CHARLES TOWN UTILITY BOARD
AGENDA

WEDNESDAY, APRIL 9, 2025

Regular Meeting | **661 South George Street, Charles Town, WV 25414** | **4:00 PM**

CALL TO ORDER

1. **APPROVAL OF MINUTES**
   a. Approval of March 26, 2025 Regular Meeting Minutes
   03.26.25 UB Minutes.pdf

2. **PUBLIC COMMENT**
   This portion of the agenda is designed for members of the general public to share thoughts on items of interest in the community. By law, Board members may ask clarifying questions or discuss procedural matters but are not permitted to discuss the policy merits of any issue unless it is scheduled for discussion.

   The public is invited to attend this meeting in person or via webcast (www.ctubwv.com- Board Meeting - Meeting Agendas and Minutes 2025) or by accessing the following zoom link:

   https://us06web.zoom.us/j/87329955868?pwd=nroHHManNi0c7N5a8kriwjN2HpDMwj.1

   Meeting ID: 873 2995 5868
   Passcode: 297863
   (301)715-8592

3. **UNFINISHED BUSINESS**
   a. Update on WV PSC Cases - Possible Executive Session under the provision of W. VA Code 6-9a-4(b)(12) - To discuss any matter which, by express provision of federal law or state statute or rule of court is rendered confidential, or which is not considered a public record within the meaning of the freedom of information act as set forth in article one, chapter twenty-nine-b of the code.
   i. 25-0263-W-C – West Virginia American Water Complaint Case
   ii. 25-0079-W-PC - Sidewinder Service Agreement for Mountain Pure Development

4. **NEW BUSINESS**
   a. Water Model Update Presentation by Dewberry
   Draft CTUB Model Update 03.21.25.pdf
   CTUB Water Model Update Presentation.pdf

b. 2022 Sewer Collection System Project - Resolution No. 6 - CIF Payment #5
Resolution No. 6 - CIF Payment No. 5.pdf
c. CEM Corporation Quote for Lab Equipment
CEM Quote.pdf
d. PFAS Biosolids Testing Results
PFAS Results.pdf
e. Board Policies
Board Policies.pdf
i. CIF Policy - Draft by Mr. Maxey
ii. Biosolids PFAS Policy - Draft by Mr. Maxey
iii. Rules of Procedure
iv. Connect and Disconnect Policy
v. Developer Policy

5. **MANAGER REPORTS**
a. Utility Manager Report
UM Report.pdf
b. Chairman Report

6. **APPROVAL OF BILLS**
a. April 9, 2025
Board Report 04.09.25.pdf

7. **ADJOURNMENT**

8. **INFORMATION ONLY**
a. Next Meeting - April 23, 2025 at 4:00 P.M.

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Approval of March 26, 2025 Regular Meeting Minutes

Attachments:

03.26.25 UB Minutes.pdf

Charles Town Utility Board
Regular Board Meeting
March 26, 2025

The Charles Town Utility Board held a regular meeting on March 26, 2025 at 4:00 P.M. Members of the Board present were John Nissel, Chairman; John Maxey, Vice Chairman; Duke Pierson, Treasurer; Heidi Parker, Board Member; and Patrick Kratovil, Board Member. Also present were Kristen Stolipher, Utility Manager; April Shultz, Assistant Utility Manager; Ashley Stottlemyer, Secretary; Robert Rodecker, Legal Counsel (Zoom) and Pasha Majdi, County Commission Liaison (Zoom).

CALL TO ORDER

The Chairman called the meeting to order at 4:00 P.M.

APPROVAL OF MINUTES

Approval of March 12, 2025 Minutes

The Chairman called for changes or corrections to the March 12, 2025 regular meeting minutes. Mrs. Parker suggested one minor grammatical change.

Action: **Motion made by Mr. Maxey, second by Mr. Pierson, the Board unanimously approved the minutes as amended.**

PUBLIC COMMENT

The Board received public comments from Giuliana Broyna, Christine Wimer and Jessie Norris.

UNFINISHED BUSINESS

Update on WV PSC Cases - Possible Executive Session under the provision of W. VA Code 6-9a-4(b)(12) - To discuss any matter which, by express provision of federal law or state statute or rule of court is rendered confidential, or which is not considered a public record within the meaning of the freedom of information act as set forth in article one, chapter twenty-nine-b of the code.

i. 25-0263-W-C – West Virginia American Water Complaint Case

This item was discussed in executive session.

ii. 25-0079-W-PC - Sidewinder Service Agreement for Mountain Pure Development

No updates for this item.

NEW BUSINESS

2022 Collection System Project – Change Order Request #1 B&O Tax Credit – Possible Executive Session under the provision of W. VA Code 6-9a-4(b)(12) - To discuss any matter which, by express provision of federal law or state statute or rule of court is rendered confidential, or which is not considered a public record within the meaning of the freedom of information act as set forth in article one, chapter twenty-nine-b of the code.

This item was discussed in executive session.

MANAGER REPORTS

Utility Manager Report

Mrs. Stolipher provided staff is preparing for CTUB Day on May 9th for a tour of the wastewater plant with a rain date of May 16th. She also mentioned baffle walls were installed at the water treatment plant that may have resulted in the discoloration of the water which was addressed by staff. Staff put out a notice that this work will continue the latter part of the week and any further discoloration will be addressed. Mr. Maxey suggested looking into turbidity monitoring coming out of the water plant which may address the sediment issue.

Mrs. Stolipher also addressed issues with the complexity of social media and suggested customers call the Utility if there are any issues or concerns.

Action: No action required by the Board.

Chairman Report

The Chairman provided no updates.

Action: No action required by the Board.

APPROVAL OF BILLS

March 26, 2025

Action: Motion made by Mrs. Parker, second by Mr. Pierson, the Board unanimously approved the payment of the bills.

EXECUTIVE SESSION

Action: Motion by Mr. Pierson, second by Mr. Maxey, the Board unanimously approved convening into Executive Session at 4:19 P.M. to discuss PSC case 25-0263-W-C – West Virginia American Water Complaint Case and the 2022 Collection System Project Change Order Request #1 B&O Tax Credit.

The Board convened back into public session at 5:00 P.M.

Action: Motion by Mr. Maxey, second by Mr. Pierson, the Board unanimously approved directing Mr. Rodecker to not sign the request for a privacy waiver in the West Virginia American Water Complaint Case.

Action: Motion by Mr. Pierson, second by Mr. Maxey, the Board unanimously approved paying the Change Order #1 for the Collection System Project as submitted.

Action: Motion by Mr. Maxey, second by Mrs. Parker, the Board unanimously approved directing Mr. Rodecker to file a letter with the PSC notifying them that the Planning Commission denied the Mountain Pure Concept Plan and if it does come back for approval, it may have significant changes.

Action: **Motion by Mr. Maxey, second by Mrs. Parker, the Board unanimously approved any future agreements regarding the Mountain Pure project be brought back to the Board for discussion and action.**

ADJOURNMENT

There being no further business at this time, the Board adjourned the meeting at 5:03 P.M.

INFORMATION ONLY

The next meeting is scheduled for Wednesday, April 9, 2025 at 4:00 P.M. at 661 S. George Street.

_____	_____
John Nissel	Ashley Stottlemyer
Chairman	Secretary

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Update on WV PSC Cases - Possible Executive Session under the provision of W. VA Code 6-9a-4(b)(12) - To discuss any matter which, by express provision of federal law or state statute or rule of court is rendered confidential, or which is not considered a public record within the meaning of the freedom of information act as set forth in article one, chapter twenty-nine-b of the code.

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

25-0263-W-C – West Virginia American Water Complaint Case

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

25-0079-W-PC - Sidewinder Service Agreement for Mountain Pure Development

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting **661 South George Street**
Charles Town, WV 25414

Water Model Update Presentation by Dewberry

Attachments:

Draft CTUB Model Update 03.21.25.pdf
CTUB Water Model Update Presentation.pdf

REFERENCE NO.

CTUB WATER MODEL UPDATE REPORT

CHARLES TOWN UTILITY BOARD

MARCH 2025

DRAFT

Dewberry

ORIGINAL

SUBMITTED BY
Dewberry Engineers Inc.
8401 Arlington Boulevard
Fairfax, Virginia 22031-4666
703.849.0100

SUBMITTED TO
Kristen M. Stolipher
Charles Town Utility Board
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Charles Town, WV 25414
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Table of Contents

1. Introduction 4

1.1 Purpose 4

1.2 Scope 4

2. Existing System 5

2.1 Main Pressure Zone 5

2.2 Huntsfield Pressure Zone 6

2.3 Northern High-Pressure Zone 6

3. System Demands 9

3.1 Existing Demands 9

3.2 Future Demands 10

4. Hydraulic Model Update 12

4.1 Data Collection 12

4.2 Infrastructure Updates 12

4.3 Operational Settings 12

4.4 Model Validation 13

4.5 Demand Allocation 13

4.6 Model Scenarios 13

5. Hydraulic Evaluation 16

5.1 Level of Service Criteria 16

5.2 Minimum Pressure 16

5.3 Maximum Pressure 17

5.4 Maximum Velocity 17

5.5 Fire Flow 17

5.6 Storage 18

6. Recommended Improvements 22

6.1 Previous Recommendation Validation 22

6.2 Fire Flow Improvements 22

6.3 Flushing Protocol 23

DRAFT

6.4 Hydrant Testing Protocol 23

Attachments 26

Attachment A: CTUB 2018 - Present Developments 26

Attachment B: 2019 Study Recommended Projects 26

Attachment C: Example Hydrant Testing Protocol 26

Table of Tables

Table 2.1 Existing System piping 6

Table 3.1 Existing System Demands (gpm) 9

Table 3.2 Estimated Peak Design Flows per Home 10

Table 3.3 Development Demands 11

Table 3.4 Projected System Demands (GPM) 11

Table 4.1 Pump Station Operational Data 13

Table 4.2 Water Tank Data 13

Table 5.1 Level of Service Criteria 16

Table 5.2 System Static Pressure (psi) 16

Table 5.3 Minimum System Pressure (psi) 17

Table 5.4 Maximum System Pressure (psi) 17

Table 5.5 Maximum System Velocity (ft/s) 17

Table 5.6 Available Fire Flow (gpm) 18

Table 5.7 Storage Evaluation (Gal) 18

Table 6.1 Available Fire Flow With 2019 Projects (gpm) 22

Table 6.2 Available Fire Flow With All Improvements (gpm) 22

Table 6.3 Required Flushing Flow (gpm) 23

DRAFT

Table of Figures

Figure 2.1 System Schematic Diagram 5
Figure 2.2 CTUB Water Distribution System 7
Figure 2.3 CTUB Water Mains by Diameter 8
Figure 3.1 Diurnal Patterns 10
Figure 4.1 Infrastructure Updates 15
Figure 5.1 Minimum Static Pressure 19
Figure 5.2 Minimum Pressure 20
Figure 5.3 Available Fire Flow 21
Figure 6.1 2019 Study Recommended Projects 24
Figure 6.2 Recommended Hydrant Improvements 25

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1. Introduction

1.1 Purpose

The Charles Town Utility Board (CTUB) operates independently of the City of Charles Town and provides water service to a growing number of water customers in the City of Charles Town, the City of Ranson, Tuscawilla Hills, and Locust Hill. CTUB is responsible for the supervision, management, control and operation of the water distribution system (the system), including the maintenance, operations, improvements and extension of the system.

CTUB is anticipating significant near-term and long-term future development based on consistent growth in the system service area. To ensure the ability to evaluate system expansion and levels of service, a hydraulic model has been developed representing the system.

CTUB has tasked Dewberry Engineers Inc. (Dewberry) with updating and calibrating the hydraulic model to reflect existing conditions as of July 2024. The updated model has also been sued to evaluate system conditions under three (3) demand scenarios reflecting existing, near-term, and long-term demand conditions.

This report evaluates the model and system demands, reviews existing infrastructure and model verification, analyzes system hydraulics, and provides recommendations for improving the system.

1.2 Scope

Dewberry's scope included updating and verifying the water model using ArcGIS and WaterGems. The existing system model scenario was updated using record drawings, customer billing data, and other pertinent information provided by CTUB.

Updating the hydraulic model required extensive coordination with CTUB to integrate existing system records and current project information. The following data was collected to complete the model update.

1. Record drawings for infrastructure constructed since 2018.
2. Operational and physical data for system controls, pump stations, and tanks
3. Customer billing and water supply data
3. Current system GIS database
4. Hydrant test results

The general approach for updating the hydraulic model and completing system evaluations incorporated the following steps:

1. Review existing system information.
2. Review historic hydrant testing data.
3. Develop level of service (LOS) criteria for hydraulic model evaluation
4. Quality control review of the existing hydraulic model
5. Update the physical model to include new piping and infrastructure based off data collected from 2018 onwards.
6. Complete hydraulic model validation and calibration
7. Complete an evaluation of the existing system and validate the improvements recommended in the 2020 Water Model Update
8. Identify conceptual level recommendations for near-term and long-term demand conditions.
9. Develop a Water Model Update Report summarizing the previous steps.

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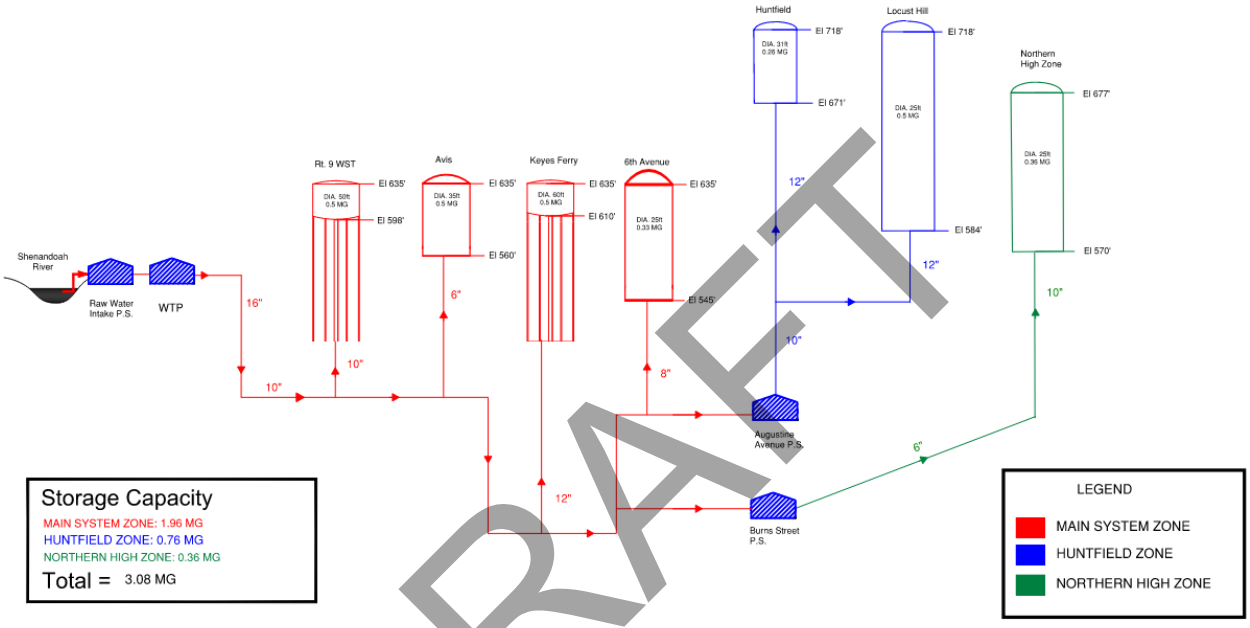
2. Existing System

CTUB owns and operates the Charles Town Utility Board Water Treatment Plant (WTP), a 2.8 million gallons per day (MGD) water treatment plant, located along Charles Town Road, southeast of the City of Charles Town. The WTP draws water from the Shenandoah River and supplies water to the system. The system consists of three (3) pressure zones: the Main Pressure Zone (MPZ), the Huntsfield Pressure Zone (HPZ), and the Northern High-Pressure Zone (NHPZ). The WTP discharges into the MPZ which in turn connects to the HPZ, located west of the MPZ, and the NHPZ, located north of the MPZ. Additional information on each pressure zone and existing system infrastructure is provided in the following sections. A schematic figure of the existing system is shown below in **Figure 2.1.**

Figure 2.1 System Schematic Diagram



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2.1 Main Pressure Zone

The MPZ runs northeast to southeast and is the largest zone in the system. The MPZ includes approximately seventy-nine (79) miles of piping, ranging from two- to sixteen-inch diameter. Piping materials include asbestos cement pipe (ACP), cast iron pipe (CIP), copper, ductile iron pipe (DIP), galvanized iron, and polyvinyl chloride pipe (PVC). Infrastructure in the zone includes one (1) pump station and five (5) tanks. The MPZ operates at a hydraulic grade line (HGL) of 635-feet (ft).

The pump station at the WTP (WTP Station) is controlled by the Route 9 Tank and is located along Charles Town Road. It connects into the Raw Water Reservoir that is supplied by the Shenandoah River and supplies the existing system through 16-inch piping. The pumps at the WTP Station are variable speed pumps with a design point of 1,945 gallons per minute (gpm) at 229-ft of head. The station operates based on levels in the Route 9 Tank.

The Route 9 Tank, constructed in 1968, is located at the intersection of Veteran Memorial Highway and S George Street. The 50-foot (ft) diameter circular tank has a capacity of 0.5 million gallons (MG) and sits at an elevation of 539.92-ft with a top elevation of 635-ft.

The Avis Street Tank, constructed in 1976, is located along E Avis Street. The 35-ft diameter circular tank has a capacity of 0.5 MG and sits at an elevation of 554.07-ft with a top elevation of 635-ft.

The Keyes-Ferry Road Tank, constructed in 1988, is located along Keyes Ferry Road. The 60-ft diameter circular tank has a capacity of 0.5 MG and sits at an elevation of 486.10-ft with a top elevation of 635-ft.

The 6th Avenue Elevated Storage Tank (EST), constructed in 1991, is located along E 6th Avenue. The 10-ft diameter EST has a capacity of 0.13 MG and sits at an elevation of 543.68-ft with a top elevation of 623.64-ft. The site also includes the 6th Avenue Standpipe, also constructed in 1991. The 25-ft diameter standpipe has a capacity of 0.33 MG and sits at an elevation of 541.17-ft with a top elevation of 635-ft.

2.2 Huntsfield Pressure Zone

The HPZ is fed by the MPZ along Augustine Avenue through the Augustine Avenue Pump Station (AAPS) which boosts the HGL of the zone to 718'. The HPZ includes approximately 28 miles of piping, ranging from two to twelve-inch diameter. Piping materials include copper, DIP, and PVC. Infrastructure in the zone includes one (1) pump station and two (2) tanks: the AAPS, the Huntsfield Tank, and Locust Hill Tank.

The AAPS, located along Augustine Avenue, boosts pressure from the MPZ into the HPZ. The station has a capacity of 0.65 MGD and the pumps have a design point of 450 gpm at 156-ft of head. The station operates based on levels in the Huntsfield Tank.

The Huntsfield Tank, located at the corner of Hughs Road and Union Ridge Drive, is a 31-ft diameter tank with a capacity of 0.26 MG and sits at an elevation of 550-ft with a top elevation of 718-ft. The Locust Hill Tank is located along Sawgrass Drive. The 25-ft diameter tank has a capacity of 0.5 MG and sits at an elevation of 574.45-ft with a top elevation of 718-ft.

2.3 Northern High-Pressure Zone

The NHPZ, fed by the MPZ along Beltline Avenue through the Burns Street Pump Station (BSPS), boosts the HGL of the zone to 677-ft. There are additional interconnections between the MPZ and NHPZ at the intersections of North Mildred Street, North Preston Street, and North Fairfax Boulevard. These interconnections currently have isolation valves preventing flow between the zones. The NHPZ includes approximately thirteen miles of piping, ranging from two to ten-inch diameter. Piping materials include ACP, CIP, copper, DIP, galvanized iron, and PVC. Infrastructure includes one (1) pump station and one (1) tank: the BSPS and the Northern High Zone Tank.

The BSPS, located along Burns Street, boosts pressures from the MPZ into the NHPZ. The station has a capacity of 1.08 MGD and the pumps have a design point of 750 gpm at 145-ft of head. The station operates based on levels in the Northern High Zone Tank.

The Northern High Zone Tank is located along 16th Avenue. The 25-ft diameter tank has a capacity of 0.36 MG and sits at an elevation of 570 ft with a top elevation of 677-ft.

The existing system can be seen in **Figure 2.2,** and existing system piping is shown by diameter in **Figure 2.3.** A summary of system piping by diameter is seen in **Table 2.1.**

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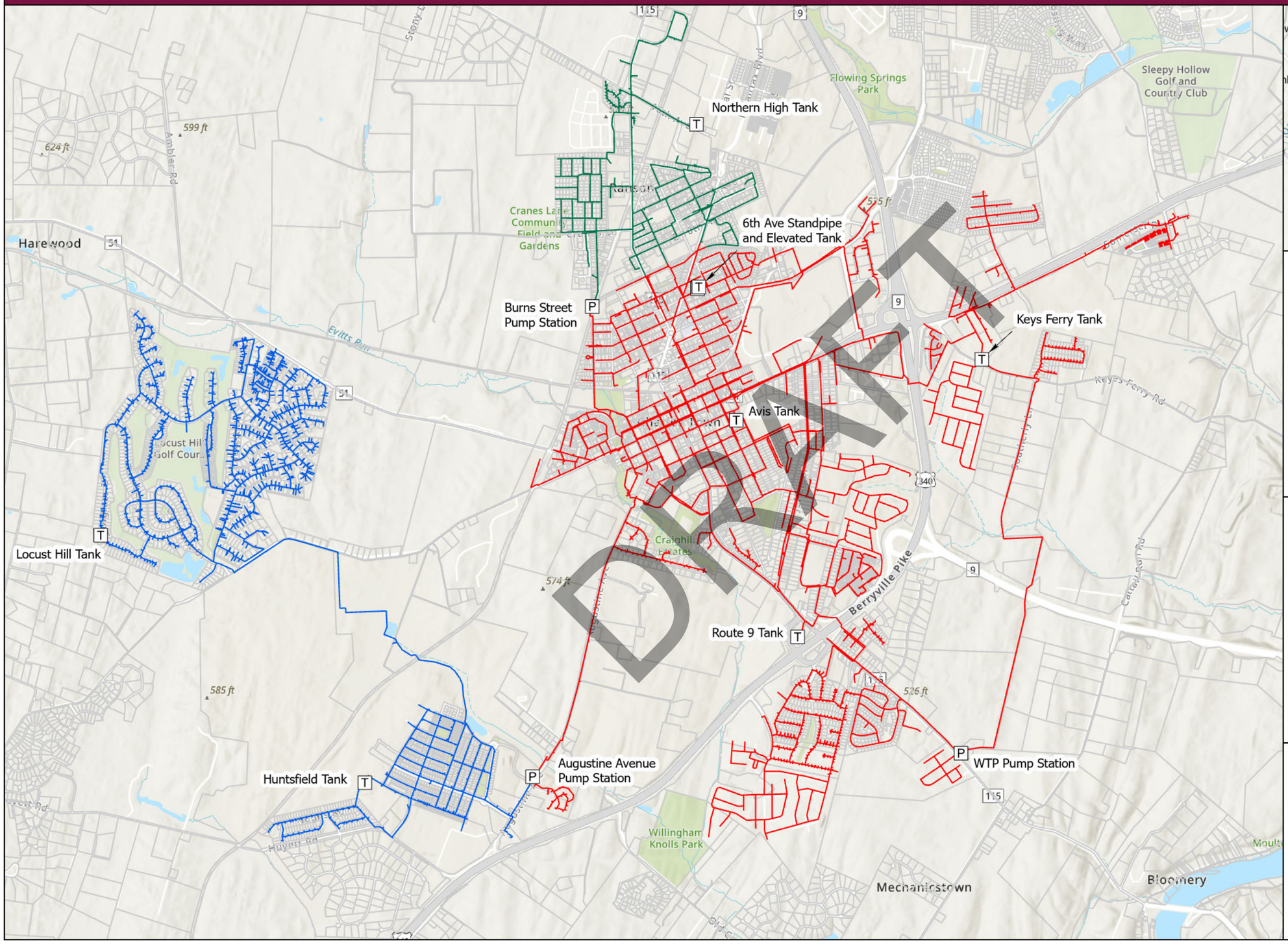
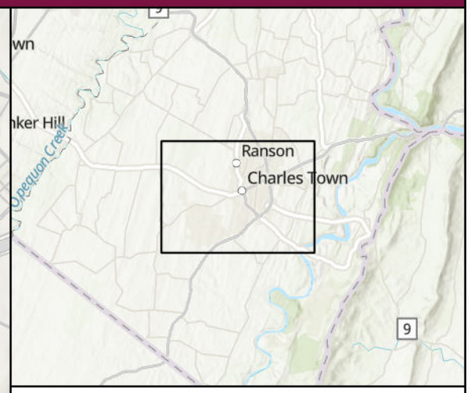
TABLE 2.1 EXISTING SYSTEM PIPING

DIAMETER (IN)	TOTAL LENGTH (LF)
≤ 2	169,825
3	1,414
4	40,850
6	140,313
8	223,218
10	51,995
12	85,926
16	12,882

Figure 2.2 - CTUB Water Distribution System





Pressure Zone
- Huntsfield
- Main
- Northern
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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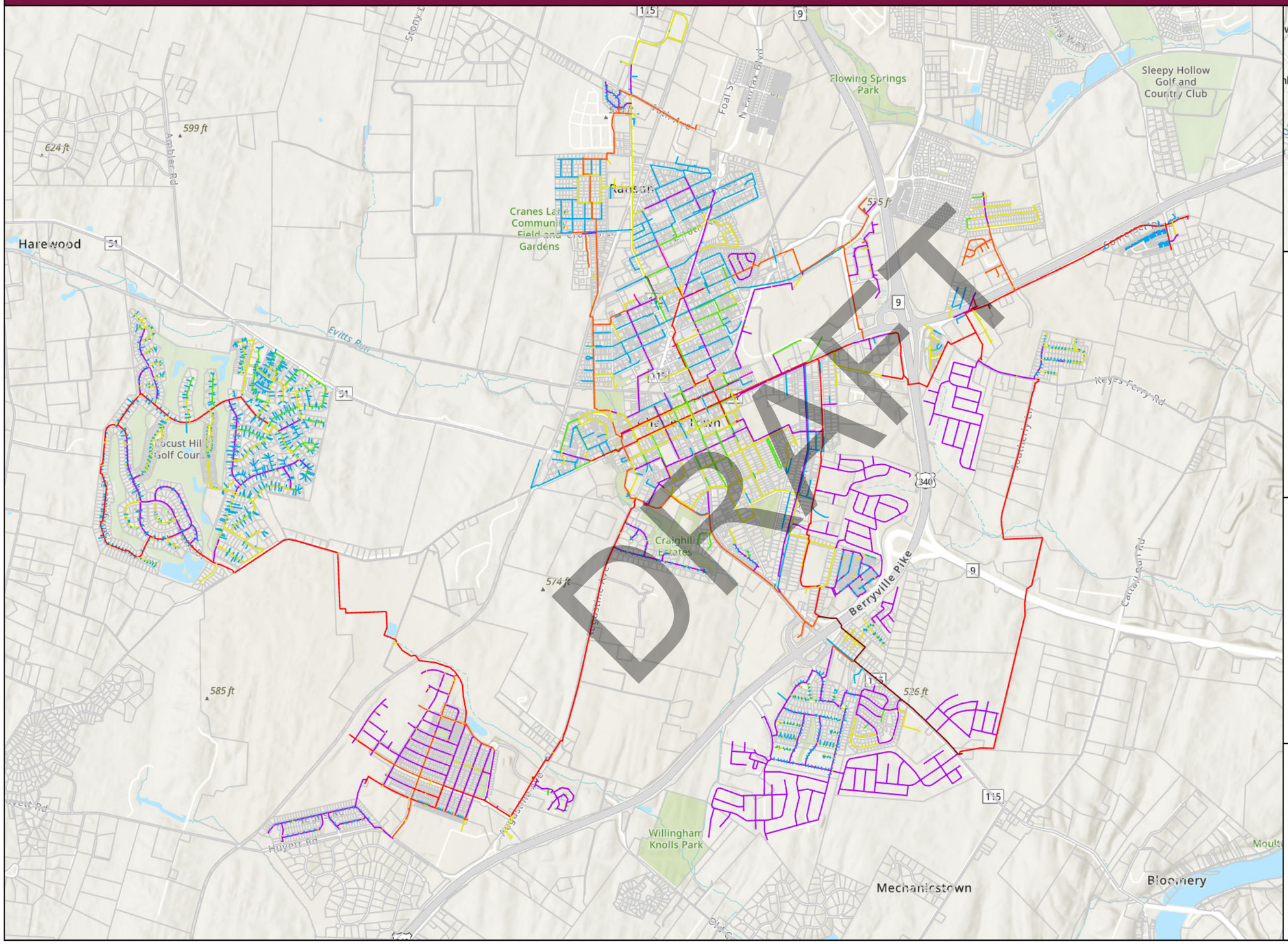
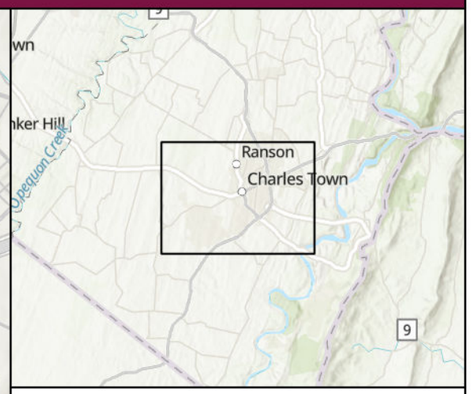
Figure 2.3 CTUB Water Mains by Diameter





Piping Diameter
- < 2 in
- 3 in
- 4 in
- 6 in
- 8 in
- 10 in
- 12 in
- 16 in
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

CHARLES TOWN UTILITY BOARD 1998

Dewberry

3. System Demands

System demands are the foundation for system analysis and developing demand projections for future scenarios. Existing water demands were determined through analyzing customer billing and supervisory control and data acquisition (SCADA) data provided by CTUB. In addition to the existing system demand, demands for fourteen (14) developments have been projected and are included in the model.

