	8.26	8.14	7670
NC03737	25y24h	3.30	4.17	0.0003	7.56	7.44	6963
NC03800	25y24h	2.60	1.53	0.0002	56.38	56.38	100
NC03825	25y24h	2.00	3.73	0.0014	51.41	40.91	31973
NC03830	25y24h	2.40	3.73	0.0038	24.05	20.95	25009
NC03833P	25y24h	6.00	3.78	0.0000	4.28	3.95	2067
NC03835P	25y24h	6.00	3.78	0.0000	0.27	0.24	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03837P	25y24h	3.80	3.78	0.0000	2.84	2.45	1447
NC03845	25y24h	2.40	3.75	0.0005	26.06	24.93	10929
NC03850	25y24h	2.20	3.75	0.0012	17.54	16.06	14240
NC03855	25y24h	2.30	3.57	0.0002	15.29	14.77	22225
NC03856	25y24h	2.50	3.57	0.0002	13.82	13.53	19298
NC06000	25y24h	2.80	3.20	0.0003	11.67	11.59	1317
NC06010	25y24h	2.70	3.45	0.0010	13.21	11.33	11029
NC06020	25y24h	2.80	3.78	0.0014	10.50	9.95	4737
NC06400	25y24h	4.80	5.17	0.0001	2.99	2.74	1863
ND03900	25y24h	2.30	2.04	0.0001	24.77	24.77	100
ND04000	25y24h	2.90	1.42	0.0001	31.62	31.62	282
ND04010	25y24h	2.80	1.63	0.0001	4.52	4.51	100
ND04012P	25y24h	3.00	4.60	0.0004	1.72	3.07	490
ND04014P	25y24h	4.38	4.65	0.0008	2.84	1.57	495
ND04015	25y24h	2.90	1.94	0.0002	23.24	23.24	100
ND04016P	25y24h	3.00	4.71	0.0001	1.23	1.16	1665
ND04030	25y24h	3.00	3.66	0.0010	15.39	12.69	12994
ND04100	25y24h	2.50	3.55	0.0010	9.67	6.76	19243
ND04200	25y24h	2.50	3.55	0.0013	9.77	5.74	21334
ND04300	25y24h	2.30	2.91	0.0004	11.45	10.90	4488
ND04315	25y24h	3.40	3.76	0.0003	4.08	3.82	800
ND04316P	25y24h	3.00	4.74	0.0001	2.09	3.37	1639
ND04318P	25y24h	3.00	4.75	0.0017	3.37	0.85	1204
ND04400	25y24h	2.10	2.82	0.0007	9.99	9.18	7144
ND04500	25y24h	2.90	2.24	0.0002	43.87	43.87	199
ND04511	25y24h	2.90	2.64	0.0001	5.82	5.78	100
ND04512	25y24h	2.50	2.86	0.0002	4.08	4.04	2169
ND04513	25y24h	2.40	2.88	0.0002	4.50	4.49	1319
ND04515	25y24h	3.40	4.08	0.0006	39.56	39.54	2719
ND04530	25y24h	3.00	4.18	0.0010	17.94	11.74	19373
ND04542	25y24h	2.90	4.19	0.0026	12.36	10.82	17404
ND04550	25y24h	3.00	4.19	0.0015	40.87	29.28	41084
ND04555	25y24h	2.90	4.19	0.0009	27.75	26.77	18800
ND04565	25y24h	2.80	4.19	0.0022	24.13	22.47	29731
ND04571P	25y24h	4.80	4.85	0.0000	6.27	5.67	4787
ND04600	25y24h	2.50	0.93	0.0000	7.73	7.72	380
ND04700	25y24h	3.20	3.41	0.0002	4.73	4.73	365
ND04715	25y24h	3.20	4.16	0.0001	8.04	8.15	20747
ND04800	25y24h	3.00	2.37	0.0008	9.53	9.53	254
ND04815	25y24h	3.40	4.13	0.0012	10.01	8.53	5261
ND04900	25y24h	3.40	1.74	0.0002	40.29	40.29	178
ND04913	25y24h	3.90	3.38	0.0000	0.95	0.94	100
ND04915	25y24h	4.20	2.63	0.0003	37.92	37.93	112
ND04925	25y24h	3.20	3.71	0.0003	15.52	14.94	4300
ND04930	25y24h	3.60	3.43	0.0005	22.21	22.20	100
ND04935	25y24h	3.20	4.14	0.0018	24.56	21.74	22150
ND04947	25y24h	3.70	4.22	0.0019	8.88	8.78	2891

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04949P	25y24h	4.93	5.25	0.0000	14.73	12.73	36106
ND04951	25y24h	2.90	4.05	0.0017	7.96	6.61	10701
ND04960	25y24h	3.50	3.91	0.0006	4.35	3.97	3293
ND04961	25y24h	3.60	3.96	0.0004	1.43	1.33	961
ND05000	25y24h	2.50	0.81	0.0000	5.56	5.56	212
ND05100	25y24h	1.90	2.77	0.0005	9.07	8.42	6677
ND05200	25y24h	2.60	1.06	0.0000	6.26	6.25	100
ND05300	25y24h	2.70	1.33	0.0001	31.80	31.80	100
ND05310	25y24h	2.60	1.82	0.0001	27.83	27.84	100
ND05315	25y24h	3.30	2.46	0.0002	24.60	24.62	114
ND05316	25y24h	3.20	2.75	0.0002	3.60	3.62	100
ND05335	25y24h	12.20	2.62	0.0002	5.84	5.76	100
ND05337	25y24h	13.65	2.63	0.0000	0.75	0.75	100
ND05339	25y24h	2.10	3.23	0.0004	6.35	5.79	3631
ND05345	25y24h	5.90	2.69	0.0002	15.25	15.36	100
ND05355	25y24h	5.20	2.92	0.0003	14.79	14.87	100
ND05360	25y24h	2.40	3.61	0.0006	14.15	14.30	560
ND05365	25y24h	3.00	3.92	0.0013	16.30	12.43	24725
ND05375	25y24h	3.50	3.93	0.0010	0.79	2.11	528
ND05405	25y24h	5.80	4.51	0.0000	0.19	0.19	100
ND05500	25y24h	3.00	5.17	0.0001	23.02	7.05	113171
ND05600	25y24h	4.40	5.17	0.0005	5.39	3.30	4296
ND05700	25y24h	3.90	4.82	0.0007	5.36	3.30	6283
ND05800	25y24h	3.00	3.29	0.0001	3.94	3.92	289
ND05900	25y24h	3.80	3.62	0.0007	2.27	2.27	100
ND05910	25y24h	3.00	3.77	0.0007	3.87	3.34	4495
ND06105P	25y24h	5.20	5.05	0.0011	2.60	2.58	146
ND06110P	25y24h	5.30	5.12	0.0005	1.77	1.65	185
ND06115P	25y24h	5.30	5.15	0.0006	1.15	0.67	100
ND06210P	25y24h	5.50	5.33	0.0017	3.76	2.16	118
ND06215P	25y24h	4.90	5.41	0.0011	2.16	1.16	398
ND06300P	25y24h	2.70	4.19	0.0001	10.91	7.55	24970
NE020P	25y24h	3.98	4.25	0.0000	47.20	39.74	71152
NE08000	25y24h	3.30	3.67	0.0003	12.42	11.83	3059
NE08100	25y24h	3.10	4.24	0.0019	28.35	13.78	31342
NE08200	25y24h	2.60	4.24	0.0021	51.04	32.20	81644
NE08300	25y24h	3.20	4.30	0.0031	32.49	26.10	21393
NE08400	25y24h	3.30	4.31	0.0014	26.29	25.50	17997
NE08500	25y24h	3.10	4.16	0.0013	14.23	9.41	18352
NE08600	25y24h	3.40	4.16	0.0002	13.96	13.33	10031
NE08615	25y24h	2.70	4.51	0.0004	15.12	8.84	42833
NE08625	25y24h	3.10	4.34	0.0010	16.77	15.71	24229
NE08700	25y24h	3.00	4.15	0.0002	10.42	8.54	10016
NE08716	25y24h	4.20	4.83	0.0002	2.32	2.14	891
NE08717	25y24h	4.50	4.93	0.0001	1.26	1.16	1036
NE08720	25y24h	3.50	4.16	0.0003	5.60	5.24	3804
NE08735	25y24h	3.70	4.48	0.0003	4.02	3.58	4329

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE08745	25y24h	3.50	4.37	0.0005	3.86	3.77	3978
NE08800	25y24h	3.90	3.15	0.0001	10.10	10.08	235
NE08900	25y24h	3.50	3.18	0.0001	10.05	10.04	217
NE09000	25y24h	4.00	4.28	0.0002	4.72	4.39	965
NE09100	25y24h	3.10	2.80	0.0001	32.58	32.58	381
NE09110	25y24h	3.80	3.28	0.0001	22.28	22.29	291
NE09125	25y24h	4.80	4.64	0.0000	24.00	18.85	27191
NE09200	25y24h	4.40	1.72	0.0002	19.74	19.74	354
NE09210	25y24h	3.80	1.90	0.0000	19.60	19.59	313
NE09220	25y24h	4.70	4.30	0.0000	54.79	38.46	85786
NE09300	25y24h	3.00	4.24	0.0021	13.08	9.56	15645
NE09400	25y24h	2.90	4.24	0.0003	21.21	16.14	54815
NE09415	25y24h	3.10	4.41	0.0006	10.39	9.78	19123
NE09500	25y24h	2.80	4.24	0.0020	25.46	12.48	35342
NE09600	25y24h	2.80	4.18	0.0025	24.09	20.68	46001
NE09700	25y24h	3.00	3.91	0.0011	11.28	9.25	20924
NE09800	25y24h	3.10	2.14	0.0001	5.84	5.85	137
NE09900	25y24h	3.20	3.98	0.0016	12.81	11.96	9830
NE10000	25y24h	3.10	3.08	0.0001	10.68	10.67	186
NE10100	25y24h	2.70	3.00	0.0001	4.49	4.37	383
NE10200	25y24h	3.00	3.70	0.0016	11.08	8.11	14135
NE10300	25y24h	3.10	3.62	0.0003	8.48	7.91	2280
NE10400	25y24h	3.10	3.95	0.0014	14.75	10.69	22248
NE10500	25y24h	3.30	2.69	0.0001	8.21	8.21	211
NE10600	25y24h	3.40	3.70	0.0003	8.59	8.17	1517
NE10700	25y24h	2.80	3.40	0.0003	5.33	4.72	2093
NE10800	25y24h	3.20	3.79	0.0009	9.84	8.40	6097
NE10900	25y24h	3.20	2.23	0.0000	9.00	8.99	117
NE11000	25y24h	2.80	4.13	0.0013	14.32	9.19	36139
NE11100	25y24h	3.00	3.34	0.0004	8.48	8.06	1400
NE11200	25y24h	2.80	3.84	0.0015	10.55	6.64	18418
NE11300	25y24h	2.90	2.72	0.0001	4.61	4.59	100
NE11400	25y24h	2.80	3.75	0.0005	8.63	7.69	3125
NE11500	25y24h	3.40	4.20	0.0021	12.18	9.70	13830
NE11600	25y24h	3.40	4.40	0.0011	15.35	10.29	25093
NE11700	25y24h	3.30	4.53	0.0013	11.06	9.21	16984
NE11800	25y24h	3.30	4.33	0.0012	7.82	5.47	8300
NE11900	25y24h	3.30	4.20	0.0019	13.70	9.83	18210
NE12000	25y24h	3.30	4.03	0.0010	7.22	5.40	6685
NE12100	25y24h	3.20	3.33	0.0001	12.21	12.13	335
NE12200	25y24h	3.20	4.14	0.0018	12.16	8.78	12590
NE12300	25y24h	3.20	3.50	0.0002	8.62	8.42	758
NE12400	25y24h	3.20	3.98	0.0014	11.48	8.62	13450
NE12500	25y24h	3.10	3.93	0.0014	10.77	7.92	13000
NE12600	25y24h	3.30	3.78	0.0003	5.91	5.39	1354
NE13100	25y24h	3.00	3.91	0.0007	7.45	6.66	3737
NE14000	25y24h	2.00	3.93	0.0001	2.71	2.48	570

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF15000	25y24h	3.10	4.49	0.0014	24.70	15.00	61201
NF15010	25y24h	3.00	4.49	0.0009	4.50	4.05	8000
NF15100	25y24h	3.70	4.74	0.0012	15.86	14.86	23348
NF15200	25y24h	3.30	4.49	0.0008	19.17	13.77	15936
NF15210	25y24h	3.20	4.49	0.0010	11.20	9.43	12884
NF15215	25y24h	3.30	4.49	0.0011	19.06	13.31	29084
NF15300	25y24h	3.20	4.49	0.0009	31.43	31.12	26377
NF15315	25y24h	3.30	4.49	0.0003	13.16	11.22	8089
NF15330	25y24h	3.20	4.49	0.0004	15.64	13.60	29766
NF15400	25y24h	3.00	4.33	0.0023	29.52	29.25	28845
NF15500	25y24h	3.40	4.43	0.0021	15.88	12.16	21818
NF15600	25y24h	2.20	3.55	0.0022	30.42	25.95	76334
NF15700	25y24h	2.60	3.55	0.0012	10.61	7.35	25006
NF15800	25y24h	2.40	3.33	0.0017	11.41	7.78	13585
NF15900	25y24h	2.20	3.55	0.0021	17.28	15.25	34092
NF16000	25y24h	4.00	2.66	0.0001	3.90	3.86	100
NF16100	25y24h	2.80	3.90	0.0014	11.96	7.98	26497
NF16200	25y24h	2.00	2.91	0.0016	18.22	16.72	21477
NF16300	25y24h	2.20	2.90	0.0005	9.99	8.30	7425
NF16310	25y24h	2.10	2.91	0.0010	5.78	5.14	7793
NF16500	25y24h	2.10	2.95	0.0005	10.50	8.83	9717
NF16510	25y24h	2.10	2.95	0.0009	5.05	4.54	8622
NF16700	25y24h	2.80	2.04	0.0000	2.13	2.12	116
NF16800	25y24h	1.70	2.91	0.0017	18.12	11.53	29883
NF16900	25y24h	1.60	2.91	0.0013	15.17	11.46	24472
NF17000	25y24h	1.80	2.90	0.0020	11.93	7.01	17132
NF17100	25y24h	1.90	2.90	0.0019	10.19	9.67	9046
NF17200	25y24h	2.60	3.48	0.0005	12.31	9.87	15273
NF17210	25y24h	2.20	3.54	0.0011	10.00	7.32	17118
NF17300	25y24h	3.20	2.04	0.0000	2.05	2.05	111
NF17400	25y24h	2.20	3.80	0.0020	17.43	11.71	32310
NF17500	25y24h	2.70	3.82	0.0012	11.84	9.68	19962
NF17600	25y24h	2.20	3.33	0.0020	13.59	8.55	25331
NF17700	25y24h	2.30	3.15	0.0015	14.25	11.83	10528
NF17800	25y24h	2.80	3.77	0.0016	13.97	10.13	17641
NG20000	25y24h	3.30	3.02	0.0001	5.68	5.66	159
NG20100	25y24h	2.90	4.01	0.0012	11.38	8.97	8536
NG20200	25y24h	3.40	4.29	0.0021	13.70	9.72	18433
NG20300	25y24h	3.20	4.17	0.0020	11.84	8.51	14431
NG20400	25y24h	3.10	3.91	0.0011	10.30	8.08	8194
NG20500	25y24h	3.20	4.26	0.0016	15.02	9.57	29239
NG20600	25y24h	3.30	4.26	0.0013	9.56	6.82	22642
NG20700	25y24h	2.90	3.60	0.0010	13.55	11.54	9819
NG20800	25y24h	3.30	3.96	0.0005	10.18	8.37	10090
NG20810	25y24h	3.10	4.25	0.0013	12.20	9.19	44307
NG20900	25y24h	3.10	3.57	0.0001	11.46	11.36	460
NG21000	25y24h	3.00	4.05	0.0008	11.59	8.53	12079

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG21010	25y24h	3.30	4.20	0.0018	6.41	6.48	7483
NG21100	25y24h	3.10	4.05	0.0004	9.00	8.35	5733
NG21110	25y24h	3.20	4.19	0.0008	9.61	9.50	17030
NG21200	25y24h	3.40	3.28	0.0001	4.21	4.20	100
NG21300	25y24h	2.80	4.27	0.0005	33.02	24.32	93386
NG21400	25y24h	3.00	4.26	0.0003	25.67	22.57	53374
NG21415	25y24h	3.40	4.27	0.0003	11.99	9.16	25399
NG21500	25y24h	2.60	4.26	0.0017	20.45	13.43	32870
NG21600	25y24h	2.70	4.26	0.0017	20.90	11.60	48655
NG21700	25y24h	3.00	4.27	0.0008	20.42	14.65	47229
NG21715	25y24h	3.30	4.27	0.0006	8.76	6.32	25298
NG21800	25y24h	3.40	4.27	0.0003	14.03	13.80	16501
NG21810	25y24h	3.20	4.27	0.0004	16.74	13.17	42565
NG21900	25y24h	2.90	3.95	0.0005	20.37	20.05	14146
NG22000	25y24h	3.80	4.37	0.0003	12.85	11.74	14825
NG22000P	25y24h	4.28	2.89	0.0000	10.30	1.80	33714
NG22015P	25y24h	3.31	3.45	0.0000	19.60	4.87	92935
NG22025	25y24h	4.20	4.37	0.0002	2.72	2.75	1094
NG22040	25y24h	2.90	3.80	0.0001	9.75	9.58	14212
NG22100	25y24h	2.30	3.65	0.0007	29.37	28.71	27510
NG22300	25y24h	3.30	2.39	0.0001	3.00	2.95	185
NG22400	25y24h	2.50	3.62	0.0021	22.61	22.41	27346
NG22500	25y24h	2.60	3.63	0.0008	25.20	23.76	31712
NG22600	25y24h	2.80	3.63	0.0011	7.60	6.76	5838
NG22700	25y24h	2.70	3.63	0.0012	9.62	8.21	21957
NG22800	25y24h	2.70	3.63	0.0021	11.91	7.71	27624
NG22900	25y24h	2.90	3.63	0.0012	9.33	8.51	17588
NG23000	25y24h	2.50	3.55	0.0005	19.57	18.88	22197
NG23015	25y24h	2.90	3.58	0.0004	7.26	7.02	7651
NG23100	25y24h	2.60	3.36	0.0007	18.78	18.43	33355
NG23200	25y24h	2.50	3.13	0.0004	9.32	9.03	9917
NG23300	25y24h	2.60	2.59	0.0001	8.41	8.40	267
NG23315	25y24h	2.30	2.70	0.0001	3.24	3.12	173
NG23400	25y24h	2.30	2.87	0.0000	3.49	3.41	1535
NG23500	25y24h	2.60	2.93	0.0001	3.19	3.00	1228
NG23600	25y24h	2.30	3.09	0.0004	6.00	5.06	8026
NG23700	25y24h	2.30	2.97	0.0006	8.00	7.71	7275
NG23800	25y24h	2.30	2.97	0.0010	6.17	4.49	3540
NG23900	25y24h	2.30	1.52	0.0001	4.29	4.28	129
NG24000	25y24h	1.90	2.78	0.0005	8.52	7.46	11708
NG24100	25y24h	1.50	0.78	0.0000	0.62	0.62	135
NG24200	25y24h	2.00	1.88	0.0000	12.03	12.02	566
NG24216	25y24h	2.50	1.88	0.0000	0.21	0.20	147
NG24225	25y24h	2.70	2.13	0.0001	5.81	5.82	202
NG24230	25y24h	2.80	2.54	0.0001	4.40	4.42	147
NG24300	25y24h	3.10	2.40	0.0004	13.94	13.92	355
NG24320	25y24h	3.00	2.51	0.0010	1.41	2.65	148

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG24322	25y24h	2.90	3.73	0.0000	1.85	1.15	7386
NG24330	25y24h	2.30	3.58	0.0005	9.59	6.36	11067
NG24335	25y24h	3.00	3.78	0.0002	5.70	5.19	1981
NG24340	25y24h	2.90	3.58	0.0002	4.80	4.37	3717
NG24341	25y24h	2.80	3.58	0.0001	5.12	4.40	4132
NG24400	25y24h	2.90	3.65	0.0005	13.54	12.67	11578
NG24500P	25y24h	2.00	2.66	0.0005	14.46	14.15	1584
NG24516P	25y24h	4.20	4.11	0.0000	0.29	0.28	100
NG24527P	25y24h	4.00	3.29	0.0000	2.38	2.38	181
NG24530P	25y24h	1.60	2.69	0.0001	3.25	3.14	195
NG24600P	25y24h	3.30	3.77	0.0003	9.40	8.78	2514
NG24615P	25y24h	3.20	3.95	0.0007	5.87	4.73	12070
NH30000	25y24h	3.70	1.57	0.0000	6.54	6.53	254
NH30030	25y24h	4.20	1.60	0.0000	1.36	1.32	135
NH30035	25y24h	4.20	1.63	0.0000	1.19	1.16	137
NH30040	25y24h	4.30	1.64	0.0000	0.36	0.34	101
NH30045	25y24h	4.30	1.64	0.0001	0.16	0.18	100
NH30050	25y24h	3.60	1.97	0.0001	5.38	5.38	192
NH30055	25y24h	3.80	2.38	0.0001	4.69	4.69	147
NSP0100	25y24h	3.50	4.38	0.0021	17.96	13.19	15133
NSP0200	25y24h	3.50	3.52	0.0001	9.60	9.59	275
NSP0215	25y24h	3.70	4.39	0.0006	12.31	11.73	19329
NSP0300	25y24h	3.40	4.15	0.0008	14.19	11.89	9768
NSP0400	25y24h	3.60	3.83	0.0001	10.82	10.80	255
NSP0415	25y24h	3.70	4.41	0.0001	10.68	10.49	10784
NSP0500	25y24h	3.90	2.93	0.0000	6.70	6.69	193
NSP0600	25y24h	3.70	4.07	0.0002	6.92	6.52	1869
NSP0700	25y24h	3.50	3.80	0.0001	12.43	11.97	1888
NSP0715	25y24h	3.90	4.54	0.0005	4.19	4.25	12544
NSP0800	25y24h	3.60	3.87	0.0001	11.38	10.65	3701
NSP0815	25y24h	3.60	4.54	0.0008	6.20	4.81	26381
NSP0900	25y24h	3.50	4.11	0.0002	12.65	11.08	7960
NSP0915	25y24h	3.50	4.12	0.0004	8.53	8.64	11869
NSP1000	25y24h	3.60	4.49	0.0010	11.36	7.66	23152
BDRY	50y24h	5.00	0.69	0.0000	2025.90	0.00	0
NA00100	50y24h	2.70	1.83	0.0001	8.22	8.22	206
NA00106	50y24h	2.20	1.87	0.0000	1.17	1.17	100
NA00110	50y24h	3.30	1.94	0.0000	2.51	2.50	100
NA00200	50y24h	1.90	1.22	0.0000	3.44	3.44	366
NA00300	50y24h	1.40	1.63	0.0002	52.62	52.62	100
NA00312	50y24h	2.30	2.85	0.0001	11.06	11.09	1207
NA00314P	50y24h	1.20	3.55	0.0005	13.73	9.33	24058
NA00335	50y24h	1.80	1.85	0.0001	47.29	47.27	251
NA00360	50y24h	1.70	2.04	0.0001	28.94	28.96	100
NA00370	50y24h	3.70	3.32	0.0005	12.27	12.33	309
NA00375	50y24h	3.20	3.92	0.0014	9.21	8.45	10989
NA00385	50y24h	3.60	3.97	0.0004	3.97	3.43	2797

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA00510	50y24h	1.50	2.75	0.0003	17.67	16.71	27441
NA00605	50y24h	1.70	2.81	0.0004	14.67	14.07	21753
NA00620	50y24h	1.90	2.80	0.0001	16.50	16.24	19584
NA00700	50y24h	1.90	2.05	0.0001	8.52	8.51	100
NA00710	50y24h	1.70	2.40	0.0002	52.33	51.50	8242
NA00735	50y24h	1.60	2.75	0.0001	13.99	13.82	15269
NA00745	50y24h	3.70	3.25	0.0004	17.45	17.53	100
NA00750	50y24h	3.30	3.89	0.0015	9.67	8.42	12882
NA00765	50y24h	4.30	4.75	0.0003	11.71	11.67	2818
NA00800	50y24h	2.00	1.88	0.0001	61.73	61.73	100
NA00900	50y24h	2.80	3.49	0.0004	8.97	8.84	3770
NA01000	50y24h	2.10	3.11	0.0014	10.85	7.97	8450
NA01010	50y24h	4.70	5.38	0.0001	12.68	12.62	17674
NA01100	50y24h	2.60	3.29	0.0006	9.94	9.57	6433
NA01200	50y24h	2.60	2.96	0.0004	8.66	8.16	1957
NA01300	50y24h	1.80	2.76	0.0004	11.30	8.14	15272
NA01325	50y24h	1.60	2.77	0.0005	15.30	12.17	37594
NA01600	50y24h	1.00	2.76	0.0003	38.40	19.72	58653
NA01615	50y24h	1.30	2.76	0.0010	24.15	20.22	40767
NA01700	50y24h	1.50	2.76	0.0014	30.17	26.44	26995
NA01710	50y24h	1.40	2.76	0.0006	6.80	5.78	10366
NA01720	50y24h	1.60	2.76	0.0013	13.65	11.29	33246
NA01800	50y24h	2.48	3.26	0.0018	22.73	22.71	4585
NA01816	50y24h	2.40	3.07	0.0001	25.30	25.27	7647
NA01825	50y24h	2.80	3.39	0.0002	9.06	8.96	7149
NA01835	50y24h	1.70	2.80	0.0002	22.99	22.83	15261
NA01850	50y24h	3.60	4.63	0.0002	21.13	21.05	7545
NA01855	50y24h	3.80	4.67	0.0006	21.68	21.46	15121
NA01900	50y24h	2.10	2.84	0.0002	7.70	6.19	7098
NA02000	50y24h	1.80	2.89	0.0013	10.93	7.82	16080
NA02100	50y24h	1.40	2.89	0.0002	17.96	7.40	29920
NA02110	50y24h	1.50	2.89	0.0005	9.03	4.97	19602
NA02120	50y24h	3.30	3.58	0.0001	3.81	3.80	767
NB02200	50y24h	4.10	1.53	0.0001	13.71	13.71	340
NB02215	50y24h	4.30	1.76	0.0001	4.38	4.36	100
NB02235	50y24h	3.90	2.28	0.0001	6.71	6.70	189
NB02245	50y24h	7.60	2.57	0.0000	4.76	4.75	253
NB02260	50y24h	5.60	3.88	0.0000	4.45	4.45	237
NB02270	50y24h	5.50	3.90	0.0000	1.00	0.99	100
NB02310	50y24h	2.30	3.09	0.0005	31.90	31.82	9667
NB02315	50y24h	1.90	3.12	0.0070	32.92	27.81	50605
NB02316P	50y24h	3.50	3.12	0.0003	1.35	24.22	3523
NB02320	50y24h	4.00	3.81	0.0006	4.21	4.18	332
NB02325	50y24h	4.20	4.35	0.0003	1.43	1.39	100
NB02400	50y24h	2.30	1.33	0.0001	40.80	40.80	100
NB02410	50y24h	2.30	3.09	0.0007	31.17	29.85	4469
NB02412	50y24h	1.60	3.11	0.0010	5.82	5.51	7279

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02425	50y24h	4.20	4.71	0.0002	10.68	10.66	611
NB02426	50y24h	4.70	5.07	0.0002	3.22	3.20	1694
NB02427	50y24h	4.80	5.20	0.0003	4.43	4.40	2626
NB02430	50y24h	4.50	5.04	0.0002	5.95	5.56	2806
NB02435	50y24h	2.10	3.34	0.0012	20.26	16.44	18908
NB02445	50y24h	3.10	3.87	0.0004	11.40	11.38	708
NB02455	50y24h	4.20	4.49	0.0003	5.42	5.32	650
NB02500	50y24h	4.00	2.68	0.0004	9.62	9.62	141
NB02510	50y24h	4.10	5.23	0.0014	13.80	9.02	21914
NB02517P	50y24h	5.10	5.53	0.0004	1.54	1.47	1070
NB02600	50y24h	2.60	1.32	0.0000	6.60	6.60	100
NB02610	50y24h	1.90	2.38	0.0001	11.27	11.27	2259
NB02615	50y24h	3.00	3.05	0.0001	7.34	7.34	241
NB02616	50y24h	3.80	4.18	0.0001	2.30	2.27	1357
NB02617	50y24h	4.40	4.72	0.0001	1.08	1.00	1261
NB02618	50y24h	2.70	3.07	0.0002	2.43	2.37	2810
NB02620	50y24h	3.50	3.89	0.0001	8.12	8.07	1535
NB02622	50y24h	3.20	3.67	0.0002	5.30	5.17	3238
NB02700	50y24h	2.90	3.14	0.0004	11.11	10.75	1646
NB02706	50y24h	2.90	3.12	0.0001	1.03	1.12	766
NB02707	50y24h	2.60	3.11	0.0003	2.94	2.89	3967
NB02710	50y24h	2.80	3.66	0.0008	18.87	12.77	20183
NB02800	50y24h	2.70	3.43	0.0020	22.62	22.16	10514
NB02900	50y24h	2.30	2.35	0.0002	11.30	11.31	194
NB02910	50y24h	2.60	3.66	0.0006	30.97	21.83	25103
NB02930	50y24h	2.30	3.66	0.0009	16.47	12.26	23187
NB02965	50y24h	2.30	3.66	0.0006	13.26	11.46	9695
NC002P	50y24h	3.00	1.43	0.0000	3.31	3.30	132
NC003P	50y24h	3.00	1.50	0.0000	0.83	0.87	343
NC03000	50y24h	3.30	3.73	0.0001	8.09	7.77	1831
NC03031P	50y24h	4.60	4.22	0.0001	2.44	2.43	100
NC03040	50y24h	3.30	3.73	0.0001	2.68	2.89	1338
NC03050	50y24h	3.00	3.73	0.0001	3.15	3.10	2340
NC03055	50y24h	3.50	3.82	0.0000	2.91	2.88	1827
NC03100	50y24h	3.30	3.56	0.0002	23.16	23.14	339
NC03120	50y24h	3.00	3.87	0.0003	15.26	12.74	12248
NC03123P	50y24h	3.10	3.89	0.0001	4.47	4.23	3378
NC03125	50y24h	1.90	3.83	0.0006	22.12	13.92	34838
NC03135	50y24h	2.20	3.83	0.0004	11.00	8.46	11913
NC03137	50y24h	3.20	3.84	0.0004	1.25	1.18	334
NC03160	50y24h	2.30	3.83	0.0005	16.10	14.44	20791
NC03200	50y24h	3.10	4.39	0.0002	27.91	23.89	20732
NC03210	50y24h	3.00	4.39	0.0003	29.89	27.84	25449
NC03220	50y24h	3.30	4.41	0.0004	19.45	17.64	24334
NC03222	50y24h	3.80	4.74	0.0005	3.25	2.78	12559
NC03235	50y24h	3.80	4.43	0.0003	6.74	6.48	8527
NC03240	50y24h	3.50	4.39	0.0007	6.92	5.99	12203

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03300	50y24h	2.80	4.10	0.0026	35.50	31.23	49455
NC03400	50y24h	3.30	3.89	0.0003	7.12	6.85	2390
NC03415	50y24h	3.50	4.04	0.0004	4.35	4.04	3147
NC03500	50y24h	2.80	4.02	0.0013	17.62	14.32	15904
NC03600	50y24h	3.50	2.69	0.0001	6.95	6.94	320
NC03610	50y24h	3.10	4.10	0.0001	15.12	14.80	10664
NC03615	50y24h	3.50	4.18	0.0002	9.47	9.11	12788
NC03625	50y24h	3.60	4.23	0.0002	2.92	2.39	6175
NC03700	50y24h	3.20	4.10	0.0006	23.41	22.40	21114
NC03715	50y24h	3.60	4.27	0.0004	5.89	5.92	7340
NC03716	50y24h	3.50	4.27	0.0004	5.73	5.43	11365
NC03720	50y24h	3.40	4.23	0.0003	8.88	7.32	21381
NC03723	50y24h	3.50	4.28	0.0002	5.30	5.25	4037
NC03730	50y24h	3.30	4.23	0.0002	9.22	9.09	8011
NC03737	50y24h	3.30	4.20	0.0003	8.91	8.75	7442
NC03800	50y24h	2.60	1.89	0.0002	67.35	67.35	100
NC03825	50y24h	2.00	3.81	0.0014	56.54	48.87	34986
NC03830	50y24h	2.40	3.81	0.0038	28.67	26.87	26838
NC03833P	50y24h	6.00	3.87	0.0000	4.82	4.42	2067
NC03835P	50y24h	6.00	3.87	0.0000	0.30	0.27	100
NC03837P	50y24h	3.80	3.88	0.0000	3.17	2.74	1447
NC03845	50y24h	2.40	3.83	0.0005	29.83	28.03	11801
NC03850	50y24h	2.20	3.83	0.0012	20.64	18.26	15849
NC03855	50y24h	2.30	3.62	0.0002	18.94	18.34	24023
NC03856	50y24h	2.50	3.62	0.0002	18.25	17.90	21105
NC06000	50y24h	2.80	3.28	0.0005	15.45	15.42	1619
NC06010	50y24h	2.70	3.48	0.0011	16.18	15.11	11498
NC06020	50y24h	2.80	3.82	0.0014	12.77	12.37	5248
NC06400	50y24h	4.80	5.24	0.0001	3.33	2.96	2423
ND03900	50y24h	2.30	2.44	0.0001	28.16	28.14	201
ND04000	50y24h	2.90	1.56	0.0001	34.43	34.43	282
ND04010	50y24h	2.80	1.80	0.0001	5.02	4.99	100
ND04012P	50y24h	3.00	4.61	0.0004	1.87	3.07	497
ND04014P	50y24h	4.38	4.66	0.0008	2.84	1.74	498
ND04015	50y24h	2.90	2.14	0.0002	24.72	24.71	100
ND04016P	50y24h	3.00	4.74	0.0001	1.37	1.29	1689
ND04030	50y24h	3.00	3.77	0.0013	17.12	13.37	18221
ND04100	50y24h	2.50	3.59	0.0010	10.85	9.40	20810
ND04200	50y24h	2.50	3.59	0.0013	11.14	7.30	23337
ND04300	50y24h	2.30	2.94	0.0005	12.65	12.40	5273
ND04315	50y24h	3.40	3.83	0.0003	4.58	4.53	1081
ND04316P	50y24h	3.00	4.74	0.0001	2.28	3.37	1642
ND04318P	50y24h	3.00	4.76	0.0017	3.37	0.95	1212
ND04400	50y24h	2.10	2.88	0.0007	11.95	10.96	8665
ND04500	50y24h	2.90	2.32	0.0002	45.00	45.00	202
ND04511	50y24h	2.90	2.81	0.0002	6.04	5.97	100
ND04512	50y24h	2.50	2.89	0.0002	4.44	4.37	2296

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04513	50y24h	2.40	2.89	0.0002	5.04	5.03	1379
ND04515	50y24h	3.40	4.23	0.0006	40.49	40.45	4011
ND04530	50y24h	3.00	4.26	0.0010	19.20	14.65	22602
ND04542	50y24h	2.90	4.26	0.0027	13.98	11.35	20750
ND04550	50y24h	3.00	4.26	0.0017	47.42	30.08	48776
ND04555	50y24h	2.90	4.27	0.0009	31.81	29.95	20414
ND04565	50y24h	2.80	4.27	0.0021	27.77	24.83	32568
ND04571P	50y24h	4.80	4.91	0.0000	6.96	6.17	4870
ND04600	50y24h	2.50	1.00	0.0000	8.71	8.70	394
ND04700	50y24h	3.20	3.44	0.0002	5.14	5.13	417
ND04715	50y24h	3.20	4.24	0.0001	10.36	10.56	26374
ND04800	50y24h	3.00	2.43	0.0009	9.72	9.71	254
ND04815	50y24h	3.40	4.22	0.0013	10.21	8.67	7627
ND04900	50y24h	3.40	1.85	0.0002	42.37	42.37	182
ND04913	50y24h	3.90	3.50	0.0000	1.07	1.11	100
ND04915	50y24h	4.20	2.83	0.0003	39.77	39.78	113
ND04925	50y24h	3.20	3.95	0.0005	18.86	17.09	11565
ND04930	50y24h	3.60	3.72	0.0005	23.48	23.46	177
ND04935	50y24h	3.20	4.23	0.0023	26.34	25.16	26891
ND04947	50y24h	3.70	4.26	0.0019	10.00	9.89	3641
ND04949P	50y24h	4.93	5.27	0.0000	16.25	14.31	36602
ND04951	50y24h	2.90	4.08	0.0020	8.92	7.75	11567
ND04960	50y24h	3.50	4.01	0.0009	5.15	4.15	4661
ND04961	50y24h	3.60	4.05	0.0006	1.99	1.85	1541
ND05000	50y24h	2.50	0.86	0.0000	6.40	6.40	212
ND05100	50y24h	1.90	2.81	0.0005	10.15	9.46	7434
ND05200	50y24h	2.60	1.16	0.0000	7.07	7.07	100
ND05300	50y24h	2.70	1.45	0.0001	34.76	34.76	100
ND05310	50y24h	2.60	2.04	0.0001	30.40	30.41	100
ND05315	50y24h	3.30	2.74	0.0002	26.06	26.09	120
ND05316	50y24h	3.20	3.50	0.0002	5.80	5.83	800
ND05335	50y24h	12.20	2.86	0.0002	5.83	5.74	100
ND05337	50y24h	13.65	2.87	0.0001	0.84	0.82	100
ND05339	50y24h	2.10	3.29	0.0005	7.07	6.43	4346
ND05345	50y24h	5.90	2.96	0.0002	15.34	15.46	100
ND05355	50y24h	5.20	3.18	0.0003	14.88	14.99	100
ND05360	50y24h	2.40	3.86	0.0006	14.26	14.44	1120
ND05365	50y24h	3.00	4.01	0.0015	18.24	14.12	29019
ND05375	50y24h	3.50	4.02	0.0010	1.28	2.21	767
ND05405	50y24h	5.80	4.54	0.0000	0.22	0.21	100
ND05500	50y24h	3.00	5.28	0.0001	25.82	6.73	128017
ND05600	50y24h	4.40	5.27	0.0005	5.46	3.44	5367
ND05700	50y24h	3.90	5.00	0.0008	6.10	3.30	8156
ND05800	50y24h	3.00	3.46	0.0001	4.25	4.17	389
ND05900	50y24h	3.80	3.67	0.0007	2.49	2.49	100
ND05910	50y24h	3.00	3.84	0.0007	4.30	3.69	5341
ND06105P	50y24h	5.20	5.15	0.0011	2.88	2.86	146

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND06110P	50y24h	5.30	5.24	0.0005	1.87	1.82	196
ND06115P	50y24h	5.30	5.28	0.0006	1.15	0.74	100
ND06210P	50y24h	5.50	5.35	0.0017	3.76	2.16	118
ND06215P	50y24h	4.90	5.43	0.0011	2.16	1.30	438
ND06300P	50y24h	2.70	4.27	0.0001	12.14	8.58	28488
NE020P	50y24h	3.98	4.28	0.0000	53.13	41.12	75598
NE08000	50y24h	3.30	4.14	0.0013	18.27	13.31	22241
NE08100	50y24h	3.10	4.27	0.0019	32.67	16.52	33621
NE08200	50y24h	2.60	4.27	0.0020	52.77	42.88	84975
NE08300	50y24h	3.20	4.36	0.0030	32.39	30.22	22814
NE08400	50y24h	3.30	4.36	0.0013	30.86	29.04	21406
NE08500	50y24h	3.10	4.24	0.0013	16.84	10.13	23222
NE08600	50y24h	3.40	4.23	0.0002	15.63	15.12	11672
NE08615	50y24h	2.70	4.58	0.0004	16.45	9.09	45447
NE08625	50y24h	3.10	4.37	0.0010	19.56	18.47	25032
NE08700	50y24h	3.00	4.23	0.0002	10.72	10.12	13213
NE08716	50y24h	4.20	4.88	0.0002	2.43	2.23	1184
NE08717	50y24h	4.50	4.96	0.0001	1.40	1.34	1122
NE08720	50y24h	3.50	4.23	0.0004	6.08	5.70	4854
NE08735	50y24h	3.70	4.54	0.0003	4.49	3.83	5196
NE08745	50y24h	3.50	4.39	0.0006	4.62	4.52	4084
NE08800	50y24h	3.90	3.61	0.0001	11.40	11.38	235
NE08900	50y24h	3.50	3.67	0.0001	11.89	11.79	528
NE09000	50y24h	4.00	4.48	0.0004	5.27	4.53	2212
NE09100	50y24h	3.10	2.98	0.0001	36.16	36.16	381
NE09110	50y24h	3.80	3.54	0.0002	24.47	24.50	291
NE09125	50y24h	4.80	4.71	0.0000	26.83	21.48	30038
NE09200	50y24h	4.40	1.81	0.0002	21.54	21.54	354
NE09210	50y24h	3.80	2.00	0.0000	21.38	21.38	313
NE09220	50y24h	4.70	4.36	0.0000	62.85	44.78	90618
NE09300	50y24h	3.00	4.29	0.0021	14.58	10.80	16838
NE09400	50y24h	2.90	4.29	0.0002	23.74	16.96	60443
NE09415	50y24h	3.10	4.42	0.0005	11.74	11.14	19715
NE09500	50y24h	2.80	4.29	0.0020	26.97	16.13	38394
NE09600	50y24h	2.80	4.22	0.0024	30.46	27.97	48457
NE09700	50y24h	3.00	3.94	0.0011	12.67	10.79	22361
NE09800	50y24h	3.10	2.78	0.0001	7.51	7.51	137
NE09900	50y24h	3.20	4.08	0.0016	17.58	16.96	12020
NE10000	50y24h	3.10	3.70	0.0010	14.19	12.90	6740
NE10100	50y24h	2.70	3.25	0.0003	5.04	4.60	1334
NE10200	50y24h	3.00	3.89	0.0025	12.43	9.15	22540
NE10300	50y24h	3.10	3.95	0.0019	10.98	8.53	12873
NE10400	50y24h	3.10	3.99	0.0015	16.58	13.00	24522
NE10500	50y24h	3.30	3.00	0.0001	9.22	9.24	211
NE10600	50y24h	3.40	3.90	0.0008	9.65	8.45	4254
NE10700	50y24h	2.80	3.56	0.0007	5.98	4.86	3818
NE10800	50y24h	3.20	3.92	0.0014	11.05	8.57	10541

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE10900	50y24h	3.20	3.17	0.0001	11.68	11.66	117
NE11000	50y24h	2.80	4.17	0.0013	16.09	10.99	38451
NE11100	50y24h	3.00	3.55	0.0006	9.53	8.40	3613
NE11200	50y24h	2.80	3.90	0.0015	11.85	7.93	20784
NE11300	50y24h	2.90	3.47	0.0006	5.86	5.38	2842
NE11400	50y24h	2.80	3.91	0.0010	9.69	7.92	6709
NE11500	50y24h	3.40	4.39	0.0027	13.67	11.05	20522
NE11600	50y24h	3.40	4.45	0.0011	17.24	12.61	28745
NE11700	50y24h	3.30	4.56	0.0012	12.43	10.82	17986
NE11800	50y24h	3.30	4.46	0.0014	8.79	5.58	12290
NE11900	50y24h	3.30	4.39	0.0023	16.51	10.47	24584
NE12000	50y24h	3.30	4.17	0.0013	8.11	5.51	9341
NE12100	50y24h	3.20	3.67	0.0005	13.71	12.89	2464
NE12200	50y24h	3.20	4.23	0.0020	13.65	10.15	15353
NE12300	50y24h	3.20	3.75	0.0004	9.68	8.91	3152
NE12400	50y24h	3.20	4.13	0.0019	13.01	8.87	18083
NE12500	50y24h	3.10	4.10	0.0019	12.30	8.16	17983
NE12600	50y24h	3.30	3.97	0.0007	6.64	5.55	3553
NE13100	50y24h	3.00	4.22	0.0016	9.00	7.45	12772
NE14000	50y24h	2.00	4.11	0.0001	3.02	2.52	2144
NF15000	50y24h	3.10	4.54	0.0013	27.36	17.69	64427
NF15010	50y24h	3.00	4.54	0.0008	4.96	5.04	8282
NF15100	50y24h	3.70	4.75	0.0011	17.71	16.87	24380
NF15200	50y24h	3.30	4.53	0.0008	19.58	15.79	17308
NF15210	50y24h	3.20	4.53	0.0009	11.54	9.63	13084
NF15215	50y24h	3.30	4.54	0.0010	21.63	14.59	31767
NF15300	50y24h	3.20	4.53	0.0009	40.27	39.94	27796
NF15315	50y24h	3.30	4.53	0.0003	13.28	11.25	8423
NF15330	50y24h	3.20	4.53	0.0004	17.61	16.75	31139
NF15400	50y24h	3.00	4.37	0.0022	38.17	37.90	30536
NF15500	50y24h	3.40	4.49	0.0022	17.74	14.02	25680
NF15600	50y24h	2.20	3.61	0.0022	41.30	38.00	81574
NF15700	50y24h	2.60	3.61	0.0012	11.92	7.47	27366
NF15800	50y24h	2.40	3.46	0.0020	12.81	7.97	17802
NF15900	50y24h	2.20	3.61	0.0021	21.59	19.39	36303
NF16000	50y24h	4.00	3.16	0.0001	4.38	4.33	100
NF16100	50y24h	2.80	3.94	0.0014	13.43	9.60	28683
NF16200	50y24h	2.00	3.09	0.0018	25.58	22.25	30413
NF16300	50y24h	2.20	3.09	0.0009	12.42	11.05	10518
NF16310	50y24h	2.10	3.09	0.0011	8.21	7.43	10841
NF16500	50y24h	2.10	3.08	0.0007	11.28	9.23	11431
NF16510	50y24h	2.10	3.08	0.0011	5.67	5.43	10452
NF16700	50y24h	2.80	2.13	0.0000	2.39	2.38	116
NF16800	50y24h	1.70	3.09	0.0018	25.49	13.90	36536
NF16900	50y24h	1.60	3.09	0.0014	19.63	11.81	28065
NF17000	50y24h	1.80	3.08	0.0021	17.88	9.14	26941
NF17100	50y24h	1.90	3.08	0.0020	13.21	10.69	12229

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF17200	50y24h	2.60	3.54	0.0004	14.23	11.39	16534
NF17210	50y24h	2.20	3.57	0.0010	11.20	8.78	17599
NF17300	50y24h	3.20	2.12	0.0000	2.31	2.30	111
NF17400	50y24h	2.20	3.86	0.0019	20.90	14.39	35946
NF17500	50y24h	2.70	3.87	0.0011	13.30	11.22	22101
NF17600	50y24h	2.20	3.44	0.0020	15.26	10.93	31848
NF17700	50y24h	2.30	3.44	0.0028	16.69	12.50	20657
NF17800	50y24h	2.80	3.83	0.0017	15.69	11.89	20006
NG20000	50y24h	3.30	3.33	0.0001	6.37	6.36	159
NG20100	50y24h	2.90	4.16	0.0018	12.77	9.21	12931
NG20200	50y24h	3.40	4.37	0.0024	15.39	11.57	20416
NG20300	50y24h	3.20	4.37	0.0025	14.11	8.85	18622
NG20400	50y24h	3.10	4.16	0.0020	11.54	8.39	16532
NG20500	50y24h	3.20	4.29	0.0016	17.49	11.45	31925
NG20600	50y24h	3.30	4.29	0.0014	11.56	8.51	23883
NG20700	50y24h	2.90	3.73	0.0016	15.22	11.87	15182
NG20800	50y24h	3.30	4.19	0.0009	11.38	8.90	18524
NG20810	50y24h	3.10	4.29	0.0012	14.32	11.41	47930
NG20900	50y24h	3.10	3.76	0.0004	12.87	12.02	4132
NG21000	50y24h	3.00	4.17	0.0008	13.00	8.68	14640
NG21010	50y24h	3.30	4.22	0.0018	8.36	8.36	7901
NG21100	50y24h	3.10	4.17	0.0004	11.57	10.94	8053
NG21110	50y24h	3.20	4.22	0.0008	13.72	13.56	19271
NG21200	50y24h	3.40	3.79	0.0005	5.53	5.06	2461
NG21300	50y24h	2.80	4.29	0.0005	36.32	28.41	96714
NG21400	50y24h	3.00	4.29	0.0003	29.89	25.88	55167
NG21415	50y24h	3.40	4.29	0.0002	14.10	10.98	27141
NG21500	50y24h	2.60	4.29	0.0016	23.64	14.87	34883
NG21600	50y24h	2.70	4.30	0.0016	24.39	14.00	53403
NG21700	50y24h	3.00	4.29	0.0007	22.12	16.91	48826
NG21715	50y24h	3.30	4.29	0.0005	10.73	7.90	26211
NG21800	50y24h	3.40	4.29	0.0002	15.55	15.09	17262
NG21810	50y24h	3.20	4.29	0.0004	19.10	14.39	46070
NG21900	50y24h	2.90	4.01	0.0005	26.23	26.02	18022
NG22000	50y24h	3.80	4.45	0.0005	14.72	13.03	25319
NG22000P	50y24h	4.28	2.95	0.0000	11.70	1.85	33859
NG22015P	50y24h	3.31	3.48	0.0000	22.53	8.80	95608
NG22025	50y24h	4.20	4.44	0.0003	2.73	2.75	1580
NG22040	50y24h	2.90	3.83	0.0001	12.21	12.04	15560
NG22100	50y24h	2.30	3.71	0.0007	37.09	35.11	30410
NG22300	50y24h	3.30	2.81	0.0001	3.35	3.29	185
NG22400	50y24h	2.50	3.68	0.0021	35.47	35.29	31309
NG22500	50y24h	2.60	3.70	0.0008	30.98	27.12	35615
NG22600	50y24h	2.80	3.70	0.0012	9.55	7.95	6617
NG22700	50y24h	2.70	3.70	0.0012	12.70	9.00	24391
NG22800	50y24h	2.70	3.70	0.0022	15.32	7.81	31751
NG22900	50y24h	2.90	3.70	0.0012	11.75	9.58	19654

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG23000	50y24h	2.50	3.59	0.0005	25.47	25.09	26284
NG23015	50y24h	2.90	3.61	0.0004	9.28	8.93	8559
NG23100	50y24h	2.60	3.38	0.0007	22.98	22.73	34973
NG23200	50y24h	2.50	3.21	0.0004	11.38	10.83	14005
NG23300	50y24h	2.60	2.93	0.0004	9.95	9.54	3833
NG23315	50y24h	2.30	3.00	0.0003	3.81	3.48	879
NG23400	50y24h	2.30	3.00	0.0001	4.07	3.70	3108
NG23500	50y24h	2.60	3.04	0.0001	4.12	3.88	2025
NG23600	50y24h	2.30	3.12	0.0004	6.72	5.91	8648
NG23700	50y24h	2.30	3.08	0.0006	9.16	8.26	9819
NG23800	50y24h	2.30	3.07	0.0012	7.13	4.89	4496
NG23900	50y24h	2.30	1.81	0.0001	5.01	4.99	129
NG24000	50y24h	1.90	2.81	0.0005	9.53	8.54	12600
NG24100	50y24h	1.50	0.79	0.0000	0.70	0.69	136
NG24200	50y24h	2.00	2.20	0.0001	15.45	15.32	903
NG24216	50y24h	2.50	2.20	0.0001	0.24	0.23	147
NG24225	50y24h	2.70	2.68	0.0001	7.97	7.98	202
NG24230	50y24h	2.80	3.07	0.0002	6.36	6.37	196
NG24300	50y24h	3.10	2.62	0.0004	14.83	14.81	354
NG24320	50y24h	3.00	2.76	0.0010	1.50	2.65	148
NG24322	50y24h	2.90	3.74	0.0000	2.08	1.49	7555
NG24330	50y24h	2.30	3.61	0.0005	9.60	6.45	11963
NG24335	50y24h	3.00	3.87	0.0002	6.38	5.82	2218
NG24340	50y24h	2.90	3.61	0.0002	5.37	5.01	4122
NG24341	50y24h	2.80	3.61	0.0001	5.88	5.57	4284
NG24400	50y24h	2.90	3.71	0.0005	15.73	14.89	12992
NG24500P	50y24h	2.00	2.94	0.0005	16.56	16.01	2082
NG24516P	50y24h	4.20	4.20	0.0000	0.34	0.32	100
NG24527P	50y24h	4.00	3.75	0.0001	2.76	2.73	181
NG24530P	50y24h	1.60	2.98	0.0001	3.75	3.62	194
NG24600P	50y24h	3.30	3.86	0.0003	9.95	9.05	4478
NG24615P	50y24h	3.20	3.99	0.0007	6.60	5.32	13288
NH30000	50y24h	3.70	1.84	0.0000	8.60	8.60	254
NH30030	50y24h	4.20	1.86	0.0000	1.43	1.36	135
NH30035	50y24h	4.20	1.87	0.0000	1.27	1.21	141
NH30040	50y24h	4.30	1.88	0.0000	0.37	0.34	107
NH30045	50y24h	4.30	1.88	0.0001	0.18	0.18	100
NH30050	50y24h	3.60	2.62	0.0001	7.43	7.43	192
NH30055	50y24h	3.80	3.46	0.0001	6.75	6.75	147
NSP0100	50y24h	3.50	4.45	0.0024	20.52	13.94	17169
NSP0200	50y24h	3.50	3.74	0.0001	10.59	10.44	810
NSP0215	50y24h	3.70	4.46	0.0006	14.18	12.51	23753
NSP0300	50y24h	3.40	4.33	0.0014	16.12	13.82	15066
NSP0400	50y24h	3.60	4.01	0.0001	11.62	11.41	1137
NSP0415	50y24h	3.70	4.46	0.0001	11.98	11.62	12747
NSP0500	50y24h	3.90	3.07	0.0000	7.51	7.50	193
NSP0600	50y24h	3.70	4.23	0.0005	7.76	6.83	4163

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NSP0700	50y24h	3.50	3.97	0.0002	13.60	12.48	4266
NSP0715	50y24h	3.90	4.61	0.0005	4.70	4.53	16561
NSP0800	50y24h	3.60	3.99	0.0001	12.42	11.06	7093
NSP0815	50y24h	3.60	4.60	0.0008	7.41	6.10	29515
NSP0900	50y24h	3.50	4.17	0.0003	13.24	11.23	10347
NSP0915	50y24h	3.50	4.17	0.0004	10.97	11.21	15267
NSP1000	50y24h	3.60	4.56	0.0011	12.79	8.85	26486

APPENDIX L

Hydrologic & Hydraulic Model Results (Future Conditions)

