ABINGTON TOWNSHIP

AUGUST 31, 2022

COMPREHENSIVE PLAN CONSISTENCY COMMITTEE

TOWNSHIP OF ABINGTON

COMPREHENSIVE PLAN CONSISTENCY COMMITTEE

A G E N D A
August 31, 2022
7:00 PM

There are three ways for the public to participate in the meeting: online, by phone, or an in-person viewing room. Residents can access the meeting online, by a computer, iPad, iPhone or Android at https://us06web.zoom.us/j/84064759553. This link will enable residents to hear the meeting and see presentations. There will be no video capabilities. Residents, who are unable to join online, can listen to the meeting by calling 1-929-436-2866 and entering the meeting ID number 840-6475-9553 when prompted. Residents, who are unable to join online or by phone, can watch, hear, and participate in the meeting in a viewing room at the Abington Township Municipal Building located at 1176 Old York Road, Abington, PA 19001.

CALL TO ORDER

CONSIDER APPROVAL OF MINUTES

a. Motion to approve the Minutes from the May 24, 2022 Comprehensive Plan Consistency Committee.

UNFINISHED BUSINESS

NEW BUSINESS

a. Review and consider an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 146 [Subdivision and Land Development], by amending and restating Article III [Plan Application Requirements] and Article IV [Plan Review Procedures] and adding Article VIII [Waiver of Land Development] to create additional exemptions of the Land Development process, to create a process for notification of property owners and residents regarding the review of Land Development application by the Planning Commission, and to create a process for a waiver of Land Development.

b. Review and discuss the request by Toll Mid-Atlantic, L.P. Company, Inc. (Toll Brothers) for a Zoning Text Amendment to create the AR - Age-Restricted Carriage Home Overlay District and a Zoning Map Amendment to rezone certain parcels on the northeast side of Fox Chase Road as AR - Age-Restricted Carriage Home overlay.

PUBLIC COMMENT ON NON-AGENDA ITEMS ONLY

ADJOURNMENT

BOARD POLICY ON PUBLIC PARTICIPATION

For Information Purposes Only

The Township shall conduct business in accordance with the Commonwealth of Pennsylvania Laws governing the conduct of public meetings and only establish guidelines that shall govern public participation at meetings consistent with the law.

Each commenter shall:

- Direct their comments to the Presiding Officer;
- Speak from the podium or into a microphone designated by the presiding officer;
- State their name for the record;
- Either orally or in writing provide their address for the record;
- Have a maximum of three minutes to make their comments. Each commenter when speaking to a specific agenda item, is to keep their comments relative to that identified agenda item;
- Speak one time per agenda item;
- When commenting on non-agenda items, the commenter is to keep their comments related to matters of the Township of Abington, Montgomery County, Pennsylvania.
- State a question to the Presiding Officer after all commenters have spoken, and;
- Be seated after speaking or upon the request of the presiding officer;
- Not engage in debate, dialogue or discussion;
- Not disrupt the public meeting, and;
- Exercise restraint and sound judgement in avoiding the use of profane language, and the maligning of others.

The stated meeting of the Comprehensive Plan Consistency Committee of the Board of Commissioners of the Township of Abington was held on Tuesday, May 24, 2022, via webinar with Chairman Commissioner Thompson presiding.

CALL TO ORDER: 7:02 p.m.

ROLL CALL: Present: Commissioners Chairman THOMPSON, Vice Chairman DiPLACIDO, BOWMAN, ROTHMAN
Excused: Commissioner VAUGHN

Also Present: Township Manager MANFREDI
Township Solicitor CLARKE
Commissioners SCHREIBER, SPIEGELMAN, WINEGRAD

A MOMENT OF SILENCE WAS HELD IN REMEMBERANCE OF THE FOURTEEN CHILDREN AND ONE TEACHER WHO LOST THEIR LIVES FROM A SENSELESS ACT OF VIOLENCE AT A SCHOOL IN TEXAS TODAY

ANNOUNCEMENT:

Commissioner Thompson announced that this meeting will be the first of several meetings on the proposed project as it moves forward to a vote by the full Board of Commissioners. There will be three opportunities for public comment, and while this project has drawn interest by the public, he asked for comments to be held to three minutes to allow others the opportunity to speak.

Although there have been numerous neighborhood meetings on the proposed project, many of the Commissioners are hearing the details for the first time, so public comments will be just that, and there will be no response to questions until we hear from the applicant and digest their proposal.

CONSIDER APPROVAL OF MINUTES:

Commissioner Thompson made a MOTION, seconded by Commissioner Rothman to approve the minutes of the Comprehensive Plan Consistency Committee Organization Meeting of January 19, 2022, and the meeting of February 2, 2022.

MOTION was ADOPTED 4-0.

UNFINISHED BUSINESS: None.

NEW BUSINESS:

Consider the request by Toll Mid-Atlantic, L.P. Company, Inc. i.e., Toll Brothers, as it pertains to the potential redevelopment of a property situated at 711 Fox Chase Road ("St. Basil's") and their request for a proposed zoning text and map amendment creating an age-restricted carriage home overlay district:

Mr. Lou Colagreco, Attorney representing Toll Brothers, said this is the St. Basil's property that Toll Brothers has under agreement. There has been a series of neighborhood meetings that began a year ago last May and presentations were made on three residential concepts via Zoom, and then the applicant revised the plan based on feedback. The draft ordinance calls for the Community Service District to remain in place and this would be an overlay, which is another way to develop the property with age-restricted housing.

Plan was presented of 150 carriage homes with density is 3.3-3.4 dwelling units per acre noting the rear of the site is environmentally sensitive in which stormwater management is an issue.

A previous plan showed the potential for interconnectivity with adjacent residential communities, but the residents do not want it, so that proposal was rejected. However, there may be the possibility for emergency access on the side streets, but they are substandard per ordinance requirements.

There are two access points on Fox Chase Road and the plan showed an extensive 125 ft. buffer around the perimeter of the tract. There was discussion about trails around the perimeter and Toll Brothers would be happy to do a trail system or 125 ft. planted landscaped buffer surrounding the tract. Truck turning templates for emergency vehicles were shown on the plan and proposed subdivision meets open space requirements of the CS District.

Mr. Brian Thierrin, representing Toll Brothers, added that proposed carriage homes would be 30 ft. wide with first floor master bedrooms and amenities of a clubhouse and pool.

Mr. Jeff Madden, PE with ESE Consultants, representing the applicant, stated that stormwater management facilities would be designed per requirements of PADEP, Montgomery County Conservation District and the Township's Stormwater Management Ordinance. 75% of the area flows towards the Pennypack Creek tributary and Kirkwood Avenue, and the other 25% flows towards Fox Chase Road and the Tookany/Tacony-Frankford watershed. As shown on the plan, there is a large basin that would reduce and treat any water before going towards Pennypack Creek, and in the front of the site, there are two smaller basins that will capture, treat, and release the stormwater flowing towards Fox Chase Road's storm system, ultimately flowing towards the TTF watershed.

Mr. Colagreco added that currently there is no stormwater management onsite, so the benefit of this redevelopment would be to control the unabated flow into the creek.

Ms. Emily Stewart, Landscape Architect, representing the applicant, said there will be a 15 ft. rear yard for each of the carriage homes that may have a deck or patio area and small landscaping, and the medium intensity landscape buffer will consist of Evergreens, shade trees ornamental trees and shrubs that will screen the development from adjacent neighbors. Also, the applicant would like input on what would be best for the 85 ft. wide HOA area such as whether it should be lawn or a walking trail and then there is 125 ft. buffer area that will be maintained by the HOA.

Mr. Thierrin presented a rendering of the proposed units with one and two car garages, three bedrooms and 2.5-3.5 bathrooms and either a small deck or patio in the rear. If this development moves forward to the land development stage, the design may need to be tweaked and possibly radiuses will need to be widen for emergency vehicles to circulate through the neighborhood.

Mr. Colagreco added that the applicant submitted a fiscal impact analysis as well as a traffic analysis.

Commissioner Thompson called on Commissioner Rothman.

Commissioner Rothman thanked the residents of Ward 3 for their passion for our neighborhood as well as their time, involvement, and for dissecting every document that has been provided. This is step one of the formalities of the process and there will be ample time for public comment and more give and take. Tonight's presentation is for this committee to decide what happens next, and he is aware of the desires of the community.

Commissioner Thompson asked for any other comments from Commissioners.

Commissioner Bowman commented that he would hate to see all those garages upfront but understands there is no easy solution as to where to park one or two vehicles. As a bicyclist, he likes neighborhood integration; however, he understands the neighbors' concerns about traffic. So out of the three proposals, this is the one that is the most pleasing.

Commissioner Thompson said regarding the MCPC's response to the proposed text amendment, there was a comment about this potentially being spot zoning, and the proposed overlay does appear to pertain to one parcel, and he asked Solicitor Clarke to clarify whether it is spot zoning.

Solicitor Clarke replied after reviewing the information, at this time, he does not believe this would qualify as spot zoning.

Ms. Allison Lee, Township Engineer, said we reviewed the proposed text amendment, which is comparable to the existing Senior Neighborhood Residential District, so why not modify the SNR rather that create a new age-restricted carriage home district.

Mr. Colagreco replied that we could modify the existing SNR District, although the concern is taking a community that is conforming and make it nonconforming because we would need to change the area and bulk requirements and the current SNR does not permit these types of units as proposed; also, the current SNR District only calls for a tract buffer of 50 ft. and proposed is 125 ft., but if the direction to the applicant is to modify the SNR, that can be done.

Commissioner Thompson made a MOTION, seconded by Commissioner Bowman to move forward without recommendation the request by Toll Mid-Atlantic, L.P. Company, Inc. i.e., Toll Brothers, as it pertains to the potential redevelopment of a property situated at 711 Fox Chase Road ("St. Basil's") and their request for a proposed zoning text and map amendment creating an age-restricted carriage home overlay district to a Board of Commissioners Regular Meeting on a date to be scheduled.

Commissioner Rothman noted the importance of community engagement throughout the process, and we will do our best to respond to questions.

Commissioner Thompson asked for any public comments.

Mike Tobin, resident, said the residents on either side of St. Basil's do not want the little undersized connector roads connected to our neighborhood, and he is opposed to the zoning of this property for triplexes, duplexes, twins, quads, or rowhomes.

Ray Vandergrift, resident, said he does not want any connector roads, and he and all the neighbors want nothing to do with those various types of housing; also, regarding the buffer, we do not want a "parade" behind our property lines, so if anyone wants a walking or bike trail, they can go to Alverthorpe Road across the street.

Liz Kerr, resident, expressed concern about the proposed 1.9-acre basin that would be behind her home collecting water drawing mosquitoes, so will it be a dry or wet basin, and will there be fencing?

Mr. Madden replied that the proposed basin will infiltrate stormwater into the ground per requirements of PADEP and the Township's Stormwater Management Ordinance, and the requirements only allow 72 hours after a storm for there to be any standing water to help mitigate mosquitoes, so our basins will be designed accordingly, and there will be a fence around the basin to differentiate from the surrounding area along with planted water-tolerant vegetation to create a buffer from the surrounding area.

Janie Burstein Boyle, resident, asked when would construction begin, how long would it last, and what are the price points lowest to highest for each unit?

Mr. Thierrin replied it is a lengthy process to get to an approved plan. Earth work and improvements of installing the basin and roadway would take about one year and then build out could take four to five years. Price point in today's market would be approximately $600,000.

Pearse Kerr, resident, expressed concern about the environmental effects on his property from the basin such as standing water causing mosquitoes, pesticides, and flooding. Will the basin be covered, will there be permanent maintenance, and what type of landscaping? Also, he is opposed to the through-roads as well as any triplexes and quadplexes.

Mr. Madden replied that the infiltration basins would be owned and maintained by the HOA, who is responsible for the facility as well as the landscaping and there will be a fence around all basins.

PADEP, the Montgomery County Conservation District, and the Township have requirements on the amount of time for standing water and they will be designed to be dry detention basins, so there is no need for spraying of pesticides. During the land development process this will be reviewed by a multitude of professionals adhering to the requirements to reduce flow coming from the site.

John Tracey, resident, expressed concern about changing the zoning to benefit the builder and 150 homes is too many, and if each has two vehicles, there will be more traffic on the local roads.

Vince Kelly, resident, commented that he does not want the cross-through roads and more traffic. He also wants to be sure that the basins are maintained properly and that the open space between the rear of the properties on Kirkwood and Forrest Avenues to be flat with grass and no walking or bike path.

A resident commented that he does not want the stub roads and they should never be opened because he does not want the traffic from it, and what guarantee does residents have that the Township will not open those roads in the future.

Solicitor Clarke replied that this application will be presented before the full Board of Commissioners and the developer will need to build in conformance with any approved plans.

Commissioner Rothman added that there is no way to guarantee that anything would ever change many years down the road; however, he has heard the sentiment from the neighbors about not wanting the stub roads to be opened and the residents have his assurance that he will always be against those roads being opened. And Toll Brothers is not pushing for that to be done anyways.

Manager Manfredi said this will be a lengthy process, and if this application is approved as a zoning amendment and approved as a land development plan that does not include access roads, the only way for that to change in the future is for it to go back through the same public process.

Nancy Krenzel, resident, said her home is located at 777 Fox Chase Road and her side yard is right up against St. Basil's property and she is thrilled with the extended boundary that is going to be presented and hopes that remains true. She asked for an explanation on spot zoning.

Mr. Mike Narcowich, County Planner with MCPC, replied spot zoning is treating one small area of land differently than other nearby areas by rezoning without any rationalization for justifying that difference.

Lora Lehmann, resident, asked for documents to be provided to the residents a week in advance of the meeting. She asked what meeting this will go to next and how residents will be notified as well as for a page on St. Basil's with links from previous meetings.

Manager Manfredi replied at a certain point in time if the Board of Commissioners decides to consider this a land development plan, then we will add a page to the Township's website; also, this information can be found on the land development page of the website.

A resident from Fox Chase Manor commented that he has lived in this neighborhood for 35 years, and these homes were originally built to be used for summer homes for Philadelphian's, so these streets were never built for today's volume of traffic. There is a lot of cut-through traffic causing Fox Chase, Cedar, and Huntingdon Pike to become parking lots at rush hour, so those who expressed concern about streets being opened for through-traffic are legitimate concerns. Also, he suggested that "Stop" and flashing lights to be installed during the time of construction of this development to dissuade traffic. Also, if the basins do not hold up Montgomery and Seminole Avenues will become a "pool of water."

Mr. Madden replied there will be two infiltration basins at the front of the site that will discharge the stormwater towards the existing Fox Chase Road storm sewer network.

A resident from Forrest Avenue said she absolutely does not want cut-through traffic on her side of the neighborhood. Also, currently, the grass is getting very high on the St. Basil's property and there will be issues with rodents, bugs, etc.

Commissioner Thompson reminded the applicant that the Township has a property maintenance code that needs to be followed.

Mr. Colagreco replied that he will relay those comments to the school who still owns the property about getting it cleaned up.

Justin Poor, resident, commented that he is a high school student and wants to see more development because the more there is the more affordable it will be for him to live there in the future. Also, he suggested a pedestrian-only connection between the new development and existing neighborhood as he cares about a green future with more people walking and less traffic.

Cakky Evans, EAC member, questioned whether the applicant will consider using elements of sustainability or green building design as well as solar and electrified buildings so as not to use natural gas for the HVAC system; also, electric vehicle charging stations. And if this does move through the process would the applicant consider working with the EAC.

Mr. Thierrin replied yes, we are willing to meet with the EAC during the process.

Lance Weatherly, resident, said he would like to be sure there will be BMPs along the southern side of the site. Also, the applicant will be providing buffers and green space around the property as well as stormwater facilities, and it is good to see that the development is not encroaching into any flood areas along the tributary. And he agrees with Township Engineer's comments regarding curve roads and traffic calming, etc.

A resident commented that the design of the new houses/garages should include separate circuits just for electric vehicles, so we will not have to look at charging stations around the new development, which should be at the expense of Toll Brothers or the HOA.

MOTION was ADOPTED 4-0.

PUBLIC COMMENT NON-AGENDA ITEMS ONLY:

Lora Lehmann, resident, expressed concern about "website fixes."

Mike Tobin, resident, asked for clarification on what was approved tonight.

Commissioner Thompson replied only the proposed zoning text/map amendment will move forward to the full Board of Commissioners and not the plan.

Cakky Evans, commented that the 2007 Comp Plan requires new construction to be built for LEED certification and will that be enforced?

Manager Manfredi requested that question be held until the Board of Commissioners meeting.

ADJOURNMENT: 9:02 p.m.

Respectfully submitted,

Liz Vile, Minutes Secretary

COMPREHENSIVE PLAN CONSISTENCY COMMITTEE

AGENDA ITEM

August 31, 2022

DATE

AGENDA ITEM NUMBER

Administration

DEPARTMENT

FISCAL IMPACT
Cost > $10,000
Yes ☐ No ☑

PUBLIC BID REQUIRED
Cost > $20,100
Yes ☐ No ☑

AGENDA ITEM:

Advertisement of Ordinance SALDO

EXECUTIVE SUMMARY:

This Ordinance will amend the Code of the Township of Abington at Part II [General Legislation], Chapter 146 [Subdivision and Land Development], by amending and restating Article III [Plan Application Requirements] and Article IV [Plan Review Procedures] and adding Article VIII [Waiver of Land Development] to create additional exemptions of the Land Development process, to create a process for notification of property owners and residents regarding the review of Land Development application by the Planning Commission, and to create a process for a waiver of Land Development.

PREVIOUS BOARD ACTIONS:

n/a

RECOMMENDED BOARD ACTIONS:

Review and consider an Ordinance amending the Code of the Township of Abington at Part II [General Legislation], Chapter 146 [Subdivision and Land Development], by amending and restating Article III

[Plan Application Requirements] and Article IV [Plan Review Procedures] and adding Article VIII [Waiver of Land Development] to create additional exemptions of the Land Development process, to create a process for notification of property owners and residents regarding the review of Land Development application by the Planning Commission, and to create a process for a waiver of Land Development.

TOWNSHIP OF ABINGTON

ORDINANCE NO. 2197

AN ORDINANCE AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 146 [SUBDIVISION AND LAND DEVELOPMENT], BY AMENDING AND RESTATING ARTICLE III [PLAN APPLICATION REQUIREMENTS] AND ARTICLE IV [PLAN REVIEW PROCEDURES] AND ADDING ARTICLE VIII [WAIVER OF LAND DEVELOPMENT] TO CREATE ADDITIONAL EXEMPTIONS TO THE LAND DEVELOPMENT PROCESS, TO CREATE A PROCESS FOR NOTIFICATION OF PROPERTY OWNERS AND RESIDENTS REGARDING THE REVIEW OF LAND DEVELOPMENT APPLICATIONS BY THE PLANNING COMMISSION, AND TO CREATE A PROCESS FOR A WAIVER OF LAND DEVELOPMENT

CERTIFICATION

I, RICHARD J. MANFREDI, BEING DULY SWORN ACCORDING TO LAW, DEPOSE AND SAY THAT I AM THE TOWNSHIP MANAGER IN ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA AND THAT ATTACHED HERETO IS A TRUE AND COMPLETE CORRECT COPY OF ORDINANCE NO. _____.

_____

Richard J. Manfredi, Township Manager

_____, 2022

ENACTED: _____

TOWNSHIP OF ABINGTON

ORDINANCE NO. _____

AN ORDINANCE AMENDING THE CODE OF THE TOWNSHIP OF ABINGTON AT PART II [GENERAL LEGISLATION], CHAPTER 146 [SUBDIVISION AND LAND DEVELOPMENT], BY AMENDING AND RESTATING ARTICLE III [PLAN APPLICATION REQUIREMENTS] AND ARTICLE IV [PLAN REVIEW PROCEDURES] AND ADDING ARTICLE VIII [WAIVER OF LAND DEVELOPMENT] TO CREATE ADDITIONAL EXEMPTIONS TO THE LAND DEVELOPMENT PROCESS, TO CREATE A PROCESS FOR NOTIFICATION OF PROPERTY OWNERS AND RESIDENTS REGARDING THE REVIEW OF LAND DEVELOPMENT APPLICATIONS BY THE PLANNING COMMISSION, AND TO CREATE A PROCESS FOR A WAIVER OF LAND DEVELOPMENT

WHEREAS, the Board of Commissioners of Abington Township is duly empowered by the First Class Township Code, 53 P.S. § 55101, *et seq.*, to enact certain regulations relating to the public health, safety welfare of the residents of Abington Township;

WHEREAS, the Board of Commissioners of Abington Township has adopted a subdivision and land development ordinance, known as the Subdivision and Land Development Regulations of the Township of Abington, as amended, in accordance with the provisions of Article V of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10101, *et seq.*, which is intended to provide for the orderly development and redevelopment of Abington Township;

WHEREAS, the First Class Township Code and Pennsylvania Municipalities Planning Code, *supra*, authorize the Board of Commissioners to make, amend and adopt amendments to the Subdivision and Land Development Regulations of the Township of Abington, as amended, that are consistent with the Constitution and laws of the Commonwealth that it deems necessary for the proper management and control of the Township and the best interests of its residents;

WHEREAS, the Board of Commissioners of Abington Township have determined that certain amendments to the Subdivision and Land Development Regulations of the Township of Abington, as amended, are required for the orderly administration of the laws of Abington Township;

WHEREAS, the Board of Commissioners of Abington Township have determined that certain amendments to the Subdivision and Land Development Regulations of the Township of Abington, as amended, are required to provide for clarity in the administration of the laws of Abington Township;

WHEREAS, the Board of Commissioners of Abington Township have determined that certain amendments to the Subdivision and Land Development Regulations of the Township of Abington, as amended, are required to provide for safe and proper design and regulation of land development within Abington Township.