3.1 Existing Demands

Total water production represents all water entering the system and is the basis for the existing water demand calculations. CTUB provided the finished water plant effluent data for 2024 analyzed to determine the total average daily demand (ADD) entering the system over this time frame. The total system demand is broken down into total consumption and water loss to adequately distribute the demands throughout the system. It should be noted that water can also be supplied by the tanks throughout the system so water production data may not capture all demand flowing through the system at a given time. SCADA data on tank level was not available; therefore, water balance calculations could not be completed to determine the impact of tank flow on total system demand. While total system demand is in line with previous studies, tank SCADA should be prioritized in future studies.

Total water consumption represents the portion of water production directly used by customers in the system. CTUB provided monthly billing data from June 2023 through July 2024. This data was analyzed to determine the ADD for each customer over this period. The processed data was then geocoded using customer address information to spatially locate the demands throughout the system.

Water loss represents the difference between water production and water consumption and represents the amount of water that is being used but not billed to customers. Water loss can occur from leakage in waterlines due to aging infrastructure. This demand is added to the model to reflect the true demand through the system above the consumption demand. Billing data provided by CTUB indicates a water loss percentage of approximately 31%.

The water production data was also used to determine the maximum day demand (MDD), peak hour demand (PHD) and the corresponding peak factors. Peak factor is the ratio of MDD or PHD relative to the ADD. Water production data was analyzed to determine the maximum water production in a consecutive twenty-four (24) hour period which represents the MDD, and a consecutive one (1) hour period which represents the PHD. To ensure that the model demands are not artificially inflated due to data collection error, or an isolated period of high production, the top ten water production days and hours were determined and reviewed before determining the MDD and PHD. The MDD was determined to have occurred on July 8, 2024, and the PHD was determined to have occurred on February 21, 2024, at noon. Peak factors for PHD and MDD were calculated as 2.29 and 1.29, respectively.

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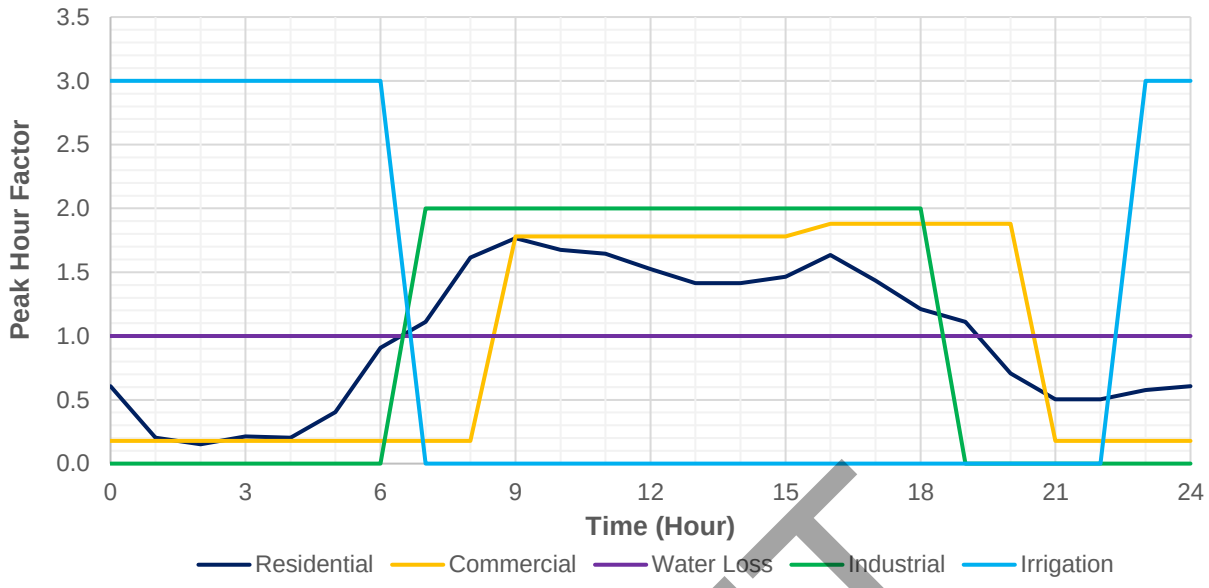
Existing system demands are summarized by pressure zone in **Table 3.1**, below.

TABLE 3.1 EXISTING SYSTEM DEMANDS (GPM)

PRESSURE ZONE	CONSUMPTION ADD	WATER LOSS ADD	TOTAL ADD	TOTAL MDD	TOTAL PHD
Main	729.24	280.03	1,009.27	1,301.01	2,310.45
Huntsfield	150.12	107.52	257.64	332.02	590.85
Northern	73.73	31.30	105.03	135.29	240.06
Total	953.09	418.85	1,371.94	1,768.32	3,141.36

Diurnal patterns are used to represent how water use varies over an extended period. Diurnal patterns from the American Water Works Association (AWWA) Manual of Water Supply Practices M32 Computer Modeling of Water Distribution Systems are used to represent use variations for residential, commercial, irrigation, and water loss and are shown graphically below in **Figure 3.1.** Since usage type was not included in the billing data, all demands have been assigned a residential diurnal pattern for extended period simulations.

Figure 3.1 Diurnal Patterns



3.2 Future Demands

CTUB provided information for fourteen (14) developments entirely or partially excluded from the customer billing data to include in future demand scenarios. The locations of future developments are shown in **Attachment A**. Future demand calculations were determined based on the quantity of equivalent dwelling units (EDUs) in each development. The demand per EDU varies based on the size of each development and was determined using the West Virginia Public Water System Design Standards Table 64-77E, shown in **Table 3.2**.

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TABLE 3.2 ESTIMATED PEAK DESIGN FLOWS PER HOME		
NUMBER OF HOMES	TOTAL PHD FLOW (GPM)	PHD PER EDU (GPM)
0	0	0.00
1	14	14.00
2	18	9.00
3	20	6.67
4	22	5.50
6	25	4.17
8	28	3.50
15	37	2.47
20	43	2.15
25	48	1.92
30	53	1.77
40	62	1.55
50	70	1.40
60	76	1.27
70	82	1.18
80	88	1.10
90	94	1.05
100	100	1.00
125	110	0.88
150	120	0.80
175	132	0.76
200	140	0.70
300	175	0.59
400	200	0.50
For greater than 400 homes, use 0.50 gpm per home.		

The total EDU count for each development was used to calculate PHD per EDU, which was then multiplied by the excluded EDUs to assess the additional demand for the model. The additional EDUs were identified by comparing CTUB development plans to the geocoded customer billing locations. Peak factors were subsequently applied to calculate the MDD and ADD for each development.

The existing demands represent current customer demand and developments currently under construction. Near-term demand includes developments that are approved or are anticipated to be constructed within the next five (5) years. Long-term demand includes planned development not anticipated to be completed within the next five (5) years. Demand projects based on land use or unplanned development are not included in this update. The demand scenario for each development was provided by CTUB. Development demands and the corresponding demand scenario are summarized in **Table 3.3.**

TABLE 3.3 DEVELOPMENT DEMANDS

DEVELOPMENT	DEMAND SCENARIO	NEW EDU COUNT	TOTAL ADD (GPM)	TOTAL MDD (GPM)	TOTAL PHD (GPM)
Jefferson Crossing	Existing	0	0.00	0.00	0.00
Magnolia Springs	Existing	58	15.08	19.72	34.22
Norborne Glebe	Existing	142	31.24	39.76	71.00
Sheetz Augustine Ave	Existing	0	0.00	0.00	0.00
Stone Spring	Existing	325	84.50	110.50	191.75
Tate Manor	Existing	2	0.76	0.98	1.76
Washington Landing	Existing	274	84.94	109.60	191.80
Avalon (Fairview)	Long-Term	187	61.71	80.41	142.12
Cantor Hollow	Long-Term	125	47.50	61.25	110.00
Hillside	Long-Term	121	53.24	68.97	121.00
Kings Crossing	Long-Term	404	88.88	113.12	202.00
Norborne Glebe (10 - 13)	Long-Term	228	70.68	91.20	159.60
Norborne Glebe Pool	Long-Term	1	6.11	7.88	14.00
Huntfield	Near-Term	77	16.94	21.56	38.50

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Demands for the Jefferson Crossing and Augustine Avenue Sheetz are included in the billing data; therefore, no additional demand is added to the model in these locations.

Total system demands for all demand scenarios are summarized in **Table 3.4**.

TABLE 3.4 PROJECTED SYSTEM DEMANDS (GPM)

SCENARIO	CONSUMPTION ADD	DEVELOPMENT ADD	WATER LOSS ADD	TOTAL ADD	TOTAL MDD	TOTAL PHD
Existing	742.59	216.52	420.44	1,379.55	1,779.61	3,159.16
Near-Term	742.59	233.46	420.44	1,396.49	1,801.47	3,197.95
Long-Term	742.59	561.58	420.44	1,724.61	2,224.74	3,949.35

4. Hydraulic Model Update

Water system modeling for this update was performed using WaterGems modeling software. Previous model updates were completed by Dewberry in 2019. This iteration aims to incorporate newly constructed infrastructure and update operational controls for accurate conditions.

4.1 Data Collection

The hydraulic model of the water distribution system relies on accurate data to accurately represent its physical and operational characteristics. The model's effectiveness is determined by the completeness and accuracy of this data. Dewberry updated the model by acquiring essential data from CTUB, identifying data gaps, and documenting necessary assumptions and interpolations. Collected data included the following:

1. Geographic information system (GIS) data
2. Development and system improvement record drawings
3. Booster Pump Station operational data (design flow, on/off level)
4. Tank record drawings, and operational information
5. Hydrant test results

4.2 Infrastructure Updates

CTUB provided existing water infrastructure data, including the recent GIS database and record drawings. The GIS data, reflecting the system as of August 2024, was used to update the model. The review identified and corrected common data gaps, such as missing pipe materials and diameters, using available record drawings and CTUB input. Ground elevations for new infrastructure were assigned based on CTUB's GIS contour data.

System infrastructure completed after the 2019 model update was added to the model based on available record drawing information. The model was also reviewed against GIS data to identify any discrepancies. New infrastructure added to the model includes:

1. North Fairfax Boulevard Extension
2. Various upsizing and improvements along North Fairfax Boulevard
3. Summit Point Connection
4. North George Street Connection

Additionally, new system piping has been added to the model for fourteen (14) developments throughout the system. Infrastructure updates to the model are summarized in **Figure 4.1.**

4.3 Operational Settings

Operational data includes pump control data and design points, tank controls, and valve controls. CTUB provided information for each pump station including design capacity, and pump on and off levels, as well as typical operating elevations for each tank.

The model update includes isolation valves between the MPZ and NHPZ, at the intersections of North Mildred Street, North Preston Street, and North Fairfax Boulevard. These valves are closed, preventing flow between the pressure zones.

All pump stations are modeled to reflect current operating conditions as closely as possible. Each of the three (3) pressure zones contain one (1) pump station. Pump curves for these stations were not available, but CTUB reviewed the design flow and head settings of each pump and confirmed that they are correct. CTUB also provided the pump on and off levels for each station. Pump station operational data is summarized below in **Table 4.1**.

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TABLE 4.1 PUMP STATION OPERATIONAL DATA					
STATION	ZONE	DESIGN FLOW (GPM)	DESIGN HEAD (FT)	PUMP ON LEVEL (FT)	PUMP OFF LEVEL (FT)
WTP Station	Main	1,945	229	27	37
AAPS	Huntsfield	450	156	65	71
BSPS	Northern High	750	145	43	46

The MPZ has five (5) tanks, while the HPZ and NHPZ each have one (1) tank. All tanks are modeled based on CTUB's record drawings to reflect real-world conditions to accurately include diameter, volume, and geometry. Tank volume curves were not available; therefore, all tanks are assumed to be cylindrical. Tank information is summarized in **Table 4.2**.

TABLE 4.2 WATER TANK DATA					
TANK	ZONE	DIA. (FT)	VOLUME (MG)	LOW EL. (FT)	HIGH EL.(FT)
Route 9	Main	50.00	0.50	624.50	634.50
Avis	Main	35.00	0.50	624.50	634.50
Keys Ferry	Main	60.00	0.50	624.50	634.50
6th Ave. (Standpipe)	Main	25.00	0.33	624.50	634.50
6th Ave. (Elevated)	Main	10.00	0.13	613.64	623.64
Huntsfield	Huntsfield	31.00	0.26	701.28	709.28
Locust Hill	Huntsfield	25.00	0.50	701.28	709.28
Northern High	Northern High	25.00	0.36	635.00	650.00

4.4 Model Validation

To ensure that a hydraulic model accurately calculates the system head loss due to friction, the Hazen Williams pipe roughness coefficients (C-factor) must be estimated for each. During the previous model update task, system wide model calibration was completed utilizing hydrant flow test data and the WaterGems software model calibration tool.

CTUB provided hydrant flushing data for twenty-three (23) tests completed in April of 2024 which were used to validate the previous calibration in the updated model. Hydrant flushing data included static pressure, test flow, and residual pressure for each hydrant. Static pressure results were generally accurate, with an average of 6.3% difference between the model and flushing data. Results within 10% difference are typically deemed acceptable. Three (3) of the twenty-three (23) tests exceeded 10% difference and results ranged from 47.7% different to 0% different. Residual pressures varied between the model and the flushing data. Residual pressures are highly influenced by tank level and pump station operation during testing, which was not included in the hydrant flushing data.

4.5 Demand Allocation

Three (3) demand conditions are included in the model for the existing, near-term and long-term scenarios to simulate system conditions under average day, maximum day, and peak hour conditions. The demands for each service connection were assigned to the nearest node based on the geocoded service address for existing consumers. Water loss is allocated to the model based on the location of each water main segment.

4.6 Model Scenarios

Once the model was calibrated, Dewberry set up steady state and extended period scenarios to complete an analysis of the existing system capacity under various stages of development. A steady state scenario shows a snapshot of the system with demands running through the system instantaneously. An extended period simulation (EPS) reflects system operation over a set period of time to reflect fluctuations in demand and tank and pump station operation. The following scenarios are included in the model for existing, near-term and long-term demand scenarios.

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1. Minimum Pressure
    a. Steady state simulation with PHD
    b. Pump stations are turned off and tanks are set at low levels.
2. Maximum Pressure
    a. Steady state simulation with ADD
    b. Pump stations are turned on and tanks are set at high levels.
3. Maximum Velocity
    a. Steady state simulation with PHD
    b. Pump stations are turned on and tanks are set at high levels.
4. Fire Flow
    a. Steady state simulation with MDD
    b. Pump stations are turned off and tanks are set at low levels.
5. Extended Period Average Day
    a. 7-day extended period simulation with ADD
6. Extended Period Max Day
    a. 24-hour extended period simulation with MDD

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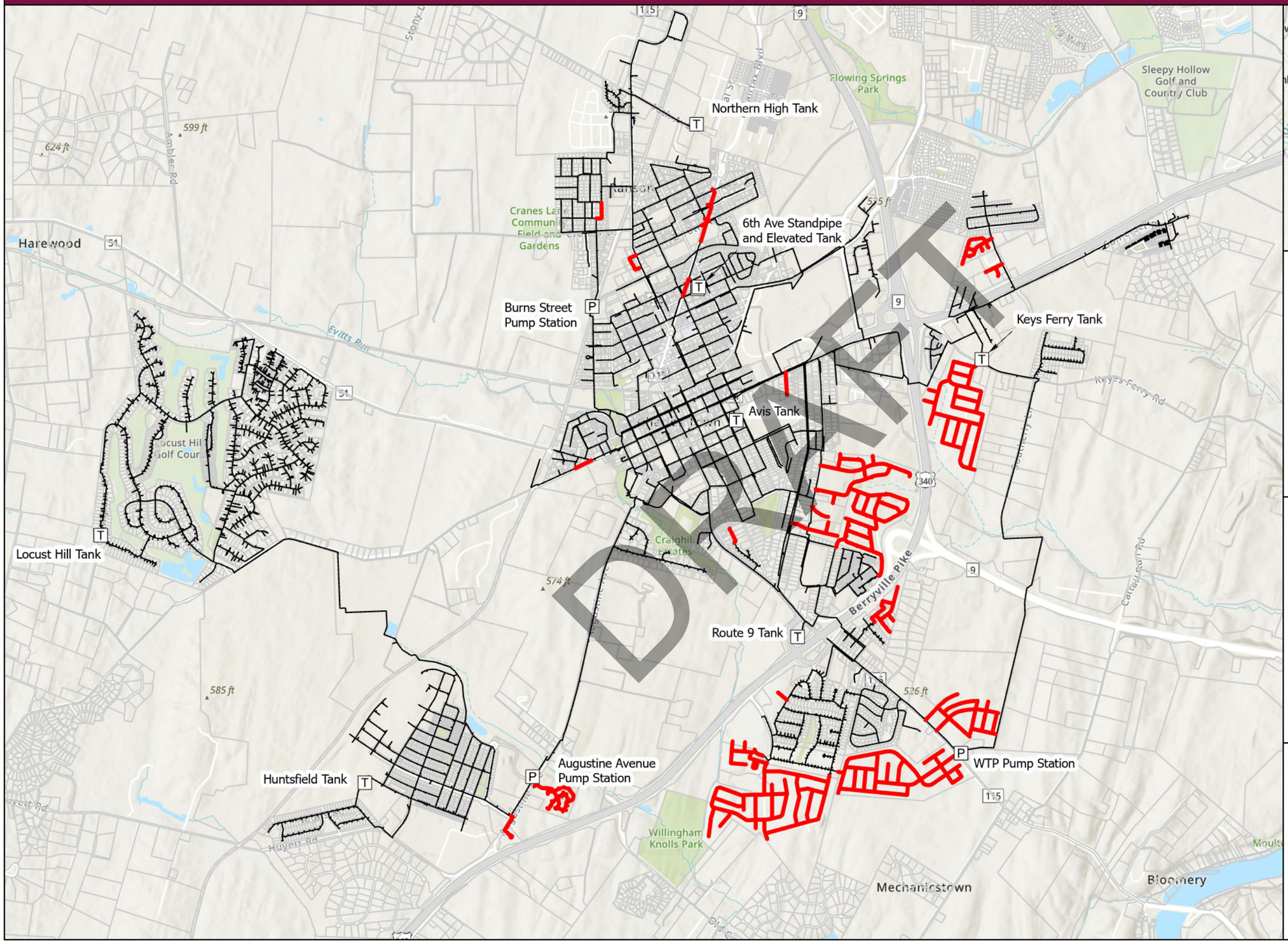
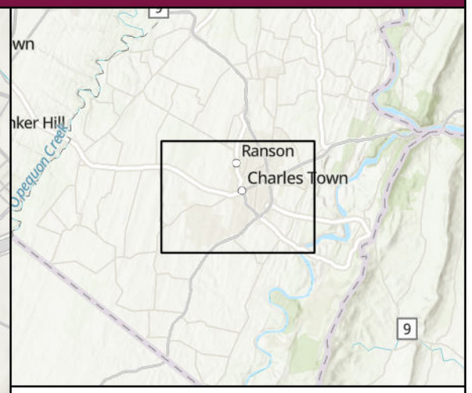
Figure 4.1 Infrastructure Updates





- Infrastructure Updates
- Watermain
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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5. Hydraulic Evaluation

After developing, reviewing, and calibrating the model to represent the system as accurately as possible, Dewberry performed an evaluation of the system under existing, near-term, and long-tern demand scenarios. The model was used to observe operational trends throughout the system. Results were compared with the level of service criteria established by Dewberry and CTUB. While this evaluation does not serve to suggest specific improvements beyond those included in the previous model update task, the results may be used in planning projects and identifying conceptual improvements to benefit system performance.

5.1 Level of Service Criteria

LOS criteria were determined based on the Charles Town Utility Board Water System Specifications dated April 2015 (CTUB Specifications), the West Virginia Public Water Systems Design Standards (WV Standards), and industry standards. The LOS criteria were reviewed and agreed upon with CTUB. The LOS criteria are summarized in **Table 5.1**.

TABLE 5.1 LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE	DEFICIENCY CRITERIA	SOURCE
Minimum Pressure	> 20 psi All Conditions > 30 psi Static Conditions	CTUB Specifications
Maximum Pressure	< 100 psi	WV Standards
Maximum Velocity	< 8.0 ft/s	Industry Standard
Fire Flow(1)	> 500 gpm	Per Project Scope
Storage Capacity	2xADD + Fire Flow	WV Standards

1. CTUB Specifications and WV Standards require a minimum available fire flow of 250 gpm.

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5.2 Minimum Pressure

Minimum system pressures were evaluated under static and dynamic conditions. Low system pressure can increase the risk of contamination and in extreme situations can cause vacuum conditions and pipe collapse.

Minimum static pressures were observed with no system demands, pumps off and tanks at low (pumps on) levels. Static pressure results are consistent in each demand scenario and are generally adequate, with 78 junctions, representing approximately 1.5% of the system having static pressures below 30 psi. The minimum static pressure in the system is 25.1 psi and the average static pressure is 60.63 psi under all demand scenarios. Low static pressures typically occur in the Northern High-Pressure Zone along Robelei Drive, Stiles Way, and Starman Drive with one low pressure pocket in the Main Pressure Zone located around the intersection of South Church Street and East Avis Street. These pressures can be improved with adjustments to the tank minimum operating levels, but do not pose a significant risk to system operations and are not a high priority for improvements. Static pressures for each scenario are summarized in **Table 5.2** and shown for the long-term scenario in **Figure 5.1.**

TABLE 5.2 SYSTEM STATIC PRESSURE (PSI)

SCENARIO	MIN. STATIC PRESSURE	AVG. STATIC PRESSURE	PERCENTAGE < 30 PSI
Existing	25.10	60.63	1.47%
Near-Term	25.10	60.70	1.46%
Long-Term	25.10	60.72	1.45%

Minimum dynamic pressures were observed with PHD conditions, pumps off and tanks at low (pumps on) levels. Minimum pressures are consistent in each demand scenario and adequate throughout the system under all demand scenarios except for the corner of East North Street and Hessey Street in the Main Pressure Zone. Three junctions representing 0.06% of the system have minimum pressures below 20 psi with a minimum pressure of 17.10 psi under existing and near-term demands and 16.80 psi under long-term demands. These pressures can be improved with adjustments to the tank minimum operating levels,

or pump station operating point, but do not pose a significant risk to system operations and are not a high priority for improvements. Minimum pressures for each scenario are summarized in **Table 5.3** and shown for the long-term scenario in **Figure 5.2.**

TABLE 5.3 MINIMUM SYSTEM PRESSURE (PSI)			
SCENARIO	MIN. PRESSURE	AVG. MIN. PRESSURE	PERCENTAGE < 20 PSI
Existing	17.10	59.89	0.06%
Near-Term	17.10	59.97	0.06%
Long-Term	16.80	59.60	0.06%

5.3 Maximum Pressure

Maximum system pressures were evaluated under dynamic conditions. High system pressure can increase the risk of pipe breaks and leaks, damage to valves and fittings, and increased water loss.

Maximum pressures were observed with ADD conditions, pumps on and tanks at high (pumps off) levels. Maximum pressures are adequate throughout the system under all demand scenarios except for one junction located between Route 9 and Southerly Lane crossing Cattail Run. This junction represents 0.02% of the system and has a maximum pressure of 100.10 psi just above the LOS threshold of 100 psi. This is likely due to low elevations around Cattail Run and does not pose a significant risk to system operation. No associated improvements are needed. Maximum pressures for each scenario are summarized in **Table 5.4.**

TABLE 5.4 MAXIMUM SYSTEM PRESSURE (PSI)			
SCENARIO	MAX. PRESSURE	AVG. MAX. PRESSURE	PERCENTAGE > 100 PSI
Existing	100.10	65.33	0.02%
Near-Term	100.10	65.40	0.02%
Long-Term	99.10	65.32	0.00%

5.4 Maximum Velocity

Maximum system velocities were evaluated under dynamic conditions. High system velocity can increase the risk of pipe breaks and leaks, and lead to increased water loss.

Maximum velocities were observed with PHD conditions, pumps on and tanks at high (pumps off) levels. Maximum velocities are adequate throughout the system under all demand scenarios. No associated improvements are needed. Maximum velocities for each scenario are summarized in **Table 5.5.**

TABLE 5.5 MAXIMUM SYSTEM VELOCITY (FT/S)			
SCENARIO	MAX. VELOCITY	AVG. VELOCITY	PERCENTAGE > 8 FT/S
Existing	7.29	0.62	0.00%
Near-Term	7.29	0.61	0.00%
Long-Term	7.30	0.63	0.00%

5.5 Fire Flow

The minimum available fire flow evaluation was completed with MDD conditions, pumps off and tanks at low (pumps on) levels. The evaluation includes all hydrants in the model, and all junctions on pipes greater than 4-inches in diameter. Junctions and hydrants that achieve a fire flow of 500 gpm during the simulation are considered to have adequate fire flow. The minimum allowable residual pressure is 20 psi, and the minimum allowable pressure in the respective pressure zone is also 20 psi. The available fire flow is limited to 1,000 gpm for this evaluation.