Node Max Conditions [wmp]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
BDRY	100y24h	5.00	2.23	0.0000	2484.56	0.00	0
NA00100	100y24h	2.70	2.49	0.0000	9.16	9.16	100
NA00106	100y24h	2.20	2.50	0.0000	1.41	1.42	487
NA00110	100y24h	3.30	2.66	0.0000	3.04	3.03	100
NA00200	100y24h	1.90	2.25	0.0000	5.07	5.07	1561
NA00300	100y24h	1.40	2.94	0.0000	51.64	45.38	29775
NA00312	100y24h	2.30	3.06	0.0000	15.12	15.05	2527
NA00314P	100y24h	1.20	3.61	0.0000	16.62	15.15	27409
NA00335	100y24h	1.80	2.94	0.0000	40.67	33.47	32587
NA00360	100y24h	1.70	2.95	0.0001	21.32	20.24	7420
NA00370	100y24h	3.70	3.85	0.0004	10.00	9.90	1213
NA00375	100y24h	3.20	4.20	0.0012	11.08	8.35	19206
NA00385	100y24h	3.60	4.02	0.0003	4.78	4.74	3373
NA00510	100y24h	1.50	2.95	0.0000	19.22	18.35	37643
NA00605	100y24h	1.70	2.95	0.0000	22.57	19.25	30482
NA00620	100y24h	1.90	2.94	0.0000	28.48	27.97	25932
NA00700	100y24h	1.90	2.92	0.0000	6.12	6.08	971
NA00710	100y24h	1.70	2.92	0.0000	46.45	42.99	44048
NA00735	100y24h	1.60	2.92	0.0000	22.31	22.51	27109
NA00745	100y24h	3.70	3.66	0.0002	15.18	15.17	100
NA00750	100y24h	3.30	3.95	0.0010	11.66	11.42	15727
NA00765	100y24h	4.30	4.80	0.0002	14.17	14.15	3318
NA00800	100y24h	2.00	2.84	0.0001	57.74	57.63	5704
NA00900	100y24h	2.80	3.58	0.0002	11.12	11.04	4461
NA01000	100y24h	2.10	3.27	0.0001	15.94	15.64	13859
NA01010	100y24h	4.70	5.39	0.0001	15.29	15.24	18173
NA01100	100y24h	2.60	3.36	0.0003	12.17	12.05	7879
NA01200	100y24h	2.60	3.48	0.0009	10.46	6.40	23042
NA01300	100y24h	1.80	3.00	0.0000	10.72	6.20	23946
NA01325	100y24h	1.60	3.00	0.0000	18.64	9.98	50904
NA01600	100y24h	1.00	3.00	0.0000	37.38	36.35	70149
NA01615	100y24h	1.30	3.00	0.0000	21.94	20.42	49999
NA01700	100y24h	1.50	2.99	0.0000	37.22	36.73	31220
NA01710	100y24h	1.40	2.99	0.0000	19.24	19.24	12367
NA01720	100y24h	1.60	3.00	0.0000	19.06	19.68	38797
NA01800	100y24h	2.48	3.29	0.0018	26.28	26.26	4983
NA01816	100y24h	2.40	3.10	0.0002	31.00	30.96	8313
NA01825	100y24h	2.80	3.42	0.0002	11.40	11.28	8239
NA01835	100y24h	1.70	3.00	0.0002	29.02	24.21	27420
NA01850	100y24h	3.60	4.67	0.0002	25.09	25.01	8016
NA01855	100y24h	3.80	4.69	0.0005	26.10	25.85	15990
NA01900	100y24h	2.10	3.14	0.0001	12.93	12.79	12767
NA02000	100y24h	1.80	3.25	0.0000	14.65	13.57	29753
NA02100	100y24h	1.40	3.25	0.0000	18.90	9.53	39651
NA02110	100y24h	1.50	3.25	0.0000	12.55	9.07	32755
NA02120	100y24h	3.30	3.62	0.0001	4.61	4.59	932

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02200	100y24h	4.10	3.33	0.0000	15.90	15.90	100
NB02215	100y24h	4.30	3.66	0.0001	5.28	5.25	100
NB02235	100y24h	3.90	4.26	0.0001	7.93	7.94	315
NB02245	100y24h	7.60	4.70	0.0001	5.64	5.64	239
NB02260	100y24h	5.60	5.47	0.0002	5.30	5.26	233
NB02270	100y24h	5.50	5.49	0.0002	1.21	1.19	100
NB02310	100y24h	2.30	3.21	0.0003	47.03	46.93	11973
NB02315	100y24h	1.90	3.23	0.0010	45.19	40.52	63617
NB02316P	100y24h	3.50	3.23	0.0003	1.55	24.22	3621
NB02320	100y24h	4.00	4.23	0.0003	5.01	4.94	257
NB02325	100y24h	4.20	4.97	0.0002	1.72	1.64	188
NB02400	100y24h	2.30	2.80	0.0000	59.31	59.07	7517
NB02410	100y24h	2.30	3.32	0.0001	32.40	32.24	6030
NB02412	100y24h	1.60	3.32	0.0000	7.06	6.69	12242
NB02425	100y24h	4.20	4.76	0.0001	12.42	12.42	936
NB02426	100y24h	4.70	5.10	0.0002	3.87	3.85	1869
NB02427	100y24h	4.80	5.23	0.0003	5.34	5.31	2863
NB02430	100y24h	4.50	5.19	0.0001	7.18	6.37	5274
NB02435	100y24h	2.10	3.41	0.0001	24.19	23.78	21726
NB02445	100y24h	3.10	3.91	0.0002	13.45	13.45	774
NB02455	100y24h	4.20	4.72	0.0002	6.52	6.22	1801
NB02500	100y24h	4.00	3.77	0.0007	9.46	9.46	100
NB02510	100y24h	4.10	5.48	0.0018	16.43	8.99	30849
NB02517P	100y24h	5.10	5.56	0.0004	1.85	1.82	1166
NB02600	100y24h	2.60	2.28	0.0000	2.57	2.57	100
NB02610	100y24h	1.90	2.43	0.0000	12.63	12.63	2692
NB02615	100y24h	3.00	3.10	0.0000	7.53	7.53	335
NB02616	100y24h	3.80	4.21	0.0001	2.84	2.82	1450
NB02617	100y24h	4.40	4.74	0.0001	1.29	1.27	1379
NB02618	100y24h	2.70	3.12	0.0001	4.12	4.00	3436
NB02620	100y24h	3.50	3.96	0.0001	10.11	10.07	1932
NB02622	100y24h	3.20	3.72	0.0001	7.85	7.76	3887
NB02700	100y24h	2.90	3.38	0.0002	17.29	17.25	3006
NB02706	100y24h	2.90	3.34	0.0001	4.91	4.88	1221
NB02707	100y24h	2.60	3.22	0.0001	10.02	9.88	6282
NB02710	100y24h	2.80	3.71	0.0004	20.48	19.92	21246
NB02800	100y24h	2.70	3.54	0.0010	40.81	40.56	12982
NB02900	100y24h	2.30	2.95	0.0000	11.38	11.37	1154
NB02910	100y24h	2.60	3.71	0.0001	31.69	24.26	26548
NB02930	100y24h	2.30	3.71	0.0001	18.34	15.01	24436
NB02965	100y24h	2.30	3.71	0.0001	13.87	11.22	10144
NC002P	100y24h	3.00	3.12	0.0001	3.66	3.62	288
NC003P	100y24h	3.00	3.19	0.0001	1.00	1.02	890
NC03000	100y24h	3.30	3.78	0.0001	9.31	9.21	2074
NC03031P	100y24h	4.60	4.50	0.0001	2.93	2.92	100
NC03040	100y24h	3.30	3.78	0.0001	3.29	3.25	1553
NC03050	100y24h	3.00	3.77	0.0001	4.92	4.89	2622

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03055	100y24h	3.50	3.84	0.0001	3.50	3.48	2013
NC03100	100y24h	3.30	4.25	0.0001	23.21	19.81	19558
NC03120	100y24h	3.00	4.25	0.0000	16.42	11.03	32350
NC03123P	100y24h	3.10	4.01	0.0001	6.48	6.45	4163
NC03125	100y24h	1.90	4.01	0.0000	31.38	24.98	39741
NC03135	100y24h	2.20	4.00	0.0000	13.73	9.55	12885
NC03137	100y24h	3.20	4.01	0.0000	1.51	1.38	460
NC03160	100y24h	2.30	4.00	0.0000	28.00	26.99	26455
NC03200	100y24h	3.10	4.43	0.0001	27.31	26.77	22283
NC03210	100y24h	3.00	4.44	0.0001	33.57	31.93	26820
NC03220	100y24h	3.30	4.45	0.0001	23.04	21.17	28304
NC03222	100y24h	3.80	4.76	0.0003	4.14	3.82	13213
NC03235	100y24h	3.80	4.47	0.0001	8.10	7.60	9681
NC03240	100y24h	3.50	4.44	0.0001	8.32	7.24	13273
NC03300	100y24h	2.80	4.19	0.0008	47.38	43.79	56794
NC03400	100y24h	3.30	4.19	0.0004	8.20	6.44	7082
NC03415	100y24h	3.50	4.17	0.0004	5.29	5.15	7790
NC03500	100y24h	2.80	4.16	0.0015	26.07	23.18	21996
NC03600	100y24h	3.50	3.22	0.0000	6.56	6.56	100
NC03610	100y24h	3.10	4.16	0.0001	18.36	17.36	13299
NC03615	100y24h	3.50	4.21	0.0001	11.90	11.42	14213
NC03625	100y24h	3.60	4.27	0.0001	3.51	3.00	6877
NC03700	100y24h	3.20	4.15	0.0002	29.14	28.53	23178
NC03715	100y24h	3.60	4.31	0.0001	5.29	4.78	8457
NC03716	100y24h	3.50	4.30	0.0001	7.61	7.38	12215
NC03720	100y24h	3.40	4.27	0.0001	10.26	8.60	22455
NC03723	100y24h	3.50	4.33	0.0001	7.71	7.65	4456
NC03730	100y24h	3.30	4.26	0.0001	10.97	10.84	8610
NC03737	100y24h	3.30	4.25	0.0001	12.06	11.83	8413
NC03800	100y24h	2.60	3.91	0.0001	85.76	85.39	12155
NC03825	100y24h	2.00	3.99	0.0001	67.94	66.52	40841
NC03830	100y24h	2.40	3.99	0.0002	46.46	45.64	31535
NC03833P	100y24h	6.00	4.08	0.0000	5.52	4.86	2067
NC03835P	100y24h	6.00	4.08	0.0000	0.36	0.30	100
NC03837P	100y24h	3.80	4.09	0.0000	3.83	3.08	1447
NC03845	100y24h	2.40	4.00	0.0001	35.84	35.29	13818
NC03850	100y24h	2.20	4.00	0.0001	24.43	23.87	18896
NC03855	100y24h	2.30	3.92	0.0000	29.02	27.97	35803
NC03856	100y24h	2.50	3.92	0.0000	33.29	29.04	28810
NC06000	100y24h	2.80	3.42	0.0002	23.97	23.96	2327
NC06010	100y24h	2.70	3.54	0.0006	24.60	24.55	12201
NC06020	100y24h	2.80	3.93	0.0004	20.78	20.62	7025
NC06400	100y24h	4.80	5.36	0.0001	4.00	3.33	4810
ND03900	100y24h	2.30	3.92	0.0010	44.66	27.64	56137
ND04000	100y24h	2.90	3.56	0.0001	43.16	43.03	2354
ND04010	100y24h	2.80	3.69	0.0001	6.77	5.59	2258
ND04012P	100y24h	3.00	4.62	0.0004	2.16	3.07	508

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04014P	100y24h	4.38	4.68	0.0008	2.84	2.07	504
ND04015	100y24h	2.90	4.01	0.0002	25.97	24.28	16146
ND04016P	100y24h	3.00	4.79	0.0001	1.65	1.53	1721
ND04030	100y24h	3.00	4.02	0.0010	20.57	15.73	31143
ND04100	100y24h	2.50	3.68	0.0002	17.90	17.33	23982
ND04200	100y24h	2.50	3.68	0.0003	13.93	12.37	27387
ND04300	100y24h	2.30	3.04	0.0001	15.03	15.03	7481
ND04315	100y24h	3.40	3.94	0.0002	9.98	9.97	2042
ND04316P	100y24h	3.00	4.75	0.0001	2.67	3.37	1648
ND04318P	100y24h	3.00	4.77	0.0017	3.37	1.14	1226
ND04400	100y24h	2.10	3.03	0.0001	20.28	20.08	12575
ND04500	100y24h	2.90	3.15	0.0001	35.24	35.24	1087
ND04511	100y24h	2.90	3.21	0.0001	6.20	6.18	802
ND04512	100y24h	2.50	3.03	0.0000	7.75	7.65	3240
ND04513	100y24h	2.40	3.03	0.0000	6.45	6.34	2176
ND04515	100y24h	3.40	4.43	0.0002	33.17	33.04	5675
ND04530	100y24h	3.00	4.44	0.0005	20.73	18.34	26412
ND04542	100y24h	2.90	4.44	0.0009	19.50	15.87	31061
ND04550	100y24h	3.00	4.44	0.0003	46.20	33.82	61591
ND04555	100y24h	2.90	4.44	0.0004	29.97	28.33	24129
ND04565	100y24h	2.80	4.44	0.0008	27.73	24.65	42483
ND04571P	100y24h	4.80	5.06	0.0000	8.18	7.06	5278
ND04600	100y24h	2.50	2.68	0.0000	10.81	10.51	2731
ND04700	100y24h	3.20	3.59	0.0001	8.21	8.21	834
ND04715	100y24h	3.20	4.43	0.0001	17.59	17.24	41412
ND04800	100y24h	3.00	3.31	0.0004	8.10	8.10	337
ND04815	100y24h	3.40	4.42	0.0009	8.75	6.80	13759
ND04900	100y24h	3.40	3.03	0.0001	35.19	35.19	223
ND04913	100y24h	3.90	4.24	0.0001	1.32	1.02	1482
ND04915	100y24h	4.20	3.66	0.0001	32.21	32.22	114
ND04925	100y24h	3.20	4.18	0.0002	29.22	29.29	17935
ND04930	100y24h	3.60	4.34	0.0002	26.65	26.64	3731
ND04935	100y24h	3.20	4.43	0.0009	33.68	33.26	41718
ND04947	100y24h	3.70	4.44	0.0005	12.66	12.05	7057
ND04949P	100y24h	4.93	5.30	0.0000	19.23	17.56	37405
ND04951	100y24h	2.90	4.18	0.0004	14.45	13.77	14690
ND04960	100y24h	3.50	4.18	0.0002	5.56	4.15	9005
ND04961	100y24h	3.60	4.18	0.0002	2.97	3.02	2698
ND05000	100y24h	2.50	3.42	0.0002	24.32	24.12	8389
ND05100	100y24h	1.90	3.01	0.0000	16.68	16.15	13701
ND05200	100y24h	2.60	3.12	0.0005	13.23	12.54	7531
ND05300	100y24h	2.70	3.10	0.0001	37.25	37.21	2175
ND05310	100y24h	2.60	3.69	0.0002	33.39	32.81	9357
ND05315	100y24h	3.30	3.79	0.0001	20.47	20.30	2003
ND05316	100y24h	3.20	3.82	0.0003	14.73	14.71	3621
ND05335	100y24h	12.20	3.79	0.0001	3.23	3.18	100
ND05337	100y24h	13.65	3.79	0.0001	1.01	0.97	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND05339	100y24h	2.10	3.69	0.0001	11.00	9.76	12138
ND05345	100y24h	5.90	3.88	0.0001	11.19	11.13	100
ND05355	100y24h	5.20	3.96	0.0002	10.75	10.83	100
ND05360	100y24h	2.40	4.17	0.0003	10.16	10.48	3484
ND05365	100y24h	3.00	4.18	0.0006	24.58	20.31	43840
ND05375	100y24h	3.50	4.18	0.0005	3.64	3.72	1780
ND05405	100y24h	5.80	4.58	0.0000	0.27	0.26	100
ND05500	100y24h	3.00	5.41	0.0001	31.38	9.70	145282
ND05600	100y24h	4.40	5.41	0.0005	6.31	6.30	6900
ND05700	100y24h	3.90	5.28	0.0009	7.59	3.35	12261
ND05800	100y24h	3.00	3.76	0.0001	4.92	4.52	1136
ND05900	100y24h	3.80	3.74	0.0007	2.80	2.80	100
ND05910	100y24h	3.00	3.89	0.0007	5.17	4.85	6027
ND06105P	100y24h	5.20	5.37	0.0011	3.33	3.24	328
ND06110P	100y24h	5.30	5.48	0.0005	2.18	2.05	440
ND06115P	100y24h	5.30	5.53	0.0006	1.15	0.83	349
ND06210P	100y24h	5.50	5.39	0.0017	3.76	2.16	120
ND06215P	100y24h	4.90	5.45	0.0011	2.16	1.57	495
ND06300P	100y24h	2.70	4.45	0.0001	14.60	8.08	37041
NE020P	100y24h	3.98	4.36	0.0000	69.88	64.59	87442
NE08000	100y24h	3.30	4.37	0.0012	34.03	26.11	31290
NE08100	100y24h	3.10	4.36	0.0011	32.21	21.20	39542
NE08200	100y24h	2.60	4.36	0.0008	86.36	85.24	93528
NE08300	100y24h	3.20	4.46	0.0016	37.02	36.54	25339
NE08400	100y24h	3.30	4.47	0.0004	39.28	35.67	27831
NE08500	100y24h	3.10	4.54	0.0009	21.05	12.32	41156
NE08600	100y24h	3.40	4.53	0.0001	20.88	17.76	22408
NE08615	100y24h	2.70	4.71	0.0001	19.52	10.52	51385
NE08625	100y24h	3.10	4.47	0.0003	25.11	23.03	27157
NE08700	100y24h	3.00	4.53	0.0001	12.87	13.56	25227
NE08716	100y24h	4.20	4.96	0.0001	2.57	2.38	1586
NE08717	100y24h	4.50	4.99	0.0001	1.70	1.65	1232
NE08720	100y24h	3.50	4.53	0.0001	10.10	8.93	7099
NE08735	100y24h	3.70	4.66	0.0002	5.43	4.45	6936
NE08745	100y24h	3.50	4.47	0.0003	6.53	6.31	4573
NE08800	100y24h	3.90	4.53	0.0018	13.63	12.52	16503
NE08900	100y24h	3.50	4.50	0.0020	19.44	15.00	25860
NE09000	100y24h	4.00	4.81	0.0009	6.37	4.67	10268
NE09100	100y24h	3.10	3.26	0.0001	40.17	40.15	439
NE09110	100y24h	3.80	3.88	0.0001	25.77	25.80	267
NE09125	100y24h	4.80	4.82	0.0000	32.46	26.65	35498
NE09200	100y24h	4.40	2.38	0.0001	24.80	24.80	282
NE09210	100y24h	3.80	2.55	0.0001	24.60	24.60	269
NE09220	100y24h	4.70	4.46	0.0000	74.78	62.11	99641
NE09300	100y24h	3.00	4.41	0.0012	12.43	8.89	19290
NE09400	100y24h	2.90	4.41	0.0001	28.57	21.29	73929
NE09415	100y24h	3.10	4.45	0.0001	14.43	13.80	20827

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE09500	100y24h	2.80	4.41	0.0009	32.52	31.38	50250
NE09600	100y24h	2.80	4.30	0.0013	45.56	44.85	52643
NE09700	100y24h	3.00	4.02	0.0005	15.45	14.06	26098
NE09800	100y24h	3.10	4.01	0.0009	12.23	10.57	10703
NE09900	100y24h	3.20	4.21	0.0010	27.45	27.19	15369
NE10000	100y24h	3.10	4.11	0.0018	30.63	29.42	28130
NE10100	100y24h	2.70	4.10	0.0008	19.73	18.76	22527
NE10200	100y24h	3.00	4.16	0.0013	29.07	27.18	35824
NE10300	100y24h	3.10	4.24	0.0016	18.27	13.81	21687
NE10400	100y24h	3.10	4.25	0.0009	20.21	13.77	48059
NE10500	100y24h	3.30	4.16	0.0016	15.15	11.22	16338
NE10600	100y24h	3.40	4.13	0.0011	11.78	11.11	13618
NE10700	100y24h	2.80	4.13	0.0008	10.75	7.37	19066
NE10800	100y24h	3.20	4.25	0.0015	13.44	10.32	24403
NE10900	100y24h	3.20	4.35	0.0021	19.45	13.32	22263
NE11000	100y24h	2.80	4.36	0.0005	19.61	12.77	52862
NE11100	100y24h	3.00	4.15	0.0015	12.45	8.99	18257
NE11200	100y24h	2.80	4.15	0.0006	15.76	10.49	29218
NE11300	100y24h	2.90	4.15	0.0010	12.36	9.17	17088
NE11400	100y24h	2.80	4.36	0.0016	11.78	10.22	19156
NE11500	100y24h	3.40	4.75	0.0018	19.93	13.93	35469
NE11600	100y24h	3.40	4.75	0.0007	21.00	12.77	48215
NE11700	100y24h	3.30	4.63	0.0006	15.14	14.21	20163
NE11800	100y24h	3.30	4.75	0.0011	10.70	7.84	18576
NE11900	100y24h	3.30	4.75	0.0016	22.74	11.15	36161
NE12000	100y24h	3.30	4.51	0.0010	9.88	6.55	17818
NE12100	100y24h	3.20	4.46	0.0025	16.85	11.70	26732
NE12200	100y24h	3.20	4.45	0.0015	16.61	13.99	26471
NE12300	100y24h	3.20	4.45	0.0019	15.66	8.31	21457
NE12400	100y24h	3.20	4.45	0.0017	18.38	14.16	33005
NE12500	100y24h	3.10	4.45	0.0014	20.11	9.05	36810
NE12600	100y24h	3.30	4.45	0.0012	8.08	6.07	12583
NE13100	100y24h	3.00	4.41	0.0009	11.00	6.57	17343
NE14000	100y24h	2.00	4.41	0.0006	3.86	2.41	6721
NF15000	100y24h	3.10	4.64	0.0005	33.48	24.34	72820
NF15010	100y24h	3.00	4.64	0.0004	7.66	7.72	8964
NF15100	100y24h	3.70	4.79	0.0005	21.40	20.75	26556
NF15200	100y24h	3.30	4.64	0.0002	22.48	20.45	20435
NF15210	100y24h	3.20	4.64	0.0003	16.99	16.37	13522
NF15215	100y24h	3.30	4.64	0.0005	27.05	20.62	36106
NF15300	100y24h	3.20	4.63	0.0003	64.21	63.94	30902
NF15315	100y24h	3.30	4.63	0.0001	10.62	8.81	9012
NF15330	100y24h	3.20	4.64	0.0001	25.77	25.18	34145
NF15400	100y24h	3.00	4.46	0.0013	63.76	63.52	34644
NF15500	100y24h	3.40	4.61	0.0018	21.54	20.27	34523
NF15600	100y24h	2.20	3.72	0.0002	80.20	78.88	93726
NF15700	100y24h	2.60	3.72	0.0003	17.43	15.88	35816

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF15800	100y24h	2.40	3.74	0.0005	15.61	10.94	28639
NF15900	100y24h	2.20	3.72	0.0002	30.19	28.26	42326
NF16000	100y24h	4.00	4.29	0.0003	5.33	5.27	2098
NF16100	100y24h	2.80	4.01	0.0006	16.36	13.74	32916
NF16200	100y24h	2.00	3.40	0.0000	37.96	35.90	46276
NF16300	100y24h	2.20	3.40	0.0000	15.94	14.15	16799
NF16310	100y24h	2.10	3.40	0.0001	14.21	12.38	21350
NF16500	100y24h	2.10	3.40	0.0001	10.90	9.90	20805
NF16510	100y24h	2.10	3.40	0.0001	8.66	6.87	16545
NF16700	100y24h	2.80	3.24	0.0001	2.90	2.85	282
NF16800	100y24h	1.70	3.40	0.0000	43.16	41.81	58252
NF16900	100y24h	1.60	3.40	0.0000	33.45	31.62	42083
NF17000	100y24h	1.80	3.35	0.0001	69.41	69.15	40367
NF17100	100y24h	1.90	3.39	0.0001	34.22	34.06	17801
NF17200	100y24h	2.60	3.65	0.0000	16.60	13.84	19802
NF17210	100y24h	2.20	3.66	0.0001	13.59	11.26	19058
NF17300	100y24h	3.20	3.51	0.0001	3.52	3.38	697
NF17400	100y24h	2.20	3.98	0.0006	28.49	24.15	42669
NF17500	100y24h	2.70	3.99	0.0003	16.20	12.83	27294
NF17600	100y24h	2.20	3.91	0.0001	27.73	20.01	62060
NF17700	100y24h	2.30	3.91	0.0003	27.94	16.71	40206
NF17800	100y24h	2.80	3.96	0.0010	19.12	16.83	25379
NG20000	100y24h	3.30	4.05	0.0005	7.75	6.62	4079
NG20100	100y24h	2.90	4.51	0.0016	15.54	11.97	23573
NG20200	100y24h	3.40	4.62	0.0015	18.77	13.26	27466
NG20300	100y24h	3.20	4.61	0.0016	21.72	15.92	22209
NG20400	100y24h	3.10	4.40	0.0014	18.72	17.39	27557
NG20500	100y24h	3.20	4.39	0.0015	25.46	22.34	40053
NG20600	100y24h	3.30	4.39	0.0008	19.40	18.39	28783
NG20700	100y24h	2.90	4.16	0.0021	18.53	10.21	40640
NG20800	100y24h	3.30	4.39	0.0002	16.13	9.93	27292
NG20810	100y24h	3.10	4.39	0.0005	23.60	13.79	59357
NG20900	100y24h	3.10	4.20	0.0019	15.68	11.47	17506
NG21000	100y24h	3.00	4.34	0.0010	13.77	8.00	17967
NG21010	100y24h	3.30	4.34	0.0006	14.25	14.08	10364
NG21100	100y24h	3.10	4.33	0.0002	14.39	13.76	12275
NG21110	100y24h	3.20	4.34	0.0003	25.52	25.14	30326
NG21200	100y24h	3.40	4.19	0.0010	13.57	13.12	13556
NG21300	100y24h	2.80	4.36	0.0001	48.43	46.38	119057
NG21400	100y24h	3.00	4.36	0.0001	42.14	41.30	59103
NG21415	100y24h	3.40	4.37	0.0001	19.17	15.73	32556
NG21500	100y24h	2.60	4.37	0.0009	28.18	22.46	39296
NG21600	100y24h	2.70	4.40	0.0010	31.53	18.36	63770
NG21700	100y24h	3.00	4.36	0.0001	26.98	24.46	54005
NG21715	100y24h	3.30	4.37	0.0003	14.04	11.06	30870
NG21800	100y24h	3.40	4.37	0.0002	18.67	18.46	19700
NG21810	100y24h	3.20	4.37	0.0002	26.50	25.64	57337

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG21900	100y24h	2.90	4.19	0.0002	54.75	54.33	29038
NG22000	100y24h	3.80	4.55	0.0005	18.81	16.59	40640
NG22000P	100y24h	4.28	3.51	0.0000	12.96	2.31	35998
NG22015P	100y24h	3.31	3.54	0.0000	28.39	21.31	102263
NG22025	100y24h	4.20	4.56	0.0004	3.11	2.71	4174
NG22040	100y24h	2.90	4.01	0.0001	32.27	31.91	24967
NG22100	100y24h	2.30	3.87	0.0005	74.51	73.97	40446
NG22300	100y24h	3.30	3.90	0.0006	4.04	2.86	6653
NG22400	100y24h	2.50	3.78	0.0006	75.63	75.56	36861
NG22500	100y24h	2.60	3.86	0.0001	48.35	47.59	44544
NG22600	100y24h	2.80	3.86	0.0006	6.78	6.63	8825
NG22700	100y24h	2.70	3.86	0.0003	14.38	13.36	36103
NG22800	100y24h	2.70	3.86	0.0008	17.40	11.22	48578
NG22900	100y24h	2.90	3.86	0.0005	12.77	7.61	23395
NG23000	100y24h	2.50	3.70	0.0001	46.47	46.23	35757
NG23015	100y24h	2.90	3.71	0.0001	14.47	13.64	10846
NG23100	100y24h	2.60	3.43	0.0002	34.89	34.77	38833
NG23200	100y24h	2.50	3.35	0.0001	16.64	16.19	22456
NG23300	100y24h	2.60	3.23	0.0002	18.57	18.54	11913
NG23315	100y24h	2.30	3.36	0.0002	3.43	3.33	2541
NG23400	100y24h	2.30	3.36	0.0004	5.51	4.04	8824
NG23500	100y24h	2.60	3.36	0.0005	5.34	3.91	6577
NG23600	100y24h	2.30	3.36	0.0001	8.24	5.86	15442
NG23700	100y24h	2.30	3.36	0.0000	11.56	9.17	19062
NG23800	100y24h	2.30	3.36	0.0003	8.66	8.52	7270
NG23900	100y24h	2.30	3.07	0.0001	9.50	9.44	3969
NG24000	100y24h	1.90	2.99	0.0000	15.26	14.10	20786
NG24100	100y24h	1.50	2.77	0.0001	6.30	6.24	1352
NG24200	100y24h	2.00	2.77	0.0001	25.88	25.65	5050
NG24216	100y24h	2.50	2.77	0.0001	0.29	0.24	100
NG24225	100y24h	2.70	3.63	0.0005	11.10	10.89	3576
NG24230	100y24h	2.80	3.64	0.0002	10.99	9.22	7892
NG24300	100y24h	3.10	3.63	0.0002	14.87	12.63	12388
NG24320	100y24h	3.00	3.71	0.0002	2.29	1.85	2689
NG24322	100y24h	2.90	3.78	0.0001	2.54	2.03	7960
NG24330	100y24h	2.30	3.71	0.0000	9.15	8.09	14987
NG24335	100y24h	3.00	4.07	0.0002	7.73	7.07	2988
NG24340	100y24h	2.90	3.71	0.0002	6.51	6.18	5140
NG24341	100y24h	2.80	3.71	0.0001	8.51	8.13	4806
NG24400	100y24h	2.90	3.88	0.0008	35.70	35.52	16769
NG24500P	100y24h	2.00	3.74	0.0001	19.77	18.35	8960
NG24516P	100y24h	4.20	4.31	0.0000	0.43	0.38	580
NG24527P	100y24h	4.00	4.24	0.0002	3.51	3.39	3980
NG24530P	100y24h	1.60	3.79	0.0001	4.74	4.25	3764
NG24600P	100y24h	3.30	4.05	0.0003	10.74	8.60	9738
NG24615P	100y24h	3.20	4.07	0.0006	8.07	6.68	15303
NH30000	100y24h	3.70	2.52	0.0001	10.15	10.15	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NH30030	100y24h	4.20	2.58	0.0001	2.00	2.00	100
NH30035	100y24h	4.20	2.62	0.0001	1.81	1.81	119
NH30040	100y24h	4.30	2.63	0.0001	1.06	1.07	100
NH30045	100y24h	4.30	2.63	0.0001	0.21	0.20	100
NH30050	100y24h	3.60	3.48	0.0004	8.41	8.41	100
NH30055	100y24h	3.80	4.47	0.0009	8.70	8.03	7756
NSP0100	100y24h	3.50	4.59	0.0031	21.61	15.55	22560
NSP0200	100y24h	3.50	4.56	0.0018	20.10	11.71	14275
NSP0215	100y24h	3.70	4.59	0.0006	16.88	12.20	27441
NSP0300	100y24h	3.40	4.57	0.0026	22.80	21.27	21876
NSP0400	100y24h	3.60	4.55	0.0015	13.85	11.62	12678
NSP0415	100y24h	3.70	4.59	0.0001	14.98	13.77	20503
NSP0500	100y24h	3.90	3.64	0.0001	9.12	9.11	100
NSP0600	100y24h	3.70	4.41	0.0010	9.44	7.32	10291
NSP0700	100y24h	3.50	4.38	0.0004	15.70	11.84	16352
NSP0715	100y24h	3.90	4.70	0.0005	5.73	5.71	20888
NSP0800	100y24h	3.60	4.31	0.0003	14.48	11.29	18056
NSP0815	100y24h	3.60	4.67	0.0009	10.55	9.82	35053
NSP0900	100y24h	3.50	4.48	0.0008	14.75	12.37	20631
NSP0915	100y24h	3.50	4.48	0.0006	18.91	15.14	31166
NSP1000	100y24h	3.60	4.65	0.0013	15.63	11.66	33939
BDRY	10y24h	5.00	2.23	0.0000	1413.94	0.00	0
NA00100	10y24h	2.70	2.34	0.0000	6.08	6.08	100
NA00106	10y24h	2.20	2.37	0.0000	0.86	0.87	300
NA00110	10y24h	3.30	2.41	0.0000	1.85	1.85	100
NA00200	10y24h	1.90	2.23	0.0000	2.54	2.54	1489
NA00300	10y24h	1.40	2.69	0.0000	38.93	36.61	22304
NA00312	10y24h	2.30	2.92	0.0000	8.66	8.66	1601
NA00314P	10y24h	1.20	3.51	0.0000	10.11	6.95	21845
NA00335	10y24h	1.80	2.70	0.0000	35.07	31.80	15896
NA00360	10y24h	1.70	2.77	0.0000	20.67	20.04	3712
NA00370	10y24h	3.70	3.52	0.0002	9.17	9.14	133
NA00375	10y24h	3.20	3.88	0.0004	6.86	5.67	9232
NA00385	10y24h	3.60	3.92	0.0002	2.96	2.49	2150
NA00510	10y24h	1.50	2.78	0.0000	13.42	11.15	28633
NA00605	10y24h	1.70	2.79	0.0000	10.87	9.77	20591
NA00620	10y24h	1.90	2.79	0.0000	13.27	12.71	18850
NA00700	10y24h	1.90	2.78	0.0000	5.45	5.43	766
NA00710	10y24h	1.70	2.79	0.0000	36.23	34.29	29841
NA00735	10y24h	1.60	2.79	0.0000	9.94	9.66	18428
NA00745	10y24h	3.70	3.39	0.0002	13.56	13.55	100
NA00750	10y24h	3.30	3.83	0.0009	7.17	5.70	10474
NA00765	10y24h	4.30	4.70	0.0002	8.63	8.59	2226
NA00800	10y24h	2.00	2.65	0.0000	40.83	40.80	3025
NA00900	10y24h	2.80	3.46	0.0002	6.32	6.21	3543
NA01000	10y24h	2.10	3.16	0.0001	8.28	6.91	10337
NA01010	10y24h	4.70	5.37	0.0001	9.40	9.34	16941

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA01100	10y24h	2.60	3.28	0.0002	7.22	6.89	6065
NA01200	10y24h	2.60	3.18	0.0002	6.40	5.26	7543
NA01300	10y24h	1.80	2.81	0.0000	7.32	5.36	16441
NA01325	10y24h	1.60	2.81	0.0000	11.10	4.99	40955
NA01600	10y24h	1.00	2.81	0.0000	16.50	13.19	60751
NA01615	10y24h	1.30	2.81	0.0000	12.38	6.37	42515
NA01700	10y24h	1.50	2.80	0.0000	19.20	17.08	27778
NA01710	10y24h	1.40	2.80	0.0000	4.88	4.85	10776
NA01720	10y24h	1.60	2.80	0.0000	7.14	6.65	34695
NA01800	10y24h	2.48	3.23	0.0018	17.88	17.87	3966
NA01816	10y24h	2.40	3.03	0.0005	17.81	17.78	6659
NA01825	10y24h	2.80	3.32	0.0005	6.01	5.73	4580
NA01835	10y24h	1.70	2.81	0.0005	15.30	15.23	15936
NA01850	10y24h	3.60	4.58	0.0005	16.04	15.91	6784
NA01855	10y24h	3.80	4.63	0.0006	16.15	15.88	13848
NA01900	10y24h	2.10	2.94	0.0000	5.44	4.07	8941
NA02000	10y24h	1.80	2.97	0.0000	7.14	4.54	19591
NA02100	10y24h	1.40	2.97	0.0000	11.40	4.48	32302
NA02110	10y24h	1.50	2.97	0.0000	6.42	2.57	21692
NA02120	10y24h	3.30	3.55	0.0001	2.82	2.81	617
NB02200	10y24h	4.10	2.68	0.0001	10.15	10.14	100
NB02215	10y24h	4.30	2.80	0.0000	3.26	3.25	100
NB02235	10y24h	3.90	3.08	0.0001	4.92	4.93	100
NB02245	10y24h	7.60	3.24	0.0001	3.47	3.47	239
NB02260	10y24h	5.60	3.67	0.0000	3.25	3.25	233
NB02270	10y24h	5.50	3.68	0.0000	0.74	0.74	100
NB02310	10y24h	2.30	3.08	0.0003	23.16	23.10	9564
NB02315	10y24h	1.90	3.10	0.0010	24.22	20.14	48442
NB02316P	10y24h	3.50	3.12	0.0003	0.95	24.22	3523
NB02320	10y24h	4.00	3.47	0.0003	3.14	3.12	100
NB02325	10y24h	4.20	3.77	0.0002	1.07	1.04	100
NB02400	10y24h	2.30	2.52	0.0000	31.83	31.80	2736
NB02410	10y24h	2.30	3.19	0.0001	23.14	23.00	5139
NB02412	10y24h	1.60	3.20	0.0001	4.25	3.75	9335
NB02425	10y24h	4.20	4.66	0.0001	8.26	8.25	472
NB02426	10y24h	4.70	5.03	0.0001	2.41	2.39	1440
NB02427	10y24h	4.80	5.16	0.0002	3.29	3.26	2248
NB02430	10y24h	4.50	4.86	0.0001	4.41	4.31	1197
NB02435	10y24h	2.10	3.33	0.0001	14.96	12.64	18535
NB02445	10y24h	3.10	3.81	0.0001	8.47	8.46	607
NB02455	10y24h	4.20	4.17	0.0001	4.05	4.04	138
NB02500	10y24h	4.00	3.50	0.0003	8.60	8.60	100
NB02510	10y24h	4.10	4.92	0.0008	10.37	8.14	11995
NB02517P	10y24h	5.10	5.39	0.0003	1.15	0.97	592
NB02600	10y24h	2.60	2.27	0.0000	2.35	2.35	100
NB02610	10y24h	1.90	2.40	0.0000	9.19	9.18	2402
NB02615	10y24h	3.00	2.99	0.0000	6.83	6.83	129

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02616	10y24h	3.80	4.12	0.0001	1.57	1.47	1165
NB02617	10y24h	4.40	4.65	0.0001	0.80	0.62	953
NB02618	10y24h	2.70	3.03	0.0001	1.81	1.75	2426
NB02620	10y24h	3.50	3.68	0.0001	5.66	5.60	571
NB02622	10y24h	3.20	3.59	0.0001	2.59	2.56	2355
NB02700	10y24h	2.90	3.07	0.0002	7.82	7.77	1202
NB02706	10y24h	2.90	3.09	0.0001	0.67	0.74	667
NB02707	10y24h	2.60	3.09	0.0001	1.81	1.77	3514
NB02710	10y24h	2.80	3.59	0.0005	14.62	7.96	18330
NB02800	10y24h	2.70	3.34	0.0009	10.50	10.05	8336
NB02900	10y24h	2.30	2.78	0.0001	7.74	7.74	477
NB02910	10y24h	2.60	3.58	0.0003	17.73	14.77	22658
NB02930	10y24h	2.30	3.58	0.0002	10.58	7.40	21162
NB02965	10y24h	2.30	3.58	0.0002	8.18	7.72	8975
NC002P	10y24h	3.00	2.62	0.0000	2.39	2.38	222
NC003P	10y24h	3.00	2.65	0.0000	0.62	0.65	732
NC03000	10y24h	3.30	3.58	0.0001	7.78	7.59	1015
NC03031P	10y24h	4.60	3.84	0.0001	1.82	1.80	100
NC03040	10y24h	3.30	3.63	0.0001	2.54	2.70	832
NC03050	10y24h	3.00	3.63	0.0001	1.49	1.54	1494
NC03055	10y24h	3.50	3.78	0.0000	2.16	2.13	1523
NC03100	10y24h	3.30	3.55	0.0001	15.57	15.56	300
NC03120	10y24h	3.00	3.76	0.0000	11.76	9.85	9046
NC03123P	10y24h	3.10	3.85	0.0001	3.33	3.13	3097
NC03125	10y24h	1.90	3.75	0.0000	16.92	9.00	33315
NC03135	10y24h	2.20	3.75	0.0000	9.68	6.60	11415
NC03137	10y24h	3.20	3.76	0.0000	0.94	0.88	271
NC03160	10y24h	2.30	3.75	0.0000	10.38	8.75	18779
NC03200	10y24h	3.10	4.35	0.0001	21.52	17.34	19448
NC03210	10y24h	3.00	4.35	0.0002	22.85	21.57	24355
NC03220	10y24h	3.30	4.36	0.0002	14.53	13.57	20634
NC03222	10y24h	3.80	4.70	0.0004	2.16	1.55	11253
NC03235	10y24h	3.80	4.40	0.0002	5.03	4.81	7282
NC03240	10y24h	3.50	4.35	0.0002	5.17	4.53	11342
NC03300	10y24h	2.80	4.05	0.0012	25.17	21.81	45428
NC03400	10y24h	3.30	3.86	0.0002	5.27	5.09	1820
NC03415	10y24h	3.50	4.01	0.0002	3.25	3.03	1997
NC03500	10y24h	2.80	3.87	0.0012	10.57	7.61	9498
NC03600	10y24h	3.50	2.99	0.0000	5.74	5.73	100
NC03610	10y24h	3.10	4.08	0.0001	11.18	10.58	10056
NC03615	10y24h	3.50	4.13	0.0002	6.83	6.45	11034
NC03625	10y24h	3.60	4.19	0.0002	2.18	1.75	5311
NC03700	10y24h	3.20	4.07	0.0002	18.43	16.78	20080
NC03715	10y24h	3.60	4.20	0.0002	4.82	4.86	5467
NC03716	10y24h	3.50	4.24	0.0003	4.28	4.01	10525
NC03720	10y24h	3.40	4.19	0.0002	6.68	5.59	20062
NC03723	10y24h	3.50	4.23	0.0001	3.49	3.46	3525

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03730	10y24h	3.30	4.17	0.0002	6.98	6.81	7142
NC03737	10y24h	3.30	4.14	0.0002	6.12	6.01	6375
NC03800	10y24h	2.60	2.78	0.0001	45.52	45.52	159
NC03825	10y24h	2.00	3.74	0.0002	37.34	31.81	32537
NC03830	10y24h	2.40	3.74	0.0002	18.76	17.53	25256
NC03833P	10y24h	6.00	3.77	0.0000	3.36	2.71	2067
NC03835P	10y24h	6.00	3.77	0.0000	0.22	0.18	100
NC03837P	10y24h	3.80	3.78	0.0000	2.35	1.80	1447
NC03845	10y24h	2.40	3.75	0.0001	21.44	19.55	10916
NC03850	10y24h	2.20	3.75	0.0002	15.30	12.94	14203
NC03855	10y24h	2.30	3.56	0.0000	13.63	13.17	22007
NC03856	10y24h	2.50	3.57	0.0000	12.76	12.54	19078
NC06000	10y24h	2.80	3.28	0.0002	10.96	10.94	1583
NC06010	10y24h	2.70	3.44	0.0007	11.38	10.66	10991
NC06020	10y24h	2.80	3.76	0.0005	9.10	8.74	4592
NC06400	10y24h	4.80	5.06	0.0001	2.48	2.38	924
ND03900	10y24h	2.30	3.04	0.0000	20.70	19.10	9012
ND04000	10y24h	2.90	2.68	0.0001	25.14	25.14	100
ND04010	10y24h	2.80	2.82	0.0001	3.76	3.74	100
ND04012P	10y24h	3.00	4.59	0.0004	1.48	3.07	479
ND04014P	10y24h	4.38	4.63	0.0008	2.84	1.31	489
ND04015	10y24h	2.90	2.99	0.0001	17.99	17.99	100
ND04016P	10y24h	3.00	4.67	0.0001	1.02	0.97	1632
ND04030	10y24h	3.00	3.77	0.0007	12.79	9.87	18315
ND04100	10y24h	2.50	3.57	0.0003	7.97	6.25	20040
ND04200	10y24h	2.50	3.57	0.0004	8.09	4.83	22351
ND04300	10y24h	2.30	2.97	0.0000	9.69	9.62	5878
ND04315	10y24h	3.40	3.60	0.0001	3.32	3.28	287
ND04316P	10y24h	3.00	4.73	0.0001	1.78	3.37	1633
ND04318P	10y24h	3.00	4.74	0.0017	3.37	0.71	1198
ND04400	10y24h	2.10	2.93	0.0000	10.47	10.07	9920
ND04500	10y24h	2.90	3.04	0.0001	31.80	31.80	711
ND04511	10y24h	2.90	3.08	0.0001	3.82	3.76	368
ND04512	10y24h	2.50	2.93	0.0000	3.66	3.51	2537
ND04513	10y24h	2.40	2.93	0.0000	3.93	3.78	1604
ND04515	10y24h	3.40	4.13	0.0002	30.37	30.40	3137
ND04530	10y24h	3.00	4.17	0.0005	14.42	9.12	18595
ND04542	10y24h	2.90	4.17	0.0009	10.20	8.50	16637
ND04550	10y24h	3.00	4.17	0.0004	31.43	22.62	39107
ND04555	10y24h	2.90	4.17	0.0005	20.78	19.59	18396
ND04565	10y24h	2.80	4.17	0.0011	18.72	16.63	29014
ND04571P	10y24h	4.80	4.77	0.0000	5.22	4.71	4683
ND04600	10y24h	2.50	2.39	0.0000	6.25	6.24	659
ND04700	10y24h	3.20	3.46	0.0001	4.04	4.04	463
ND04715	10y24h	3.20	4.14	0.0001	6.49	6.56	20125
ND04800	10y24h	3.00	3.16	0.0003	7.11	7.11	163
ND04815	10y24h	3.40	4.13	0.0008	7.29	6.33	5277

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04900	10y24h	3.40	2.83	0.0001	30.54	30.54	216
ND04913	10y24h	3.90	3.59	0.0000	0.76	0.71	100
ND04915	10y24h	4.20	3.35	0.0001	28.75	28.75	114
ND04925	10y24h	3.20	3.91	0.0002	12.60	11.68	10360
ND04930	10y24h	3.60	3.83	0.0003	17.31	17.29	286
ND04935	10y24h	3.20	4.14	0.0011	19.30	16.94	22183
ND04947	10y24h	3.70	4.19	0.0005	7.28	7.20	2400
ND04949P	10y24h	4.93	5.22	0.0000	12.26	10.31	34966
ND04951	10y24h	2.90	4.05	0.0011	6.52	5.12	10704
ND04960	10y24h	3.50	3.96	0.0002	3.57	3.09	3987
ND04961	10y24h	3.60	4.00	0.0002	1.30	1.21	1223
ND05000	10y24h	2.50	2.32	0.0000	4.54	4.54	100
ND05100	10y24h	1.90	2.81	0.0000	7.43	6.97	7337
ND05200	10y24h	2.60	2.46	0.0000	5.09	5.09	100
ND05300	10y24h	2.70	2.63	0.0001	25.11	25.11	100
ND05310	10y24h	2.60	2.93	0.0001	21.90	21.92	639
ND05315	10y24h	3.30	3.24	0.0001	17.33	17.35	131
ND05316	10y24h	3.20	3.56	0.0001	3.78	3.82	1125
ND05335	10y24h	12.20	3.26	0.0001	3.28	3.23	100
ND05337	10y24h	13.65	3.27	0.0001	0.63	0.59	100
ND05339	10y24h	2.10	3.31	0.0001	5.26	4.80	4627
ND05345	10y24h	5.90	3.36	0.0001	11.05	11.09	100
ND05355	10y24h	5.20	3.48	0.0002	10.67	10.71	100
ND05360	10y24h	2.40	3.85	0.0003	10.03	10.25	1096
ND05365	10y24h	3.00	3.95	0.0006	13.25	9.81	25758
ND05375	10y24h	3.50	3.95	0.0005	0.65	1.19	572
ND05405	10y24h	5.80	4.48	0.0000	0.15	0.15	100
ND05500	10y24h	3.00	5.00	0.0001	18.81	7.34	87280
ND05600	10y24h	4.40	4.99	0.0005	4.96	3.30	2724
ND05700	10y24h	3.90	4.52	0.0003	4.24	3.30	3298
ND05800	10y24h	3.00	3.19	0.0001	3.58	3.57	126
ND05900	10y24h	3.80	3.54	0.0007	1.93	1.93	100
ND05910	10y24h	3.00	3.64	0.0007	3.22	2.97	2806
ND06105P	10y24h	5.20	4.91	0.0011	2.45	2.15	146
ND06110P	10y24h	5.30	4.96	0.0005	1.77	1.37	170
ND06115P	10y24h	5.30	4.98	0.0006	1.15	0.56	100
ND06210P	10y24h	5.50	5.27	0.0017	3.76	2.16	118
ND06215P	10y24h	4.90	5.34	0.0011	2.16	0.94	330
ND06300P	10y24h	2.70	4.17	0.0001	9.45	5.49	24562
NE020P	10y24h	3.98	4.21	0.0000	38.78	32.25	65697
NE08000	10y24h	3.30	3.33	0.0001	8.62	8.60	336
NE08100	10y24h	3.10	4.20	0.0013	20.20	9.69	28558
NE08200	10y24h	2.60	4.21	0.0011	42.10	21.44	77561
NE08300	10y24h	3.20	4.24	0.0018	27.07	18.52	19743
NE08400	10y24h	3.30	4.24	0.0007	20.83	20.58	15720
NE08500	10y24h	3.10	4.21	0.0008	13.16	7.38	21672
NE08600	10y24h	3.40	4.21	0.0001	12.31	11.88	11152

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE08615	10y24h	2.70	4.46	0.0002	12.55	5.98	40400
NE08625	10y24h	3.10	4.31	0.0005	13.48	12.42	23029
NE08700	10y24h	3.00	4.21	0.0001	8.09	7.25	12244
NE08716	10y24h	4.20	4.75	0.0001	2.05	1.99	433
NE08717	10y24h	4.50	4.87	0.0001	1.04	0.92	864
NE08720	10y24h	3.50	4.21	0.0001	4.76	4.41	4515
NE08735	10y24h	3.70	4.41	0.0003	3.30	2.98	3584
NE08745	10y24h	3.50	4.34	0.0004	2.88	2.82	3809
NE08800	10y24h	3.90	3.57	0.0001	8.35	8.34	100
NE08900	10y24h	3.50	3.53	0.0001	8.17	8.16	106
NE09000	10y24h	4.00	4.38	0.0003	3.89	3.45	1568
NE09100	10y24h	3.10	2.61	0.0000	25.74	25.74	196
NE09110	10y24h	3.80	2.89	0.0001	17.66	17.67	267
NE09125	10y24h	4.80	4.54	0.0000	19.74	14.68	23218
NE09200	10y24h	4.40	2.31	0.0001	18.02	18.02	282
NE09210	10y24h	3.80	2.39	0.0001	17.91	17.91	269
NE09220	10y24h	4.70	4.24	0.0000	45.37	31.64	80067
NE09300	10y24h	3.00	4.22	0.0014	9.04	7.32	14847
NE09400	10y24h	2.90	4.22	0.0002	17.35	13.19	52150
NE09415	10y24h	3.10	4.38	0.0002	8.36	7.68	18175
NE09500	10y24h	2.80	4.22	0.0010	21.04	9.28	33848
NE09600	10y24h	2.80	4.13	0.0015	17.02	13.91	43650
NE09700	10y24h	3.00	3.90	0.0006	9.17	7.46	20627
NE09800	10y24h	3.10	3.10	0.0001	5.20	5.20	100
NE09900	10y24h	3.20	3.93	0.0009	8.70	7.99	8643
NE10000	10y24h	3.10	3.33	0.0001	8.70	8.63	403
NE10100	10y24h	2.70	3.39	0.0002	3.66	3.09	2337
NE10200	10y24h	3.00	3.77	0.0011	9.04	5.81	17689
NE10300	10y24h	3.10	3.83	0.0010	7.00	5.99	9421
NE10400	10y24h	3.10	3.96	0.0009	12.00	8.76	23051
NE10500	10y24h	3.30	3.04	0.0000	6.68	6.67	100
NE10600	10y24h	3.40	3.88	0.0005	6.98	6.06	4030
NE10700	10y24h	2.80	3.59	0.0003	4.35	3.35	4285
NE10800	10y24h	3.20	3.90	0.0008	8.03	6.07	10050
NE10900	10y24h	3.20	3.15	0.0001	7.09	7.09	100
NE11000	10y24h	2.80	4.11	0.0006	11.65	7.08	34914
NE11100	10y24h	3.00	3.59	0.0004	6.91	5.86	4406
NE11200	10y24h	2.80	3.85	0.0007	8.59	5.24	19064
NE11300	10y24h	2.90	3.50	0.0004	3.97	3.63	3169
NE11400	10y24h	2.80	3.84	0.0006	7.05	5.91	4639
NE11500	10y24h	3.40	4.24	0.0016	9.94	7.79	15181
NE11600	10y24h	3.40	4.39	0.0007	12.50	8.06	24867
NE11700	10y24h	3.30	4.52	0.0008	9.01	7.36	16487
NE11800	10y24h	3.30	4.35	0.0008	6.37	4.19	9029
NE11900	10y24h	3.30	4.24	0.0013	11.51	7.64	19274
NE12000	10y24h	3.30	4.11	0.0008	5.89	3.97	8210
NE12100	10y24h	3.20	3.73	0.0003	9.95	9.14	3496

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE12200	10y24h	3.20	4.18	0.0012	9.92	6.98	13374
NE12300	10y24h	3.20	3.65	0.0001	7.02	6.64	1587
NE12400	10y24h	3.20	3.96	0.0010	9.35	7.01	12766
NE12500	10y24h	3.10	3.98	0.0011	8.78	6.04	14474
NE12600	10y24h	3.30	3.94	0.0004	4.82	4.01	3222
NE13100	10y24h	3.00	4.07	0.0007	6.17	5.04	7375
NE14000	10y24h	2.00	3.90	0.0001	2.24	2.10	504
NF15000	10y24h	3.10	4.46	0.0007	20.49	11.65	58915
NF15010	10y24h	3.00	4.46	0.0005	3.52	3.26	7858
NF15100	10y24h	3.70	4.72	0.0008	13.07	12.04	22338
NF15200	10y24h	3.30	4.45	0.0002	14.02	10.73	14969
NF15210	10y24h	3.20	4.45	0.0004	9.11	7.36	12743
NF15215	10y24h	3.30	4.46	0.0007	15.70	10.44	27189
NF15300	10y24h	3.20	4.45	0.0003	24.67	24.42	25375
NF15315	10y24h	3.30	4.45	0.0001	9.96	8.17	7852
NF15330	10y24h	3.20	4.45	0.0002	12.49	10.65	28793
NF15400	10y24h	3.00	4.32	0.0015	23.58	23.38	28052
NF15500	10y24h	3.40	4.40	0.0017	13.08	9.73	19566
NF15600	10y24h	2.20	3.55	0.0003	24.75	21.99	75978
NF15700	10y24h	2.60	3.55	0.0004	8.63	5.33	24876
NF15800	10y24h	2.40	3.46	0.0006	9.29	5.32	17962
NF15900	10y24h	2.20	3.55	0.0003	13.86	12.32	33946
NF16000	10y24h	4.00	3.55	0.0001	3.19	3.16	100
NF16100	10y24h	2.80	3.89	0.0007	9.74	6.22	25783
NF16200	10y24h	2.00	3.13	0.0000	18.79	13.09	32532
NF16300	10y24h	2.20	3.12	0.0000	10.35	9.26	11065
NF16310	10y24h	2.10	3.12	0.0001	7.97	7.19	11893
NF16500	10y24h	2.10	3.12	0.0001	7.48	6.06	12361
NF16510	10y24h	2.10	3.12	0.0001	4.10	4.01	11135
NF16700	10y24h	2.80	2.60	0.0000	1.73	1.73	100
NF16800	10y24h	1.70	3.12	0.0000	17.58	9.33	37723
NF16900	10y24h	1.60	3.12	0.0000	12.66	7.84	29498
NF17000	10y24h	1.80	3.12	0.0001	9.76	9.18	28777
NF17100	10y24h	1.90	3.12	0.0001	7.81	6.18	12893
NF17200	10y24h	2.60	3.51	0.0001	9.76	7.88	15831
NF17210	10y24h	2.20	3.53	0.0001	8.18	5.86	16856
NF17300	10y24h	3.20	2.54	0.0000	1.67	1.66	100
NF17400	10y24h	2.20	3.80	0.0008	14.57	9.54	32297
NF17500	10y24h	2.70	3.81	0.0005	9.64	7.82	19524
NF17600	10y24h	2.20	3.43	0.0001	11.06	7.28	30798
NF17700	10y24h	2.30	3.42	0.0003	11.68	8.91	19838
NF17800	10y24h	2.80	3.78	0.0010	11.38	8.05	17910
NG20000	10y24h	3.30	3.12	0.0001	4.63	4.62	100
NG20100	10y24h	2.90	4.04	0.0010	9.28	7.01	9250
NG20200	10y24h	3.40	4.29	0.0015	11.14	7.72	18509
NG20300	10y24h	3.20	4.22	0.0015	9.62	6.44	15583
NG20400	10y24h	3.10	4.00	0.0008	8.43	5.99	10544