NOW, THEREFORE, IT IS HEREBY ENACTED AND ORDAINED by the Abington Township Board of Commissioners that the Township's Code is amended as follows:

SECTION 1. **Amendment to Chapter 146 [Subdivision and Land Development], Article III [Plan Application Procedures], Section 9 [Type of Application], Subsection C [Types] to create additional exemptions to the land development process.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 146 [Subdivision and Land Development], Article III [Plan Application Procedures], Section 9 [Type of Application], Subsection C [Types] is hereby restated and amended with the underlined language (example) as follows:

(2) Land development plan.

…

(b) Exception. A land development plan shall not be required for approval by the township when development involves:

…

[4] A boundary line adjustment between adjoining property owners where no new lots are involved and in accordance with the following procedures:

[a] Upon request to the Board of Commissioner, the Commissioners may exempt a boundary line adjustment from normal submission and plan preparation requirements as set forth in this article.

[b] The written request for exemption shall be accompanied by a plan of the proposed adjustment or subdivision, which will enable the Commissioners to determine that the boundary line adjustment will not result in a lot which does not conform with the minimum requirements of the Zoning Ordinance and does not prevent the logical development of the remaining tract. The plan shall meet the following requirements:

(1) The plan shall be a clear and legible reproduction of the Tax Map, illustrating the area which includes the adjustment or subdivision.

(2) The plan shall illustrate the existing and proposed lot lines, the existing streets in the area and the existing structures on the properties involved.

(3) Approval by the Board of Commissioners and recording, where required.

(4) Payment of fees.

[5] Interior allocation of space of an existing multi-unit commercial or industrial development provided that no modifications to public improvements are proposed or required to permit compliance with the provisions of this Chapter or the Zoning Ordinance.

[6] The Board of Commissioners may require minor land development submission as required by this Chapter in place of building and grading permits when conditions shall warrant. The Board of Commissioners may permit submission of a plan through the building and grading process in place of the processes outlined in this Chapter where, in the distraction of the Board of Commissioners, the plan is consistent with the overall objectives and standards of this Chapter, even though strict compliance with the terms outlined herein is not met.

SECTION 2. **Amendment to Chapter 146 [Subdivision and Land Development], Article IV [Plan Review Procedures], Section 14 [Review Sequence] to create a process for notification of property owners and residents regarding the review of land development applications by the Planning Commission.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 146 [Subdivision and Land Development], Article IV [Plan Review Procedures], Section 14 [Review Sequence] is hereby restated and amended with the underlined language (example) as follows:

F. Notice procedure.

(1) Prior to the review of the Township Planning Commission, as stated above at § 146-14.E(6), the applicant shall provide notice of the first meeting of the Township Planning Commission at which the applicant's application will be reviewed.

(2) Notice shall be sent to the owner or owners of every lot on the same street within five hundred (500) feet of the lot(s) proposed for development, and of every lot not on the same street within two hundred fifty (250) feet of the said lot(s) proposed for development. The notices herein required shall be delivered by first class mail or hand delivery at least seven (7) days prior to the scheduled meeting, shall state the location of the proposed development, the general nature of the proposed development, and the date, time and location of the meeting.

SECTION 3. **Amendment to Chapter 146 [Subdivision and Land Development], Article VIII [Modification and Validity] to create a new Section and renumber subsequent Sections.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 146 [Subdivision and Land Development], Article VIII [Modification and Validity] is hereby restated and amended to create a new Section 51 entitled [Waiver of Land Development] and renumber subsequent Sections as follows: Section 52 [Appeals], Section 53 [Severability], Section 54 [Repealer], Section 55 [Effective Date] and Section 56 [Enactment].

SECTION 4. **Amendment to Chapter 146 [Subdivision and Land Development], Article VIII [Modification and Validity], Section 51 [Waiver of Land Development] to create a process for a waiver of land development.**

The Code of the Township of Abington, Part II [General Legislation], Chapter 146 [Subdivision and Land Development], Article VIII [Modification and Validity], Section 51 [Waiver of Land Development] is hereby restated and amended to include the underlined language (example) as follows:

§ 146-51. Waiver of land development.

A. The applicant shall prepare and submit to the Township a preliminary/final plan, the application form, and a letter requesting a waiver from the land development plan approval process. The requirements of the preliminary/final plan found in this Article must be met unless specific waivers are requested and granted by the Board of Commissioners.

B. Applicant shall submit the appropriate fee for review of a land development plan, copies of the preliminary/final plan in accordance with § 149-14.B, application, and a letter to the Township, and request that a review be scheduled with the Township Planning Commission. If, upon review by the Township, the land development waiver request is acceptable, that portion of the fee submitted by the applicant that is required for review of a land development plan shall be refunded to the applicant.

C. The Township Zoning Official shall review the submission for completeness, and if the submission is incomplete, shall return the submission to the applicant within seven (7) working days and indicate the deficiencies. If the submission is complete, the Township Zoning Official shall accept the preliminary/final plan, application, request letter, and fees.

D. The Township Zoning Official shall, upon acceptance of a complete submission, immediately distribute copies of the preliminary/final plan, application, and request letter, with a request to review, in accordance with § 146-14.D.

E. The Township Engineer shall, within thirty (30) days following the receipt of the plan from the Township:

(1) Review the applicant's submission for compliance with all applicable requirements of the Zoning Ordinance, this Chapter, the Municipal Comprehensive Plan, and all other ordinances and regulations.

(2) Review the engineering considerations in the applicant's submission.

(3) Prepare a report for the Planning Commission and Board of Commissioners, including a recommendation for the granting or denial of the waiver from the land development plan approval process.

F. Action of Planning Commission.

(1) Within sixty (60) days following the receipt of a complete preliminary/final plan submission, the Planning Commission shall, at a public meeting:

(a) Review the applicant's submission.

(b) Review all reports and recommendations received.

(c) Evaluate the plan, reports, and any discussion of the plan.

(d) Determine whether the preliminary/final plan meets the objectives and requirements of this chapter, the Municipal Comprehensive Plan, and other ordinances.

(e) Recommend revisions, if necessary, so that the plan will conform to Township regulations.

(f) Recommend granting or denying the waiver from the land development plan approval process.

(2) The requirements of § 146-14.F pertaining to notice shall be applicable.

G. Actions by the Board of Supervisors.

(1) Following the receipt of the Township Planning Commission's recommendation, the Board of Commissioners shall, at a public meeting:

(a) Receive and review the applicant's submission.

(b) Receive and review the reports of the Township Engineer, Township Fire Marshal, Township Traffic Engineer, any other reports submitted, and the recommendation of the Township Planning Commission.

(c) Evaluate the applicant's submission, the Township Engineer's report, the Planning Commission's recommendation, and any other appropriate reports.

(d) Determine whether the preliminary/final plan meets the objectives and requirements of this chapter, the Zoning Ordinance, the Municipal Comprehensive Plan, and other ordinances.

(e) Adopt a resolution approving or rejecting the request for a waiver from the land development plan approval process. If the waiver request is approved, the Board shall express its approval and state the conditions of approval, if any. If the request is not approved, the Board shall state the reasons for disapproval.

(f) The decision of the Board of Commissioners and any conditions imposed by the Board shall be in writing and shall be communicated to the applicant or the applicant's agent personally or be mailed to him at the last known address not later than fifteen (15) days following the decision or within such time limits as may be required by the Pennsylvania Municipalities Planning Code.

(g) Approval of the waiver request shall be rescinded automatically upon the applicant's or applicant's agent's failure to accept, in writing, all conditions imposed by the Board of Commissioners within seven (7) days of receipt of the written decision.

H. If approved:

(1) Applicant shall submit one (1) copy of the final plan to the Township Engineer, who shall issue a letter specifying the number and format of plans required for signatures and recording. Prior to submission of the plans for Township signatures and recording, applicant shall have the record plan signed by the property owner.

(2) After all other signatures, as required by this Chapter, are on the preliminary/final plan, the Board of Commissioners shall sign the preliminary/final plan.

(3) The property owner and, if different, the applicant, shall record the plan in the office of the Recorder of Deeds of Montgomery County, as provided under this Chapter.

I. Approval of the request for a waiver from the land development plan approval process shall constitute approval of the project and, following the completion of the recording procedure, the authorization for the construction of the site improvements and buildings. A developer's agreement will not be required; however, building permits will be required and the applicant shall be required to post appropriate escrow with the Township to cover the cost of inspections.

J. Criteria for the waiver from the land development plan approval process. In order to qualify for a waiver from the land development plan approval process, the applicant shall meet the following criteria:

(1) The application is for a primary disturbance of less than 10,000 square feet or construction of a primary building of less than 10,000 square feet.

(2) The application is for a minor building addition or an accessory building that is not more than 20% of the existing principal building;

(3) The application is for a minor building addition or an accessory building that is not more than 10,000 square feet in size; and

(4) All applicable zoning requirements, including building setbacks and building and impervious surface coverages, must be met.

K. A waiver from the land development plan approval process shall not be granted if there is a significant impact upon neighboring properties, stormwater management control requirements, traffic, or the public health, safety, and welfare.

L. A proposed development receiving a waiver of land development in accordance with the provisions of this Section shall still be required to obtain building, grading, and all other applicable permits required under the Township's Code of Ordinances.

SECTION 5. Repeal and Ratification.

All ordinances or parts of ordinances inconsistent herewith or in conflict with any of the specific terms enacted hereby, to the extent of said inconsistencies or conflicts, are hereby specifically repealed. Any other terms and provisions of the Township's Code unaffected by this Ordinance are hereby reaffirmed and ratified.

SECTION 6. Severability.

Should any section, paragraph, sentence, clause, or phrase in this Ordinance be declared unconstitutional or invalid for any reason, the remainder of the Ordinance shall not be affected thereby and shall remain in full force and affect, and for this reason the provisions of this Ordinance shall be severable.

SECTION 7. **Effective Date.**

This Ordinance shall become effective 5 days after enactment.

ORDAINED AND ENACTED this _____ day of _____ 2022, by the Board of Commissioners of the Township of Abington.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

_____
THOMAS HECKER
President

[Seal]

Attested by:

_____
Richard J. Manfredi
Township Manager & Secretary

COMPREHENSIVE PLAN CONSISTENCY COMMITTEE

AGENDA ITEM

August 31, 2022

DATE

AGENDA ITEM NUMBER

Administration

DEPARTMENT

FISCAL IMPACT
Cost > $10,000
Yes ☐ No ☑

PUBLIC BID REQUIRED
Cost > $20,100
Yes ☐ No ☑

AGENDA ITEM:

Toll Brothers Text Amendment

EXECUTIVE SUMMARY:

The request by Toll Mid-Atlantic, L.P. Company, Inc. i.e. Toll Brothers, as it pertains to the potential redevelopment of a property situated at 711 Fox Chase Road ("St. Basil's") and their request for a proposed zoning text and map amendment creating an age-restricted carriage home overlay district.

At the August 23, 2022 the Planning Commission recommended merging the proposed text amendment by Toll Brothers with the existing SNR Senior Neighborhood zoning district. If the merging of the zoning districts is not feasible, the recommendation is then to approve the text amendment with the following conditions:

1. Add a parking space requirement for the carriage homes.
2. Make the necessary referenced 2103 section and H-12 use typo corrections. The 8/12/22 updated text amendment still referenced section 2301 erroneously and H-12 should be H-13 since H-12 was added by a prior text amendment.
3. Reduce the plantings distance within the buffer area so the plantings are closer to the tract boundary line to provide a more effective screening.

PREVIOUS BOARD ACTIONS:

08.12.22 - A revised Ordinance was sent to address the Planning Commissions comments from the August 4, 2022 meeting. This Ordinance is attached and marked Revised 08.12.22.

08.23.22 - The Planning Commission recommended moving forward to the Comprehensive Plan Consistency Committee on August 31, 2022 with the recommendations stated in the Executive Summary.

RECOMMENDED BOARD ACTIONS:

Review and discuss the request by Toll Mid-Atlantic, L.P. Company, Inc. (Toll Brothers) for a Zoning Text Amendment to create the AR - Age-Restricted Carriage Home Overlay District and a Zoning Map Amendment to rezone certain parcels on the northeast side of Fox Chase Road as AR - Age-Restricted Carriage Home overlay.

TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO.

AN ORDINANCE AMENDING CHAPTER 162 – "ZONING", BY ADDING A NEW ARTICLE XVIIA TO ESTABLISH AN AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT, BY ADDING A NEW LAND USE CATEGORY IDENTIFIED AS AGE-RESTRICTED CARRIAGE HOME DWELLING UNIT, AND TO ADD AGE-RESTRICTED CARRIAGE HOME DWELLING UNIT TO THE COMPREHENSIVE USE MATRIX, AND BY AMENDING THE ABINGTON TOWNSHIP ZONING MAP TO ESTABLISH AN AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT.

WHEREAS, the Township of Abington is a Township of the First Class, duly organized and existing pursuant to the applicable laws of the Commonwealth of Pennsylvania; and

WHEREAS, pursuant to Section 1502.44 of the First Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. § 56544 and Section 609 of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10609, the Board of Commissioners has the authority to enact and amend provisions of the Abington Township Code ("Code") at any time it deems necessary for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof; and

WHEREAS, the Board of Commissioners of the Township has determined that the Code of Ordinances of the Township of Abington shall be amended at Chapter 162 – "Zoning" to create an AR Age-Restricted Carriage Home Overlay District and the Zoning Map of Abington Township shall be amended to establish an AR Age-Restricted Carriage Home Overlay District on property located on the northeast side of Fox Chase Road, identified as Tax Parcel Nos. 30-00-22424-00-1 and 30-00-22420-00-5, consisting of approximately 46.37 acres, for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof.

NOW, THEREFORE, the Board of Commissioners of the Township of Abington does hereby **ENACT** and **ORDAIN** as follows:

SECTION I. ZONING TEXT AMENDMENTS. The Code of the Township of Abington is amended at Chapter 162 – "Zoning" as follows:

1. The Revised Abington Township Zoning Ordinance, as heretofore amended, Section 2301 (entitled "Categories of Permitted Uses"), Subsection H (entitled "Residential Uses") thereof, is hereby amended to add a new Article XVIIA as follows:

ARTICLE XVIIA: AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT

SECTION 1709. PURPOSE: The purpose and intent of the AR Age-Restricted Carriage Home Overlay District is to provide a specialized overlay district to facilitate residential living by persons that qualify for housing under The Housing for Older Persons Act of 1995, in areas of the Township that are otherwise zoned for certain institutional uses.

SECTION 1710. USE REGULATIONS: A building may be erected, altered or used, and a lot may be occupied or used, in whole or in part, for the following uses and no other, provided that such uses shall comply with the Overlay District regulations established in this Article and all applicable sections of this Ordinance:

A. *See* ***Comprehensive Use Matrix, Appendix.***

B. Accessory uses including clubhouse, swimming pool, bocce, indoor and outdoor recreational uses, trails, fitness center, guest parking, dog park, outdoor grilling, picnic areas and other similar uses to the foregoing.

SECTION 1711. DIMENSIONAL REGULATIONS: The dimensional regulations in the following chart are the Overlay District standards, which must be achieved any use, addition or alteration:

Figure 17.2

AR Age-Restricted Carriage Home Overlay District: Dimensional Requirements

Minimum Site Area	Lot Width	Lot Depth
40 acres gross	N/A	N/A
MINIMUM YARD DIMENSIONS		

Perimeter	Front	Side	Rear
Set back from tract perimeter: - From ultimate right-of-way: 100 feet - From other tract boundary line: 125 feet	30’ dwelling set back from face of curb/edge of cartway	N/A	N/A
COVERAGE (percentage of gross site area)			
Maximum Building Area		Maximum Impervious	Minimum Green Area
25%		50%	50%
OPEN SPACE			
Gross Site Area (in acres) x .40			
DENSITY			
Gross Site Area (in acres) x 3.4			
BUILDING DIMENSIONS			
Maximum Height		Maximum Length	Minimum Separation
35’ maximum, as defined by the Building Code of Abington Township (ICC)		160’	20’

SECTION 1712. SPECIAL DEVELOPMENT REGULATIONS:

A. No retail operations or land uses are permitted even as accessory uses.

B. Residential green area and buffer: Along any boundary line of the tract adjoining an existing residential use, an 85 foot wide green area shall be provided. In addition, a screening buffer conforming to the specifications of a high intensity buffer set forth in **§ 2403.B.4 Buffer Specifications**, with a depth of not less than 40 feet, shall be provided between the green area and any structure in the age-restricted carriage home development.

C. Open Space Requirements: Land preserved for open space purposes shall be in compliance with **Open Space Standards of the SALDO** for the Township Zoning Ordinance; provided however that age-restricted carriage home accessory uses such as clubhouse, swimming pool, bocce, indoor and outdoor recreational uses, trails, fitness center, dog park, outdoor grilling, picnic areas, parking serving said facilities and other similar uses to the foregoing shall be permitted in the open space. Guest parking otherwise serving the community shall not be permitted in the open space.

SECTION 1714. SEVERABILITY: If any section, subsection, or clause of this ordinance shall be deemed to be unconstitutional or otherwise invalid, the validity of the remaining sections, subsections and clauses shall not be affected.

2. The Revised Abington Township Zoning Ordinance, as heretofore amended, Section 2301 (entitled "Categories of Permitted Uses"), Subsection H (entitled "Residential Uses") thereof, is hereby amended to add a "Use H-12: Age-Restricted Carriage Homes" as follows:

> **Use H-12: Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached):** A single-family attached dwelling unit that is age-restricted as provided for by The Housing for Older Persons Act of 1995, as amended. An age-restricted carriage home dwelling unit is a single-family attached dwelling within a multi-dwelling unit building consisting of at least 3 such dwelling units, but not more than 6 such dwelling units, with each unit occupying the total space from ground to roof, and joined to each other by not more than 2 vertical, common party walls, which also serve as the lot line dividing the properties.
>
> 1. Age-restricted carriage homes may be one- or two-level dwelling units above grade, provided they do not exceed the district height limitation and may have a third level serving as a basement.
>
> 2. All age-restricted carriage home dwelling units must connect to public water and sewer.
>
> 3. Age-restricted carriage homes may be defined by the footprint of the dwelling unit. There is no minimum lot size requirement.
>
> 4. Age-restricted carriage homes shall be a minimum of 28' wide and 50' in depth.
>
> 5. Age-restricted carriage homes shall be setback at least 30' from the face of curb/edge of cartway.
>
> 6. Age-restricted carriage homes shall have a minimum building separation of 20'.

3. The Revised Abington Township Zoning Ordinance, as heretofore amended, the Comprehensive Use Matrix thereof, is hereby amended to add a new residential use category, H-12, Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached), which shall only be permitted in the AR Overlay District, as follows: **See Attachment "A".**

SECTION 2. ZONING MAP AMENDMENT.

The Abington Township Zoning Map, Montgomery County, as heretofore amended, is hereby amended as follows:

> An AR Age-Restricted Carriage Home Overlay District is established on property located the northeast side of Fox Chase Road, Montgomery County, Pennsylvania, identified as Tax Parcel Nos. 30-00-22424-00-1 and 30-00-22420-00-5, consisting of approximately 46.37 acres, as delineated on Attachment "B", which shall overlay all existing and hereafter created underlying districts applicable to the property in the area designated as "AR Age-Restricted Carriage Home Overlay District" on Attachment "B" hereto.