Available fire flow is generally similar across the existing, near-term and long-term scenarios and most of the system achieves adequate fire flow. Approximately 2.8% of the system does not achieve the required fire flow in each demand scenario. This is primarily sporadically throughout the Main Pressure Zone in the vicinity of Washington Street and Fairfax Boulevard.

Available fire flow for each scenario is summarized in **Table 5.6** and shown in **Figure 5.3.**

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TABLE 5.6 AVAILABLE FIRE FLOW (GPM)			
SCENARIO	MIN. FIRE FLOW	AVG. FIRE FLOW	PERCENTAGE < 500 GPM
Existing	37	978	1.31%
Near-Term	37	978	1.29%
Long-Term	36	978	1.27%

5.6 Storage

To assess available storage in the system, Dewberry compared system demands to the existing storage throughout the system. To meet the LOS criteria for effective storage, system storage must exceed twice the ADD plus fire flow. For this analysis the fire flow LOS criteria of 500 gpm and a two-hour fire duration is used, resulting in fire demand of 60,000 gallons. The storage analysis was completed for each individual pressure zone, and the total system. The net available storage is summarized in **Table 5.7.**

TABLE 5.7 STORAGE EVALUATION (GAL)					
PRESSURE ZONE	ADD	FIRE FLOW	REQUIRED STORAGE	EXISTING STORAGE	NET STORAGE
Main	2,100,211	60,000	2,160,211	1,960,000	-200,211
Huntsfield	432,346	60,000	492,346	760,000	267,654
Northern	212,342	60,000	272,342	360,000	87,658
Total System	**2,744,899**	**60,000**	**2,804,899**	**3,080,000**	**275,101**

While the HPZ and NHPZ have adequate storage, the MPZ has a deficit of approximately 200,000 gallons of storage based on the existing demands and required fire flow. The total system does have adequate storage when considered as a whole, with a net excess storage of approximately 275,000 gallons. While it is recommended that each pressure zone have adequate storage, the WV Standards require adequate storage for the entire system, therefore no improvements are needed.

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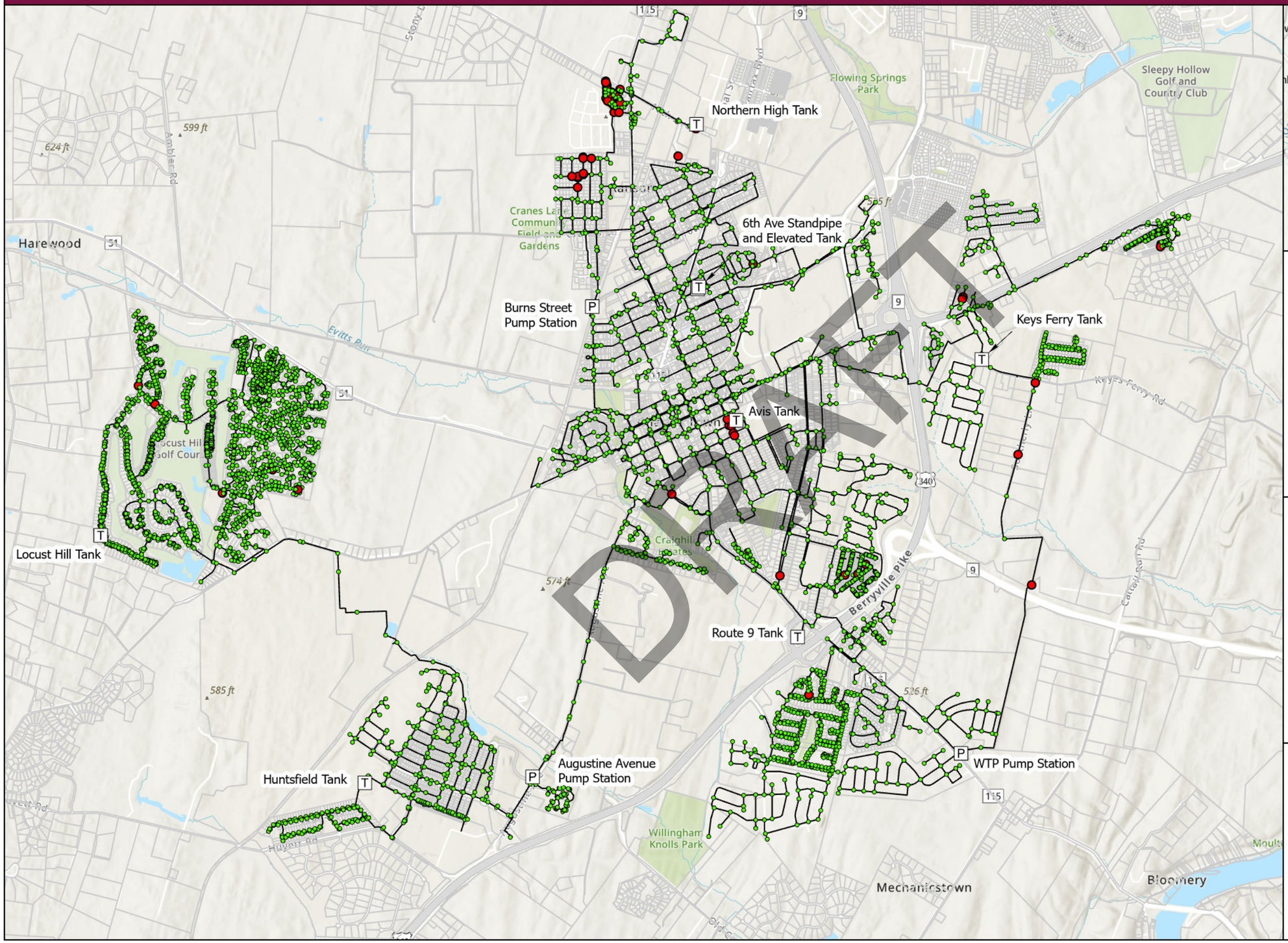
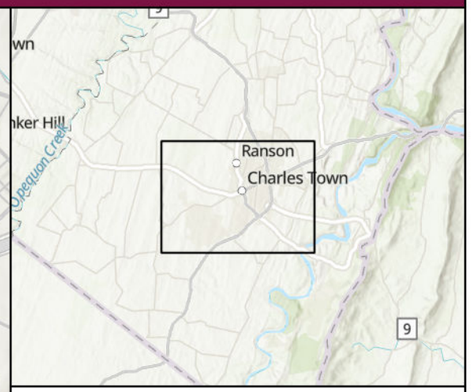
Figure 5.1 Minimum Static Pressure





Minimum Static Pressure
- < 30 psi
- > 30 psi
- Watermain
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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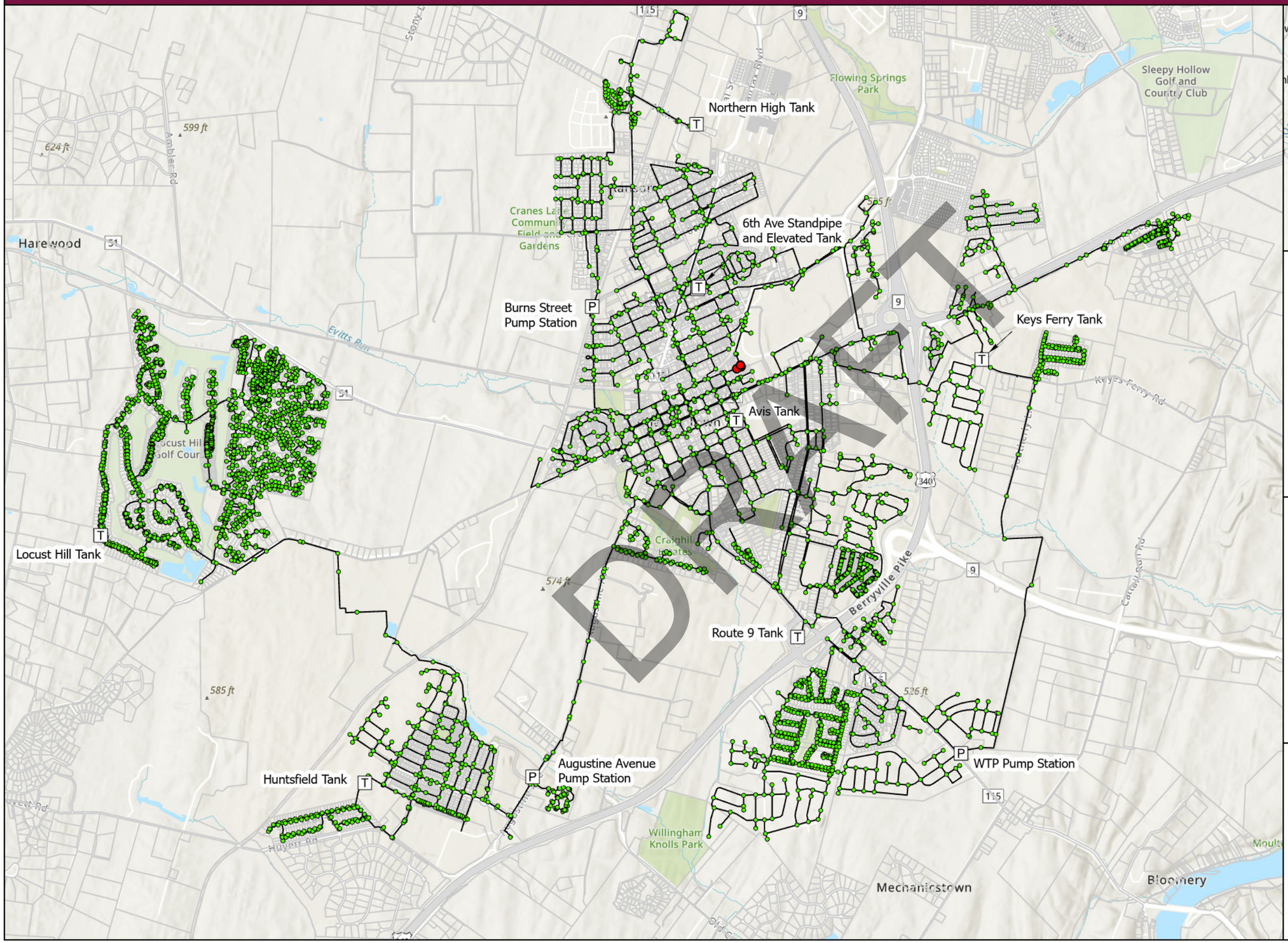
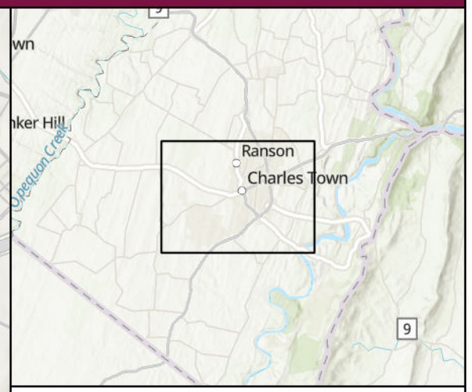
Figure 5.2 Minimum Pressure





Minimum Pressure
- < 20 psi
- > 20 psi
- Watermain
- Tanks
- Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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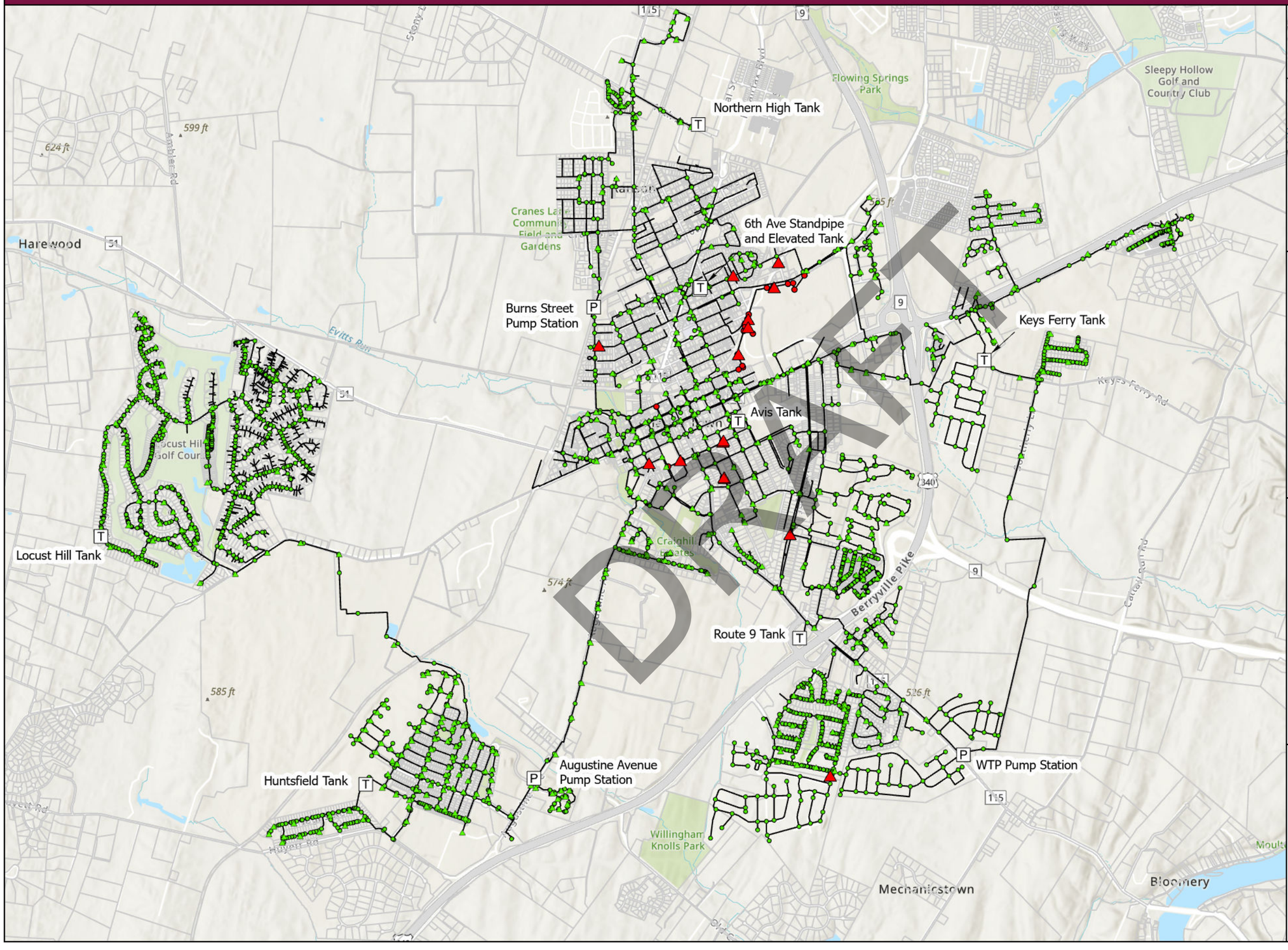
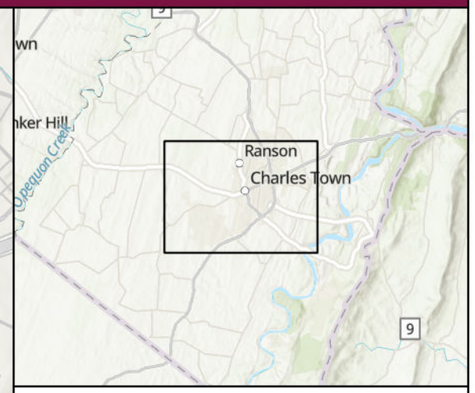
Figure 5.3 Available Fire Flow





Junction Fire Flow
- < 500 gpm
- 500 - 1,000 gpm

Hydrant Fire Flow
- < 500 gpm
- 500 - 1000 gpm

Watermain
Tanks
Pump Stations
Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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6. Recommended Improvements

Dewberry reviewed the water model to validate the improvement recommendations in the previous model update task. This includes thirteen (13) projects to improve available fire flow. In addition to validating these projects, Dewberry has identified conceptual level recommendations to improve system operations based on the results of the hydraulic evaluation. Based on the hydraulic evaluation, no recommended improvements are required to address minimum static and dynamic pressure, maximum pressure, maximum velocity, and system storage.

6.1 Previous Recommendation Validation

Under the previous model update task, Dewberry recommended thirteen (13) projects to improve available fire flow. To validate these projects, fire flow scenarios were completed under existing, near-term and long-term demand conditions with the projects implemented. The model results were then compared to the existing system performance to confirm if the projects increased available fire flow in the system. Excerpts of the previous model update report describing the recommended projects have been included as **Attachment B** and the projects are shown in **Figure 6.1.**

Fire flows in the vicinity of Projects 1, 2, 3, and 6 are already adequate, therefore these projects do not directly improve fire flow availability. Projects 1, 2 and 3 do eliminate bottle necks in the NHPZ flowing to the northern end of the system by increasing the diameter of piping of the main flow path along North Mildred Street from 6-inch to 10-inch. Project 6 creates adequate looping between Higgs Boulevard and North Water Street. These projects do offer benefits to the system beyond fire flow and are still recommended.

Projects 4, 5, 7, 8, 9, 10, 11, 12 and 13 have been confirmed to improve fire flow in the system and increase the available fire flow of several junctions and hydrants from below 500 gpm to above 500 gpm. It is recommended that these projects be included in future capital improvements planning. The available fire flow with the previously recommended projects implemented is summarized in **Table 6.1.**

TABLE 6.1 AVAILABLE FIRE FLOW WITH 2019 PROJECTS (GPM)

SCENARIO	MIN. FIRE FLOW	AVG. FIRE FLOW	PERCENTAGE < 500 GPM
Existing	37	990	0.12%
Near-Term	37	990	0.12%
Long-Term	36	989	0.12%

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6.2 Fire Flow Improvements

With the 2019 projects implemented, four (4) hydrants in the model still have available fire flow below 500 gpm. These hydrants are all connected to water mains by lines 2-inches or smaller in diameter. It is recommended that the diameter of all hydrant connecting lines be confirmed in the field, and all hydrant connecting lines be replaced with 6-inch diameter or larger pipe. The recommended additional improvements to upsize these connecting lines to 6-inch piping are shown in **Figure 6.2** and are located at:

1. Intersection of Racetrack Street and East 5th Avenue
2. Intersection of Jefferson Avenue and High Street
3. Intersection of Barksdale Drive and Fairleigh Drive
4. Barksdale Drive between Courier Drive and Triberg Drive

The available fire flow with the 2019 recommended projects, and the additional recommended improvements implemented is summarized in **Table 6.2.**

TABLE 6.2 AVAILABLE FIRE FLOW WITH ALL IMPROVEMENTS (GPM)

SCENARIO	MIN. FIRE FLOW	AVG. FIRE FLOW	PERCENTAGE < 500 GPM
Existing	612	991	0.00%
Near-Term	612	991	0.00%
Long-Term	611	990	0.00%

6.3 Flushing Protocol

Low velocity in water mains create a risk for the settlement of solids and a decrease in water quality. To mitigate this issue a flushing protocol is recommended. A flushing protocol would be designed to promote flows resulting in velocities exceeding 2.5 ft/s in pipes that would not typically reach that velocity under ADD conditions. A flushing protocol can be designed using the hydraulic model under a separate task. The flow required to achieve minimum velocity for each diameter pipe in the system is shown in **Table 6.3.**

TABLE 6.3 REQUIRED FLUSHING FLOW (GPM)	
DIAMETER (IN)	MINIMUM FLOW (GPM)
2	25
3	55
4	98
6	220
8	395
10	615
12	880
16	1,565

6.4 Hydrant Testing Protocol

Prior to design of any recommended improvements, it is recommended that targeted hydrant testing and comparison to the model is completed to ensure that model results represent field conditions and to confirm the necessity and extent of an improvement.

Targeted hydrant testing can also be completed as a dedicated model calibration task. To ensure an accurate model calibration, hydrant flow test data should include tank levels and pump station flows during the time of testing. Each test should include a separate flow hydrant and residual hydrant. An example hydrant testing protocol has been included as **Attachment C**.

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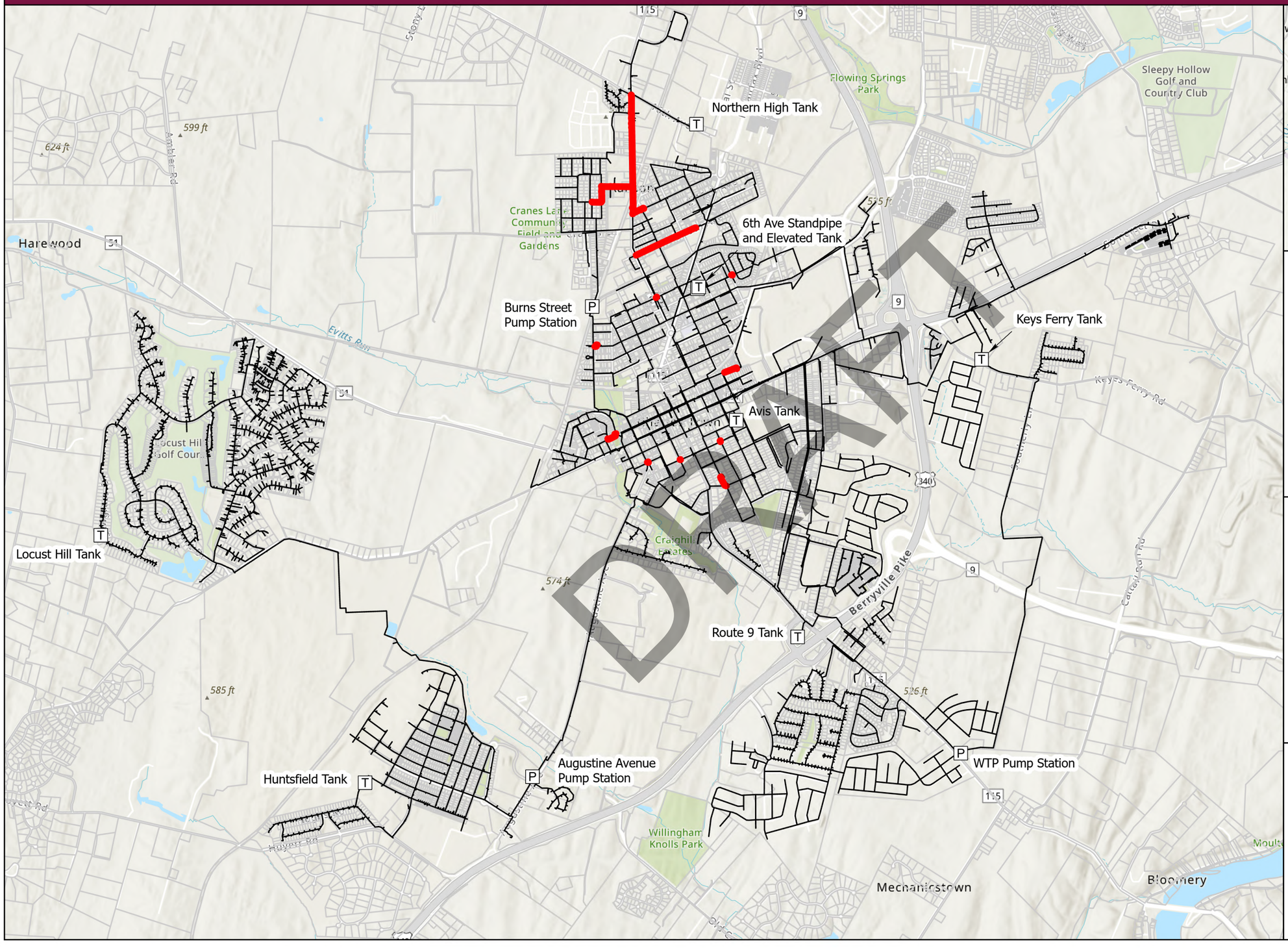
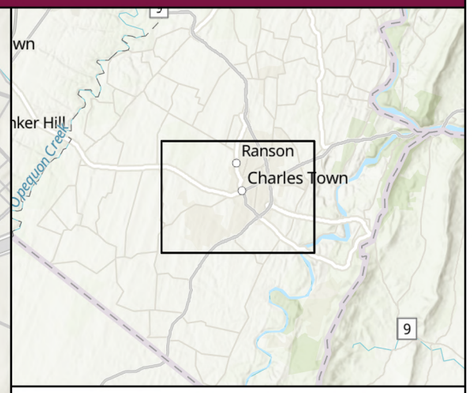
Figure 6.1 2019 Study Recommended Projects





- 2020 Projects
- Watermain
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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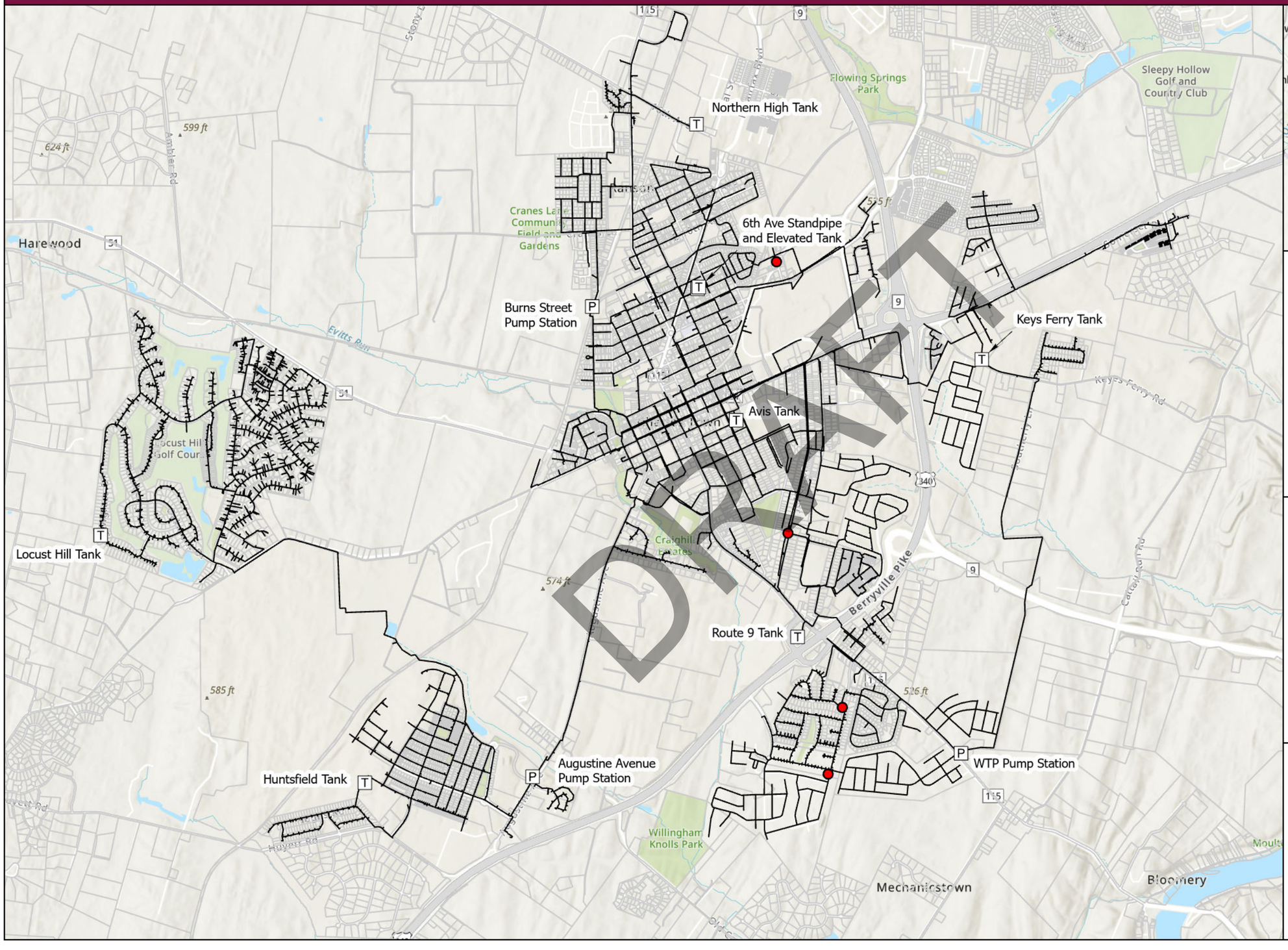
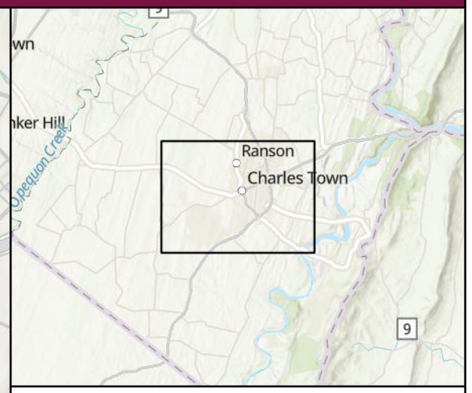
Figure 6.2 Recommended Hydrant Improvements





- Hydrant Improvements
- Watermain
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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Attachments

Attachment A: CTUB 2018 - Present Developments

Attachment B: 2019 Study Recommended Projects

Attachment C: Example Hydrant Testing Protocol

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Attachment A

CTUB 2018 - Present Developments

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CTUB Water Distribution
2018- Present Developments

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W
E
S

DEVELOPMENTS	
1	Cantor Hollow
2	Huntfield
3	Kings Crossing
4	Magnolia Springs
5	Norborne Glebe
6	Stone Spring
7	Washington Landing
8	Hillside
9	Tate Manor
10	Sheetz Augustine Ave
11	Jefferson Crossing

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- Parcels
- Charles_Town
- Ranson_UGB
- Charles_Town_Limits
- Ranson_Limits
- CTUB_Watermains
- CTUB_Water_Tanks
- Water_Pump_Stations

Attachment B

2019 Study Recommended Projects

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SECTION 4 – SYSTEM IMPROVEMENT RECOMMENDATIONS

Based on the fire flow analysis discussed above, the following water distribution system improvements were identified as necessary in order to achieve a minimum flow of 500 gpm at 20 psi minimum pressure.