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG20500	10y24h	3.20	4.21	0.0016	12.74	7.56	25771
NG20600	10y24h	3.30	4.23	0.0009	7.81	5.46	21510
NG20700	10y24h	2.90	3.66	0.0008	11.04	8.78	12228
NG20800	10y24h	3.30	4.01	0.0002	8.27	6.18	12241
NG20810	10y24h	3.10	4.21	0.0006	9.93	7.81	39917
NG20900	10y24h	3.10	3.52	0.0001	9.33	9.27	366
NG21000	10y24h	3.00	4.08	0.0011	9.10	6.33	12671
NG21010	10y24h	3.30	4.18	0.0007	4.49	4.57	7195
NG21100	10y24h	3.10	4.08	0.0002	6.83	6.23	6062
NG21110	10y24h	3.20	4.17	0.0004	6.91	6.72	16278
NG21200	10y24h	3.40	2.97	0.0001	3.48	3.47	100
NG21300	10y24h	2.80	4.24	0.0001	26.55	18.35	89895
NG21400	10y24h	3.00	4.22	0.0001	20.21	17.83	50216
NG21415	10y24h	3.40	4.25	0.0002	9.63	6.92	23558
NG21500	10y24h	2.60	4.22	0.0012	16.67	11.44	30398
NG21600	10y24h	2.70	4.22	0.0012	16.62	8.43	43682
NG21700	10y24h	3.00	4.25	0.0002	16.69	11.09	45366
NG21715	10y24h	3.30	4.25	0.0004	6.98	4.79	24270
NG21800	10y24h	3.40	4.24	0.0002	11.63	11.43	15680
NG21810	10y24h	3.20	4.24	0.0003	13.32	10.62	38787
NG21900	10y24h	2.90	3.89	0.0003	14.70	14.43	10382
NG22000	10y24h	3.80	4.18	0.0001	10.06	9.78	2795
NG22000P	10y24h	4.28	3.07	0.0000	7.88	1.82	34136
NG22015P	10y24h	3.31	3.44	0.0000	15.24	3.42	92285
NG22025	10y24h	4.20	4.17	0.0001	2.36	2.38	282
NG22040	10y24h	2.90	3.77	0.0001	7.91	7.72	13070
NG22100	10y24h	2.30	3.62	0.0007	20.65	19.35	26171
NG22300	10y24h	3.30	3.41	0.0001	2.47	2.40	433
NG22400	10y24h	2.50	3.61	0.0006	18.64	18.30	26493
NG22500	10y24h	2.60	3.62	0.0003	17.90	15.17	30878
NG22600	10y24h	2.80	3.62	0.0006	4.37	2.96	5696
NG22700	10y24h	2.70	3.62	0.0004	7.82	6.03	21565
NG22800	10y24h	2.70	3.62	0.0009	9.82	5.45	26990
NG22900	10y24h	2.90	3.62	0.0006	6.88	6.08	17041
NG23000	10y24h	2.50	3.54	0.0002	17.14	16.82	21293
NG23015	10y24h	2.90	3.58	0.0002	7.25	7.03	7656
NG23100	10y24h	2.60	3.36	0.0003	16.70	16.47	32874
NG23200	10y24h	2.50	3.19	0.0001	8.20	7.86	13106
NG23300	10y24h	2.60	3.05	0.0002	7.34	6.81	5779
NG23315	10y24h	2.30	3.06	0.0001	2.33	2.15	1046
NG23400	10y24h	2.30	3.05	0.0003	2.95	2.66	3680
NG23500	10y24h	2.60	3.06	0.0003	3.14	3.01	2114
NG23600	10y24h	2.30	3.11	0.0001	4.93	4.23	8514
NG23700	10y24h	2.30	3.12	0.0000	6.74	4.93	10970
NG23800	10y24h	2.30	3.12	0.0003	4.52	3.53	4855
NG23900	10y24h	2.30	2.80	0.0000	3.93	3.56	1781
NG24000	10y24h	1.90	2.80	0.0000	6.99	6.35	12392

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG24100	10y24h	1.50	2.25	0.0000	1.16	1.16	500
NG24200	10y24h	2.00	2.35	0.0000	10.16	10.15	1255
NG24216	10y24h	2.50	2.35	0.0000	0.18	0.17	100
NG24225	10y24h	2.70	2.44	0.0000	3.56	3.56	100
NG24230	10y24h	2.80	2.56	0.0000	2.46	2.46	100
NG24300	10y24h	3.10	3.15	0.0000	10.30	10.24	849
NG24320	10y24h	3.00	3.22	0.0000	1.06	1.02	137
NG24322	10y24h	2.90	3.71	0.0000	1.50	0.80	7126
NG24330	10y24h	2.30	3.58	0.0001	6.71	4.73	11105
NG24335	10y24h	3.00	3.72	0.0001	4.68	4.34	1809
NG24340	10y24h	2.90	3.58	0.0002	4.01	3.67	3720
NG24341	10y24h	2.80	3.58	0.0001	4.87	4.67	4135
NG24400	10y24h	2.90	3.62	0.0009	10.92	10.28	10641
NG24500P	10y24h	2.00	2.77	0.0000	11.15	10.99	1870
NG24516P	10y24h	4.20	3.97	0.0000	0.22	0.22	100
NG24527P	10y24h	4.00	3.11	0.0000	1.83	1.83	128
NG24530P	10y24h	1.60	2.79	0.0000	2.52	2.46	174
NG24600P	10y24h	3.30	3.69	0.0003	8.09	7.72	1895
NG24615P	10y24h	3.20	3.89	0.0006	4.76	4.20	10078
NH30000	10y24h	3.70	2.28	0.0000	4.42	4.42	100
NH30030	10y24h	4.20	2.30	0.0000	1.15	1.15	100
NH30035	10y24h	4.20	2.31	0.0000	1.00	0.99	119
NH30040	10y24h	4.30	2.32	0.0000	0.29	0.29	100
NH30045	10y24h	4.30	2.32	0.0000	0.13	0.13	100
NH30050	10y24h	3.60	2.44	0.0000	3.30	3.30	100
NH30055	10y24h	3.80	2.57	0.0000	2.68	2.68	100
NSP0100	10y24h	3.50	4.26	0.0016	13.65	10.91	11729
NSP0200	10y24h	3.50	3.42	0.0001	8.35	8.35	153
NSP0215	10y24h	3.70	4.32	0.0006	9.69	9.31	14900
NSP0300	10y24h	3.40	4.00	0.0006	11.38	10.15	5484
NSP0400	10y24h	3.60	3.73	0.0001	9.33	9.32	128
NSP0415	10y24h	3.70	4.38	0.0001	8.73	8.56	9122
NSP0500	10y24h	3.90	2.72	0.0000	5.48	5.48	100
NSP0600	10y24h	3.70	3.52	0.0001	5.65	5.63	102
NSP0700	10y24h	3.50	3.81	0.0001	10.31	9.88	2092
NSP0715	10y24h	3.90	4.49	0.0005	3.41	3.61	9028
NSP0800	10y24h	3.60	3.70	0.0001	9.76	9.51	1615
NSP0815	10y24h	3.60	4.44	0.0008	5.06	3.75	21053
NSP0900	10y24h	3.50	3.98	0.0001	11.02	10.32	3423
NSP0915	10y24h	3.50	4.05	0.0003	6.96	6.75	7953
NSP1000	10y24h	3.60	4.31	0.0009	9.21	6.82	14898
BDRY	233y24h	5.00	2.23	0.0000	913.25	0.00	0
NA00100	233y24h	2.70	2.27	0.0000	3.47	3.47	100
NA00106	233y24h	2.20	2.27	0.0000	0.49	0.49	162
NA00110	233y24h	3.30	2.29	0.0000	1.05	1.05	100
NA00200	233y24h	1.90	2.23	0.0000	1.44	1.44	1480
NA00300	233y24h	1.40	2.40	0.0000	23.07	22.52	13259

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA00312	233y24h	2.30	2.66	0.0000	3.56	3.58	540
NA00314P	233y24h	1.20	3.24	0.0000	5.69	2.81	10571
NA00335	233y24h	1.80	2.42	0.0000	20.55	20.21	6096
NA00360	233y24h	1.70	2.45	0.0000	12.88	12.88	580
NA00370	233y24h	3.70	2.85	0.0000	6.70	6.68	113
NA00375	233y24h	3.20	3.06	0.0001	4.02	3.99	100
NA00385	233y24h	3.60	3.03	0.0000	1.72	1.70	100
NA00510	233y24h	1.50	2.68	0.0000	7.44	6.71	21941
NA00605	233y24h	1.70	2.71	0.0000	6.11	5.12	15720
NA00620	233y24h	1.90	2.71	0.0000	6.18	5.88	15763
NA00700	233y24h	1.90	2.55	0.0000	4.17	4.16	435
NA00710	233y24h	1.70	2.56	0.0000	24.89	23.78	14780
NA00735	233y24h	1.60	2.69	0.0000	5.68	5.53	11014
NA00745	233y24h	3.70	2.92	0.0000	10.67	10.66	100
NA00750	233y24h	3.30	3.21	0.0001	4.14	4.10	124
NA00765	233y24h	4.30	3.82	0.0001	4.90	4.88	100
NA00800	233y24h	2.00	2.45	0.0000	26.39	26.39	656
NA00900	233y24h	2.80	3.20	0.0002	3.25	2.88	1646
NA01000	233y24h	2.10	2.69	0.0000	3.53	3.30	2220
NA01010	233y24h	4.70	5.35	0.0002	5.43	5.28	15596
NA01100	233y24h	2.60	2.81	0.0001	3.79	3.71	465
NA01200	233y24h	2.60	2.68	0.0001	3.65	3.63	237
NA01300	233y24h	1.80	2.57	0.0000	4.60	4.13	10155
NA01325	233y24h	1.60	2.57	0.0000	5.99	4.21	23270
NA01600	233y24h	1.00	2.57	0.0000	12.05	7.08	42854
NA01615	233y24h	1.30	2.58	0.0000	8.07	5.61	32861
NA01700	233y24h	1.50	2.57	0.0000	11.15	9.48	18828
NA01710	233y24h	1.40	2.57	0.0000	1.59	1.56	8386
NA01720	233y24h	1.60	2.57	0.0000	4.68	4.96	26888
NA01800	233y24h	2.48	3.15	0.0018	10.35	10.37	2403
NA01816	233y24h	2.40	2.94	0.0005	6.24	6.23	4598
NA01825	233y24h	2.80	3.14	0.0006	3.37	3.27	2312
NA01835	233y24h	1.70	2.70	0.0006	9.16	9.10	9316
NA01850	233y24h	3.60	4.33	0.0006	9.05	8.48	3459
NA01855	233y24h	3.80	4.53	0.0006	9.45	8.41	10388
NA01900	233y24h	2.10	2.58	0.0000	2.74	2.51	1857
NA02000	233y24h	1.80	2.64	0.0000	4.12	3.37	8730
NA02100	233y24h	1.40	2.64	0.0000	6.38	3.31	23196
NA02110	233y24h	1.50	2.64	0.0000	3.28	1.91	12685
NA02120	233y24h	3.30	3.30	0.0000	1.61	1.58	100
NB02200	233y24h	4.10	2.38	0.0000	5.83	5.83	100
NB02215	233y24h	4.30	2.42	0.0000	1.90	1.89	100
NB02235	233y24h	3.90	2.50	0.0000	2.77	2.77	100
NB02245	233y24h	7.60	2.55	0.0000	1.90	1.90	239
NB02260	233y24h	5.60	3.39	0.0000	1.80	1.79	233
NB02270	233y24h	5.50	3.40	0.0000	0.43	0.42	100
NB02310	233y24h	2.30	2.92	0.0003	11.26	10.71	5916

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02315	233y24h	1.90	2.93	0.0010	24.22	9.81	31689
NB02316P	233y24h	3.50	3.12	0.0003	0.67	24.22	3523
NB02320	233y24h	4.00	3.03	0.0003	1.84	1.83	100
NB02325	233y24h	4.20	3.13	0.0002	0.63	0.61	100
NB02400	233y24h	2.30	2.35	0.0000	17.36	17.36	985
NB02410	233y24h	2.30	2.79	0.0000	14.92	14.91	972
NB02412	233y24h	1.60	2.89	0.0000	2.36	2.47	4651
NB02425	233y24h	4.20	4.06	0.0001	5.10	5.08	100
NB02426	233y24h	4.70	4.90	0.0001	1.43	1.29	784
NB02427	233y24h	4.80	5.07	0.0002	1.91	1.86	1376
NB02430	233y24h	4.50	4.12	0.0001	2.55	2.50	100
NB02435	233y24h	2.10	2.90	0.0000	7.97	6.93	5768
NB02445	233y24h	3.10	3.65	0.0001	4.40	4.38	318
NB02455	233y24h	4.20	3.77	0.0001	2.39	2.38	138
NB02500	233y24h	4.00	2.89	0.0000	6.18	6.18	100
NB02510	233y24h	4.10	3.96	0.0000	5.77	5.77	100
NB02517P	233y24h	5.10	4.19	0.0001	0.67	0.60	100
NB02600	233y24h	2.60	2.26	0.0000	2.13	2.13	100
NB02610	233y24h	1.90	2.37	0.0000	6.51	6.50	2235
NB02615	233y24h	3.00	2.73	0.0000	5.35	5.35	120
NB02616	233y24h	3.80	3.54	0.0001	1.00	0.88	356
NB02617	233y24h	4.40	3.79	0.0001	0.48	0.41	106
NB02618	233y24h	2.70	2.96	0.0001	1.05	1.01	1681
NB02620	233y24h	3.50	3.10	0.0000	3.89	3.88	100
NB02622	233y24h	3.20	3.49	0.0001	1.38	1.35	1328
NB02700	233y24h	2.90	2.79	0.0001	6.33	6.33	125
NB02706	233y24h	2.90	2.99	0.0000	0.67	0.69	360
NB02707	233y24h	2.60	3.03	0.0001	1.03	0.87	2965
NB02710	233y24h	2.80	3.09	0.0002	6.01	5.41	4130
NB02800	233y24h	2.70	2.33	0.0000	2.18	2.18	100
NB02900	233y24h	2.30	2.62	0.0001	6.26	6.26	247
NB02910	233y24h	2.60	3.30	0.0004	7.86	6.51	13099
NB02930	233y24h	2.30	3.35	0.0003	5.15	3.53	12322
NB02965	233y24h	2.30	3.35	0.0003	3.01	1.79	5204
NC002P	233y24h	3.00	2.37	0.0000	1.44	1.44	204
NC003P	233y24h	3.00	2.38	0.0000	0.37	0.38	642
NC03000	233y24h	3.30	2.95	0.0000	5.55	5.54	240
NC03031P	233y24h	4.60	3.04	0.0000	1.07	1.06	100
NC03040	233y24h	3.30	3.01	0.0000	2.34	2.36	109
NC03050	233y24h	3.00	3.03	0.0000	1.50	1.54	100
NC03055	233y24h	3.50	3.64	0.0000	1.26	1.17	831
NC03100	233y24h	3.30	2.99	0.0000	11.79	11.79	100
NC03120	233y24h	3.00	3.37	0.0000	7.82	7.93	1516
NC03123P	233y24h	3.10	3.55	0.0001	1.97	1.88	227
NC03125	233y24h	1.90	3.43	0.0000	9.86	6.31	25139
NC03135	233y24h	2.20	3.43	0.0000	4.07	2.98	8885
NC03137	233y24h	3.20	3.43	0.0000	0.55	0.51	118

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03160	233y24h	2.30	3.43	0.0000	4.32	2.97	11835
NC03200	233y24h	3.10	4.12	0.0002	11.17	9.28	8850
NC03210	233y24h	3.00	4.27	0.0003	12.67	10.51	21939
NC03220	233y24h	3.30	4.27	0.0003	8.42	7.28	14489
NC03222	233y24h	3.80	4.49	0.0004	0.93	1.19	5800
NC03235	233y24h	3.80	4.32	0.0003	2.97	2.71	4730
NC03240	233y24h	3.50	4.27	0.0002	3.06	2.05	9454
NC03300	233y24h	2.80	3.67	0.0008	9.28	7.64	10974
NC03400	233y24h	3.30	3.00	0.0001	3.50	3.50	100
NC03415	233y24h	3.50	3.11	0.0001	1.92	1.90	100
NC03500	233y24h	2.80	2.74	0.0000	4.21	4.21	100
NC03600	233y24h	3.50	2.80	0.0000	4.97	4.97	100
NC03610	233y24h	3.10	3.91	0.0001	6.34	5.79	6748
NC03615	233y24h	3.50	4.05	0.0002	3.73	3.28	7477
NC03625	233y24h	3.60	4.10	0.0002	1.44	1.07	3485
NC03700	233y24h	3.20	3.86	0.0002	9.80	8.55	10868
NC03715	233y24h	3.60	4.03	0.0001	4.79	4.82	1887
NC03716	233y24h	3.50	4.18	0.0003	2.53	1.86	8481
NC03720	233y24h	3.40	4.10	0.0003	4.22	3.35	16154
NC03723	233y24h	3.50	4.12	0.0002	1.17	1.13	2330
NC03730	233y24h	3.30	4.02	0.0002	2.34	2.33	4775
NC03737	233y24h	3.30	4.01	0.0004	2.32	2.29	4293
NC03800	233y24h	2.60	2.38	0.0001	23.42	23.42	100
NC03825	233y24h	2.00	3.07	0.0001	17.59	16.94	7861
NC03830	233y24h	2.40	3.18	0.0001	7.38	6.29	8151
NC03833P	233y24h	6.00	3.28	0.0000	1.88	1.77	2067
NC03835P	233y24h	6.00	3.28	0.0000	0.13	0.10	100
NC03837P	233y24h	3.80	3.28	0.0000	1.34	1.04	1447
NC03845	233y24h	2.40	3.39	0.0001	9.00	8.81	5617
NC03850	233y24h	2.20	3.42	0.0002	6.41	6.11	9034
NC03855	233y24h	2.30	3.40	0.0000	6.43	5.93	14819
NC03856	233y24h	2.50	3.41	0.0000	4.49	3.94	14058
NC06000	233y24h	2.80	2.45	0.0000	3.08	3.08	100
NC06010	233y24h	2.70	2.67	0.0000	2.85	2.85	100
NC06020	233y24h	2.80	2.70	0.0000	0.95	0.95	100
NC06400	233y24h	4.80	4.80	0.0001	1.45	1.45	100
ND03900	233y24h	2.30	2.53	0.0000	11.61	11.61	309
ND04000	233y24h	2.90	2.43	0.0000	16.89	16.89	100
ND04010	233y24h	2.80	2.48	0.0001	2.20	2.20	100
ND04012P	233y24h	3.00	4.57	0.0004	0.96	3.07	450
ND04014P	233y24h	4.38	4.59	0.0008	2.84	0.89	476
ND04015	233y24h	2.90	2.59	0.0000	12.88	12.88	100
ND04016P	233y24h	3.00	4.60	0.0001	0.89	0.57	1566
ND04030	233y24h	3.00	3.24	0.0001	7.56	7.33	1197
ND04100	233y24h	2.50	3.27	0.0003	4.91	2.75	11808
ND04200	233y24h	2.50	3.27	0.0004	4.57	3.00	12022
ND04300	233y24h	2.30	2.84	0.0000	5.69	5.27	2819

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04315	233y24h	3.40	3.01	0.0000	1.81	1.79	100
ND04316P	233y24h	3.00	4.71	0.0001	1.13	3.37	1617
ND04318P	233y24h	3.00	4.72	0.0017	3.37	0.41	1190
ND04400	233y24h	2.10	2.75	0.0000	4.87	4.43	5423
ND04500	233y24h	2.90	2.66	0.0000	23.15	23.15	214
ND04511	233y24h	2.90	2.80	0.0000	2.69	2.67	100
ND04512	233y24h	2.50	2.83	0.0000	2.11	2.07	1997
ND04513	233y24h	2.40	2.84	0.0000	2.21	2.20	1123
ND04515	233y24h	3.40	3.15	0.0001	20.42	20.42	100
ND04530	233y24h	3.00	3.54	0.0001	8.20	7.97	2154
ND04542	233y24h	2.90	3.78	0.0001	6.03	5.17	4707
ND04550	233y24h	3.00	3.38	0.0001	12.22	12.74	2098
ND04555	233y24h	2.90	3.94	0.0005	8.48	8.82	10840
ND04565	233y24h	2.80	3.94	0.0011	9.41	7.36	18479
ND04571P	233y24h	4.80	4.62	0.0000	3.09	2.92	4474
ND04600	233y24h	2.50	2.27	0.0000	3.27	3.27	636
ND04700	233y24h	3.20	3.34	0.0001	2.79	2.78	258
ND04715	233y24h	3.20	3.93	0.0001	3.39	2.71	9360
ND04800	233y24h	3.00	2.43	0.0000	3.25	3.25	100
ND04815	233y24h	3.40	2.60	0.0000	2.65	2.65	100
ND04900	233y24h	3.40	2.56	0.0000	22.46	22.46	206
ND04913	233y24h	3.90	3.02	0.0000	0.38	0.38	100
ND04915	233y24h	4.20	2.84	0.0000	21.28	21.28	114
ND04925	233y24h	3.20	3.17	0.0000	8.22	8.21	100
ND04930	233y24h	3.60	3.09	0.0001	12.58	12.60	100
ND04935	233y24h	3.20	3.62	0.0002	10.09	9.95	3658
ND04947	233y24h	3.70	4.04	0.0002	4.04	3.98	1415
ND04949P	233y24h	4.93	5.14	0.0001	7.23	5.55	31966
ND04951	233y24h	2.90	3.50	0.0001	3.61	3.47	1160
ND04960	233y24h	3.50	3.25	0.0001	1.85	1.84	100
ND04961	233y24h	3.60	3.25	0.0001	0.42	0.42	100
ND05000	233y24h	2.50	2.26	0.0000	2.49	2.49	100
ND05100	233y24h	1.90	2.66	0.0000	4.13	3.84	4800
ND05200	233y24h	2.60	2.30	0.0000	2.75	2.75	100
ND05300	233y24h	2.70	2.41	0.0001	16.88	16.88	100
ND05310	233y24h	2.60	2.55	0.0001	14.88	14.88	100
ND05315	233y24h	3.30	2.76	0.0001	13.87	13.87	120
ND05316	233y24h	3.20	2.78	0.0000	0.86	0.85	100
ND05335	233y24h	12.20	2.82	0.0000	3.33	3.34	100
ND05337	233y24h	13.65	2.82	0.0001	0.37	0.36	100
ND05339	233y24h	2.10	3.07	0.0001	3.08	2.76	1985
ND05345	233y24h	5.90	2.85	0.0000	9.39	9.40	100
ND05355	233y24h	5.20	2.94	0.0001	9.00	9.01	100
ND05360	233y24h	2.40	3.22	0.0001	8.48	8.51	263
ND05365	233y24h	3.00	3.46	0.0001	7.18	6.56	3805
ND05375	233y24h	3.50	3.47	0.0001	0.37	0.43	100
ND05405	233y24h	5.80	4.39	0.0000	0.08	0.08	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND05500	233y24h	3.00	4.66	0.0001	10.29	3.32	53434
ND05600	233y24h	4.40	3.26	0.0001	1.10	1.09	100
ND05700	233y24h	3.90	3.68	0.0001	2.03	2.03	100
ND05800	233y24h	3.00	2.82	0.0001	2.80	2.80	100
ND05900	233y24h	3.80	3.22	0.0007	0.76	1.38	100
ND05910	233y24h	3.00	3.22	0.0007	1.91	1.90	202
ND06105P	233y24h	5.20	4.67	0.0011	2.45	1.77	146
ND06110P	233y24h	5.30	4.69	0.0005	1.77	1.15	161
ND06115P	233y24h	5.30	4.70	0.0006	1.15	0.33	100
ND06210P	233y24h	5.50	5.15	0.0017	3.76	2.16	118
ND06215P	233y24h	4.90	5.17	0.0011	2.16	0.56	215
ND06300P	233y24h	2.70	3.94	0.0001	5.56	3.09	19715
NE020P	233y24h	3.98	3.91	0.0000	21.76	11.57	54715
NE08000	233y24h	3.30	2.40	0.0000	3.35	3.35	131
NE08100	233y24h	3.10	2.75	0.0000	3.21	3.21	100
NE08200	233y24h	2.60	3.89	0.0012	14.06	7.44	48121
NE08300	233y24h	3.20	2.98	0.0001	6.84	6.84	100
NE08400	233y24h	3.30	4.00	0.0008	7.66	6.91	8023
NE08500	233y24h	3.10	3.26	0.0001	4.58	4.57	100
NE08600	233y24h	3.40	3.90	0.0002	6.34	6.05	2703
NE08615	233y24h	2.70	4.18	0.0002	7.87	4.53	24583
NE08625	233y24h	3.10	4.18	0.0006	6.39	4.45	18068
NE08700	233y24h	3.00	3.93	0.0001	6.65	5.88	3285
NE08716	233y24h	4.20	4.14	0.0001	1.26	1.23	172
NE08717	233y24h	4.50	4.19	0.0001	0.59	0.55	100
NE08720	233y24h	3.50	4.01	0.0001	3.30	3.21	1733
NE08735	233y24h	3.70	4.23	0.0002	2.15	2.50	2029
NE08745	233y24h	3.50	4.23	0.0003	1.18	1.34	3133
NE08800	233y24h	3.90	2.66	0.0000	4.72	4.71	100
NE08900	233y24h	3.50	2.65	0.0000	4.62	4.62	100
NE09000	233y24h	4.00	3.10	0.0001	2.22	2.20	100
NE09100	233y24h	3.10	2.32	0.0000	12.79	12.79	196
NE09110	233y24h	3.80	2.38	0.0000	8.36	8.36	267
NE09125	233y24h	4.80	4.14	0.0000	11.12	6.85	15406
NE09200	233y24h	4.40	2.26	0.0001	12.17	12.17	282
NE09210	233y24h	3.80	2.30	0.0001	12.11	12.11	269
NE09220	233y24h	4.70	3.89	0.0000	24.51	15.89	52206
NE09300	233y24h	3.00	3.48	0.0001	4.22	4.16	259
NE09400	233y24h	2.90	3.88	0.0003	9.59	7.26	22025
NE09415	233y24h	3.10	4.31	0.0002	4.29	2.92	15151
NE09500	233y24h	2.80	3.85	0.0009	8.91	5.70	14406
NE09600	233y24h	2.80	3.47	0.0003	6.19	5.32	5733
NE09700	233y24h	3.00	3.67	0.0005	4.93	3.70	10357
NE09800	233y24h	3.10	2.30	0.0000	1.45	1.45	100
NE09900	233y24h	3.20	2.66	0.0000	3.09	3.09	100
NE10000	233y24h	3.10	2.56	0.0000	4.69	4.69	100
NE10100	233y24h	2.70	2.70	0.0000	1.98	1.97	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE10200	233y24h	3.00	3.27	0.0001	4.93	4.76	879
NE10300	233y24h	3.10	2.85	0.0000	3.73	3.72	100
NE10400	233y24h	3.10	3.46	0.0002	6.46	5.88	2964
NE10500	233y24h	3.30	2.46	0.0000	3.59	3.58	100
NE10600	233y24h	3.40	2.86	0.0000	3.74	3.73	100
NE10700	233y24h	2.80	2.90	0.0001	2.37	2.35	130
NE10800	233y24h	3.20	3.09	0.0001	4.37	4.36	100
NE10900	233y24h	3.20	2.47	0.0000	3.65	3.65	100
NE11000	233y24h	2.80	3.80	0.0007	6.26	3.39	16463
NE11100	233y24h	3.00	2.78	0.0001	3.73	3.73	100
NE11200	233y24h	2.80	3.46	0.0005	4.62	3.40	7371
NE11300	233y24h	2.90	2.62	0.0000	2.01	2.01	100
NE11400	233y24h	2.80	2.90	0.0001	3.84	3.83	100
NE11500	233y24h	3.40	3.61	0.0001	5.41	5.33	324
NE11600	233y24h	3.40	3.84	0.0003	6.75	5.76	5114
NE11700	233y24h	3.30	4.13	0.0005	4.86	3.69	5868
NE11800	233y24h	3.30	3.61	0.0001	3.44	3.38	299
NE11900	233y24h	3.30	3.51	0.0001	5.55	5.40	796
NE12000	233y24h	3.30	3.40	0.0001	3.18	3.13	270
NE12100	233y24h	3.20	2.75	0.0000	5.37	5.37	100
NE12200	233y24h	3.20	3.56	0.0001	5.38	5.23	724
NE12300	233y24h	3.20	2.69	0.0000	3.79	3.78	100
NE12400	233y24h	3.20	3.12	0.0000	5.04	5.03	100
NE12500	233y24h	3.10	3.30	0.0001	4.77	4.71	366
NE12600	233y24h	3.30	2.95	0.0001	2.60	2.59	100
NE13100	233y24h	3.00	3.16	0.0001	3.60	3.59	100
NE14000	233y24h	2.00	2.87	0.0000	1.31	1.29	100
NF15000	233y24h	3.10	4.16	0.0008	13.16	7.18	35118
NF15010	233y24h	3.00	4.16	0.0005	1.89	1.27	6176
NF15100	233y24h	3.70	4.60	0.0009	7.42	5.39	16307
NF15200	233y24h	3.30	4.16	0.0002	9.68	7.07	7801
NF15210	233y24h	3.20	4.16	0.0004	6.08	5.37	9619
NF15215	233y24h	3.30	4.16	0.0007	7.25	6.24	13417
NF15300	233y24h	3.20	4.16	0.0004	10.67	6.00	14366
NF15315	233y24h	3.30	4.16	0.0001	7.36	6.64	5714
NF15330	233y24h	3.20	4.16	0.0003	7.98	6.32	16884
NF15400	233y24h	3.00	3.62	0.0001	6.44	6.11	1590
NF15500	233y24h	3.40	3.88	0.0001	7.42	7.25	657
NF15600	233y24h	2.20	3.19	0.0003	9.34	4.94	30993
NF15700	233y24h	2.60	3.19	0.0003	4.63	3.89	9489
NF15800	233y24h	2.40	3.01	0.0001	5.01	4.23	5160
NF15900	233y24h	2.20	3.19	0.0002	7.51	5.43	14050
NF16000	233y24h	4.00	2.62	0.0000	1.73	1.73	100
NF16100	233y24h	2.80	3.56	0.0006	5.27	3.57	11388
NF16200	233y24h	2.00	2.68	0.0000	6.30	5.63	11695
NF16300	233y24h	2.20	2.69	0.0000	3.50	3.23	2505
NF16310	233y24h	2.10	2.73	0.0000	2.52	2.25	4698

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF16500	233y24h	2.10	2.85	0.0000	4.68	3.92	8253
NF16510	233y24h	2.10	2.85	0.0000	2.19	1.63	7089
NF16700	233y24h	2.80	2.34	0.0000	0.94	0.94	100
NF16800	233y24h	1.70	2.67	0.0000	6.45	4.49	18366
NF16900	233y24h	1.60	2.67	0.0000	6.23	5.13	16561
NF17000	233y24h	1.80	2.54	0.0000	3.42	2.64	6797
NF17100	233y24h	1.90	2.66	0.0000	3.89	3.13	6201
NF17200	233y24h	2.60	3.21	0.0001	5.71	4.69	8236
NF17210	233y24h	2.20	3.33	0.0001	4.52	2.55	12514
NF17300	233y24h	3.20	2.32	0.0000	0.89	0.89	100
NF17400	233y24h	2.20	3.24	0.0003	6.15	4.81	7919
NF17500	233y24h	2.70	3.60	0.0005	5.20	3.21	11932
NF17600	233y24h	2.20	2.97	0.0001	5.95	4.27	11324
NF17700	233y24h	2.30	2.83	0.0000	6.18	5.82	2646
NF17800	233y24h	2.80	3.28	0.0002	6.14	5.50	2958
NG20000	233y24h	3.30	2.49	0.0000	2.52	2.51	100
NG20100	233y24h	2.90	3.16	0.0001	5.05	5.04	100
NG20200	233y24h	3.40	3.76	0.0002	5.98	5.57	2199
NG20300	233y24h	3.20	3.49	0.0001	5.16	5.13	246
NG20400	233y24h	3.10	3.27	0.0001	4.64	4.59	267
NG20500	233y24h	3.20	2.89	0.0000	3.65	3.65	102
NG20600	233y24h	3.30	3.85	0.0004	4.28	3.52	6043
NG20700	233y24h	2.90	2.89	0.0000	5.97	5.96	100
NG20800	233y24h	3.30	3.59	0.0002	5.65	5.39	1615
NG20810	233y24h	3.10	4.02	0.0007	5.35	3.74	22712
NG20900	233y24h	3.10	2.61	0.0000	5.03	5.03	100
NG21000	233y24h	3.00	3.54	0.0005	6.26	5.33	3806
NG21010	233y24h	3.30	3.76	0.0004	3.68	2.97	1712
NG21100	233y24h	3.10	3.61	0.0001	3.16	3.12	918
NG21110	233y24h	3.20	3.77	0.0001	3.18	3.02	3373
NG21200	233y24h	3.40	2.47	0.0000	1.99	1.99	100
NG21300	233y24h	2.80	4.13	0.0003	12.73	6.85	72849
NG21400	233y24h	3.00	4.02	0.0001	7.51	5.11	33874
NG21415	233y24h	3.40	4.13	0.0002	5.13	4.74	15192
NG21500	233y24h	2.60	3.46	0.0001	5.99	5.09	4095
NG21600	233y24h	2.70	3.60	0.0006	7.34	5.38	13469
NG21700	233y24h	3.00	4.10	0.0004	9.58	5.35	33564
NG21715	233y24h	3.30	4.10	0.0004	3.07	2.07	18392
NG21800	233y24h	3.40	4.11	0.0003	5.53	5.54	10900
NG21810	233y24h	3.20	4.11	0.0004	6.32	5.50	25526
NG21900	233y24h	2.90	3.46	0.0002	3.01	2.56	2296
NG22000	233y24h	3.80	3.18	0.0001	6.63	6.63	100
NG22000P	233y24h	4.28	2.68	0.0000	4.13	1.33	33103
NG22015P	233y24h	3.31	2.95	0.0000	6.83	1.31	44803
NG22025	233y24h	4.20	3.39	0.0001	2.39	2.41	282
NG22040	233y24h	2.90	3.61	0.0001	3.05	2.83	7308
NG22100	233y24h	2.30	3.01	0.0001	4.28	3.85	2201

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG22300	233y24h	3.30	2.64	0.0000	1.42	1.41	100
NG22400	233y24h	2.50	2.90	0.0000	3.75	3.65	1053
NG22500	233y24h	2.60	3.27	0.0003	5.71	4.37	18196
NG22600	233y24h	2.80	2.41	0.0000	1.07	1.07	100
NG22700	233y24h	2.70	3.34	0.0004	4.19	3.10	11001
NG22800	233y24h	2.70	3.14	0.0001	4.62	4.17	2975
NG22900	233y24h	2.90	3.30	0.0004	3.73	3.14	5615
NG23000	233y24h	2.50	3.21	0.0002	3.43	2.84	7381
NG23015	233y24h	2.90	3.29	0.0002	1.23	1.14	1450
NG23100	233y24h	2.60	3.21	0.0004	4.70	3.45	18602
NG23200	233y24h	2.50	2.71	0.0000	2.93	2.93	265
NG23300	233y24h	2.60	2.40	0.0000	3.11	3.11	100
NG23315	233y24h	2.30	2.42	0.0000	1.13	1.12	100
NG23400	233y24h	2.30	2.55	0.0000	1.58	1.57	100
NG23500	233y24h	2.60	2.39	0.0000	1.06	1.06	100
NG23600	233y24h	2.30	2.89	0.0001	2.75	2.20	3883
NG23700	233y24h	2.30	2.86	0.0000	3.69	3.47	4804
NG23800	233y24h	2.30	2.73	0.0000	2.49	2.16	1635
NG23900	233y24h	2.30	2.38	0.0000	1.84	1.83	223
NG24000	233y24h	1.90	2.70	0.0000	3.89	3.21	9087
NG24100	233y24h	1.50	2.23	0.0000	0.34	0.34	475
NG24200	233y24h	2.00	2.26	0.0000	4.63	4.63	845
NG24216	233y24h	2.50	2.26	0.0000	0.10	0.10	100
NG24225	233y24h	2.70	2.28	0.0000	1.70	1.70	100
NG24230	233y24h	2.80	2.30	0.0000	0.88	0.88	100
NG24300	233y24h	3.10	2.72	0.0000	7.49	7.48	248
NG24320	233y24h	3.00	2.75	0.0000	0.74	0.71	115
NG24322	233y24h	2.90	3.49	0.0000	0.80	0.35	4094
NG24330	233y24h	2.30	3.40	0.0001	5.37	3.92	6973
NG24335	233y24h	3.00	3.44	0.0002	2.62	2.45	1037
NG24340	233y24h	2.90	3.41	0.0002	1.83	1.80	1348
NG24341	233y24h	2.80	3.41	0.0001	2.25	1.99	2425
NG24400	233y24h	2.90	2.83	0.0001	2.92	2.92	100
NG24500P	233y24h	2.00	2.33	0.0000	4.83	4.82	711
NG24516P	233y24h	4.20	3.80	0.0000	0.10	0.09	100
NG24527P	233y24h	4.00	2.76	0.0000	0.78	0.78	111
NG24530P	233y24h	1.60	2.34	0.0000	1.11	1.10	155
NG24600P	233y24h	3.30	3.02	0.0001	5.67	5.66	212
NG24615P	233y24h	3.20	3.17	0.0001	2.52	2.51	220
NH30000	233y24h	3.70	2.24	0.0000	2.18	2.18	100
NH30030	233y24h	4.20	2.25	0.0000	0.67	0.67	100
NH30035	233y24h	4.20	2.25	0.0000	0.59	0.59	119
NH30040	233y24h	4.30	2.26	0.0000	0.17	0.17	100
NH30045	233y24h	4.30	2.26	0.0000	0.08	0.08	100
NH30050	233y24h	3.60	2.27	0.0000	1.45	1.45	100
NH30055	233y24h	3.80	2.29	0.0000	0.98	0.98	100
NSP0100	233y24h	3.50	2.53	0.0000	4.09	4.09	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NSP0200	233y24h	3.50	2.88	0.0001	6.16	6.16	153
NSP0215	233y24h	3.70	4.16	0.0005	4.56	3.79	6116
NSP0300	233y24h	3.40	2.66	0.0000	5.14	5.14	103
NSP0400	233y24h	3.60	3.05	0.0001	6.90	6.89	128
NSP0415	233y24h	3.70	4.24	0.0001	4.78	4.72	3352
NSP0500	233y24h	3.90	2.38	0.0000	3.01	3.01	100
NSP0600	233y24h	3.70	2.62	0.0000	3.08	3.08	102
NSP0700	233y24h	3.50	2.78	0.0000	5.84	5.83	192
NSP0715	233y24h	3.90	3.10	0.0000	1.85	1.87	100
NSP0800	233y24h	3.60	2.93	0.0000	6.58	6.55	367
NSP0815	233y24h	3.60	3.79	0.0001	2.76	2.77	343
NSP0900	233y24h	3.50	2.99	0.0000	6.80	6.79	102
NSP0915	233y24h	3.50	3.47	0.0001	3.78	3.80	100
NSP1000	233y24h	3.60	3.31	0.0001	4.88	4.87	163
BDRY	25y24h	5.00	2.23	0.0000	1744.01	0.00	0
NA00100	25y24h	2.70	2.39	0.0000	7.26	7.26	100
NA00106	25y24h	2.20	2.42	0.0000	1.05	1.05	378
NA00110	25y24h	3.30	2.48	0.0000	2.25	2.25	100
NA00200	25y24h	1.90	2.24	0.0000	3.21	3.21	1502
NA00300	25y24h	1.40	2.80	0.0000	44.03	40.49	25061
NA00312	25y24h	2.30	2.98	0.0000	11.14	11.12	2011
NA00314P	25y24h	1.20	3.56	0.0000	12.29	9.53	24403
NA00335	25y24h	1.80	2.80	0.0000	37.72	32.93	19223
NA00360	25y24h	1.70	2.84	0.0001	21.12	20.20	5169
NA00370	25y24h	3.70	3.64	0.0003	9.45	9.42	136
NA00375	25y24h	3.20	4.03	0.0009	8.27	6.24	14499
NA00385	25y24h	3.60	3.99	0.0003	3.57	3.44	3085
NA00510	25y24h	1.50	2.84	0.0000	16.08	11.36	32181
NA00605	25y24h	1.70	2.85	0.0000	15.60	12.90	24317
NA00620	25y24h	1.90	2.85	0.0000	18.51	16.04	21238
NA00700	25y24h	1.90	2.83	0.0000	5.69	5.67	836
NA00710	25y24h	1.70	2.84	0.0000	37.96	37.15	34978
NA00735	25y24h	1.60	2.84	0.0000	12.57	12.96	22150
NA00745	25y24h	3.70	3.50	0.0002	14.20	14.19	100
NA00750	25y24h	3.30	3.91	0.0010	8.67	7.37	13788
NA00765	25y24h	4.30	4.74	0.0002	10.48	10.45	2694
NA00800	25y24h	2.00	2.72	0.0000	46.24	46.19	3949
NA00900	25y24h	2.80	3.51	0.0002	7.92	7.83	3926
NA01000	25y24h	2.10	3.21	0.0001	10.85	10.13	12031
NA01010	25y24h	4.70	5.38	0.0001	11.37	11.32	17408
NA01100	25y24h	2.60	3.31	0.0003	8.87	8.67	6898
NA01200	25y24h	2.60	3.30	0.0006	7.76	5.58	13931
NA01300	25y24h	1.80	2.88	0.0000	8.56	5.72	19516
NA01325	25y24h	1.60	2.89	0.0000	13.63	5.79	45944
NA01600	25y24h	1.00	2.88	0.0000	21.55	19.57	64597
NA01615	25y24h	1.30	2.89	0.0000	14.81	9.98	45576
NA01700	25y24h	1.50	2.88	0.0000	24.49	22.47	29188

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA01710	25y24h	1.40	2.88	0.0000	9.00	8.98	11523
NA01720	25y24h	1.60	2.88	0.0000	9.46	9.67	36815
NA01800	25y24h	2.48	3.25	0.0018	20.92	20.90	4365
NA01816	25y24h	2.40	3.05	0.0003	22.40	22.37	7282
NA01825	25y24h	2.80	3.37	0.0003	7.87	7.74	6448
NA01835	25y24h	1.70	2.88	0.0003	19.92	19.46	20814
NA01850	25y24h	3.60	4.61	0.0003	19.13	19.04	7275
NA01855	25y24h	3.80	4.65	0.0006	19.47	19.26	14649
NA01900	25y24h	2.10	3.02	0.0001	6.80	5.57	10273
NA02000	25y24h	1.80	3.10	0.0000	9.09	5.64	24786
NA02100	25y24h	1.40	3.11	0.0000	13.91	5.12	36153
NA02110	25y24h	1.50	3.11	0.0000	8.41	3.22	26756
NA02120	25y24h	3.30	3.58	0.0001	3.42	3.40	737
NB02200	25y24h	4.10	2.87	0.0000	12.14	12.14	100
NB02215	25y24h	4.30	3.05	0.0000	3.93	3.91	100
NB02235	25y24h	3.90	3.44	0.0001	5.89	5.90	100
NB02245	25y24h	7.60	3.68	0.0001	4.16	4.19	239
NB02260	25y24h	5.60	4.08	0.0001	3.92	3.90	233
NB02270	25y24h	5.50	4.09	0.0001	0.90	0.90	100
NB02310	25y24h	2.30	3.14	0.0003	31.23	31.15	10545
NB02315	25y24h	1.90	3.15	0.0010	31.28	26.89	53949
NB02316P	25y24h	3.50	3.15	0.0003	1.15	24.22	3549
NB02320	25y24h	4.00	3.71	0.0003	3.79	3.76	100
NB02325	25y24h	4.20	4.15	0.0002	1.29	1.26	100
NB02400	25y24h	2.30	2.63	0.0000	41.83	41.75	4101
NB02410	25y24h	2.30	3.25	0.0001	26.98	26.83	5515
NB02412	25y24h	1.60	3.25	0.0001	5.19	4.82	10691
NB02425	25y24h	4.20	4.70	0.0001	9.75	9.74	550
NB02426	25y24h	4.70	5.06	0.0001	2.90	2.88	1602
NB02427	25y24h	4.80	5.19	0.0003	3.98	3.94	2490
NB02430	25y24h	4.50	4.98	0.0001	5.34	5.11	1965
NB02435	25y24h	2.10	3.37	0.0001	18.21	17.10	20117
NB02445	25y24h	3.10	3.85	0.0001	10.28	10.28	685
NB02455	25y24h	4.20	4.37	0.0001	4.87	4.84	322
NB02500	25y24h	4.00	3.61	0.0005	8.94	8.94	100
NB02510	25y24h	4.10	5.15	0.0012	12.45	8.50	18653
NB02517P	25y24h	5.10	5.51	0.0004	1.38	1.26	996
NB02600	25y24h	2.60	2.27	0.0000	2.44	2.44	100
NB02610	25y24h	1.90	2.41	0.0000	10.46	10.45	2514
NB02615	25y24h	3.00	3.05	0.0000	7.11	7.11	231
NB02616	25y24h	3.80	4.16	0.0001	2.02	1.99	1300
NB02617	25y24h	4.40	4.70	0.0001	0.97	0.87	1179
NB02618	25y24h	2.70	3.06	0.0001	2.18	2.12	2699
NB02620	25y24h	3.50	3.84	0.0001	7.09	7.04	1279
NB02622	25y24h	3.20	3.66	0.0001	4.05	3.81	3114
NB02700	25y24h	2.90	3.25	0.0002	10.08	9.93	2260
NB02706	25y24h	2.90	3.17	0.0001	1.52	1.50	898

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02707	25y24h	2.60	3.13	0.0001	3.42	3.37	4200
NB02710	25y24h	2.80	3.65	0.0005	15.85	10.68	19977
NB02800	25y24h	2.70	3.44	0.0010	20.00	19.81	10784
NB02900	25y24h	2.30	2.86	0.0001	9.13	9.13	776
NB02910	25y24h	2.60	3.65	0.0002	26.21	19.37	24839
NB02930	25y24h	2.30	3.65	0.0002	14.31	10.37	22955
NB02965	25y24h	2.30	3.65	0.0002	11.75	10.07	9613
NC002P	25y24h	3.00	2.77	0.0000	2.83	2.82	234
NC003P	25y24h	3.00	2.82	0.0000	0.75	0.77	788
NC03000	25y24h	3.30	3.68	0.0001	8.16	7.88	1545
NC03031P	25y24h	4.60	4.08	0.0001	2.19	2.18	100
NC03040	25y24h	3.30	3.70	0.0001	2.87	3.10	1161
NC03050	25y24h	3.00	3.69	0.0001	1.94	1.90	2030
NC03055	25y24h	3.50	3.80	0.0000	2.61	2.59	1716
NC03100	25y24h	3.30	3.87	0.0001	17.57	17.30	3224
NC03120	25y24h	3.00	3.95	0.0000	13.41	10.03	14641
NC03123P	25y24h	3.10	3.90	0.0001	4.01	3.76	3487
NC03125	25y24h	1.90	3.87	0.0000	21.77	14.09	35443
NC03135	25y24h	2.20	3.86	0.0000	11.23	7.54	12111
NC03137	25y24h	3.20	3.87	0.0000	1.13	1.05	359
NC03160	25y24h	2.30	3.86	0.0000	16.23	14.89	21831
NC03200	25y24h	3.10	4.38	0.0001	23.77	20.58	20580
NC03210	25y24h	3.00	4.38	0.0002	26.07	23.84	25310
NC03220	25y24h	3.30	4.40	0.0002	17.47	15.57	23574
NC03222	25y24h	3.80	4.73	0.0003	2.82	2.30	12141
NC03235	25y24h	3.80	4.42	0.0002	6.05	5.78	8122
NC03240	25y24h	3.50	4.39	0.0002	6.22	5.14	12090
NC03300	25y24h	2.80	4.11	0.0011	33.01	29.49	50127
NC03400	25y24h	3.30	4.04	0.0004	6.14	5.38	4942
NC03415	25y24h	3.50	4.06	0.0003	3.91	3.64	4031
NC03500	25y24h	2.80	4.05	0.0014	16.71	14.04	17126
NC03600	25y24h	3.50	3.07	0.0000	6.03	6.03	100
NC03610	25y24h	3.10	4.10	0.0001	13.61	13.34	10592
NC03615	25y24h	3.50	4.16	0.0002	8.47	8.13	12218
NC03625	25y24h	3.60	4.22	0.0002	2.63	2.14	5904
NC03700	25y24h	3.20	4.10	0.0002	20.89	20.12	21103
NC03715	25y24h	3.60	4.25	0.0001	4.80	4.83	6914
NC03716	25y24h	3.50	4.26	0.0002	5.15	4.90	11047
NC03720	25y24h	3.40	4.22	0.0001	8.15	6.77	20967
NC03723	25y24h	3.50	4.27	0.0001	4.91	4.86	3946
NC03730	25y24h	3.30	4.21	0.0001	8.48	8.35	7762
NC03737	25y24h	3.30	4.18	0.0002	8.10	7.94	7150
NC03800	25y24h	2.60	3.22	0.0001	61.29	61.22	2183
NC03825	25y24h	2.00	3.85	0.0002	44.70	43.32	36293
NC03830	25y24h	2.40	3.85	0.0002	27.02	25.87	27767
NC03833P	25y24h	6.00	3.89	0.0000	4.05	3.14	2067
NC03835P	25y24h	6.00	3.90	0.0000	0.27	0.22	100

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03837P	25y24h	3.80	3.90	0.0000	2.84	2.17	1447
NC03845	25y24h	2.40	3.86	0.0001	25.58	23.37	12161
NC03850	25y24h	2.20	3.86	0.0002	18.78	14.91	16507
NC03855	25y24h	2.30	3.63	0.0000	18.91	18.39	24647
NC03856	25y24h	2.50	3.63	0.0000	19.32	19.05	21731
NC06000	25y24h	2.80	3.34	0.0002	15.70	15.69	1891
NC06010	25y24h	2.70	3.48	0.0007	15.83	15.40	11554
NC06020	25y24h	2.80	3.82	0.0004	12.60	12.35	5269
NC06400	25y24h	4.80	5.17	0.0001	2.99	2.74	1863
ND03900	25y24h	2.30	3.40	0.0003	26.92	22.98	24434
ND04000	25y24h	2.90	2.98	0.0001	32.34	32.34	146
ND04010	25y24h	2.80	3.16	0.0001	4.54	4.51	139
ND04012P	25y24h	3.00	4.60	0.0004	1.72	3.07	490
ND04014P	25y24h	4.38	4.65	0.0008	2.84	1.57	495
ND04015	25y24h	2.90	3.34	0.0001	20.47	20.33	625
ND04016P	25y24h	3.00	4.71	0.0001	1.23	1.16	1665
ND04030	25y24h	3.00	3.87	0.0009	15.39	11.76	23589
ND04100	25y24h	2.50	3.61	0.0002	10.37	9.94	21593
ND04200	25y24h	2.50	3.62	0.0004	9.82	7.04	24339
ND04300	25y24h	2.30	2.99	0.0001	11.48	11.39	6421
ND04315	25y24h	3.40	3.81	0.0001	4.08	4.02	987
ND04316P	25y24h	3.00	4.74	0.0001	2.09	3.37	1639
ND04318P	25y24h	3.00	4.75	0.0017	3.37	0.85	1204
ND04400	25y24h	2.10	2.97	0.0000	13.93	13.61	11136
ND04500	25y24h	2.90	3.10	0.0001	33.26	33.26	907
ND04511	25y24h	2.90	3.15	0.0001	4.62	4.54	489
ND04512	25y24h	2.50	2.98	0.0000	5.30	5.21	2780
ND04513	25y24h	2.40	2.98	0.0000	4.85	4.70	1866
ND04515	25y24h	3.40	4.28	0.0002	31.67	31.68	4381
ND04530	25y24h	3.00	4.28	0.0005	15.44	12.55	23138
ND04542	25y24h	2.90	4.29	0.0010	12.40	9.22	21864
ND04550	25y24h	3.00	4.29	0.0004	39.84	24.45	50498
ND04555	25y24h	2.90	4.29	0.0005	25.90	23.09	20905
ND04565	25y24h	2.80	4.29	0.0010	23.66	19.18	33425
ND04571P	25y24h	4.80	4.85	0.0000	6.27	5.67	4794
ND04600	25y24h	2.50	2.47	0.0000	7.73	7.71	675
ND04700	25y24h	3.20	3.49	0.0001	4.73	4.72	550
ND04715	25y24h	3.20	4.27	0.0001	9.85	9.86	28840
ND04800	25y24h	3.00	3.23	0.0004	7.45	7.45	219
ND04815	25y24h	3.40	4.26	0.0009	7.67	6.56	8734
ND04900	25y24h	3.40	2.93	0.0001	32.96	32.96	219
ND04913	25y24h	3.90	3.93	0.0001	0.95	0.89	210
ND04915	25y24h	4.20	3.51	0.0001	30.56	30.56	114
ND04925	25y24h	3.20	4.05	0.0002	17.59	16.66	14175
ND04930	25y24h	3.60	4.09	0.0003	19.23	19.11	1479
ND04935	25y24h	3.20	4.26	0.0013	22.17	22.21	29766
ND04947	25y24h	3.70	4.28	0.0006	8.88	8.69	4079