SECTION 3. All other ordinances, portions of ordinances, or any section of the Code inconsistent with this Ordinance are hereby repealed.

SECTION 4. This Ordinance shall become effective five (5) days after enactment.

ORDAINED AND ENACTED this _____ day of _____, 2022.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

Attest:

_____ By: _____
, Secretary , President

ATTACHMENT "A"

Code	Use	Class (for MS Districts)	AO	BC: Lot < 1 Ac	BC: Abington Towne Center	BC: Foxcroft	BC: Huntingdon Valley	BC: Noble	BC: Willow Grove Park	CS	LP Overlay	MS-H	MS-L	MS-VC	R1	R2	R3	R4	RC	SI-G	SI-W	SNR	AR Overlay
A	**Accessory Uses**																						
A-6	Clubhouse	1	Y							Y	Y								Y			Y	Y
A-18	Outdoor Recreation, Uses Accessory to	N/A		N	N	N	N	N	N	Y		N	N	N			SE	SE	Y				Y
A-24	Swimming Pool	1	NOTE 4	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y
A-25	Tennis/Sports Court	1	NOTE 4	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y
H	**Residential Uses**																						
H-12	Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached)	N/A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y

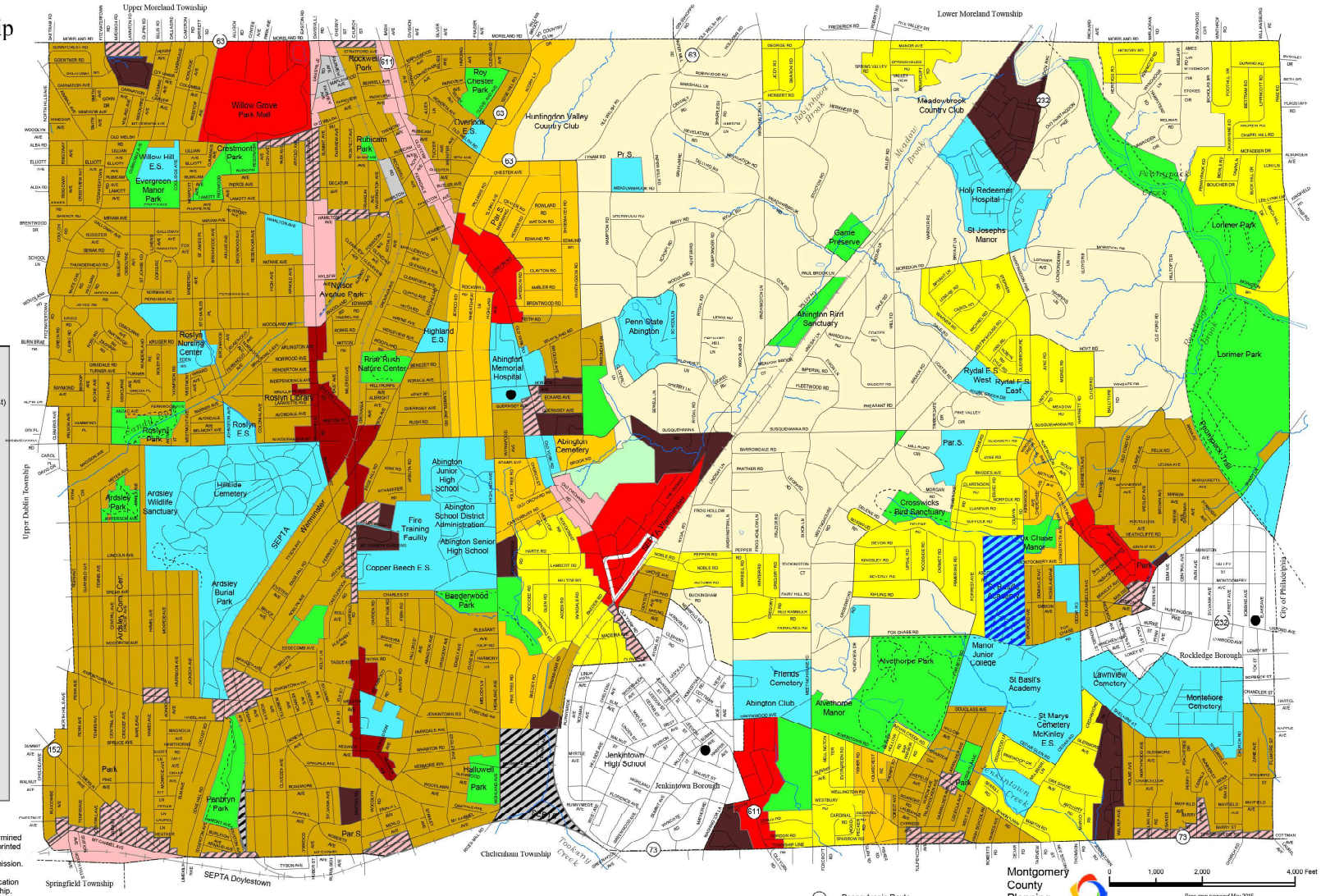
ATTACHMENT "B"

Abington Township

Jenkintown and Rockledge Boroughs

Montgomery County, Pennsylvania

Proposed AR Age-Restricted Carriage Home Overlay District



Zoning Map

- streets
- railroads
- Triangle Area (Applicable to part of BC District)
- municipal
- Trail
- Streams
- Water Bodies
- RC Recreation/Conservation
- R1 Low Density Residential
- R2 Low-Medium Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- AO Apartment Office
- SNR Senior Neighborhood Residential
- BC Business Center
- MS-H Main Street High Intensity/Density
- MS-L Main Street Low Intensity/Density
- MS VC Village Center
- CS Community Service
- SI-G Suburban Industrial Glenside
- SI-W Suburban Industrial Willow Grove

Zoning boundaries as of April 2017

The Zoning Districts displayed on this map were determined by the Zoning Code of Abington Township. The date printed on this map is the latest information received from the Township by the Montgomery County Planning Commission. This information should not be considered the official "Adopted Zoning Map". Any question regarding the location of a district boundary should be directed to the Township.

611 Pennsylvania Route

Municipal Building

Multiuse Trail

P.S. Parochial School
Pr.S. Private School

Montgomery County Planning Commission

0 1,000 2,000 4,000 Feet

Base map prepared May 2016

Montgomery County Courthouse - Planning Commission
PO Box 311 ▪ Norristown PA 19404-0311
(p) 610.278.3722 ▪ (f) 610.278.3941
www.montcopa.org/plancom

This map is based on 2015 ortho photography and official sources. Property lines were compiled from individual block maps from the Montgomery County Board of Assessment Appeals, with no verification from the deed. This map is not meant to be used as a legal definition of properties or for engineering purposes.

MONTGOMERY COUNTY
BOARD OF COMMISSIONERS

VALERIE A. ARKOOSH, MD, MPH, CHAIR
KENNETH E. LAWRENCE, JR., VICE CHAIR
JOSEPH C. GALE, COMMISSIONER

MONTGOMERY COUNTY
PLANNING COMMISSION

MONTGOMERY COUNTY COURTHOUSE • PO BOX 311
NORRISTOWN, PA 19404-0311
610-278-3722 • FAX: 610-278-3941
WWW.MONTCOPA.ORG

SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

August 19, 2022

Mr. Richard J. Manfredi, Manager
Abington Township
1176 Old York Road
Abington, Pennsylvania 19001-3713

Re: MCPC #22-0205-001
Sisters of St. Basil's Zoning Amendment (Age-Restricted Carriage Homes Overlay)
Abington Township

Dear Mr. Manfredi:

We have reviewed the above-referenced zoning map and text amendment in accordance with Section 609 of Act 247, "The Pennsylvania Municipalities Planning Code," as you requested on August 2, 2022. We forward this letter as a report of our review.

BACKGROUND

Toll Mid-Atlantic, L.P., Company, Inc., the applicant, has submitted a request to Abington Township to amend the zoning text and map to create an Age-Restricted Carriage Home Overlay District and a new use called "Age-Restricted Carriage Home Dwelling Unit." The new overlay district allowing the proposed new use would apply to two mapped parcels (the site of the former St. Basil's Academy) which front on Fox Chase Road. The base zoning for the site affected is the CS Community Service zoning district. The applicant submitted a sketch plan with the proposed zoning amendment, illustrating a development that could occur using the zoning. We previously reviewed this proposal in a memorandum dated March 6, 2022.

COMPREHENSIVE AND OTHER PLAN COMPLIANCE

MONTCO 2040: A New Vision: the Comprehensive Plan for Montgomery County (2015). The proposal is located in the plan's Suburban Residential future land use area. The plan recommends that development in this area include appropriate landscaping, buffers, and street trees, and says that recreation facilities and central open space should be provided.

The plan's transportation chapter notes, "Having an interconnected, finely-grained road network with many choices reduces congestion and provides alternative routes around accidents or other incidents." One of the plan's goals is "Provide more opportunities for residents to exercise and have healthy lifestyles."

The proposed zoning is consistent in some ways, but would be more consistent if it required central open space, recreational facilities, and trails. The attached sketch would be more consistent if its proposed roads were interconnected with the surrounding street system (this might consist of emergency access roads), and if it included a loop trail to provide recreational opportunities.

Abington Master Bicycle Plan (2016):

The Abington Township Master Bicycle Plan (see p.94) recommends that a bicycle route "14E-Manor College Trail Extension Shared Use Path" be added, that would connect the site to the Cedar Road bicycle route to the east (see map). The full route would connect McKinley Elementary to Seminole Road. It would consist of a 10-foot asphalt trail, wayfinding signage and bicycle crossing bollards.

Comprehensive Plan Update for Abington Township (2007): The proposal is located in the "Institutional—Schools/Churches" future land use category of the Comprehensive Plan Update for Abington Township, and is consistent with that plan.

RECOMMENDATION

The Montgomery County Planning Commission (MCPC) generally supports the applicant's proposal, however, in the course of our review we have identified a number of key issues that we believe should be resolved prior to zoning amendment adoption. Our comments are as follows:

REVIEW COMMENTS

ZONING MAP

A. Not Spot Zoning. The solicitor's opinion is that this is not a case of spot zoning. We defer to the solicitor on this matter.

B. Senior Neighborhood Residential District. We suggest the township work to merge this proposed zoning text amendment with that of the SNR Senior Neighborhood Residential District. Although each of the two sites to which it would apply have unique characteristics, much of the zoning could be combined

under the SNR District, with allowances for site-specific variations based on the road from which it takes access.

ZONING TEXT

A. Overlay. We suggest that the applicant clarify that the use of the overlay is at the discretion of the developer and what, if any parts of the underlying CS Community Service District will apply when a developer opts to develop under the Age-Restricted Carriage Home Overlay District.

B. Transportation and Parking.

1. Interconnections. The street grid, including sidewalks, should be interconnected. There are existing streets that should be continued onto the site to strengthen the vehicular, bicycling, and pedestrian transportation network. This would improve access for residents and emergency vehicles; promote walking, bicycling, and healthy lifestyles; and make it easier to access the amenities and services on Huntingdon Pike.

2. Bicycling. Abington Township Master Bicycle Plan (see p.94 and "Comprehensive and Other Plan Compliance," above).

3. Parking. We should clarify parking requirements for this use. Subdivisions for the purposes of building townhouses require two parking spaces (not counting garages) plus ¼ space per unit for developments over 16 units.

4. Bus Shelter. We recommend requiring a bus shelter be provided, provided that a shelter on property undergoing land development is an appropriate location for one, in the opinion of SEPTA.

C. Open Space.

1. Setback. The setbacks that Abington's zoning requires for shopping centers ranges from 50 to 100 feet (from a single-family residential neighborhood). Why would an age-restricted residential neighborhood require a 125 foot setback? It would generate far less traffic, noise, and light.

2. Definition from Subdivision and Land Development Ordinance (SALDO). Open space:

> "A parcel or parcels of land or an area of water or a combination of land and water within a development site, interconnected and designed for the use and enjoyment of the residents of a development and or community, not including streets, off-street parking areas, required yards and areas set aside for public facilities."

We recommend that this definition be reflected in the zoning text for this district.

3. "Open Space" vs. "Residential Green Area and Buffer." The "open space" and "residential green area and buffer" regulations seem to address separate entities. The "residential green area and buffer" would create an extremely wide clear zone area that seems like a lost opportunity for a better use of space—whether for a better neighborhood layout or usable or landscaped open space. The proposed zoning text would not require the green area and buffer to provide usable open space, facilities, nor amenities.

4. Central Open Space. We recommend adding a list of required central open space requirements. These should include:

   a. Minimum area and/or percentage of tract.

   b. Required accommodations and facilities to enhance the usability of the land.

   c. Physical requirements. This should address configuration, maximum grade, location with respect to the neighborhood's homes, and pedestrian access.

Central open space in Woodmont, Lower Moreland is visible and accessible from residents' front doors.

D. <u>Housing Types and Design.</u>

1. Zoning's H-9 Townhouse Dwelling Unit (Single-Family Attached). This use should be used as a point of reference and should influence this text amendment. Some requirements from that use should be added to this text amendment. For example, the requirement that end units have side-loaded garages (intended to prevent a "snout house" development, with garages and driveways dominating the façade/front of house). There is a requirement that off-street parking spaces be located to the side or rear, and for a small planting strip to separate adjacent driveways. Internal townhouse units have a limit on the percentage (30%) of the front façade that the garage may occupy.

2. Variety of Unit Types. We recommend the ordinance be more flexible regarding permitted unit types, so that more than simply townhomes are permitted. What about duplexes? Triplexes? Quadruplexes? Twins? Adding those uses would make the site more adaptable to changing real estate market conditions and housing unit type preferences.

E. Landscaping.

1. Stormwater Basin. The basin along Fox Chase Road will be located in a prominent location and could serve as a prominent visual enhancement for the development. All basins should be sufficiently naturalized and landscaped.
2. Landscaping Behind Homes. Where the backs of two rows of homes abut one another, we recommend adding landscaping for buffering the homes and creating a greater sense of privacy and visual interest, similar to that behind units #57-61.
3. Pool and Clubhouse Screening. The pool and clubhouse should be screened from units #140-143.

SKETCH PLAN

A. General Comment. In order to accommodate a wide grass area surrounding the tract in the interest of privacy and security of existing residents, the resulting proposed neighborhood seems unfortunately packed together and isolated from the surrounding community, with little visual relief and open space which does not serve to provide usable, active open space for the development's residents nor for the adjacent neighborhoods. Most of the open space would consist of a grass buffer with no access, and thus provide neither ecological nor recreational benefits.

B. Transportation.

1. Sidewalks are required along both sides of the street.
2. Bus. The Route 28 bus serves the site. We suggest consulting with SEPTA about whether a bus shelter and concrete waiting pad would be appropriate at this location.
3. Intersections. The curving road intersections appear as if they are intended to calm traffic. Calming traffic is a desirable goal, but this design appears unnatural and may be confusing and disruptive to traffic flow (example: intersection of Roads A and E). These intersections seem suited for small traffic circles to slow traffic.

From "Designing Roundabouts to Support Walkability and Smart Growth," American Planning Association Webinar, 8/19/2022.

The applicant agreed to take another look at the intersection design shown on the sketch plan.

4. Guest Parking. We recommend providing guest parking in convenient locations distributed around the development.

C. Open Space.

1. Open space is subject to the requirements of the existing zoning ordinance's §2601.K. Very little of the open space shown on the proposed sketch plan would seem to meet the requirements, including:

    a. May consist of plazas, parks, central greens, urban gardens, and similar types of usable, public space.
    b. Open space shall be visible from dwellings and roadways. Most of the open land in the proposed neighborhood would be located in the wide clear zone along the tract periphery. That area would be hidden from the homes and roads by the development's layout and the proposed vegetative buffer.
    c. No individual open space area shall be smaller than 2,500 square feet.
    d. Land having a width of less than 25' may not be counted towards the minimum required open space area.
    e. Such areas shall be surrounded by streets and/or front facades of buildings along at least 45% of their perimeter.
    f. At least one focal element, such as a fountain, clock tower, sculpture, trellis, garden, or other public art feature should be located in each public open space area
    g. Open space area must have safe and convenient pedestrian and maintenance access, without obstruction of an intervening lot(s), structures, fences, or other impediments. The clear zone along the tract periphery would have no pedestrian accommodations.

2. Usable, Central Open Space. Proposed open space is difficult to discern on the sketch plan. It appears to consist of the pool, clubhouse, and a few small areas which might take the form of pocket parks if they were designed as such. We recommend that sidewalks, trails, and any other facilities that would increase the usability of the open space be shown (e.g., picnic area, gazebo, and community garden).

3. Riparian Corridor. The site is subject to the requirements of Article XV: the Riparian Corridor Conservation District. We recommend the boundaries of the corridor be designated on the plan.

4. The area along the tributary to the Pennypack Creek lies adjacent to Fox Chase Manor Park, 12 acres of land owned by the township. Would there be a benefit to dedicating this portion of the tract/greenway to the township, for consolidation with Fox Chase Manor Park? Management of the riparian, wooded, and sloped areas could be undertaken in a consistent manner.

CONCLUSION

We wish to reiterate that MCPC generally supports the applicant's proposal but we believe that our suggested revisions will better achieve the township's planning objectives for residential development.

Please note that the review comments and recommendations contained in this report are advisory to the municipality and final disposition for the approval of any proposal will be made by the municipality.

Sincerely,

Mike Narcowich, AICP, Community Planning Assistant Manager
mnarcowi@montcopa.org – 610-278-5238

c:
Lucy Strackhouse, Chair, Township Planning Commission
Toll Mid-Atlantic, L.P. Company, Inc., Applicant
Brian Thierrin, Toll Brothers, Applicant's Representative

Khaled R. Hassan, P.E., Pennoni, Township Engineer
Michael P. Clarke, Esq., Rudolph Clarke, LLC, Township Solicitor
Steve D'Antonio, City Service Planning, SEPTA

Attachment A: Aerial Image of Site
Attachment B: Reduced Copy of Applicant's Proposed Site Plan

ATTACHMENT A

ATTACHMENT B

TOWNSHIP OF ABINGTON
MONTGOMERY COUNTY, PENNSYLVANIA

ORDINANCE NO.

AN ORDINANCE AMENDING CHAPTER 162 – "ZONING", BY ADDING A NEW ARTICLE XVIIA TO ESTABLISH AN AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT, BY ADDING A NEW LAND USE CATEGORY IDENTIFIED AS AGE-RESTRICTED CARRIAGE HOME DWELLING UNIT, AND TO ADD AGE-RESTRICTED CARRIAGE HOME DWELLING UNIT TO THE COMPREHENSIVE USE MATRIX, AND BY AMENDING THE ABINGTON TOWNSHIP ZONING MAP TO ESTABLISH AN AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT.

WHEREAS, the Township of Abington is a Township of the First Class, duly organized and existing pursuant to the applicable laws of the Commonwealth of Pennsylvania; and

WHEREAS, pursuant to Section 1502.44 of the First Class Township Code of the Commonwealth of Pennsylvania, 53 P.S. § 56544 and Section 609 of the Pennsylvania Municipalities Planning Code, 53 P.S. § 10609, the Board of Commissioners has the authority to enact and amend provisions of the Abington Township Code ("Code") at any time it deems necessary for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof; and

WHEREAS, the Board of Commissioners of the Township has determined that the Code of Ordinances of the Township of Abington shall be amended at Chapter 162 – "Zoning" to create a CH Carriage Home Overlay District and the Zoning Map of Abington Township shall be amended to establish a CH Carriage Home Overlay District on a property located on the northeast side of Fox Chase Road for the health, safety, morals, general welfare, cleanliness, beauty, convenience and comfort of the Township and the inhabitants thereof.

NOW, THEREFORE, the Board of Commissioners of the Township of Abington does hereby **ENACT** and **ORDAIN** as follows:

SECTION I. <u>ZONING TEXT AMENDMENTS</u>. The Code of the Township of Abington is amended at Chapter 162 – "Zoning" as follows:

1. The Revised Abington Township Zoning Ordinance, as heretofore amended, Section 2301 (entitled "Categories of Permitted Uses"), Subsection H (entitled "Residential Uses") thereof, is hereby amended to add a new Article XVIIA as follows:

ARTICLE XVIIA: AR AGE-RESTRICTED CARRIAGE HOME OVERLAY DISTRICT

SECTION 1709. PURPOSE: The purpose and intent of the AR Age-Restricted Carriage Home Overlay District is to provide a specialized overlay district to facilitate residential living by persons that qualify for housing under The Housing for Older Persons Act of 1995, in areas of the Township that are otherwise zoned for certain institutional uses.