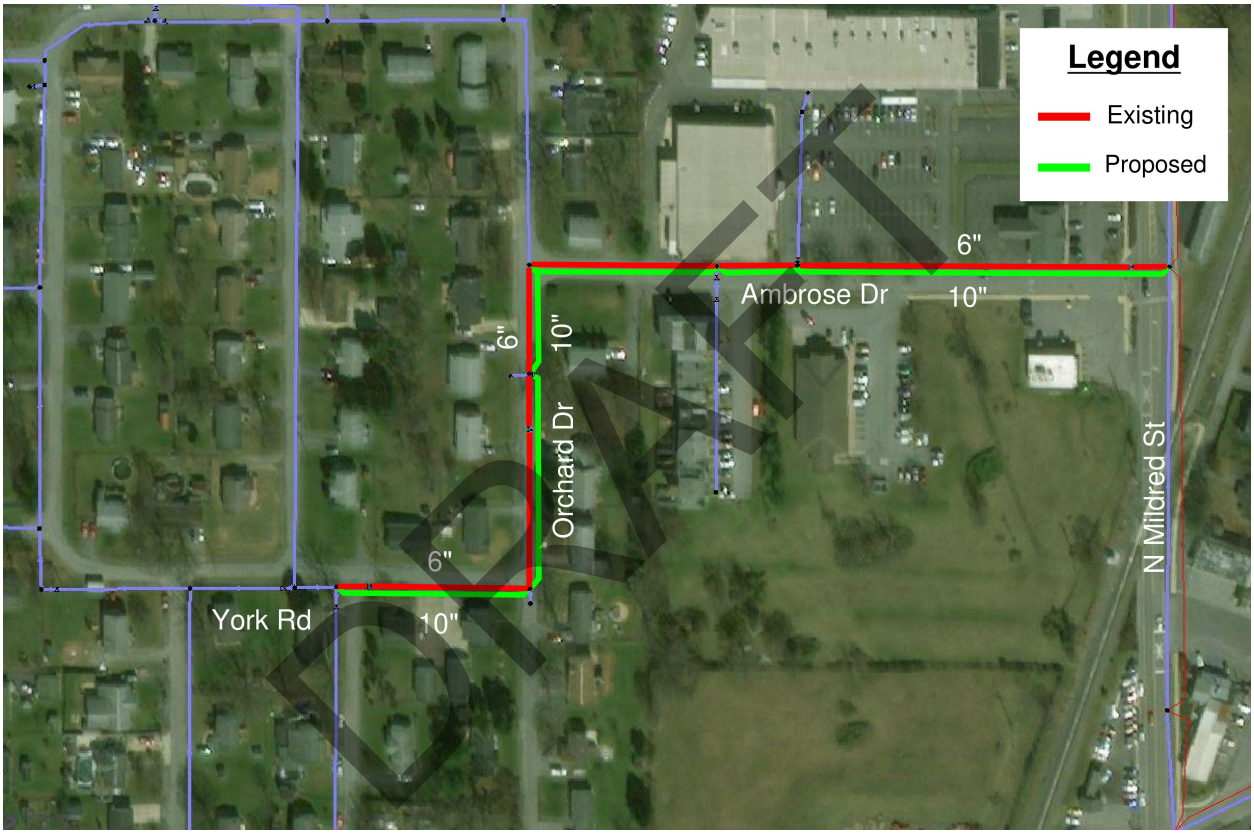

Figure 4-1: Northern High Zone Waterline Improvements

Project 1 – Northern High Zone Central Transmission Waterline Improvements: Parallel the existing 6-inch asbestos cement waterline which serves as the main transmission conduit for the Northern High Pressure Zone to eliminate this bottle-neck. The project will include approximately 1,500 LF of 10-inch PVC waterline as shown above.



Figure 4-2: Northern High Zone Waterline Improvements

Project 2 – Northern High Zone North Transmission Waterline Improvements: Parallel the existing 6-inch asbestos cement waterline which serves as the main transmission conduit for the Northern High Pressure Zone to eliminate this bottle-neck. The project will include approximately 2,700 LF of 10-inch PVC waterline as shown above.

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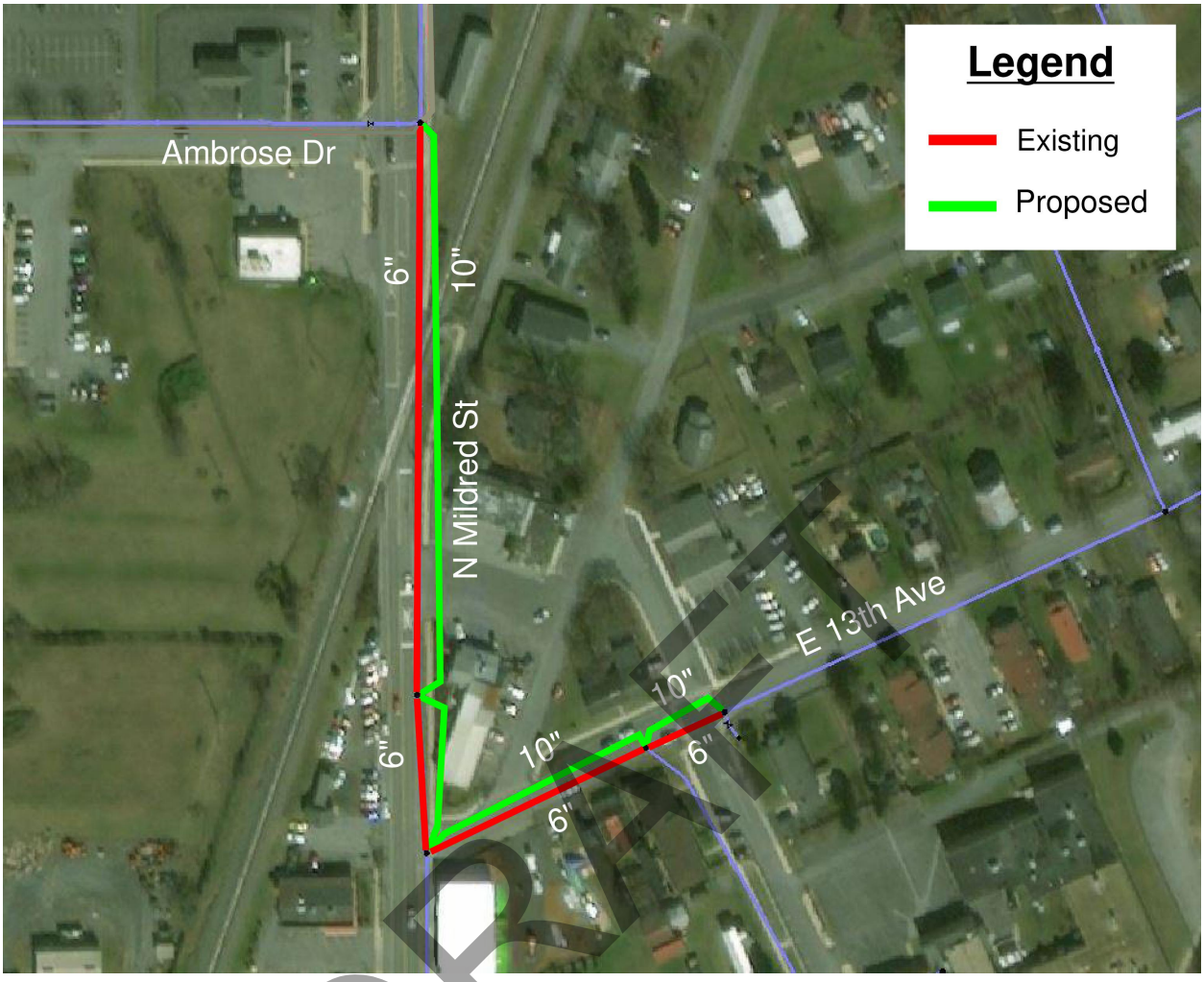

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Figure 4-3: Northern High Zone Waterline Improvements

Project 3 – Northern High Zone South Transmission Waterline Improvements: Parallel the existing 6-inch asbestos cement waterline which serves as the main transmission conduit for the Northern High Pressure Zone to eliminate this bottle-neck. The project will include approximately 1,100 LF of 10-inch PVC waterline as shown above.

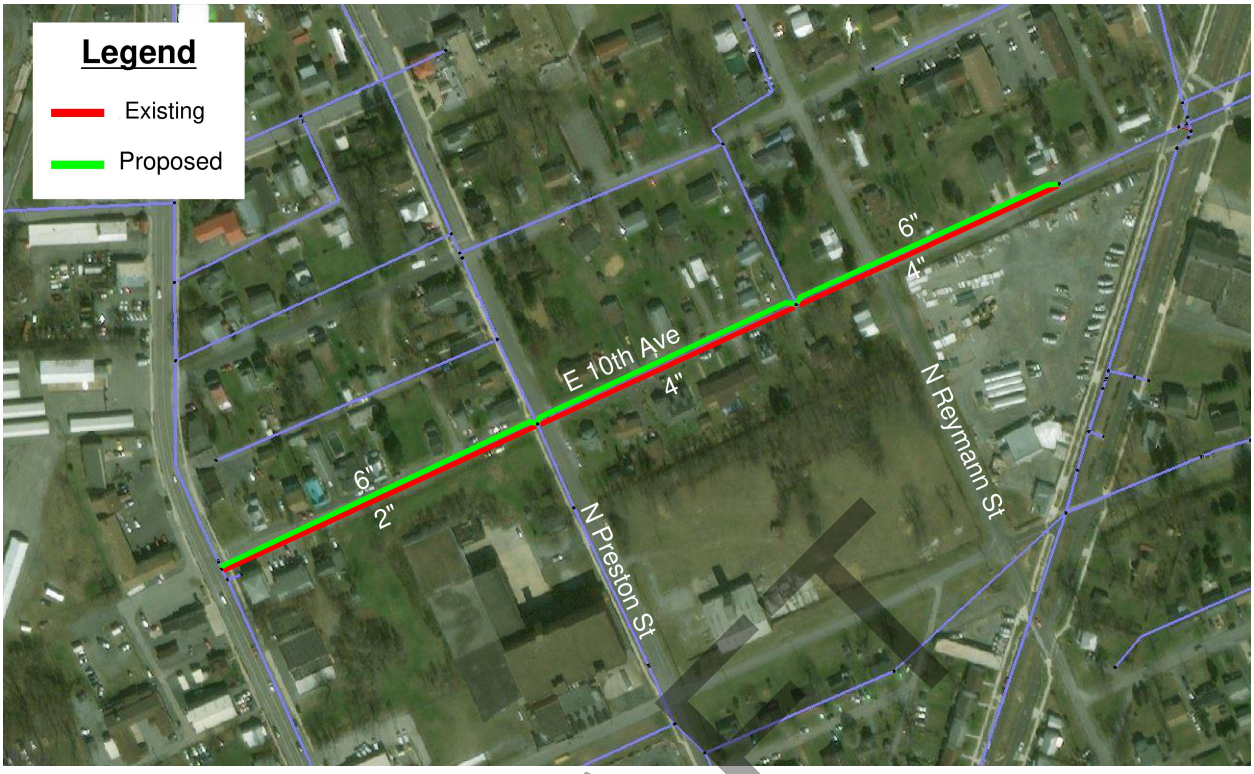

Figure 4-4: East 10th Avenue Waterline Improvements

Project 4 – East 10th Avenue Waterline Improvements: Install approximately 1,800 LF of 6-inch PVC waterline along East 10th Avenue from North Mildred Steert to North Fairfax Boulevard and install an interconnection between the existing 6-inch waterlines at the intersection of East 10th Street and North Fairfax Boulevard.

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Figure 4-5: East North Street Waterline Improvements

Project 5 – East North Street Waterline Improvements: Install approximately 400 LF of 8-inch PVC waterline along East North Street from North Seminary Street to Hessy Street to close the 8-inch loop.

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Figure 4-6: West Liberty Street Improvements

Project 6 – West Liberty Street Improvements: Install approximately 400 LF of 6-inch PVC waterline along West LibertyStreet from North Water Street to Higgs Boulevard to provide adequate looping.

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Figure 4-7: South Samuel Street Waterline Improvements

Project 7 – South Samuel Street Waterline Improvements: Install approximately 400 LF of 6-inch PVC waterline along Samuel Street north of the Mason Street intersection to the first fire hydrant and abandon the existing 4-inch main.

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Figure 4-8: South Mildred Street Waterline Improvements

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Project 8 – South Mildred Street Waterline Improvements: Install an interconnection between the existing 8-inch and 4-inch waterlines at the intersection of East Academy Street and South Mildred Street to improve looping.



Figure 4-9: West Academy Street Waterline Improvements

Project 7 – West Academy Street Waterline Improvements: Install an interconnection between the existing 8-inch waterlines at the intersection of West Academy Street and South Charles Street to improve looping.

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Figure 4-10: North Mildred Street Waterline Improvements

Project 10 – North Mildred Street Waterline Improvements: Install an interconnection between the existing 8-inch waterlines at the intersection of North Mildred Street and East 7th Street to improve looping.

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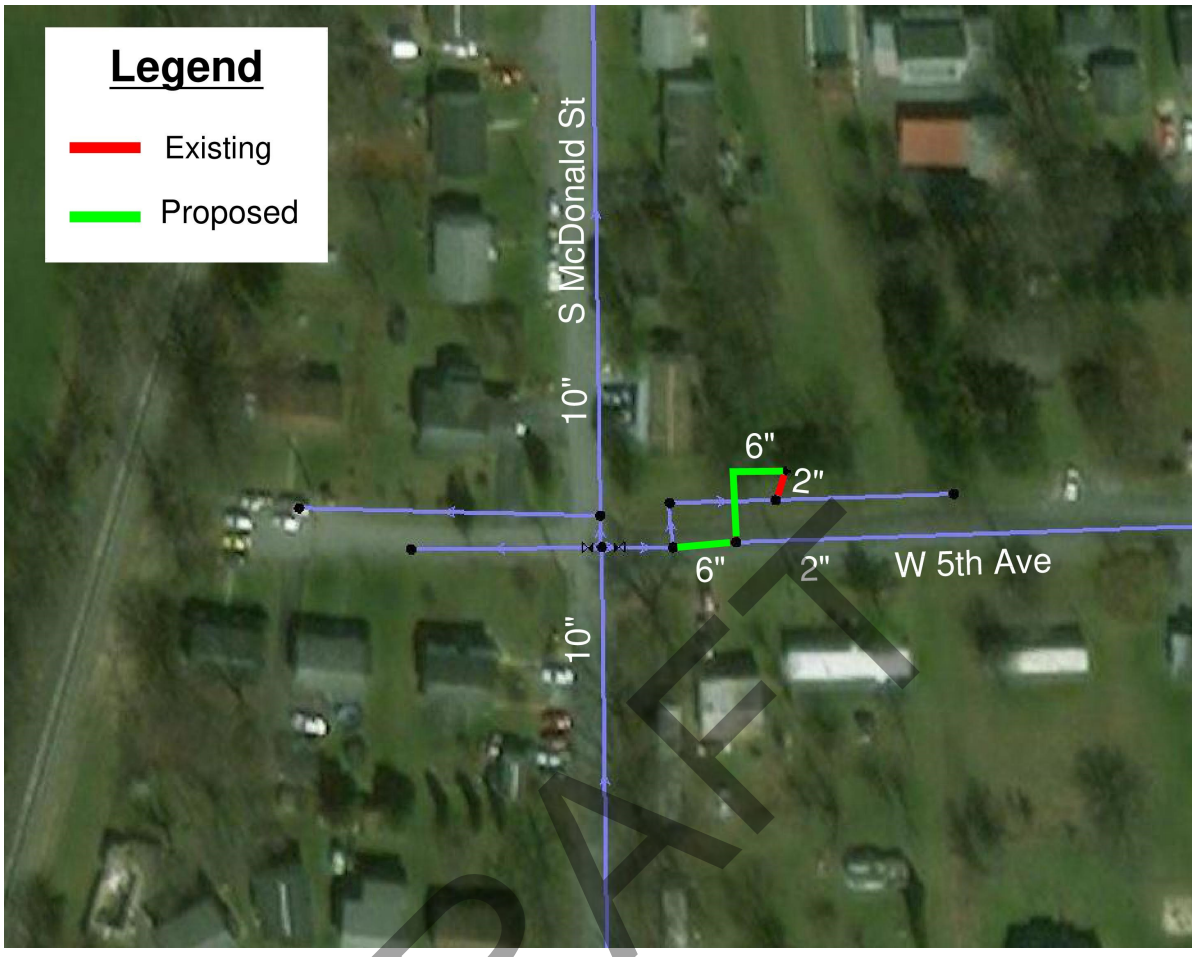

Figure 4-11: West 5th Street Waterline Improvements

Project 11 – West 5th Street Waterline Improvements: The model indicates that the hydrant leader for the fire hydrant along West 5th Street is connected to an existing 2-inch line. Dewberry recommends performing field reconnaissance to determine if this is actually the case; if so, the fire hydrant leader should be relocated to the 6-inch waterline along West 5th Street.

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Figure 4-12: East 6th Avenue Waterline Improvements

Project 12 – East 6th Avenue Waterline Improvements: The model indicates that the hydrant leader for the fire hydrant at the intersection of East 6th Street and South Marshall Street is connected to an existing 2-inch line running along South Marshall Street. Dewberry recommends performing field reconnaissance to determine if this is actually the case; if so, the fire hydrant leader should be relocated to the 8-inch waterline along East 6th Street.

DRAFT

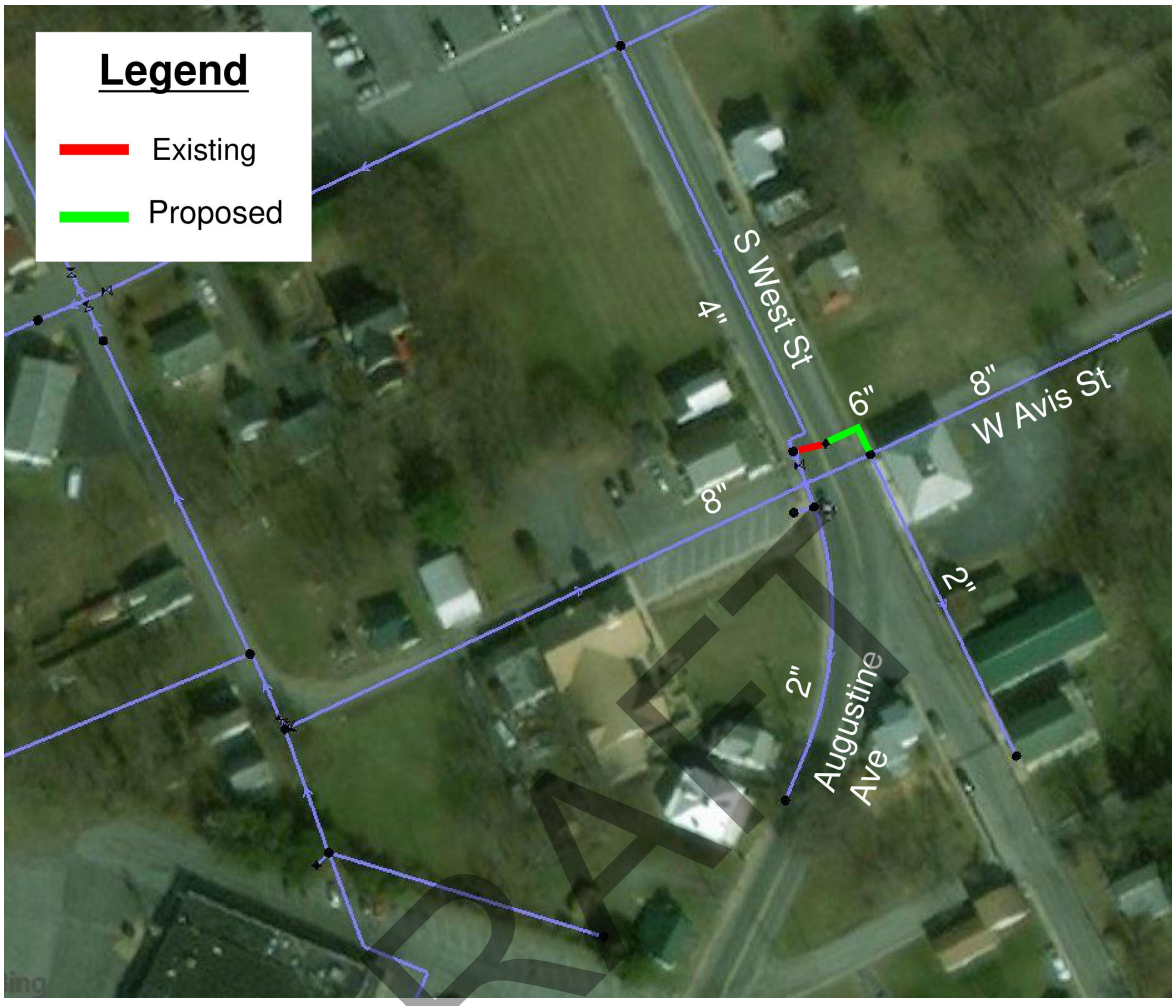

Figure 4-13: West Avis Street Waterline Improvements

Project 13 – West Avis Street Waterline Improvements: The model indicates that the hydrant leader for the fire hydrant at the intersection of West Avis Street and South West Street is connected to an existing 4-inch line running along South West Street. Dewberry recommends performing field reconnaissance to determine if this is actually the case; if so, the fire hydrant leader should be relocated to the 8-inch waterline along West Avis Street.

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Attachment C

Example Hydrant Testing Protocol

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Hydrant Test Areas

Hydrant flow testing will be conducted to provide data for developing and calibrating the computerized hydraulic model. Testing should be completed in each pressure zone and throughout the system to allow for a comprehensive model calibration. Testing locations should be reviewed and confirmed for feasibility with the Engineer and Owner prior to testing.

Hydrant Test Protocol

A minimum of two (2) hydrants will be used to conduct the flow testing, one designated as the residual hydrant to observe static and residual pressures and one designated as the flow hydrant to discharge water. Each hydrant used in the test will be manned. The selection of the flow hydrant will be made to minimize damage to private property, preferably near a catch basin or drainage swale, and to avoid discharging water onto streets.

Below are instructions to complete the attached Fire Hydrant Fire Flow Test form for each test:

1. During all tests, booster station pumps should be off.
2. Use the Hydrant Testing Form, included as **Attachment B**, to note the following (use a new form for each test):
    a. 'Date', 'Time' of the test, and 'Weather' (time of test shall be the time the flow hydrant is opened)
    b. Names of personnel occupying the flow and residual hydrant ('Flusher/Tester')
    c. 'Flow Hydrant' ID and information
    d. 'Residual Hydrant' ID
3. Perform Hydrant Test:
    a. Record the flow hydrant nozzle diameter and type as follows:
        a. Rounded Outlet
        b. Square Outlet
        c. Projecting Outlet
    b. Install a pressure gauge on the flow and residual hydrant and note both 'Static' pressures on the form.
    c. Remove pressure gauge from flow hydrant and install flow gauge.
    d. Open hydrant slowly to avoid generating pressure surges within the system.
    e. The flow hydrant will be fully opened and allowed to discharge until the pitot gauge has stabilized so that an accurate reading can be recorded (typically about 2-5 minutes).
    f. Read the flow at the flow hydrant and pressure at the residual hydrant and note 'Test Flow', and 'Residual Pressure' on the form.
    g. Close hydrant slowly and note the length of time 'Test Duration' the hydrant was flowed.
4. The data to be collected during each test will be as noted on the attached Hydrant Testing Form
5. SCADA data for the testing days will be collected. SCADA data points will include tank levels, pump station flow rates, and suction and discharge pressures for all pump stations.
    a. If SCADA data is not available, this information should be collected in the field at the time of testing.
6. If a pressure gauge is used in place of a flow gauge at the flow hydrant, note the test pressure on the testing form in place of the test flow. The discharge from the flow hydrant will then be calculated based on the formulas in the Calculations Section.

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Calculations

The following calculations will be used to complete hydrant testing.