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04949P	25y24h	4.93	5.25	0.0000	14.73	12.73	36106
ND04951	25y24h	2.90	4.09	0.0012	7.96	7.19	11839
ND04960	25y24h	3.50	4.06	0.0002	4.67	3.50	5861
ND04961	25y24h	3.60	4.07	0.0002	2.01	1.91	1693
ND05000	25y24h	2.50	2.72	0.0001	10.47	10.42	782
ND05100	25y24h	1.90	2.86	0.0000	9.07	8.53	8304
ND05200	25y24h	2.60	2.64	0.0000	6.73	6.72	356
ND05300	25y24h	2.70	2.78	0.0001	29.58	29.58	349
ND05310	25y24h	2.60	3.22	0.0001	26.17	26.13	2601
ND05315	25y24h	3.30	3.50	0.0001	17.80	17.85	601
ND05316	25y24h	3.20	3.75	0.0002	7.34	7.34	2678
ND05335	25y24h	12.20	3.50	0.0001	3.28	3.22	100
ND05337	25y24h	13.65	3.51	0.0001	0.75	0.73	100
ND05339	25y24h	2.10	3.41	0.0001	7.08	6.85	6006
ND05345	25y24h	5.90	3.62	0.0001	11.10	11.11	100
ND05355	25y24h	5.20	3.72	0.0002	10.71	10.77	100
ND05360	25y24h	2.40	4.05	0.0003	10.09	10.37	2432
ND05365	25y24h	3.00	4.06	0.0007	16.43	13.06	33514
ND05375	25y24h	3.50	4.06	0.0006	1.70	1.64	1069
ND05405	25y24h	5.80	4.51	0.0000	0.19	0.19	100
ND05500	25y24h	3.00	5.17	0.0001	23.02	7.05	113171
ND05600	25y24h	4.40	5.17	0.0005	5.39	3.30	4296
ND05700	25y24h	3.90	4.82	0.0007	5.36	3.30	6283
ND05800	25y24h	3.00	3.34	0.0001	3.87	3.84	248
ND05900	25y24h	3.80	3.63	0.0007	2.30	2.30	100
ND05910	25y24h	3.00	3.79	0.0007	3.87	3.30	4691
ND06105P	25y24h	5.20	5.05	0.0011	2.60	2.58	146
ND06110P	25y24h	5.30	5.13	0.0005	1.77	1.65	185
ND06115P	25y24h	5.30	5.16	0.0006	1.15	0.67	100
ND06210P	25y24h	5.50	5.33	0.0017	3.76	2.16	118
ND06215P	25y24h	4.90	5.41	0.0011	2.16	1.16	398
ND06300P	25y24h	2.70	4.29	0.0001	10.91	6.58	29603
NE020P	25y24h	3.98	4.26	0.0000	48.28	36.96	73877
NE08000	25y24h	3.30	4.23	0.0013	17.75	12.08	25805
NE08100	25y24h	3.10	4.26	0.0012	27.07	13.61	32753
NE08200	25y24h	2.60	4.26	0.0010	48.73	36.01	83691
NE08300	25y24h	3.20	4.34	0.0018	28.29	25.13	22361
NE08400	25y24h	3.30	4.34	0.0006	27.55	26.54	20312
NE08500	25y24h	3.10	4.30	0.0008	16.37	8.97	27274
NE08600	25y24h	3.40	4.30	0.0001	15.01	14.22	13043
NE08615	25y24h	2.70	4.55	0.0002	14.48	7.20	44455
NE08625	25y24h	3.10	4.35	0.0004	17.56	16.49	24652
NE08700	25y24h	3.00	4.29	0.0001	11.29	10.88	15714
NE08716	25y24h	4.20	4.86	0.0001	2.27	2.09	1035
NE08717	25y24h	4.50	4.94	0.0001	1.26	1.18	1067
NE08720	25y24h	3.50	4.30	0.0002	5.91	5.84	5398
NE08735	25y24h	3.70	4.51	0.0002	4.02	3.40	4740

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE08745	25y24h	3.50	4.37	0.0004	4.05	3.96	4010
NE08800	25y24h	3.90	4.23	0.0006	10.67	10.18	3978
NE08900	25y24h	3.50	3.95	0.0004	10.06	9.39	3025
NE09000	25y24h	4.00	4.61	0.0006	4.72	3.63	5179
NE09100	25y24h	3.10	2.83	0.0001	32.55	32.55	196
NE09110	25y24h	3.80	3.31	0.0001	22.26	22.27	267
NE09125	25y24h	4.80	4.64	0.0000	24.00	18.83	27240
NE09200	25y24h	4.40	2.34	0.0001	21.20	21.20	282
NE09210	25y24h	3.80	2.46	0.0001	21.06	21.06	269
NE09220	25y24h	4.70	4.34	0.0000	57.16	39.67	89066
NE09300	25y24h	3.00	4.30	0.0013	10.21	8.36	17035
NE09400	25y24h	2.90	4.30	0.0002	21.14	14.33	61447
NE09415	25y24h	3.10	4.41	0.0001	10.39	9.78	19177
NE09500	25y24h	2.80	4.30	0.0010	23.27	14.97	38968
NE09600	25y24h	2.80	4.22	0.0014	27.26	25.13	48209
NE09700	25y24h	3.00	3.95	0.0006	11.28	9.76	22711
NE09800	25y24h	3.10	3.73	0.0005	7.66	6.81	4599
NE09900	25y24h	3.20	4.10	0.0010	16.56	16.21	12518
NE10000	25y24h	3.10	3.91	0.0015	15.03	12.90	16691
NE10100	25y24h	2.70	3.64	0.0007	4.49	3.41	4816
NE10200	25y24h	3.00	3.97	0.0015	11.27	10.03	25941
NE10300	25y24h	3.10	4.07	0.0015	12.36	8.20	16118
NE10400	25y24h	3.10	4.07	0.0009	14.75	11.66	28486
NE10500	25y24h	3.30	3.48	0.0001	8.37	8.28	636
NE10600	25y24h	3.40	4.02	0.0007	8.59	7.57	9216
NE10700	25y24h	2.80	3.88	0.0007	5.53	3.68	10108
NE10800	25y24h	3.20	4.07	0.0013	9.84	6.73	15991
NE10900	25y24h	3.20	3.92	0.0009	11.07	9.63	8926
NE11000	25y24h	2.80	4.17	0.0006	14.32	9.75	38500
NE11100	25y24h	3.00	3.82	0.0010	8.48	6.34	8849
NE11200	25y24h	2.80	3.93	0.0006	10.55	7.45	21845
NE11300	25y24h	2.90	3.92	0.0009	6.33	4.18	9263
NE11400	25y24h	2.80	4.03	0.0010	8.63	6.26	10256
NE11500	25y24h	3.40	4.49	0.0019	12.18	9.83	24996
NE11600	25y24h	3.40	4.49	0.0007	15.35	11.33	31166
NE11700	25y24h	3.30	4.56	0.0007	11.06	9.72	18036
NE11800	25y24h	3.30	4.54	0.0010	7.82	4.38	14765
NE11900	25y24h	3.30	4.49	0.0016	16.14	7.93	28661
NE12000	25y24h	3.30	4.30	0.0010	7.22	4.17	12037
NE12100	25y24h	3.20	3.96	0.0009	12.21	9.83	10318
NE12200	25y24h	3.20	4.27	0.0014	12.16	9.22	17637
NE12300	25y24h	3.20	3.90	0.0005	8.62	7.21	6986
NE12400	25y24h	3.20	4.20	0.0016	11.97	7.47	20271
NE12500	25y24h	3.10	4.22	0.0014	11.74	7.29	25515
NE12600	25y24h	3.30	4.16	0.0008	5.91	4.32	6578
NE13100	25y24h	3.00	4.29	0.0010	8.07	6.77	14730
NE14000	25y24h	2.00	4.29	0.0006	3.06	2.30	4652

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF15000	25y24h	3.10	4.53	0.0006	24.34	15.64	64089
NF15010	25y24h	3.00	4.53	0.0004	4.70	4.77	8249
NF15100	25y24h	3.70	4.75	0.0007	15.86	15.08	24028
NF15200	25y24h	3.30	4.53	0.0002	16.25	13.78	17169
NF15210	25y24h	3.20	4.53	0.0004	10.58	9.17	13063
NF15215	25y24h	3.30	4.53	0.0006	19.61	13.16	31490
NF15300	25y24h	3.20	4.53	0.0003	37.95	37.66	27649
NF15315	25y24h	3.30	4.53	0.0001	10.08	8.21	8388
NF15330	25y24h	3.20	4.53	0.0001	16.16	15.38	30995
NF15400	25y24h	3.00	4.37	0.0015	36.61	36.39	30685
NF15500	25y24h	3.40	4.49	0.0018	15.88	12.45	25779
NF15600	25y24h	2.20	3.63	0.0002	42.03	39.85	83290
NF15700	25y24h	2.60	3.63	0.0004	10.61	6.78	28703
NF15800	25y24h	2.40	3.63	0.0006	11.41	5.67	25024
NF15900	25y24h	2.20	3.62	0.0002	20.04	18.32	37031
NF16000	25y24h	4.00	4.10	0.0001	3.90	3.77	656
NF16100	25y24h	2.80	3.95	0.0007	11.96	8.64	29051
NF16200	25y24h	2.00	3.25	0.0000	25.79	19.40	39705
NF16300	25y24h	2.20	3.25	0.0000	12.99	11.52	13392
NF16310	25y24h	2.10	3.25	0.0000	10.53	9.67	16261
NF16500	25y24h	2.10	3.25	0.0001	7.97	7.24	16527
NF16510	25y24h	2.10	3.25	0.0001	6.11	5.46	13740
NF16700	25y24h	2.80	2.79	0.0000	2.13	2.12	100
NF16800	25y24h	1.70	3.25	0.0000	21.54	20.25	44830
NF16900	25y24h	1.60	3.25	0.0000	16.85	16.03	35504
NF17000	25y24h	1.80	3.24	0.0000	30.32	30.08	34558
NF17100	25y24h	1.90	3.25	0.0000	16.35	16.26	15152
NF17200	25y24h	2.60	3.57	0.0001	12.50	9.96	17237
NF17210	25y24h	2.20	3.58	0.0001	10.00	7.85	17696
NF17300	25y24h	3.20	2.70	0.0000	2.05	2.05	100
NF17400	25y24h	2.20	3.89	0.0008	19.70	13.70	37415
NF17500	25y24h	2.70	3.89	0.0004	11.84	10.03	23176
NF17600	25y24h	2.20	3.65	0.0001	17.53	8.71	39554
NF17700	25y24h	2.30	3.65	0.0004	16.12	12.48	28697
NF17800	25y24h	2.80	3.86	0.0010	13.97	10.80	21331
NG20000	25y24h	3.30	3.55	0.0001	5.68	5.64	210
NG20100	25y24h	2.90	4.26	0.0015	11.38	7.44	15388
NG20200	25y24h	3.40	4.45	0.0016	13.70	10.15	22559
NG20300	25y24h	3.20	4.44	0.0017	13.97	8.14	20303
NG20400	25y24h	3.10	4.28	0.0014	10.30	6.56	22609
NG20500	25y24h	3.20	4.28	0.0017	17.39	11.00	31307
NG20600	25y24h	3.30	4.28	0.0008	9.65	7.40	23624
NG20700	25y24h	2.90	3.85	0.0014	13.55	9.34	20358
NG20800	25y24h	3.30	4.26	0.0003	9.69	7.37	21234
NG20810	25y24h	3.10	4.28	0.0006	12.98	10.01	47090
NG20900	25y24h	3.10	3.82	0.0005	11.46	10.31	5473
NG21000	25y24h	3.00	4.21	0.0011	10.76	6.55	15600

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG21010	25y24h	3.30	4.22	0.0007	7.64	7.64	7911
NG21100	25y24h	3.10	4.21	0.0002	10.34	9.86	9140
NG21110	25y24h	3.20	4.22	0.0004	12.83	12.58	19333
NG21200	25y24h	3.40	3.97	0.0008	6.74	6.10	6194
NG21300	25y24h	2.80	4.28	0.0001	31.80	25.08	95366
NG21400	25y24h	3.00	4.28	0.0001	26.82	23.19	54651
NG21415	25y24h	3.40	4.28	0.0002	12.33	9.62	26422
NG21500	25y24h	2.60	4.28	0.0011	21.51	12.93	34310
NG21600	25y24h	2.70	4.29	0.0012	22.03	12.16	52057
NG21700	25y24h	3.00	4.28	0.0002	19.68	14.49	48156
NG21715	25y24h	3.30	4.28	0.0003	9.67	6.91	25831
NG21800	25y24h	3.40	4.28	0.0002	14.06	13.62	16961
NG21810	25y24h	3.20	4.28	0.0003	17.00	12.71	44687
NG21900	25y24h	2.90	4.00	0.0003	23.82	23.72	17261
NG22000	25y24h	3.80	4.41	0.0004	12.85	11.45	20882
NG22000P	25y24h	4.28	3.21	0.0000	9.64	1.96	34804
NG22015P	25y24h	3.31	3.49	0.0000	19.60	8.74	96068
NG22025	25y24h	4.20	4.41	0.0003	2.39	2.38	1349
NG22040	25y24h	2.90	3.82	0.0001	11.21	11.05	15037
NG22100	25y24h	2.30	3.72	0.0006	33.14	32.29	30999
NG22300	25y24h	3.30	3.64	0.0002	3.00	2.62	1839
NG22400	25y24h	2.50	3.69	0.0006	37.33	37.19	32254
NG22500	25y24h	2.60	3.72	0.0002	25.27	24.41	36460
NG22600	25y24h	2.80	3.72	0.0006	5.00	3.44	6816
NG22700	25y24h	2.70	3.72	0.0004	9.73	6.40	25812
NG22800	25y24h	2.70	3.72	0.0009	11.94	6.75	33955
NG22900	25y24h	2.90	3.72	0.0006	8.50	7.00	20083
NG23000	25y24h	2.50	3.61	0.0002	27.36	27.04	27847
NG23015	25y24h	2.90	3.62	0.0002	9.98	9.69	8892
NG23100	25y24h	2.60	3.39	0.0003	23.35	23.17	35402
NG23200	25y24h	2.50	3.27	0.0001	11.21	10.70	17681
NG23300	25y24h	2.60	3.16	0.0002	11.12	11.04	9274
NG23315	25y24h	2.30	3.21	0.0002	2.49	2.24	1537
NG23400	25y24h	2.30	3.21	0.0004	4.53	2.96	5597
NG23500	25y24h	2.60	3.21	0.0005	4.65	3.68	4147
NG23600	25y24h	2.30	3.21	0.0001	6.51	5.01	10537
NG23700	25y24h	2.30	3.21	0.0000	8.32	5.86	13392
NG23800	25y24h	2.30	3.21	0.0003	5.08	4.88	5604
NG23900	25y24h	2.30	2.89	0.0001	5.07	5.01	2447
NG24000	25y24h	1.90	2.87	0.0000	9.32	8.32	14458
NG24100	25y24h	1.50	2.35	0.0000	2.98	2.97	644
NG24200	25y24h	2.00	2.47	0.0000	15.92	15.91	1793
NG24216	25y24h	2.50	2.48	0.0000	0.21	0.19	100
NG24225	25y24h	2.70	2.81	0.0001	6.71	6.71	100
NG24230	25y24h	2.80	3.06	0.0001	5.31	5.31	171
NG24300	25y24h	3.10	3.35	0.0001	11.76	11.28	3075
NG24320	25y24h	3.00	3.45	0.0001	1.30	1.23	642

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG24322	25y24h	2.90	3.74	0.0000	1.85	1.23	7508
NG24330	25y24h	2.30	3.62	0.0001	6.83	5.89	12307
NG24335	25y24h	3.00	3.84	0.0001	5.70	5.31	2134
NG24340	25y24h	2.90	3.62	0.0002	4.89	4.59	4269
NG24341	25y24h	2.80	3.62	0.0001	6.48	6.20	4341
NG24400	25y24h	2.90	3.73	0.0009	13.94	13.47	13247
NG24500P	25y24h	2.00	3.10	0.0000	14.38	13.97	2272
NG24516P	25y24h	4.20	4.11	0.0000	0.29	0.28	100
NG24527P	25y24h	4.00	3.71	0.0001	2.38	2.37	169
NG24530P	25y24h	1.60	3.13	0.0000	3.25	3.17	174
NG24600P	25y24h	3.30	3.86	0.0003	8.97	8.14	4303
NG24615P	25y24h	3.20	3.98	0.0006	5.87	4.68	12777
NH30000	25y24h	3.70	2.36	0.0000	6.80	6.80	100
NH30030	25y24h	4.20	2.38	0.0000	1.38	1.37	100
NH30035	25y24h	4.20	2.39	0.0000	1.19	1.18	119
NH30040	25y24h	4.30	2.39	0.0000	0.35	0.34	100
NH30045	25y24h	4.30	2.39	0.0000	0.16	0.15	100
NH30050	25y24h	3.60	2.81	0.0000	5.66	5.66	100
NH30055	25y24h	3.80	3.27	0.0001	4.98	4.98	129
NSP0100	25y24h	3.50	4.42	0.0024	18.18	12.13	16315
NSP0200	25y24h	3.50	3.73	0.0001	9.49	9.38	764
NSP0215	25y24h	3.70	4.43	0.0006	12.46	11.29	22017
NSP0300	25y24h	3.40	4.31	0.0020	14.39	11.86	14423
NSP0400	25y24h	3.60	4.03	0.0001	10.48	10.22	1265
NSP0415	25y24h	3.70	4.43	0.0001	10.68	10.38	11380
NSP0500	25y24h	3.90	2.99	0.0001	6.70	6.69	100
NSP0600	25y24h	3.70	4.02	0.0002	6.92	6.62	1360
NSP0700	25y24h	3.50	4.07	0.0001	12.12	10.64	6815
NSP0715	25y24h	3.90	4.60	0.0006	4.19	4.37	16411
NSP0800	25y24h	3.60	3.94	0.0001	11.28	10.24	5591
NSP0815	25y24h	3.60	4.58	0.0009	6.52	5.35	28135
NSP0900	25y24h	3.50	4.12	0.0002	12.48	10.74	8411
NSP0915	25y24h	3.50	4.13	0.0004	8.53	8.82	12416
NSP1000	25y24h	3.60	4.49	0.0013	11.36	7.63	23056
BDRY	50y24h	5.00	2.23	0.0000	1970.73	0.00	0
NA00100	50y24h	2.70	2.43	0.0000	7.94	7.94	100
NA00106	50y24h	2.20	2.45	0.0000	1.17	1.17	422
NA00110	50y24h	3.30	2.54	0.0000	2.51	2.51	100
NA00200	50y24h	1.90	2.24	0.0000	3.75	3.74	1517
NA00300	50y24h	1.40	2.85	0.0000	47.17	42.53	26619
NA00312	50y24h	2.30	3.01	0.0000	12.61	12.56	2213
NA00314P	50y24h	1.20	3.58	0.0000	13.73	11.42	25617
NA00335	50y24h	1.80	2.86	0.0000	38.76	33.21	24559
NA00360	50y24h	1.70	2.88	0.0000	21.26	20.24	6016
NA00370	50y24h	3.70	3.70	0.0004	9.56	9.53	138
NA00375	50y24h	3.20	4.12	0.0011	9.21	6.56	17017
NA00385	50y24h	3.60	4.00	0.0003	3.97	3.92	3207

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NA00510	50y24h	1.50	2.88	0.0000	17.16	11.57	34172
NA00605	50y24h	1.70	2.88	0.0000	18.34	15.25	26488
NA00620	50y24h	1.90	2.88	0.0000	20.85	17.56	22628
NA00700	50y24h	1.90	2.87	0.0000	5.86	5.82	882
NA00710	50y24h	1.70	2.87	0.0000	40.43	39.13	38323
NA00735	50y24h	1.60	2.87	0.0000	15.58	15.89	24158
NA00745	50y24h	3.70	3.56	0.0002	14.62	14.61	100
NA00750	50y24h	3.30	3.93	0.0010	9.67	8.86	14750
NA00765	50y24h	4.30	4.76	0.0002	11.71	11.68	2938
NA00800	50y24h	2.00	2.76	0.0000	49.98	49.94	4552
NA00900	50y24h	2.80	3.53	0.0002	8.99	8.90	4147
NA01000	50y24h	2.10	3.24	0.0001	12.55	12.07	12770
NA01010	50y24h	4.70	5.38	0.0001	12.68	12.63	17684
NA01100	50y24h	2.60	3.33	0.0003	9.96	9.80	7330
NA01200	50y24h	2.60	3.37	0.0008	8.66	5.77	17568
NA01300	50y24h	1.80	2.93	0.0000	9.33	5.91	21202
NA01325	50y24h	1.60	2.93	0.0000	15.30	7.16	47832
NA01600	50y24h	1.00	2.93	0.0000	26.36	25.00	66708
NA01615	50y24h	1.30	2.93	0.0000	16.37	13.35	47258
NA01700	50y24h	1.50	2.92	0.0000	27.53	27.07	29961
NA01710	50y24h	1.40	2.92	0.0000	12.29	12.27	11873
NA01720	50y24h	1.60	2.93	0.0000	12.51	12.78	37568
NA01800	50y24h	2.48	3.26	0.0018	22.73	22.71	4585
NA01816	50y24h	2.40	3.07	0.0002	25.30	25.27	7647
NA01825	50y24h	2.80	3.39	0.0002	9.06	8.94	7157
NA01835	50y24h	1.70	2.93	0.0002	22.98	21.54	23496
NA01850	50y24h	3.60	4.63	0.0002	21.13	21.05	7545
NA01855	50y24h	3.80	4.67	0.0006	21.68	21.46	15121
NA01900	50y24h	2.10	3.05	0.0001	7.70	6.75	10793
NA02000	50y24h	1.80	3.17	0.0000	10.44	8.01	26883
NA02100	50y24h	1.40	3.17	0.0000	15.58	6.27	37805
NA02110	50y24h	1.50	3.17	0.0000	9.79	4.97	29296
NA02120	50y24h	3.30	3.59	0.0001	3.81	3.80	808
NB02200	50y24h	4.10	3.02	0.0000	13.47	13.46	100
NB02215	50y24h	4.30	3.25	0.0000	4.38	4.35	100
NB02235	50y24h	3.90	3.72	0.0001	6.53	6.55	100
NB02245	50y24h	7.60	4.02	0.0001	4.63	4.66	239
NB02260	50y24h	5.60	4.54	0.0001	4.36	4.33	233
NB02270	50y24h	5.50	4.55	0.0001	1.00	1.00	100
NB02310	50y24h	2.30	3.16	0.0003	36.61	36.52	11084
NB02315	50y24h	1.90	3.18	0.0010	36.04	31.47	57526
NB02316P	50y24h	3.50	3.18	0.0003	1.29	24.22	3576
NB02320	50y24h	4.00	3.88	0.0003	4.21	4.19	100
NB02325	50y24h	4.20	4.43	0.0002	1.43	1.40	100
NB02400	50y24h	2.30	2.69	0.0000	47.86	47.74	5257
NB02410	50y24h	2.30	3.28	0.0001	29.08	28.93	5690
NB02412	50y24h	1.60	3.28	0.0001	5.82	5.45	11323

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NB02425	50y24h	4.20	4.72	0.0001	10.68	10.68	695
NB02426	50y24h	4.70	5.07	0.0002	3.22	3.20	1698
NB02427	50y24h	4.80	5.20	0.0003	4.43	4.40	2629
NB02430	50y24h	4.50	5.06	0.0001	5.95	5.58	3029
NB02435	50y24h	2.10	3.38	0.0001	20.29	19.59	20779
NB02445	50y24h	3.10	3.88	0.0002	11.41	11.41	718
NB02455	50y24h	4.20	4.50	0.0002	5.42	5.33	687
NB02500	50y24h	4.00	3.67	0.0006	9.14	9.14	100
NB02510	50y24h	4.10	5.27	0.0015	13.78	8.69	23619
NB02517P	50y24h	5.10	5.53	0.0004	1.54	1.47	1074
NB02600	50y24h	2.60	2.27	0.0000	2.48	2.48	100
NB02610	50y24h	1.90	2.42	0.0000	11.18	11.18	2575
NB02615	50y24h	3.00	3.07	0.0000	7.20	7.19	273
NB02616	50y24h	3.80	4.18	0.0001	2.33	2.30	1363
NB02617	50y24h	4.40	4.72	0.0001	1.08	1.01	1269
NB02618	50y24h	2.70	3.07	0.0001	2.43	2.37	2853
NB02620	50y24h	3.50	3.89	0.0001	8.13	8.09	1551
NB02622	50y24h	3.20	3.69	0.0001	5.35	4.96	3416
NB02700	50y24h	2.90	3.32	0.0002	12.61	12.55	2657
NB02706	50y24h	2.90	3.25	0.0001	2.93	2.89	1058
NB02707	50y24h	2.60	3.17	0.0001	5.82	5.68	5140
NB02710	50y24h	2.80	3.68	0.0005	16.28	13.98	20558
NB02800	50y24h	2.70	3.48	0.0010	27.68	27.43	11748
NB02900	50y24h	2.30	2.90	0.0001	9.96	9.95	933
NB02910	50y24h	2.60	3.68	0.0002	28.91	21.35	25586
NB02930	50y24h	2.30	3.68	0.0002	16.32	11.27	23605
NB02965	50y24h	2.30	3.68	0.0002	12.81	10.64	9845
NC002P	50y24h	3.00	2.88	0.0000	3.12	3.09	243
NC003P	50y24h	3.00	2.94	0.0000	0.83	0.86	829
NC03000	50y24h	3.30	3.72	0.0001	8.30	7.99	1757
NC03031P	50y24h	4.60	4.21	0.0001	2.44	2.43	100
NC03040	50y24h	3.30	3.73	0.0001	2.90	3.12	1309
NC03050	50y24h	3.00	3.72	0.0001	2.93	2.89	2289
NC03055	50y24h	3.50	3.82	0.0000	2.91	2.88	1823
NC03100	50y24h	3.30	4.03	0.0001	19.47	18.16	7946
NC03120	50y24h	3.00	4.07	0.0000	14.41	10.03	20647
NC03123P	50y24h	3.10	3.93	0.0001	4.79	4.76	3642
NC03125	50y24h	1.90	3.92	0.0000	25.12	17.51	36804
NC03135	50y24h	2.20	3.92	0.0000	12.25	8.00	12457
NC03137	50y24h	3.20	3.92	0.0000	1.25	1.16	403
NC03160	50y24h	2.30	3.92	0.0000	20.10	18.81	23643
NC03200	50y24h	3.10	4.40	0.0001	24.62	22.68	21196
NC03210	50y24h	3.00	4.40	0.0002	28.13	26.40	25856
NC03220	50y24h	3.30	4.42	0.0001	19.35	17.45	25273
NC03222	50y24h	3.80	4.74	0.0003	3.25	2.80	12580
NC03235	50y24h	3.80	4.44	0.0001	6.74	6.40	8651
NC03240	50y24h	3.50	4.41	0.0001	6.92	5.84	12518

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NC03300	50y24h	2.80	4.14	0.0010	37.96	34.37	52523
NC03400	50y24h	3.30	4.12	0.0004	6.85	5.68	6050
NC03415	50y24h	3.50	4.12	0.0003	4.35	3.95	5829
NC03500	50y24h	2.80	4.10	0.0015	20.74	17.99	19540
NC03600	50y24h	3.50	3.12	0.0001	6.21	6.21	100
NC03610	50y24h	3.10	4.11	0.0001	15.21	14.99	11161
NC03615	50y24h	3.50	4.18	0.0001	9.58	9.24	12902
NC03625	50y24h	3.60	4.24	0.0002	2.92	2.43	6252
NC03700	50y24h	3.20	4.11	0.0002	22.52	22.04	21622
NC03715	50y24h	3.60	4.27	0.0001	4.79	4.81	7507
NC03716	50y24h	3.50	4.27	0.0002	5.73	5.35	11454
NC03720	50y24h	3.40	4.24	0.0001	8.96	7.44	21499
NC03723	50y24h	3.50	4.29	0.0001	5.86	5.80	4138
NC03730	50y24h	3.30	4.23	0.0001	9.38	9.25	8080
NC03737	50y24h	3.30	4.21	0.0002	9.45	9.25	7616
NC03800	50y24h	2.60	3.53	0.0001	70.57	69.99	5592
NC03825	50y24h	2.00	3.90	0.0002	51.96	50.31	38054
NC03830	50y24h	2.40	3.90	0.0002	32.40	31.25	29030
NC03833P	50y24h	6.00	3.96	0.0000	4.46	3.61	2067
NC03835P	50y24h	6.00	3.96	0.0000	0.30	0.24	100
NC03837P	50y24h	3.80	3.97	0.0000	3.17	2.38	1447
NC03845	50y24h	2.40	3.91	0.0001	28.09	27.30	12791
NC03850	50y24h	2.20	3.92	0.0001	20.74	17.42	17651
NC03855	50y24h	2.30	3.67	0.0000	22.45	21.83	26133
NC03856	50y24h	2.50	3.67	0.0000	23.65	23.34	23225
NC06000	50y24h	2.80	3.37	0.0002	18.32	18.31	2047
NC06010	50y24h	2.70	3.50	0.0007	18.37	18.10	11773
NC06020	50y24h	2.80	3.85	0.0004	14.59	14.42	5756
NC06400	50y24h	4.80	5.24	0.0001	3.33	2.96	2423
ND03900	50y24h	2.30	3.62	0.0007	32.30	25.08	38779
ND04000	50y24h	2.90	3.22	0.0001	37.17	37.16	570
ND04010	50y24h	2.80	3.46	0.0001	5.30	5.11	771
ND04012P	50y24h	3.00	4.61	0.0004	1.87	3.07	497
ND04014P	50y24h	4.38	4.66	0.0008	2.84	1.74	498
ND04015	50y24h	2.90	3.63	0.0002	22.11	21.14	4403
ND04016P	50y24h	3.00	4.74	0.0001	1.37	1.29	1689
ND04030	50y24h	3.00	3.93	0.0009	17.12	13.05	26264
ND04100	50y24h	2.50	3.64	0.0002	12.92	12.34	22356
ND04200	50y24h	2.50	3.64	0.0004	11.22	8.65	25317
ND04300	50y24h	2.30	3.00	0.0001	12.63	12.48	6766
ND04315	50y24h	3.40	3.84	0.0001	4.64	4.64	1112
ND04316P	50y24h	3.00	4.74	0.0001	2.28	3.37	1642
ND04318P	50y24h	3.00	4.76	0.0017	3.37	0.95	1212
ND04400	50y24h	2.10	3.00	0.0000	16.19	15.88	11718
ND04500	50y24h	2.90	3.12	0.0001	34.00	34.00	982
ND04511	50y24h	2.90	3.18	0.0001	5.15	5.08	646
ND04512	50y24h	2.50	3.00	0.0000	6.32	6.21	2897

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND04513	50y24h	2.40	3.00	0.0000	5.46	5.31	1991
ND04515	50y24h	3.40	4.34	0.0002	32.27	32.24	4917
ND04530	50y24h	3.00	4.34	0.0005	16.30	14.96	24436
ND04542	50y24h	2.90	4.35	0.0010	14.40	11.42	24579
ND04550	50y24h	3.00	4.35	0.0004	43.00	26.54	54914
ND04555	50y24h	2.90	4.35	0.0004	27.97	24.38	22180
ND04565	50y24h	2.80	4.35	0.0009	25.72	19.97	36888
ND04571P	50y24h	4.80	4.92	0.0000	6.96	5.99	4894
ND04600	50y24h	2.50	2.54	0.0000	8.71	8.66	1111
ND04700	50y24h	3.20	3.51	0.0001	5.17	5.17	596
ND04715	50y24h	3.20	4.34	0.0001	12.33	11.85	33980
ND04800	50y24h	3.00	3.26	0.0004	7.67	7.67	258
ND04815	50y24h	3.40	4.33	0.0010	8.08	6.66	10573
ND04900	50y24h	3.40	2.97	0.0001	33.75	33.75	221
ND04913	50y24h	3.90	4.05	0.0001	1.07	0.94	618
ND04915	50y24h	4.20	3.56	0.0001	31.19	31.20	114
ND04925	50y24h	3.20	4.11	0.0002	21.69	21.54	15910
ND04930	50y24h	3.60	4.17	0.0003	21.72	21.75	2195
ND04935	50y24h	3.20	4.33	0.0013	26.67	26.51	34563
ND04947	50y24h	3.70	4.35	0.0007	10.00	9.67	5258
ND04949P	50y24h	4.93	5.27	0.0000	16.25	14.31	36602
ND04951	50y24h	2.90	4.12	0.0012	10.06	9.65	12780
ND04960	50y24h	3.50	4.11	0.0002	5.07	3.61	7292
ND04961	50y24h	3.60	4.12	0.0002	2.54	2.31	2024
ND05000	50y24h	2.50	3.20	0.0001	15.62	14.95	5481
ND05100	50y24h	1.90	2.90	0.0000	10.27	9.89	8935
ND05200	50y24h	2.60	2.87	0.0002	8.65	8.40	2486
ND05300	50y24h	2.70	2.89	0.0001	32.48	32.47	789
ND05310	50y24h	2.60	3.41	0.0001	29.21	28.60	5052
ND05315	50y24h	3.30	3.66	0.0001	17.89	17.95	1281
ND05316	50y24h	3.20	3.78	0.0003	9.82	9.81	3077
ND05335	50y24h	12.20	3.65	0.0001	3.27	3.22	100
ND05337	50y24h	13.65	3.65	0.0001	0.84	0.78	100
ND05339	50y24h	2.10	3.45	0.0001	8.77	8.52	6582
ND05345	50y24h	5.90	3.75	0.0001	11.15	11.12	100
ND05355	50y24h	5.20	3.85	0.0002	10.73	10.80	100
ND05360	50y24h	2.40	4.11	0.0003	10.12	10.42	2935
ND05365	50y24h	3.00	4.11	0.0007	19.22	14.94	38009
ND05375	50y24h	3.50	4.11	0.0005	2.48	2.29	1373
ND05405	50y24h	5.80	4.54	0.0000	0.22	0.21	100
ND05500	50y24h	3.00	5.28	0.0001	25.82	6.73	128017
ND05600	50y24h	4.40	5.27	0.0005	5.46	3.44	5367
ND05700	50y24h	3.90	5.00	0.0008	6.10	3.30	8156
ND05800	50y24h	3.00	3.51	0.0001	4.21	4.13	431
ND05900	50y24h	3.80	3.68	0.0007	2.51	2.51	100
ND05910	50y24h	3.00	3.84	0.0007	4.30	3.73	5424
ND06105P	50y24h	5.20	5.15	0.0011	2.88	2.86	146

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
ND06110P	50y24h	5.30	5.25	0.0005	1.87	1.82	197
ND06115P	50y24h	5.30	5.28	0.0006	1.15	0.74	100
ND06210P	50y24h	5.50	5.35	0.0017	3.76	2.16	118
ND06215P	50y24h	4.90	5.43	0.0011	2.16	1.30	438
ND06300P	50y24h	2.70	4.35	0.0001	12.14	7.24	32557
NE020P	50y24h	3.98	4.30	0.0000	54.94	44.74	78500
NE08000	50y24h	3.30	4.30	0.0013	24.76	16.66	28497
NE08100	50y24h	3.10	4.29	0.0012	30.25	16.51	35228
NE08200	50y24h	2.60	4.29	0.0009	49.97	48.70	87148
NE08300	50y24h	3.20	4.39	0.0017	29.71	29.14	23590
NE08400	50y24h	3.30	4.39	0.0005	31.93	29.61	23272
NE08500	50y24h	3.10	4.38	0.0008	18.30	10.74	32273
NE08600	50y24h	3.40	4.38	0.0001	17.42	15.66	14772
NE08615	50y24h	2.70	4.61	0.0002	16.15	8.03	46982
NE08625	50y24h	3.10	4.40	0.0004	20.10	19.06	25601
NE08700	50y24h	3.00	4.38	0.0001	11.68	12.58	18846
NE08716	50y24h	4.20	4.90	0.0001	2.38	2.19	1272
NE08717	50y24h	4.50	4.96	0.0001	1.40	1.35	1137
NE08720	50y24h	3.50	4.38	0.0001	7.62	7.50	5919
NE08735	50y24h	3.70	4.57	0.0002	4.49	3.64	5680
NE08745	50y24h	3.50	4.40	0.0003	4.78	4.68	4165
NE08800	50y24h	3.90	4.37	0.0015	11.62	10.73	7771
NE08900	50y24h	3.50	4.17	0.0011	11.91	9.98	9654
NE09000	50y24h	4.00	4.70	0.0008	5.27	3.72	7730
NE09100	50y24h	3.10	2.98	0.0001	36.19	36.19	196
NE09110	50y24h	3.80	3.54	0.0001	24.45	24.46	267
NE09125	50y24h	4.80	4.71	0.0000	26.83	21.47	30068
NE09200	50y24h	4.40	2.35	0.0001	22.54	22.54	282
NE09210	50y24h	3.80	2.49	0.0001	22.38	22.38	269
NE09220	50y24h	4.70	4.39	0.0000	64.39	46.64	93244
NE09300	50y24h	3.00	4.35	0.0013	11.25	8.24	17966
NE09400	50y24h	2.90	4.35	0.0002	23.61	14.62	66418
NE09415	50y24h	3.10	4.42	0.0001	11.74	11.14	19771
NE09500	50y24h	2.80	4.35	0.0010	23.83	20.47	43712
NE09600	50y24h	2.80	4.25	0.0013	33.37	31.90	50011
NE09700	50y24h	3.00	3.98	0.0006	12.67	11.35	23687
NE09800	50y24h	3.10	3.93	0.0009	9.27	7.75	8806
NE09900	50y24h	3.20	4.15	0.0010	20.63	20.30	13601
NE10000	50y24h	3.10	4.04	0.0018	20.78	19.11	23366
NE10100	50y24h	2.70	3.98	0.0008	9.83	8.48	16886
NE10200	50y24h	3.00	4.05	0.0014	16.95	15.70	29559
NE10300	50y24h	3.10	4.14	0.0016	15.30	9.91	18389
NE10400	50y24h	3.10	4.15	0.0009	16.58	12.66	35498
NE10500	50y24h	3.30	3.84	0.0007	9.89	9.41	5706
NE10600	50y24h	3.40	4.06	0.0008	9.65	8.83	10595
NE10700	50y24h	2.80	4.03	0.0007	7.36	4.11	16176
NE10800	50y24h	3.20	4.14	0.0014	11.05	7.52	18891

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NE10900	50y24h	3.20	4.18	0.0017	13.86	10.64	15237
NE11000	50y24h	2.80	4.21	0.0006	16.09	11.55	40412
NE11100	50y24h	3.00	3.99	0.0014	9.54	6.66	12124
NE11200	50y24h	2.80	4.00	0.0006	11.85	8.79	24474
NE11300	50y24h	2.90	3.99	0.0009	8.07	4.47	11907
NE11400	50y24h	2.80	4.16	0.0014	9.69	6.64	13479
NE11500	50y24h	3.40	4.59	0.0019	14.51	11.07	29939
NE11600	50y24h	3.40	4.60	0.0008	17.24	12.36	38262
NE11700	50y24h	3.30	4.59	0.0007	12.43	11.25	18844
NE11800	50y24h	3.30	4.62	0.0011	8.79	5.48	16174
NE11900	50y24h	3.30	4.59	0.0016	19.06	8.72	32328
NE12000	50y24h	3.30	4.41	0.0010	8.11	4.29	15033
NE12100	50y24h	3.20	4.10	0.0014	13.71	10.21	13486
NE12200	50y24h	3.20	4.32	0.0014	13.65	10.77	19831
NE12300	50y24h	3.20	4.08	0.0012	9.68	7.58	11171
NE12400	50y24h	3.20	4.30	0.0017	13.95	9.29	25596
NE12500	50y24h	3.10	4.31	0.0014	14.27	8.24	30727
NE12600	50y24h	3.30	4.30	0.0010	6.64	4.81	9286
NE13100	50y24h	3.00	4.34	0.0010	9.44	6.39	15831
NE14000	50y24h	2.00	4.34	0.0006	3.35	2.31	5517
NF15000	50y24h	3.10	4.57	0.0006	26.75	18.44	66900
NF15010	50y24h	3.00	4.57	0.0004	5.68	5.74	8521
NF15100	50y24h	3.70	4.76	0.0007	17.71	17.01	24955
NF15200	50y24h	3.30	4.57	0.0002	18.27	15.92	18391
NF15210	50y24h	3.20	4.57	0.0003	12.25	11.56	13238
NF15215	50y24h	3.30	4.57	0.0005	22.13	15.57	33465
NF15300	50y24h	3.20	4.57	0.0003	46.79	46.48	28885
NF15315	50y24h	3.30	4.57	0.0001	10.19	8.33	8649
NF15330	50y24h	3.20	4.57	0.0001	19.28	18.58	32191
NF15400	50y24h	3.00	4.41	0.0014	45.47	45.23	32138
NF15500	50y24h	3.40	4.53	0.0018	17.74	14.67	28919
NF15600	50y24h	2.20	3.67	0.0002	54.81	52.94	87002
NF15700	50y24h	2.60	3.67	0.0004	11.94	9.73	31576
NF15800	50y24h	2.40	3.68	0.0006	12.81	7.35	26850
NF15900	50y24h	2.20	3.66	0.0002	23.66	22.02	38597
NF16000	50y24h	4.00	4.22	0.0002	4.38	4.21	1333
NF16100	50y24h	2.80	3.97	0.0007	13.43	10.32	30546
NF16200	50y24h	2.00	3.31	0.0001	29.30	25.53	42330
NF16300	50y24h	2.20	3.31	0.0000	13.94	12.71	14757
NF16310	50y24h	2.10	3.31	0.0001	12.12	10.87	18229
NF16500	50y24h	2.10	3.31	0.0001	8.95	7.63	18391
NF16510	50y24h	2.10	3.31	0.0001	7.22	6.03	14907
NF16700	50y24h	2.80	2.93	0.0000	2.39	2.38	100
NF16800	50y24h	1.70	3.31	0.0000	27.40	27.44	50191
NF16900	50y24h	1.60	3.31	0.0000	21.77	21.51	38286
NF17000	50y24h	1.80	3.29	0.0001	44.44	44.21	36886
NF17100	50y24h	1.90	3.30	0.0000	23.03	22.92	16207

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NF17200	50y24h	2.60	3.60	0.0001	14.16	11.24	17948
NF17210	50y24h	2.20	3.61	0.0001	11.20	9.01	18211
NF17300	50y24h	3.20	2.87	0.0000	2.40	2.39	100
NF17400	50y24h	2.20	3.93	0.0007	22.99	16.90	39870
NF17500	50y24h	2.70	3.93	0.0004	13.30	11.22	24991
NF17600	50y24h	2.20	3.77	0.0001	21.85	10.67	48336
NF17700	50y24h	2.30	3.77	0.0004	19.90	14.40	32341
NF17800	50y24h	2.80	3.90	0.0010	15.69	12.68	23034
NG20000	50y24h	3.30	3.78	0.0002	6.37	6.09	969
NG20100	50y24h	2.90	4.34	0.0016	12.77	8.48	17509
NG20200	50y24h	3.40	4.52	0.0016	15.39	11.22	24781
NG20300	50y24h	3.20	4.52	0.0017	17.36	10.87	21199
NG20400	50y24h	3.10	4.33	0.0014	12.57	10.06	24966
NG20500	50y24h	3.20	4.32	0.0016	20.66	12.63	34571
NG20600	50y24h	3.30	4.32	0.0008	11.21	9.64	25407
NG20700	50y24h	2.90	3.96	0.0017	15.22	9.66	26772
NG20800	50y24h	3.30	4.32	0.0002	12.86	8.08	23558
NG20810	50y24h	3.10	4.32	0.0005	17.59	12.06	51694
NG20900	50y24h	3.10	3.96	0.0010	12.87	10.75	9075
NG21000	50y24h	3.00	4.26	0.0010	12.09	6.62	16613
NG21010	50y24h	3.30	4.26	0.0007	9.81	9.82	8499
NG21100	50y24h	3.10	4.26	0.0002	11.85	11.04	10321
NG21110	50y24h	3.20	4.26	0.0004	16.63	16.54	23115
NG21200	50y24h	3.40	4.09	0.0010	8.96	8.36	10311
NG21300	50y24h	2.80	4.32	0.0001	34.37	30.70	102857
NG21400	50y24h	3.00	4.31	0.0001	31.91	29.57	56455
NG21415	50y24h	3.40	4.32	0.0001	14.66	11.76	28894
NG21500	50y24h	2.60	4.32	0.0010	24.49	16.16	36317
NG21600	50y24h	2.70	4.33	0.0011	25.45	14.17	56627
NG21700	50y24h	3.00	4.32	0.0002	22.12	17.23	50518
NG21715	50y24h	3.30	4.32	0.0003	11.31	8.42	27627
NG21800	50y24h	3.40	4.32	0.0002	15.43	14.57	18077
NG21810	50y24h	3.20	4.32	0.0003	19.15	15.03	49831
NG21900	50y24h	2.90	4.07	0.0003	33.72	33.42	22038
NG22000	50y24h	3.80	4.48	0.0005	14.72	12.84	29489
NG22000P	50y24h	4.28	3.31	0.0000	10.77	2.06	35339
NG22015P	50y24h	3.31	3.51	0.0000	22.53	12.72	98107
NG22025	50y24h	4.20	4.47	0.0003	2.52	2.38	2144
NG22040	50y24h	2.90	3.90	0.0001	17.81	17.49	18095
NG22100	50y24h	2.30	3.78	0.0006	45.91	45.54	33668
NG22300	50y24h	3.30	3.74	0.0004	3.35	2.72	2914
NG22400	50y24h	2.50	3.73	0.0006	50.77	50.68	34724
NG22500	50y24h	2.60	3.77	0.0002	32.48	31.67	39465
NG22600	50y24h	2.80	3.77	0.0006	5.25	3.74	7396
NG22700	50y24h	2.70	3.78	0.0004	10.99	7.76	29836
NG22800	50y24h	2.70	3.78	0.0009	14.12	7.81	39690
NG22900	50y24h	2.90	3.78	0.0006	10.14	7.32	21364

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NG23000	50y24h	2.50	3.65	0.0002	33.54	33.28	30929
NG23015	50y24h	2.90	3.65	0.0002	11.61	11.31	9943
NG23100	50y24h	2.60	3.41	0.0003	27.18	27.05	36638
NG23200	50y24h	2.50	3.31	0.0001	13.05	12.47	19795
NG23300	50y24h	2.60	3.19	0.0002	13.82	13.77	10492
NG23315	50y24h	2.30	3.27	0.0002	2.74	2.50	1737
NG23400	50y24h	2.30	3.27	0.0004	5.04	3.40	6365
NG23500	50y24h	2.60	3.27	0.0005	5.03	3.72	5127
NG23600	50y24h	2.30	3.27	0.0001	7.46	5.07	11741
NG23700	50y24h	2.30	3.27	0.0000	8.97	6.72	14956
NG23800	50y24h	2.30	3.27	0.0003	6.20	6.01	6088
NG23900	50y24h	2.30	2.95	0.0001	6.38	6.34	2979
NG24000	50y24h	1.90	2.91	0.0000	11.14	10.08	16118
NG24100	50y24h	1.50	2.54	0.0000	4.78	4.74	927
NG24200	50y24h	2.00	2.56	0.0000	20.02	19.94	2644
NG24216	50y24h	2.50	2.57	0.0000	0.24	0.21	100
NG24225	50y24h	2.70	3.15	0.0001	8.82	8.78	574
NG24230	50y24h	2.80	3.22	0.0001	7.23	7.21	567
NG24300	50y24h	3.10	3.46	0.0001	12.83	11.81	6473
NG24320	50y24h	3.00	3.60	0.0001	1.62	1.58	1655
NG24322	50y24h	2.90	3.75	0.0000	2.08	1.48	7683
NG24330	50y24h	2.30	3.66	0.0001	7.61	6.70	13287
NG24335	50y24h	3.00	3.91	0.0001	6.38	5.93	2340
NG24340	50y24h	2.90	3.66	0.0002	5.45	5.18	4690
NG24341	50y24h	2.80	3.65	0.0001	7.29	7.01	4513
NG24400	50y24h	2.90	3.78	0.0009	20.39	20.23	14567
NG24500P	50y24h	2.00	3.35	0.0000	16.51	15.81	2682
NG24516P	50y24h	4.20	4.20	0.0000	0.34	0.32	100
NG24527P	50y24h	4.00	4.09	0.0001	2.76	2.74	1539
NG24530P	50y24h	1.60	3.39	0.0000	3.75	3.64	296
NG24600P	50y24h	3.30	3.93	0.0003	9.57	8.32	6439
NG24615P	50y24h	3.20	4.01	0.0006	6.60	5.30	13794
NH30000	50y24h	3.70	2.44	0.0000	8.61	8.61	100
NH30030	50y24h	4.20	2.46	0.0000	1.52	1.50	100
NH30035	50y24h	4.20	2.47	0.0000	1.32	1.30	119
NH30040	50y24h	4.30	2.47	0.0000	0.39	0.37	100
NH30045	50y24h	4.30	2.47	0.0000	0.18	0.16	100
NH30050	50y24h	3.60	3.22	0.0001	7.48	7.48	100
NH30055	50y24h	3.80	4.10	0.0002	7.12	6.95	2051
NSP0100	50y24h	3.50	4.49	0.0027	19.93	12.94	18315
NSP0200	50y24h	3.50	4.21	0.0008	12.49	10.79	8194
NSP0215	50y24h	3.70	4.50	0.0006	14.28	11.77	24851
NSP0300	50y24h	3.40	4.40	0.0023	16.49	15.85	16999
NSP0400	50y24h	3.60	4.17	0.0002	11.29	10.62	3556
NSP0415	50y24h	3.70	4.49	0.0001	11.98	11.40	14944
NSP0500	50y24h	3.90	3.19	0.0001	7.51	7.50	100
NSP0600	50y24h	3.70	4.20	0.0005	7.76	6.94	3170

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
NSP0700	50y24h	3.50	4.19	0.0002	13.34	10.99	10714
NSP0715	50y24h	3.90	4.64	0.0006	4.70	4.93	18931
NSP0800	50y24h	3.60	4.06	0.0001	12.33	10.60	8870
NSP0815	50y24h	3.60	4.63	0.0009	7.92	6.87	31334
NSP0900	50y24h	3.50	4.18	0.0003	12.99	10.91	10742
NSP0915	50y24h	3.50	4.18	0.0004	11.20	11.44	15871
NSP1000	50y24h	3.60	4.56	0.0013	12.79	8.82	26427

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Prepared By the City of Treasure Island Parks and Recreation Department



City of Treasure Island Master Park Plan

2021-2031

City of Treasure Island
120 108th Ave

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City of Treasure Island Master Park Plan 2021-2031

Mission Statement:

Enhance the quality of life for the Treasure Island Community. We strive to promote community spirit and economic growth by proactively managing public facilities and parks and offering a variety of family friendly programs and signature community events.



Prepared By:

The City of Treasure Island's Parks and Recreation Department

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Acknowledgments

Community Members of the City of Treasure Island

Thank you for all of your continued enthusiasm, and wonderful creative ideas. We would not have been able to write this plan without the participation of the community. Thank you for your involvement!

Mayor

Larry Lunn - Mayor

City Commision

Vice Mayor Deborah Toth, Commissioner Tyler Payne, Commissioner Saleene Partridge, Commissioner Maribeth Wetzel

City Administration

Garry Brumback, City Manager
Amy Davis, Assistant City Manager

Recreation Department

Cathy Hayduke - Director
Justin Tramble - Assistant Director
Special thanks to Parks and Recreation Intern Marc Steelman

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1 - Executive Summary

The City of Treasure Island's Master Park Plan is a decision-making tool to set priorities and identify funding sources for parks and recreational amenities that reflect the needs of the community. It sets the standard for a level of service and provides for long-term goals and ecological sustainability. The Master Park Plan is a collaborative effort of residents, community and business leaders, elected officials and City staff. It is a dynamic, living document that reflects the City's mission statement that we are dedicated to being good fiscal and environmental stewards of our community while providing responsive, high-quality public services to meet the needs of our dynamic residents, business owners and visitors – today and tomorrow.

The planning process included an inventory of the current parks and recreational areas within the City. Numerous community engagement sessions titled Park Planning and Pizza and a city-wide survey were implemented to identify the goals of the community. From the Park Planning and Pizza session, areas of interest were identified, and subsequent Focus Groups were developed to address those areas – Arts, Entertainment and Leisure; Health and Wellness; and Environment/Sustainability.

In being good fiscal stewards, the Master Park Plan identifies funding sources such as grants, public-private partnerships and Penny for Pinellas funding to offset the costs for park and facility enhancements as identified in this Plan. The Recreation Department will use this Master Park Plan as a guide for the preparation of the annual budget and the development of the City's 5-Year Capital Improvement Program. Through the budget process, the Recreation Department will provide an annual review of the identified programs.

The Master Park Plan perpetuates the significant enhancements to the City's current recreational amenities funded by community partnerships and grants.

John Morroni Memorial Dog Park – dedicated January 25, 2020 and located in Rosselli Park on the Isle of Capri. The construction of the dog park was completed with donated funds provided by the community

Sunset Vista Park – identified as a publicly owned recreation open space/conservation area. The City of Treasure Island was successful in obtaining a $1.2 million grant from the Florida Communities Trust for land acquisition for the construction of Sunset Vista Park. The City then successfully applied to the National Oceanic Atmospheric Administration (NOAA) and the Florida Department of Environmental Protection (FDEP) for $260,000 in waterfront restoration funds that were available in the aftermath of the 1993 Tampa Bay Oil Spill. Of the remaining project, $160,000 was required from the Local Pennies for Pinellas fund to complete the total of $420,000 park development budget.

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Mobi-Mat - The City of Treasure Island installed an ADA beach access mat, which is the first of its kind in Pinellas County. The mat was installed at Gulf Front Park, the busiest beach access location in Treasure Island. The Mobi-Mat is a removable access pathway made from recycled materials. It extends approximately 400 ft. towards the Gulf and is 6.5 ft. wide. It provides improved accessibility for those with mobility impairments and for pedestrians and users of strollers and beach carts. The funds to purchase the Mobi-Mat were donated to the City by a local business.

The Recreation Department is divided into four functional areas:

- Administration provides overall leadership and direction to achieve the department's mission.
- Recreational Facilities are the gathering areas utilized by residents and visitors. Included in these areas are the public beach, beach facilities and parks, and the one-mile Central Beach Trail
- Treasure Bay is the city's flagship waterfront property offering beautiful views of Boca Ciega Bay and providing an abundance of recreational amenities
- Parks, the Recreation Department oversees 61 beach/bay accesses, mini/neighborhood/ community parks and open space/conservation areas.

The Master Park Plan expresses the goals as outlined in the City of Treasure Island's Strategic Plan and Sustainability Plan. The Strategic Plan ensures the implementation of the Master Park Plan, which is measurable and result driven. Additionally, the Master Park Plan addresses the Recreation/Open Space (R/OS) Element of the Comprehensive Plan.

The implementation of this plan is a collaborative effort driven by the community that reflects the City's Vision Statement of a vibrant, unique and sustainable community:

1. Provide a safer environment to walk and bike by improving connectivity between parks and public spaces
2. Improve water access and water activities
3. Provide community workout/excercise equipment
4. Promote inclusiveness
5. Enhance public spaces with public art
6. Provide opportunities for the community to gather outside
7. Provide unique community events and programming
8. Enhance environmental education programs
9. Incorporate environmental sustainability elements into parks and public spaces



Cathy Hayduke, CPM
Recreation Director

City of Treasure Island Master Park Planning Process

The City's Master Park Plan will set the course for the future needs and desires of the community. The Master Park Plan allows the City to understand the impact (social, economic and environmental) of future choices for the betterment of Treasure Island. Planning provides perspective in challenges, identifies realistic alternatives and formulates a successful course of action in regards to the parks, recreational facilities and programs provided by the City.