SECTION 1710. USE REGULATIONS: A building may be erected, altered or used, and a lot may be occupied or used, in whole or in part, for the following uses and no other, provided that such uses shall comply with the Overlay District regulations established in this Article and all applicable sections of this Ordinance:

A. *See* ***Comprehensive Use Matrix, Appendix.***

B. Accessory uses including clubhouse, swimming pool, bocce, indoor and outdoor recreational uses, trails, fitness center, guest parking, dog park, outdoor grilling, picnic areas and other similar uses to the foregoing.

SECTION 1711. DIMENSIONAL REGULATIONS: The dimensional regulations in the following chart are the Overlay District standards, which must be achieved any use, addition or alteration:

Figure 17.2

AR Age-Restricted Carriage Home Overlay District: Dimensional Requirements

Minimum Site Area		Lot Width	Lot Depth
40 acres gross		N/A	N/A
MINIMUM YARD DIMENSIONS			
Perimeter	Front	Side	Rear
Set back from tract perimeter: - From ultimate right-	30' dwelling set back from face of curb/edge of	N/A	N/A

of-way: 100 feet - From other tract boundary line: 125 feet	cartway		
COVERAGE (percentage of gross site area)			
Maximum Building Area		Maximum Impervious	Minimum Green Area
25%		50%	50%
OPEN SPACE			
Gross Site Area (in acres) x .40			
DENSITY			
Gross Site Area (in acres) x 3.4			
BUILDING DIMENSIONS			
Maximum Height		Maximum Length	Minimum Separation
35’ maximum, as defined by the Building Code of Abington Township (ICC)		160’	20’

SECTION 1712. SPECIAL DEVELOPMENT REGULATIONS:

A. No retail operations or land uses are permitted even as accessory uses.

B. Residential green area and buffer: Along any boundary line of the tract adjoining an existing residential use, an 85 foot wide green area shall be provided. In addition, a screening buffer conforming to the specifications of a high intensity buffer set forth in **§ 2403.B.4 Buffer Specifications**, with a depth of not less than 40 feet, shall be provided between the green area and any structure in the age-restricted carriage home development.

C. Open Space Requirements: Land preserved for open space purposes shall be in compliance with **Open Space Standards of the SALDO** for the Township Zoning Ordinance; provided however that age-restricted carriage home accessory uses such as clubhouse, swimming pool, bocce, indoor and outdoor recreational uses, trails, fitness center, guest parking, dog park, outdoor grilling, picnic areas and other similar uses to the foregoing shall be permitted in the open space.

SECTION 1714. SEVERABILITY: If any section, subsection, or clause of this ordinance shall be deemed to be unconstitutional or otherwise invalid, the validity of the remaining sections, subsections and clauses shall not be affected.

2. The Revised Abington Township Zoning Ordinance, as heretofore amended, Section 2301 (entitled “Categories of Permitted Uses”), Subsection H (entitled “Residential

Uses") thereof, is hereby amended to add a "Use H-12: Age-Restricted Carriage Homes" as follows:

> **Use H-12: Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached):** A single-family attached dwelling unit that is age-restricted as provided for by The Housing for Older Persons Act of 1995, as amended. An age-restricted carriage home dwelling unit is a single-family attached dwelling within a multi-dwelling unit building consisting of at least 3 such dwelling units, but not more than 6 such dwelling units, with each unit occupying the total space from ground to roof, and joined to each other by not more than 2 vertical, common party walls, which also serve as the lot line dividing the properties.
>
> 1. Age-restricted carriage homes may be one-, two-, or three-level dwelling units, provided they do not exceed the district height limitation.
>
> 2. All age-restricted carriage home dwelling units must connect to public water and sewer.
>
> 3. Age-restricted carriage homes may be defined by the footprint of the dwelling unit. There is no minimum lot size requirement.
>
> 4. Age-restricted carriage homes shall be a minimum of 24' wide and 50' in depth.
>
> 5. Age-restricted carriage homes shall be setback at least 30' from the face of curb/edge of cartway.
>
> 6. Age-restricted carriage homes shall have a minimum building separation of 20'.

3. The Revised Abington Township Zoning Ordinance, as heretofore amended, the Comprehensive Use Matrix thereof, is hereby amended to add a new residential use category, H-12, Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached), which shall only be permitted in the AR Overlay District, as follows: **See Attachment "A".**

SECTION 2. ZONING MAP AMENDMENT.

The Abington Township Zoning Map, Montgomery County, as heretofore amended, is hereby amended as follows:

> An AR Age-Restricted Carriage Home Overlay District is established on a property located the northeast side of Fox Chase Road, Montgomery County,

Pennsylvania, as delineated on Attachment "B", which shall overlay all existing and hereafter created underlying districts applicable to the property in the area designated as "AR Age-Restricted Carriage Home Overlay District" on Attachment "B" hereto.

SECTION 3. All other ordinances, portions of ordinances, or any section of the Code inconsistent with this Ordinance are hereby repealed.

SECTION 4. This Ordinance shall become effective five (5) days after enactment.

ORDAINED AND ENACTED this _____ day of _____, 2022.

TOWNSHIP OF ABINGTON
BOARD OF COMMISSIONERS

Attest:

_____ By: _____
, Secretary , President

ATTACHMENT "A"

Code	Use	Class (for MS Districts)	AO	BC: Lot < 1 Ac	BC: Abington Towne Center	BC: Foxcroft	BC: Huntingdon Valley	BC: Noble	BC: Willow Grove Park	CS	LP Overlay	MS-H	MS-L	MS-VC	R1	R2	R3	R4	RC	SI-G	SI-W	SNR	AR Overlay
A	**Accessory Uses**																						
A-6	Clubhouse	1	Y							Y	Y								Y			Y	Y
A-18	Outdoor Recreation, Uses Accessory to	N/A		N	N	N	N	N	N	Y		N	N	N			SE	SE	Y				Y
A-24	Swimming Pool	1	NOTE 4	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y
A-25	Tennis/Sports Court	1	NOTE 4	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y			Y	Y
H	**Residential Uses**																						
H-12	Age-Restricted Carriage Home Dwelling Unit (Single-Family Attached)	N/A	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	Y

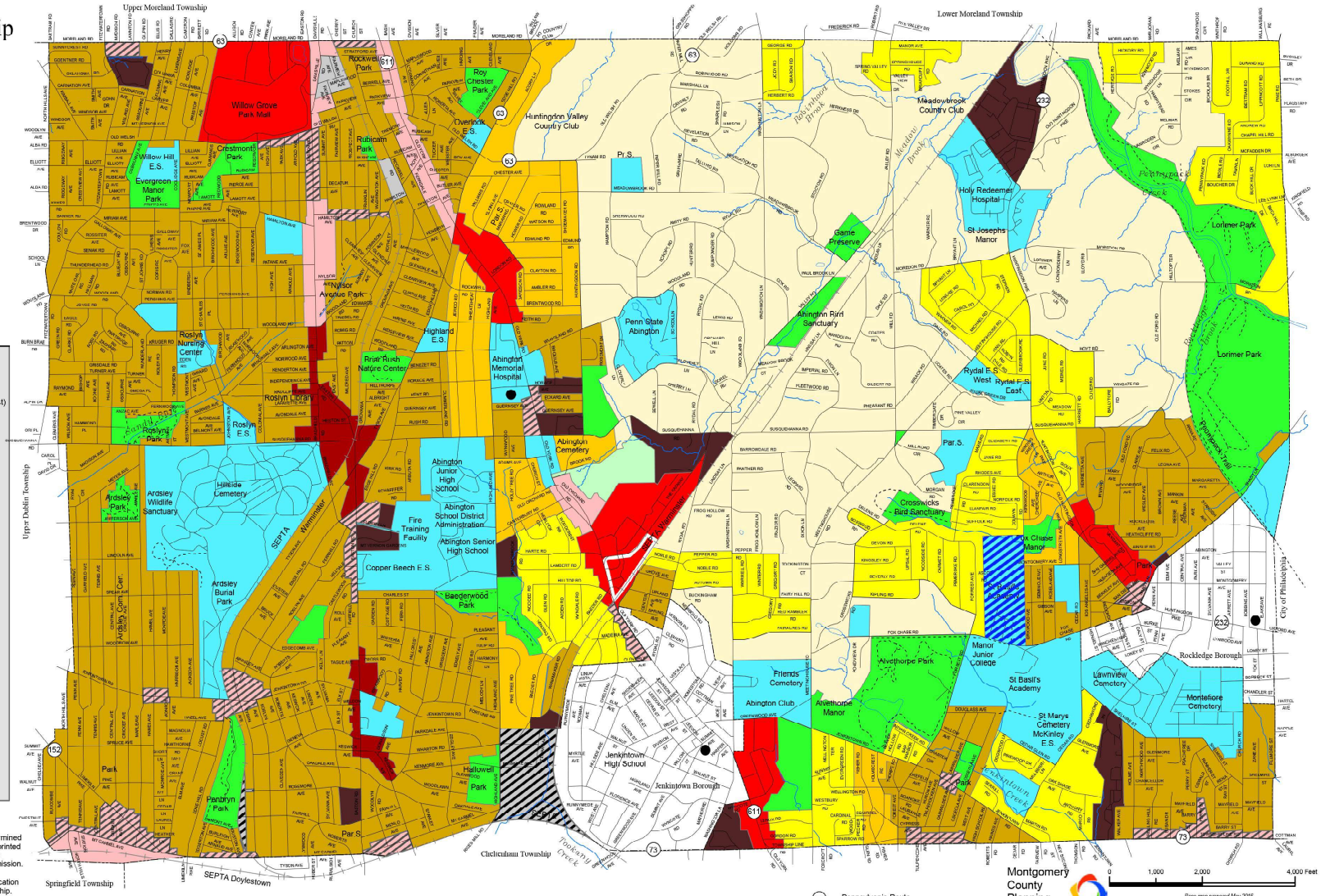
ATTACHMENT "B"

Abington Township

Jenkintown and Rockledge Boroughs

Montgomery County, Pennsylvania

Proposed AR Age-Restricted Carriage Home Overlay District



Zoning Map

- streets
- railroads
- Triangle Area (Applicable to part of BC District)
- municipal
- Trail
- Streams
- Water Bodies
- RC Recreation/Conservation
- R1 Low Density Residential
- R2 Low-Medium Density Residential
- R3 Medium Density Residential
- R4 High Density Residential
- AO Apartment Office
- SNR Senior Neighborhood Residential
- BC Business Center
- MS-H Main Street High Intensity/Density
- MS-L Main Street Low Intensity/Density
- MS VC Village Center
- CS Community Service
- SI-G Suburban Industrial Glenside
- SI-W Suburban Industrial Willow Grove

Zoning boundaries as of April 2017

The Zoning Districts displayed on this map were determined by the Zoning Code of Abington Township. The date printed on this map is the latest information received from the Township by the Montgomery County Planning Commission. This information should not be considered the official "Adopted Zoning Map". Any question regarding the location of a district boundary should be directed to the Township.

611 Pennsylvania Route

Municipal Building

Multiuse Trail

P.S. Parochial School
Pr.S. Private School

Montgomery County Planning Commission

0 1,000 2,000 4,000 Feet

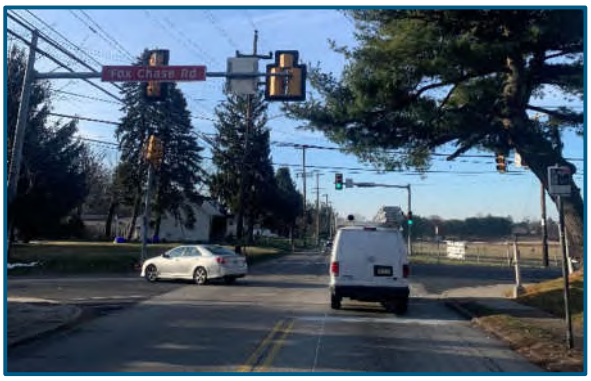
Base map prepared May 2016

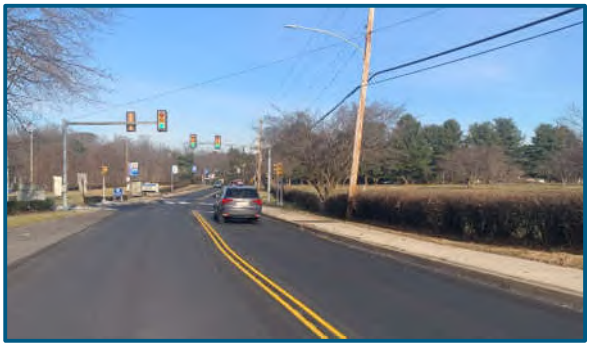
Montgomery County Courthouse - Planning Commission
PO Box 311 ▪ Norristown PA 19404-0311
(p) 610.278.3722 ▪ (f) 610.278.3941
www.montcopa.org/plancom

This map is based on 2015 ortho photography and official sources. Property lines were compiled from individual block maps from the Montgomery County Board of Assessment Appeals, with no verification from the deed. This map is not meant to be used as a legal definition of properties or for engineering purposes.

Transportation Impact Assessment for the St. Basil Redevelopment

Abington Township, Montgomery County, PA





COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
SANDY A. KOZA
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Prepared for
Toll Brothers

February 10, 2022

McMahon Project Number 821051.12

TABLE OF CONTENTS

Executive Summary

Toll Brothers proposes to redevelop the former St. Basil Academy located along Fox Chase Road across from Manor College in Abington Township, Montgomery County, Pennsylvania (see **Figure 1**). The redevelopment of the property is associated with a proposed Zoning Overlay District and Text Amendment. According to Concept "L" prepared by ESE Planning dated January 19, 2022, the existing St. Basil Academy is proposed to be rezoned to permit the development of approximately 150 age-restricted carriage homes. Access to the new residential subdivision would be provide via a full-movement access (Road A), which would be located along Fox Chase Road directly opposite the Manor College Access. An emergency only access is also proposed along Fox Chase Road located approximately 480 feet to the north of the signalized access. The two existing St. Basil's Academy accesses will then be removed. A schematic of the site plan is illustrated in **Figure 2.**

As the Township does not have specific requirements related to the preparation of a traffic impact studies, the scope of the study generally follows PennDOT's guidelines outlined in their *Policies and Procedures for Transportation Impact Studies,* as documented in Appendix A of PennDOT *Publication 282*. The purpose of this study is to evaluate the traffic impacts associated with the redevelopment of the parcel based upon the proposed Zoning Overlay District and Text Amendment. The scope of this study includes an evaluation of the existing weekday morning and weekday afternoon peak hours, as well as the future 2029 build-out year, both without and with the redevelopment of the parcel at the following study intersections:

- Fox Chase Road and Forrest Avenue;
- Fox Chase Road and Manor College/Proposed Local Road (Road A); and
- Fox Chase Road (S.R. 2019) and Cedar Road (S.R. 2058).

Based upon data compiled by the Institute of Transportation Engineers (ITE) in their publication entitled, *Trip Generation Manual, 11th Edition*, the proposed Zoning Overlay District and Text Amendment to permit the development of approximately 150 age-restricted carriage homes on the former St. Basil Academy parcel will generate approximately 836 total trips (entering and exiting) on a typical weekday, of which 53 and 61 total trips (entering and exiting) would be generated during the weekday morning and afternoon commuter peak hours. During a typical weekday, the school at its peak enrollment, as well as the permitted by-right life-care facility are projected to generate more trips than the proposed age-restricted carriage homes. The proposed age-restricted carriage homes also result in less peak hour trips during both the weekday morning and afternoon commuter peak period compared to the former school use at its peak enrollment and the by-right life-care facility. As a result, it can be concluded that the proposed Zoning Overlay District and Text Amendment for the parcel to permit the age-restricted carriage homes would result in less impacts to the area roadways than the former school use or a by-right life-care facility based upon the current zoning of the parcel.

Based upon the traffic evaluation, no off-site mitigation measures are recommended as the two signalized intersections along Fox Chase Road with Forrest Avenue and Cedar Road will both continue to operate at acceptable levels of service overall (LOS B or better) during both peak hours with the lane groups also operating acceptably (LOS D or better).

As the site access will be located directly opposite the Manor College Access along Fox Chase Road, it would then form the fourth leg of the traffic control signal. The following access improvements are recommended, which will require the review and approval of PennDOT and Abington Township:

- Provide one ingress lane and one egress lane for the access separated by a landscaped median;

- Relocate and replace any impacted traffic signal equipment due to the inclusion of the new access road;
- Provide pedestrian equipment and pushbuttons to/from all corners of the signalized intersection of Fox Chase Road (SR 2019) with Manor College Access and the proposed site access (Road A); and
- Provide ADA compliant ramps and/or landing areas to/from northwest and northeast quadrants of the intersection as a result of the fourth leg.

The proposed emergency access will also require review and coordination with Abington Township's emergency service providers. Since the former parcel use was a school, it is recommended that any associated wayfinding signage for the school be removed and that the school speed limit signing, flashing devices, and other associated school signage along Fox Chase Road be removed in conjunction with the redevelopment of the parcel.

The traffic analyses contained herein reveal that efficient access to and from the proposed redevelopment can be provided, and furthermore, site-generated traffic can be accommodated at the study area intersections.

Existing Transportation Settings and Conditions

The former St. Basil Academy, which is proposed to be redeveloped based upon a proposed Zoning Overlay District and Text Amendment, is located along Fox Chase Road across from Manor College in Abington Township, Montgomery County, Pennsylvania (see **Figure 1**). The existing roadways and intersections in the vicinity of the site, which comprise the study area roadway network, are described in this section.

Roadway Characteristics

The study area roadway network and characteristics are summarized below in **Table 1**.

Table 1. Existing Roadway Characteristics

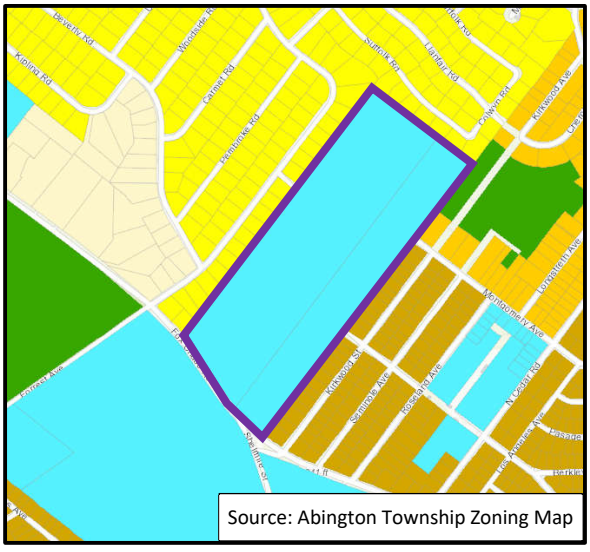
Roadway Name (Jurisdiction)	Average Daily Traffic Volumes (vehicles per day)	Roadway Classification		Travel Lanes (per direction)	Posted Speed Limit (mph)
		PennDOT Typology (1)	PennDOT (2) / Township		
Fox Chase Road (Township)	4,232 (3)	Community Collector	Primary Street	1	35
Fox Chase Road (S.R. 2019 – State)	5,664 (3)	Community Collector	Urban, Major Collector	1	35
Forrest Avenue (Township)	n/a	Local	Local	1	25
Cedar Road (S.R. 2058 – State)	7,065 (3)	Community Collector	Urban, Major Collector	1	35

(1) Based on Table 1.2 – Roadway Typologies in the PennDOT *Publication 13M, Design Manual Part 2*.
(2) Based on the roadway classifications provided on PennDOT's Traffic Information Repository (TIRe) website.
(3) Based on traffic data from PennDOT's Traffic Information Repository (TIRe) website.

The following key intersections in the vicinity of the site comprise the study area:

- Fox Chase Road and Forrest Avenue;
- Fox Chase Road and Manor College/Proposed Local Road (Road A); and
- Fox Chase Road (S.R. 2019) and Cedar Road (S.R. 2058).

The existing characteristics of the study intersections, including photographs, field sketches, and signal permit plans are provided in **Appendix A**.



Land Use Context

The proposed development is currently located in Abington Township, within the CS – Community Service zoning district as seen in the Abington Township Zoning Map illustrated in **Exhibit A**. The proposed redevelopment of the parcel to provide for the age-restricted carriage homes is based upon the proposed Zoning Overlay District and Text Amendment.