1. Flow Hydrant Discharge (Q_f)

$$Q_f(gpm) = 29.83 * c * d^2 * p^{0.5}$$

$c = coefficient\ of\ discharge$

$d = diameter\ of\ nozzile\ (in.)$

$p = pitot\ gauge\ reading\ (psi) - measured\ at\ flow\ hydrant\ with\ pitot\ gauge\ instrument$

2. Available Flow at a residual pressure of 20 psi (Q_{20})

$$Q_{20} = Q_f * \frac{(H_s - 20) * 0.54}{(H_s - H_r) * 0.54}$$

$Q_f = Flow\ hydrant\ discharge\ (gpm)$

$H_s = static\ pressure\ reading\ at\ the\ test\ hydrant$

$H_r = residual\ pressure\ reading\ at\ the\ test\ hydrant$

Attachments

Attachment A: Hydrant Testing Maps
Attachment B: Hydrant Testing Form

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HYDRANT TESTING FORM
TEST NUMBER:

Test Information

Date: _____

Time: _____

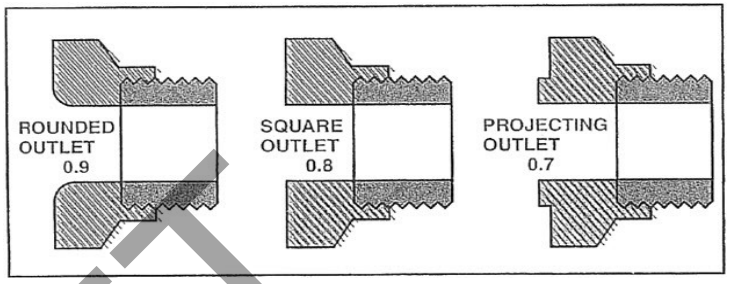
Weather: _____

Temperature: _____ °F / °C

Flusher: _____

Tester: _____

Nozzle Type and Coefficient



Flow Hydrant

Hydrant ID: _____

Flow Nozzle Dia. _____ in.

Flow Nozzle Type: _____

Flow Nozzle Coefficient: _____

Static Pressure: _____ psi

Test Flow: _____ gpm

Test Duration: _____ minutes

Residual Hydrant - A Information

Hydrant ID: _____

Static Pressure: _____ psi

Residual Pressure: _____ psi

Residual Hydrant - B Information

Hydrant ID: _____

Static Pressure: _____ psi

Residual Pressure: _____ psi

System Operational Conditions

Tank Name _____

Tank Level or Elevation _____ ft

Tank Name _____

Tank Level or Elevation _____ ft

Pump Station Name _____ psi

Pump Station Flow _____ gpm

Pump Station Name _____ psi

Pump Station Flow _____ gpm

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Charles Town Utility Board
Water Model Update

Contents

01 Existing System

02 System Demands

03 Model Updates

04 Hydraulic Evaluation

05 Recommended Improvements

Existing System

01

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System Schematic Diagram

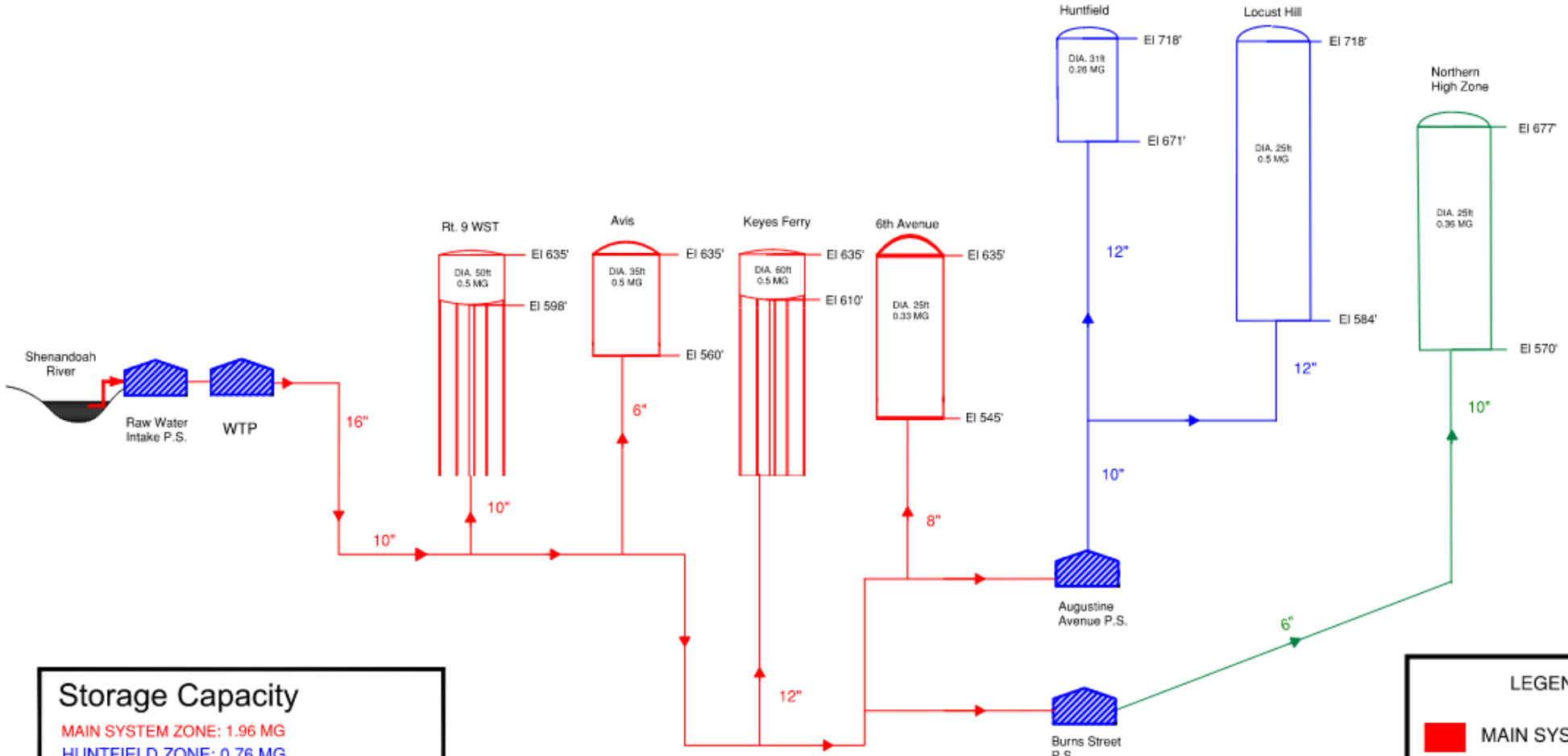
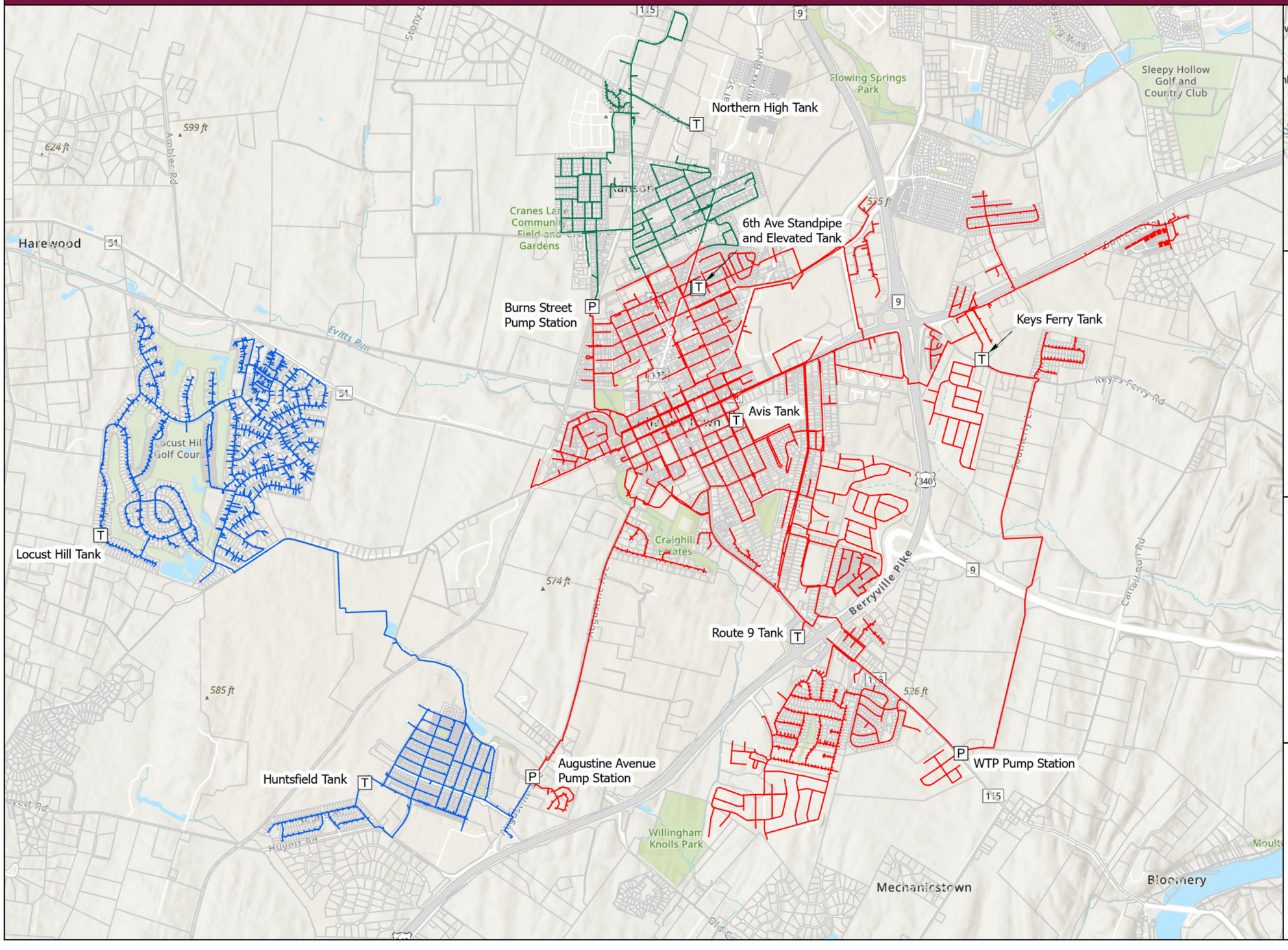


Figure 2.2 - CTUB Water Distribution System



System Demands

02

Projected System Demands

- Demand Scenarios:
  1. Existing
  2. Near Term: 1-5 Years
  3. Long Term: 6+ Years

PROJECTED SYSTEM DEMANDS (GPM)						
SCENARIO	CONSUMPTION ADD	DEVELOPMENT ADD	WATER LOSS ADD	TOTAL ADD	TOTAL MDD	TOTAL PHD
Existing	742.59	216.52	420.44	1,379.55	1,779.61	3,159.16
Near-Term	742.59	233.46	420.44	1,396.49	1,801.47	3,197.95
Long-Term	742.59	561.58	420.44	1,724.61	2,224.74	3,949.35

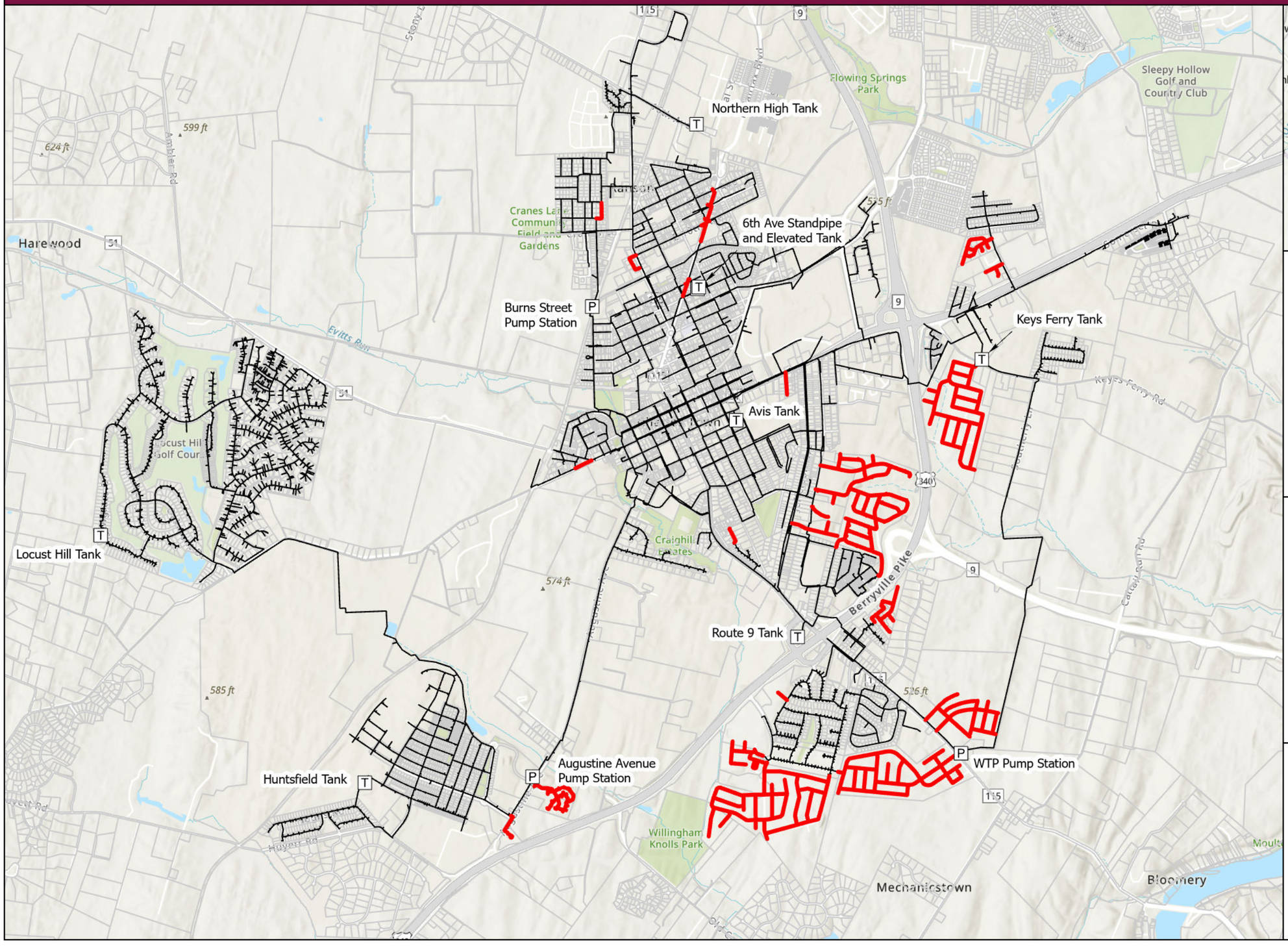
Development Demands

DEVELOPMENT DEMANDS					
DEVELOPMENT	DEMAND SCENARIO	NEW EDU COUNT	TOTAL ADD (GPM)	TOTAL MDD (GPM)	TOTAL PHD (GPM)
Jefferson Crossing	Existing	0	0.00	0.00	0.00
Magnolia Springs	Existing	58	15.08	19.72	34.22
Norborne Glebe	Existing	142	31.24	39.76	71.00
Sheetz Augustine Ave	Existing	0	0.00	0.00	0.00
Stone Spring	Existing	325	84.50	110.50	191.75
Tate Manor	Existing	2	0.76	0.98	1.76
Washington Landing	Existing	274	84.94	109.60	191.80
Huntfield	Near-Term	77	16.94	21.56	38.50
Avalon (Fairview)	Long-Term	187	61.71	80.41	142.12
Cantor Hollow	Long-Term	125	47.50	61.25	110.00
Hillside	Long-Term	121	53.24	68.97	121.00
Kings Crossing	Long-Term	404	88.88	113.12	202.00
Norborne Glebe (10 - 13)	Long-Term	228	70.68	91.20	159.60
Norborne Glebe Pool	Long-Term	1	6.11	7.88	14.00

Model Updates

03

Figure 4.1 Infrastructure Updates



Hydraulic Evaluation 04

Level of Service Criteria

LEVEL OF SERVICE CRITERIA		
LEVEL OF SERVICE	**DEFICIENCY CRITERIA**	**SOURCE**
Minimum Pressure	> 20 psi All Conditions > 30 psi Static Conditions	CTUB Specifications
Maximum Pressure	< 100 psi	WV Standards
Maximum Velocity	< 8.0 ft/s	Industry Standard
Storage Capacity	2xADD + Fire Flow	WV Standards
Fire Flow(1)	> 500 gpm	Per Project Scope

(1) Minimum fire flow of 250 gpm is required per CTUB Specifications and WV Standards

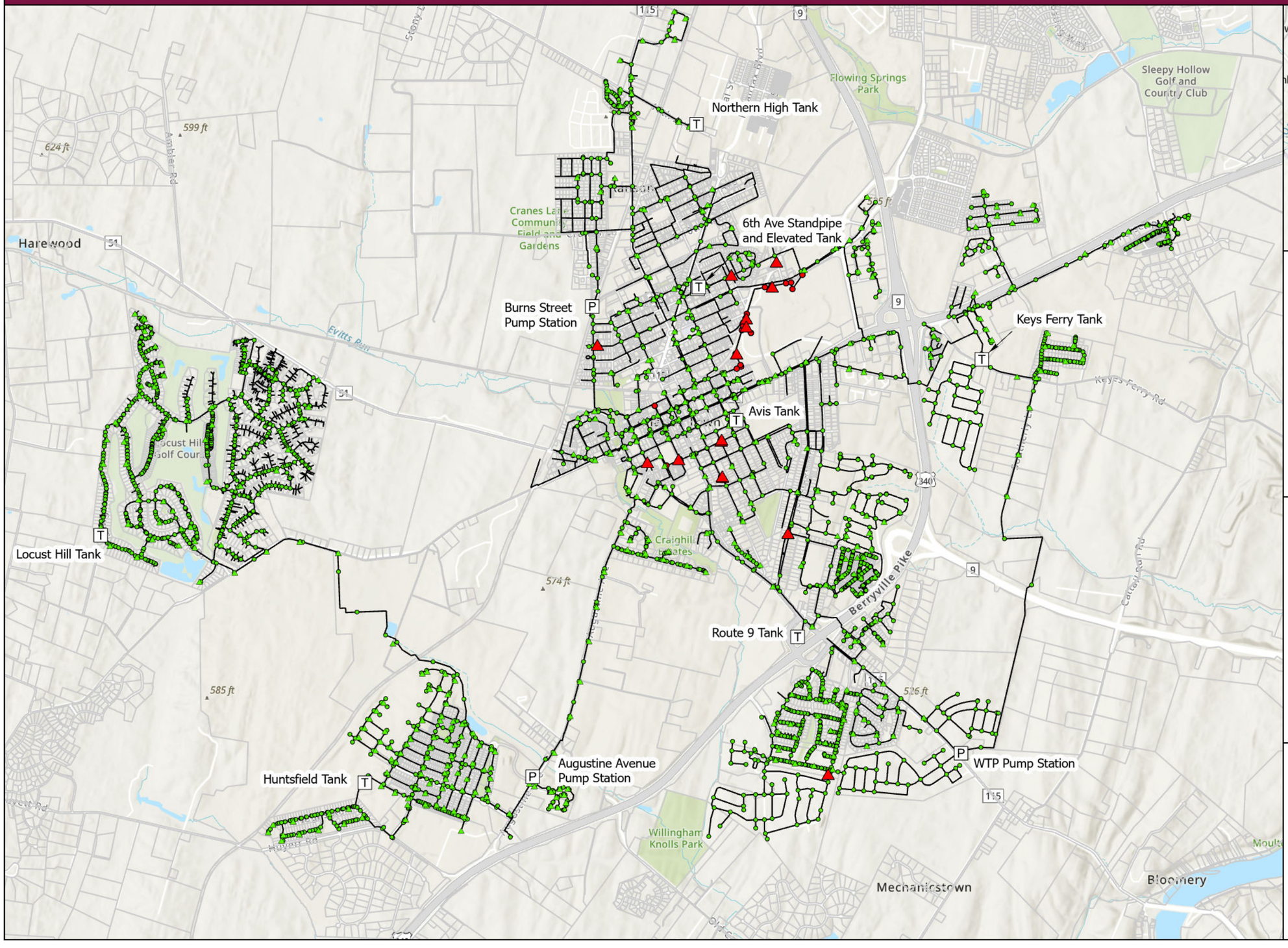
Storage Evaluation

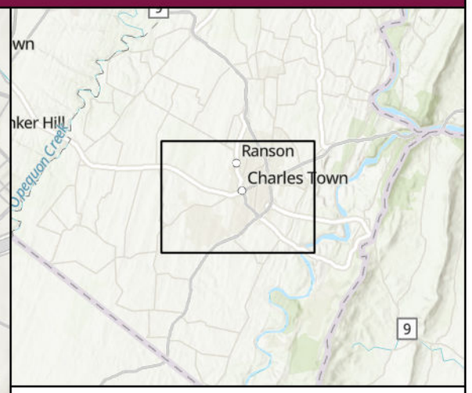
STORAGE EVALUATION (GAL)					
SCENARIO	2 x ADD	FIRE FLOW	REQUIRED STORAGE	EXISTING STORAGE	NET STORAGE
Existing	3,973,104	60,000	4,033,104	4,080,000	***46,896***
Near-Term	4,021,891	60,000	4,081,891	4,080,000	***-1,891***
Long-Term	4,966,877	60,000	5,026,877	4,080,000	***-946,877***

Available Fire Flow

AVAILABLE FIRE FLOW (GPM)			
SCENARIO	MIN. FIRE FLOW	AVG. FIRE FLOW	PERCENTAGE < 500 GPM
Existing	37	978	1.31%
Near-Term	37	978	1.29%
Long-Term	36	978	1.27%

Figure 5.3 Available Fire Flow





Junction Fire Flow
- < 500 gpm
- 500 - 1,000 gpm

Hydrant Fire Flow
- < 500 gpm
- 500 - 1000 gpm

Watermain
Tanks
Pump Stations
Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

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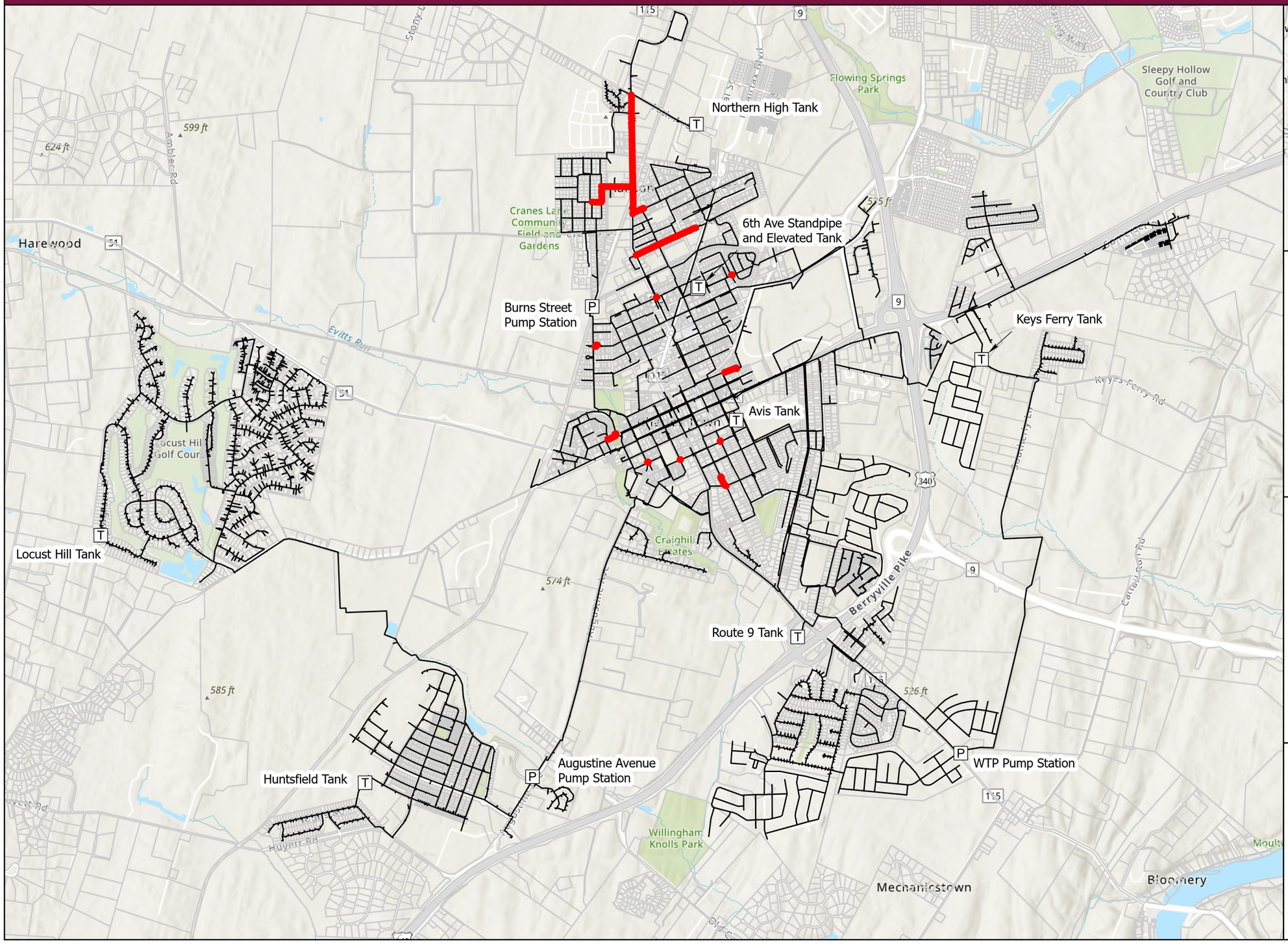
Recommended Improvements 05

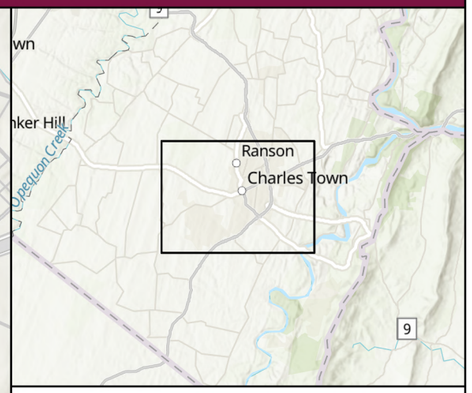
Improvement Projects

2019 PROJECTS (GPM)			
PROJECT NO.	PROJECT NAME	PRESSURE ZONE	DESCRIPTION
2019-01*	York Rd. & Ambrose Dr.	Northern	Parallel 1,500 LF of 6” ACP with 10” PVC
2019-02*	No Mildred St.	Northern	Parallel 2,700 LF of 6” ACP with 10” PVC
2019-03*	N Mildred St. & E 13th Ave.	Northern	Parallel 1,100 LF of 6” ACP with 10” PVC
2019-04	East 10th Avenue	Northern	Install 1,800 LF of 6” PVC to connect to North Fairfax Boulevard
2019-05	East North Street	Main	Install 400 LF of 8” PVC
2019-06*	West Liberty Street	Main	Install 400 LF of 6” PVC to provide adequate looping
2019-07	South Samuel Street	Main	Upsize 400 LF from 4” to 6”
2019-08	South Mildred Street	Main	Install interconnection between existing 8” and 4” waterlines
2019-09	West Academy Street	Main	Install interconnection between West Academy St. and South Charles St.
2019-10	North Mildred Street	Main	Install interconnection between North Mildred St. and East 7th St.
2019-11	West 5th Avenue	Main	Relocate hydrant branch from 2” waterline to 6” waterline
2019-12	East 6th Avenue	Main	Relocate hydrant branch from 2” waterline to 8” waterline
2019-13	West Avis Street	Main	Relocate hydrant branch from 4” waterline to 8” waterline
2025-01	Racetrack St. & E 5th Ave.	Main	Upsize hydrant branch from 2” connection to 6”
2025-02	Jefferson Ave. & High St.	Main	Upsize hydrant branch from 2” connection to 6”
2025-03	Barksdale Dr. & Fairleigh Dr.	Main	Upsize hydrant branch from 2” connection to 6”
2025-04	Barksdale Dr. & Courier Dr.	Main	Upsize hydrant branch from 2” connection to 6”
2025-05	Storage Tank	-	Study and Design of an Approximately 1 MG Storage Tank