The goal of the Master Park Plan is to answer these three (3) essential questions relating to the City's parks, recreational facilities and programs:

1. Where are we today?
2. Where do we want to go tomorrow?
3. How do we get there?

In order to effectively answer these essential questions, the Recreation Department initiated work on the following phases as outlined in The Master Park Plan Timeline and Outlined Strategy.

Phase 1 – Goals/Terms of Reference
Phase 2 – Research & Analysis
Phase 3 – Public Engagement/Analysis & Synthesis
Phase 4 – The Plan
Phase 5 – Implementation/Evaluation & Renewal





The Recreation Department started work on the plan in July 2018 in order to establish goals and effective terms of reference, which defines the purpose and structure of the project in its entirety. An extensive inventory assessment was then completed.

The City's Recreation Department hosted a series of public engagement opportunities in conjunction with the Master Park Planning Process. The goal was to conduct genuine and meaningful consultation with stakeholders through a series of meetings and other efficient and effective forums. Through this engagement, the City identified a preferred course of action and a set of priorities that form the basis of the plan.

The Recreation Department hosted three (3) "Park Planning and Pizza" engagement sessions that were each facilitated by St. Pete College Collaborative Labs. A meeting was held at the Treasure Island Community Center, Rosselli Park and the Sunset Beach Pavilion. The Recreation Department also conducted two (2) open house bus tours that were available on a first come, first serve basis.

Once strategic topic areas were identified, the City asked residents to participate in focus groups related to: Health and Wellness, Environment and Sustainability, Arts Entertainment & Leisure. Two of the focus groups met more than once. An additional focus group was created in an effort to engage the different perspectives in each topic area. In total, six (6) focus group meetings were conducted and these groups helped define the community goals outlined in this plan.



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The Master Park Plan Answers These 3 Questions:

1. Where are we now?
2. Where do we want to go?
3. How do we get there?









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Where are we now?

The Parks and Recreation Department conducted a thorough inventory to establish a baseline of the current parks, open spaces, and recreation areas located within the City of Treasure Island. The inventory process also identified the overall condition of these recreational offerings. Keeping the City's parks and recreation areas safe and functional is an important component of community wellness (National Recreation and Parks Association).

The City of Treasure Island currently offers residents and visitors a diverse selection of recreation opportunities. In total, sixty one (61) areas were included in the inventory audit.

The inventory process revealed that the existing recreation areas meet the previously established Florida Department of Environmental Protection level-of-service standards.

IT STARTS IN

PARKS

Coaching. Connecting. Community.

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Where are we now?

The 2021-2031 City of Treasure Island Master Plan has been developed to serve as a decision-making tool for future "re-imagining" of recreational facilities and programs within the City of Treasure Island. This plan focuses on Community Parks, Neighborhood Parks, Beach Access, Open Spaces, Mini-Parks, Events and Programming. The plan includes an assessment of current facilities and programs, as well as the development of re-purposed facilities and programs based on the current and future anticipated demands. It also considers connectivity throughout the City and other neighboring communities.

The City of Treasure Island is located in Pinellas County, bordering St. Petersburg and is 23 miles from Tampa.

Additional surrounding communities include St. Pete Beach and Madeira Beach.

The City of Treasure Island is approximately 5.3 square miles.









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Treasure Island Facts

A Brief History of Treasure Island

The early settlers of Treasure Island, after the Great Gale of 1848 and the civil war, were mostly fisherman, hunters and the occasional pirate or smuggler. In 1908 Treasure Island welcomed its first landowner, Tom Pierce, who bought the island for $1.25 an acre. Other early landowners were Whitey Harrell, who was quick to realize the possibilities Treasure Island had to offer and in 1915 built Treasure Island's first hotel, The Coney Island, on the east side of Surf Avenue (now Gulf Boulevard) near 100th Avenue. Whitey's Coney Island Hotel unwittingly played a role in naming Treasure Island. In 1918, a fellow named Bill McAdoo wanted to generate interest in land he owned on St. Pete Beach. McAdoo, along with friend Ed Brantley and two guests from the Coney Island, "discovered" buried treasure on the beach (treasure McAdoo and Brantley had buried the night before). Subsequent publicity resulted from the two guests spreading the word about their discovery and people began calling the area around the hotel "out at that Treasure Island."



The direct link from St. Petersburg to Treasure Island came in 1939 with the Treasure Island Causeway, which brought unprecedented development after World War II. The four towns of Treasure Island, Boca Ciega, Sunshine Beach and Sunset Beach incorporated as The City of Treasure Island on May 3, 1955.

Source: The Treasure Island Story



This photograph of downtown Treasure Island, circa 1949, is on display at TI City Hall.

TREASURE ISLAND AT-A-GLANCE

■ **Region:** A barrier island in Pinellas County on Florida's west coast. Or, more precisely at 27°46′8″N, 82°46′6″W.

■ **Size:** 3.4 square miles (from Gulf shoreline)
Actual Land area: 1.3 miles
Gulf frontage: 3.83 miles
Bay frontage: 28.39 miles

■ **Temperature:** 88° to 76°(July high & low). 68°to 52°(January high & low).

■ **Population:** 6,858 (2018)

■ **Average Household Income:** $42,150. Median income for a family is $64,158.

■ **Neighborhoods:** Sunshine Beach, Sunset Beach, Isle of Capri, Isle of Palms and Paradise Island. 4,128 households, 2,059 families and 5,694 housing units

■ **Tax Millage Rates (dollars per thousand)**
2020 - 3.6129
2019–3.4368
2018 - 3.3368
2017 - 3.3368
2016 - 3.3368
2015 - 3.3368

■ **Bridges:** 3
Treasure Island C.W. "Bill" Young Bascule Bridge & Causeway—drawbridge operated by the City of Treasure Island
John's Pass Bridge—drawbridge operated by the State of Florida
Blind Pass Bridge—fixed bridge operated by the State of Florida

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Where are we now?

Community Data

City of Treasure Island
Population Estimate as of April 1, 2018

6,858

Bureau of Economics and
Business Research, University of Florida

Age and Sex

Persons under 5 years, percent	4.7%
Persons under 18 years, percent	9.6%
Persons 65 years and over, percent	35.4%
Female persons, percent	53.8%

Race and Hispanic Origin

White alone, percent	95.1%
Black or African American alone, percent(a)	0.4%
American Indian and Alaska Native alone, percent(a)	0.0%
Asian alone, percent(a)	1.8%
Native Hawaiian and Other Pacific Islander alone, percent(a)	0.2%
Two or More Races, percent	1.9%
Hispanic or Latino, percent(b)	5.5%
White alone, not Hispanic or Latino, percent	89.8

Population Characteristics

Veterans, 2014-2018	765
Foreign born persons, percent, 2014-2018	11.5%

Housing

Owner-occupied housing unit rate, 2014-2018	73.8%
Median value of owner-occupied housing units, 2014-2018	$380,100
Median selected monthly owner costs -with a mortgage, 2014-2018	$2,095
Median selected monthly owner costs -without a mortgage, 2014-2018	$968
Median gross rent, 2014-2018	$1,249

Families & Living Arrangements

Households, 2014-2018	3,640
Persons per household, 2014-2018	1.89
Living in same house 1 year ago, percent of persons age 1 year+, 2014-2018	87.0%
Language other than English spoken at home, percent of persons age 5 years+, 2014-2018	16.0%

Computer and Internet Use

Households with a computer, percent, 2014-2018	92.5%

Education

High school graduate or higher, percent of persons age 25 years+, 2014-2018	96.2%
Bachelor's degree or higher, percent of persons age 25 years+, 2014-2018	44.1%

Health

With a disability, under age 65 years, percent, 2014-2018	8.1%
Persons without health insurance, under age 65 years, percent	14.1%

Income & Poverty

Median household income (in 2018 dollars), 2014-2018	$74,830
Per capita income in past 12 months (in 2018 dollars), 2014-2018	$58,592
Persons in poverty, percent	7.5%

https://www.census.gov/quickfacts/treasureislandcityflorida

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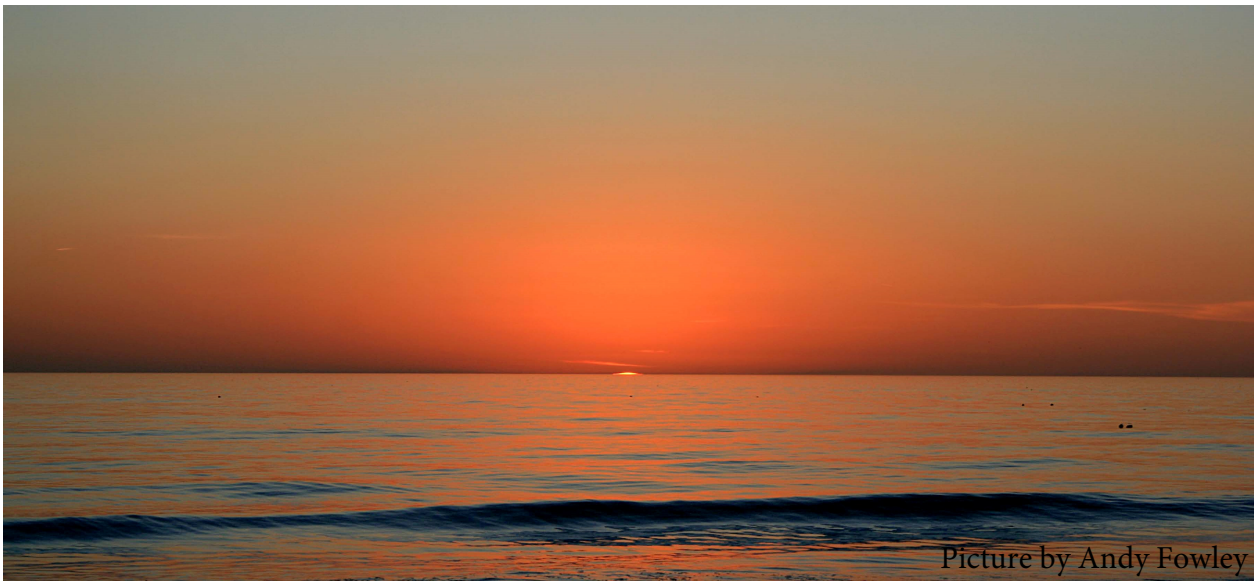
Where are we now?

Pinellas County Population Estimate in 2019

970,532

PROJECTIONS

	2020	2025	2030	2035	2040	2045
Low	953,700	960,700	960,700	955,800	947,600	938,300
Medium	983,900	1,012,900	1,034,300	1,050,600	1,063,500	1,075,000
High	1,012,700	1,068,000	1,118,000	1,161,800	1,200,600	1,236,600



Picture by Andy Fowley

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Age/Sex		Census 2010	Est. 2018	2020	2025	2030	2035	2040	2045
PINELLAS									
All Races	Totals	916,542	970,532	983,883	1,012,892	1,034,290	1,050,569	1,063,472	1,075,042
0-4		42,349	46,135	46,737	48,341	48,701	48,830	48,189	48,767
5-17		120,539	118,170	119,201	123,543	127,354	129,918	131,364	131,054
18-24		66,823	67,987	66,593	65,222	66,917	69,468	70,980	72,924
25-54		358,333	341,928	338,522	337,175	339,218	345,163	346,692	350,198
55-64		134,399	156,740	160,695	148,434	128,808	119,333	124,319	132,514
65-79		131,384	173,102	184,151	212,269	228,055	225,818	209,071	189,976
80+		62,715	66,470	67,984	77,908	95,237	112,039	132,857	149,609
Female		476,533	503,641	510,450	525,522	537,087	546,488	554,341	561,476
0-4		20,774	22,606	22,901	23,687	23,863	23,927	23,612	23,896
5-17		58,774	58,050	58,615	60,789	62,645	63,900	64,604	64,446
18-24		33,459	33,661	33,016	32,372	33,291	34,560	35,312	36,257
25-54		182,366	174,014	172,183	171,718	172,989	176,310	177,341	179,012
55-64		70,378	81,991	83,865	77,014	66,608	61,924	64,720	69,422
65-79		71,438	92,615	98,500	113,063	121,518	119,797	110,666	100,514
80+		39,344	40,704	41,370	46,879	56,173	66,070	78,086	87,929
Non-Hispanic White		714,823	725,409	726,139	726,109	723,068	717,625	714,342	713,740
0-4		25,497	26,788	26,847	26,125	24,827	23,624	22,045	21,804
5-17		78,931	68,984	67,537	67,418	67,930	66,926	65,325	63,116
18-24		45,723	42,258	39,951	35,600	34,112	35,642	36,631	36,824
25-54		272,080	242,832	235,149	223,970	217,976	214,884	210,321	209,361
55-64		115,803	130,646	132,721	118,756	98,013	87,185	90,865	98,552
65-79		118,009	153,037	162,068	183,849	194,728	189,542	171,524	152,078
80+		58,780	60,864	61,866	70,391	85,482	99,822	117,631	132,005
Female		371,900	376,952	377,327	377,650	376,778	375,057	374,607	375,526
0-4		12,460	13,126	13,155	12,801	12,165	11,576	10,802	10,684
5-17		38,394	33,826	33,176	33,168	33,441	32,949	32,162	31,075
18-24		22,956	21,064	19,954	17,918	17,209	18,014	18,515	18,613
25-54		137,069	122,402	118,489	112,991	110,380	109,076	107,005	106,518
55-64		60,335	67,964	68,874	61,379	50,440	45,039	47,260	51,549
65-79		63,883	81,336	86,093	97,189	102,946	99,819	90,076	79,876
80+		36,803	37,234	37,586	42,204	50,197	58,584	68,787	77,211
Non-Hispanic Black		95,721	109,575	113,701	123,124	131,050	137,953	142,745	146,599
0-4		8,008	9,208	9,342	9,881	10,154	10,428	10,630	10,969
5-17		20,702	21,471	22,150	23,793	25,019	26,146	26,831	27,187
18-24		10,427	10,862	10,659	10,742	11,398	12,562	12,840	13,281
25-54		38,771	43,013	44,579	47,740	49,976	51,989	53,697	55,020
55-64		9,382	12,779	13,528	13,969	14,390	14,641	14,999	15,715
65-79		6,518	9,703	10,679	13,661	15,880	16,774	17,033	16,800
80+		1,913	2,539	2,764	3,338	4,233	5,413	6,715	7,627
Female		50,438	57,625	59,780	64,664	68,738	72,292	74,748	76,703
0-4		3,934	4,500	4,566	4,832	4,968	5,102	5,201	5,367
5-17		10,078	10,616	10,963	11,763	12,370	12,927	13,266	13,443
18-24		5,435	5,476	5,413	5,509	5,823	6,398	6,537	6,763
25-54		20,962	23,117	23,868	25,459	26,512	27,498	28,279	28,813
55-64		5,035	6,840	7,221	7,383	7,660	7,828	7,998	8,447
65-79		3,703	5,482	6,027	7,636	8,817	9,233	9,381	9,246
80+		1,291	1,594	1,722	2,082	2,588	3,306	4,086	4,624

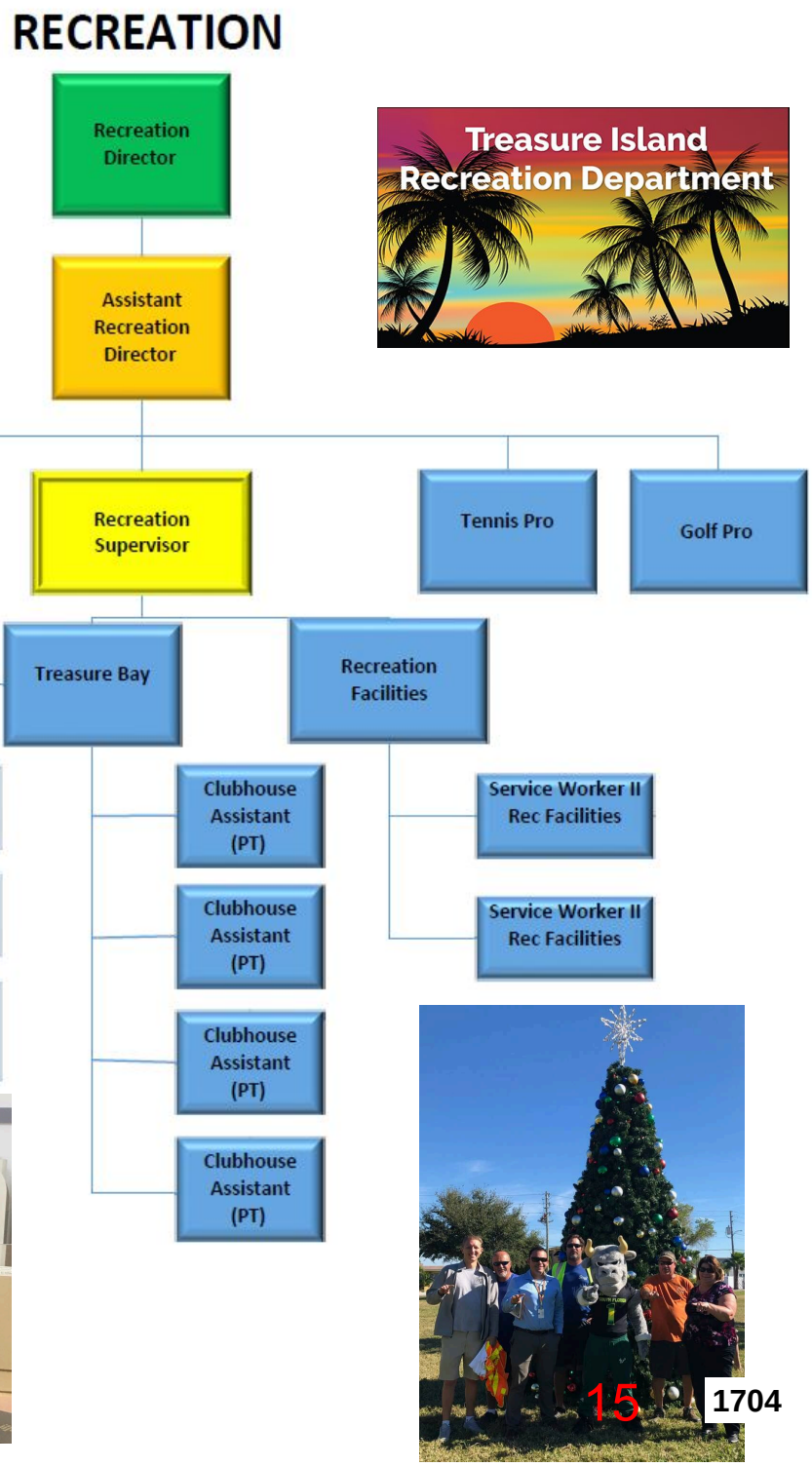
COMMISSION APPROVED

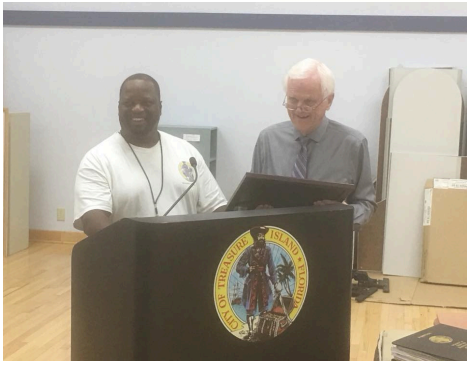
Organization Chart

Parks and Recreation Department

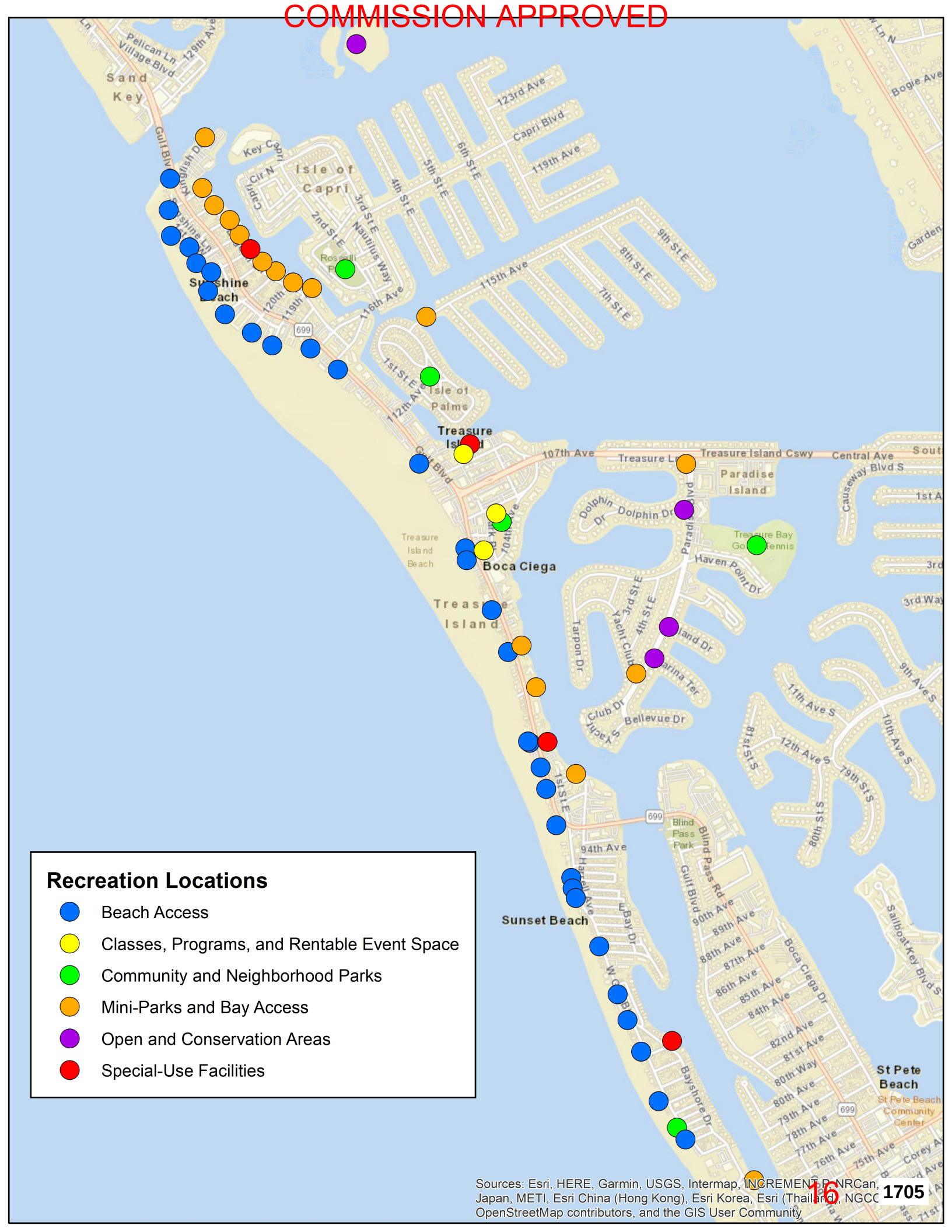
The Parks and Recreation Department is responsible for the day-to-day operations of the facilities and programs. The City's Recreation Department has a Director and Assistant Director handling the management and operations. The Recreation Supervisor oversees the Recreation Facility Service Workers and Treasure Bay Service Workers, as well as the Part-Time Clubhouse Assistants. The Department also has Recreation Aides that handle the facility programming and facility rentals. The Department additionally employs part-time seasonal staff for Summer Camp and events.







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1705





City of Treasure Island (COTI): Inventory of Parks and Recreation Areas

Prepared by Marc Steelman

COTI – Parks & Recreation Inventory: Purpose

- **Component of Master Parks Plan**
- **Provide baseline inventory & condition**
- **Provide complete list of available recreation resources**

COTI – Parks & Recreation Inventory: Recreation Definition

Recreation can be categorized into two activity groups:

- **Resource-based Activities:** Dependent on natural/cultural environments
- **User-Oriented Activities:** Structured, rule-oriented, any location

COTI – Parks & Recreation Inventory: Recreation Definition



Fishing



Golf & Tennis



Saltwater Beach Activities



Baseball & Softball



Boating/Kayaking



Playground Activities

COTI – Parks & Recreation Inventory: Level-of-Service

- **Recreation site guidelines and level-of-service standards ensure current and future needs are met**
- **COTI's standards follow FL DEP's recommendations & published in 1999 City-wide Comprehensive Plan**

COTI – Parks & Recreation Inventory: Beach Access Areas

City's largest recreational asset : 3.5 miles of public beachfront

2017 FL DEP Economic of Recreation Activities in Florida Analysis– Majority of West Central Florida visitors (56%) & residents (75%) used the beach for recreation

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COTI – Parks & Recreation Inventory: Beach Access Areas

COTI Provides Ample Beach Access for Residents and Visitors

31 Beach Access Areas



COTI – Parks & Recreation Inventory: Beach Access Areas

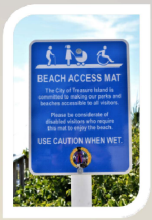


20+ Dune Walk-overs



COTI – Parks & Recreation Inventory: Beach Access Areas





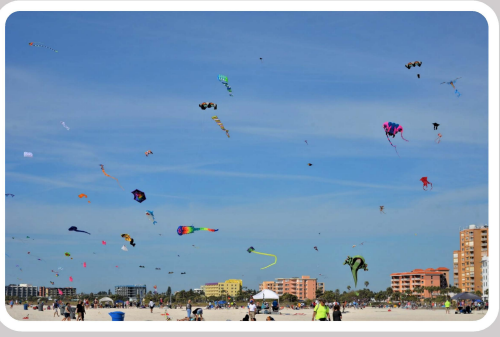


COTI – Parks & Recreation Inventory: Beach Access Areas

Beyond everyday recreation use... **Special events year-round**







COTI – Parks & Recreation Inventory: Community & Neighborhood Parks

- **Community Parks: Serve immediate community and beyond (0.5 – 3 miles)**
- **Neighborhood Parks: Serve residents within walking/biking distance & broader community (depending on amenities)**

...both serve *entire* family w/broad activity selection

COTI – Parks & Recreation Inventory: Community & Neighborhood Parks



COTI – Parks & Recreation Inventory: Community & Neighborhood Parks

COTI's Community / Neighborhood Parks:





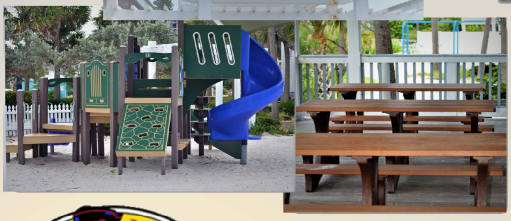






COTI – Parks & Recreation Inventory: Community & Neighborhood Parks









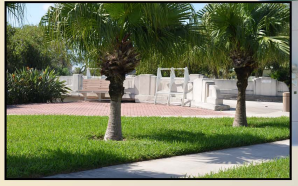
















COTI – Parks & Recreation Inventory: Mini-parks/Bay Access

- **Mini Parks – Small spaces (< .25 acre)**
- **Provide recreation/leisure ops. for surrounding community…**

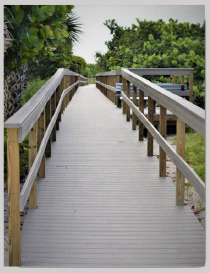


…access surrounding waterways

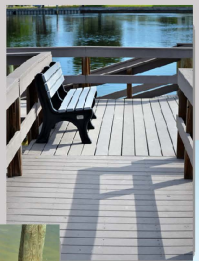
COTI – Parks & Recreation Inventory: Mini-parks/Bay Access



15 Mini-parks & Bay access areas













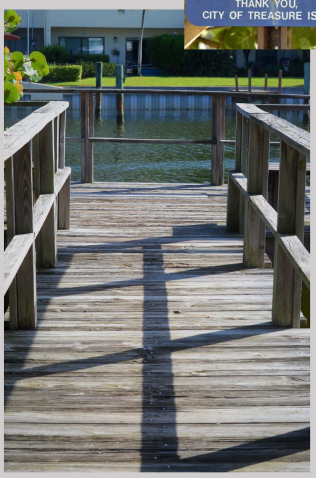


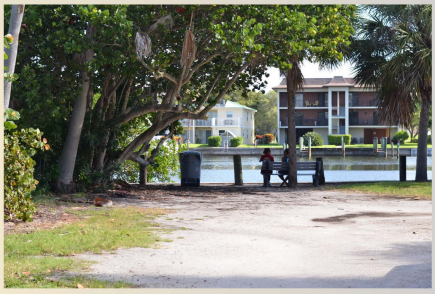
COTI – Parks & Recreation Inventory: Mini-parks/Bay Access











COTI – Parks & Recreation Inventory: Special-use

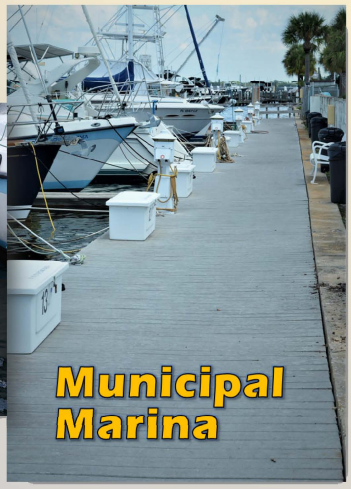
- **Special-use recreation facilities include parks or open spaces that serve a specific, recreation-related, need**

COTI's special-use facilities include:

COTI – Parks & Recreation Inventory: Special-use







COTI – Parks & Recreation Inventory: Open/Conservation Areas

- ***Open areas:*** **include any undeveloped land that is accessible by the public**
- ***Conservation areas:*** **protected from development and certain uses, and often contain important or sensitive natural environments**

Where are we now?

COTI – Parks & Recreation Inventory: Open/Conservation Areas





- Obtained through land swap in 1984
- Zoned protected area plant & bird species

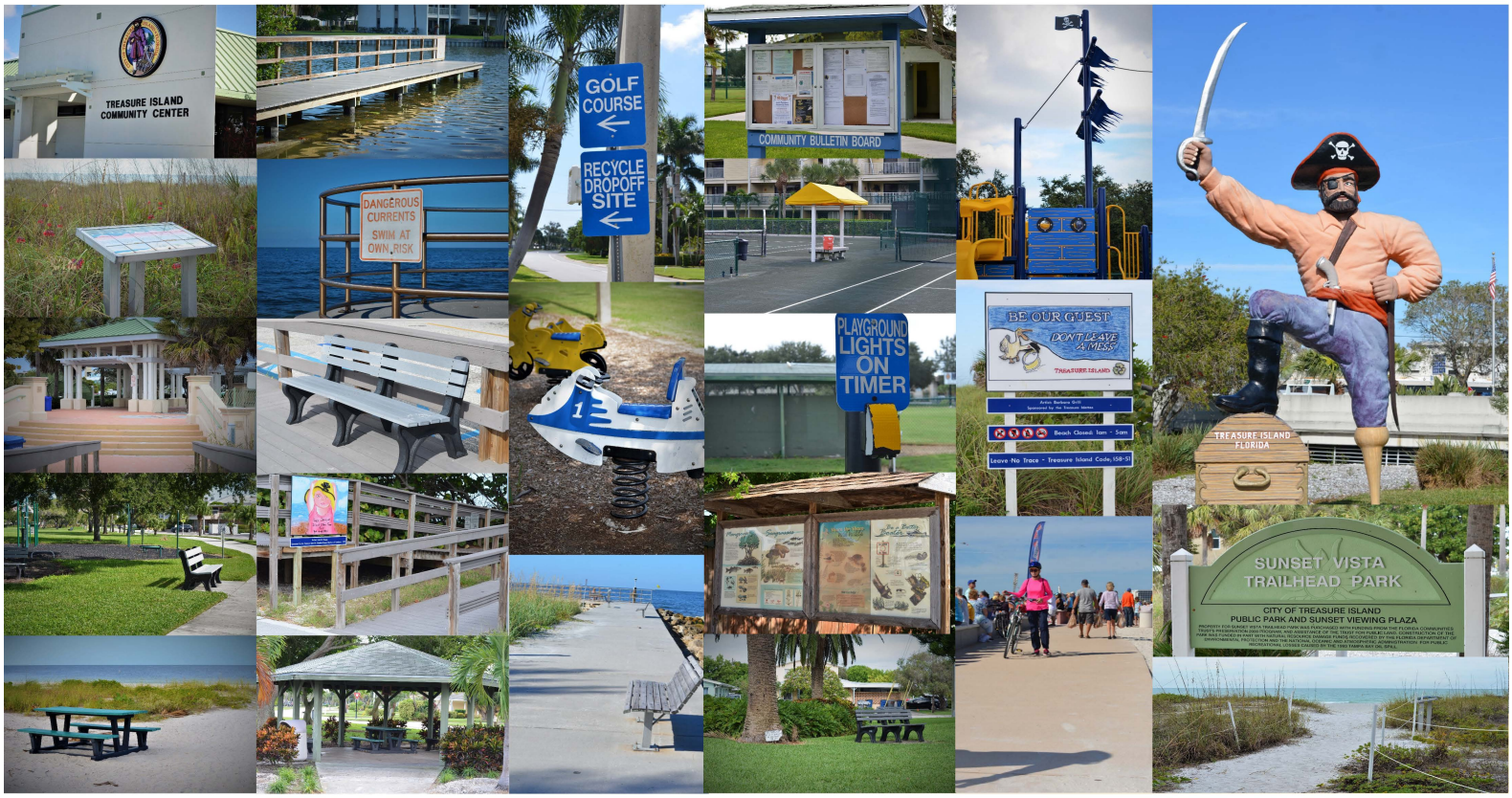


COTI – Parks & Recreation Inventory: Conclusion

Total: 61 recreation-related areas

COTI offers diverse selection of recreation activities

Services meet or exceed level-of-service standards for residents & visitors in all areas



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INVENTORY SHOW OFF!



The Parks and Recreation Department hosted bus tours to show residents the parks and recreation facilities. The bus tours were designed to educate residents about what is currently offered in the City of Treasure Island.



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Where do we want to go?

"If you don't know where you are going, any road will take you there" - Lewis Carroll



Needs and Priorities Assessment

The three (3) most common types of assessment techniques are anecdotal, qualitative and quantitative.

Specific Techniques Used in Our Plan

1. Neighborhood/Community Workshops – Park Planning and Pizza
2. Focus Group Workshops
3. Community Survey Data
4. Staff Analysis





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Park Planning and Pizza

The Parks and Recreation Department conducted (3) large community open house workshops called "Park Planning and Pizza" sessions. These workshops were facilitated by St. Pete College's Collaborative Labs. The workshops were held at different facilities and parks with the goal to engage as many stakeholders as possible. The Parks and Recreation Department even hosted an evening workshop with complimentary childcare.





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What is the ONE WORD you would use to describe our City's Parks and Recreation spaces and offerings?



Q2. What is the COOLEST FEATURE you have ever seen in any park or recreation facility?

Q3. What is the MOST MEMORABLE EXPERIENCE you have had at any park or recreation facility in other cities?

Q4. What RECREATIONAL AMENITY do you value and use the most in any city?

Q9. What are the GREATEST ASSESTS and STRENGTHS of Treasure Island's Parks and Recreation spaces and offerings?

Q10. What do you do for recreation in the City of Treasure Island?

Q12. In 2040, how do you see residents of Treasure Island using parks and recreation spaces and offerings?

Q13. What is the GREATEST OPPORTUNITY for IMPROVEMENT with our City's Parks and Recreation spaces and offerings? (Anything missing?)



Shane Fischer provided live music at all 3 Park Planning and Pizza Workshops

See responses in Appendix*

Community Engagement Sessions:

Summary of Submitted Responses

Q2. What is the COOLEST FEATURE you have ever seen in any park or recreation facility?

- Splash pad/water park – 23%
- Parks & green/open spaces, playground equipment – 17%
- Walking/exercise – 15%
- Concert/entertainment – 13%
- Boating/kayak, fishing – 6%

Q3. What is the MOST MEMORABLE EXPERIENCE you have had at any park or recreation facility in other cities?

- Concert/entertainment – 47%
- Wedding/birthday celebration – 16%
- Camping/hiking – 6%

Q4. What RECREATIONAL AMENITY do you value and use the most in any city?

- Walking/exercise – 32%
- Parks & green/open spaces – 23%
- Beach – 11%
- Boating/kayak, fishing – 4%

Q9. What are the GREATEST ASSETS and STRENGTHS of Treasure Island's Parks and Recreation spaces and offerings?

- Beach – 30%
- Accessibility, clean, safe – 29%
- Sports (golf, tennis, etc.) – 8%
- Parks & open/green spaces – 4%

Q10. What do you do for recreation in the City of Treasure Island?

- Walking/exercise – 37%
- Beach – 25%
- Boating/kayak, fishing – 20%
- Sports (golf, tennis, shuffleboard, etc.) – 16%
- Eating/drinking/socializing – 12%

Q12. In 2040, how do you see residents of Treasure Island using parks and recreation spaces and offerings?

- Walking, sports – 23%
- Same as today – 9%
- Parks & green/open spaces – 8%
- Increased use – 7%
- Technology integration – 7%
- Entertainment/arts – 6.5%
- Infrastructure (parking, meters, roads, etc.) – 5%
- Boating/kayak, fishing – 4%

Q13. What is the GREATEST OPPORTUNITY for IMPROVEMENT with our City's Parks and Recreation spaces and offerings? (Anything missing?)

- Parks & green/open spaces – 15%
- Infrastructure (boardwalks, paved walkway, etc.) – 12%
- Entertainment/arts – 9%
- Walking, sports – 7%
- Splash pad/pool – 7%
- Boating/kayaking, fishing – 5%
- Accessibility – 5%

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With the data from the Park Planning and Pizza workshops, focus groups were created to continue community engagement. The focus groups were broken into (3) strategic areas that captured the community responses.

Health and Wellness

Environment and Sustainabiltiy

Arts, Entertainment and Leisure



Health & Wellness –
- Walking (paths, connectivity)
- Exercise/fitness (equipment, locations)
- Bike & running paths (location, connect to existing trails)

Environment & Sustainability –
- Green spaces (designation, management)
- Conservation
- Climate change/sea-level rise (future planning, considerations)

Arts, Entertainment, & Leisure -
- Weddings/celebrations (location management, marketing)
- Boating, kayaking and fishing (additional locations, designated areas/launches)
- Food & drink (event management, designated areas/ concessions)
- Live music, art, community celebrations (event management, community involvement)

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Steve Edwards
Diane Crabill
Gabriel DiCristofaro
Michael Noonan
Carlos Miro

Health and Wellness Focus Group

Community Ideas for H&W Activities	
• Increase safe running and cycling (aerobic exercise activity) spaces in the City	• Improve boardwalk designation signage for safe use
• Better use of existing park spaces for H&W purposes (e.g. Triangle Park improvement)	• Too much alcohol along Beach Trail
• Trees used for shade structure	• Exercise equipment for all activity levels (i.e. beginner, intermediate, advanced)
• Exercise trail and equipment to blend into natural environment (not to stand out)	• Exercise equipment composed of recycle material
• Connectivity, connected trails, connect to existing area trails (i.e. Pinellas Trail)	• Kayak launch. Bay access on North end of island preferable; Elnor Island access
• More green spaces/less concrete. Trees in public spaces	• More level walking spaces for greater accessibility
• Keep/improve shuffleboard area(s)	• Increase "eco" activity in the City, embrace existing ecosystems
• Shaded walkways	• Outdoor fitness equipment connected to trail system
• Ensure inclusivity (i.e. different levels by age/ability)	• Local running opportunities (not traveling to run)
• Beach not level for running; activities shouldn't be based on water level (low tide)	• Safe bicycle lanes on Gulf Blvd; too many vehicles parked along hotels; beach cruiser on beach
• Own identity/character (i.e. not Clearwater or St. Pete Beach)	• Community gardening; volunteers maintain gardens; garden adoption

Community Ideas for Safety Improvement	
• Exercise trail along Treasure Bay	• Waterfront trail; connect to other area trails
• Running, walking, cycling trails off City streets	• Desirable scenery/visuals when exercising
• Barrier used if trail along roadway	• Safe paddle area near Treasure Bay; launches at Treasure Bay
• Safe area for kayak launch (boat traffic)	• Kayak launch near Tarpon Dr; easement
• Improve signage at City's boardwalk; ownership not clear; only safe space	• Floating docks with kayak launch (e.g. Yakport Launch)
• Expand/extend Beach Trail; safe space	

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Ginger Goepper
Diane Crabill
Bob Minning
Karen Barnett
Leonard Kaul
Carlos Miro

Environment and Sustainability Focus Group

Table 1. Meeting 1: Top Environmental Issues/Topics of Focus Group

Objective: What do you see as the most impactful initiatives to promote sustainability?	
Attendee Responses	
• Cleanliness of the environment/beach (more beach clean-ups)	• Interconnectivity of the 3 pillars of Sustainability (i.e. Environmental, Social, and Economical)
• Adapt other Cities' or regions' initiatives (e.g. Southern California)	• Address beach erosion and preserve green space
• Address environmental issues specific to the City	• Develop and offer eco-tours to visitors and residents
• Evaluate how similar communities address stormwater and beach erosion	• "Resiliency is essential", value green spaces. Grants/partnerships for plantings (drought tolerant species)
• Address sea level rise and preserve island as "nice place for people to visit and live"	• Create revenue through green spaces, increased parking, and more water events (e.g. rowing)
• Maintain beach and beach environment (sustainable, resilient and clean)	• Beach is the City's greatest asset/ preserve beach
• Ensure continuity between Master Parks Plan and City's Sustainability Plan	• Improve City's stormwater systems (e.g. stormwater backflow and check valve systems)
• Address erosion using living sea walls	• Establish requirements to increase the height of existing and new sea walls
• Treasure Bay provides excellent opportunity to deploy sustainability initiatives (e.g. living sea wall, water access, etc.)	• Increase connectivity with treed walkways connecting recreation areas
• Informational signage relating to coastal habitats (Sunset Vista Park example)	• Create/promote local ferry system as revenue source. Promote non-vehicle travel

Table 2. Meeting 1: Top Social Issues/Topics of Focus Group

Objective: What do you see as the most impactful initiatives to promote sustainability?	
Attendee Responses	
• Safer spaces to walk and improved connectivity (strong consensus)	• ADA accessible pathways
• Create and/or promote areas for outdoor activities (e.g. fishing, kayaking)	• Use a bike/scooter share service
• Consider plant species at Treasure Bay to create living sea wall (to not obstruct views)	• Provide public education with improved signage. Engage with local school-aged children and local nonprofit organizations
• Develop existing accesses to intercoastal/Create new access at Treasure Bay	• Provide education/promote recycling programs (e.g. TIcollects.com)
• Create green/open space	• Develop "no-plastic-straw" policy
• Increase number of cigarette disposal containers City-wide	• Use existing electronic signage to promote City services (recycling)
• Proactive advertising of community events (contact community instead of expecting them to visit website)	• Engage in a local Time Bank service
• Publish City maps of amenities on the City's website	• Create Sustainability page on the City's website

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Environment and Sustainability Continued

Table 3. Meeting 2: Beach Focus

Objective: Think BIG. Envision parks and green spaces 20+ years into the future. How will green spaces and parks make us feel?	
What does our beach look and feel like?	
• Mixed opinions relating to event area size. Consensus is that the event space should not be expanded too much (e.g. Remove some newer beach vegetation, but not all)	• Staggered and elevated dune system preferred
• Extend the beach trail to the north with an elevated boardwalk through the dune systems	• Create and maintain walkovers to protect vegetation and provide beach access around standing water
• Improved beach access (more ADA accessible areas)	• Vegetation used to defend against effects of climate change
• Both sandy beach areas and vegetation areas are valued	• Improved beach aesthetics as seen from roadway (see beach from major corridors)
• Develop dual-purpose aquatic attractions (e.g. elevated pools and activities that also defend against effects of climate change)	• Incorporate principles of stormwater management into usable park spaces
• Use Florida-native plant species when planting and develop sponsorships for community gardens	



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Environment and Sustainability Continued

Table 4. Group Questions and Answered

How do future green spaces and parks make you feel connected to the environment? (more interactive or more passive spaces)	
• Shade and water fountains	• Water features for kids
• Reduced amount of paved surfaces	• Multifaceted park spaces
• Florida native plants, increased wildlife	• Interactive areas
• Covered trash bins	• Education
• Roof-top parks	• Solar panels to shade/power parking areas
• Historical signage	• Greater use of public art
Should parks be examples of sustainable design? (e.g. LEED certified buildings, etc.)	
• Should use LEED designs as budgeting allows	• Educate and promote sustainable buildings when implemented
• Incorporate as many sustainability components as possible	• Treasure Bay is most feasible site for living shoreline
How do we promote sustainability through events?	
• Water bottle filling stations	• Ice vending machines
• Cigarette butt receptacles	• Children activities (seed plantings)
• Understand our community demographics (e.g. how many children live/visit frequently)	• Offer eco-workshops and promote partnerships with local environmental groups
• Educational boards/handouts highlighting current sustainability efforts	• Promote community-based volunteer opportunities
How do we draw people to our parks?	
• Graphics on advertisements	• Promote volunteer opportunities
• Accessible workout areas/equipment	• Water access to parks/short-term docking and transient slips at existing marina
	• Treasure-themed park equipment/workout equipment
What opportunities or areas for improvement do you have in mind?	
• Green roofs on municipal buildings	• Convert existing City Hall site to park space
• Water access in parks	• Grants to create green spaces
• Create Treasure Island merchandise shop with City-themed items	• Engage with a local Time Bank
• Address funding in Master Plan	• Embrace laid-back atmosphere

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Carrie Auerbach
Ray Chewning
Diane Crabill
Chuck Coward

Arts, Entertainment and Leisure Focus Group

Table 1. Public Art

Community Ideas for Public Art	
• Fish sculpture w/ recyclables (recycling art in general)	• Street furniture w/ City-wide theme (e.g. Caddy's & Beach Pavilion)
• Commemorative bench program	• Embrace beach heritage (e.g. year-round sand sculptures that change style and locations monthly, adjacent to Beach Walk. Sand Sculpture Capital of FL)
• Transient beach art in permissible areas	• More "local vibe" w/ artwork (i.e. local artists/content)
• Central art piece (e.g. clocktower)	• Arts & Craft shows
• Art gatherings w/ workshops	• Traveling art exhibitions
• Dance and music gatherings w/ workshops	• Expand/improve community artwork at City beach accesses

Table 2. Entertainment/Leisure

Community Ideas for Entertainment & Leisure	
• More beach-front festivals (e.g. Sanding Ovations)	• Community-wide holiday celebrations (e.g. 4th of July, etc.)
• Outdoor music shows (e.g. seafood, BBQ, or Jazz festivals. Attract locals *and* tourists)	• Better advertising for events (e.g. street banner, civic assoc. newsletter, resident text/email database, "Events" page on website)
• Dance shows	• Expand "Rock Around the Clock" to every 2 months
• Car shows (e.g. classic cars)	• Environmental education events. Bring in community support (e.g. beach clean-up w/ informational lecture after)
• Fair w/ amusement rides/attractions	• Amphitheater at Treasure Bay
• Local vendor fair (e.g. Friday Market)	

Arts, Entertainment and Leisure Continued

Table 1. Event Strengths & Opportunities

Community Views of Event Strengths & Opportunities	
Strengths	***Opportunities***
• Ample accessible public beach	• More events on sand (e.g. sanding ovations, kite festival, markets)
• Hometown feel (i.e. "Old Florida", local shopping, etc.)	• "Green" festival, good environmental stewardship
• Current organized beach clean-ups	• Increased participation in beach clean-ups
• Holiday boat parade	• Community spaces in new facility (i.e. Allied building)
• City purchase of Allied building (new City facility)	• Address loss of events and parking on beach related to objection by hotel owner(s)
• Kite Festival & markets	• Monthly market/gathering (e.g. 1st Friday, "The Big Chill", etc.)
• Events on the beach (e.g. Sanding Ovations)	• Expand use of Treasure Bay facility

Table 2. Events at Treasure Bay

Community Ideas for Events at Treasure Bay	
• More events/festivals (e.g. daytime music, arts festival, etc.)	• Boat parade viewing/event on property
• Dual purpose - keep tennis, convert golf spaces to multi-purpose use.	• Food and alcohol at events on property
• Expand tennis courts	• Sports camps (i.e. tennis & golf) for tourists, promote at hotels
• Create walking path equipped with exercise stations	• Address drainage issue(s) on current golf course
• Create green/open space	• Amphitheater/bandstand
• Driving range with chipping and putting area (as only golf activities)	• Create a putt-putt area/course
• Create area for younger kids and teenagers (market to tourists)	• Make facility "sustainable"
• Offset improvement costs by selling naming rights to facility/area	• Create fishing pier
• Retain property as-is and improve North-end of City (i.e. Kingfish Park area)	

Arts, Entertainment and Leisure Continued

Table 3. Messaging & Communication

How Community Receives/How to Improve Communication (of events)	
• Word-of-mouth (WOM)	• Community newsletter and/or local news sources (i.e. Beach Beacon)
• Community activity calendar	• Community bulletin boards
• Community signs (e.g. Isle of Palms) & over-head roadway banners	• Electronic messaging beyond social media (e.g. e-mail)
• Personal texts/messaging	• Local Chamber of Commerce messaging
• Social media	• Neighborhood civic association messaging
• Digital signs (City Hall and Community Center)	• Create "Events" page on City's website
• Create social media page solely for events	• Create City-wide electronic database for resident e-mails



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Mike Porter
Chuck Coward
Ray Chewning
Diane Crabill
Carlos Miro
Tammy Payne
Leonard Kaul
Steve Edwards
Hal Merryman

Combined Focus Group Workshop

Table 1. Breakout Session – Consensus Items

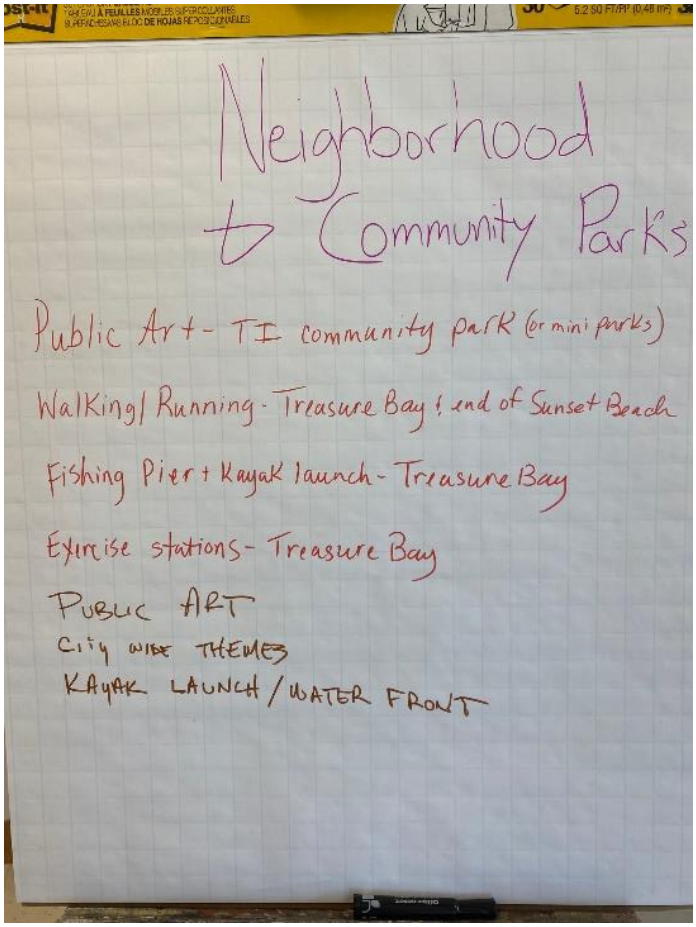
Consensus Items by Location				
Mini Parks	Neighborhood/Community Parks		Beach Access	Special Use Facilities
Modified exercise stations	Public art (at Treasure Island Park)	Kayak launches	Public art at beach access locations	Public art at water access points
Public art/themed murals	Local artist representation	Eliminate golf course at Treasure Bay	City-wide theme (e.g. marine life and pirates)	Kayak launches at bay access points
Environmental education	Walking/running path (at Treasure Bay/Sunset Beach)	Increase connectivity		Kayak storage at larger facility
Develop additional park space at current City Hall	Fishing pier at Treasure Bay	Water access at current City Hall for transient boat slips/kayak launch		Add to existing docks and/or boat ramps
Marina/kayak launches	Exercise stations at Treasure Bay/Treasure Island Park			Benches with city-wide theme

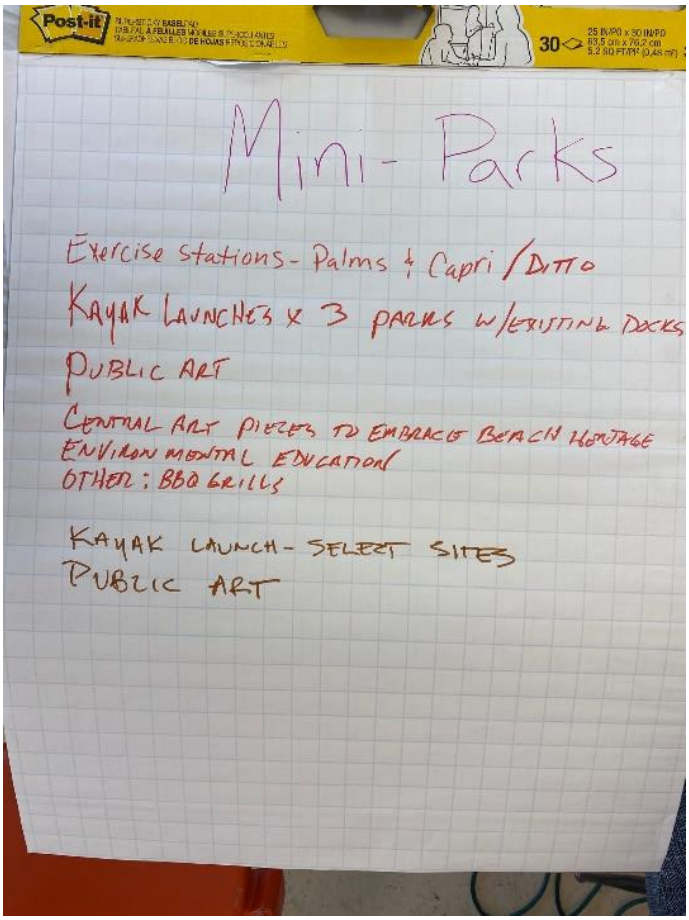
Table 2. Treasure Bay Question Responses

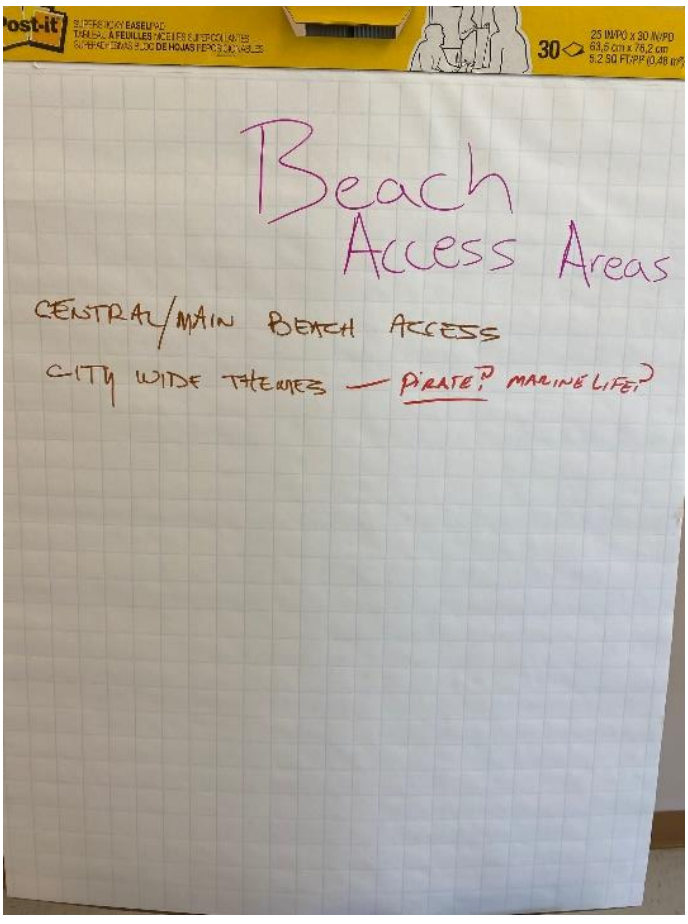
"What does a flagship Treasure Bay facility look like to you?"					
Walking/running trails throughout	Mixed use pier (fishing/kayak launches)	Small band shelter or amphitheater	Community park like "Rosselli Park"	Wedding venue	Acoustic music
Exercise & playground equipment	Eco-activities & educational areas	Putting greens	Build a Community Center for Paradise Island	Exercise programs or classes	Community gardens
Benches	Eliminate the golf course	Enhance playground with splash pad/wading area	Regional tennis facility	Positive messaging throughout parks	Redevelop space currently used for golf
Increased parking	Kayak facility with launches, rentals, and storage	Good neighbors	Non-income producing activities (i.e. passive recreation)	Revenue producing activities (i.e. tennis program, regional tennis, pavilion rentals, and kayak storage)	Series of pavilions for rentals
Keep green space (retain "view" for nearby residents)	Any new buildings must consider water views, FEMA	More input from Paradise Island residents	Parking an issue	Consider tourist use	Treasure Bay is "Community's" park

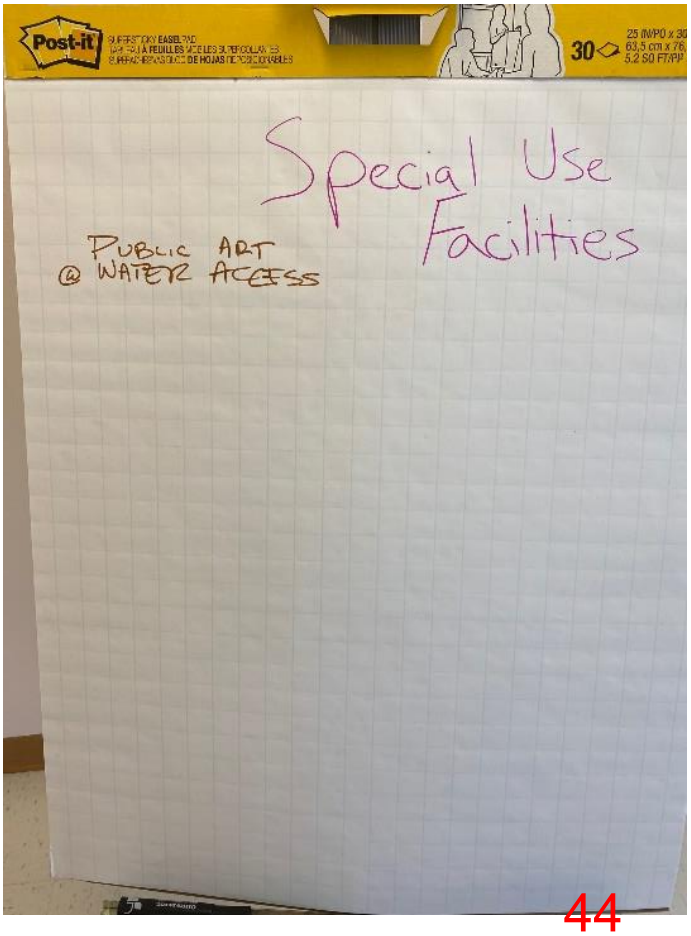
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Combined Focus Group Workshop Continued

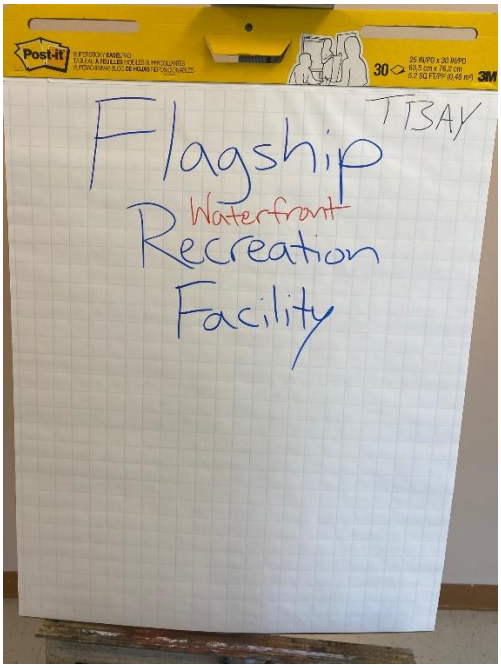


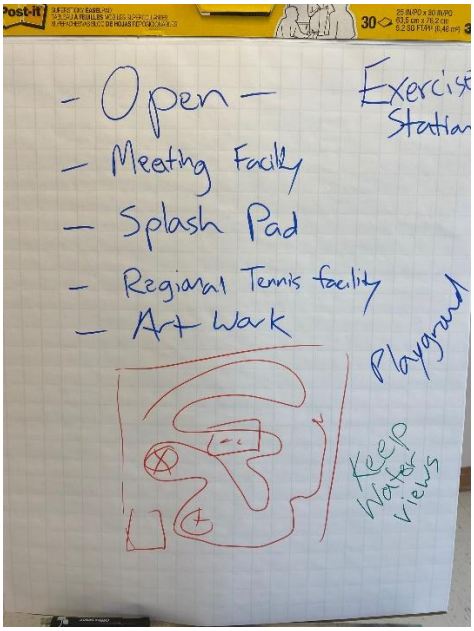






Combined Focus Group Workshop Continued

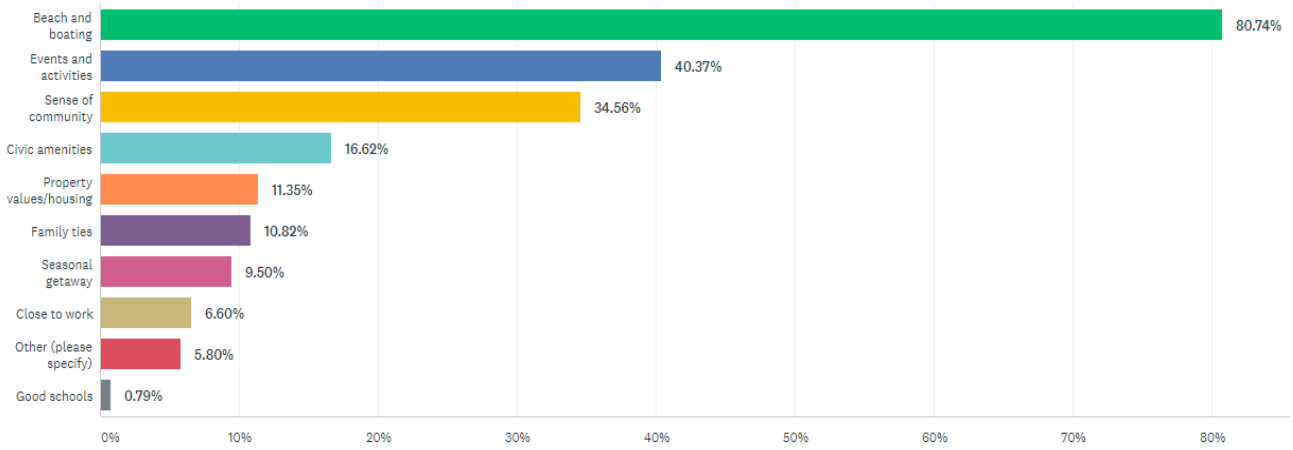




The Parks and Recreation Department also utilized data from the City's Community Survey.