Pedestrian, Bicycle, and Transit Facilities

Under current conditions, there is no sidewalk provided along the site's Fox Chase Road (SR 2019) frontage from where it terminates to the south across from the signalized access to Manor College and to the northern full-movement access for St. Basil's Academy. On the opposite side of Fox Chase Road, the sidewalk terminates on the north side of the signalized access for Manor College and a paved asphalt trail is then provided. With the redevelopment of the site, ADA compliant curb ramps and crosswalks will be provided at the signalized access, as well as pedestrian pushbuttons and equipment for all corners.

SEPTA Bus Route 28 currently provide provides services between Torresdale-Cottman to Fern Rock Transportation Center and includes a dedicated route along Fox Chase Road (SR 2019) from Forrest Avenue to Cedar Road. There is currently a box stop with a shelter provided on the west side of Fox Chase Road (SR 2019), to the north of the signalized Manor College access and on the east side of Fox Chase Road (SR 2019), there is a landing area provided adjacent to a utility pole that is to the south of the former main access for St. Basil's Academy.

There are currently no dedicated on-road bicycle lanes provided along Fox Chase Road or off-road paths provided along the site frontage. A review of the *DRAFT Township of Abington Master Bicycle Plan*, dated September 2015, does indicate future connections in the area provided along Forrest Avenue, as well as Fox Chase Road from Manor College to Cedar Road, which would most likely be an off-road path in this area. This item will be investigated during the land development phase of the site.

Traffic Count Data

Daily traffic counts were obtained from PennDOT's Traffic Information Repository (TIRe) website, which is summarized in Table 1. Copies of the daily traffic data is provided in **Appendix B**. Turning movement traffic counts, were conducted in January 2022 during the weekday morning (7:0 AM to 9:00 AM) and weekday afternoon (4:00 PM to 6:00 PM) peak periods. The results of these traffic counts are tabulated by 15-minute intervals in **Appendix C**. The four highest consecutive 15-minute peak intervals during these traffic count periods constitute the peak hours that are the basis of this traffic analysis.

Traffic volumes along Fox Chase Road were conservatively balanced between the Manor College Access and Forrest Avenue, resulting in a net zero difference in volumes between these two intersections. The resultant peak hour traffic volumes are depicted in **Figure 3A** for the weekday morning and weekday afternoon peak hours. These traffic volumes were then analyzed to determine the existing operating conditions, and the results are shown on **Figure 3B.** Specific details regarding the analysis results and traffic operations are provided later in this report.

Crash Summary

Reportable crash data was obtained from PennDOT for the most recent available five-year period, from January 1, 2016 to December 31, 2020. A reportable crash is one in which an injury occurred and/or a vehicle was towed from the scene. Typically, PennDOT considers five reportable, correctable crashes within a 12-month period a threshold value which would result in further analysis to determine if safety improvements should be provided.

Table 2 below summarizes the frequency of the crashes within the study area, while **Table 3** summarizes the types of crashes. Based upon a review of the crash data, there were no discernable crash patterns.

Table 2. Reportable Crash Summary by Year

Location along Fox Chase Road	Crash Frequency Per Year					Total	Average Per Year
	2016	2017	2018	2019	2020		
Intersection with Forrest Avenue	0	0	1	0	0	1	0.3
Site Frontage	0	1	0	0	0	1	0.3
Intersection with Manor College Access	0	0	0	0	0	0	0.0
Intersection with Cedar Road (S.R. 2058)	0	2	2	1	2	7	1.8
Total	**0**	**3**	**3**	**1**	**2**	**9**	**2.1**

Table 3. Reportable Crash Summary by Type

Location along Fox Chase Road	Crash Type			Total
	Angle	Rear-End	Pedestrian	
Intersection with Forrest Avenue	0	0	1	1
Site Frontage	0	1	0	1
Intersection with Manor College Access	0	0	0	0
Intersection with Cedar Road (S.R. 2058)	6	1	2	7
Total	**6**	**2**	**1**	**9**

Site Characteristics

This section presents the details regarding the proposed site, including the incremental increase in traffic volumes generated by the development during the peak hours and the distribution of site traffic to the study area roadways, as well as the proposed site access configuration, traffic control, and sight distance requirements. A trip generation comparison to the former St. Basil Academy and the by-right use based upon the current zoning is also provided.

Trip Generation

The site parcel currently contains the former St. Basil Academy, which was a private school for girls in grades 9 through 12 that closed following the end of the 2020 to 2021 school year on June 21, 2021. According to an article published by CatholicPhilly.com, the school enrollment was as high as 400 students, but had declined to 226 students in the 2020 to 2021 school year. The school had classes from 8:00 AM to 2:55 PM, with the doors opening as early as 7:00 AM. During the 2020 to 2021 school year, the school operated under a hybrid model due to the COVID-19 restrictions. According to the school's website, in-person classes were held on Mondays and Wednesday for grades 9 and 10 and on Tuesdays and Thursdays for grades 11 and 12 with Friday classes alternating between in-person and virtual classes for the two groups.

Typical weekday daily, commuter weekday morning (7:00 AM to 9:00 AM), and weekday afternoon (4:00 PM to 6:00 PM) trip generation characteristics have been estimated for the former private school based upon the peak and current student enrollment, the proposed zoning to allow the age-restricted carriage homes, and the by-right life-care facility. The trip generation characteristics are based upon data compiled by the Institute of Transportation Engineers (ITE) in their publication entitled, *Trip Generation Manual, 11th Edition*.

Table 4 provides a summary of the vehicular trip generation characteristics for the former school, the proposed age-restricted carriage homes that would be permitted within the zoning overlay district and text amendment, and the permitted by-right life-care facility based upon the current zoning of the parcel. During a typical weekday, the school at its peak enrollment, as well as the permitted by-right life-care facility are projected to generate more trips than the proposed age-restricted carriage homes. The proposed age-restricted carriage homes also result in less peak hour trips during both the weekday morning and afternoon commuter peak period compared to the former school use at its peak enrollment and the by-right life-care facility. As a result, it can be concluded that the proposed Zoning Overlay District and Text Amendment for the parcel to permit the age-restricted carriage homes would result in less impacts to the area roadways than the former school use or a by-right life-care facility based upon the current zoning of the parcel.

Trip Distribution and Assignment

Site-generated traffic will approach and depart the site via different routes depending on factors such as the existing traffic patterns, location of major roadways, and the location of the development's site access. The distribution percentages for the anticipated directions of approach and departure are illustrated in **Figure 4A**, based upon a typical cordon-area of the study intersections. Application of the percentages in Figure 4A to the trips associated with the proposed age-restricted carriage homes from Table 4, provides an estimate of the site traffic to be added to the study area, which is then illustrated in **Figure 4B** for the peak hours.

Table 4 –Vehicular Trip Generation Comparison [1]

Land Use	Size/ Variable	Daily	Weekday Morning Peak Hour (7:00 AM to 9:00 AM)			Weekday Afternoon Peak Hour (4:00 PM to 6:00 PM)		
			In	Out	Total	In	Out	Total
Existing School [2]								
Peak Enrollment	400 students	992	203	119	322	29	39	68
2020 to 2021 Enrollment	226 students	560	118	70	188	16	22	38
Zoning Overlay District & Text Amendment								
Proposed Age-Restricted Carriage Homes [3]	**150 d.u.**	**836**	**17**	**36**	**53**	**37**	**24**	**61**
Permitted By-Right Life-Care Facility								
Dependent Care: Personal [4]	152 d.u.	395	16	11	27	14	22	36
Dependent Care: Congregate/Personal [5]	60 d.u.	133	3	3	6	6	6	12
Apartments [6]	331 d.u.	981	22	42	64	46	37	83
Total	543 d.u.	1,509	41	46	97	66	65	131

(1) Based on the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition.*
(2) Daily and weekday afternoon is based on the rates for ITE Land Use Code 532: Private School (K-12), while the weekday morning is based on equations.
(3) Based on the equations for ITE Land Use Code 251: Senior Adult Housing – Single-Family.
(4) Based on the rates for ITE Land Use Code 254: Assisted Living.
(5) Daily is based on the rates for ITE Land Use Code: 253 – Congregate Care Facility, while the weekday morning and afternoon is based on the equations
(6) Based on the equations for ITE Land Use Code 252: Senior Adult Housing – Multifamily.

School Signage and Equipment

With the redevelopment of the site, a thorough review of area signage will need to be conducted to remove all traffic control devices, including any school crossing and speed limit devices from the area, as well as any associated wayfinding signs for the former school. At a minimum, there is an overhead mast-arm with a flashing beacon provided for vehicles traveling north that is located on the west side of Fox Chase Road to the south of Kirkwood Avenue that will need to be removed and for vehicles traveling south, there is an overhead mast-arm with a flashing beacon located on the east side of Fox Chase Road, to the north of the St. Basil's Academy northern access.

Site Access Configuration and Traffic Control

The existing St. Basil's Academy has one main vehicular access located along Fox Chase Road (SR 2019) approximately 410 feet south of Forrest Avenue and a second access located 265 feet south of the main access, which has gates and bollards that restrict vehicles from utilizing the access. With the redevelopment of the site, the existing accesses would be closed and a new full-movement access (Road A) would be provided along Fox Chase Road directly opposite the access for Manor College, forming the fourth leg of the intersection, which would be designed to provide a landscaped median separating the single ingress lane and single egress lane for the access. An emergency only access is also proposed along Fox Chase Road located approximately 480 feet to the north of the signalized access.

The need for separate left- and/or right-turn lanes at the signalized intersection of Fox Chase Road with Manor College Access/Proposed Local Road (Road A) was based on the current PennDOT guidelines in accordance with *Publication 46, Chapter 11 – Traffic Studies*. **Table 5** summarizes the results of the auxiliary turn lane warrants for the local road intersection along Fox Chase Road. The various warrant/guideline analysis worksheets are contained in **Appendix D**.

Table 5 – Turn Lane Warrant Summary for the Intersection of Fox Chase Road with Manor College Access/Proposed Local Road (Road A)

Approach and Movement	Warrant Satisfied? (1)	Required Lane Length (1)	Proposed Lane Length (feet)
Southbound Left	No	Not Required	n/a
Northbound Right	No	Not Required	n/a
Northbound Left	No	Not Required	n/a

As the site access will be located directly opposite the Manor College Access along Fox Chase Road, the left-turn conflict factors were also reviewed for all of the approaches to determine if separate left-turn phasing should be provided for any of the approaches. The worksheet for this evaluation is also contained in Appendix D, which does not indicate the need for left-turn phasing on any of the approaches. The following access improvements are recommended, which will require the review and approval of PennDOT and Abington Township:

- Provide one ingress lane and one egress lane for the access separated by a landscaped median;
- Relocate and replace any impacted traffic signal equipment due to the inclusion of the new access road;
- Provide pedestrian equipment and pushbuttons to/from all corners of the signalized intersection of Fox Chase Road (SR 2019) with Manor College Access and the proposed site access (Road A); and
- Provide ADA compliant ramps and/or landing areas to/from northwest and northeast quadrants of the intersection as a result of the fourth leg.

Sight Distance

An evaluation of the existing available sight distance at the proposed Fox Chase Road access was performed to determine if safe sight distances are available, which would allow for right-turn on red movements to be made at the signalized access. Generally, the prevailing travel speed, roadway grades and profiles, and number of travel lanes play a role in determining if safe sight distances are available.

Table 6 provides a summary of the existing available distance for egress vehicles looking to the left, which does meet the minimum required sight distance to permit right turn on red movements according to *Exhibit 4-22 of PennDOT Publication 46*. This distance will be confirmed during the highway occupancy permit phase of the project when the signal is designed. The distances for a left-turn vehicle looking ahead and for a vehicle approaching from the rear are also adequate based upon the minimum intersection sight distance criteria from the American Association of State Highway and Transportation Officials (AASHTO) in their publication entitled *A Policy on Geometric Design of Highways and Streets.*

Table 6 - Sight Distance Evaluation
Proposed Fox Chase Road Access (Road A)

Movement	Direction	Posted Speed (mph)	Approximate Grade	Minimum Required Sight Distance (feet)	Available Sight Distance (feet)	Meets Criteria?
Exiting	**Looking Left**	35	+2%	247 (1)	253 (3)	Yes
Left-Turn Entering	**Looking Ahead**	35	+2%	285 (2)	441	Yes
	From the Rear	35	-2%	285 (2)	470	Yes

(1) Meets PennDOT's minimum sight distance criteria from *Exhibit 4-22 of Publication* 46 to allow for right-turn on red movements based on the posted speed limit and a grade of 0%. .

(2) Based on Table 9-17 for a left-turn from the major road from AASHTO's *A Policy on Geometric Design of Highways and Streets.* PennDOT's desirable sight distance for a left-turning vehicle entering from a main highway is 300 feet based *on Table 5 of Title 67 Chapter 441* for a travel speed of 35 miles per hour, which is also met.

(3) Requires removal of existing vegetation along site frontage.

A clear sight distance triangle will also be maintained for the proposed access in accordance with *Section 146-25.F. of the SALDO*. The triangle will be measured along the center line a minimum of 65 feet from the point of intersection and no vegetation or other obstruction will be provided in this area, with the exception of the traffic signal equipment. The sight distance will be further evaluated during the land development phase of the project with the Township, as well as the during the traffic signal design phase with PennDOT.

Future Traffic Conditions

This section presents the future build-out year 2029 traffic conditions, both without and with the proposed redevelopment of the St. Basil Academy based upon the proposed zoning overlay district and text amendment to allow for the age-restricted carriage homes, which are anticipated to be constructed and occupied by 2029. The future 2029 build-out year without-development traffic volumes were estimated by increasing the existing 2022 traffic volumes to account for regional growth, as described below. The incremental increase due to the anticipated trip generation for the site was then added, resulting in the future 2029 build-out year with-development traffic volumes.

Regional Traffic Growth

To account for regional traffic growth, the existing traffic volumes were increased by an annual traffic growth rate of 0.33 percent per year, which was compounded for three years to 2029 or 2.33 percent total. This growth rate is consistent with the traffic growth rate recommended by the PennDOT Bureau of Planning and Research's *Growth Factors for August 2021 and July 2022* for similar urban, non-interstate roadways in Montgomery County. There are no other known developments within Abington Township in this area of the Township, which would impact the study area intersections.

Planned Roadway Improvements

There are no known roadway improvement projects planned by PennDOT, the County, or the Township that would impact the operations of the study area intersections.

Future Traffic Volumes

The total background growth traffic volumes were then added to the existing 2022 traffic volumes, resulting in the future 2029 without-development traffic volumes. Next, the site generated traffic volumes, as shown in Figure 4B, were added to the future 2029 without-development traffic volumes, resulting in the future 2029 with-development traffic volumes.

The resultant future 2029 peak hour traffic volumes without development are illustrated in **Figure 5A,** and the future 2029 with-development peak hour traffic volumes are illustrated in **Figures 5B** for the weekday morning and weekday afternoon. These traffic volumes were then analyzed to determine the future 2029 without and with development traffic operating conditions, and the results of this analysis are shown in **Figures 5C and 5D.** Detailed traffic volume projection worksheets are provided in **Appendix E.**

Capacity/Level-of-Service Results

The peak hour traffic volumes were analyzed to determine the existing and future traffic operating conditions, both without and with the proposed age-restricted carriage homes, in accordance with the standard techniques contained in the current *Highway Capacity Manual (6th Edition)* for signalized intersections. The HCM 6th Edition Methodology within Synchro 10.3 (build 151, rev. 0) traffic analysis software was utilized in the traffic analyses.

These standard capacity/level-of-service analysis techniques, which calculate total control delay, are described in **Appendix F** for signalized intersections, as well as the correlation between average total control delay and the respective level-of-service (LOS) criteria for each intersection type. The following procedures and assumptions were utilized for the analysis, which are also based upon PennDOT's *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permit Plans,* as well as other general engineering principals:

- For signalized intersections, the Pennsylvania base saturation flow rate (Exhibit 10-9) and Pennsylvania traffic signal control calibration parameters (Exhibit 10-10) outlined in PennDOT's *Publication 46, Traffic Engineering Manual*, were used.

- If the evaluation of without-development to with-development conditions indicates that the overall intersection level-of-service has dropped, mitigation will be required if the increase in delay is greater than 10 seconds. If the overall intersection delay increase is less than or equal to 10 seconds, mitigation of the intersection will not be required.

- The existing traffic signal phasing at the intersection of Fox Chase Road (S.R. 2019) and Cedar Road is not currently supported by the *Highway Capacity Manual* methodology due to the advanced left-turn phases provided on two approaches where separate left-turn lanes are not provided. Therefore, delay and queue results for this intersection are based on the Synchro percentile methodology.

The existing, future build-out year 2029 traffic conditions, both without and with the proposed development, are summarized in **Figures 3B, 5C, and 5D,** respectively. The detailed capacity/level-of-service analysis worksheets are provided in **Appendices G, H, and I**. **Table 6** below summarizes the overall levels of service for the study area intersections for the two peak hours. The detailed results of the level-of-service analysis and the 95th percentile queues are contained in the matrices provided in **Tables 7 and 8**, respectively.

Based on the results of the analysis, mitigation measures are not required at the two off-site study area intersections as a result of the redevelopment of the site. All of the study area intersections are anticipated to operate at acceptable levels of service overall (LOS B or better) during both peak hours with the corresponding lane groups also operating acceptably (LOS D or better).

Table 6. Overall Intersection Levels-of-Service

Weekday Morning Peak Hour

Intersection of Fox Chase Road	Overall Level-of-Service (Delay in Seconds)		Drop in LOS/ Increase in Delay (2)	Requires Mitigation
	Without Development	With Development (1)		
Forrest Avenue	A (8.9)	A (8.8)	No LOS Drop	No
Manor College Access/Proposed Local Road	A (1.7)	A (3.5)	No LOS Drop	No
Cedar Road (S.R. 2058)	C (27.3)	C (27.9)	No LOS Drop	No

Weekday Afternoon Peak Hour

Intersection of Fox Chase Road	Overall Level-of-Service (Delay in Seconds)		Drop in LOS/ Increase in Delay (2)	Requires Mitigation
	Without Development	With Development (1)		
Forrest Avenue	A (9.4)	A (9.3)	No LOS Drop	No
Manor College Access/Proposed Local Road	A (3.8)	A (4.4)	No LOS Drop	No
Cedar Road (S.R. 2058)	C (26.2)	C (27.4)	No LOS Drop	No

(1) With-development base conditions without improvements.
(2) Based on the difference in delay from without-development to with-development conditions, in accordance with PennDOT's level of service requirements.

Conclusions and Recommendations

The proposed Zoning Overlay District and Text Amendment to permit the development of approximately 150 age-restricted carriage homes on the former St. Basil Academy parcel will generate approximately 836 total trips (entering and exiting) on a typical weekday, of which 53 and 61 total trips (entering and exiting) would be generated during the weekday morning and afternoon commuter peak hours. During a typical weekday, the school at its peak enrollment, as well as the permitted by-right life-care facility are projected to generate more trips than the proposed age-restricted carriage homes. The proposed age-restricted carriage homes also result in less peak hour trips during both the weekday morning and afternoon commuter peak period compared to the former school use at its peak enrollment and the by-right life-care facility. As a result, it can be concluded that the proposed Zoning Overlay District and Text Amendment for the parcel to permit the age-restricted carriage homes would result in less impacts to the area roadways than the former school use or a by-right life-care facility based upon the current zoning of the parcel.

Based upon the traffic evaluation, no off-site mitigation measures are recommended as the two signalized intersections along Fox Chase Road with Forrest Avenue and Cedar Road will both continue to operate at acceptable levels of service overall (LOS B or better) during both peak hours with the lane groups also operating acceptably (LOS D or better).

As the site access will be located directly opposite the Manor College Access along Fox Chase Road, it would then form the fourth leg of the traffic control signal. The following access improvements are recommended, which will require the review and approval of PennDOT and Abington Township:

- Provide one ingress lane and one egress lane for the access separated by a landscaped median;
- Relocate and replace any impacted traffic signal equipment due to the inclusion of the new access road;
- Provide pedestrian equipment and pushbuttons to/from all corners of the signalized intersection of Fox Chase Road (SR 2019) with Manor College Access and the proposed site access (Road A); and
- Provide ADA compliant ramps and/or landing areas to/from northwest and northeast quadrants of the intersection as a result of the fourth leg.

The proposed emergency access will also require review and coordination with Abington Township's emergency service providers. Since the former parcel use was a school, it is recommended that any associated wayfinding signage for the school be removed and that the school speed limit signing, flashing devices, and other associated school signage along Fox Chase Road be removed in conjunction with the redevelopment of the parcel.