* Project does not impact fire flow, but does relieve system bottlenecks or improve looping

Figure 6.1 2019 Study Recommended Projects





- 2020 Projects
- Watermain
- T Tanks
- P Pump Stations
- Parcel

N

0 1,250 2,500 5,000 Feet

1 inch equals 2,500 feet

CHARLES TOWN UTILITY BOARD 1998

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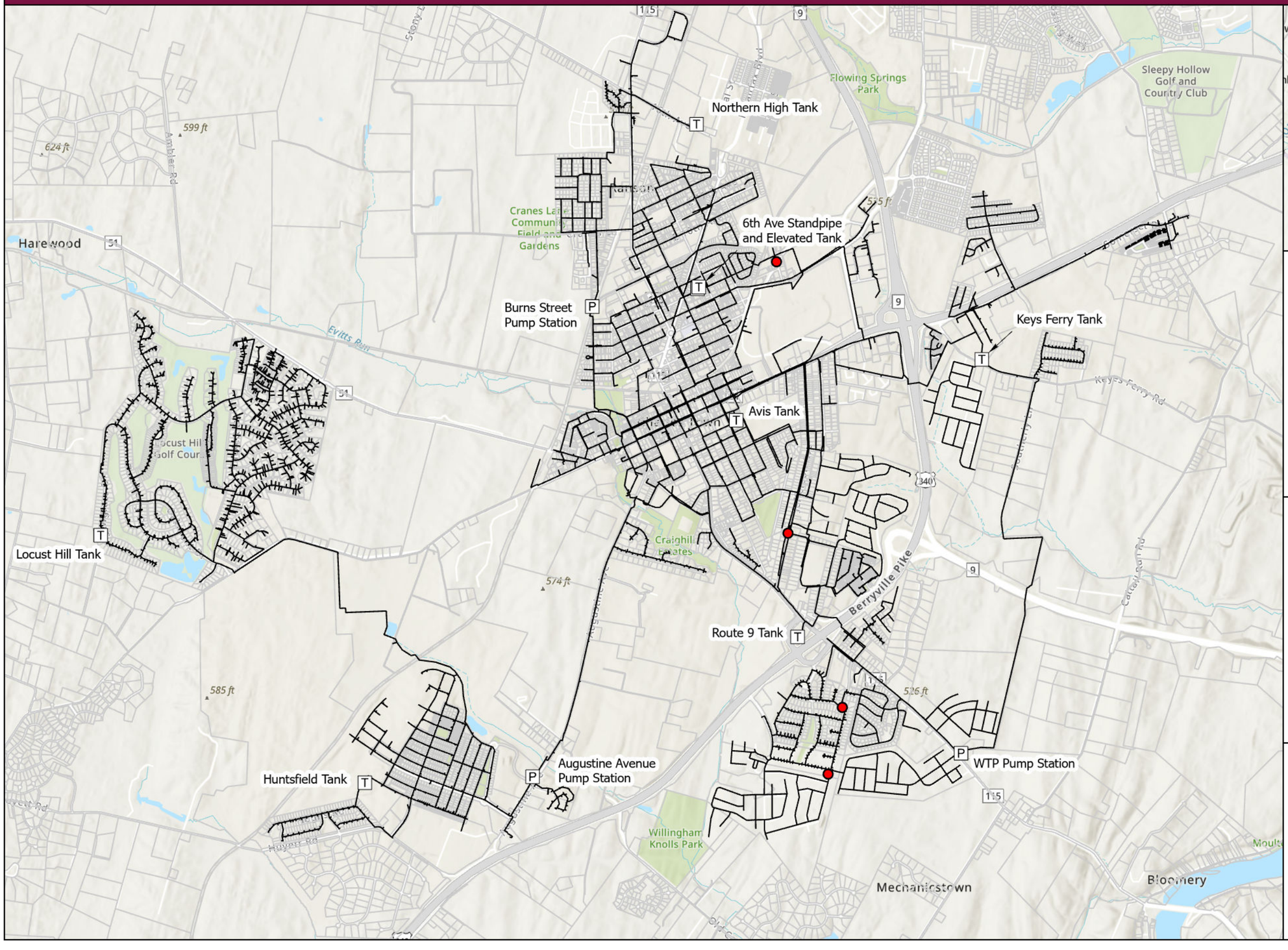
Figure 6.2 Recommended Hydrant Improvements



Fire Flow Improvements

AVAILABLE FIRE FLOW WITH 2019 PROJECTS (GPM)			
SCENARIO	**MIN. FIRE FLOW**	**AVG. FIRE FLOW**	**PERCENTAGE < 500 GPM**
Existing	37	990	0.12%
Near-Term	37	990	0.12%
Long-Term	36	989	0.12%

AVAILABLE FIRE FLOW WITH ALL IMPROVEMENTS (GPM)			
SCENARIO	**MIN. FIRE FLOW**	**AVG. FIRE FLOW**	**PERCENTAGE < 500 GPM**
Existing	612	991	0.00%
Near-Term	612	991	0.00%
Long-Term	611	990	0.00%

Flushing Protocol

- Recommended to mitigate water quality and sedimentation risks from low velocity
- Flushing protocol promotes flows and results in velocities higher then 2.5 ft/sec

REQUIRED FLUSHING FLOW (GPM)	
DIAMETER (IN)	MINIMUM FLOW (GPM)
2	25
3	55
4	98
6	220
8	395
10	615
12	880
16	1,565

Hydrant Flushing Data Collection

HYDRANT TESTING FORM
TEST NUMBER:

Test Information

Date: _____

Time: _____

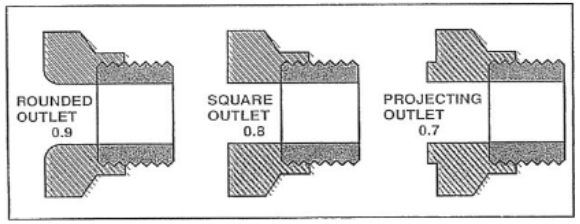
Weather: _____

Temperature: _____ °F / °C

Flusher: _____

Tester: _____

Nozzle Type and Coefficient



Flow Hydrant

Hydrant ID: _____

Flow Nozzle Dia. _____ in.

Flow Nozzle Type: _____

Flow Nozzle Coefficient: _____

Static Pressure: _____ psi

Test Flow: _____ gpm

Test Duration: _____ minutes

Residual Hydrant - A Information

Hydrant ID: _____

Static Pressure: _____ psi

Residual Pressure: _____ psi

Residual Hydrant - B Information

Hydrant ID: _____

Static Pressure: _____ psi

Residual Pressure: _____ psi

System Operational Conditions

Tank Name _____

Tank Level or Elevation _____ ft

Tank Name _____

Tank Level or Elevation _____ ft

Pump Station Name _____ psi

Pump Station Flow _____ gpm

Pump Station Name _____ psi

Pump Station Flow _____ gpm

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Open Discussion

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

2022 Sewer Collection System Project - Resolution No. 6 - CIF Payment #5

Attachments:

Resolution No. 6 - CIF Payment No. 5.pdf

CHARLES TOWN UTILITY BOARD
2022 COLLECTION SYSTEM PROJECT
(IJDC #2021S-2041 / CWSRF #C-544686)

RESOLUTION NO. 6
REQUEST FOR PAYMENT #6
(CIF PAYMENT #5)

RESOLUTION OF THE CHARLES TOWN UTILITY BOARD APPROVING INVOICES RELATING TO CONSTRUCTION AND OTHER SERVICES FOR THE SEWER PROJECT AND AUTHORIZING PAYMENT THEREOF,

WHEREAS, the Charles Town Utility Board (CTUB), has reviewed the invoices attached hereto and incorporated herein by reference relation to the Project funded in part by the Clean Water State Revolving Fund (CWSRF) and find as follows:

a.) That none of the items for which payment is proposed to be made has formed the basis for any disbursement theretofore made;

b.) Each item for which the payment is proposed to be paid is or was necessary in connection with the Project and constitutes a Cost of the project;

c.) Each of such costs has been otherwise properly incurred; and

d.) Payment for each of the items proposed is due and owing.

NOW, THEREFORE, BE IT RESOLVED by the Charles Town Utility Board that the payment of the invoices as summarized below are hereby authorized and directed:

Vendor	CWSRF	Capacity Improvement Fee (CIF) Fund	Total Approved for Payment
GD&F Engineers	$0	$5,254.60	$5,254.60
Kay, Casto, & Chaney	$0	$682.50	$682.50
Rummel, Klepper, & Kahl	$0	$3,932.69	$3,932.69
Total	**$0**	**$9,869.79**	**$9,869.79**

ADOPTED BY the City of Charles Town Utility Board, at the meeting held on the 9th day of April, 2025.

By: _____
John Nissel, Chairman

Date: April 9, 2025

Charles Town Utility Board
2022 Sewer Collection System Project
Schedule B - Internal Purposes Only

A. COST OF PROJECT	APPROVED CONSTRUCTION BUDGET	Paid from CTUB Internal CIF Funds (Prior to Closing)	Resolution No. 1 Request for Payment (RFP) # 1 CWSRF # 1	Resolution No. 2 Request for Payment (RFP) # 2 CIF # 1	Resolution No. 3 Request for Payment (RFP) # 3 CIF # 2	Resolution No. 4 Request for Payment (RFP) # 4 CIF # 3	Resolution No. 5 Request for Payment (RFP) # 5 CIF # 4	Resolution No. 6 Request for Payment (RFP) # 6 CIF # 5	BALANCE REMAINING
1 **CONSTRUCTION**									
a. Contract	$ 6,074,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,074,000.00
2 **CONSTRUCTION CONTINGENCY**									
a. Construction Contingency - (See note #1)	$ 303,684.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 303,684.00
3 **LEGAL SERVICES**									
a. Project Attorney	$ 140,000.00	$ 137,264.09	$ -	$ 812.50	$ 487.50	$ 650.00	$ -	$ 682.50	$ 103.41
4 **ACCOUNTING SERVICES**									
a. Project Account - CPA	$ 30,000.00	$ 18,262.50	$ -	$ 3,950.00	$ -	$ -	$ -	$ -	$ 7,787.50
5 **ENGINEERING SERVICES**									
a. RK&K Engineering fees	$ 596,090.00	$ 565,565.83	$ -	$ 10,166.61	$ 7,785.91	$ 4,968.77	$ -	$ 3,932.69	$ 3,670.19
b. GDF Engineering (Construction Admin & RPR)	$ 300,000.00	$ -	$ -	$ 1,325.80	$ 3,478.44	$ 12,000.38	$ 7,736.10	$ 5,254.60	$ 270,204.68
6 **ADMINISTRATIVE SERVICES**									
a. Other Administrative Costs	$ 10,000.00	$ 5,377.14	$ -	$ -	$ -	$ -	$ -		$ 4,622.86
7 **LANDS/EASEMENTS**									
a. Easements	$ 50,600.00	$ 47,325.00	$ -	$ -	$ -	$ -	$ -		$ 3,275.00
b. R/W Agent - (See note #2)	$ 100,690.72	$ 100,690.72	$ -	$ -	$ -	$ -	$ -		$ -
c. Permits - (See note #2)	$ 6,859.28	$ 1,000.00	$ -	$ -	$ -	$ -	$ -		$ 5,859.28
d. Plats - (See note #2)	$ 12,970.00	$ 10,828.00	$ -	$ 1,071.00	$ -	$ -	$ -		$ 1,071.00
8 Sub Total Line 1-7	**$ 7,624,894.00**	**$ 886,313.28**	**$ -**	**$ 17,325.91**	**$ 11,751.85**	**$ 17,619.15**	**$ 7,736.10**	**$ 9,869.79**	**$ 6,674,277.92**
B. COST OF FINANCING									
9 Registrar Fees	$ 650.00	$ -	$ 650.00	$ -	$ -	$ -	$ -	$ -	$ -
10 Bond Counsel (S&J)	$ 40,000.00	$ -	$ 40,000.00	$ -	$ -	$ -	$ -	$ -	$ -
11 Sub Total of Financing - Line 9-10	**$ 40,650.00**	**$ -**	**$ 40,650.00**	**$ -**	**$ -**	**$ -**	**$ -**		**$ -**
12 Total Project Costs Line 8 + Line 11	**$ 7,665,544.00**	**$ 886,313.28**	**$ 40,650.00**	**$ 17,325.91**	**$ 11,751.85**	**$ 17,619.15**	**$ 7,736.10**	**$ 9,869.79**	**$ 6,674,277.92**

B. SOURCES OF FUNDS	APPROVED PROJECT FUNDING	Paid from CTUB Internal CIF Funds (Prior to Closing)	Request for Payment (RFP) # 1 CWSRF # 1	Request for Payment (RFP) # 2 CIF # 1	Request for Payment (RFP) # 3 CIF # 2	Request for Payment (RFP) # 4 CIF # 3	Request for Payment (RFP) # 5 CIF # 4	Request for Payment (RFP) # 6 CIF # 5	BALANCE REMAINING
1 INTERNAL FUNDS									
a. Capacity Improvement Fees	$ 3,027,560.00	$ (886,313.28)	$ -	$ (17,325.91)	$ (11,751.85)	$ (17,619.15)	$ (7,736.10)	$ (9,869.79)	$ 2,076,943.92
1 Subtotal Internal Funds	**$ 3,027,560.00**	**$ (886,313.28)**	**$ -**	**$ (17,325.91)**	**$ (11,751.85)**	**$ (17,619.15)**	**$ (7,736.10)**	**$ (9,869.79)**	**$ 2,076,943.92**
2 GRANT FUNDS									
a. State Grant (EEGF)	$ 1,077,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,077,000.00
b. Federal Grant (CWSRF) - "Green Grant"	$ 500,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 500,000.00
2 Subtotal Grant Funds	**$ 1,577,000.00**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,577,000.00**
3 BOND ISSUE									
a. CWSRF Loan (1%, 40 Year)	$ 2,844,984.00	$ -	$ (40,650.00)	$ -	$ -	$ -	$ -	$ -	$ 2,804,334.00
b. CWSRF Loan (3%, 20 Year)	$ 216,000.00	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 216,000.00
3 Subtotal Bond Issue	**$ 3,060,984.00**	**$ -**	**$ (40,650.00)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,020,334.00**
4 Total Sources of Funds Line 1-3	**$ 7,665,544.00**	**$ (886,313.28)**	**$ (40,650.00)**	**$ (17,325.91)**	**$ (11,751.85)**	**$ (17,619.15)**	**$ (7,736.10)**	**$ (9,869.79)**	**$ 6,674,277.92**

Note #1 - 12/10/2024 - The CWSRF loan in the amount of $216,016 was shown as $216,000 on the closing documentation. Per the State, the CWSRF loan and the total project costs line items on the Schedule B were reduced by $16.00 to correct the error.

Note #2 - 12/11/2024 - Line item R/W Agent was decreased by $1,444.28 to actual, line item Permits was decreased by $140.72, and the line item for Plats was increased by $1,585.00.

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting **661 South George Street**
Charles Town, WV 25414

CEM Corporation Quote for Lab Equipment

Attachments:

CEM Quote.pdf

CEM Corporation
3100 Smith Farm Road, P.O. Box 200, Matthews, NC 28106- 0200 USA
Phone 800-726-3331 or 704-821-7015 • FAX 704-821-7894

QUOTATION

Name	Robbie Shipe	Created Date	March 28, 2025
Phone	(304) 724-3280	Quote Number	QT0079828
Email	rshipe@ctubwv.com	Revision	1
Account Name	Charles Town Utility Board	Expiration Date	September 30, 2025

Bill To	832 South George St Charles Town, WV 25414-1469 United States	Ship To	832 South George St Charles Town, WV 25414-1469 United States

Please verify Billing Address by retyping below or enter correct Billing Address if different:

Contact			
Address			
City	State/Province		
Zip	Country		
Phone	Fax		

Please verify Shipping Address by retyping below or enter correct Shipping Address if different:

Contact			
Address			
City	State/Province		
Zip	Country		
Phone	Fax		

Product Code	Product	Sales Price (USD)	Quantity	Total Price (USD)
928034-1	WASTE WATER 6 120/240V 50/60HZ SALES	$15,467.00	1	$15,467.00
SMART 6™ WWTP, 120-240V/50-60Hz Pre-programmed with various moisture/solids methods including, cake, feed, poly and total suspended solids, the SMART 6 WWTP comes ready to use. Includes: - 6-Month Standard Service Warranty - Accessory Kit - (2) balance pans and stems, (1) CEM® Sample Pad starter pack (200 pads), (5) rolls of thermal printer paper, sample press, monitor kit, operation manual and appropriate fuses. - Appropriate Power Cord(s)				
200150	PADS, DRYING 10CM SQ DOMESTIC LOCATIONS ONLY	$76.00	5	$380.00
Glass fiber sample pads, 10 cm square pads, 400/bx				
921210	SMART SYSTEM INSTALLATION AND TRAINING LABOR	$1,123.00	1	$1,123.00
This service provides installation and training for a new user on instrument operation, routine maintenance and basic applications training.				
992090	CUSTOMER CARE PLUS PLAN, DEPOT ONLY, SMART WWTP ONLY	$1,250.00	1	$1,250.00
All versions of WWTP and P/P units. *Depot only contract* Customer pays for shipping of unit to and from CEM for repair. Parts and labor are included with initial purchase of contract.				
FREIGHT (SMART)	FREIGHT CHARGES (SMART)	$208.00	1	$208.00

Subtotal (USD)	$18,428.00
Total Price (USD)	$18,428.00

Comments

Payment and Shipping Terms

Payment Terms:	Net 30 days
Delivery:	6 Weeks
Shipping Terms:	
Warranty:	
Quote Valid:	September 30, 2025

Yours Sincerely,

Vince Collins

Vince.Collins@cem.com

Purchase Order

Note: This quote can be used as a purchase order by entering purchase order number and signing

Please sign here: _____ Date: _____ PO Number: _____

Tax Status: If Account is Tax-Exempt, please provide a Tax-Exemption or Resale Certificate along with the Purchase Order. Otherwise, the order will be processed as taxable.

If Account is Partially Exempt for this order, please send Partial Exemption Certificate.

Standard Terms and Conditions

For information on leasing CEM products, contact Marissa Reinhardt at CEM Financial Services
Phone 973-292-0025 x412, mreinhardt@navitascredit.com

Standard Terms & Conditions

1. Payment - Make all checks payable to CEM Corporation and mail to Accounts Receivable at the below address:

12750 COLLECTIONS CENTER DRIVE, CHICAGO IL 60693 United States
2a. For existing customers: NET 30 days from ship date or prior negotiated payment terms. Clerical errors are subject to corrections
2b. For new customers: (All terms contingent on submission and approval of New Account Form) 50% down-payment of quoted amount, excluding tax and freight. Remainder of balance due NET 30 days from ship date. Clerical errors are subject to corrections
3. All orders subject to shipping and handling charges.
4. USA Shipping Terms: ExWorks, Matthews, NC USA Please provide an account number to ship collect, otherwise we will prepay add freight charges changing the terms to FCA shipping point.
5. Canada Shipping Terms: Preferred terms are ExWorks, Matthews, NC USA (please provide an account number to ship collect). CEM can prepay and add the freight charges however, this changes the terms to DDP and CEM Corporation will be the importer of record. Please contact us for a revised quote reflecting the DDP charges (including taxes.)
CEM Corporation Canadian Tax Id #: 88762 7149 RT0001
6. Taxes - All prices are quoted excluded of any sales, excise, use, or similar tax. The amount of tax applicable is the buyer's responsibility.
7. Renters Casualty - Renter shall bear the risk of loss or damage to the equipment from delivery to customer site until it is returned to CEM.
8. Warranty - All new instruments are warrantied against defects in workmanship or material for one (1) year from date of shipment unless noted otherwise in the product description above. All refurbished/demo instruments are warrantied against defects in workmanship or material for six (6) months from date of shipment unless noted otherwise in the comments section above.
9. Returns - All returns must be authorized with an RMA# by the CEM Customer Service Department. Call (800) 726-3331 for authorization.
10. Quantity - Any changes to quantities other than complete instruments will not affect the validity of this quote.
11. CEM products listed in this invoice are for domestic sale only. The Export Administration Regulations prohibit the export of these products to Cuba, Iran, North Korea, and Syria. Also, effective September 15, 2022, some CEM products, including the MARS 6 and EDGE 60 and their components, are prohibited for export to Russia and Belarus without prior U.S. Government authorization. Diversion of any CEM product contrary to U.S. law is prohibited.

EEO Clause

If applicable to this purchase order, subcontract, or bill of lading, the affirmative action clause for disabled workers (41 CFR § 60-741.4), the equal opportunity clause in Section 202 of Executive Order 11246 (41 CFR § 60-1 through 60-50), and the affirmative action clause for covered veterans (41 CFR 6-300) are hereby incorporated herein by reference. Further, if applicable, seller agrees to file Standard Form 100 (EEO-1) and the VETS-100A report. The contractor agrees to comply with 29 CFR Part 471, Appendix A to Subpart A.

This contractor and subcontractor shall abide by the requirements of 41 CFR §§ 60-1.4(a), 60-300.5(a) and 60-741.5(a). These regulations prohibit discrimination against qualified individuals based on their status as protected veterans or individuals with disabilities, and prohibit discrimination against all individuals based on their race, color, religion, sex, sexual orientation, gender identity or national origin. Moreover, these regulations require that covered prime contractors and subcontractors take affirmative action to employ and advance in employment individuals without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, protected veteran status or disability.

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

PFAS Biosolids Testing Results

Attachments:

PFAS Results.pdf

Detection Summary

Client: Charles Town Utility Board
Project/Site: 1633 PFAS in Biosolids

Job ID: 410-210654-1

Client Sample ID: Centrifuge

Lab Sample ID: 410-210654-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	1.9		1.9	0.48	ng/g	1	☼	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	2.4		1.9	0.58	ng/g	1	☼	1633	Total/NA
Perfluorooctanoic acid (PFOA)	4.7		1.9	0.58	ng/g	1	☼	1633	Total/NA
Perfluorononanoic acid (PFNA)	2.8	I cn	1.9	0.58	ng/g	1	☼	1633	Total/NA
Perfluorodecanoic acid (PFDA)	6.2	I cn	1.9	0.48	ng/g	1	☼	1633	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.69	J	1.9	0.48	ng/g	1	☼	1633	Total/NA
Perfluorododecanoic acid (PFDoA)	1.8	J	1.9	0.48	ng/g	1	☼	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	12		1.9	0.48	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	7.8		1.9	0.77	ng/g	1	☼	1633	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	3.7		1.9	1.1	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	5.8	J	9.6	2.9	ng/g	1	☼	1633	Total/NA
3-Perfluoropentylpropanoic acid (5:3 FTCA)	130		9.6	4.8	ng/g	1	☼	1633	Total/NA
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	25		9.6	3.9	ng/g	1	☼	1633	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Charles Town Utility Board
Project/Site: 1633 PFAS in Biosolids

Job ID: 410-211844-1

Client Sample ID: Centrifuge

Lab Sample ID: 410-211844-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	1.4		1.1	0.26	ng/g	1	☼	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	2.0		1.1	0.32	ng/g	1	☼	1633	Total/NA
Perfluorooctanoic acid (PFOA)	6.4		1.1	0.32	ng/g	1	☼	1633	Total/NA
Perfluorononanoic acid (PFNA)	2.3	l cn	1.1	0.32	ng/g	1	☼	1633	Total/NA
Perfluorodecanoic acid (PFDA)	5.4		1.1	0.26	ng/g	1	☼	1633	Total/NA
Perfluoroundecanoic acid (PFUnA)	1.1		1.1	0.26	ng/g	1	☼	1633	Total/NA
Perfluorododecanoic acid (PFDoA)	2.0	l cn	1.1	0.26	ng/g	1	☼	1633	Total/NA
Perfluorotetradecanoic acid (PFTeDA)	0.41	J	1.1	0.37	ng/g	1	☼	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	7.5		1.1	0.26	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	7.9		1.1	0.42	ng/g	1	☼	1633	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.3		1.1	0.58	ng/g	1	☼	1633	Total/NA
3-Perfluoropentylpropanoic acid (5:3 FTCA)	70		5.3	2.6	ng/g	1	☼	1633	Total/NA
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	16		5.3	2.1	ng/g	1	☼	1633	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Charles Town Utility Board
Project/Site: 1633 PFAS in Biosolids

Job ID: 410-213208-1

Client Sample ID: Centrifuge

Lab Sample ID: 410-213208-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	1.3	J	2.1	0.52	ng/g	1	☼	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	1.1	J	2.1	0.63	ng/g	1	☼	1633	Total/NA
Perfluorooctanoic acid (PFOA)	4.8		2.1	0.63	ng/g	1	☼	1633	Total/NA
Perfluorononanoic acid (PFNA)	1.7	J	2.1	0.63	ng/g	1	☼	1633	Total/NA
Perfluorodecanoic acid (PFDA)	3.7		2.1	0.52	ng/g	1	☼	1633	Total/NA
Perfluorododecanoic acid (PFDoA)	1.3	J	2.1	0.52	ng/g	1	☼	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	11		2.1	0.52	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	5.2		2.1	0.84	ng/g	1	☼	1633	Total/NA
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.1		2.1	1.1	ng/g	1	☼	1633	Total/NA
3-Perfluoropentylpropanoic acid (5:3 FTCA)	60		10	5.2	ng/g	1	☼	1633	Total/NA
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	12		10	4.2	ng/g	1	☼	1633	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Charles Town Utility Board
Project/Site: 1633 PFAS in Biosolids

Job ID: 410-214059-1

Client Sample ID: Centrifuge

Lab Sample ID: 410-214059-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	1.4	J	1.9	0.47	ng/g	1	☼	1633	Total/NA
Perfluorohexanoic acid (PFHxA)	1.4	J	1.9	0.56	ng/g	1	☼	1633	Total/NA
Perfluorooctanoic acid (PFOA)	4.7		1.9	0.56	ng/g	1	☼	1633	Total/NA
Perfluorononanoic acid (PFNA)	1.9	I cn	1.9	0.56	ng/g	1	☼	1633	Total/NA
Perfluorodecanoic acid (PFDA)	4.4		1.9	0.47	ng/g	1	☼	1633	Total/NA
Perfluoroundecanoic acid (PFUnA)	0.64	J	1.9	0.47	ng/g	1	☼	1633	Total/NA
Perfluorododecanoic acid (PFDoA)	1.3	J	1.9	0.47	ng/g	1	☼	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	10		1.9	0.47	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	6.6		1.9	0.75	ng/g	1	☼	1633	Total/NA
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	3.3	J	9.3	2.8	ng/g	1	☼	1633	Total/NA
3-Perfluoropentylpropanoic acid (5:3 FTCA)	86		9.3	4.7	ng/g	1	☼	1633	Total/NA
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	14		9.3	3.7	ng/g	1	☼	1633	Total/NA

This Detection Summary does not include radiochemical test results.