ENGAGE TI FY20

Treasure Island residents all have different reasons for calling our community home. Please choose your top 3 reasons why you live in Treasure Island:



Why is Treasure Island your home?

Reason: percent of respondents
beach and boating - 80.74%
proximity to entertainment and cultural events - 40.37%
general sense of community - 34.56%
amenities (parks, library, facilities) - 16.62%
property values or housing options - 11.35%
I was born here or family moved here - 10.82%
seasonal getaway - 9.50%
it is close to work - 6.60%; and
proximity to good schools - 0.79%

Among the respondent's choosing other (5.8%) and providing an answer, the majority fell into one of the following broad categories:

-small-town feel, especially compared to other more built-up beach communities,
-general sense of safety, and
-great weather and natural environment.

Most important City services

Service: percent of respondents
city parks and the beach - 57.78%
street, sidewalk, bike line, and street lighting - 43.80%
public safety (police and fire/EMS) - 43.80%
recreation/community events/amenities - 27.70%
zoning, planning, and code compliance - 23.48%
garbage, recycling, and yard waste collections - 21.37%
economic redevelopment - 16.62%
public parking - 12.40%
stormwater management - 11.35%
water & wastewater - 7.92%; and
public communication, civic participation, and outreach - 7.39%

Among the respondent's choosing other (1.85%) and providing an answer, the majority fell into one of the following broad categories:

-improve public landscaping;
-becoming a more environmentally aware community, and
-explore outsourcing city departments.

see appendix for survey results

How do we get there?

Through the extensive engagement process, the Treasure Island Community has identified these *9 Master Park Plan Goals* that will be a tool to guide future decision making. A goal is defined by a broad directional statement of emphasis or intent to do or accomplish something in the future.

Within each strategic goal area in the Master Park Plan, we have identified community driven *visions* and *case studies*.

Our Park Plan:

Enhances Efficiency
Enhances Decision Making
Enhances Communication
Enhances Effectiveness
Unifies



The City's Master Park Plan sets the course for the future needs and desires of the community. The Master Park Plan allows the City to understand the impact (social, economic and environmental) of future choices for the betterment of Treasure

Island. Planning provides perspective in challenges, identifies realistic alternatives and formulates a successful course of action in regards to the parks, recreational facilities and programs provided by the City.

How do we get there?

Master Park Plan Goals

1. Provide a safer environment to walk and bike by improving connectivity between parks and public places
2. Improve water access and water activities
3. Provide community workout/exercise equipment
4. Promote inclusiveness
5. Enhance public spaces with public art
6. Provide opportunities for the community to gather outside
7. Provide unique community events and programming
8. Enhance environmental education programs
9. Incorporate environmental sustainability elements into parks and public spaces

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GOAL 1

Provide a safer environment to walk and bike by improving connectivity between parks and public places.

The City of Treasure Island desires to improve wayfinding and accessibility to local attractions by waterway, bicycle paths and pedestrian paths. These multimodal improvements will aim to lessen roadway traffic and to enhance the safety, health and enjoyment of residents and visitors. As part of this initiative, the City will develop a Connectivity Master Plan.

Visions & Case Studies:

1. Re-imagine Treasure Bay Recreation Facility to include a walking/running trail loop.
2. Install bike racks at all City parks.
3. Provide a covered and secure area for bike storage at the new City Hall.
4. Develop a Treasure Island Walking Trail.



Mayor at the 1st Annual Pirates in Pink 5K



Q10. What do you do for recreation in the City of Treasure Island?

- Walking/exercise – 37% (58)
- Beach – 25% (39)
- Boating/kayak, fishing – 20% (32)
- Sports (golf, tennis, shuffleboard, etc.) – 16% (25)
- Eating/drinking/socializing – 12% (19)

"If you put a trail out here (Treasure Bay), a runner will come here because it is safe."
~ Steve Edwards

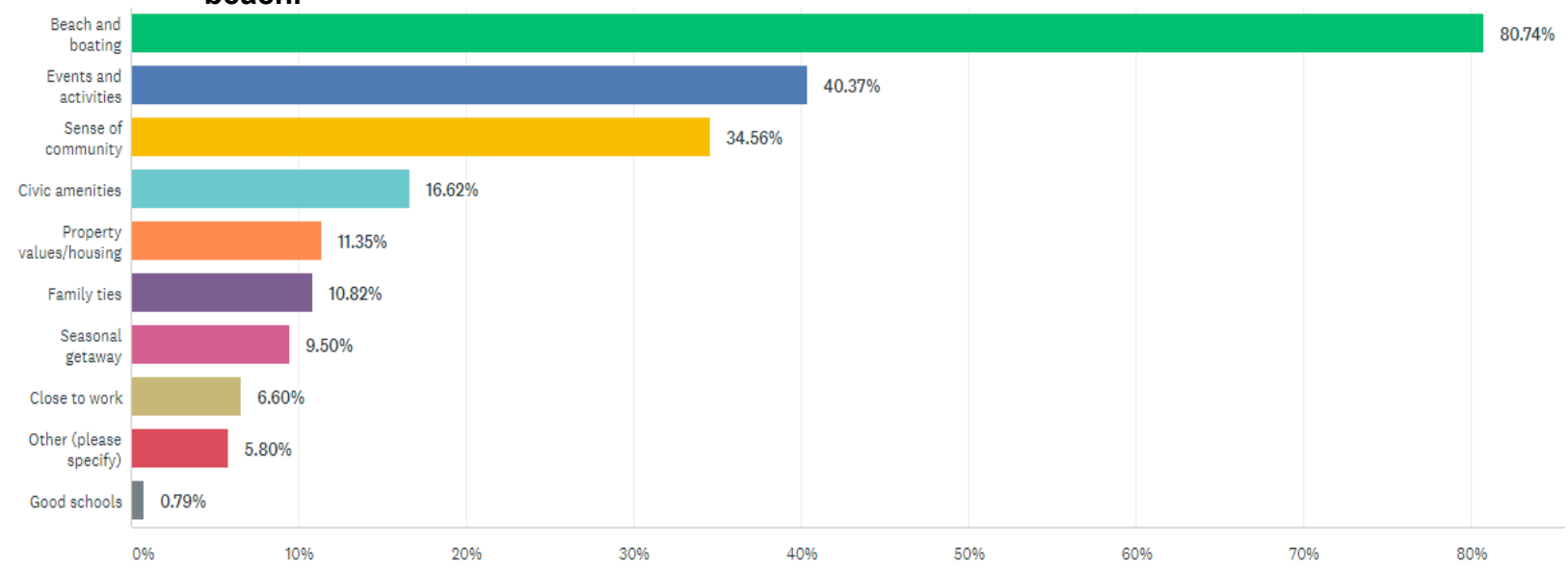
How do we get there?

GOAL 2

Improve water access and water activities.

Visions & Case Studies:

1. **Add a kayak and SUP launch at the Treasure Bay Recreation Facility.**
2. **Install kayak launch and SUP staging racks at City's existing boat ramps and existing dock at 119th Ave.**
3. **Explore other locations to improve water access and amenities (transient boat slips, fishing areas).**
4. **Include boat ramps, kayak launch areas and docks on City's Recreation GIS map.**
5. **Promote benefits of living shoreline at Treasure Bay Recreation Facility.**
6. **Continue to educate community on benefits of clean water.**
7. **Continue to look for ways to improve the existing boardwalks on the City's beach.**

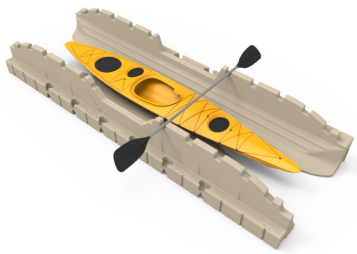




Boat ramps in Treasure Island



Picture of kayak loading area in Lee County Parks



Example of kayak floating dock

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GOAL 3

Provide community workout/ exercise equipment.

Visions & Case Studies:

1. **Revamp the existing exercise equipment located in TI Park.**
2. **Look for other feasible locations to include small inclusive excercise stations that are connected by a walking trail.**
3. **Install exercise equipment along the proposed Treasure Bay Recreation Facility walking/ running trail.**

Email sent on 3/5/20

Justin,
Let's light this up, sir.
It is exciting and inspiring to see everyone in sync with our goals and vision.
Wonderful to hear that from you.
Quick Bullets on Areas of Importance to Gabriel DiCristofaro
1. Love the idea of exercise systems at all levels in all our parks
2. Love to see that material be from post-consumer recycled, even the parking lots can use the recycled bottle asphalt
3. Love to see local Artist's Paint those machines
4. Love to see the system of parks connected. Maybe the "Healthy Treasure Trail"? On the trail, we, TI, guide participants on a fun, healthy, light learning adventure. Picture 3 Colored Circled Stacked on a Poll at Intervals along the trail.
A. Mental - Red
B. Physical - Blue
C. Environmental - Green
Talk soon. This is a good start to add to the materials.
Thank you,
Gabriel





Example of exercise equipment that could be feasible in City parks.

Health and Wellness Focus Group Consensus Item:

Increase safe running and cycling (aerobic excercise activity) spaces in the City

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GOAL 4

Promote inclusiveness.

The City of Treasure Island is committed to accessibility for our residents and visitors with disabilities.

Visions & Case Studies:

1. **Promote diversity and inclusion in all programming and events.**
2. **Pursue funding for additional beach wheelchairs.**
3. **Ensure that all improvements proposed in the Master Park Plan are ADA compliant and promote inclusiveness.**



Picture from the Mobi-Mat Ribbon Cutting

GOAL 5

Enhance public spaces with public art.

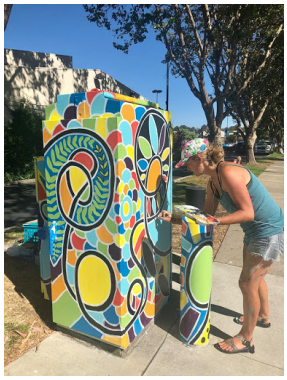
Public art adds value to the cultural, aesthetic and economic vitality of a community. It is a principle of design that public art contributes to a community's identity, fosters community pride and a sense of belonging, and enhances the quality of life for its residents and visitors. ~The Amherst Public Art Commission

Visions & Case Studies:

1. **Incorporate public art in parks and recreation facility improvements**
2. **Host a public art contest for the Treasure Bay living shoreline educational signage.**
3. **Re-start the Beach Art Sign Contest or similar campaigns that promote environmental education with public art.**



Current beach art sign at Gulf Front Park



Example of art on a utility box



Turtle mural in neighboring city

Community Ideas for Public Art

• Fish sculpture w/ recyclables (recycling art in general)	• Street furniture w/ City-wide theme (e.g. Caddy's & Beach Pavilion)
• Commemorative bench program	• Embrace beach heritage (e.g. year-round sand sculptures that change style and locations monthly, adjacent to Beach Walk. Sand Sculpture Capital of FL)
• Transient beach art in permissible areas	• More "local vibe" w/ artwork (i.e. local artists/content)
• Central art piece (e.g. clocktower)	• Arts & Craft shows
• Art gatherings w/ workshops	• Traveling art exhibitions
• Dance and music gatherings w/ workshops	• Expand/improve community artwork at City beach accesses

Ideas proposed by the Arts, Entertainment and Leisure Focus Group

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GOAL 6

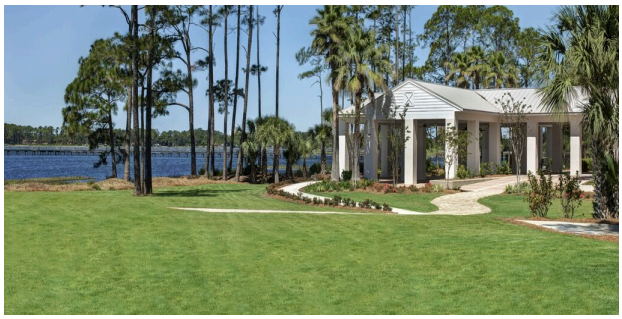
Provide opportunities for the community to gather outside.

Visions & Case Studies:

1. **In addition to including a walking/running loop, construct a pavilion at the Treasure Bay Recreation Facility for community and neighborhood gathering space.**
2. **Adapt the deck at the Sunset Beach Pavilion for acoustic performances and community gatherings.**



Example of small stage in a park



Example of pavilions that could be feasible at the Treasure Bay Recreation Facility



Picture of Sunset Beach Pavilion

Table 2. Treasure Bay Question Responses

"What does a flagship Treasure Bay facility look like to you?"					
Walking/running trails throughout	Mixed use pier (fishing/kayak launches)	Small band shelter or amphitheater	Community park like "Rosselli Park"	Wedding venue	Acoustic music
Exercise & playground equipment	Eco-activities & educational areas	Putting greens	Build a Community Center for Paradise Island	Exercise programs or classes	Community gardens
Benches	Eliminate the golf course	Enhance playground with splash pad/wading area	Regional tennis facility	Positive messaging throughout parks	Redevelop space currently used for golf
Increased parking	Kayak facility with launches, rentals, and storage	Good neighbors	Non-income producing activities (i.e. passive recreation)	Revenue producing activities (i.e. tennis program, regional tennis, pavilion rentals, and kayak storage)	Series of pavilions for rentals
Keep green space (retain "view" for nearby residents)	Any new buildings must consider water views, FEMA	More input from Paradise Island residents	Parking an issue	Consider tourist use	Treasure Bay is "Community's" park

Proposed Strategic Plan Relevance:

Community Goal 1, Objective 2 - Promote Treasure Bay as a flagship waterfront recreation facility.

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GOAL 7

Provide unique community events and programming.

Visions & Case Studies:

1. **Continue to work with Visit St. Pete Clearwater to promote the Sanding Ovations Master's Cup, the City's signature event.**

2. **Work with Visit St. Pete Clearwater and St. Petersburg College to host youth and collegiate tennis tournaments at the Treasure Bay Recreation Facility.**

3. **Identify opportunities to provide virtual and mobile programming for children and adults.**

4. **Identify and program more family-friendly and sustainability-focused events.**



Treasure Bay Recreation Facility tennis courts

Proposed Strategic Plan Relevance:

Community Goal 1 - Promote a socially - connected community by fostering a diversifying engagement strategies for residents, families, businesses and visitors.

Community Goal 1, Objective 2, Action Plan 1- Enhance tennis programming to include collegiate tournaments.



Sanding Ovations Master's Cup



ESPN Gasparilla Bowl Beach Invasion

GOAL 8

Enhance environmental education programs.

Visions & Case Studies:

1. **Incorporate learning stations and educational signage at Treasure Bay Recreation Facility to promote the ecological benefits of a living shoreline.**

2. **Develop a virtual educational program to promote the many environmental elements present in a coastal community like Treasure Island.**

3. **Host live educational classes at the Sunset Vista Trailhead Park and other City facilities and City events.**

4. **Continue to partner with the City's Public Works Department to assist in annual sea oat plantings, community driven beach cleanups and any community led sustainability initiatives.**

5. **Enhance community driven beach clean-up activities following events and holiday weekends.**





Environmental education programming will be available at Sunset Vista Trailhead Park



Annual Sea Oat planting event

GOAL 9

Incorporate environmental sustainability elements in parks and public spaces.

Visions & Case Studies:

1. **Construct a living shoreline at the Treasure Bay Recreation Facility.**
2. **Restore the stormwater ponds at the Treasure Bay Recreation Facility.**
3. **Transition to native, drought-resistant, low maintenance vegetation at City parks and public spaces.**
4. **Increase cigarette disposal containers and awareness in City parks and public spaces.**
5. **Look for ways to integrate stormwater design and parks.**
6. **Consider ways to incorporate green infrastructure when updating parks and public spaces.**

Should parks serve as an example of sustainable design? (e.g. LEED certified buildings, etc.)	
• Should use LEED designs as budgeting allows	• Educate and promote sustainable buildings when implemented
• Incorporate as many sustainability components as possible	• Treasure Bay is most feasible site for living shoreline



Pond at Treasure Bay Recreation Facility



Existing Condition of the Seawall at the Treasure Bay Recreation Facility

TBEP TAMPA BAY ESTUARY PROGRAM PARTNERSHIP FOR A HEALTHY BAY

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The Master Park Plan goals and visions will be a tool to guide future decision making. This plan will be updated to include future Capital Projects related to Parks and Recreation. Not only will traditional funding sources be utilized to complete future projects, but grants and other funding opportunities could be available.

Grant Opportunities

Florida Department of Environmental Protection

The following is a summary of the four viable recreation grant programs now available through the Florida Department of Environmental Protection (FDEP):

Florida Recreation Development Assistance Program (FRDAP)

The Land and Recreation Grants staff administers grants to local governments through the Florida Recreation Development Assistance Program (FRDAP). This competitive, reimbursement grant program provides financial assistance for acquisition or development of land for public outdoor recreation. Eligible participants include all county governments, municipalities in Florida and other legally constituted local governmental entities with the responsibility for providing outdoor recreational sites and facilities for the general public. For more program information, view the facts about FRDAP in the program information listed below.

Florida Communities Trust (FCT)

Florida Communities Trust (FCT) assists communities in protecting important natural resources, providing recreational opportunities and preserving Florida's traditional working waterfronts through the competitive criteria in the Parks and Open Space Florida Forever Grant Program and the Stan Mayfield Working Waterfronts Florida Forever Grant Program. These local land acquisition grant programs provide funding to local governments and eligible nonprofit organizations to acquire land for parks, open space, greenways and projects supporting Florida's seafood harvesting and aquaculture industries. The source of funding for Florida Communities Trust comes from Florida Forever proceeds.

Land and Water Conservation Fund (LWCF)

The Land and Recreation Grants staff administers grants to local governments through the Land and Water Conservation Fund (LWCF). The LWCF is a federal competitive program that provides grants for acquisition or development of land for public outdoor recreation. Eligible participants include all county governments, municipalities in Florida and other legally constituted local governmental entities with the responsibility for providing outdoor recreational sites and facilities for the general public. For more program information, view the facts about LWCF in the program information listed below.

Recreational Trails Program (RTP)

The Recreational Trails Program is a federally funded competitive grant program that provides financial assistance to agencies of city, county, state or federal governments, and organizations, approved by the state, or state and federally recognized Indian tribal governments, for the development of recreational trails, trailheads and trailside facilities. The program has been shifted from the Office of Greenways and Trails to DEP's Land and Recreation Grants Section within the Division of State Lands.

Tampa Bay Estuary Program (TBEP)

The program supports projects which restore and protect Tampa Bay and its watershed.

- US Fish & Wildlife Service Grants
- Deepwater Horizon Program

https://floridadep.gov/lands/land-and-recreation-grants/content/rtp-assistance

https://floridadep.gov/wra/deepwater-horizon

https://www.fws.gov/wsfrprograms/Subpages/GrantPrograms/BoatAccess/BA.htm

How do we get there?

Donations/Sponsorships

Civic Associations and community organizations will often contribute to recreation and other improvement programs to benefit the City. Private sector contributions may be in the form of monetary contributions, donations, the provision of volunteer services or the contribution of equipment or facilities.







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Park Plan Appendix

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Appendix

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Health and Wellness Focus Group ---------- 30

Environment and Sustainability Focus Group ---------- 34

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Appendices ---------- See Attached

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Summary

The following are sections intended for use when completing the Treasure Island Master Park Plan. The sections include: a complete inventory of all park and recreational spaces, feedback received during a series of community-wide engagement events, information from multiple community-based focus group meetings, and appendices that include maps and presentation materials.

The inventory lists all parks, recreation spaces, and amenities within Treasure Island (the City). There were 61 areas assessed and documented in the inventory. The inventory was presented during the community engagement sessions, copies were handed out at the focus group meetings, and it was also made available on the City's website and presented to the City Commission.

The Parks, Planning and Pizza engagements were held in several locations throughout the City. The sessions were designed to better understand and document the community's perception of current park and recreation offerings. The sessions were conducted by an independent third party and community feedback data was forwarded to City staff. Responses to the specific questions were grouped and are included in a section below

Focus groups were developed from the community responses during the Park, Planning, and Pizza sessions. There were three small groups consisting of individual members of the community, each discussing a specific topic. The first topic was Arts, Entertainment, and Leisure, which was separated into two groups because of the number of people who expressed interest in the topic. The next was Health and Wellness. Finally, conducted over two sessions, was Environment and Sustainability. Summaries from those meetings are included below.

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Inventory of Treasure Island Parks and Recreation Areas

I. INTRODUCTION

The purpose of this report is to establish a baseline inventory of the current parks, open spaces, and recreation areas located within the City of Treasure Island, Florida (the City). A recently completed audit identified the City's existing parks and recreation areas and their overall condition. Well-designed parks and recreation areas are assets to the immediate and surrounding communities. Keeping the City's parks and recreation areas safe and functional is an important component of community wellness (National Recreation and Parks Association, n.d.). Understanding what recreational resources are available for residents and visitors, and their condition, will guide future planning and funding efforts.

The City of Treasure Island is uniquely situated on the coast of the Gulf of Mexico and includes sixty one (61) parks and open spaces. Its pristine beaches and inviting waters provide many of the recreational opportunities enjoyed by residents and visitors alike. A report by the Florida Department of Environmental Protection indicates that the majority of recreation activities enjoyed by residents (75%) and visitors (56%) in West Central Florida included saltwater beach activities (Economic Impact of Outdoor Recreation Activities in Florida, 2017). Maintaining the City's public beach areas and beach accesses should be a priority.

This report defines the types of recreation areas and activities, discusses established level-of-service standards, and provides an inventory of existing recreation areas and activities within the City. An assessment of the overall condition of each recreation area is included.

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II. OUTDOOR RECREATION AND OPEN SPACES DEFINED

A. Activity Designation.

The Florida Department of Environmental Protection (FL DEP) identifies outdoor recreation as any leisure activity that is conducted outdoors (2013). Further classification of outdoor recreational activities can include the designation as being either a "resource-based" or "user-oriented" activity. According to the FL DEP, resource-based outdoor recreation is dependent on a particular element or combination of elements in the natural and cultural environments that cannot be easily duplicated by man, whereas user-oriented recreation can generally be provided anywhere, assuming the availability of space and funds for development (2013). Examples of common *resource-based* recreational activities include saltwater beach activities, boating, nature study/viewing, bicycling, fishing, and picnicking. *User-oriented* activities tend to be structured and rule-oriented and can be provided in any available location of convenience. Examples of user-oriented outdoor recreation activities include golf, tennis, baseball, footgolf, volleyball, basketball, shuffleboard, and playground activities.

B. Level-of-Service Standards and Recreation Site Guidelines.

To identify existing and future needs relating to outdoor recreation, site guidelines and level-of-service standards for recreation have been developed. Based on recommendations by the FL DEP, which provide guidance for local governments to meet specific recreation needs within the community, population-based recreation standards have been adopted by the City of Treasure Island. This information is in the Recreation and Open Space (R/OS) Element of a previously published Comprehensive Plan (1999).

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To ensure that identified open spaces and park lands were capable of meeting the recreational needs of the community, specific site guidelines were established by the City. The guidelines were based on a set of criteria that defined the acreage, facility type, and service area requirements for various types of recreation sites within the community (1999). The criteria are included in Table 1 below

Table 1. Level-of-Service Standards, Parks and Open Spaces (R/OS Element, 1999)

Park/Facility Type	***Service Area/Population Served***	***Facilities***
Mini-Park	2 - 3 block area/2,500	Play apparatus areas, benches and open space, landscaping and picnic tables optional.
Neighborhood Park	0.25 - 0.5 mile/5,000	Play apparatus areas, recreation buildings, sports fields/courts, multi-purpose fields, senior citizen areas, landscaping, open space, free play areas.
Community Park	0.5 – 3 miles/5,000	All facilities found in the neighborhood park *plus* facilities to service the entire family. Pools, baseball/softball fields, tennis courts, general play areas, picnic areas, passive and active recreation areas.
Beach Access	1 access/0.5 mile of shoreline	Walkways, parking, and restrooms optional.
Open Space	1 acre/1,000	Passive recreation area, trails, and commemorative structures optional

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The Recreation/Open Space element of the previously published Comprehensive Plan adopted level-of-service criteria, based on FL DEP recommendations, that address facility standards for specific activities. The adopted level-of-service standards for specific activities are displayed in Table 2. The City also maintains a reciprocal agreement with neighboring St. Pete Beach to provide residents access to each municipality's recreation areas.

Table 2. Level-of-Service Standards, Specific Activities (R/OS Element, 1999).

Activity	*Level-of-Service Standard Per Person*
Baseball/Softball	1 field per 6,000
Basketball	1 court per 5,000
Beach Activities	1 mile of beach per 25,000
Bicycling	1 mile of trail per 5,000
Boating	1 boat ramp/dock per 5,000
Fishing (from land)	1 site per 5,000
General Play	1 equipped play area per 10,000
Golf	1 9-hole course per 25,000
Jogging/Walking	1 exercise trail per 15,000
Picnicking	1 acre per 6,000
Tennis	1 court per 2,000

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C. Park/Facility Condition Rating and Capital Improvements Plan.

The general condition of a park, facility, or equipment therein can be assessed visually, and rated using an established condition rating system. The condition rating system is explained in Table 3 below.

Table 3. Area Condition Rating System. Adapted from (Cavnar et. al., 2003)

Rating	*Condition*	*Description*
1	Excellent	Amenities and/or infrastructure new, or in new condition. No visible defects. Equipment may still be under warranty.
2	Good	Amenities and/or infrastructure in good condition but no longer new. Slight deterioration or small defects visible, but still functional.
3	Fair	Amenities and/or infrastructure are moderately deteriorated or have defective components. Equipment has not yet exceeded life cycle expectations.
4	Needs Improvement	Amenities and/or infrastructure is completely deteriorated or fully defective and in need of replacement. Equipment has exceeded useful life expectations.
5	Under Construction	Amenities and/or infrastructure are currently being developed/under construction.
6	Little/No Development	Area has little or no amenities and/or infrastructure. Walking path or seawall only.

A visual inspection identified the current condition of each area included in this report. The condition is based on a numerical scale (1-6) and assesses the general condition of the rated area, and any applicable equipment or amenities therein. The conditions are noted in the inventory list below. Improvements/additions to the parks and facilities are made as funding becomes available. Many of the requested improvement projects are included in the City-wide Capital Improvements Plan (CIP). The CIP is a prioritization and strategic implementation tool intended to manage capital needs with a value of $10,000 or greater and at least a 3-year life expectancy (Capital Improvement Project Proposal, 2018).

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III. MAPS OF RECREATION AREAS

See Appendices 1-4.

IV. EXISTING RECREATION INVENTORY

A. Description and List of Existing Public Beach Access

Public beaches are locations where traditional saltwater beach activities can occur. Generally, saltwater beach activities define multiple activities where the beach or shoreline is used as the primary resource. Since the activities are related individually, they are considered as a group, and are together distinguished from other major activities that may also involve the use of the shoreline in one way or another such as fishing and boating. Saltwater beach activities primarily consist of swimming, sunbathing, beachcombing, shell collecting, surfing and windsurfing (FL DEP, 2013). Existing public beach accesses for Treasure Island are displayed in Table 4. The Map # corresponds to the map in Figure 1.

Table 4. Existing Beach Access

Name, Site, Address	Equipment	Condition	Comments
Public Beach		1	Multiple resource-based and user-oriented recreational activities available
Beach Trail	Bike racks, trash receptacles, access to MobiMat, educational signage	1	Approx. 1 mile of paved, 12ft wide beach trail, developed with NOAA grant
Tern Lot, W Gulf Blvd between 77th & 79th Ave	Metered parking (53) with 3 pay kiosks, 3 dune walk-overs, access to public nature boardwalk	1	Redesign completed Fall 2018, beach access point for vehicles, property deed on file (12/1962)
Ring-billed Lot, W Gulf Blvd between 81st & 82nd Ave	Metered parking (41) with 2 pay kiosks, 2 dune walk-overs, wooden sign	1	Redesign completed Fall 2018, property deed on file (7/1977)
W Gulf Blvd & 84th Ave	Updated signage	6	Pedestrian access only, unpaved
W Gulf Blvd between 84th & 85th Ave (South)	Updated signage	6	Pedestrian access only, unpaved

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W Gulf Blvd between 84th & 85th Ave (North)	Updated signage	6	Pedestrian access only, unpaved
W Gulf Blvd between 85th Ave & Bay Plaza	Updated signage	6	Pedestrian access only, unpaved
Brown Pelican Lot, W Gulf Blvd & 88th Ave	Metered parking (9)	2	Unpaved lot with individual meters
Weckesser Park, W Gulf Blvd & 88th Ave	2 picnic tables, trash receptacles, 1 bench	2	Beach front park adjacent to public parking (Brown Pelican Lot). Property deed on file (11/1970, $3,160.01)
W Gulf Blvd & 90th Ave	Updated signage	6	Pedestrian access only, unpaved
Sunset Vista Park, Gulf Blvd & 97th Ave	Covered seating with decorative features, bike rack, 2 dune walk-overs, maintained beach trail, educational/decorative signage, shower	2	Beach front park, concrete gazebo with stairs and ramp (on 97th Ave street end), Properties deeds on file (North lot - 1/2001, $725,000) & (South lot - 2/2001, $300,000).
Gulf Blvd & 99th Ave	Metered parking, dune walk-over, bike rack, trash receptacle	2	Unpaved lot, street end (99th)
Gulf Blvd between 99th & 100th Ave	Updated signage	6	Pedestrian access only, unpaved
Sandpiper Lot, Gulf Blvd & 100th Ave	Metered parking, 1 pay kiosk, dune walk-over, solar light fixture, trash receptacle	2	Paved lot, adjacent to Island Inn (north end). Land dedicated 1/1973. Image on file
Gulf Blvd & 101st Ave	Unmetered parking, bike rack, informative signage, solar light fixture, trash receptacle	2	Unpaved lot, street end (101st)
Gulf Blvd & 102nd Ave	1 ADA accessible parking area, dune walk-over, bike rack, solar light fixture, trash receptacle	2	Unpaved street end (102nd) with private use encroachment (north side of lot)
Gulf Blvd & 103rd Ave	Metered parking, dune walk-over, informative signage, bike rack, trash receptacle, solar light fixture	2	Unpaved lot, beach access point for vehicles
Gulf Front Park, Gulf Blvd & 104th Ave	Metered parking (71), 3 pay kiosks, dune walk-over, MobiMat access, restrooms, showers, 2 bike racks, Beach Trail access, cigarette disposal containers, trash receptacles	2	Paved lot, beach access point for vehicles. Property deed on file (6/2009) from Pinellas County for explicit use as beach access park.
Gulf Blvd between 104th &105th Ave	Updated signage	6	Pedestrian access only, paved, access to Beach Trail
Gulf Blvd north of 108th Ave	Updated signage	6	Pedestrian access only, paved, access to Beach Trail
Gulf Blvd & 116th Ave	Updated signage	6	Pedestrian access only, paved, access to Beach Trail
Gulf Blvd & 117th Ave	Updated signage	6	Pedestrian access only, paved, access to Beach Trail
Gulf Blvd & 119th Ave	Updated signage, educational signage, bike rack, trash receptacles	2	Pedestrian access only, street end, paved, access to Beach Trail
Gulf Blvd & 120th Ave	Dune walk-over, bike rack, trash receptacle, solar light fixture, “No Parking” signage	2	No designated vehicle parking, street end, updated access sign on Gulf Blvd
Gulf Blvd & 121st Ave	Dune walk-over, bike rack, trash receptacles, educational signage, solar light fixture	2	No designated vehicle parking, street end, updated access sign on Gulf Blvd
Gulf Blvd & 122nd Ave	Dune walk-over, bike rack, trash receptacle, solar light fixture	2	No designated vehicle parking, street end, updated sign on Gulf Blvd

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Gulf Blvd & 123rd Ave	Dune walk-over, bike rack, solar light fixture, trash receptacle, wooden gate, "No Parking" sign	2	No designated vehicle parking, street end, updated sign on Gulf Blvd
Gulf Blvd & 124th Ave	Metered parking (16), dune walk-over, bike rack, solar light fixture, trash receptacle	2	Unpaved lot, street end (124th)
Gulf Blvd & 125th Ave	Dune walk-over, bike rack, solar light fixture, trash receptacle	2	No designated vehicle parking, street end, updated access sign on Gulf Blvd
Snowy Egret Lot, Gulf Blvd & 126th Ave	Metered parking (11), dune walk-over, bike rack, solar light fixture, trash receptacle	2	Parallel parking spaces, "Snowy Egret" wooden sign, updated access sign on Gulf Blvd
Gulf Blvd & 127th Ave	Unmetered parking, bike rack, "No Parking" & "Loading/unloading Only" signage, trash receptacle	3	Unpaved lot, beach access point for vehicles, metal signs faded/worn, updated access sign on Gulf Blvd
John's Pass at Gulf of Mexico	Gulf front jetty/walkway, bench seating, fishing line receptacles, protective railing	3	Concrete jetty between sandy beach and John's pass.

There are many public access points, available for use by residents and visitors along Treasure Island's beach front. These access points may include metered vehicle parking, bike parking, and/or pedestrian-only access to the public beach. All beach access points in the City are designated with updated signage that indicates amenities (e.g. vehicle parking, bike parking). When necessary, walk-overs are used to protect the coastal primary sand dune system. All dune walk-overs are in good to fair condition. Proposed CIP projects for beach access include replacement and/or rehabilitation of beach dune walk-overs supported by Goal 4, Objective 2 of the City's Strategic Plan ("To improve accessibility and management of the City's beach.") (2018). Also proposed are on-going repairs, facility painting, and signage replacement at Sunset Vista Park in FY2019. Additionally, two of the City-operated parking locations, the Tern and Ring-billed lots, were recently redesigned and resurfaced, with work completed October 2018.

B. Description and List of Existing Community & Neighborhood Parks.

Because the City of Treasure Island has a relatively small geographic area, each of the community and neighborhood parks are within accessible range of the entire community. Also, there is overlap in what amenities are offered in these areas. For these reasons, the community

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and neighborhood parks are combined in the following section. By definition, community parks are recreation areas that are intended to serve the immediate community, and also provide service to a larger geographic area beyond the neighborhoods in which they are located. Community parks are intended to serve the entire family with a broad selection of activities. Common activities/amenities found in these parks include dog parks, baseball/softball fields, tennis courts, general play areas, picnic areas, passive/active recreation areas, and recreation buildings. There should be vehicle parking and/or transit service options to accommodate visitors beyond walking and biking distance (> 0.5 mile).

Neighborhood parks are recreation areas that are intended to serve the residents within walking or biking distance. Neighborhood parks may also draw visitors from greater distances depending on the amenities offered. Common amenities in neighborhood parks include recreation buildings, multi-purpose fields, senior citizen areas, landscaping, open space, play apparatus areas, and free play areas. Existing community and neighborhood parks in Treasure Island are displayed in Table 5.

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Table 5. Existing Community/Neighborhood Parks.

Name, Site, Address	Equipment	Condition	Comments
Treasure Bay Golf & Tennis Center, 10315 Paradise Blvd	9-hole par 3 golf course with FootGolf, 8 clay tennis courts, 2 asphalt tennis courts, sand volleyball court, basketball court (regulation size), 2 shuffleboard courts, ADA accessible playground equipment, covered picnic area with grill, clubhouse, water views	2	Waterfront facility, new playground equipment installed FY 2017 (equipment will tentatively be covered FY 2019), property deed on file (2/1960)
Rosselli Park, 2nd St East & Capri Circle S	Paved parking (unmetered), little league complex (field, dugouts, scoreboard, batting cage, concession stand, & covered spectator seating), 2 asphalt lighted tennis courts w/backboard, playground equipment (lighted), 2 shuffleboard courts, basketball hoop, dog park, bike rack, water station, bathrooms, 4 picnic tables, community bulletin board, trail-like sidewalk with bench seating, Pinellas County Schools covered bus stop	2	Updated park signage, site is location for planned dog park, property deed on file (9/1975, $300,000)
Treasure Island Park & Community Center, 1 Park Place & 106th Ave	Metered parking (99) with 3 pay kiosks, Community Center structure, bike rack, fitness equipment, paved fitness trail, community bulletin board, bench seating (perimeter), pavilion with picnic tables, trash receptacles, decorative signage, “Bucky” statue, bridge memorial, VFW memorial with flag pole, open space	2	Community center structure and Garden Room available for events (>8,000 total square feet). Large open outdoor space used for regularly/seasonally scheduled special events (e.g. Friday Market, Community Appreciation Day, etc.). The paved trail around the park also connects pedestrians to other existing trails/walkways.
Beach Pavilion, W Gulf Blvd & 79th Ave	Pavilion structure, 2 dune walk-overs, covered playground equipment, covered picnic tables, benches, shower, bike rack, restrooms, vending, ice machine	2	Structure may be reserved for private functions, civic and community events. “Black Skimmer” lot may be reserved with pavilion rental. Property deed on file (9/1997)
Triangle Park, 2nd St East & 112th Ave	Playground equipment, 2 shuffleboard courts, bench seating, bike rack, Pinellas County Schools covered bus stop, water fountain, trash receptacle, flag pole, fencing, decorative signage	2	3 city-owned lots comprise park area, most recent lot purchased 9/2018, property deed on file

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The community and neighborhood parks located in Treasure Island offer sufficient recreational activities to broadly serve the immediate and surrounding communities, and the activities found within parks meet the established level-of-service standards. There are 5 (five) parks included in this section: Treasure Bay Golf & Tennis Center, Rosselli Park, Treasure Island Park & Community Center, Beach Pavilion, and Triangle Park.

Relating to Treasure Bay, Goal 2, Objective 3 of the City's Strategic Plan is "(t)o increase usability and functionality, while working towards self-sustaining recreation facilities." (2018). This objective includes action plans that explore potential Treasure Bay restructuring. Input gathered at Stakeholder meetings will be considered for future park development. Proposed CIP projects for Treasure Bay include: resurfacing of tennis and basketball courts (FY2020-22), replace tennis courts' lights (FY2020), installation of shade structure over playground (FY2019), and seawall rehabilitation/repair (FY2022). Proposed CIP projects for Rosselli Park include: ballfield fence repair/replacement (FY2020), replace playground equipment and surfacing (FY2019), and replace ballfield and tennis courts lights. Additionally, the installation of a dedicated dog park behind the leftfield fence was completed in January 2020.

The Beach Pavilion is available to rent for private, community, or civic functions. There is ample parking nearby, and the location is a picturesque setting for any event, especially beach weddings. Proposed CIP projects for the Beach Pavilion include play structure/swing replacement (FY2022). The Community Center and Garden Room, located at Treasure Island Park, are also available for rent and offer adequate spaces to host large or small events. Amenities include climate-controlled spaces, tables and chairs available for use, and a commercial kitchen. The Community Center facilities are in good condition. Treasure Island Park is home to several memorials, including one constructed from remnants of the original

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Causeway Bridge. The paved trail surrounding the park connects to other pedestrian walkways in the area, including downtown and the Beach Trail. The park also hosts "Bucky", a 20-foot-tall fiberglass pirate statue that was once part of a 1950's-era motel, the Buccaneer, and donated to the City when the motel permanently closed.

C. Description and List of Mini-Parks/Bay Access.

Mini-parks are small spaces, usually no more than one quarter (1/4) acre in size, that provide access for recreational and leisure activities to the surrounding community (National Recreation and Parks Association, n.d.). Mini-parks generally do not provide designated vehicle parking because of their small size. Successful mini-parks share four key qualities: accessibility, allows visitors to engage in activities, are comfortable spaces with a good image, and are sociable places for residents and visitors to congregate (n.d.). Existing mini-parks in Treasure Island are displayed in Table 6.

Table 6. Existing Mini-Parks/Bay Access

Name, Site, Address	Equipment	Condition	Comments
Heron Lot, Bayshore Dr & 75th Ave	Metered parking (14), 1 pay kiosk, bench seating, bike rack, trash receptacles, wood signage, access to public nature boardwalk	2	City-owned portion of boardwalk in excellent condition, wood "Heron Lot" sign with heavy wear
99th Ave East on Boca Ciega Bay	None	6	Street end, parking barricade present, sea wall
101st Ave East & Gulf Blvd	None	5	Currently being developed, planned bay access
102nd Ave East & Gulf Blvd	None	6	Street end, unpaved area, parking barricades, sea wall
119th Ave East & Lagoon Lane	Paved lot, saltwater dock, "Neighborhood Dock" signage, landscape pilings	3	No designated parking, recent repairs to saltwater dock, dock in fair condition
120th Ave East & Lagoon Lane	Open lot, unpaved, bench seating, trash receptacle, landscape pilings, seawall	2	No designated parking
121st Ave East & Lagoon Lane	Open lot, recent xeriscaping with shell, saltwater dock, seawall	6	No designated parking, saltwater dock closed to public
122nd Ave East & Lagoon Lane	Open lot with shell, bench seating, improved landscaping (trees), seawall	1	No designated parking

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124th Ave East & Lagoon Lane	Open lot with shell, bench seating, trash receptacle, landscape pilings	2	No designated parking, seawall in disrepair
125th Ave East & Lagoon Lane	Open lot, saltwater dock, "Neighborhood Dock" signage, trash receptacle	3	No designated parking, saltwater dock in fair condition, poor drainage at park entrance (puddling)
126th Ave East & Lagoon Lane	Open lot, unpaved	6	No designated parking
127th Ave East & Lagoon Lane	Open lot, unpaved, bench seating	6	"Parallel Parking Only" signage
Kingfish Park, Kingfish Dr	Paved lot, designated parking, bike rack, bench seating, picnic tables, fishing line collection bins, City park and FWC signage	3	Old bridge remnants visible, signage in need of repair
10101 Paradise Blvd & Yacht Club Dr	Wooden gazebo, bench seating, trash receptacle	2	No designated parking
10380 Paradise Blvd & Treasure Ln	Community bulletin board, wooden gazebo, picnic table, bench seating, bike rack, trash receptacles	2	No marked parking, paved area in front used for vehicle parking.

The City of Treasure Island provides residents and visitors ample access to park space and the area's waterways. Many of the City's mini-parks are located on the East side of the Island and provide access to Boca Ciega Bay and other area waterways. Most mini-parks in the City do not provide designated vehicle parking spaces. There are two (2) existing saltwater docks managed by the city, with one dock each at the mini-parks on 119th and 125th Avenues. The saltwater docks extend over the water and allow for fishing and other recreational activities. A third saltwater dock located at the mini-park on 121st Avenue is in need of repair and currently inaccessible at the time of this report. The City also manages a section of over-the-water boardwalk located at the Heron Lot. The boardwalk connects to existing private boardwalks on each end and provides direct access to the Blind Pass waterway. The City's portion of the boardwalk is signed and in excellent condition. Kingfish Park, located at the North end of the island, is the site of the old Johns Pass Bridge. Proposed CIP projects for the City's mini-parks include seawall repair (FY2022), installation of picnic tables with shade structure, and repair slab/resurface parking spaces (FY2020) at Kingfish Park.

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D. Description and List of Special-Use Facilities.

Special-use recreation facilities include parks or open spaces that serve a specific, recreation-related, need. This section may include any park or area that serves a special need. Special-use facilities in Treasure Island are displayed in Table 7.

Table 7. Existing Special-Use Facilities.

Name, Site, Address	Equipment	Condition	Comments
Municipal Marina, 120 108th Ave	Saltwater dock with 14 slips, bench seating, trash receptacles	2	Submerged land leased from FL DEP. Designated a "Clean Marina" through DEP. City occupies 3 slips on East end of marina
84th Ave East & Bayshore Dr	Submerged boat ramp, saltwater dock with bench seating, parallel boat trailer parking, trash receptacle, ramp rules signage	2	No designated vehicle parking (trailer parking only)
100th Ave East & Gulf Blvd	Submerged boat ramp, saltwater dock with floating dock, educational bulletin board, trash receptacles	2	No designated vehicle parking, bulletin board in fair condition
123rd Ave East & Lagoon Lane	Submerged boat ramp, saltwater dock, dedication sign (Pennies 4 Pinellas), boat trailer parking	2	No designated vehicle parking

The City of Treasure Island has several special-use facilities that serve the unique needs of the community. There are three (3) submerged boat ramps that provide direct access to Boca Ciega Bay and easy access to the Gulf of Mexico. All ramps are in good condition. The saltwater docks adjacent to the ramps are in good to excellent condition. The parks with submerged boat ramps offer boat trailer parking, but not vehicle parking. The City also manages a municipal marina that includes 14 boat slips. Marina parking is in the City Hall parking lot.

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E. Description and List of Open/Conservation Areas.

Open areas include any undeveloped land that is accessible by the public (Environmental Protection Agency, n.d.). Open areas play an important role when policy decisions are made relating to zoning and land-use (n.d.). Conservation areas are protected from development and certain uses, and often contain important or sensitive natural environments. The area(s) relating to this category in Treasure Island are included in Table 8.

Table 8. Existing Open/Conservation Areas

Name, Site, Address	Equipment	Condition	Comments
Elnor Island	None	6	Dedicated protected area. Property deeds on file
McLaughlin Park, 70 Dolphin Dr & Paradise Blvd	Covered bench seating, trash receptacles, city operated lift station	6	Open area, no designated parking
Paradise Blvd & Island Dr	Bench seat	6	Open area
Paradise Blvd & Marina Terr	None	6	Open area

The City of Treasure Island includes several open/conservation areas. The largest, Elnor Island, was obtained in 1984 through a land swap agreement with a pair of local residents. Elnor Island remains undeveloped and uninhabited. The island is situated at the North end of the City, in Boca Ciega Bay at the mouth of Johns Pass, and is only accessible by boat. Elnor Island is officially zoned as a preservation area by the City and it remains an unspoiled property. The other open areas included in this section are located along Paradise Boulevard. One area, McLaughlin Park, has a city-maintained lift station on premises.

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V. CONCLUSION

A recently completed audit of the City of Treasure Island's parks and recreation areas identified the current inventory and the general condition of each area. In total, 61 areas were included in the inventory audit. The City currently offers residents and visitors a diverse selection of recreation opportunities. There are no major condition issues in the recreation areas or their amenities, and the existing recreation areas meet the previously established level-of-service standards. The public beach is the largest recreation area in the City and carries a significant financial impact. Treasure Island provides ample access for visitors and residents to the public beach areas and other local waterways, including Boca Ciega Bay. The City has been, over the years, proactive in acquiring land that has been maintained for public use. There are existing CIP projects designated for the improvement of, or addition to, the City's recreation areas and facilities. Future park plans will be created from the input of community members, elected officials and staff.

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Community Engagement Sessions:

Summary of Submitted Responses

Q2. What is the COOLEST FEATURE you have ever seen in any park or recreation facility?

- Splash pad/water park – 23% (26)
- Parks & green/open spaces, playground equipment – 17% (19)
- Walking/exercise – 15% (17)
- Concert/entertainment – 13% (15)
- Boating/kayak, fishing – 6% (7)

Q3. What is the MOST MEMORABLE EXPERIENCE you have had at any park or recreation facility in other cities?

- Concert/entertainment – 47% (42)
- Wedding/birthday celebration – 16% (14)
- Camping/hiking – 6% (5)

Q4. What RECREATIONAL AMENITY do you value and use the most in any city?

- Walking/exercise – 32% (36)
- Parks & green/open spaces – 23% (26)
- Beach – 11% (12)
- Boating/kayak, fishing – 4% (5)

Q9. What are the GREATEST ASSESTS and STRENGTHS of Treasure Island's Parks and Recreation spaces and offerings?

- Beach – 30% (35)
- Accessibility, clean, safe – 29% (34)
- Sports (golf, tennis, etc.) – 8% (10)
- Parks & open/green spaces – 4% (5)

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Q10. What do you do for recreation in the City of Treasure Island?