The traffic analyses contained herein reveal that efficient access to and from the proposed redevelopment can be provided, and furthermore, site-generated traffic can be accommodated at the study area intersections.

Table 7 - Level of Service Matrices

1. Fox Chase Road and Forrest Avenue

Time Period			Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year			2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Forrest Avenue	EB	Left	C	C	C	C	C	C
		Thru						
		Right	21.6	21.7	21.7	22.5	22.5	22.6
	WB	Left	C	C	C	C	C	C
		Thru						
		Right	21.3	21.3	21.3	20.7	20.7	20.7
Fox Chase Road	NB	Left	A	A	A	A	A	A
		Thru						
		Right	3.7	3.7	3.7	3.4	3.4	3.4
	SB	Left	A	A	A	A	A	A
		Thru						
		Right	3.1	3.2	3.2	3.2	3.2	3.2
Overall			A	A	A	A	A	A
			8.8	8.9	8.8	9.3	9.4	9.3

Table 7 - Level of Service Matrices

3. Fox Chase Road and Manor College Access / Proposed Local Road

Time Period			Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year			2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Manor College Access	EB	Left	C	C	C	C	C	C
		Thru	26.5	26.5	24.7	29.6	29.6	25.5
		Right						
Proposed Local Road	WB	Left	-	-	C	-	-	C
		Thru			26.1			25.0
		Right						
Fox Chase Road	NB	Left	A	A	A	A	A	A
		Thru	1.5	1.5		1.7	1.7	
		Right	-	-	1.9	-	-	1.9
	SB	Left	-	-	A	-	-	A
		Thru	A	A		A	A	
		Right	1.5	1.5	1.8	1.9	1.9	2.1
Overall			A	A	A	A	A	A
			1.7	1.7	3.5	3.7	3.8	4.4

Table 7 - Level of Service Matrices

4. Fox Chase Road (S.R. 2019) and Cedar Road (S.R. 2058)

Time Period			Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year			2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition			Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Cedar Road (S.R. 2058)	EB	Left	C	C	C	C	C	C
		Thru	22.7	23.8	25.2	20.7	21.7	24.1
		Right						
	WB	Left	C	C	C	C	C	C
		Thru	33.8	34.4	34.7	32.8	33.5	33.8
		Right						
Fox Chase Road (S.R. 2019)	NB	Left	D	D	D	D	D	D
		Thru	36.3	37.2	38.0	35.4	35.8	36.6
		Right						
Fox Chase Road	SB	Left	B	B	B	B	B	B
		Thru	14.8	15.1	16.1	18.4	18.7	19.7
		Right						
Overall			C	C	C	C	C	C
			26.5	27.3	27.9	25.5	26.2	27.4

Table 8- 95th Percentile Queue Matrices

1. Fox Chase Road and Forrest Avenue

Time Period			Current Storage [1]	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year				2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition				Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Forrest Avenue	EB	Left	*2,950'*	48	48	48	65	68	68
		Thru							
		Right							
	WB	Left	-	50	50	53	35	35	38
		Thru							
		Right							
Fox Chase Road	NB	Left	*775'*	33	35	38	25	28	25
		Thru							
		Right							
	SB	Left	*3,425'*	25	25	25	25	25	25
		Thru							
		Right							

(1) Distance to adjacent intersections shown in italics.

Table 8- 95th Percentile Queue Matrices

3. Fox Chase Road and Manor College Access / Proposed Local Road

Time Period			Current Storage [1]	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year				2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition				Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Manor College Access	EB	Left	-	25	25	25	25	25	25
		Thru							
		Right							
Proposed Local Road	WB	Left	-	-	-	25	-	-	25
		Thru							
		Right							
Fox Chase Road	NB	Left	*1450'*	25	25	25	25	25	25
		Thru							
		Right		-	-		-	-	
	SB	Left	*775'*	-	-	25	-	-	25
		Thru		25	25		25	25	
		Right							

(1) Distance to adjacent intersections shown in italics.

Table 8- 95th Percentile Queue Matrices

4. Fox Chase Road (S.R. 2019) and Cedar Road (S.R. 2058)

Time Period			Current Storage [1]	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year				2022	2025 Build-Out Year		2022	2025 Build-Out Year	
Development Condition				Existing	w/o Dev	w/Dev	Existing	w/o Dev	w/Dev
Cedar Road (S.R. 2058)	EB	Left	*4,875'*	234	242	245	256	268	284
		Thru							
		Right							
	WB	Left	*2,050'*	246	253	256	253	263	273
		Thru							
		Right							
Fox Chase Road (S.R. 2019)	NB	Left	-	184	192	196	155	158	165
		Thru							
		Right							
Fox Chase Road	SB	Left	*1,450'*	144	149	167	191	195	208
		Thru							
		Right							

(1) Distance to adjacent intersections shown in italics.

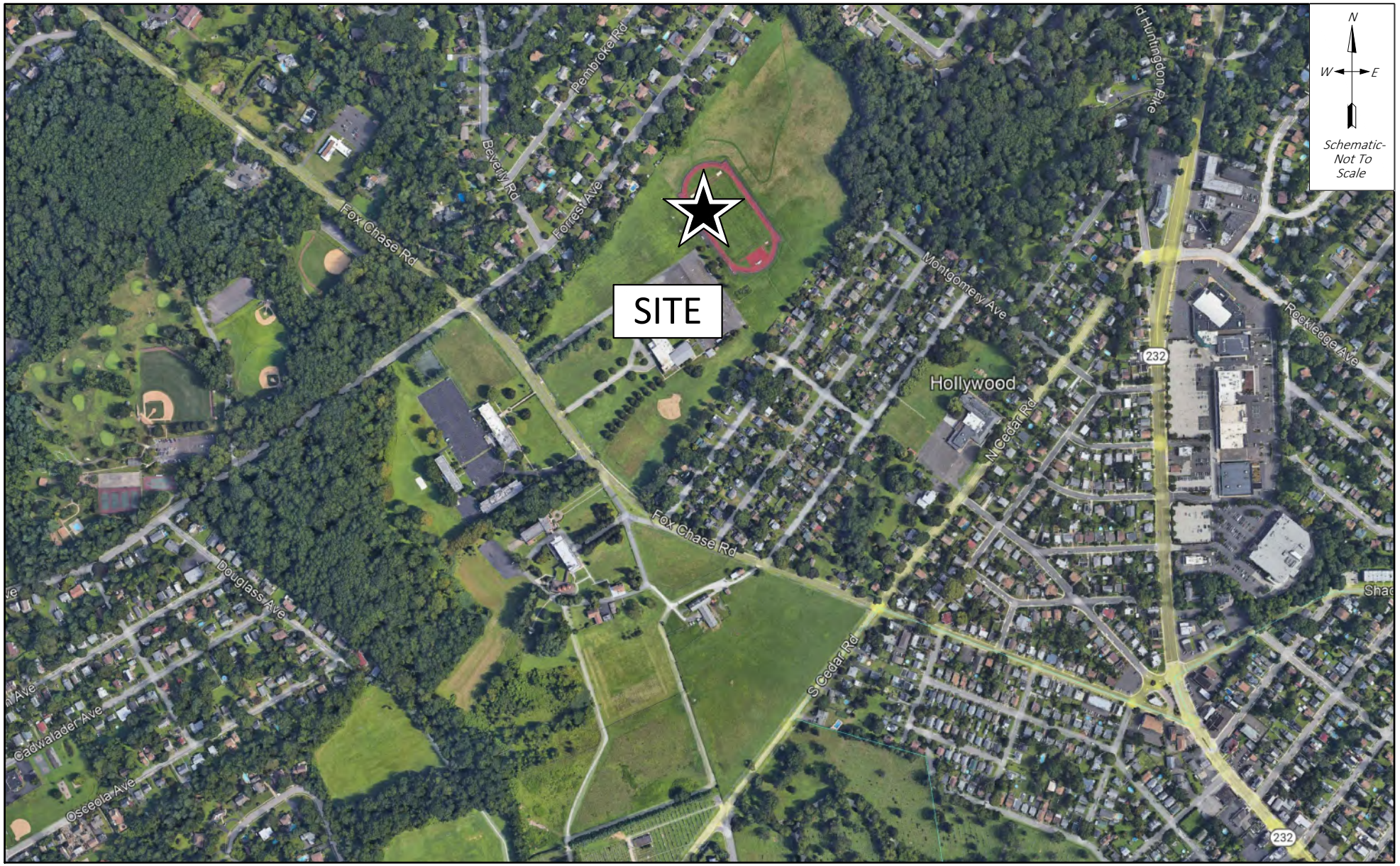


FIGURE 1

Location Map

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

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FIGURE 2

Site Plan

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

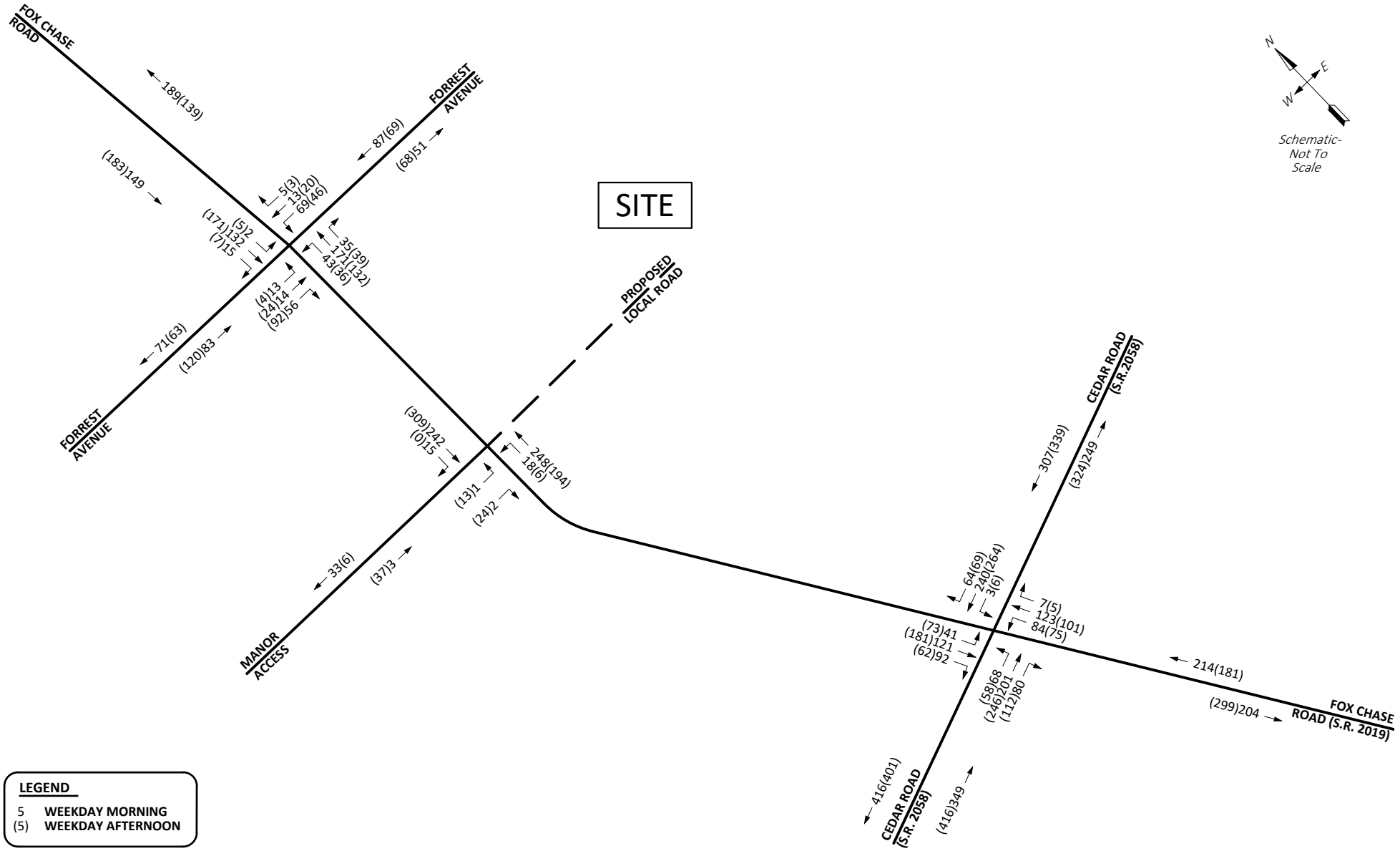

FIGURE 3A

2022 Existing Peak Hour Volumes

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

T:\TOLLBRO1\821051-Abington\Traffic\3 - TIS\5-Graphics\Figure 3A.dw

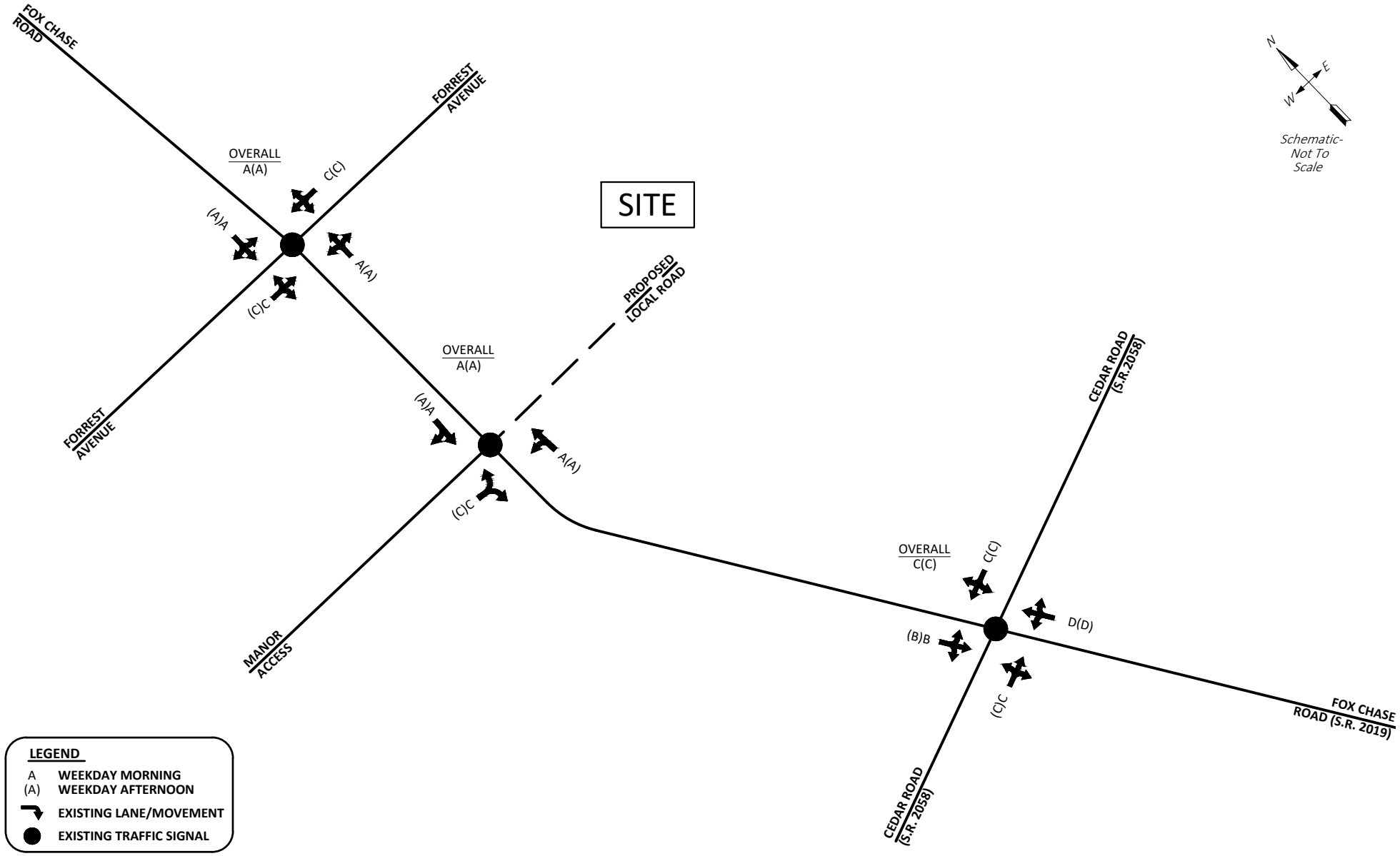

FIGURE 3B

2022 Existing Peak Hour Levels-of-Service

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

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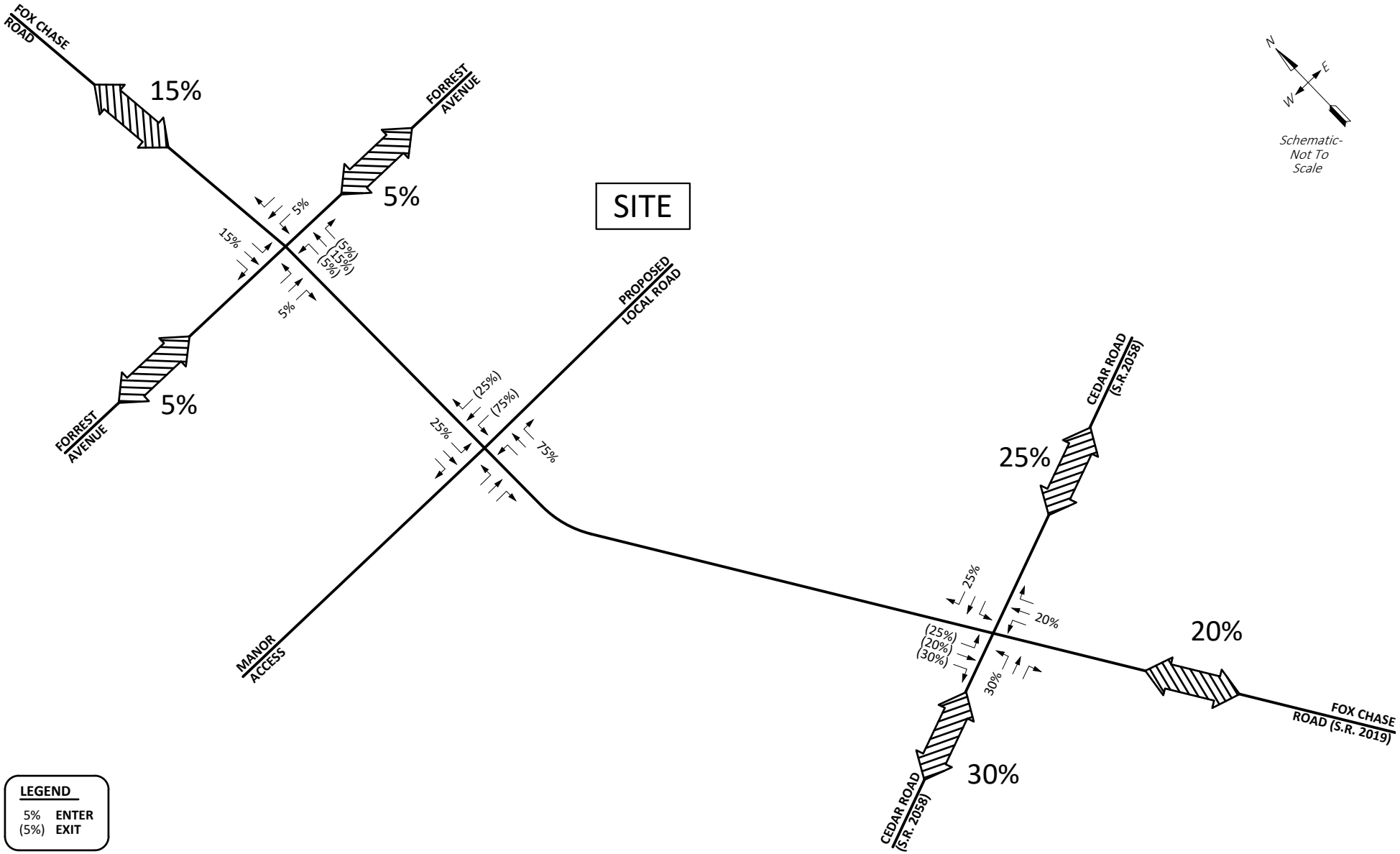