State	Water Regulation Subcategory	Regulation
Colorado	Biosolids/Sludge	CDPHE has implemented the Biosolids-PFAS interim strategy, which establishes monitoring requirements for biosolids preparers. An interim threshold level of 50 micrograms per kilogram (µg/kg) for PFOS in biosolids has been established.
Maryland	Biosolids/Sludge	If the level of PFOS or PFOA is 100 µg/kg or above, land application of the biosolids is recommended to be stopped. If PFOS or PFOA is at or above 50 µg/kg, but less than 100 µg/kg, the recommended application rate for land application of biosolids must be lowered to 1.5 dry tons per acre or less. If PFOS or PFOA is at or above 20 µg/kg, but less than 50 µg/kg, the recommended application rate for land application of biosolids must be lowered to 3 dry tons per acre or less. Biosolids with a PFOS concentration below 20 µg/kg and a PFOA concentration below 20 µg/kg may be land applied with no additional requirements after submission of results.
Michigan	Biosolids/Sludge	Michigan Department of Environment, Great Lakes, and Energy (EGLE) has implemented an interim biosolids PFAS interim strategy for wastewater treatment plants and landowners/farmers regarding the land application of biosolids. Guidance is based on the following interim thresholds for biosolids: -PFOA/PFOS concentration >100 µg/kg (industrially impacted/cannot be land applied) – PFOA/PFOS concentration > 20 µg/kg but < 100 µg/kg (elevated/trigger requirements) – PFOA/PFOS concentration of < 20 µg/kg (no additional requirements)
New York	Biosolids/Sludge	NYDEC has implemented the Interim Strategy for the Control of PFAS Compounds, which establishes interim PFOS and PFOA criteria for biosolids that are recycled in the state. Guidance is based on the following interim thresholds for biosolids: If PFOA/PFOS concentration is: – Greater than 50 µg/kg: DEC will take action and recycling is prohibited. – Between 20 µg/kg and 50 µg/kg: Additional sampling is required. – Less than 20 µg/kg: No action is required.

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Board Policies

Attachments:

Board Policies.pdf

Charles Town Utility Board Biosolids PFAS Monitoring Policy

Purpose

The Charles Town Utility Board (CTUB) is committed to protecting public health, farmland, and groundwater from potential PFAS contamination associated with biosolids land application. This policy affirms the Board's commitment to rigorous monitoring, science-based thresholds, and proactive restrictions to ensure biosolids are managed in an environmentally sound manner that safeguards our community and complies with evolving regulatory standards.

Policy Statement

CTUB recognizes that biosolids are a valuable resource for agriculture but must be managed responsibly to mitigate risks from PFAS/PFOS contamination. The Board will conduct annual PFAS testing of biosolids generated at its wastewater treatment plant and enforce application restrictions based on test results. This policy ensures transparency, aligns with EPA recommendations, and prioritizes the long-term protection of Jefferson County's land and water resources.

Guiding Principles

1. **Public Health Protection** – Land application of biosolids shall not compromise soil, groundwater, or crop safety due to PFAS contamination.
2. **Science-Based Thresholds** – Application rates will be adjusted or halted based on **tiered PFAS concentrations** (see below), using the most current EPA-certified testing methods.
3. **Transparency** – Testing results, thresholds, and corrective actions will be publicly reported on the CTUB website.
4. **Regulatory Compliance** – This policy adheres to EPA interim guidance and will adapt to future state (WVDEP) or federal regulations.
5. **Proactive Risk Management** – If PFAS levels exceed actionable thresholds, CTUB will immediately restrict application and pursue safe alternatives.

PFAS Thresholds & Land Application Restrictions

Based on average PFAS concentrations (µg/kg dry weight) from annual testing:

- < 20 µg/kg: No restrictions. Normal application rates permitted.
- 20–50 µg/kg: Application rate reduced to ***≤ 3 dry tons/acre/year***.
- 50–100 µg/kg: Application rate reduced to ≤ 1.5 dry tons/acre/year.
- ≥ 100 µg/kg: ***Land application halted***. CTUB will implement alternative disposal methods (e.g., EPA-approved landfill, thermal treatment, or other EPA/WVDEP approved method).

DRAFT

Implementation & Oversight

Annual Testing:

- Conducted by an EPA-certified lab using a minimum of three representative samples.
- Results reviewed by CTUB within 30 days.

Response to Exceedances:

- Levels >20 µg/kg trigger confirmatory testing.
- Levels >50 µg/kg require notification to WVDEP and affected landowners.

Recordkeeping:

- All data retained for 5+ years and made publicly available.

Review and Adjustments

Recognizing the rapidly evolving science of PFAS, CTUB will review this policy annually to incorporate:

- New EPA or WVDEP regulations.
- Advances in PFAS treatment or testing technologies.
- Feedback from stakeholders (farmers, health officials, environmental groups).

Conclusion

The Charles Town Utility Board prioritizes the responsible management of biosolids to balance agricultural benefits with environmental protection. This policy ensures that PFAS risks are systematically monitored, mitigated, and communicated to the public, upholding CTUB's commitment to safe and sustainable utility operations.

DRAFT

Charles Town Utility Board Capacity Improvement Fee Policy

Purpose
The Charles Town Utility Board (CTUB) is committed to ensuring that the cost of necessary water and sewer infrastructure expansion required to serve new development is borne by those creating the demand, rather than by existing ratepayers. This policy affirms the Board's commitment to maintaining a fair and reasonable Capacity Improvement Fee (CIF) that adequately funds system expansion while ensuring financial sustainability and equitable cost distribution.

Policy Statement
CTUB recognizes that growth within its service area necessitates ongoing investment in water and sewer infrastructure. To prevent the financial burden of system expansion from falling on existing ratepayers, the Board maintains a CIF to be assessed on new development. This fee is designed to reflect the actual costs associated with capacity improvements and will be reviewed and adjusted at least every three years to ensure its adequacy in funding required infrastructure projects.

Guiding Principles

1. **Equity and Fairness** – The CIF shall ensure that new growth contributes proportionally to the cost of expanding infrastructure without placing an undue burden on existing ratepayers.
2. **Cost-Based Assessment** – The fee shall be based on documented infrastructure investment needs, ensuring that it remains aligned with actual expansion costs.
3. **Transparency** – The methodology used to determine and adjust the CIF shall be publicly available, and the Board shall review the fee periodically to maintain consistency with infrastructure funding requirements.
4. **Regulatory Compliance** – The CIF shall be assessed in accordance with applicable West Virginia state law and Public Service Commission regulations governing municipal utilities and infrastructure funding.
5. **Fiscal Responsibility** – Revenues generated from the CIF shall be allocated exclusively to capital improvement projects that expand system capacity, ensuring responsible financial stewardship.

Review and Adjustments
Recognizing that the current CIF was set several years ago and has proven to be insufficient, the Board is actively reviewing the fee structure to ensure it meets the rapidly growing demands of the service area. CTUB has engaged Raftellis Financial Consultants to analyze and recommend an appropriate CIF adjustment. The Board will consider these recommendations and, with advice of the Charles Town City Council, make necessary modifications to ensure the CIF remains fair, reasonable, and sufficient to fund required infrastructure improvements.

Conclusion
The Charles Town Utility Board remains dedicated to maintaining high-quality, environmentally sound water and sewer services while ensuring that infrastructure costs are equitably distributed. This policy reaffirms the Board's commitment to responsible utility management, financial sustainability, and fair growth contributions.

DRAFT

From: Robert R. Rodecker
To: Kristen Stolipher
Cc: April Shultz; John Nissel; John R. McGhee; Cynthia L. Wilson; Elizabeth Gardner; Joanna L. Gwin
Subject: RE: Board policies
Date: Tuesday, January 14, 2025 12:11:01 PM
Attachments: image001.png

Kristen,

Thank you for sending this. I believe these documents provide a good start to a list of policy issues that the Board should consider. Based upon the attachments, I believe we have the following areas to discuss:

1. New Board member issues including attendance at training sessions and reimbursement for expenses
2. Agenda requirements including timing and content and specificity of the agenda items
3. Developer policy including procedure and submission to Board and then to PSC for approval
4. Revisions to Rules of Procedure

I will be happy to review my communications for other areas including the connect and disconnect policies. Let me know when you would like to discuss these matters.

Bob

Kay Casto

Robert R. Rodecker
Attorney
KAY CASTO & CHANEY PLLC
rrodecker@kaycasto.com | vCard
707 Virginia Street, East, Suite 1500
Charleston, WV 25301
Phone: (304) 391-8838 | Fax: (304) 345-8909

Celebrating a Century of Service

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From: Kristen Stolipher <kstolipher@ctubwv.com>
Sent: Tuesday, January 14, 2025 11:08 AM
To: Robert R. Rodecker <rrodecker@kaycasto.com>

Cc: April Shultz <ashultz@ctubwv.com>; John Nissel <jnissel@charlestownwv.us>
Subject: Board policies

[Caution, External Email]
Bob,
As a follow-up to the Board discussion last week and also various items we have encountered over the past year, I'd like to discuss a formal list of Policies that we should have detailed on our website as well as updates that are necessary (you have mentioned a few). In addition to what is attached I also think you were talking with April about a policy for sewer disconnects and possibly a policy for connections if service becomes available.

Let discuss how we move forward.

Thanks,
Kristen



Kristen M. Stolipher
Utility General Manager
Charles Town Utility Board
661 South George Street, Suite 101
Charles Town, WV 25414
Office: (304) 724-7080
Cell: (304)-904-7359
Email: kstolipher@ctubwv.com

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

CIF Policy - Draft by Mr. Maxey

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Biosolids PFAS Policy - Draft by Mr. Maxey

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Rules of Procedure

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Connect and Disconnect Policy

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Developer Policy

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Utility Manager Report

Attachments:

UM Report.pdf

Charles Town Utility Board

661 S. George Street, Suite 101 Charles Town, WV 25414
Phone: (304) 725-2316 ♦ Fax: (304) 725-7150 ♦ Web: www.ctubwv.com

MEMORANDUM TO THE BOARD OF DIRECTORS

FROM: Kristen Stolipher, Utility General Manager
SUBJECT: Utility General Manager's Report
DATE: April 9, 2025

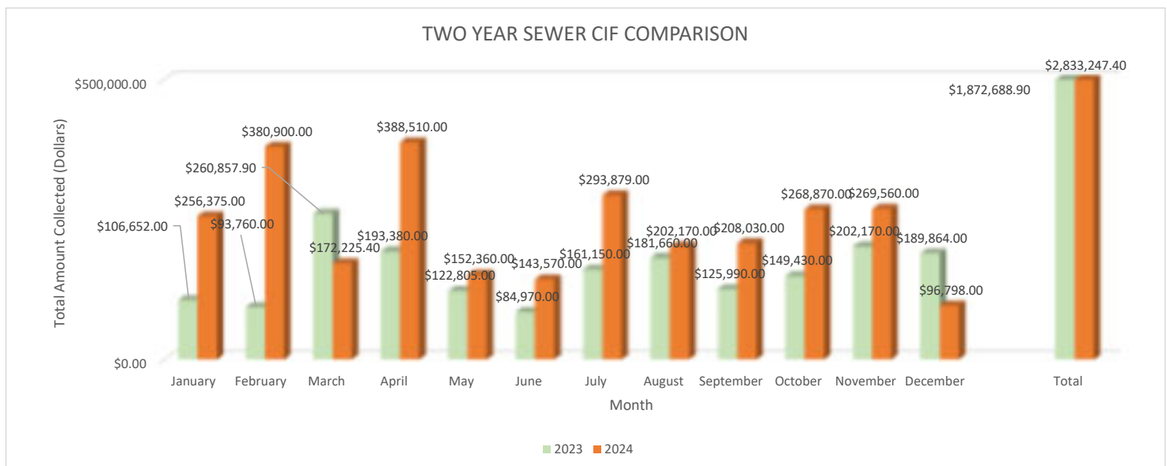
- **Customer Counts**
  - Sewer 9,880
  - Water 7,349

- **Administrative**
  - Utility Cloud and Edmunds software population and integration on-going
  - May 9th 9:00 a.m. to 12:00 p.m. CTUB Day Wastewater Plant Tour and Facility review

- **Water**
  - Water Model update complete
  - Baffle Wall installation at the water plant complete
- **Sewer**
  - Renewal and Replacement Project – Nearing completion
  - Collection System Project
  - Greenfield Forcemain – Design complete, continue working through easement acquisition

Charles Town Utility Board 2024 Capacity Improvement Fee Collections/EDU for Sewer						
Month	**Commercial**	**Residential**	**Total Number of EDU's**	**Total Sewer CIF Collected**	**CIF Paid to Ranson**	**Total**
Jan-24	1.5	86	87.5	$ 289,687.50	$ 33,312.50	$ 256,375.00
Feb-24		130	130	$ 458,900.00	$ 78,000.00	$ 380,900.00
Mar-24	6.78	52	58.78	$ 181,975.40	$ 9,750.00	$ 172,225.40
Apr-24	25	107	132	$ 438,885.00	$ 50,375.00	$ 388,510.00
May-24		52	52	$ 175,110.00	$ 22,750.00	$ 152,360.00
Jun-24		49	49	$ 182,570.00	$ 39,000.00	$ 143,570.00
Jul-24		100.3	100.3	$ 345,879.00	$ 52,000.00	$ 293,879.00
Aug-24		69	69	$ 226,545.00	$ 24,375.00	$ 202,170.00
Sep-24		71	71	$ 234,030.00	$ 26,000.00	$ 208,030.00
Oct-24	14	70	84	$ 278,620.00	$ 9,750.00	$ 268,870.00
Nov-24		92	92	$ 295,560.00	$ 26,000.00	$ 269,560.00
Dec-24	2.6	26	28.6	$ 96,798.00		$ 96,798.00
Total 2024	**49.88**	**764.3**	**954.18**	**$ 3,204,559.90**	**$ 371,312.50**	**$ 2,833,247.40**

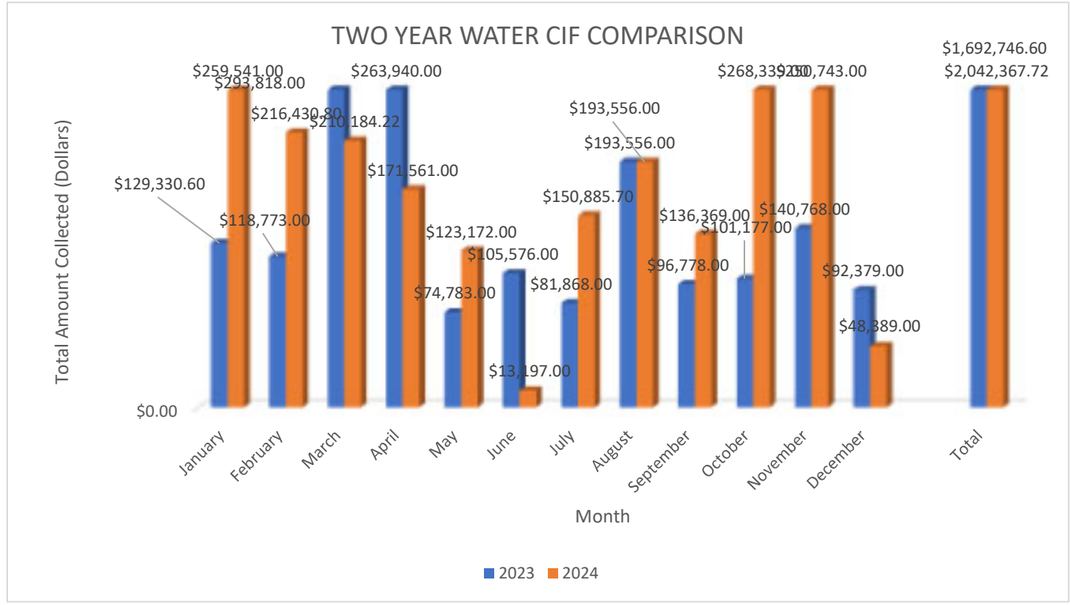
Charles Town Utility Board 2025 Capacity Improvement Fee Collections/EDU for Sewer						
Month	**Commercial**	**Residential**	**Total Number of EDU's**	**Total Sewer CIF Collected**	**CIF Paid to Ranson**	**Total**
Jan-25	1	123	124	$ 402,960.00	$ 45,500.00	$ 357,460.00
Feb-25		80	80	$ 289,650.00	$ 55,250.00	$ 234,400.00
Mar-25		121.5	121.5	$ 419,370.00	$ 63,375.00	$ 355,995.00
Apr-25	0.44		0.44	$ 1,289.20		$ 1,289.20
May-25						
Jun-25						
Jul-25						
Aug-25						
Sep-25						
Oct-25						
Nov-25						
Dec-25						
Total 2025	**1.44**	**324.5**	**325.94**	**$ 1,113,269.20**	**$ 164,125.00**	**$ 949,144.20**

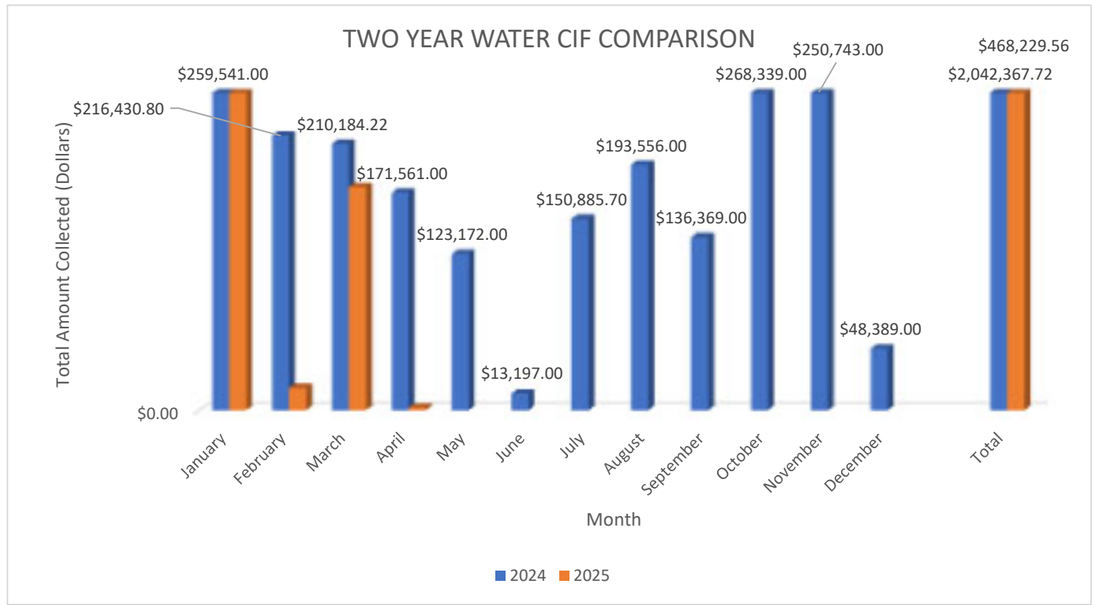




2024 Capacity Improvement Fee Collections/EDU for Water				
Month	Commercial	Residential	Total Number of EDU's	Total Water CIF
Jan-24		59	59	$ 259,541.00
Feb-24		49.2	49.2	$ 216,430.80
Mar-24	6.78	41	47.78	$ 210,184.22
Apr-24		39	39	$ 171,561.00
May-24		28	28	$ 123,172.00
Jun-24		3	3	$ 13,197.00
Jul-24		34.3	34.3	$ 150,885.70
Aug-24		44	44	$ 193,556.00
Sep-24		31	31	$ 136,369.00
Oct-24		61	61	$ 268,339.00
Nov-24		57	57	$ 250,743.00
Dec-24		11	11	$ 48,389.00
Total 2024	**6.78**	**396.5**	**464.28**	**$ 2,042,367.72**

2025 Capacity Improvement Fee Collections/EDU for Water				
Month	Commercial	Residential	Total Number of EDU's	Total Water CIF
Jan-24		62	62	$ 272,738.00
Feb-24		4	4	$ 17,596.00
Mar-24		40	40	$ 175,960.00
Apr-24	0.44		0.44	$ 1,935.56
May-24				
Jun-24				
Jul-24				
Aug-24				
Sep-24				
Oct-24				
Nov-24				
Dec-24				
Total 2025	**0.44**	**106**	**106.44**	**$ 468,229.56**





CHARLES TOWN UTILITY BOARD
WASTEWATER TREATMENT PLANT FLOW DATA

CHARLES TOWN WASTEWATER PLANT FLOW DATA						
YEAR	Total Design (MGD)	TOTAL ANNUAL FLOW (MG)	AVERAGE DAILY (MGD)	Total Design minus Average Daily (MGD)	Total Available (gpd)	Total Available (EDU's)
2015	1.75	384	1.05	0.7	700,000	4,667
2016	1.75	419	1.14	0.61	610,000	4,067
2017	1.75	393	1.08	0.67	670,000	4,467
2018	1.75	491	1.34	0.41	410,000	2,733
2019	1.75	459	1.26	0.49	490,000	3,267
2020	1.75	419.7	1.15	0.60	603,333	4,022
2021	1.75	401.61	1.11	0.64	637,500	4,250
2022	1.75	387.15	1.06	0.69	687,500	4,583
2023	1.75	382.28	1.06	0.69	694,167	4,628
2024	1.75	431.85	1.30	0.45	453,333	3,022

TUSCAWILLA WASTEWATER PLANT FLOW DATA						
YEAR	Total Design (MGD)	TOTAL ANNUAL FLOW (MG)	AVERAGE DAILY (MGD)	Total Design minus Average Daily (MGD)	Total Available (gpd)	Total Available (EDU's)
2015	0.5	48	0.13	0.37	370,000	2,467
2016	0.5	49	0.13	0.37	370,000	2,467
2017	0.5	48	0.14	0.36	360,000	2,400
2018	0.5	78	0.21	0.29	290,000	1,933
2019	0.5	55.24	0.15	0.35	350,000	2,333
2020	0.5	1.09	0.16	0.34	340,000	2,267
2021	0.5	32.55	0.10	0.40	400,833	2,672
2022	0.5	62.8	0.17	0.33	328,333	2,189
2023	0.5	83.78	0.23	0.27	270,000	1,800
2024	0.5	66.68	0.18	0.32	316,667	2,111
2025	0.5	0	0.00	0.50	500,000	3,333

Total EDU's available between CT and Tuscawilla	
2015	7,133
2016	6,533
2017	6,867
2018	4,667
2019	5,600
2020	6,289
2021	6,922
2022	6,772
2023	6,428
2024	5,133
2025	3,333

Legend:
MGD= Million gallons per day
MG=million gallons
gpd= gallons per day
EDU= Equivalent Dwelling Unit (150 gpd)

2022		
	Total (MG)	AVERAGE (MG)
JANUARY	37.25	1.20
FEBRUARY	33.8	1.21
MARCH	33.28	1.07
APRIL	32.98	1.1
MAY	35.86	1.16
JUNE	29.9	1.00
JULY	29.78	0.96
AUGUST	30.19	1.01
SEPTEMBER	29.62	0.96
OCTOBER	29.02	0.94
NOVEMBER	30.09	1.00
DECEMBER	35.38	1.14
Annual Total	387.15	1.06

2023		
	Total (MG)	AVERAGE (MG)
JANUARY	36.55	1.21
FEBRUARY	28.96	1.03
MARCH	30.46	1.02
APRIL	29.52	0.98
MAY	30.78	0.99
JUNE	29.64	0.99
JULY	31.2	1.01
AUGUST	29.96	1.00
SEPTEMBER	33.38	1.11
OCTOBER	33.02	1.07
NOVEMBER	33.61	1.12
DECEMBER	35.2	1.14
Annual Total	382.28	1.06

2024		
	Total (MG)	AVERAGE (MG)
JANUARY	36.06	1.16
FEBRUARY	34.43	1.19
MARCH	38.99	1.26
APRIL	38.08	1.27
MAY	37.15	1.2
JUNE	32.9	1.1
JULY	34.51	1.11
AUGUST	41.05	2.63
SEPTEMBER	35.37	1.18
OCTOBER	35.46	1.14
NOVEMBER	35.48	1.22
DECEMBER	32.37	1.1
Annual Total	431.85	1.30

2025		
	Total (MG)	AVERAGE (MG)
JANUARY	38.98	1.26
FEBRUARY	34.73	1.24
MARCH	33.84	1.09
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		
Annual Total	107.55	1.20

2022		
	Total (MG)	AVERAGE (MG)
JANUARY	0	0
FEBRUARY	0	0
MARCH	4.34	0.14
APRIL	4.68	0.16
MAY	6.03	0.19
JUNE	6.21	0.21
JULY	6.48	0.21
AUGUST	7.01	0.23
SEPTEMBER	7.11	0.24
OCTOBER	7.27	0.23
NOVEMBER	6.94	0.23
DECEMBER	6.73	0.22
Annual Total	62.8	0.17

2023		
	Total (MG)	AVERAGE (MG)
JANUARY	7.3	0.24
FEBRUARY	6.38	0.23
MARCH	6.41	0.21
APRIL	6.13	0.20
MAY	6.30	0.20
JUNE	6.89	0.23
JULY	7.31	0.24
AUGUST	7.7	0.25
SEPTEMBER	6.98	0.23
OCTOBER	6.92	0.22
NOVEMBER	7.22	0.24
DECEMBER	8.24	0.27
Annual Total	83.78	0.230

2024		
	Total (MG)	AVERAGE (MG)
JANUARY	8.61	0.28
FEBRUARY	8.25	0.28
MARCH	6.28	0.2
APRIL	5.05	0.17
MAY	4.64	0.15
JUNE	5.25	0.18
JULY	4.91	0.16
AUGUST	5.42	0.18
SEPTEMBER	4.87	0.16
OCTOBER	4.5	0.15
NOVEMBER	4.41	0.15
DECEMBER	4.49	0.14
Annual Total	66.68	0.183

2025		
	Total (MG)	AVERAGE (MG)
JANUARY	4.9	0.16
FEBRUARY	4.5	0.17
MARCH	6.19	0.2
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		
Annual Total	15.59	0.177

CHARLES TOWN UTILITY BOARD
WATER TREATMENT PLANT FLOW DATA

CHARLES TOWN WATER PLANT FLOW DATA						
YEAR	Total Design (MGD)	TOTAL ANNUAL FLOW (MG)	AVERAGE DAILY (MGD)	Total Design minus Average Daily (MGD)	Total Available (gpd)	Total Available (EDU's)
2019	2.8	644.32	1.77	1.03	1,034,980	6,900
2020	2.8	615.64	1.68	1.12	1,117,946	7,453
2021	2.8	601.87	1.64	1.16	1,164,627	7,764
2022	2.8	588.97	1.60	1.20	1,204,163	8,028
2023	2.8	602.24	1.63	1.17	1,168,256	7,788
2024	2.8	579.85	1.57	1.23	1,228,525	8,190
2025	2.8	142.51	1.58	1.22	1,215,628	8,104