- Walking/exercise – 37% (58)
- Beach – 25% (39)
- Boating/kayak, fishing – 20% (32)
- Sports (golf, tennis, shuffleboard, etc.) – 16% (25)
- Eating/drinking/socializing – 12% (19)

Q12. In 2040, how do you see residents of Treasure Island using parks and recreation spaces and offerings?

- Walking, sports – 23% (25)
- Same as today – 9% (11)
- Parks & green/open spaces – 8% (10)
- Increased use – 7% (9)
- Technology integration – 7% (9)
- Entertainment/arts – 6.5% (8)
- Infrastructure (parking, meters, roads, etc.) – 5% (6)
- Boating/kayak, fishing – 4% (5)

Q13. What is the GREATEST OPPORTUNITY for IMPROVEMENT with our City's Parks and Recreation spaces and offerings? (Anything missing?)

- Parks & green/open spaces – 15% (17)
- Infrastructure (boardwalks, paved walkway, etc.) – 12% (14)
- Entertainment/arts – 9% (10)
- Walking, sports – 7% (8)
- Splash pad/pool – 7% (8)
- Boating/kayaking, fishing – 5% (6)
- Accessibility – 5% (6)

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Master Park Plan Focus Group Meeting: Arts, Entertainment, and Leisure

I. Introduction

The purpose of this report is to document and highlight responses from a recent focus group meeting held in Treasure Island, FL (the City). A focus group consists of a "small number of people in an informal group discussion 'focused' around a particular topic" and provides a method for "collecting qualitative data" (Wilkinson, 2004). This group, one of several established to obtain valuable community input for the City's on-going Master Parks Plan, focused on Arts, Entertainment, and Leisure (AEL) recreational activities. The initial AEL focus group meeting was attended by five (5) members of the community, was moderated by City staff, and lasted approximately one and a half (1.5) hours. Data collection from any focus group meeting can include sources such as audio recordings, note taking by moderators, and memory recall by moderators (Kruger, 1994). Techniques used to collect data during the initial AEL focus group meeting included audio recording and note taking by the moderators.

II. Data

The qualitative data collected during the initial AEL focus group meeting will be considered while developing the City's Master Parks Plan. The purpose of the group, to gain community ideas and input relating to AEL, was established by the moderator at the start of the meeting and the assembled individuals discussed and commented on the topic. The following tables list the data collected during the meeting and are categorized as: Public Art, Entertainment/Leisure, and Strengths/Opportunities.

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Table 1. Public Art

Community Ideas for Public Art	
• Fish sculpture w/ recyclables (recycling art in general)	• Street furniture w/ City-wide theme (e.g. Caddy's & Beach Pavilion)
• Commemorative bench program	• Embrace beach heritage (e.g. year-round sand sculptures that change style and locations monthly, adjacent to Beach Walk. Sand Sculpture Capital of FL)
• Transient beach art in permissible areas	• More "local vibe" w/ artwork (i.e. local artists/content)
• Central art piece (e.g. clocktower)	• Arts & Craft shows
• Art gatherings w/ workshops	• Traveling art exhibitions
• Dance and music gatherings w/ workshops	• Expand/improve community artwork at City beach accesses

Table 2. Entertainment/Leisure

Community Ideas for Entertainment & Leisure	
• More beach-front festivals (e.g. Sanding Ovations)	• Community-wide holiday celebrations (e.g. 4th of July, etc.)
• Outdoor music shows (e.g. seafood, BBQ, or Jazz festivals. Attract locals *and* tourists)	• Better advertising for events (e.g. street banner, civic assoc. newsletter, resident text/email database, "Events" page on website)
• Dance shows	• Expand "Rock Around the Clock" to every 2 months
• Car shows (e.g. classic cars)	• Environmental education events. Bring in community support (e.g. beach clean-up w/ informational lecture after)
• Fair w/ amusement rides/attractions	• Amphitheater at Treasure Bay
• Local vendor fair (e.g. Friday Market)	

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Table 3. Strengths/Opportunities

Community Views of Current Strengths & Opportunities	
Strengths	**Opportunities**
• Arts outdoors (e.g. Sanding Ovations)	• Boat ramps/water access
• Public beach (multiple mentions)	• Improve Treasure Bay – prime property (amphitheater)
• Saltwater activities/boating	• Create City-wide theme (tropical)
• Clean	• Level walking surfaces (accessibility)
• Variety of current offerings	• Splash pads (aquatic activities)

III. Summary/Conclusion

The initial Arts, Entertainment, and Leisure focus group meeting was held August 12, 2019, and lasted approximately one and a half hours. The focus group meeting was attended by several members of the community and was moderated by City staff. The primary moderator initiated the topic and then allowed for the participants to discuss and comment based on their own ideas and experiences. The major topics discussed include: public art, entertainment and leisure activities, and strengths and weaknesses of current recreational offerings. Each participant was actively engaged, and all gave input for each topic. Their input is included in the tables above. During the "Strengths" portion of the meeting, there was consensus on multiple points, including: the public beach is the City's biggest strength, the City is well-maintained (clean appearance), and there is a wide-variety of recreational activities currently offered. The "Opportunities" portion also had multiple comments relating to improving Treasure Bay and highlighting current recreational offerings. Participants were informed about possible future meetings and/or on-line surveys. The meeting was adjourned.

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Master Parks Plan Focus Group Meeting: Arts, Entertainment, and Leisure (Group 2)

I. Introduction

The purpose of this report is to document and highlight responses from a recent focus group meeting held in Treasure Island, FL (the City). A focus group consists of a "small number of people in an informal group discussion 'focused' around a particular topic" and provides a method for "collecting qualitative data" (Wilkinson, 2004). This group, one of several established to obtain valuable community input for the City's on-going Master Parks Plan, focused on Arts, Entertainment, and Leisure (AEL) recreational activities. This is the second AEL focus group meeting, attended by five (5) members of the community, with different members in attendance from the previous AEL group meeting. City staff moderated the meeting and it lasted approximately one hour. Data collection from any focus group meeting can include sources such as audio recordings, note taking by moderators, and memory recall by moderators (Kruger, 1994). Techniques used to collect data during the second AEL focus group meeting included audio recording and note taking by the moderators.

II. Data

The qualitative data collected during the AEL focus group's meetings will be considered while developing the City's Master Parks Plan. The purpose of this second AEL group, to gain community ideas and input relating to AEL, was established by the moderator at the start of the meeting and the assembled individuals discussed and commented on the topics. The following tables list the data collected during the second AEL group meeting, and are categorized as: Event Strengths/Opportunities, Events at Treasure Bay, and Messaging/Communication.

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Table 1. Event Strengths & Opportunities

Community Views of Event Strengths & Opportunities	
Strengths	***Opportunities***
• Ample accessible public beach	• More events on sand (e.g. sanding ovations, kite festival, markets)
• Hometown feel (i.e. "Old Florida", local shopping, etc.)	• "Green" festival, good environmental stewardship
• Current organized beach clean-ups	• Increased participation in beach clean-ups
• Holiday boat parade	• Community spaces in new facility (i.e. Allied building)
• City purchase of Allied building (new City facility)	• Address loss of events and parking on beach related to objection by hotel owner(s)
• Kite Festival & markets	• Monthly market/gathering (e.g. 1st Friday, "The Big Chill", etc.)
• Events on the beach (e.g. Sanding Ovations)	• Expand use of Treasure Bay facility

The AEL group members indicated multiple strengths and opportunities as they relate to events held within the City. There was a strong indication by group members that the City currently offers a "hometown" feel, with its greatest strengths and opportunities relating to the public beaches. Expanded use of Treasure Bay was also a main topic of discussion between group members. There was a sentiment expressed by a couple of group members for the City not to become a "Johns Pass or Clearwater Beach", rather creating, maintaining, and marketing a walkable community to enhance "hometown" feel and welcome tourists into the community.

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Table 2. Events at Treasure Bay

Community Ideas for Events at Treasure Bay	
• More events/festivals (e.g. daytime music, arts festival, etc.)	• Boat parade viewing/event on property
• Dual purpose - keep tennis, convert golf spaces to multi-purpose use.	• Food and alcohol at events on property
• Expand tennis courts	• Sports camps (i.e. tennis & golf) for tourists, promote at hotels
• Create walking path equipped with exercise stations	• Address drainage issue(s) on current golf course
• Create green/open space	• Amphitheater/bandstand
• Driving range with chipping and putting area (as only golf activities)	• Create a putt-putt area/course
• Create area for younger kids and teenagers (market to tourists)	• Make facility "sustainable"
• Offset improvement costs by selling naming rights to facility/area	• Create fishing pier
• Retain property as-is and improve North-end of City (i.e. Kingfish Park area)	

Members of the second AEL group indicated that Treasure Bay is a highly valuable property. They expressed a desire to develop use of the area, though minimizing impact to the surrounding community. Discussion of potential improvements at Treasure Bay included creating new areas, maintaining current areas (i.e. tennis), and targeting families and tourists for facility use. The creation of a Splash pad/park (as indicated during previous public meetings) raised concern relating to the City's liability (e.g. guest injury) and cleanliness (e.g. bacteria in water).

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Table 3. Messaging & Communication

How Community Receives/How to Improve Communication (of events)	
• Word-of-mouth (WOM)	• Community newsletter and/or local news sources (i.e. Beach Beacon)
• Community activity calendar	• Community bulletin boards
• Community signs (e.g. Isle of Palms) & over-head roadway banners	• Electronic messaging beyond social media (e.g. e-mail)
• Personal texts/messaging	• Local Chamber of Commerce messaging
• Social media	• Neighborhood civic association messaging
• Digital signs (City Hall and Community Center)	• Create "Events" page on City's website
• Create social media page solely for events	• Create City-wide electronic database for resident e-mails

Members of the second AEL focus group meeting indicated that they receive information relating to events in the community as seen in the table above. There were several recommendations for improved messaging, including the creation of a City-wide electronic database used for direct messaging to registered users. This sentiment was also vocalized by members of the first AEL group. While some members expressed a desire to receive information via social media platforms, others suggested they are not a "social media person". There is community use, as expressed by the group members, of current messaging efforts by the City (e.g. community bulletin boards, electronic signage).

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III. Summary/Conclusion

The second Arts, Entertainment, and Leisure focus group meeting was held August 20, 2019, and lasted approximately one hour. The focus group meeting was attended by several members of the community and was moderated by City staff. The primary moderator initiated the topic and then allowed for the participants to discuss and comment based on their own ideas and experiences. The major topics discussed include: event strengths/opportunities, events at Treasure Bay, and messaging/communication. Each participant was actively engaged, and all gave input for each topic. Their input is included in the tables above. Maintaining the perceived "hometown" feel, as well as improving walkability with-in the community, were ideas expressed by group members. The use of Treasure Bay was discussed at length, with multiple ideas for development introduced. Multiple methods of communication were discussed for the dissemination of information relating to events in the City. Participants were informed about possible future meetings and/or on-line surveys. The meeting was adjourned.

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Master Parks Plan Focus Group Meeting: Health and Wellness

I. Introduction

The purpose of this report is to document and highlight responses from a recent focus group meeting held in Treasure Island, FL (the City). A focus group consists of a "small number of people in an informal group discussion 'focused' around a particular topic" and provides a method for "collecting qualitative data" (Wilkinson, 2004). This group, one of several established to obtain valuable community input for the City's on-going Master Parks Plan, focused on health and wellness (H&W) related recreational activities. The H&W focus group meeting was attended by five (5) members of the community, was moderated by City staff, and lasted approximately one hour and fifteen minutes (1:15). Data collection from any focus group meeting can include sources such as audio recordings, note taking by moderators, and memory recall by moderators (Kruger, 1994). Techniques used to collect data during the H&E focus group meeting included audio recording and note taking by the moderators.

II. Data

The qualitative data collected during the H&W focus group meeting will be considered while developing the City's Master Parks Plan. The purpose of the group, to gain community ideas and input relating to activities that promote health and wellness, was established by the moderator at the start of the meeting and the assembled individuals discussed and commented on the topic. The following tables list the data collected during the meeting and are categorized as: desired health/wellness activities/spaces, and opportunities to improve safety.

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Table 1. Desired H&W Activities and Spaces

Community Ideas for H&W Activities	
• Increase safe running and cycling (aerobic exercise activity) spaces in the City	• Improve boardwalk designation signage for safe use
• Better use of existing park spaces for H&W purposes (e.g. Triangle Park improvement)	• Too much alcohol along Beach Trail
• Trees used for shade structure	• Exercise equipment for all activity levels (i.e. beginner, intermediate, advanced)
• Exercise trail and equipment to blend into natural environment (not to stand out)	• Exercise equipment composed of recycle material
• Connectivity, connected trails, connect to existing area trails (i.e. Pinellas Trail)	• Kayak launces. Bay access on North end of island preferable; Elnor Island access
• More green spaces/less concrete. Trees in public spaces	• More level walking spaces for greater accessibility
• Keep/improve shuffleboard area(s)	• Increase "eco" activity in the City, embrace existing ecosystems
• Shaded walkways	• Outdoor fitness equipment connected to trail system
• Ensure inclusivity (i.e. different levels by age/ability)	• Local running opportunities (not traveling to run)
• Beach not level for running; activities shouldn't be based on water level (low tide)	• Safe bicycle lanes on Gulf Blvd; too many vehicles parked along hotels; beach cruiser on beach
• Own identity/character (i.e. not Clearwater or St. Pete Beach)	• Community gardening; volunteers maintain gardens; garden adoption

The H&W focus group provided ideas to increase and/or improve the activities and spaces relating to health and wellness within the City. A desire for improved safety was articulated early and emphatically. Some members of the group identified City streets as unsafe areas to run, walk, or cycle. A designated safe space (free of vehicle traffic) is desired for H&W activities. Outdoor fitness equipment that addresses *all* levels of activity in existing park spaces is also desired. Members also stressed the notion that trees should be used to create shaded areas.

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Table 2. Opportunities for Safety Improvement

Community Ideas for Safety Improvement	
• Exercise trail along Treasure Bay	• Waterfront trail; connect to other area trails
• Running, walking, cycling trails off City streets	• Desirable scenery/visuals when exercising
• Barrier used if trail along roadway	• Safe paddle area near Treasure Bay; launches at Treasure Bay
• Safe area for kayak launch (boat traffic)	• Kayak launch near Tarpon Dr; easement
• Improve signage at City's boardwalk; ownership not clear; only safe space	• Floating docks with kayak launch (e.g. Yakport Launch)
• Expand/extend Beach Trail; safe space	

The H&W focus group identified several opportunities to improve safety within the City. The group identified the existing spaces and roadways used for exercise as being unsafe. There was a strong desire to create designated exercise areas in existing spaces such as Treasure Bay and Triangle Park. The group also desired to create running/cycling trails that connect to area trail systems. Safe places to paddle was also a consistent message from the focus group.

III. Summary/Conclusion

The health and wellness focus group meeting was held August 22, 2019 and lasted approximately one hour and fifteen minutes. The focus group meeting was attended by several members of the community and was moderated by City staff. The primary moderator initiated the topic and then allowed for the participants to discuss and comment based on their own ideas and experiences. The major topics discussed include: desired health/wellness activities/spaces, and opportunities to improve safety. Each participant was actively engaged, and all gave input

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for each topic. Their input is included in the tables above. Safety was paramount throughout much of the discussion. Members of the focus group expressed a desire to have safe, designated spaces to conduct physical activities. Treasure Bay was identified as a viable and central area for designated exercise activities (e.g. walking, running, outdoor fitness equipment). Launch areas into safe waterways (e.g. low boat traffic, speed-controlled areas) are encouraged to engage growing paddle-sport activities. Additional ideas for Treasure Bay included using local authors in the Library Book vending machine, and not using the facility to park City busses. Participants were informed about possible future meetings and/or on-line surveys. The meeting was adjourned.

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Master Parks Plan Focus Group Meeting: Environment and Sustainability (Meetings 1 & 2)

I. Introduction

The purpose of this report is to document and highlight responses from two recent focus group meetings held in Treasure Island, FL (the City). A focus group consists of a "small number of people in an informal group discussion 'focused' around a particular topic" and provides a method for "collecting qualitative data" (Wilkinson, 2004). This group, one of several established to obtain valuable community input for the City's on-going Master Parks Plan, focused on issues relating to the environment and sustainability. The amount of background information and level of discussion relating to this topic required a greater amount of time to cover than the previous focus group meetings. For this reason, all attendees of the first scheduled meeting were invited to attend a subsequent meeting addressing the same topics. City staff moderated the meetings and invited a staff member with extensive environmental and sustainability knowledge to provide specific information, guide discussions, and answer questions relating to the topic. Both meetings took place in a public facility. Meeting 1 was held September 11th, 2019, had six attendees (not including City staff), and lasted approximately one hour and twenty minutes. Meeting 2 was held October 9th, 2019, had five attendees, and lasted approximately one hour and thirty-five minutes. Data collection from any focus group meeting can include sources such as audio recordings, note taking by moderators, and memory recall by moderators (Kruger, 1994). Techniques used to collect data during both environment and sustainability focus group meetings included audio recordings and note taking by the moderators.

II. Data

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The qualitative data collected during the environment and sustainability focus group's meetings will be considered while developing the City's Master Parks Plan. The purpose of the focus group meetings, to gain community ideas and input relating to the environment and sustainability, was established by the moderators at the start of the meetings. Initial background information and a sound definition of sustainability was provided by city staff and the assembled individuals discussed and commented on the topics. The data collected during both meetings is displayed in the tables below.

Table 1. Meeting 1: Top Environmental Issues/Topics of Focus Group

Objective: What do you see as the most impactful initiatives to promote sustainability?	
Attendee Responses	
• Cleanliness of the environment/beach (more beach clean-ups)	• Interconnectivity of the 3 pillars of Sustainability (i.e. Environmental, Social, and Economical)
• Adapt other Cities' or regions' initiatives (e.g. Southern California)	• Address beach erosion and preserve green space
• Address environmental issues specific to the City	• Develop and offer eco-tours to visitors and residents
• Evaluate how similar communities address stormwater and beach erosion	• "Resiliency is essential", value green spaces. Grants/partnerships for plantings (drought tolerant species)
• Address sea level rise and preserve island as "nice place for people to visit and live"	• Create revenue through green spaces, increased parking, and more water events (e.g. rowing)
• Maintain beach and beach environment (sustainable, resilient and clean)	• Beach is the City's greatest asset/ preserve beach
• Ensure continuity between Master Parks Plan and City's Sustainability Plan	• Improve City's stormwater systems (e.g. stormwater backflow and check valve systems)
• Address erosion using living sea walls	• Establish requirements to increase the height of existing and new sea walls
• Treasure Bay provides excellent opportunity to deploy sustainability initiatives (e.g. living sea wall, water access, etc.)	• Increase connectivity with treed walkways connecting recreation areas
• Informational signage relating to coastal habitats (Sunset Vista Park example)	• Create/promote local ferry system as revenue source. Promote non-vehicle travel

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The responses by the attendees relating to their top environmental issues are listed above. Preservation of the beach and the beach environments was identified as having a significant impact on the environment and sustainability by multiple attendees. Addressing/adapting to sea level rise is also among the top stated issues. Attendees recommended to adopt sustainability initiatives that similar cities/regions have placed into practice as well as creating/expanding eco-tourism within the City. Other suggestions to promote sustainability within the City include greater connectivity and more educational initiatives (e.g. signage and partnerships with local environmental groups).

Table 2. Meeting 1: Top Social Issues/Topics of Focus Group

Objective: What do you see as the most impactful initiatives to promote sustainability?	
Attendee Responses	
• Safer spaces to walk and improved connectivity (strong consensus)	• ADA accessible pathways
• Create and/or promote areas for outdoor activities (e.g. fishing, kayaking)	• Use a bike/scooter share service
• Consider plant species at Treasure Bay to create living sea wall (to not obstruct views)	• Provide public education with improved signage. Engage with local school-aged children and local nonprofit organizations
• Develop existing accesses to intercoastal/Create new access at Treasure Bay	• Provide education/promote recycling programs (e.g. TIcollects.com)
• Create green/open space	• Develop “no-plastic-straw” policy
• Increase number of cigarette disposal containers City-wide	• Use existing electronic signage to promote City services (recycling)
• Proactive advertising of community events (contact community instead of expecting them to visit website)	• Engage in a local Time Bank service
• Publish City maps of amenities on the City’s website	• Create Sustainability page on the City’s website

The responses by the attendees relating to their top social issues are listed above. Safe, interconnected areas had a strong consensus among this group and in other focus group discussions. Public education through programs, signage, and the City’s website was listed by

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several as a priority. Changing and/or adopting City policies regulating plastics, improving recycling, and managing beach litter (e.g. "Leave No Trace" policies) were topics also discussed.

Table 3. Meeting 2: Beach Focus

Objective: Think BIG. Envision parks and green spaces 20+ years into the future. How will green spaces and parks make us feel?	
What does our beach look and feel like?	
• Mixed opinions relating to event area size. Consensus is that the event space should not be expanded too much (e.g. Remove some newer beach vegetation, but not all)	• Staggered and elevated dune system preferred
• Extend the beach trail to the north with an elevated boardwalk through the dune systems	• Create and maintain walkovers to protect vegetation and provide beach access around standing water
• Improved beach access (more ADA accessible areas)	• Vegetation used to defend against effects of climate change
• Both sandy beach areas and vegetation areas are valued	• Improved beach aesthetics as seen from roadway (see beach from major corridors)
• Develop dual-purpose aquatic attractions (e.g. elevated pools and activities that also defend against effects of climate change)	• Incorporate principles of stormwater management into usable park spaces
• Use Florida-native plant species when planting and develop sponsorships for community gardens	

Members of the environment and sustainability focus group meeting indicated that an elevated dune system with beach access interspersed offshoots is a desirable and effective way to connect the north part of the beach to the central beach and downtown areas. A north/south meandering boardwalk, elevated in some places, as mentioned by several group members, would act as a nature trail and could include an educational component. Most group members valued both sandy beach and vegetation and expressed disinterest in removing all existing vegetation that was not present in 2014 for aesthetic appearances. A limited expansion of the current event area, including the removal of some vegetation was recommended.

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The following table represents specific questions asked of the group and the member's answers.

Table 4. Group Questions and Answered

How do future green spaces and parks make you feel connected to the environment? (more interactive or more passive spaces)	
• Shade and water fountains	• Water features for kids
• Reduced amount of paved surfaces	• Multifaceted park spaces
• Florida native plants, increased wildlife	• Interactive areas
• Covered trash bins	• Education
• Roof-top parks	• Solar panels to shade/power parking areas
• Historical signage	• Greater use of public art
Should parks be examples of sustainable design? (e.g. LEED certified buildings, etc.)	
• Should use LEED designs as budgeting allows	• Educate and promote sustainable buildings when implemented
• Incorporate as many sustainability components as possible	• Treasure Bay is most feasible site for living shoreline
How do we promote sustainability through events?	
• Water bottle filling stations	• Ice vending machines
• Cigarette butt receptacles	• Children activities (seed plantings)
• Understand our community demographics (e.g. how many children live/visit frequently)	• Offer eco-workshops and promote partnerships with local environmental groups
• Educational boards/handouts highlighting current sustainability efforts	• Promote community-based volunteer opportunities
How do we draw people to our parks?	
• Graphics on advertisements	• Promote volunteer opportunities
• Accessible workout areas/equipment	• Water access to parks/short-term docking and transient slips at existing marina
•	• Treasure-themed park equipment/workout equipment
What opportunities or areas for improvement do you have in mind?	
• Green roofs on municipal buildings	• Convert existing City Hall site to park space
• Water access in parks	• Grants to create green spaces
• Create Treasure Island merchandise shop with City-themed items	• Engage with a local Time Bank
• Address funding in Master Plan	• Embrace laid-back atmosphere

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III. Summary/Conclusion

The environment and sustainability focus group meeting was conducted during two sessions due to the amount of information and length of discussions relating to the topics. The first of the two meetings covered basic sustainability concepts such as the 3 Pillars and recorded the group's top environmental and social issues. Addressing the effects of climate change and protecting and promoting our beach environment were cited as top environmental concerns. Safer spaces and connectivity were cited as social improvement opportunities. The first meeting had six members in attendance and lasted approximately one hour and twenty minutes. The second environment and sustainability focus group meeting focused on long-term, big ideas. Some vegetation removal to expand a sandy beach entertainment area was recommended, but elevated and aesthetically pleasing vegetation is desired by most. Extensions of, and connections to, existing trail systems was recommended using north/south-oriented elevated boardwalks. Use of recycled, or post-consumer based, materials was also recommended. The second environmental and sustainability focus group meeting lasted approximately one hour and thirty-five minutes and had five members in attendance. Participants were informed about possible future meetings and/or on-line surveys. The meeting was adjourned.

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City of Treasure Island

FY20 Resident Survey and Results

February 28, 2020

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Introduction

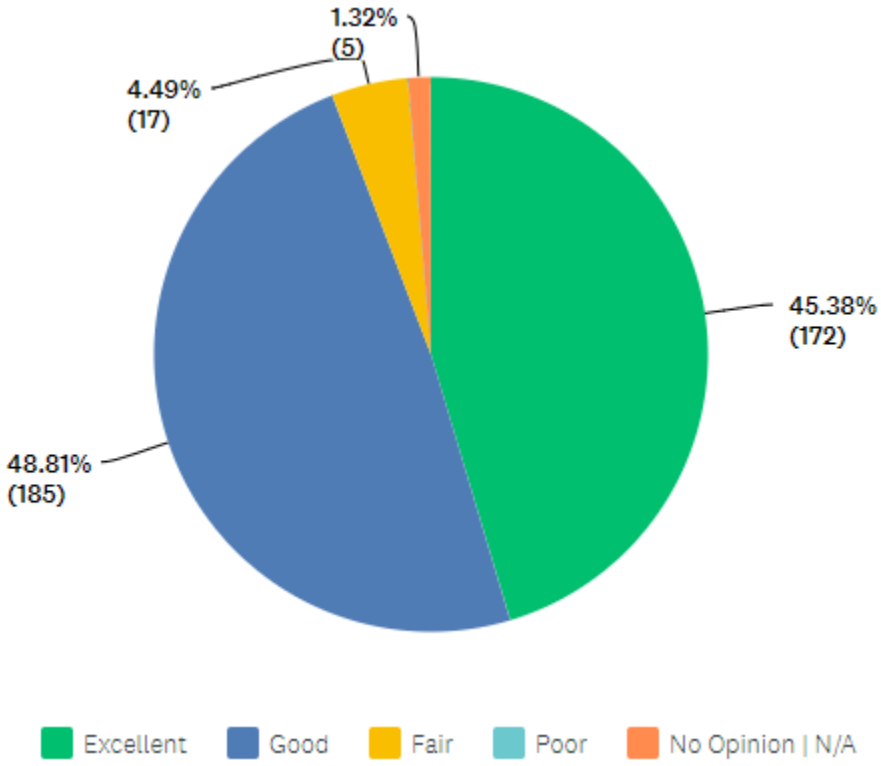
The adoption of the FY20 Budget marked the implementation of the final year of the previous 5-year Strategic Plan. Because the City will be engaging in a process to produce a brand new 5-year plan, a resident survey was created and broadcast to gather the input of our residents. Being able to tap directly into the sentiments and opinions of the residents is an important step in evaluating where the City wants to go.

The online survey—conducted from December 18, 2019 through February 2, 2020—was divided into the following sections: Measuring Our Success; Community, Government, and Performance Ratings; Utilization and Public Communication; Current Events and Emerging Topics; and Demographics/Contact Info. Staff worked over a few months in 2019 to create a list of questions that would collect the opinions of our residents, produce an objective dataset, and plant the seeds for an actionable plan for future implementation. Factoring in the estimated number of households within Treasure Island, a total of approximately 350 completed surveys were required to reach a defensible level of statistical significance; by the end of the survey period the City had collected 379 completed surveys.

What follows below is an explanation, presentation, and narrative of each question and its findings. Where applicable, staff has cross-referenced certain questions with similar ones asked in prior community surveys to provide some historical context to the responses.

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Overall, how would you describe the quality of life in Treasure Island?



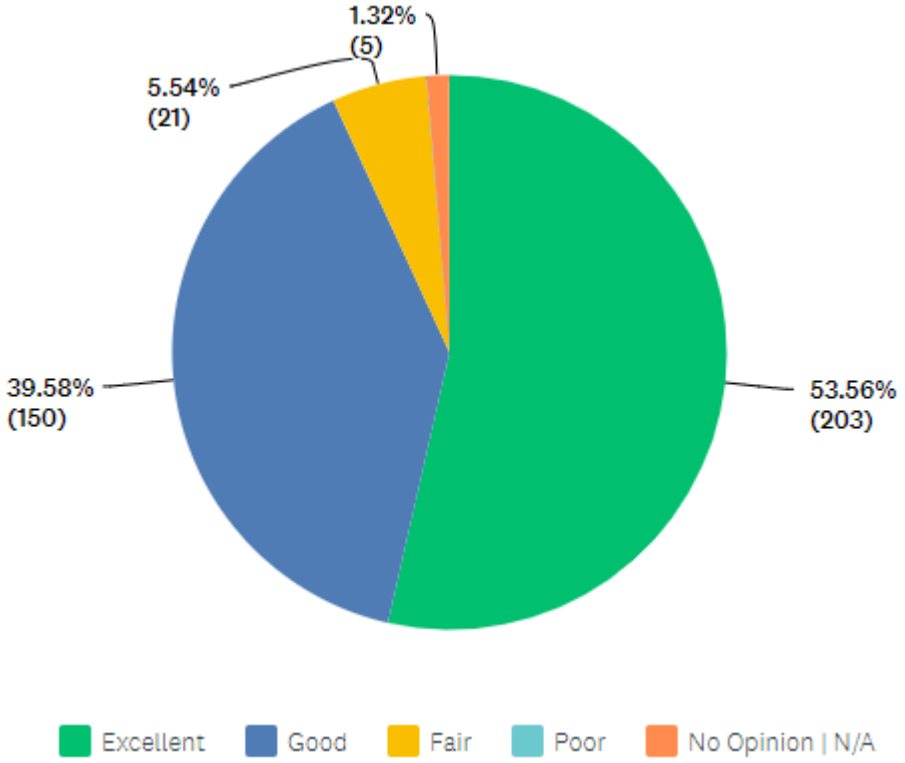
City Quality of Life

When asked to rate the overall quality of life in Treasure Island, respondents answered as follows:

Excellent - 45.38%
Good - 48.81%
Fair - 4.49%
Poor - 0%
No Opinion; n/a - 1.32%

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How would you describe the quality of life in your neighborhood?



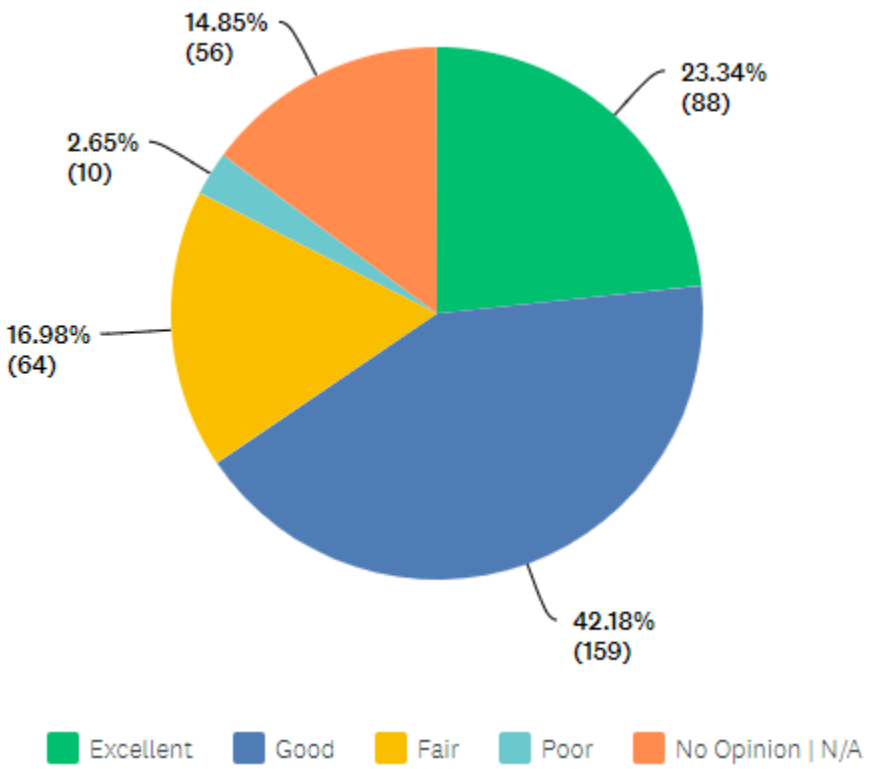
Neighborhood Quality of Life

Respondents were also asked the same question, but in relation to their specific neighborhoods. In this instance, the responses were thus:

Excellent - 53.56%
Good - 39.58%
Fair - 5.54%
Poor - 0%
No Opinion; n/a - 1.32%

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How would you rate Treasure Island as a place to raise a family?



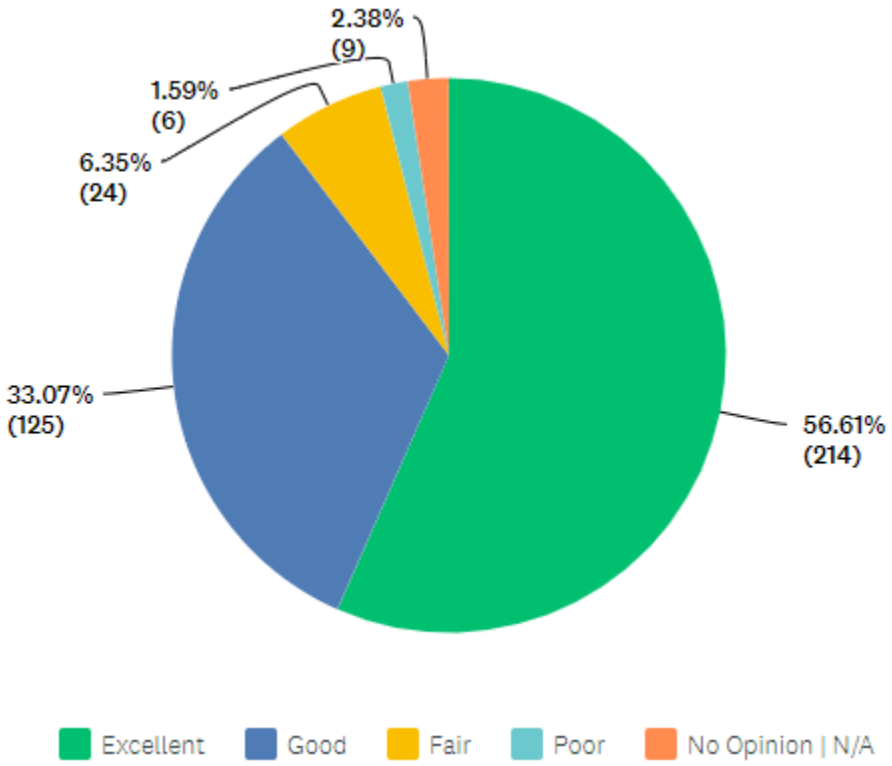
Family Friendliness

We also asked for residents to rate Treasure Island as a location to raise a family. Those responses can be categorized as such:

Excellent - 23.34%
Good - 42.18%
Fair - 16.98%
Poor - 2.65%
No Opinion; n/a - 14.85%

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How would you rate Treasure Island as a place to retire?

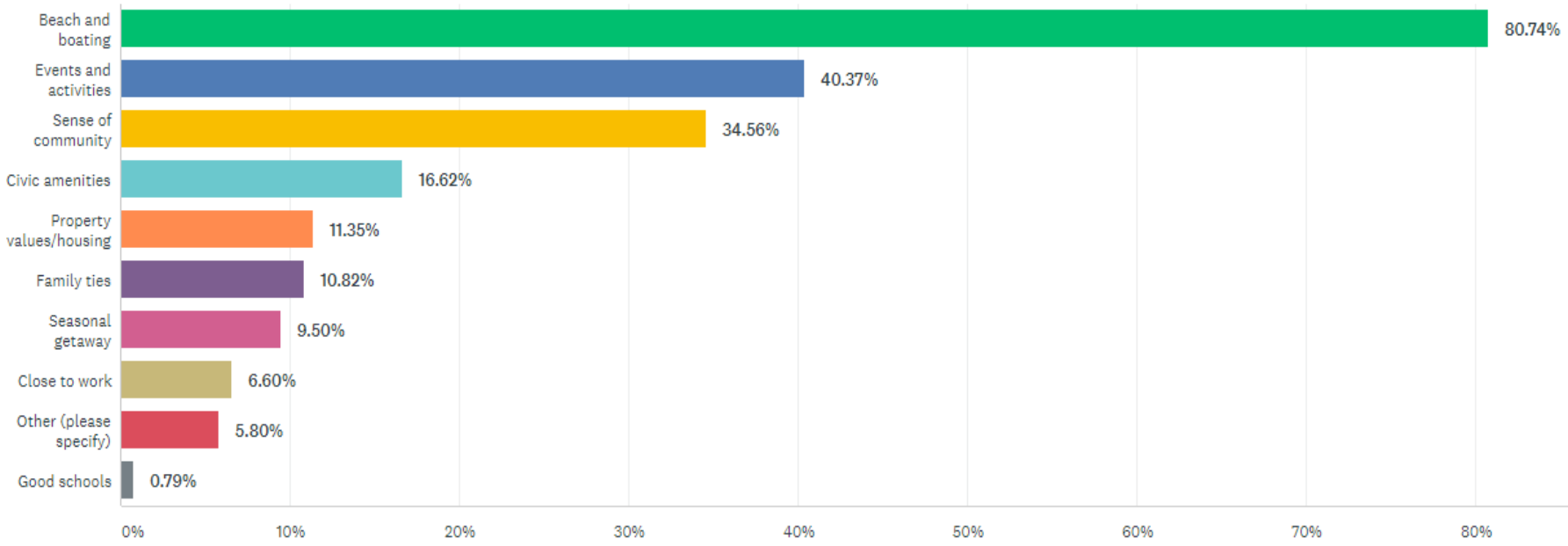


Retirement Destination

Equally important is to gauge Treasure Island's status as a place to retire. Residents responded with the following:

Excellent - 56.61%
Good - 33.07%
Fair - 6.35%
Poor - 1.59%
No Opinion; n/a - 2.38%

Treasure Island residents all have different reasons for calling our community home. Please choose your top 3 reasons why you live in Treasure Island:



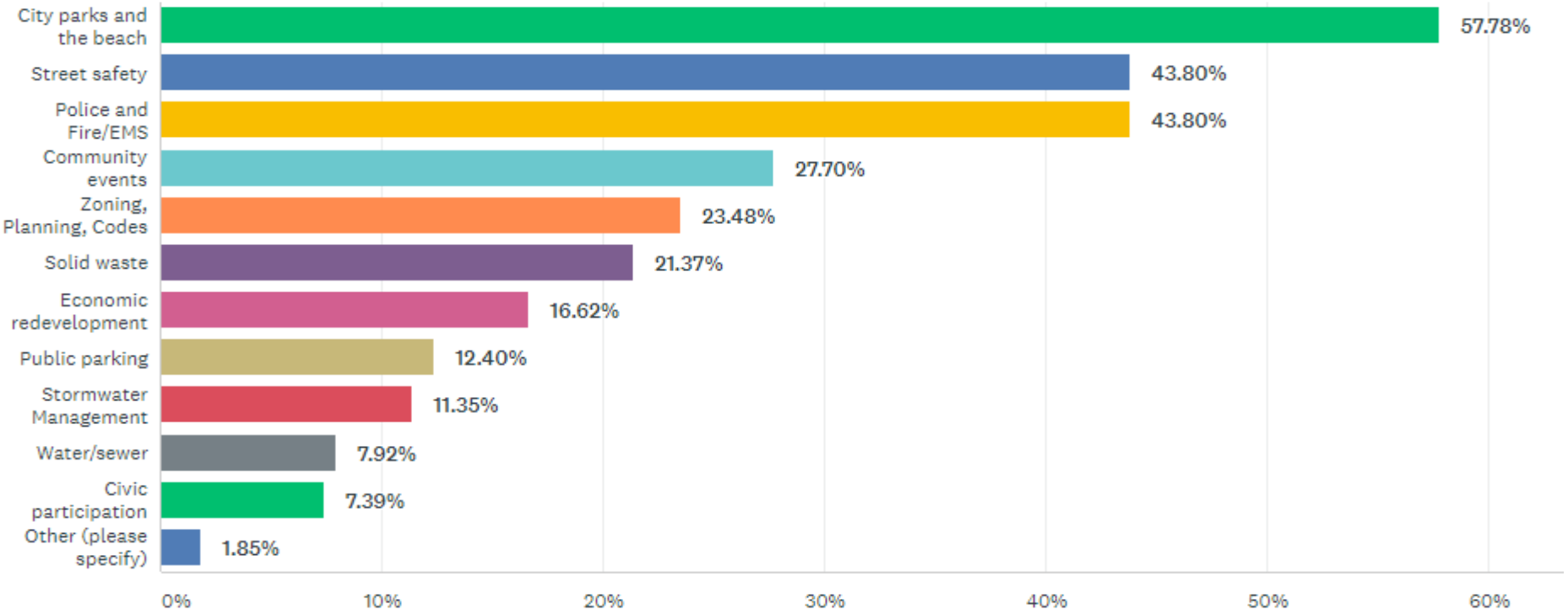
Why is Treasure Island your home?

Reason: percent of respondents
beach and boating - 80.74%
proximity to entertainment and cultural events - 40.37%
general sense of community - 34.56%
amenities (parks, library, facilities) - 16.62%
property values or housing options - 11.35%
I was born here or family moved here - 10.82%
seasonal getaway - 9.50%
it is close to work - 6.60%; and
proximity to good schools - 0.79%

Among the respondent's choosing other (5.8%) and providing an answer, the majority fell into one of the following broad categories:

-small-town feel, especially compared to other more built-up beach communities,
-general sense of safety, and
-great weather and natural environment.

Which of the following City services are the most important to you personally? (choose 3)



Most important City services

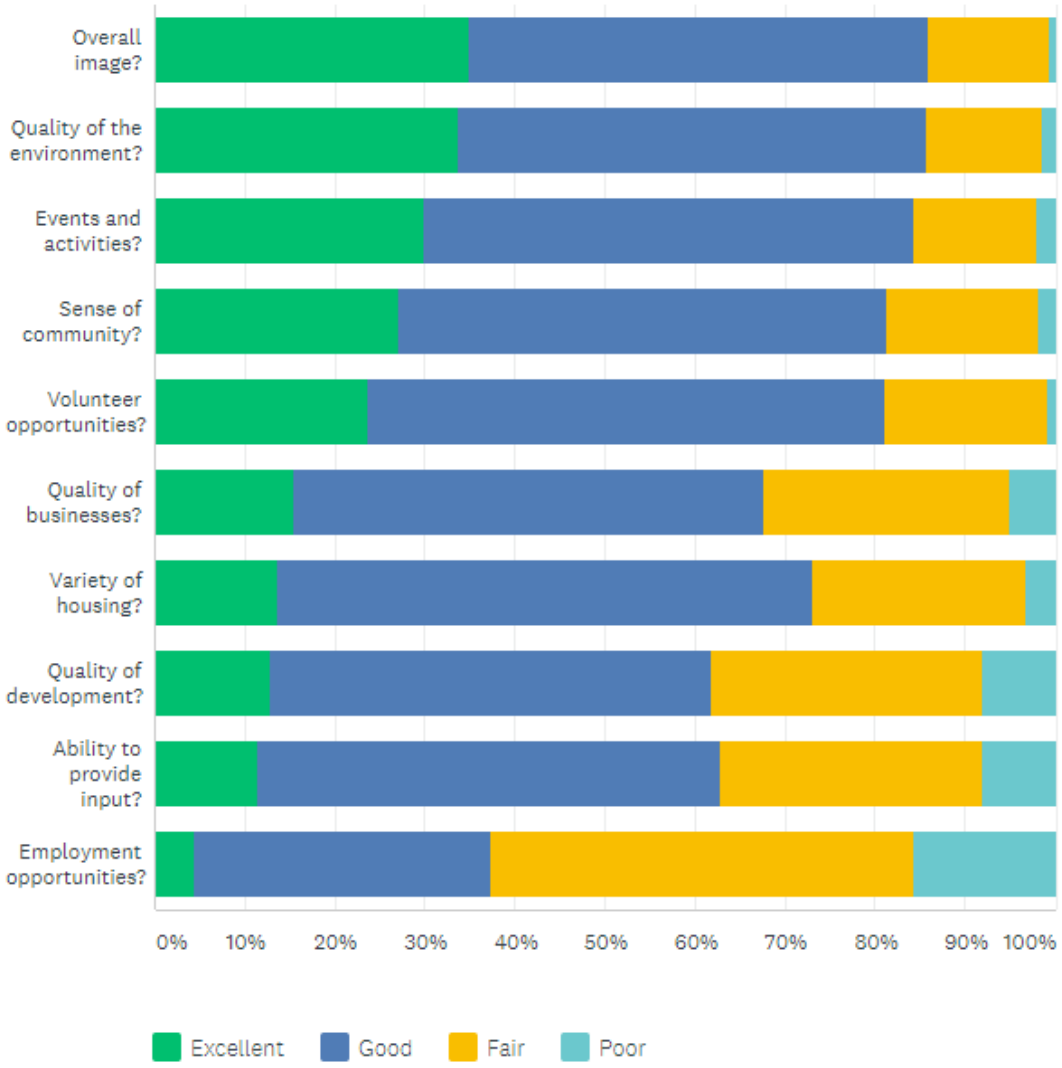
Service: percent of respondents
city parks and the beach - 57.78%
street, sidewalk, bike line, and street lighting - 43.80%
public safety (police and fire/EMS) - 43.80%
recreation/community events/amenities - 27.70%
zoning, planning, and code compliance - 23.48%
garbage, recycling, and yard waste collections - 21.37%
economic redevelopment - 16.62%
public parking - 12.40%
stormwater management - 11.35%
water & wastewater - 7.92%; and
public communication, civic participation, and outreach - 7.39%

Among the respondent's choosing other (1.85%) and providing an answer, the majority fell into one of the following broad categories:

-improve public landscaping;
-becoming a more environmentally aware community, and
-explore outsourcing city departments.

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Please rate the following characteristics as they relate to Treasure Island as a whole.



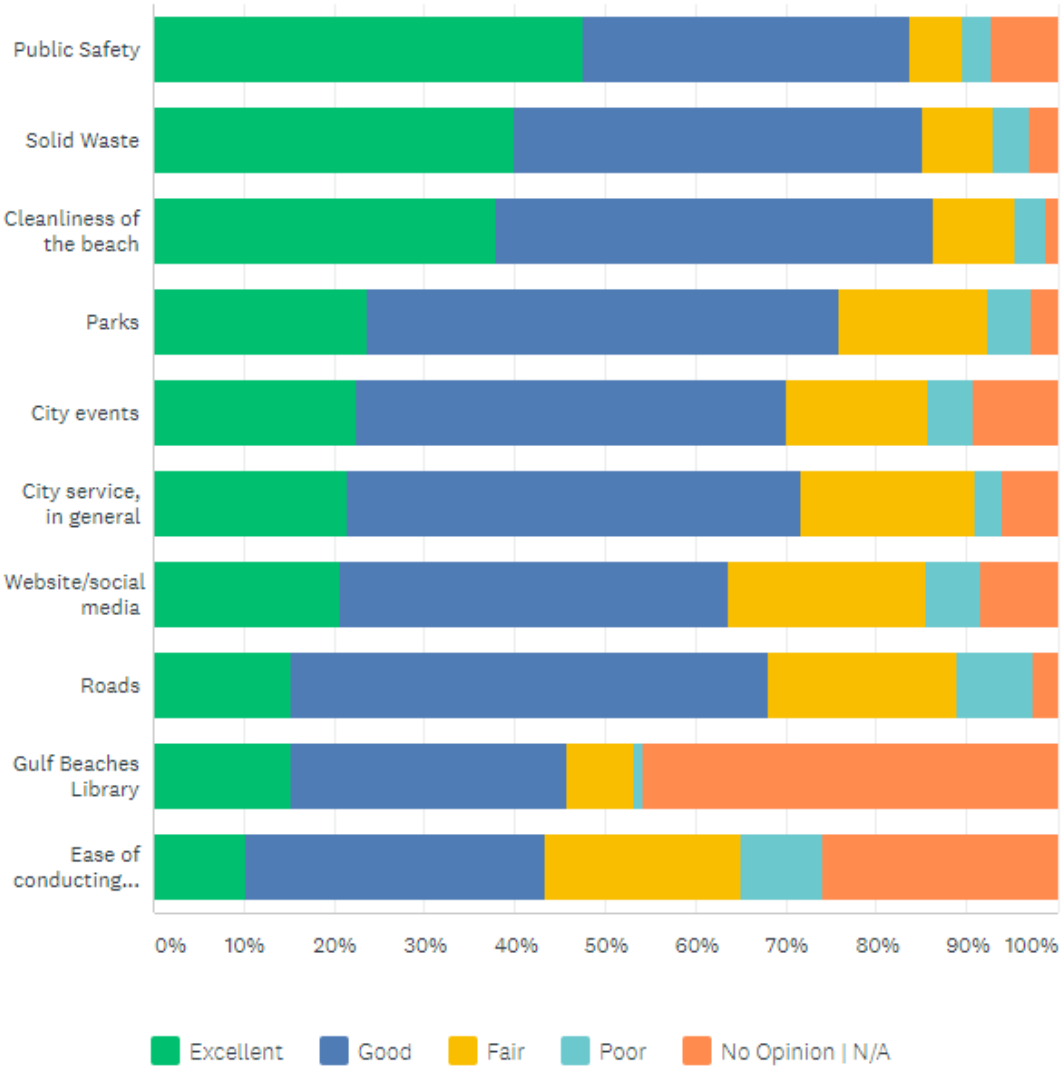
Big Picture Community Ratings

Residents were asked to weigh in on 10 different community-wide criteria. Results are as follow:

Criteria:	Excellent	Good	Fair	Poor
overall image or reputation of TI:	34.93%	50.99%	13.52%	0.56%
quality of overall natural environment in TI:	33.71%	52.12%	12.75%	1.42%
access to social events and activities:	29.83%	54.55%	13.64%	1.99%
sense of community:	27.03%	54.36%	16.86%	1.74%
opportunities to volunteer/serve:	23.80%	57.23%	18.07%	0.90%
overall quality of businesses in TI:	15.49%	52.11%	27.32%	5.07%
variety of housing options:	13.75%	59.31%	23.78%	3.15%
overall quality of new development in TI:	12.89%	49%	30.09%	8.02%
ability to have your voice heard:	11.50%	51.33%	29.20%	7.96%
employment opportunities:	4.33%	33%	47%	15.67%

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Please rate each of the following as they relate to the operations of the City of Treasure Island.



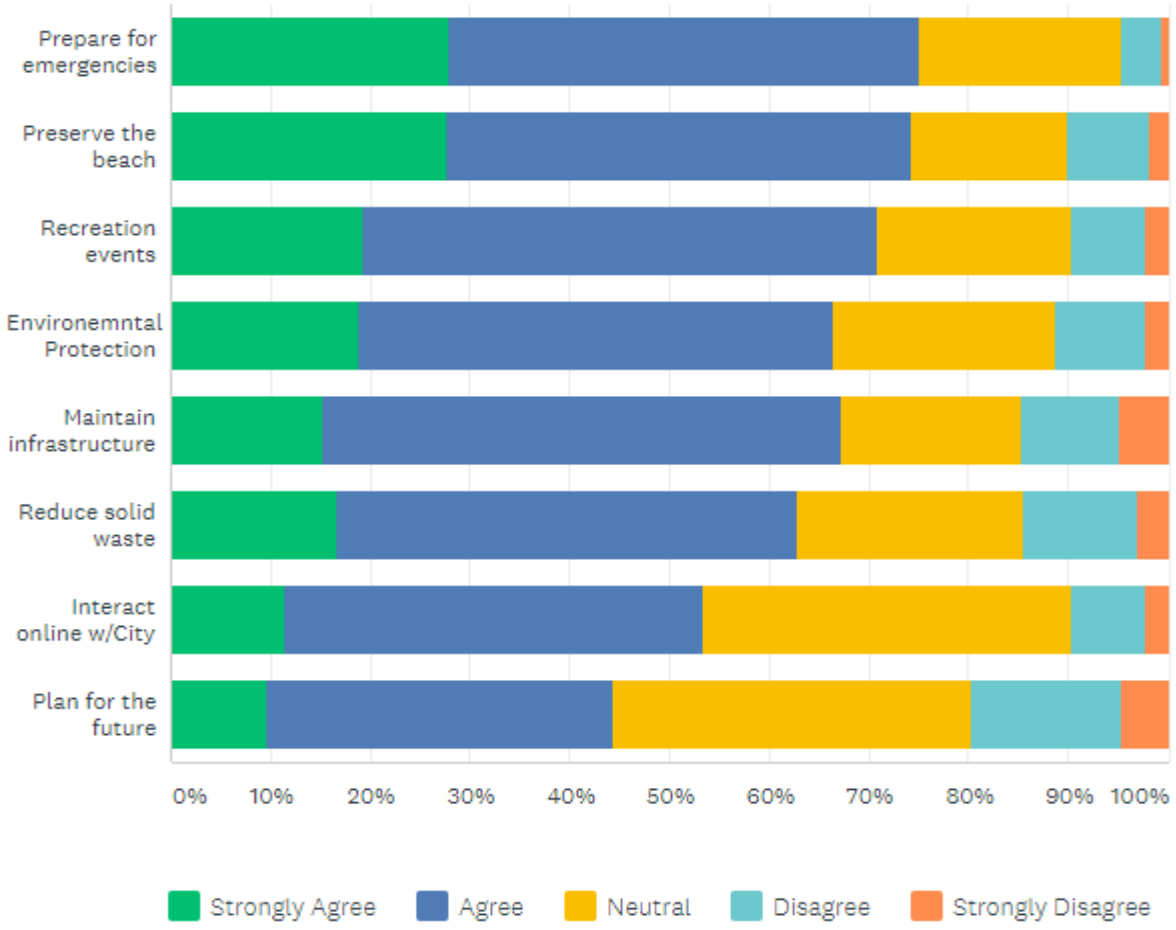
City Government Operations

Residents were asked to weigh in on 10 different community-wide criteria. Results are as follow:

Criteria:	Excellent	Good	Fair	Poor	N/A
public safety and emergency responders:	47.62%	36.13%	5.58%	3.08%	7.28%
trash, recycling, and solid waste collection:	40.00%	45.07%	7.89%	3.94%	3.1%
cleanliness of the beach:	37.85%	48.59%	9.04%	3.39%	1.13%
city parks:	23.71%	52.29%	16.29%	4.86%	2.86%
events hosted/sponsored by the City:	22.57%	47.43%	15.71%	5.14%	9.14%
services provided by the City of TI, generally:	21.53%	50.14%	19.26%	3.12%	5.95%
website and City social media:	20.62%	42.94%	22.03%	5.93%	8.47%
roads and streets:	15.17%	52.81%	21.07%	8.43%	2.53%
Gulf Beaches Library:	15.23%	30.46%	7.47%	1.15%	45.69%
ease of conducting business w/the City:	10.29%	33.14%	21.71%	8.86%	26%

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Please rate whether you agree or disagree that adequate measures are being taken by the City to address the following:



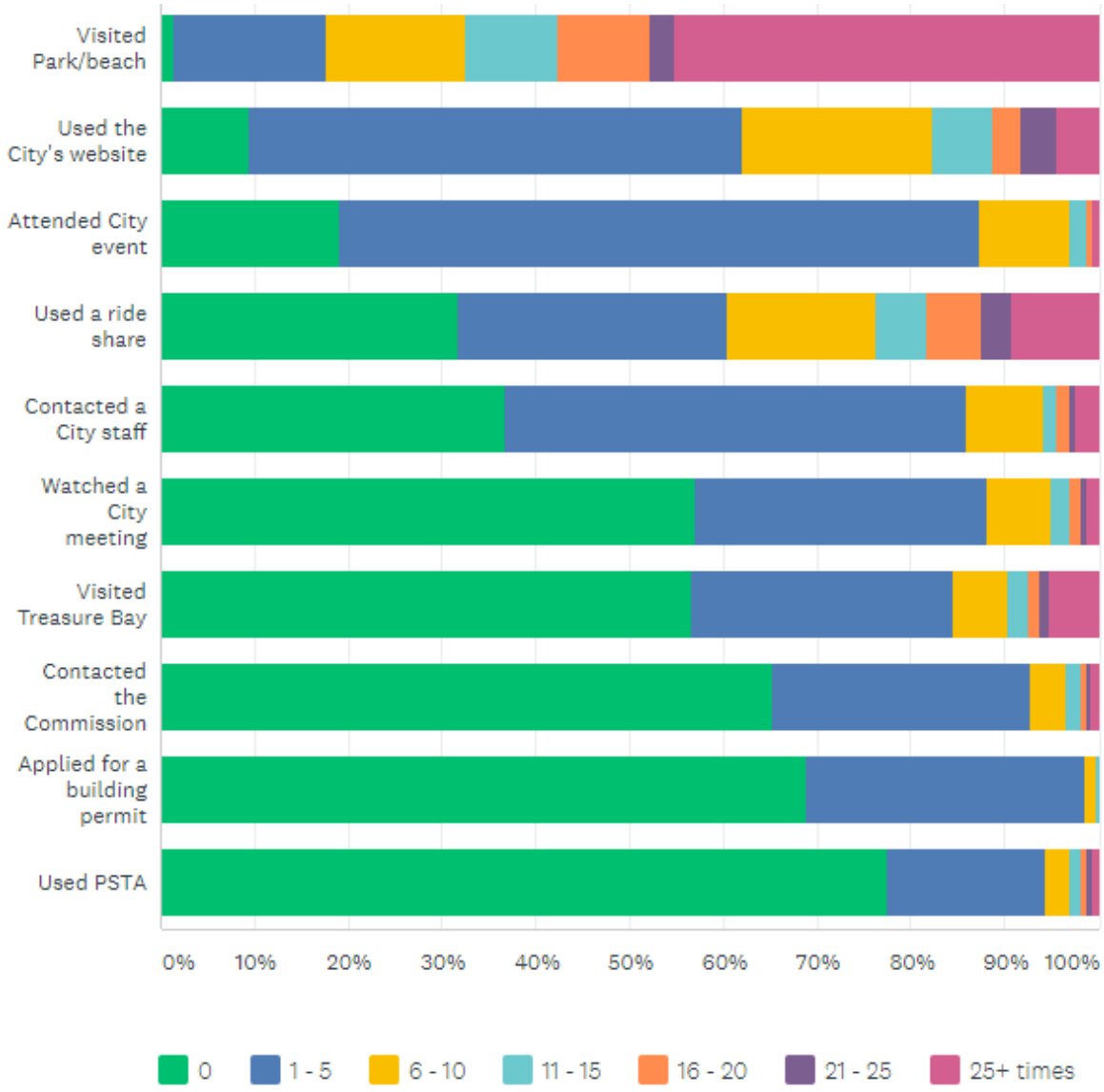
Progress on Important Issues

The City was interested to discover public sentiment regarding progress being made on major issues or primary demands. Here are how the responses were categorized for the 8 criteria.