FIGURE 4A

Site Trip Distribution

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

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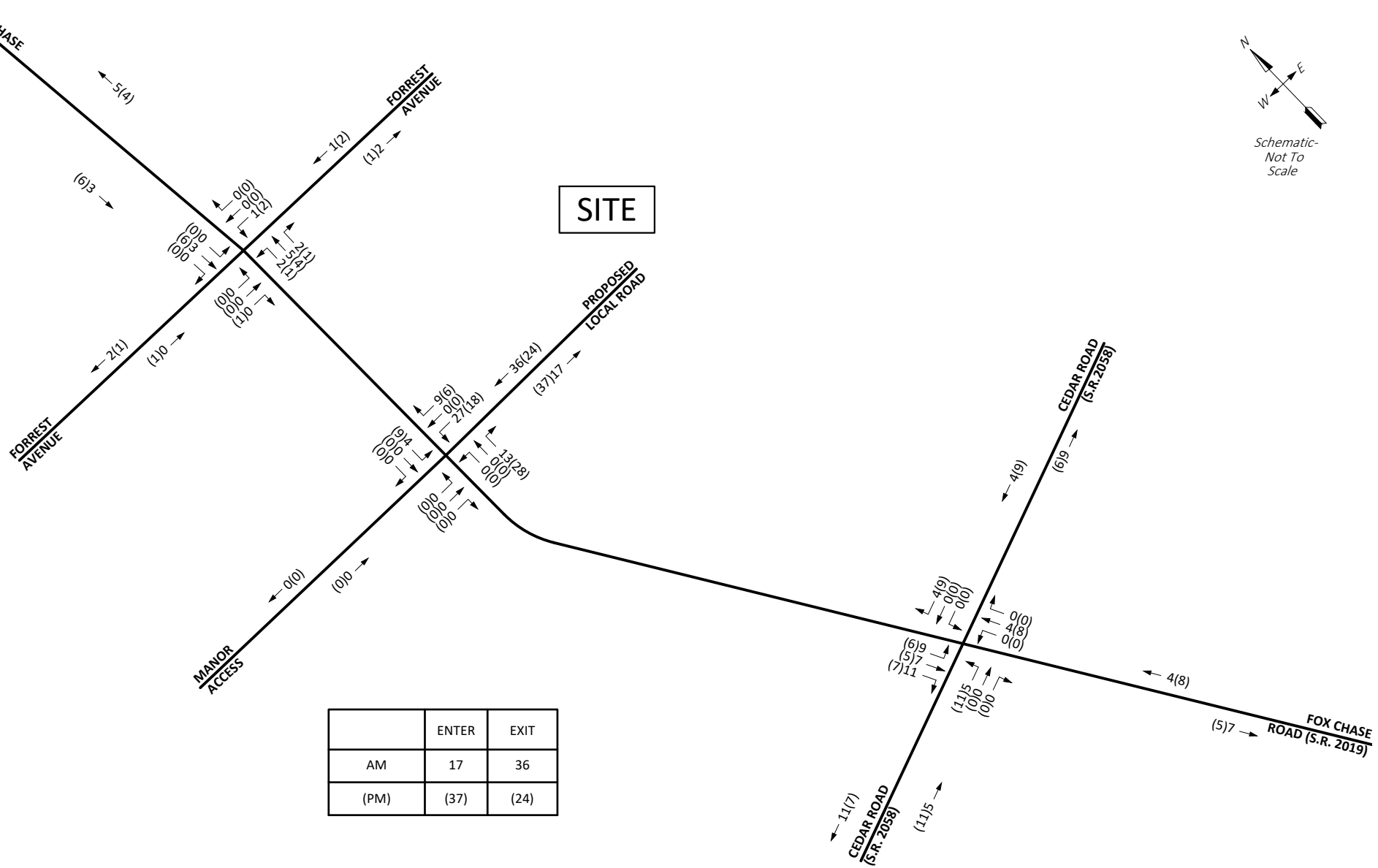
T:\TOLLBRO1\821051-Abington\Traffic\3 - TIS\5-Graphics\Figure 4A.dw



	ENTER	EXIT
AM	17	36
(PM)	(37)	(24)

FIGURE 4B

Site Trip Assignment

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

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T:\TOLLBRO1\821051-Abington\Traffic\3 - TIS\5-Graphics\Figure 4B.dw

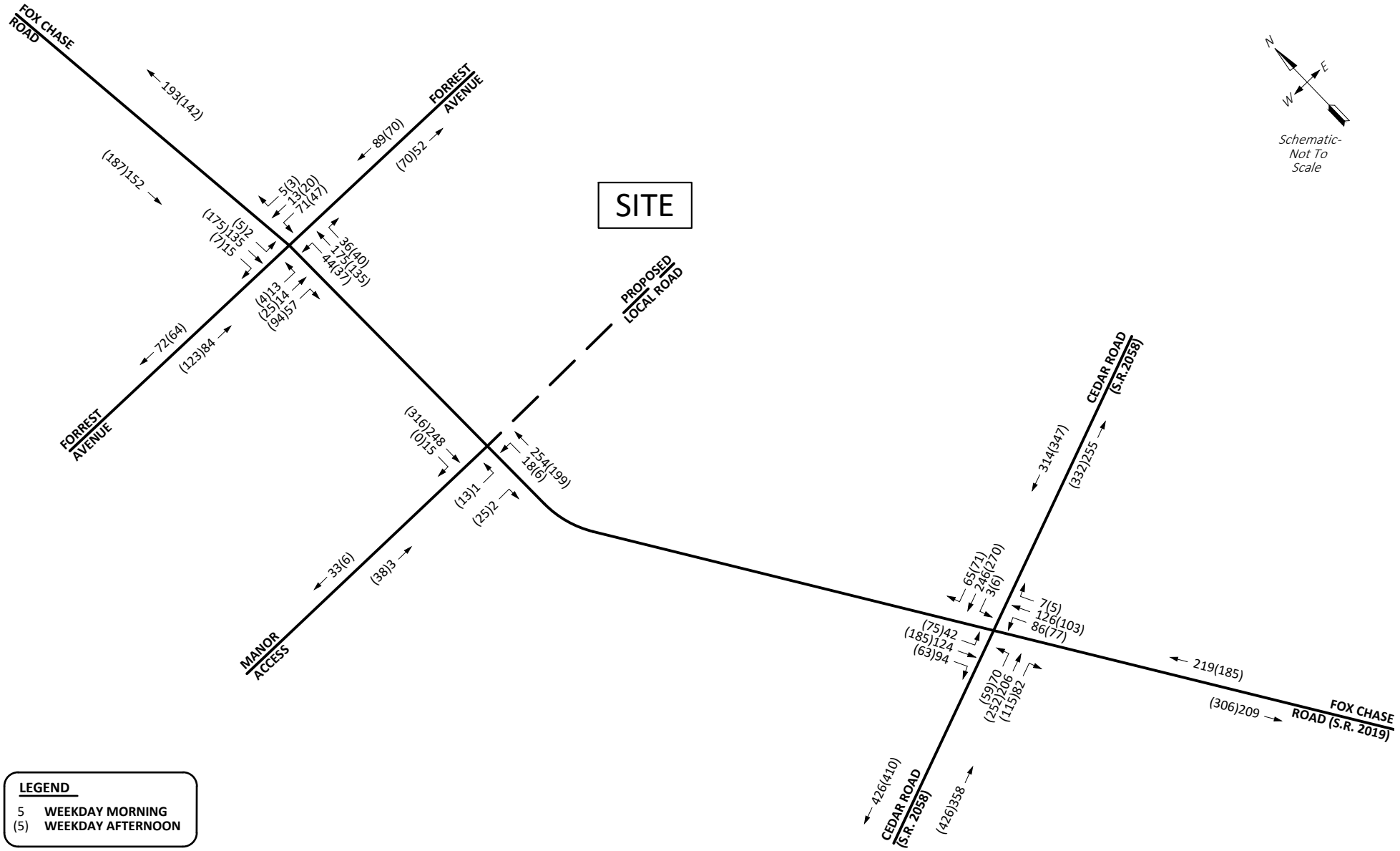

FIGURE 5A

2029 Future Peak Hour Traffic Volumes without Development

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

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T:\TOLLBRO1\821051-Abington\Traffic\3 - TIS\5-Graphics\Figure 5A.dw

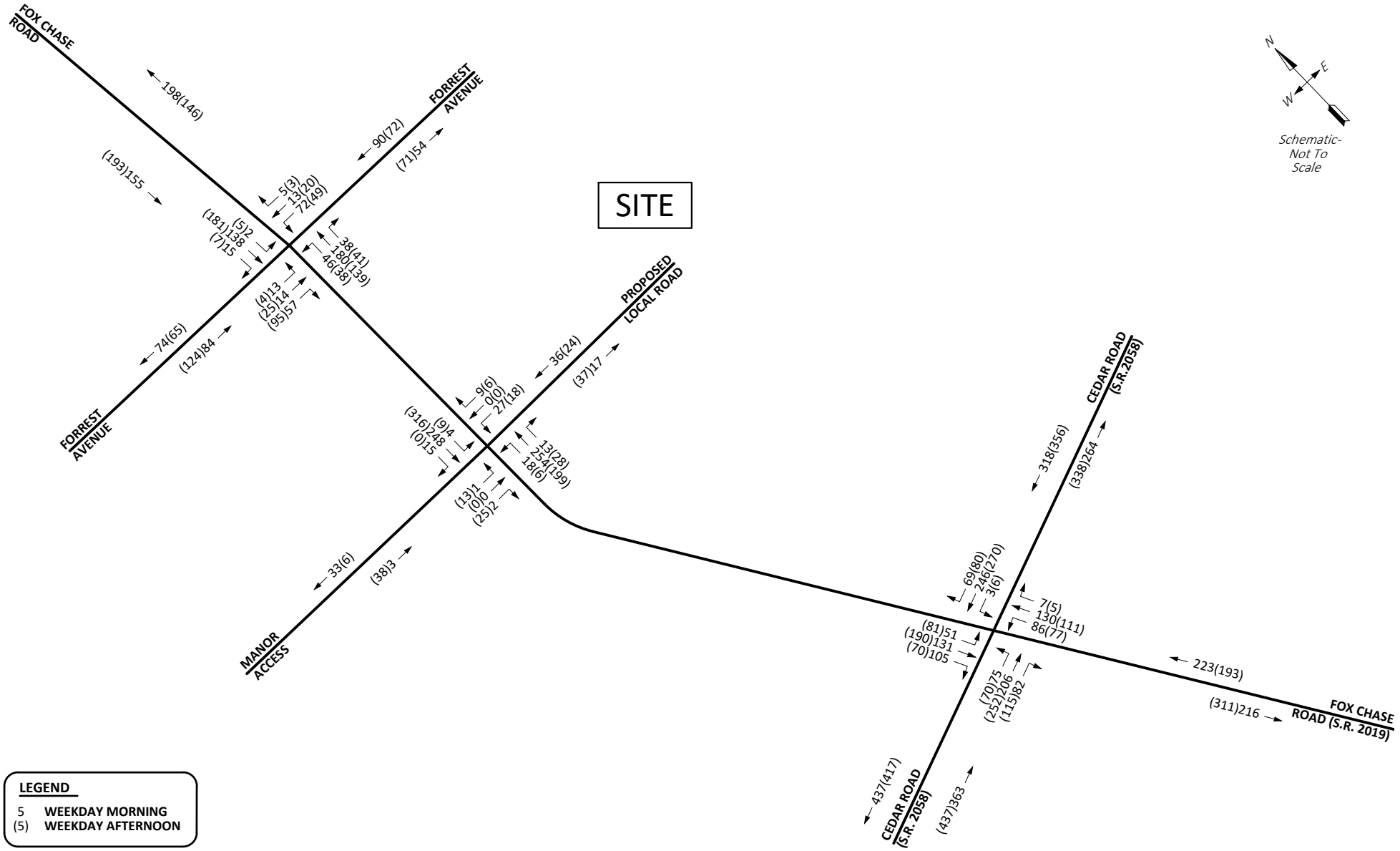

FIGURE 5B

2029 Future Peak Hour Traffic Volumes with Development

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

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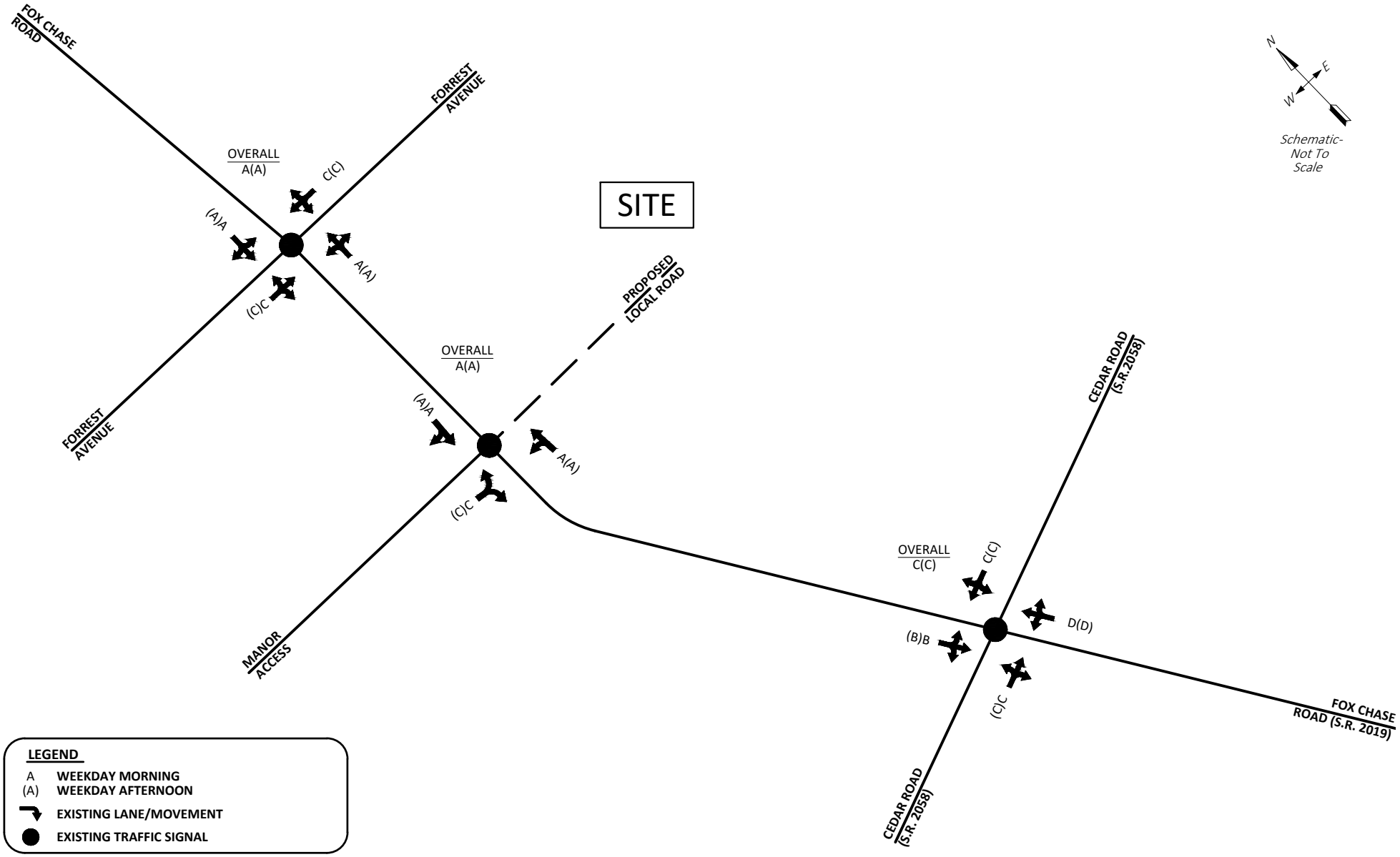

FIGURE 5C

2029 Future Peak Hour Levels of Service without Development

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

T:\TOLLBRO1\821051-Abington\Traffic\3 - TIS\5-Graphics\Figure 5C.dw

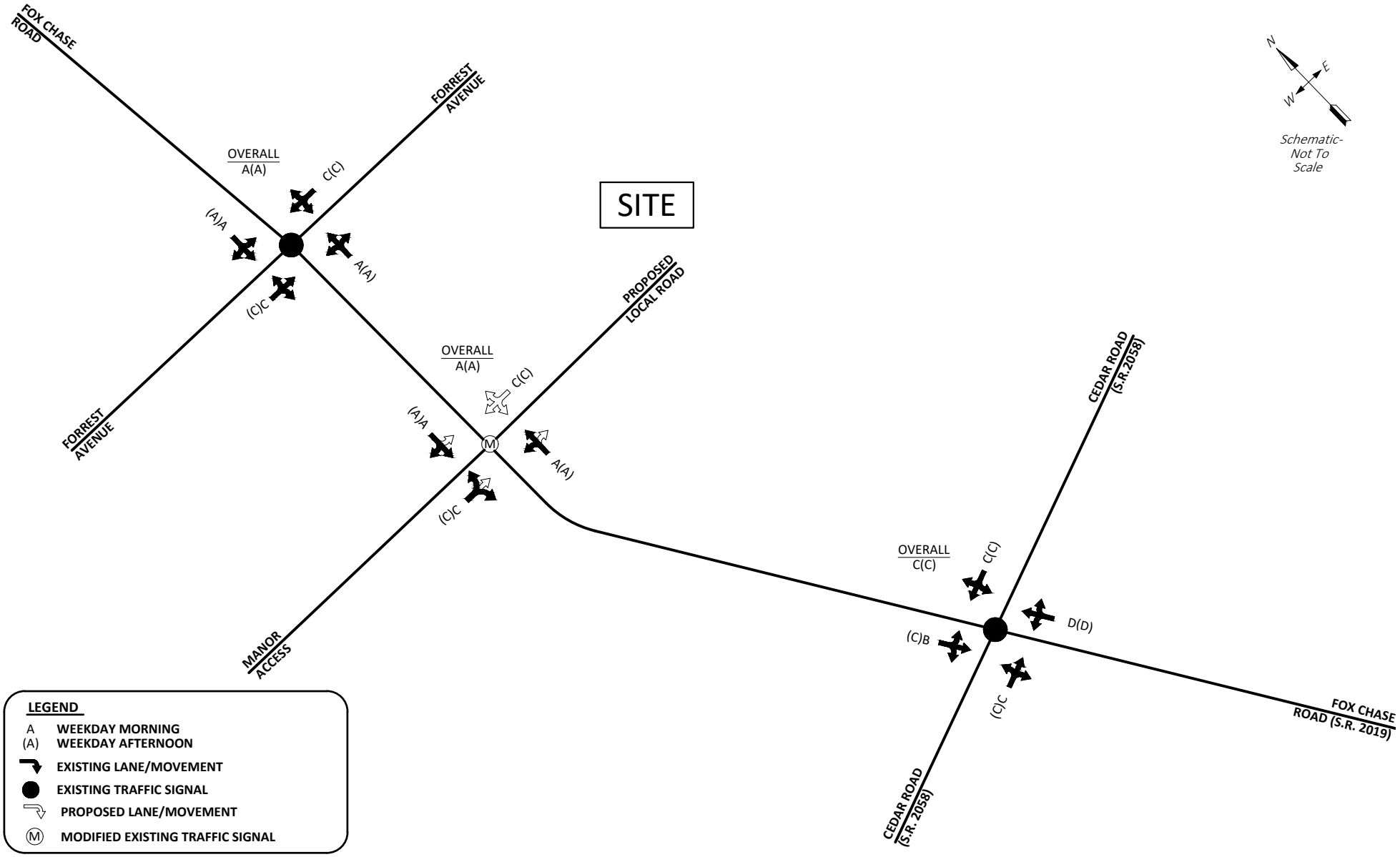

FIGURE 5D

2029 Future Peak Hour Levels of Service with Development

ST. BASIL REDEVELOPMENT

ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

McMAHON

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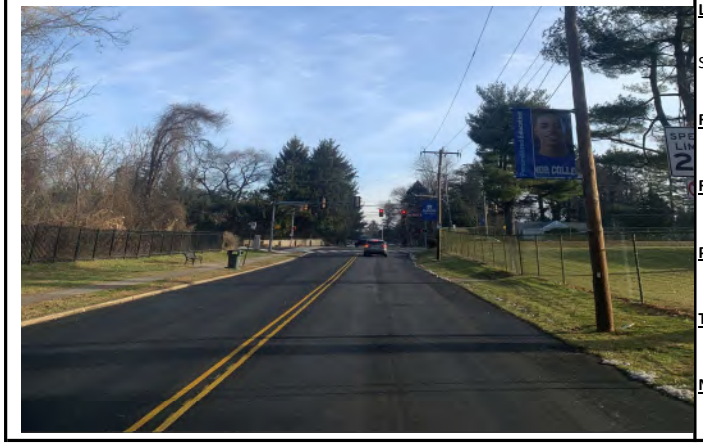
Appendix A