2022		
	Total (MG)	AVERAGE (MG)
JANUARY	47,918,736	1,545,766
FEBRUARY	43,703,896	1,560,853
MARCH	48,063,482	1,550,435
APRIL	47,294,978	1,525,644
MAY	49,834,352	1,607,560
JUNE	49,111,936	1,584,256
JULY	51,919,787	1,674,832
AUGUST	51,872,384	1,673,303
SEPTEMBER	50,844,952	1,640,160
OCTOBER	50,572,280	1,631,364
NOVEMBER	47,643,899	1,536,900
DECEMBER	50,188,260	1,618,976
Annual Total	588,968,942	1,595,837

2023		
	Total (MG)	AVERAGE (MG)
JANUARY	50,324,969	1,623,386
FEBRUARY	44,512,256	1,589,723
MARCH	51,243,776	1,653,025
APRIL	49,507,092	1,597,003
MAY	51,882,496	1,673,629
JUNE	51,245,216	1,653,071
JULY	53,546,017	1,727,291
AUGUST	53,866,467	1,737,628
SEPTEMBER	51,067,174	1,647,328
OCTOBER	49,781,275	1,605,848
NOVEMBER	47,073,432	1,518,498
DECEMBER	48,189,312	1,554,494
Annual Total	602,239,482	1,631,744

2024		
	Total (MG)	AVERAGE (MG)
JANUARY	48,027,207	1,549,265
FEBRUARY	44,217,320	1,579,190
MARCH	46,432,344	1,497,818
APRIL	44,552,042	1,437,163
MAY	46,432,344	1,497,818
JUNE	52,695,168	1,699,844
JULY	55,816,216	1,800,523
AUGUST	51,158,016	1,650,259
SEPTEMBER	48,673,792	1,570,122
OCTOBER	48,580,272	1,567,106
NOVEMBER	46,786,184	1,509,232
DECEMBER	46,480,137	1,499,359
Annual Total	579,851,042	1,571,475

2025		
	Total (MG)	AVERAGE (MG)
JANUARY	49,081,856	1,583,286
FEBRUARY	45,138,739	1,612,098
MARCH	48,289,664	1,557,731
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		
Annual Total	142,510,259	1,584,372

GLEN HAVEN WATER PLANT FLOW DATA						
YEAR	Total Design (MGD)	TOTAL ANNUAL FLOW (MG)	AVERAGE DAILY (MGD)	Total Design minus Average Daily (MGD)	Total Available (gpd)	
2020	0.0216	1.04	0.01	0.01	13,120	
2021	0.0216	3.06	0.01	0.01	13,213	-
2022	0.0216	2.70	0.01	0.01	14,335	-
2023	0.0216	2.99	0.01	0.01	13,573	-
2024	0.0216	2.68	0.01	0.01	14,441	-
2025	0.0216	0.00	0.00	0.02	21,600	-

2022		
	Total (MG)	AVERAGE (MG)
JANUARY	204,300	6,590
FEBRUARY	178,600	5,761
MARCH	191,200	6,168
APRIL	222,000	7,161
MAY	237,300	7,655
JUNE	286,600	9,245
JULY	301,600	9,729
AUGUST	262,800	8,477
SEPTEMBER	221,600	7,148
OCTOBER	236,700	7,635
NOVEMBER	215,200	6,942
DECEMBER	144,500	4,661
Annual Total	2,702,400	7,265

2023		
	Total (MG)	AVERAGE (MG)
JANUARY	233,300	7,526
FEBRUARY	184,300	5,945
MARCH	218,200	7,039
APRIL	234,800	7,574
MAY	264,800	8,542
JUNE	268,900	8,674
JULY	325,100	10,487
AUGUST	281,300	9,074
SEPTEMBER	265,600	8,568
OCTOBER	233,900	7,545
NOVEMBER	242,500	7,823
DECEMBER	233,500	7,532
Annual Total	2,986,200	8,027

2024		
	Total (MG)	AVERAGE (MG)
JANUARY	234,900	7,577
FEBRUARY	182,100	5,874
MARCH	206,200	6,250
APRIL	224,200	7,232
MAY	210,000	6,774
JUNE	257,889	8,319
JULY	306,700	9,894
AUGUST	217,900	7,029
SEPTEMBER	203,900	6,577
OCTOBER	215,000	6,935
NOVEMBER	211,300	6,816
DECEMBER	205,400	6,626
Annual Total	2,675,489	7,159

2025		
	Total (MG)	AVERAGE (MG)
JANUARY	229,800	7,413
FEBRUARY	191,300	6,832
MARCH	213,100	6,874
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		
Annual Total	634,200	7,040

CAVALAND WATER PLANT FLOW DATA					
YEAR	Total Design (MGD)	TOTAL ANNUAL FLOW (MG)	AVERAGE DAILY (MGD)	Total Design minus Average Daily (MGD)	Total Available (gpd)
2020	0.036	0.59	0.005	0.03	31,210
2021	0.036	1.91	0.01	0.03	30,766
2022	0.036	1.84	0.005	0.03	31,041
2023	0.036	1.79	0.005	0.03	31,186
2024	0.036	0.00	0.00	0.03	31,006
2025	0.036	0.00	0.00	0.04	36,000

2022		
	Total (MG)	AVERAGE (MG)
JANUARY	150,100	4,842
FEBRUARY	127,200	4,103
MARCH	130,300	4,203
APRIL	141,600	4,568
MAY	145,000	4,677
JUNE	155,500	5,016
JULY	173,500	5,597
AUGUST	167,200	5,394
SEPTEMBER	138,500	4,468
OCTOBER	144,300	4,655
NOVEMBER	145,300	4,687
DECEMBER	226,300	7,300
Annual Total	1,844,800	4,959

2023		
	Total (MG)	AVERAGE (MG)
JANUARY	134,900	4,352
FEBRUARY	122,700	3,958
MARCH	140,000	4,516
APRIL	143,100	4,616
MAY	153,400	4,948
JUNE	166,200	5,361
JULY	166,400	5,368
AUGUST	170,400	5,497
SEPTEMBER	163,600	5,277
OCTOBER	140,600	4,535
NOVEMBER	143,200	4,619
DECEMBER	146,400	4,723
Annual Total	1,790,900	4,814

2024		
	Total (MG)	AVERAGE (MG)
JANUARY	155,600	5,019
FEBRUARY	135,000	4,355
MARCH	148,800	4,750
APRIL	155,700	5,023
MAY	153,600	4,955
JUNE	164,300	5,300
JULY	178,100	5,745
AUGUST	177,200	5,716
SEPTEMBER	151,800	4,897
OCTOBER	144,000	4,645
NOVEMBER	134,900	4,352
DECEMBER	160,300	5,171
Annual Total	1,859,300	4,994

2025		
	Total (MG)	AVERAGE (MG)
JANUARY	137,900	4,448
FEBRUARY	125,700	4,489
MARCH	133,100	4,294
APRIL		
MAY		
JUNE		
JULY		
AUGUST		
SEPTEMBER		
OCTOBER		
NOVEMBER		
DECEMBER		
Annual Total	396,700	4,410

Legend:
MGD= Million gallons per day
MG=million gallons
gpd= gallons per day
EDU= Equivalent Dwelling Unit (150 gpd)

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Chairman Report

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

April 9, 2025

Attachments:

Board Report 04.09.25.pdf

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT

========== FUND TOTALS ==========		
50	WATER FUND	171,733.50
60	SEWER FUND	229,954.06
	GRAND TOTAL:	401,687.56

TOTAL PAGES: 7

APPROVED BY: _____

APPROVED BY: _____

This Packet:	$ 401,687.56
C.Mao water damage, check dated 3/26/2025:	790.00
Security Deposit Refund, check dated 3/26/2025:	50.02
B&G Painting, check dated 4/02/2025:	4,475.00
Total:	$ 407,002.58

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT		AMOUNT
U.S. BANK	OFFICE_SUPPLIES	WATER FUND	WATER		479.58
	SUBSCRIPTIONS	WATER FUND	WATER		1,249.57
	INTAKE_SUPPLIES	WATER FUND	WATER		281.39
	WTP_SUPPLIES	WATER FUND	WATER		791.37
	GH/CAV_SUPPLIES	WATER FUND	WATER		302.78
	MAINT_SUPPLIES	WATER FUND	WATER		2,468.18
	MAINT_SERVICES	WATER FUND	WATER		40.03
	MAINT_METERS	WATER FUND	WATER		55.57
	TRAINING	WATER FUND	WATER		1,100.00
	UNIFORMS	WATER FUND	WATER		163.20
	TRANSPORTATION	WATER FUND	WATER		335.31
	OFFICE_SUPPLIES	SEWER FUND	SEWER		586.03
	SUBSCRIPTIONS	SEWER FUND	SEWER		1,249.58
	CLLCTN_SYSTM_SUPPLIES	SEWER FUND	SEWER		705.13
	PMPSTN_SUPPLIES	SEWER FUND	SEWER		142.84
	TRMNT_&_DSPSL_SUPPLIES	SEWER FUND	SEWER		6,882.69
	CTWWTP_MAINT	SEWER FUND	SEWER		2,713.52
	TRAINING	SEWER FUND	SEWER		1,955.52
	UNIFORMS	SEWER FUND	SEWER		290.17
	TRANSPORTATION	SEWER FUND	SEWER		2,713.41
	MISC_GENERAL_EXPNS	SEWER FUND	SEWER		61.04
				TOTAL:	24,566.91
HD SUPPLY INC	GASKET	WATER FUND	WATER		234.09
	COVERALLS	SEWER FUND	SEWER		560.77
				TOTAL:	794.86
VITAL SIGNS	HUNTFIELD WA TANK SIGN	WATER FUND	WATER		40.00
				TOTAL:	40.00
WIRELESS NETWORKS GROUP, INC.	MISC SVCS, MAR	WATER FUND	WATER		5,450.00
				TOTAL:	5,450.00
WV AMERICAN WATER	SHUTOFFS / RECONNECTS	SEWER FUND	NON-DEPARTMENTAL		440.00
				TOTAL:	440.00
WV STATE AUDITOR'S OFFICE	PRJCT# 19908, PERRY & ASSO	WATER FUND	WATER		380.00
	PRJCT# 19908, PERRY & ASSO	SEWER FUND	SEWER		380.00
				TOTAL:	760.00
WV WATER DEVELOPMENT AUTHORITY	#2017-175 INFRSCTR FNDPRJC	SEWER FUND	NON-DEPARTMENTAL		1,364.82
				TOTAL:	1,364.82

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
	502-000042	WATER FUND	NON-DEPARTMENTAL	83.51
	504-500022	WATER FUND	NON-DEPARTMENTAL	93.43
	514-150096	WATER FUND	NON-DEPARTMENTAL	66.29
	514-150142	WATER FUND	NON-DEPARTMENTAL	42.60
	514-150204	WATER FUND	NON-DEPARTMENTAL	30.81
	514-150205	WATER FUND	NON-DEPARTMENTAL	68.32
	514-150207	WATER FUND	NON-DEPARTMENTAL	18.95
	514-150208	WATER FUND	NON-DEPARTMENTAL	14.99
	514-150209	WATER FUND	NON-DEPARTMENTAL	70.31
			TOTAL:	4,141.59
THOMAS NALLS	FEB TANK LOT RENT	WATER FUND	NON-DEPARTMENTAL	4,044.02
			TOTAL:	4,044.02
LOGICAL CONCEPTS, INC	PS MONITORING	SEWER FUND	SEWER	333.00
			TOTAL:	333.00
PATTON BUILDING SERVICES INC	CLEANING MAR	WATER FUND	WATER	416.50
	CLEANING MAR	SEWER FUND	SEWER	416.50
			TOTAL:	833.00
CORPORATION OF RANSON	MAR UT COLLECTIONS	WATER FUND	NON-DEPARTMENTAL	4,098.19
			TOTAL:	4,098.19
RUMMEL, KLEPPER & KAHL, LLP	TO19 2021 CLLCTNSYSTM PRJC	SEWER FUND	NON-DEPARTMENTAL	3,932.69
			TOTAL:	3,932.69
SHENANDOAH SALES & SERVICE, INC.	SEWER VEHICLE SERVICE	SEWER FUND	SEWER	177.41
			TOTAL:	177.41
SMITH & LOVELESS INC	SENSOR PROX	SEWER FUND	SEWER	766.57
			TOTAL:	766.57
BACKFLOW PARTS CONNECTION/SPECIALTY VA	BACKFLOW TEST KIT RECERTIF	WATER FUND	WATER	119.00
			TOTAL:	119.00
STEPTOE & JOHNSON PLLC	GENERAL EMPLOYER COUNSELIN	WATER FUND	WATER	243.75
	GENERAL ENVIRONMENTAL	WATER FUND	WATER	9,800.00
			TOTAL:	10,043.75
GERALD TAYLOR CO., INC.	PUMP / TRANSPORT	WATER FUND	WATER	996.03
	PUMP / TRANSPORT	WATER FUND	WATER	942.42
	PUMP / TRANSPORT	WATER FUND	WATER	306.25
	TRANSPORT	SEWER FUND	SEWER	727.65
	SUPERVAC	SEWER FUND	SEWER	2,292.62
	TRANSPORT	SEWER FUND	SEWER	1,049.40
	SUPERVAC	SEWER FUND	SEWER	2,917.27
	SUPERVAC	SEWER FUND	SEWER	448.34
			TOTAL:	9,679.98
TEK ADVISORS LLC	IT CONSULTING	WATER FUND	WATER	440.00
	IT CONSULTING	SEWER FUND	SEWER	440.00
			TOTAL:	880.00
THE CI THORNBURG CO, INC.	METERS & CHAMBERS	WATER FUND	WATER	18,320.40
			TOTAL:	18,320.40

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
	709-000054	WATER FUND	NON-DEPARTMENTAL	34.14
	709-000058	WATER FUND	NON-DEPARTMENTAL	30.79
	710-000064	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000065	WATER FUND	NON-DEPARTMENTAL	19.38
	710-000071	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000072	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000073	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000075	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000077	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000121	WATER FUND	NON-DEPARTMENTAL	17.98
	710-000185	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000186	WATER FUND	NON-DEPARTMENTAL	18.94
	710-000187	WATER FUND	NON-DEPARTMENTAL	18.94
	712-000026	WATER FUND	NON-DEPARTMENTAL	24.77
	712-000030	WATER FUND	NON-DEPARTMENTAL	18.95
	711-000039	WATER FUND	NON-DEPARTMENTAL	53.08
	101-000605	WATER FUND	NON-DEPARTMENTAL	26.28
	101-001235	WATER FUND	NON-DEPARTMENTAL	79.60
	101-001530	WATER FUND	NON-DEPARTMENTAL	88.03
	104-001515	WATER FUND	NON-DEPARTMENTAL	54.49
	106-001110	WATER FUND	NON-DEPARTMENTAL	54.53
	106-001490	WATER FUND	NON-DEPARTMENTAL	68.34
	108-000007	WATER FUND	NON-DEPARTMENTAL	45.68
	108-000223	WATER FUND	NON-DEPARTMENTAL	61.18
	108-000118	WATER FUND	NON-DEPARTMENTAL	83.25
	109-000064	WATER FUND	NON-DEPARTMENTAL	78.56
	109-000069	WATER FUND	NON-DEPARTMENTAL	63.26
	109-000070	WATER FUND	NON-DEPARTMENTAL	76.82
	109-000072	WATER FUND	NON-DEPARTMENTAL	67.14
	109-100024	WATER FUND	NON-DEPARTMENTAL	38.09
	109-100025	WATER FUND	NON-DEPARTMENTAL	80.51
	109-100029	WATER FUND	NON-DEPARTMENTAL	47.75
	401-000767	WATER FUND	NON-DEPARTMENTAL	73.92
	109-100016	WATER FUND	NON-DEPARTMENTAL	82.42
	109-100021	WATER FUND	NON-DEPARTMENTAL	26.47
	111-000039	WATER FUND	NON-DEPARTMENTAL	56.46
	111-000054	WATER FUND	NON-DEPARTMENTAL	54.49
	111-000055	WATER FUND	NON-DEPARTMENTAL	32.75
	111-000056	WATER FUND	NON-DEPARTMENTAL	32.75
	111-000057	WATER FUND	NON-DEPARTMENTAL	30.79
	111-000058	WATER FUND	NON-DEPARTMENTAL	46.57
	111-000059	WATER FUND	NON-DEPARTMENTAL	26.82
	111-000060	WATER FUND	NON-DEPARTMENTAL	26.82
	111-000061	WATER FUND	NON-DEPARTMENTAL	44.60
	111-000221	WATER FUND	NON-DEPARTMENTAL	32.73
	111-000223	WATER FUND	NON-DEPARTMENTAL	26.80
	111-000225	WATER FUND	NON-DEPARTMENTAL	44.58
	111-000230	WATER FUND	NON-DEPARTMENTAL	48.53
	111-000232	WATER FUND	NON-DEPARTMENTAL	34.71
	111-000236	WATER FUND	NON-DEPARTMENTAL	42.62
	201-001125	WATER FUND	NON-DEPARTMENTAL	70.39
	203-000900	WATER FUND	NON-DEPARTMENTAL	43.77
	301-000050	WATER FUND	NON-DEPARTMENTAL	67.10
	301-000445	WATER FUND	NON-DEPARTMENTAL	78.75
	402-000163	WATER FUND	NON-DEPARTMENTAL	32.32
	402-000295	WATER FUND	NON-DEPARTMENTAL	98.03

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
			TOTAL:	15,191.50
HACH COMPANY	BNCH SVC & DR3900	SEWER FUND	SEWER	8,001.50
			TOTAL:	8,001.50
HIGH HORIZONS FARM, INC.	STRAW BUNDLE	WATER FUND	WATER	120.00
			TOTAL:	120.00
INWOOD QUARRY, INC.	C2 & I8 PICKUPS: 3/21/25	WATER FUND	WATER	149.43
	C2 & I8 PICKUPS: 3/21/25	WATER FUND	WATER	149.42
	C2 & I8 PICKUPS: 3/21/25	SEWER FUND	SEWER	338.12
	I8 PICKUP: 3/24/25	SEWER FUND	SEWER	351.85
			TOTAL:	988.82
IRON MOUNTAIN, INC	SHREDDING, STORAGE	WATER FUND	WATER	986.71
	SHREDDING, STORAGE	SEWER FUND	SEWER	986.71
			TOTAL:	1,973.42
JACKSON CONCRETE CORPORATION	112 E WASHINGTON ST REPAIR	SEWER FUND	SEWER	5,000.00
			TOTAL:	5,000.00
JEFFERSON PUBLISHING COMPANY	3/20 & 3/27 ADS: WTP MODS	WATER FUND	WATER	140.34
			TOTAL:	140.34
KAY CASTO & CHANEY PLLC	CLLCTNSYSTM: THRU 2/28/25	SEWER FUND	NON-DEPARTMENTAL	682.50
			TOTAL:	682.50
KINSLEY CONSTRUCTION, LLC	GRAVITY LINE: OH TO HNTWL	SEWER FUND	NON-DEPARTMENTAL	50,668.20
			TOTAL:	50,668.20
J.C. KUNKLE & ASSOCIATES, A.C.	MIDDLEWAY PROJECT	WATER FUND	WATER	1,950.00
			TOTAL:	1,950.00
MCKINNEY'S AUTO REPAIR	WATER VEHICLE SERVICE	WATER FUND	WATER	174.11
			TOTAL:	174.11
METLIFE, INC	WEAVER	WATER FUND	WATER	60.50-
	AD&D PAYABLE	WATER FUND	WATER	11.17
	LIFE PAYABLE	WATER FUND	WATER	70.20
	LTD PAYABLE	WATER FUND	WATER	346.76
	STD PAYABLE	WATER FUND	WATER	540.39
	AD&D1 PAYABLE	SEWER FUND	SEWER	0.40
	AD&D PAYABLE	SEWER FUND	SEWER	9.91
	LIFE1 PAYABLE	SEWER FUND	SEWER	2.54
	LIFE PAYABLE	SEWER FUND	SEWER	62.40
	LTD PAYABLE	SEWER FUND	SEWER	307.23
	STD PAYABLE	SEWER FUND	SEWER	511.90
			TOTAL:	1,802.40
SECURITY DEPOSIT REFUNDS	705-001920	WATER FUND	NON-DEPARTMENTAL	804.30
	109-000051	WATER FUND	NON-DEPARTMENTAL	61.78
	109-000059	WATER FUND	NON-DEPARTMENTAL	61.78
	109-000057	WATER FUND	NON-DEPARTMENTAL	61.78
	109-000060	WATER FUND	NON-DEPARTMENTAL	61.78
	708-000720	WATER FUND	NON-DEPARTMENTAL	28.57
	709-000044	WATER FUND	NON-DEPARTMENTAL	34.14

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT		AMOUNT
	PM: CLARENCE DR	SEWER FUND	SEWER		586.59
	PM: CRAIGHILL	SEWER FUND	SEWER		507.09
	PM: TWWTP	SEWER FUND	SEWER		1,764.63
	PM: HUNTFIELD PS	SEWER FUND	SEWER		818.94
				TOTAL:	4,475.54
D.R. HORTON, INC.	SEWER UPSIZING PER AMEA	SEWER FUND	NON-DEPARTMENTAL		10,000.00
				TOTAL:	10,000.00
DELL MARKETING L.P.	MONITORS	WATER FUND	WATER		277.48
	MONITORS	SEWER FUND	SEWER		277.48
				TOTAL:	554.96
WV DEPT OF HEALTH & HUMAN SERVICES	FLOURIDE TEST	WATER FUND	WATER		20.00
				TOTAL:	20.00
DODSON SEPTIC SERVICES, LLC	HAUL 1000G TUSC	SEWER FUND	SEWER		75.00
	HAUL 2500G TUSC	SEWER FUND	SEWER		187.50
	HAUL / DISPOSE 500G KEYES	SEWER FUND	SEWER		97.50
	HAUL / DISPOSE 1000G BAILE	SEWER FUND	SEWER		75.00
	HAUL / DISPOSE 1500G CLARE	SEWER FUND	SEWER		292.50
				TOTAL:	727.50
ENCOVA INSURANCE	INSTALLMENT	WATER FUND	WATER		1,539.20
	INSTALLMENT	SEWER FUND	SEWER		1,420.80
				TOTAL:	2,960.00
EUROFINS ENVIRONMENT TESTING AMERICA H	TESTING: BIOSOLIDS	SEWER FUND	SEWER		851.00
				TOTAL:	851.00
FIRST CITIZENS BANK & TRUST CO	PLOTTER	WATER FUND	NON-DEPARTMENTAL		2,857.74
	PLOTTER	WATER FUND	WATER		101.26
				TOTAL:	2,959.00
FREDERICKTOWNE LABS INC	TESTING	SEWER FUND	SEWER		5,733.50
	TESTING	SEWER FUND	SEWER		758.00
				TOTAL:	6,491.50
GUTTMAN ENERGY	W/E 3/23/25	WATER FUND	WATER		575.89
	W/E 3/30/25	WATER FUND	WATER		598.13
	W/E 3/23/25	SEWER FUND	SEWER		941.19
	W/E 3/23/25	SEWER FUND	SEWER		304.87
	W/E 3/30/25	SEWER FUND	SEWER		868.25
	W/E 3/30/25	SEWER FUND	SEWER		245.97
				TOTAL:	3,534.30
GWIN DOBSON & FOREMAN INC	WWTP UPGRADES	SEWER FUND	NON-DEPARTMENTAL		8,764.70
	WW CLCTN SYS PRJCT RPR SVC	SEWER FUND	NON-DEPARTMENTAL		5,254.60
				TOTAL:	14,019.30
GRANICUS	CLEARCASTER YRLYRNWL	WATER FUND	WATER		850.65
	CLEARCASTER YRLYRNWL	SEWER FUND	SEWER		850.65
				TOTAL:	1,701.30
GREENRIDGE CONTRACTORS INC	SWR LATERAL BREWERY XING	SEWER FUND	SEWER		8,668.70
	SWR LATERAL 112 E WASHINGT	SEWER FUND	SEWER		6,522.80

VENDOR SORT KEY	DESCRIPTION	FUND	DEPARTMENT	AMOUNT
3RD TIME TRUCKING	HAULING	WATER FUND	WATER	147.04
	HAULING	WATER FUND	WATER	147.03
	HAULING	WATER FUND	WATER	143.46
	HAULING	WATER FUND	WATER	143.47
	HAULING	WATER FUND	WATER	72.13
	HAULING	WATER FUND	WATER	72.14
	HAULING	SEWER FUND	SEWER	136.57
	HAULING	SEWER FUND	SEWER	143.01
			TOTAL:	1,004.85
AMERIGAS PROPANE LP	TANK RENTAL: SPRUCE HILL N	SEWER FUND	SEWER	172.88
			TOTAL:	172.88
JP & RF BURNS PARTNERSHIP	MAR LOADS - 66	SEWER FUND	SEWER	12,012.00
			TOTAL:	12,012.00
CHARLES TOWN SEWER	MARCH FUNDING	SEWER FUND	NON-DEPARTMENTAL	49,395.17
			TOTAL:	49,395.17
CHARLES TOWN UTILITY BOARD	APRIL FUNDING	WATER FUND	NON-DEPARTMENTAL	17,257.79
			TOTAL:	17,257.79
CHARLES TOWN WATER	MARCH FUNDING	WATER FUND	NON-DEPARTMENTAL	37,471.32
			TOTAL:	37,471.32
CHS TRAFFIC CONTROL SERVICES, INC.	S GEORGE ST: 2/26, 3/12, 3	WATER FUND	WATER	2,274.00
			TOTAL:	2,274.00
CITY NATIONAL BANK	LOCKBOX SVCS: MAR	WATER FUND	WATER	118.36
	LOCKBOX SVCS: MAR	SEWER FUND	SEWER	118.36
			TOTAL:	236.72
CITY OF CHARLES TOWN	ANNUAL LOAN PAYMENT	WATER FUND	NON-DEPARTMENTAL	10,180.00
	UB COLLECTIONS MAR	WATER FUND	NON-DEPARTMENTAL	21,243.14
	APR RENT@ 661 S GEORGE ST	WATER FUND	WATER	1,275.00
	ANNUAL LOAN PAYMENT	SEWER FUND	NON-DEPARTMENTAL	2,636.00
	APR RENT@ 661 S GEORGE ST	SEWER FUND	SEWER	1,275.00
			TOTAL:	36,609.14
COOLEY PUBLIC STRATEGIES, LLC	APR 2025 PROFF SVCS FEE	WATER FUND	WATER	2,500.00
	APR 2025 PROFF SVCS FEE	SEWER FUND	SEWER	2,500.00
			TOTAL:	5,000.00
CORE & MAIN	VARIOUS MATERIALS	WATER FUND	WATER	1,761.84
	CPLG	WATER FUND	WATER	572.34
	CPLG	WATER FUND	WATER	458.64
			TOTAL:	2,792.82
COYNE CHEMICAL	CP - 837	WATER FUND	WATER	6,282.91
	ZETAG 8848 FS	SEWER FUND	SEWER	5,227.58
			TOTAL:	11,510.49
CSX TRANSPORTATION, INC	ANNUAL PIPELINE FEES	WATER FUND	WATER	177.00
			TOTAL:	177.00
CUMMINS, INC	PM: BURNS ST BOOSTER	WATER FUND	WATER	798.29

CHARLES TOWN UTILITY BOARD

Wednesday, April 9, 2025

Regular Meeting

661 South George Street
Charles Town, WV 25414

Next Meeting - April 23, 2025 at 4:00 P.M.