Criteria:	Excellent	Good	Fair	Poor	N/A
prepare the community for an emergency:	27.97%	47.18%	20.34%	3.95%	0.56%
preserve and enhance our beach:	27.64%	46.72%	15.67%	8.26%	1.71%
provide recreation events and opportunities:	19.21%	51.69%	19.49%	7.34%	2.26%
protect the natural environment:	18.93%	47.46%	22.32%	9.04%	2.26%
maintain public infrastructure:	15.25%	51.98%	18.08%	9.89%	4.80%
reduce solid waste/promote recycling:	16.62%	46.20%	22.82%	11.27%	3.10%
make it easier to interact with the City online:	11.43%	42%	36.86%	7.43%	2.29%
plan effectively for the future:	9.69%	34.76%	35.90%	15.10%	4.56%

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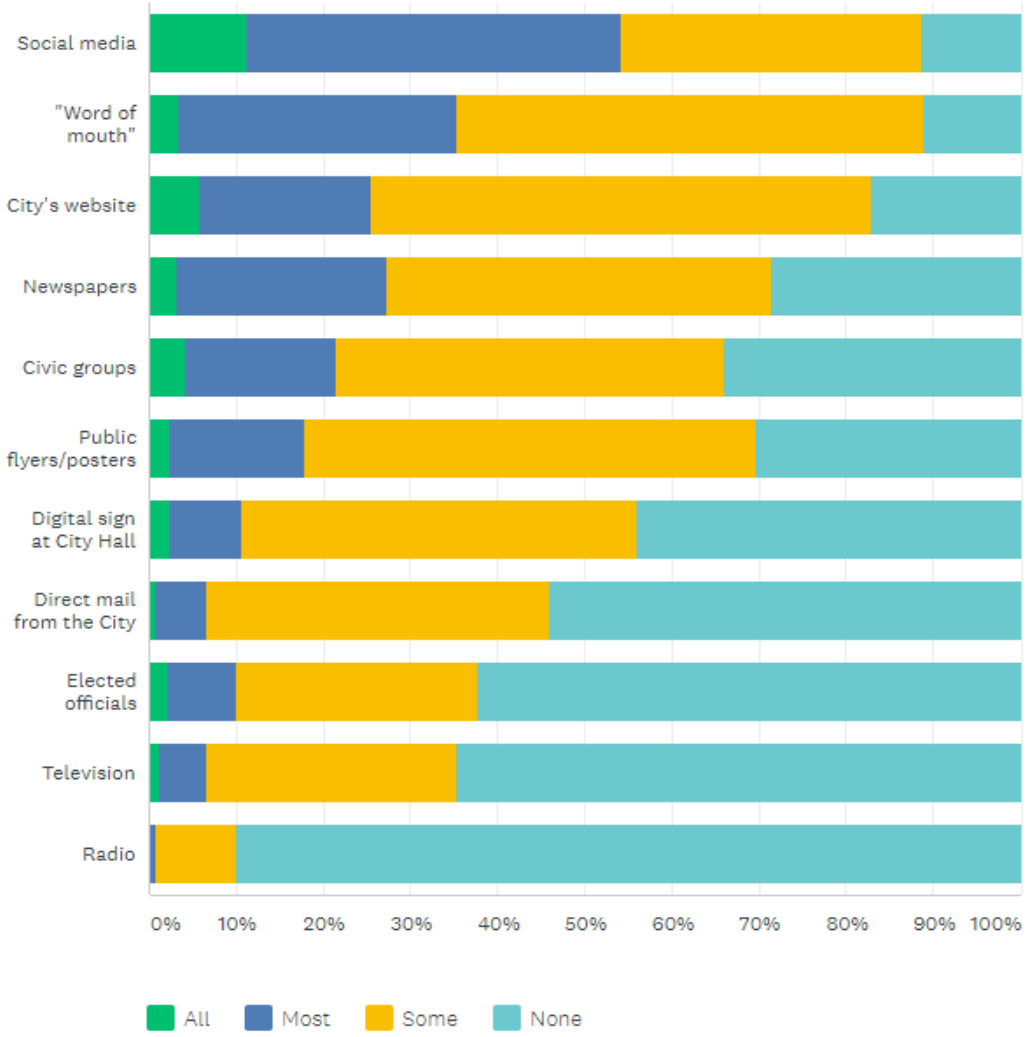
In the last 12 months, how many times have you or a member of your household done the following?



Community Utilization

Action:	0	1-5	6-10	11-15	16-20	21-25	25+
Park/beach:	1.44%	16.14%	14.99%	9.80%	9.80%	2.59%	45.24%
City website:	9.41%	52.65%	20.29%	6.47%	2.94%	3.82%	4.41%
City event:	19.06%	68.33%	9.68%	1.76%	0.59%	0.00%	0.59%
Ride share:	31.78%	28.57%	16.03%	5.25%	5.83%	3.21%	9.33%
City staff:	36.84%	49.12%	8.19%	1.46%	1.46%	0.58%	2.34%
City meeting:	57.10%	31.07%	6.80%	2.07%	1.18%	0.59%	1.18%
Treasure Bay:	56.60%	27.86%	5.87%	2.35%	1.17%	0.88%	5.28%
Contact Commission:	65.20%	27.49%	3.80%	1.75%	0.58%	0.29%	0.88%
Building Permit:	68.82%	29.71%	1.18%	0.29%	0.00%	0.00%	0.00%
PSTA:	77.42%	17.01%	2.64%	1.17%	0.59%	0.59%	0.59%

How much information do you get about the City of Treasure Island from each of the following?



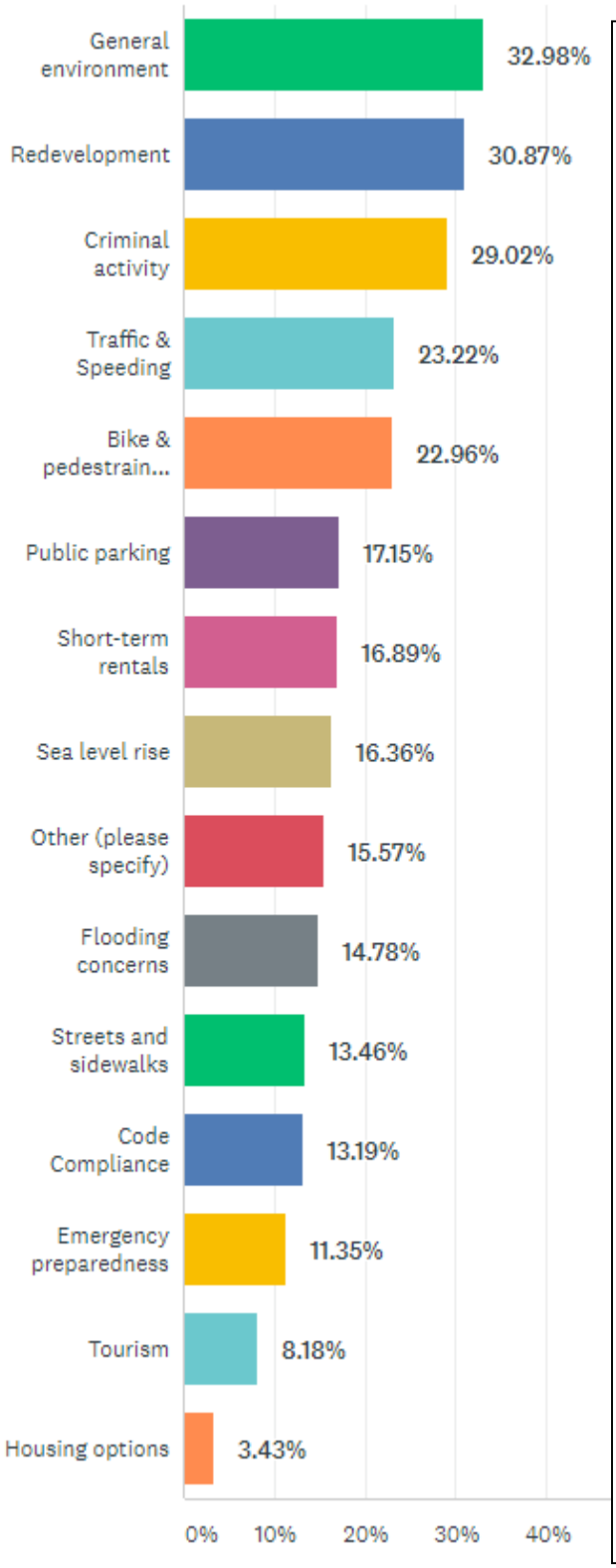
Public Communication

The City was interested in learning how its residents get their information about City events and news. When asked how much they use each of the following news sources, respondents responded with the following:

Criteria:	All	Most	Some	None
City social media outlets:	11.24%	42.94%	34.58%	11.24%
"word of mouth":	3.47%	31.79%	53.76%	10.98%
City's website:	5.81%	19.77%	57.27%	17.15%
newspapers (online or print):	3.17%	24.21%	44.09%	28.53%
civic groups (e.g. neighborhood associations):	4.31%	17.24%	44.54%	33.91%
public posters or flyers:	2.31%	15.61%	51.73%	30.35%
digital sign at City Hall:	2.31%	8.38%	45.38%	43.93%
direct mail from the City:	0.87%	5.81%	39.24%	54.07%
elected officials:	2.29%	7.74%	27.79%	62.18%
television:	1.16%	5.51%	28.70%	64.64%
radio:	0.29%	0.59%	9.14%	89.97%

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What are your most significant concerns in your community?



Focus Issues

Respondents were asked to choose 3 from a list of 14 major issues they believe are their biggest concerns in Treasure Island.

Criteria:

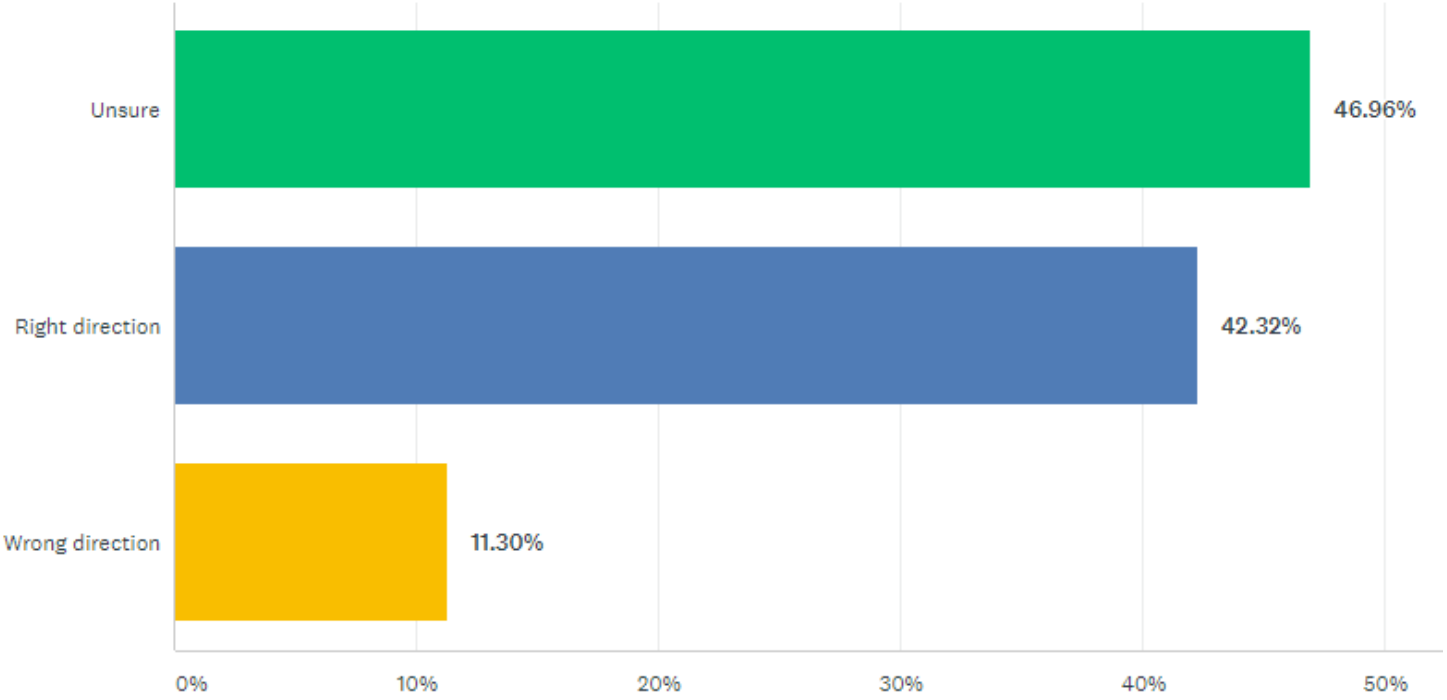
General Environment:	**32.98%**
The future of redevelopment:	**30.87%**
Criminal activity:	**29.02%**
Traffic & speeding:	**23.22%**
Bike and pedestrian access/safety:	**22.96%**
Public parking:	**17.15%**
Short-term rentals:	**16.89%**
Sea level rise:	**16.36%**
Street or localized flooding:	**14.78%**
Streets and sidewalks:	**13.46%**
Code compliance violations:	**13.19%**
Emergency preparedness:	**11.35%**
Tourism:	**8.18%**
Variety of housing options:	**3.43%**

The people choosing "other" (**15.57%**) provided answers raising the following issues:

-Addressing our homeless population
-Questions about City utilities
-Future economic development
-Merging public safety services with Pinellas County
-Usage of Treasure Bay, and
-Preserving the beach

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Would you say that Treasure Island is trending in the right direction or wrong direction?



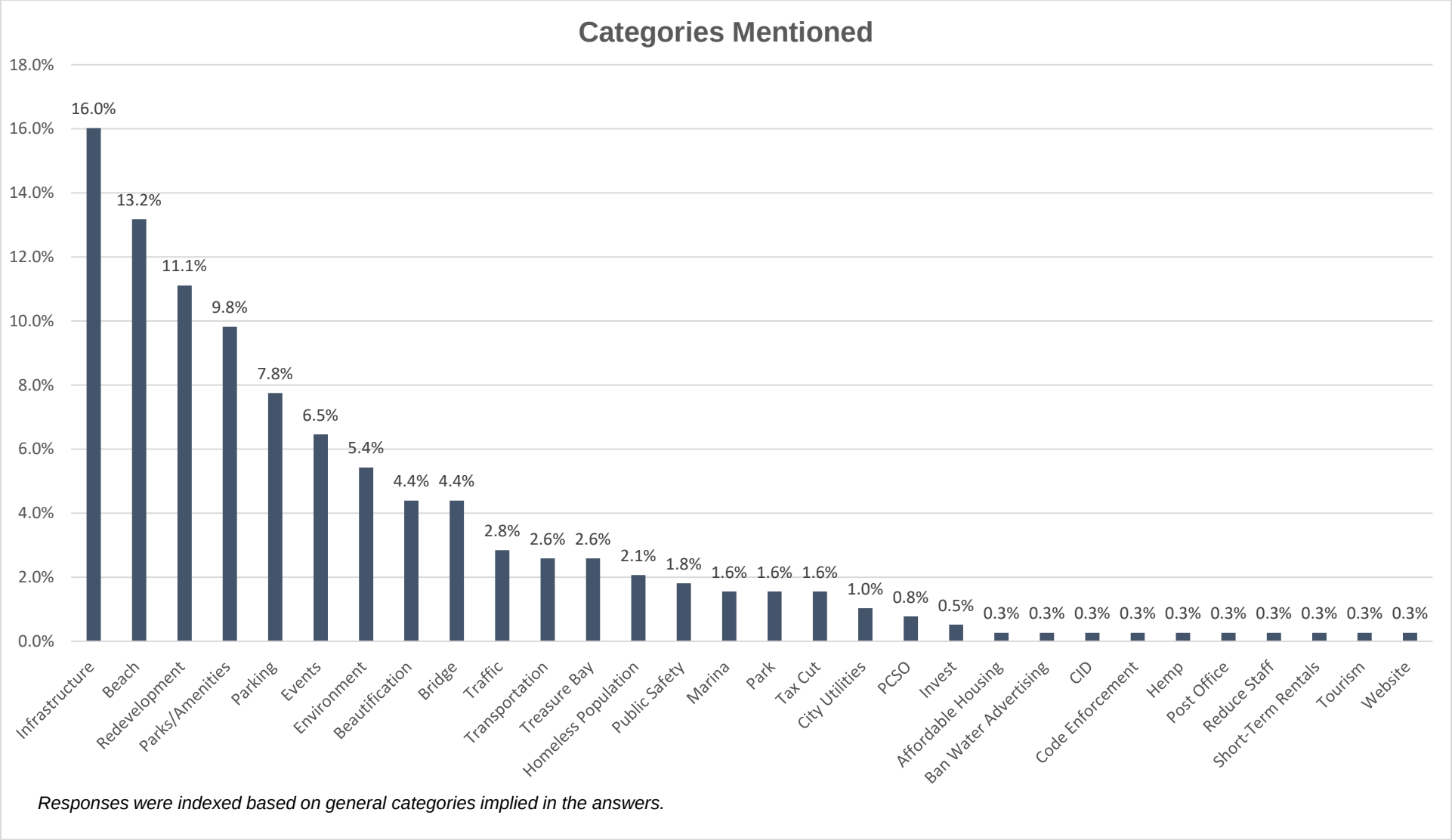
The $1,000,000 Question

Respondents were asked: if the City had one million dollars to spend—no strings attached—how would you want to see the money used?

Staff reviewed every answer to find similarities and group the responses into key categories. The results of the responses and the summary efforts are reflected in the word cloud below and the chart on the following page.



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Responses were indexed based on general categories implied in the answers.

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Historical Comparisons and Context

The City has at its disposal access to previous surveys conducted in prior years. While the questions asked are largely completely different, there are a number of historical questions which do have some parallel to the current survey. Where applicable, the old and new survey responses are compared below.

Quality of Life in Treasure Island

In the 1998 Community Action Survey, residents were asked how satisfied they were with the quality of life in Treasure Island. Those answers are compared to the question on pg. 3 of this report:

	1998	2020	
Very Satisfied	58%	45%	Excellent
Satisfied	28%	49%	Good
Neutral	3%	1%	Neutral/NA
Dissatisfied	4%	5%	Fair
Very Dissatisfied	4%	0%	Poor

Importance of Treasure Island Issues

The 1998 survey also asked residents to score a list of issues based on importance—1 being most important, 2 somewhat important, and 3 not important. The 2016 Vision Survey also had a similar question asking respondents to mark the issues important to them personally. These question are contrasted with the question in this report on pg. 8.

1998		2016		2020	
Land use planning	1.19	Beautification	61%	city parks and the beach	57.78%
Water quality	1.22	Parking & access	29%	transportation infrastructure	43.80%
Zoning codes	1.24	Beach amenities	52%	public safety	43.80%
Building codes	1.26	Safety	51%	recreation events/amenities	27.70%
Storm run-off	1.31	Redevelopment	47%	zoning, planning, code	23.48%
Environmental development	1.45	Events	45%	solid waste	21.37%
Park improvements	1.55	Pedestrian friendliness	39%	economic redevelopment	16.62%
Animal codes	1.59	Environment/green	35%	public parking	12.40%
Reclaimed water	1.58	Physical appearance	30%	stormwater management	11.35%
Economic Dev. & Tourism	1.69	Parking & access	29%	water & wastewater	7.92%
Parking	1.17	Code enforcement	27%	public input	7.39%
Recreation programs	1.75	Pet-friendly amenities	20%		
Transportation	1.84	Family activities	9%		
		Elderly services	8%		

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Reasons for Living in Treasure Island

In 1998 residents were asked why they moved to Treasure Island; the FY20 asked respondents to provide the top three reasons why they call Treasure Island home.

1998		2020	
Beach/waterfront living	34.7%	beach and boating	80.74%
Small town ambiance	24.6%	proximity to entertainment and cultural events	40.37%
Location near major activity	10.2%	general sense of community	34.56%
Family ties	8.5%	amenities (parks, library, facilities)	16.62%
Quality of life	7.3%	property values or housing options	11.35%
Vacation experience	5.5%	I was born here or family moved here	10.82%
Low taxes	3.2%	seasonal getaway	9.50%
Affordable housing	2.8%	it is close to work	6.60%
Business connection	2.8%	proximity to good schools	0.79%
Job transfer	1.6%		

Biggest Future Concerns

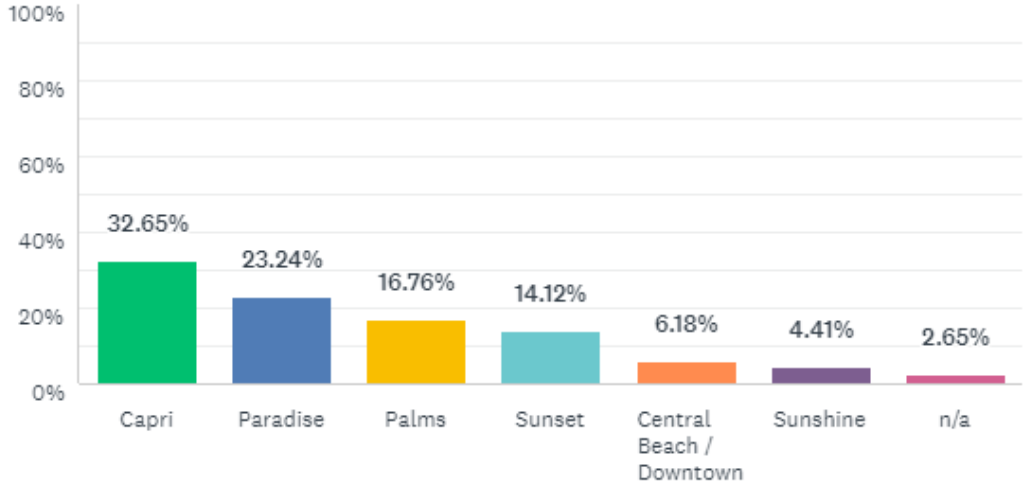
Finally, the 1998 survey asked which issues were believed to be the most important for the next five years. Those responses are compared to the question in this report on pg. 14.

1998		2020	
controlling growth	29.6%	General Environment:	32.98%
redevelopment	22.4%	The future of redevelopment:	30.87%
traffic & toll bridge	17.4%	Criminal activity:	29.02%
aesthetic improvements	16.1%	Traffic & speeding:	23.22%
capital expenses & taxes	14.3%	Bike and pedestrian access/safety:	22.96%
keeping small town feel	12.6%	Public parking:	17.15%
reclaimed/potable water	9.5%	Short-term rentals:	16.89%
FEMA/state regulations	7.9%	Sea level rise:	16.36%
beach renourishment	7.7%	Street or localized flooding:	14.78%
safety/crime	6.6%	Streets and sidewalks:	13.46%
bike path/sidewalks	2.7%	Code compliance violations:	13.19%
ordinance/code enforcement	2.7%	Emergency preparedness:	11.35%
change in demographics	1.9%	Tourism:	8.18%
city officials	1.9%	Variety of housing options:	3.43%

Demographics:

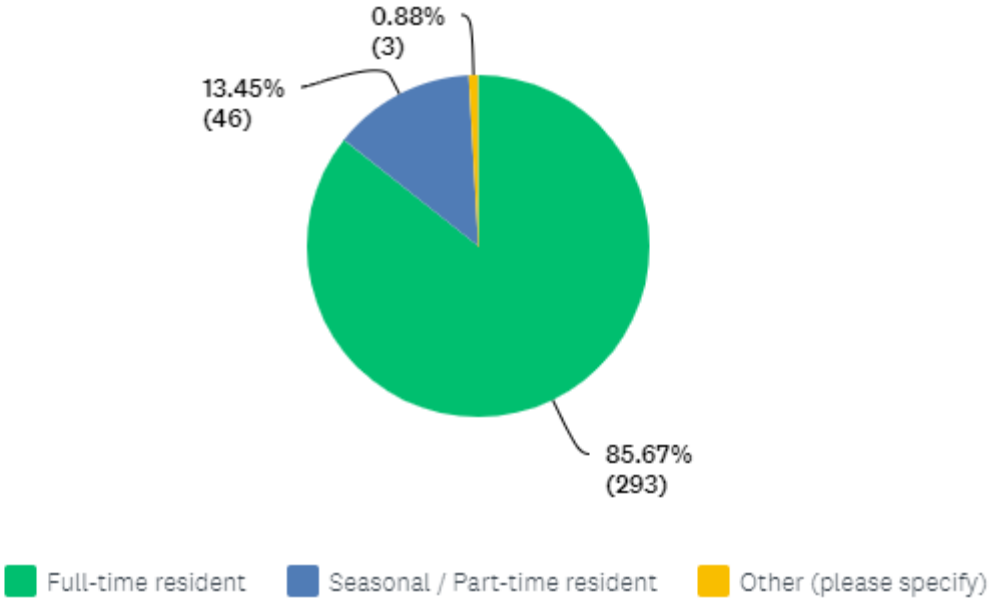
In what area of Treasure Island do you live in or identify with?

Answered: 340 Skipped: 39



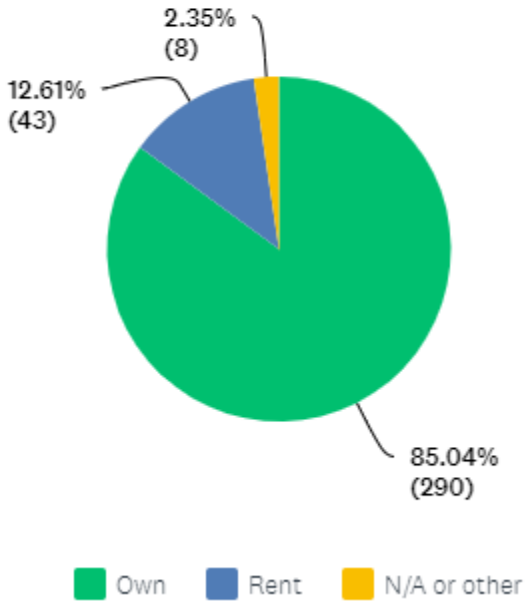
Which describes you best?

Answered: 342 Skipped: 37



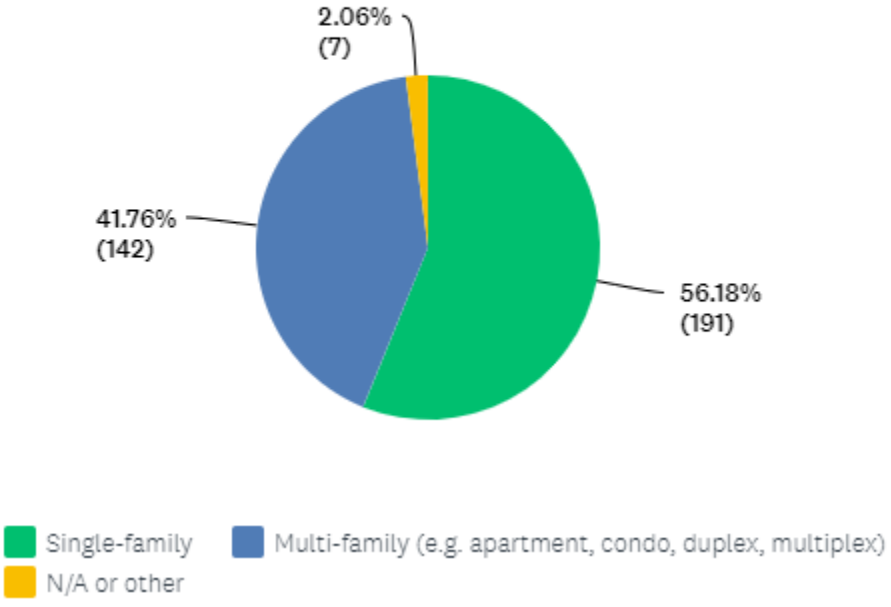
Do you own or rent your residence in Treasure Island?

Answered: 341 Skipped: 38



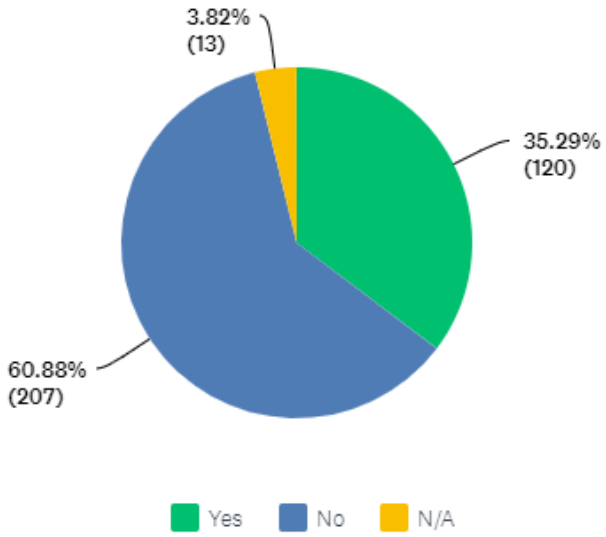
Which of the following best describes your residence?

Answered: 340 Skipped: 39



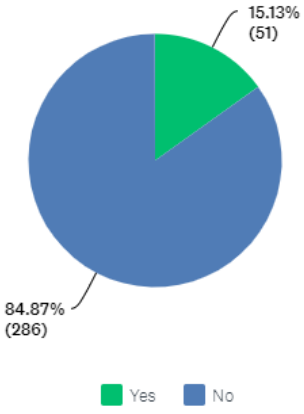
Do you have children or grandchildren living with you, or other family members living with you, or often visiting you?

Answered: 340 Skipped: 39



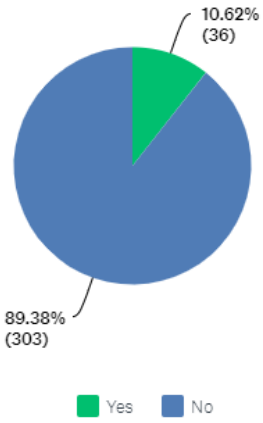
Do you work in Treasure Island?

Answered: 337 Skipped: 42



Do you own a business in Treasure Island?

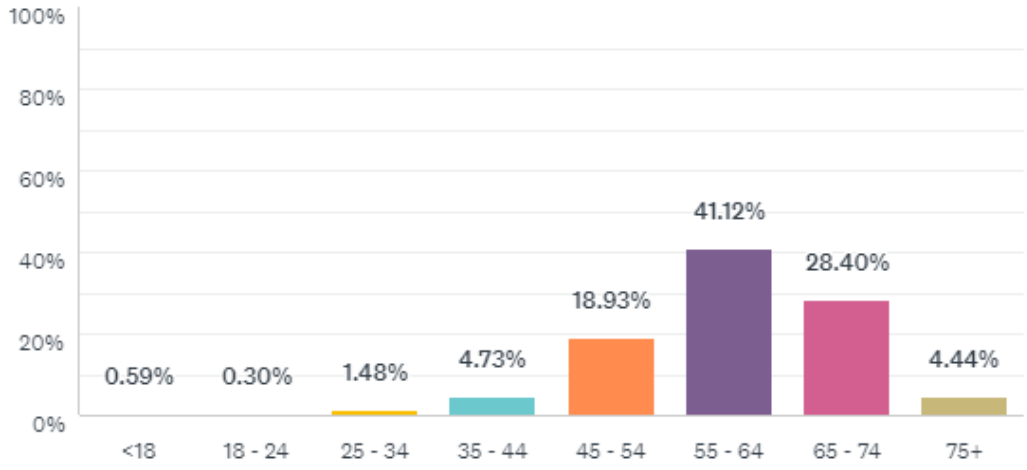
Answered: 339 Skipped: 40



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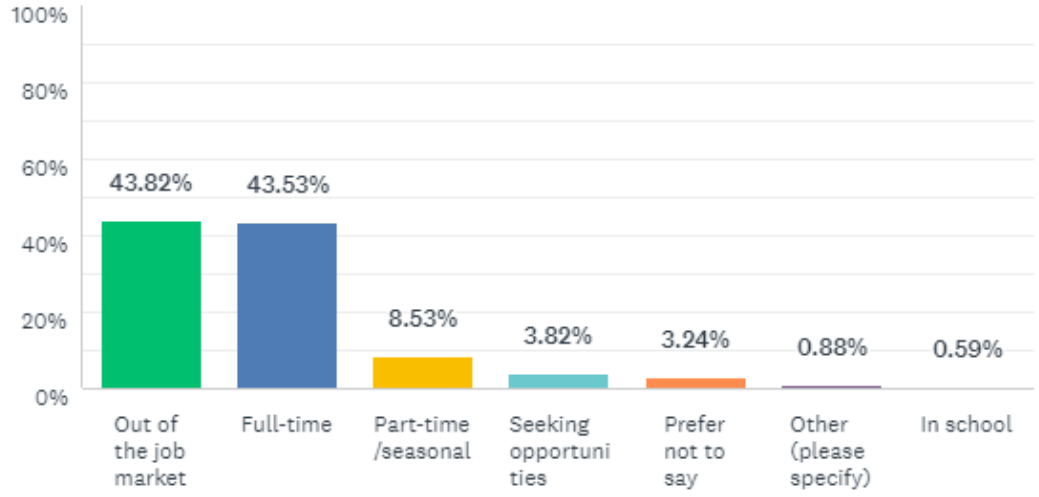
Into which of the following age groups do you fall?

Answered: 338 Skipped: 41



What is your current employment status?

Answered: 340 Skipped: 39



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NOTES:

City of Treasure Island, Florida



WATER SUPPLY WORK PLAN

Prepared By:
City of Treasure Island, Community Development Department
DATE: 4/12//2023

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5.0 GOALS, OBJECTIVES AND POLICIES

6.0 REGIONAL ISSUES IDENTIFIED IN REGIONAL WATER SUPPLY PLANS

Appendix A – Exhibit A- Pinellas County Ten-Year Water Supply Plan
Appendix A – Exhibit B- Pinellas County Utility Service Area Map

1.0 INTRODUCTION

The purpose of the City of Treasure Island's Water Supply Work Plan is to identify and plan for the water supply sources and facilities needed to serve existing and new development within the City's jurisdiction. Chapter 163, Part II, Florida Statutes (F.S.), requires local governments to prepare and adopt Work Plans into their comprehensive plans within 18 months after the Southwest Florida Water Management District (District) approves a regional water supply plan or its update. The Regional Water Supply Plan (RWSP) was approved by the District's Governing Board in November 2020.

The City of Treasure Island is a retail customer of the Pinellas County Utilities Department, which is responsible for ensuring enough capacity is available for existing and future customers.

The City's Work Plan references the Pinellas County Utilities Department 10-Year Water Supply Plan and the Southwest Florida Water Management District RWSP to ensure there is an adequate water supply for the City of Treasure Island. According to state guidelines, the Work Plan and the comprehensive plan must address the development of traditional and alternative water supplies, service delivery, and conservation and reuse programs necessary to serve existing and new development for at least a 10-year planning period.

The Work Plan is divided into five sections:
Section 1 – Introduction
Section 2 – Background Information
Section 3 – Data and Analysis
Section 4 – Work Plan Projects/Capital Improvement Element/Schedule
Section 5 – Goals, Objectives, and Policies of the Comprehensive Plan

1.1 Statutory History

The Florida Legislature enacted bills in 2002, 2004, 2005, and 2011 sessions to address the state's water supply needs. These bills, in particular Senate Bills 360 and 444 (2005 legislative session), significantly changed Chapters 163 and 373, F.S. by strengthening the statutory links between the regional water supply plans prepared by the water management districts and the comprehensive plans prepared by local governments. In addition, these bills established the basis for improving coordination between local land use planning and water supply planning.

1.2 Statutory Requirements

The City of Treasure Island has considered the following statutory provisions when updating the Water Supply Facilities Work Plan (Work Plan):

1. Coordinate appropriate aspects of its comprehensive plan with the Pinellas County Utilities Department 10-Year Water Supply Facilities Work Plan and the Southwest Florida Water Management District Regional Water Supply Plan and [163.3177(4) (a), F.S.].
2. Ensure the future land use plan is based upon availability of adequate water supplies and public facilities and services [s.163.3177 (6) (a), F.S.]. Data and analysis demonstrating that adequate water supplies and associated public facilities will be available to meet projected growth demands must accompany all proposed Future Land Use Map amendments submitted for review.
3. Ensure that adequate water supplies and potable water facilities are available to serve new

development no later than the issuance by the local government of a certificate of occupancy or its functional equivalent and consult with the applicable water supplier to determine whether adequate water supplies will be available to serve the development by the anticipated issuance date of the certificate of occupancy [s.163.3180 (2), F.S.].

4. For local governments subject to a regional water supply plan, revise the General Sanitary Sewer, Solid Waste, Drainage, Potable Water, and Natural Groundwater Aquifer Recharge Element (the "Infrastructure Element"), within 18 months after the water management district approves an updated regional water supply plan.
5. While an Evaluation and Appraisal Report is not required, local governments are encouraged to comprehensively evaluate, and as necessary, update comprehensive plans to reflect changes in local conditions. The evaluation could address the extent to which the local government has implemented the need to update their Work Plan, including the development of alternative water supplies, and determine whether the identified alternative water supply projects, traditional water supply projects, and conservation and reuse programs are meeting local water use demands [s.163.3191 (3), F.S.].

2.0 BACKGROUND INFORMATION

2.1 Overview

Provided is a description of the City of Treasure Island's geography, history, and character:

- Incorporated: May 3, 1955
- Region: A barrier island in Pinellas County on Florida's west coast. Or, precisely at 27°46′ 8″N, 82°46′6″W.
- Size: 3.4 square miles (from the Gulf shoreline)
    - Actual Land Area: 1.3 miles
    - Gulf frontage: 3.83 miles
    - Bay frontage: 28.39 miles
- Bridges: 3
    - Treasure Island C.W. "Bill" Young Bascule Bridge & Causeway- operated by the City of Treasure Island
    - John's Pass Bridge- operated by the State of Florida
    - Blind Pass Bridge- operated by the State of Florida

2.2 Relevant Regional Issues

Detailed information on the issues for the Southwest Florida Water Management District is available in the Regional Water Supply Plan (RWSP). The district last updated its RWSP in November 2020.

3.0 Maps of Current and Future Areas Served

The map depicting the current and future City of Treasure Island boundaries served by Pinellas County Utilities Department is provided in Figure 1.



Fig. 1

3.1 Population and Potable Water Demand Projections

The projected population estimates, and the potable water demand projections are presented below in Table 1. The projections are through the year 2040.

Table 1

TAMPA BAY PLANNING REGION

CITY OF TREASURE ISLAND

DEMAND ANALYSIS

UTILITY NAME	*2020*	*2025*	*2030*	*2035*	*2040*	*WUP (MGD)*	*PER CAPITA WATER USE (2011-2015)*
PINELLAS COUNTY UTILITIES (20142)	**(SUPPLIED THROUGH TAMPA BAY WATER)**						
Municipal Population Served	15,950	16,436	17,083	17,775	17,833	*0.000*	*79*
Demand (MGD)	1.253	1.291	1.342	1.397	1.401		
Total Utility Service Area Population	504,863	514,010	526,816	539,181	543,701		
Demand (MGD)	39.670	40.388	41.395	42.366	42.721		
DOMESTIC SELF SUPPLY							
Population Served	13	13	13	13	12		*54*
Demand (MGD)	0.001	0.001	0.001	0.001	0.001		
MUNICIPAL POPULATION	15,963	16,449	17,096	17,788	17,845		
TOTAL DEMAND (MUNICIPAL)	1.254	1.292	1.343	1.397	1.402		
TOTAL DEMAND (UTILITIES)	39.670	40.388	41.395	42.366	42.721		

SUPPLY ANALYSIS

EXISTING SOURCES

	CURRENT YIELD (MGD)
Total Permitted Quantities	0.000
Water Supply Authority Quantities	224.620
Total Current Yield	0.000

FUTURE SOURCE OPTIONS

	2040 POTENTIAL YIELD (MGD)	*RESPONSIBLE ENTITY*
Conservation	0.159	All

Key:
WUP = Water Use Permit
MGD = Millions of Gallons Per Day
Source: Southwest Florida Water Management District, Community Planning Pages, November 2020

3.2 Water Supply Provided by Other Entities

The City of Treasure Island is a retail customer of the Pinellas County Utilities Department and therefore, has adopted the Pinellas County Utilities Department's 10-year Water Supply Facilities Work Plan into the City of Treasure Island's Comprehensive Plan. The County's work plan addresses the requirements needed to serve current and future development within the City's jurisdiction.

3.4 Conservation

Conservation programs are adopted from Pinellas County and Southwest Florida Water Management District. Pinellas County is working to address resource uncertainty using reclaimed water that offsets of the use of potable water consumption, conservation programs that prevent the waste of potable water, and the development of alternative sources of potable water supply and storage methods.

3.4.1 Local Specific Actions, Programs, or Regulations

The City of Treasure Island has adopted by reference those provisions of water conservation ordinances that are applicable to Treasure Island which may be adopted by Pinellas County or recommended by the Southwest Florida Water Management District.

3.4.2 Identify any Local Financial Responsibilities as Detailed in the CIE or CIS

The City of Treasure Island is not financially responsible for the potable water infrastructure. The city's Capital Improvements element shown below does ensure that the City will work with Pinellas County to ensure an adequate supply of water is available, that level of service standards are met and that the budget is adequate to provide the required services.

3.5 Reuse

State law supports reuse efforts. Florida's utilities, local governments, and water management districts have led the nation in the quantity of reclaimed water reused and public acceptance of reuse programs. Section 373.250(1) F.S. provides "the encouragement and promotion of water conservation and reuse of reclaimed water, as defined by the department, are state objectives and considered to be in the public interest." In addition, Section 403.064(1), F.S., states "reuse is a critical component of meeting the state's existing and future water supply needs while sustaining natural systems."

3.5.1 Local Specific Programs, Regulations, or Opportunities

The City of Treasure Island is provided reclaimed water by the Pinellas County Utilities Department and supports water reuse initiatives and watering regulations set forth by the County.

3.5.2 Identify any Local Financial Responsibilities as Detailed in the CIE or CIS

The City of Treasure Island is not financially responsible for the reclaimed water infrastructure. The city's Capital Improvements element shown below does ensure that the City will work with Pinellas County to ensure an adequate supply of water is available, that level of service standards are met and that the budget is adequate to provide the required services.

4.0 CAPITAL IMPROVEMENTS

Refer to the adopted Pinellas County Utilities Department 10-year Water Supply Facilities Plan (see Appendix A-Exhibit A).

5.0 GOALS, OBJECTIVES AND POLICIES

The following Comprehensive Plan goals, objectives, and policies (GOPs) have been reviewed for consistency with the Work Plan.

Infrastructure Element

Goal 1: The City shall ensure that needed sanitary sewer, solid waste, and potable water services be provided by a safe and efficient system which maintains adequate facilities and provides for orderly growth and expansion.

Objective 1.1: Concurrency Management System

Utilize a system of standards for potable water, sanitary sewer, and solid waste to ensure adequate facility capacity for current and future needs.

Policy 1.1.1: The adopted potable water, sanitary sewer, and solid waste level-of-service standards for the City shall be those listed in Table 1:

Table 1
Adopted Level-of-Service Standards

Facility	Level-of-Service Standard
Potable Water	115 gallons per capita a day*

* The LOS standards for potable water and solid waste are reflective of the standards adopted by Pinellas County.

Policy 1.1.2: The development, expansion, replacement, or modification of infrastructure facilities shall be compatible with the adopted level-of-service standards.

Goal 2: The City shall support efforts to meet local potable water quality and capacity needs, while maintaining the highest water quality standards and providing for the safe collection of wastewater to protect the surrounding natural environment.

Objective 2.1: Potable Water

The City shall work ~~to~~ ensure that adequate and dependable supplies of potable water are available to meet existing and projected water demand.

Policy 2.1.1: The City will, prior to issuance of development orders and building permits, check to ensure adequate water supplies to serve new development will be available.

Policy 2.1.2: The City shall require low water usage plumbing fixtures be installed in all new buildings or in conjunction with renovations.

Policy 2.1.3: The City shall implement a water conservation program to reduce demand on potable water resources.

Policy 2.1.4: The City shall regularly review and maintain, through its land development regulations, water efficient design and construction standards that include rainwater capture and reuse.

Policy 2.1.5: The City shall promote the use of native and Florida Friendly Landscaping™ and encourage educational efforts that promote potable water conservation.

Policy 2.1.6: The City will coordinate with Pinellas County to plan for potable water infrastructure improvements that may be needed with respect to sea level rise projections.

Intergovernmental Coordination Element

Goal: Improve the existing system of interlocal coordination to successfully implement local government comprehensive plans and to effectively address regional resiliency and to resolve conflicts resulting from the plans.

Objective 1.4 Water Supply Coordination

The City will commit to work with and participate in the planning of potable water supply and facilities and for wastewater treatment.

Policy 1.4.1: The City shall coordinate the planning of potable water facilities and services and level-of-service standards with Pinellas County and the Southwest Florida Water Management District and the Regional Water Supply Plan Update.

Policy 1.4.2: The City shall coordinate water supply planning and land use planning activities of the City with Pinellas County to ensure that water needs of the City's residents are met.

Policy 1.4.3: The City shall maintain consistency between the demand calculations in the Water Supply Facilities Work Plan and the population projections contained in the Future Land Use Element and work regularly with Pinellas County to update projections as necessary.

Policy 1.4.4: The City shall coordinate with the Florida Department of Environmental Protection, the Southwest Florida Water Management District, and the City of St. Petersburg as needed to address stormwater and/or wastewater infrastructure development as part of the implementation of the City of Treasure Island's Watershed Management Plan.

Capital Improvements Element

Goal: The City shall adopt undertake fiscal actions necessary an annual budget to provide and maintain a resilient community and public facilities assets for all residents within its jurisdiction at the adopted levels of service.

Objective 1.6 Water Supply Planning

Appropriate mechanisms will be developed and adopted consistent with Pinellas County in order to assure that adequate water supplies are available to all water users.

Policy 1.6.1: In coordination with Pinellas County, assure that adequate water supplies and potable water facilities meeting the adopted level of service shall be in place and available to

serve new development no later than the issuance of a certificate of occupancy.

Policy 1.6.2: The City shall implement the policies and goals described in the 10-Year Water Supply Facilities Plan.

6.0 REGIONAL ISSUES IDENTIFIED IN REGIONAL WATER SUPPLY PLANS

Detailed information for the issues identified by SWFWMD is available in their Regional Water Supply Plan (RWSP). The district last updated its RWSP in November 2020.

City of Treasure Island
Business Impact Estimate

This form should be included in the agenda packet for the item under which the proposed ordinance is to be considered and must be posted on the City's website by the time notice of the proposed ordinance is published.

Proposed ordinance's title/reference:

Ordinance 2024-001

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF TREASURE ISLAND, FLORIDA READOPTING THE PRIOR COMPREHENSIVE PLAN TEXT AND MAPS AMENDMENT WHICH REFLECTED CHANGES IN THE STATE REQUIREMENTS CONSISTENT WITH SEC. 163.3191 FLORIDA STATUTES AND THE CHANGES IN CURRENT CONDITIONS AND COMMUNITY VISION; AMENDED EIGHT EXISTING ELEMENTS INCLUDING FUTURE LAND USE, TRANSPORTATION; HOUSING; INFRASTRUCTURE; COASTAL MANAGEMENT, CONSERVATION AND RESILIENCY; PARKS, RECREATION AND OPEN SPACE; INTERGOVERNMENTAL COORDINATION; CAPITAL IMPROVEMENTS; ADDED ONE NEW ELEMENT, PROPERTY RIGHTS; AMENDED OR UPDATED FOURTEEN MAPS INCLUDING LU-1 - EXISTING LAND USES; LU-2 - FLOOD ZONES, FLOODPLAINS, & CHHA; LU-3 - SOIL ASSOCIATIONS; LU-4 - FUTURE LAND USE MAP; LU-5 - HISTORIC RESOURCES; CM-1 - VEGETATIVE COVER & MARINE RESOURCES; T-1 - EXISTING ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-2 - EXISTING & FUTURE PUBLIC TRANSIT & TRUCK ROUTES; T-3 - EXISTING BICYCLE & SIDEWALK FACILITIES; T-4 - EXISTING & FUTURE HURRICANE EVACUATION ROUTES, T-5 - EXISTING TRAFFIC VOLUMES; T-6 - EXISTING ROADWAY LEVELS OF SERVICE; T-9 - FUTURE TRAFFIC VOLUMES; T-10 - FUTURE ROADWAY LEVELS OF SERVICE; REVISED AND RENAMED ONE MAP, PROS-1 PUBLIC AND RECREATIONAL FACILITIES; REMOVED FOUR MAPS INCLUDING B-1 – BUSINESS DISTRICT; B-2 – JOHN'S PASS REDEVELOPMENT AREA; T-7 – FUTURE ROADWAY CLASSIFICATIONS & NUMBER OF LANES; T-8 - FUTURE BICYCLE & SIDEWALK FACILITIES; REMOVED THE DATA AND ANALYSIS FROM THE ADOPTED COMPREHENSIVE PLAN; PROVIDING FOR TRANSMITTAL TO REVIEWING AGENCIES IN ACCORDANCE WITH THE REQUIREMENTS OF LAW; PROVIDING FOR SEVERABILITY, AND PROVIDING FOR AN EFFECTIVE DATE.

This Business Impact Estimate is provided in accordance with section 166.041(4), Florida Statutes.

Question 1. Does the proposed ordinance meet one or more of the exceptions listed below? If so, then please check the applicable exception below and move to Question 2. If one or more boxes are checked below, this means the City is of the view that a business impact estimate is not required by section 166.041(4), Florida Statutes, for the proposed ordinance. If there is no applicable exception, proceed with completing the business impact estimate at Question 3.

- ☐ The proposed ordinance is required for compliance with Federal or State law or regulation;
- ☐ The proposed ordinance relates to the issuance or refinancing of debt;
- ☐ The proposed ordinance relates to the adoption of budgets or budget amendments, including revenue sources necessary to fund the budget;
- ☐ The proposed ordinance is required to implement a contract or an agreement, including, but not limited to, any Federal, State, local, or private grant or other financial assistance accepted by the municipal government;
- ☐ The proposed ordinance is an emergency ordinance;
- ☐ The ordinance relates to procurement; or
- ☒ The proposed ordinance is enacted to implement the following:
  a. Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation, including zoning, development orders, development agreements and development permits;
  b. Sections 190.005 and 190.046, Florida Statutes, regarding community development districts;
  c. Section 553.73, Florida Statutes, relating to the Florida Building Code; or
  d. Section 633.202, Florida Statutes, relating to the Florida Fire Prevention Code.

Question 2. Based on the exception you selected above and in accordance with the provisions of the controlling law, please provide an explanation below of why the ordinance meets the exception(s).

The comprehensive plan text and map amendments outlined in Ordinance 2024-01 fall under Part II of Chapter 163, Florida Statutes, relating to growth policy, county and municipal planning, and land development regulation. Part II of Chapter 163 exempts ordinances related to growth policy and municipal planning.

Question 3. If there is no applicable exception, proceed with completing the below Business Impact Estimate. This Business Impact Estimate may be revised following its initial posting. In accordance, the City hereby publishes the following information:

N/A

B. An estimate of the direct economic impact of the proposed ordinance on private, for-profit businesses in the City, including the following, if any:

(1) An estimate of direct compliance costs that businesses may reasonably incur if the ordinance is enacted;

(2) Identification of any new charge or fee on businesses subject to the proposed ordinance, or for which businesses will be financially responsible; and

(3) An estimate of the City's regulatory costs, including an estimate of revenues from any new charges or fees that will be imposed on businesses to cover such costs.

(4) Any other direct economic impacts of the proposed ordinance on private, for-profit businesses in the City that are not covered by (1), (2), or (3):

C. Good faith estimate of the number of businesses likely to be impacted by the ordinance:

D. Additional information the governing body deems useful (if any):