Intersection Inventory

INTERSECTION INVENTORY SUMMARY

Fox Chase Road and Forrest Avenue

Eastbound Forrest Avenue Approach



Lane Geometry

Shared Left/Through/Right

Roadway Classification

Local

Roadway Ownership

Township

Posted Speed Limit

25 MPH

Traffic Control

Traffic Signal

Notes

Westbound Forrest Avenue Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Local

Roadway Ownership

Township

Posted Speed Limit

25 MPH

Traffic Control

Traffic Signal

Notes

Northbound Fox Chase Road Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

Township

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

Southbound Fox Chase Road Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

Township

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

INTERSECTION INVENTORY SUMMARY

Fox Chase Road and Manor College Access

Eastbound Manor College Access Approach

Lane Geometry

Shared Left//Right

Roadway Classification

Private

Roadway Ownership

Private

Posted Speed Limit

NPSL

Traffic Control

Traffic Signal

Notes

Northbound Fox Chase Road Approach

Lane Geometry

Shared Left/Through

Roadway Classification

Urban - Major Collector

Roadway Ownership

Township

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

Southbound Fox Chase Road Approach

Lane Geometry

Shared Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

Township

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

INTERSECTION INVENTORY SUMMARY

Fox Chase Road (S.R. 2019) and Cedar Road (S.R. 2058)

Eastbound Cedar Road (S.R. 2058) Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

State

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

Westbound Cedar Road (S.R. 2058) Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

State

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

Northbound Fox Chase Road (S.R. 2019) Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

State

Posted Speed Limit

35 MPH

Traffic Control

Traffic Signal

Notes

Southbound Fox Chase Road Approach

Lane Geometry

Shared Left/Through/Right

Roadway Classification

Urban - Major Collector

Roadway Ownership

Township

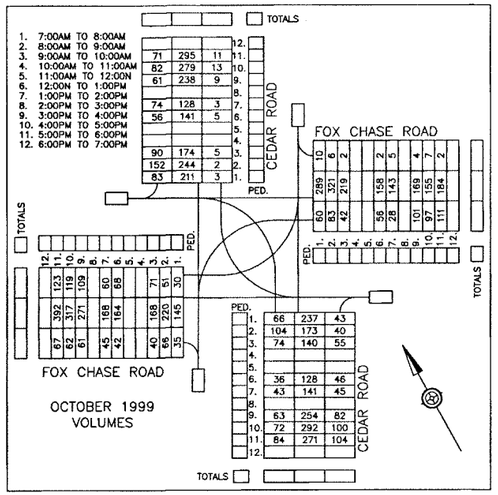
Posted Speed Limit

35 MPH

Traffic Control

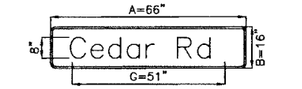
Traffic Signal

Notes

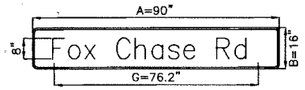


SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R10-6AL	24"X30"	STOP HERE ON RED
B	R10-11	30"X36"	NO TURN ON RED
C	R10-12	30"X36"	LEFT TURN YIELD ON GREEN ●
E	D3-4	66"X16"	OVERHEAD STREET NAME SIGN (SEE DETAIL)
F	D3-4	96"X16"	OVERHEAD STREET NAME SIGN (SEE DETAIL)
G	R9-3	18"X18"	NO PEDESTRIAN CROSSING
J	R10-4	9"X12"	PUSH BUTTON FOR GREEN SIGNAL

SIGN DETAILS
NOT TO SCALE

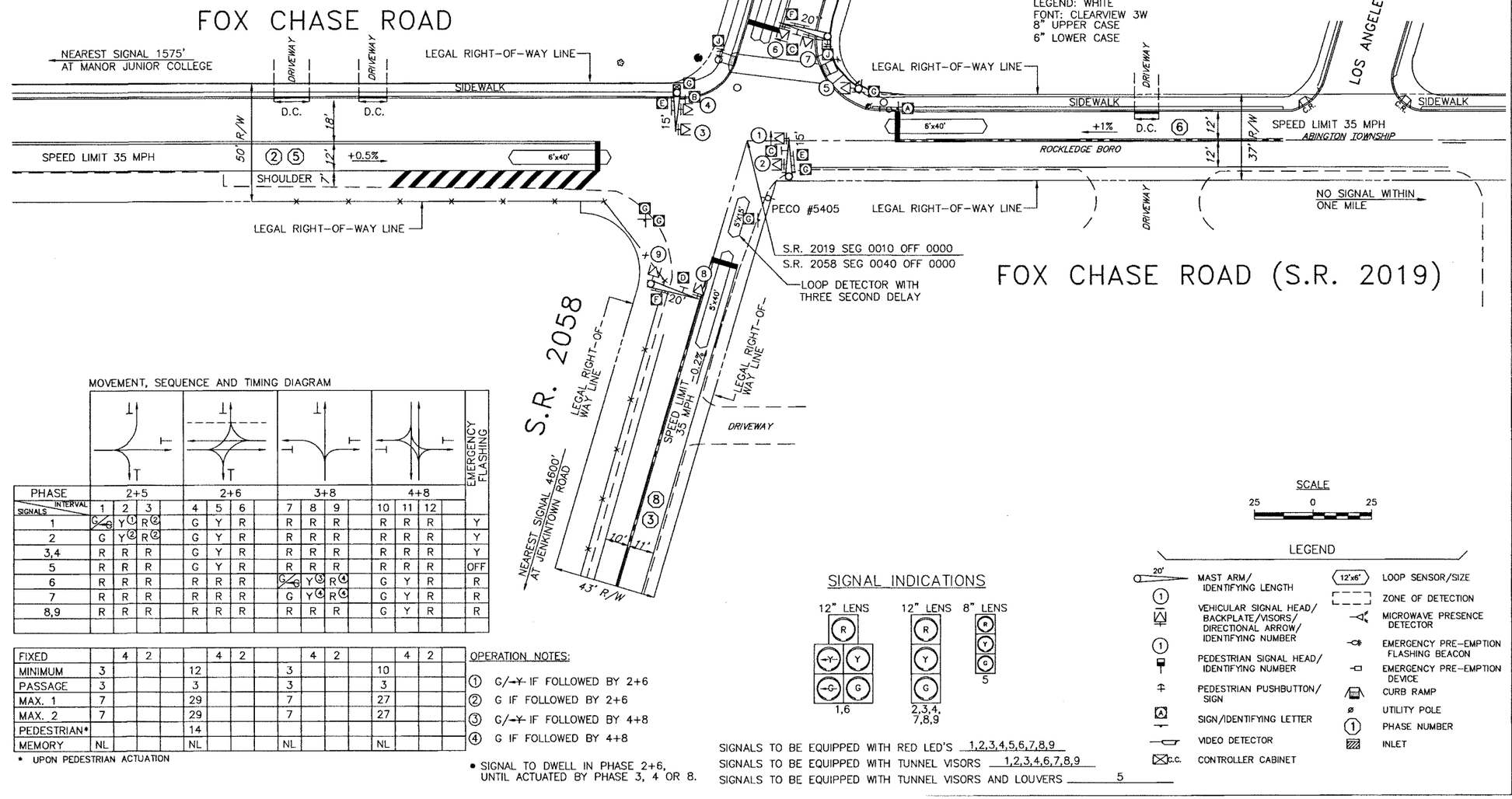


SIGN E



SIGN F

BACKGROUND: RED
LEGEND: WHITE
FONT: CLEARVIEW 3W
8" UPPER CASE
6" LOWER CASE



MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	2+5				2+6				3+8				4+8				EMERGENCY FLASHING
INTERVAL / SIGNALS	1	2	3		4	5	6		7	8	9		10	11	12		
1	G/Y①	Y①	R②		G	Y	R		R	R	R		R	R	R		Y
2	G	Y②	R②		G	Y	R		R	R	R		R	R	R		Y
3,4	R	R	R		G	Y	R		R	R	R		R	R	R		Y
5	R	R	R		G	Y	R		R	R	R		R	R	R		OFF
6	R	R	R		R	R	R		G/Y③	Y③	R④		G	Y	R		R
7	R	R	R		R	R	R		G	Y④	R④		G	Y	R		R
8,9	R	R	R		R	R	R		R	R	R		G	Y	R		R

FIXED		4	2			4	2			4	2			4	2
MINIMUM	3				12				3				10		
PASSAGE	3				3				3				3		
MAX. 1	7				29				7				27		
MAX. 2	7				29				7				27		
PEDESTRIAN*					14										
MEMORY	NL				NL				NL				NL		

* UPON PEDESTRIAN ACTUATION

OPERATION NOTES:

① G/→Y← IF FOLLOWED BY 2+6
② G IF FOLLOWED BY 2+6
③ G/→Y← IF FOLLOWED BY 4+8
④ G IF FOLLOWED BY 4+8

● SIGNAL TO DWELL IN PHASE 2+6, UNTIL ACTUATED BY PHASE 3, 4 OR 8.

SIGNAL INDICATIONS

SIGNALS TO BE EQUIPPED WITH RED LED'S 1,2,3,4,5,6,7,8,9
SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1,2,3,4,6,7,8,9
SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS AND LOUVERS 5

SCALE
25 0 25

LEGEND

- MAST ARM/ IDENTIFYING LENGTH
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER
- VIDEO DETECTOR
- C.C. CONTROLLER CABINET
- 12'x6' LOOP SENSOR/SIZE
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- PHASE NUMBER
- INLET

GENERAL NOTES

NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.

ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.

ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 212.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENDMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.

CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: ABINGTON TOWNSHIP / ROCKLEDGE BOROUGH
INTERSECTION: FOX CHASE ROAD (S.R. 2019) & CEDAR ROAD (S.R. 2058)

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

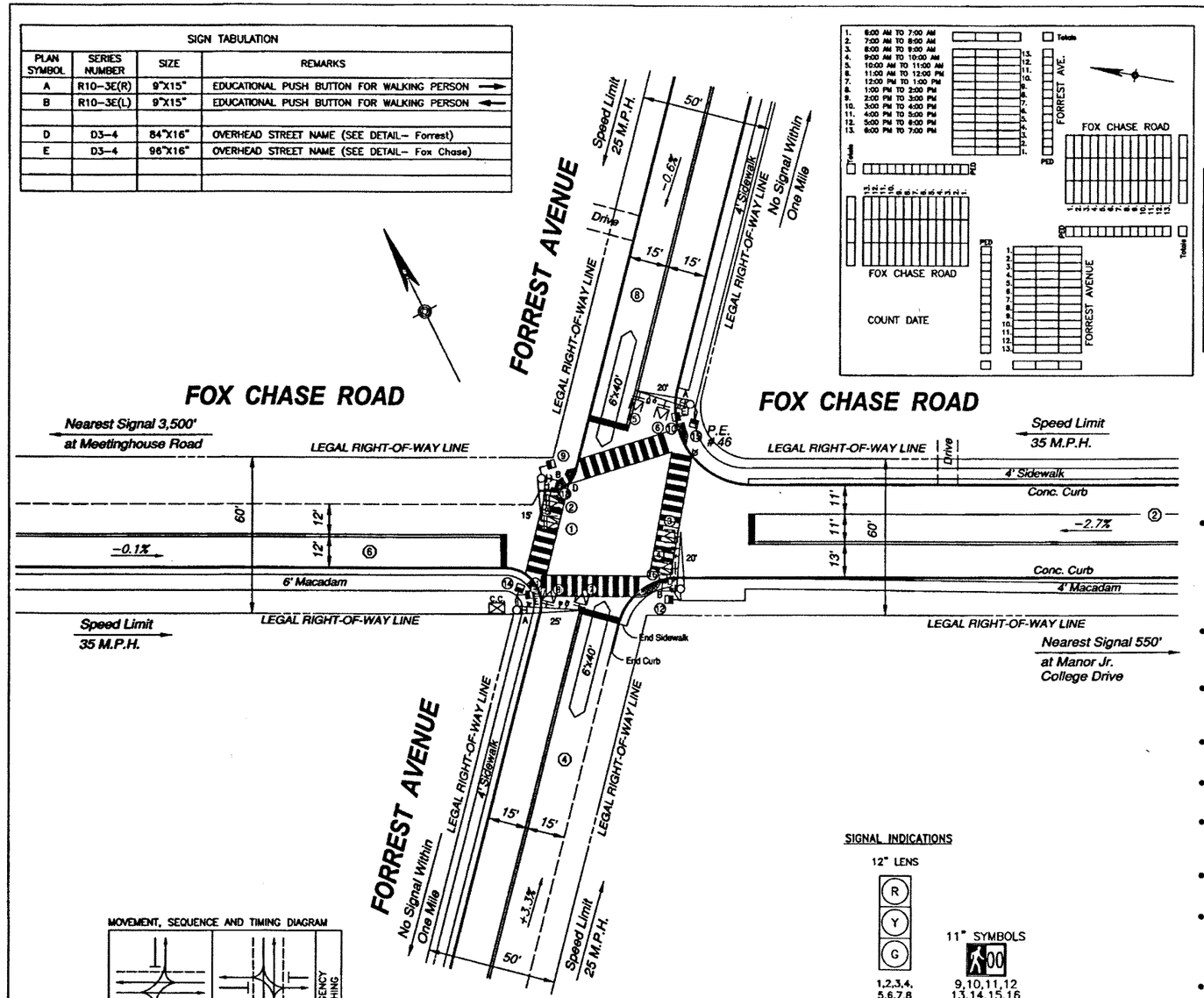
RECOMMENDED:

WERNER J EICHORN 2-7-00
DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	ADD NB ADVANCE, CHNGE MA ON NW & SE CORNER TO 15'	JPS	1/11/00	MLK	1/12/00	WJE	2/7/00
2	NEW DWG, REVISED CURB RAMPS AND PEDESTRIAN TIMES	MCM		DLA	2/17/11	ABP	2/18/11
3	REVISED PAVEMENT MARKINGS FOR EB FOX CHASE ROAD	EJR	8/30/18	KPL	10/17/18	DLA	10/19/18
4							
5							
6							
7							
8							

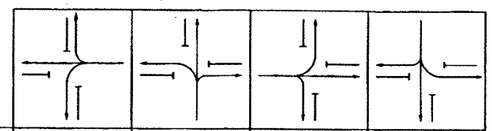
SHEET 2 OF 2 | PERMIT # 64-0347 | FILE # 0347

SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R10-3E(R)	9"X15"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON →
B	R10-3E(L)	9"X15"	EDUCATIONAL PUSH BUTTON FOR WALKING PERSON ←
D	D3-4	84"X16"	OVERHEAD STREET NAME (SEE DETAIL- Forrest)
E	D3-4	96"X16"	OVERHEAD STREET NAME (SEE DETAIL- Fox Chase)



EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE AND TIMING DIAGRAM



PHASE	2			4			6			8		
SIGNALS \ INTERVAL	9	10	11	12	13	14	15	16	17	18	19	20
1,2	G	Y◎	R◎	R	R	R	R	R	R	R	R	R
3,4	R	R	R	R	R	R	G	Y◎	R◎	R	R	R
5,6	R	R	R	G	Y	R	R	R	R	R	R	R
7,8	R	R	R	R	R	R	R	R	R	G	Y	R
9,10	H	H	H	H	H	H	H	H	H	H	H	H
11,12	H	H	H	H	H	H	H	H	H	H	H	H
13,14	H	H	H	H	H	H	H	H	H	H	H	H
15,16	H	H	H	H	H	H	H	H	H	H	H	H
FIXED	**	4	2	**	3	2	**	4	2	**	3	2

* FOR DURATION OF PRE-EMPTION

◎ G WHEN RETURNING TO NORMAL OPERATION.

NOTE: IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE WESTBOUND AND EASTBOUND APPROACH OF FOX CHASE ROAD AND THE NORTHBOUND AND SOUTH-BOUND APPROACH OF FORREST AVENUE WITH A FLASHING FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS FAIL SAFE DEVICE SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT AND SHALL BEGIN FLASHING WHEN THE PRE-EMPTION PHASE DISPLAYS PRE-EMPTION GREEN FOR THE EMERGENCY VEHICLE APPROACH.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE ACTUATION OF THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- UPON COMPLETION OF PRE-EMPTION PHASE 2, 4, 6 OR 8 IN RETURNING TO NORMAL OPERATION PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVED" OPERATION.
- THE FIELD LOCATIONS OF THE PRE-EMPTION DETECTORS MAY DIFFER FROM THE LOCATIONS DEPICTED ON THE CONDITION DIAGRAM, AS THE DETECTORS MAY NEED TO BE RELOCATED AND/OR ADJUSTED TO PROVIDE ACCEPTABLE OPERATION AS DEEMED APPROPRIATE BY DEPARTMENT PERSONNEL.
- IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON, AND THE SIGNAL IS PRE-EMPTED, THE PED WALK INTERVAL SHALL TERMINATE IMMEDIATELY, FOLLOWED BY THE PED CLEAR INTERVAL. THIS INTERVAL SHALL TIME OUT, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES, BEFORE GOING INTO EMERGENCY PRE-EMPTION.

GENERAL NOTES

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POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

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MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	2 & 6				4 & 8				EMERGENCY FLASHING
SIGNALS \ INTERVAL	1	2	3	4	5	6	7	8	
1,2	G	G	Y	R	R	R	R	R	Y
3,4	G	G	Y	R	R	R	R	R	Y
5,6	R	R	R	R	G	G	Y	R	R
7,8	R	R	R	R	G	G	Y	R	R
9,10	M	FH	H	H	H	H	H	H	OFF
11,12	M	FH	H	H	H	H	H	H	OFF
13,14	H	H	H	H	M	FH	H	H	OFF
15,16	R	R	R	R	M	FH	H	H	OFF

FIXED			4	2			3	2	
MINIMUM	15				7				
PASSAGE					3				
MAXIMUM 1	35				20				
MAXIMUM 2	35				20				
PEDESTRIAN*	7	15			7	17			
MEMORY	MX				NL				

* UPON PEDESTRIAN ACTUATION ONLY

MAX 1 TO OPERATE AT ALL TIMES

SIGNAL INDICATIONS

12" LENS

1,2,3,4, 5,6,7,8

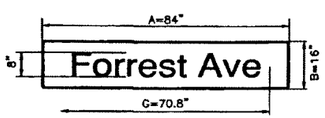
11" SYMBOLS

9,10,11,12 13,14,15,16

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1,2,3,4,5,6,7,8

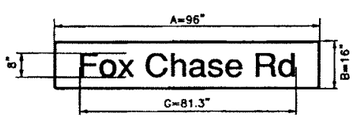
SIGN DETAILS

NOT TO SCALE



SIGN D

BACKGROUND: RED
LEGEND: WHITE
FONT: HELVETICA BOLD
8" UPPER CASE
6" LOWER CASE



SIGN E

BACKGROUND: RED
LEGEND: WHITE
FONT: HELVETICA BOLD
8" UPPER CASE
6" LOWER CASE

25' 0 25'

LEGEND

- 20' — MAST ARM/ IDENTIFYING LENGTH
- ② — VEHICULAR SIGNAL HEAD/ BACKPLATE/ VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER
- ② — PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER
- PEDESTRIAN PUSHBUTTON/ SIGN
- E — SIGN/ IDENTIFYING LETTER
- 5'x40" — LOOP SENSOR/SIZE
- MICROWAVE DETECTOR
- EMERGENCY PREEMPTION DEVICE
- CURB CUT RAMP
- UTILITY POLE
- (1) — PHASE NUMBER

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: ABINGTON TOWNSHIP

INTERSECTION: FOX CHASE ROAD AND FORREST AVENUE

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

MARK L. KRAY 5/26/95
DATE

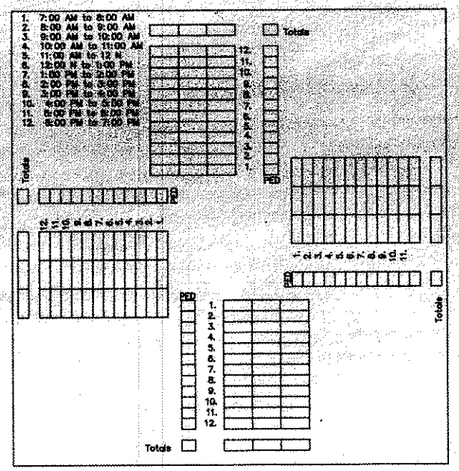
DOUGLAS MAY 5/26/95
DISTRICT TRAFFIC ENGINEER DATE

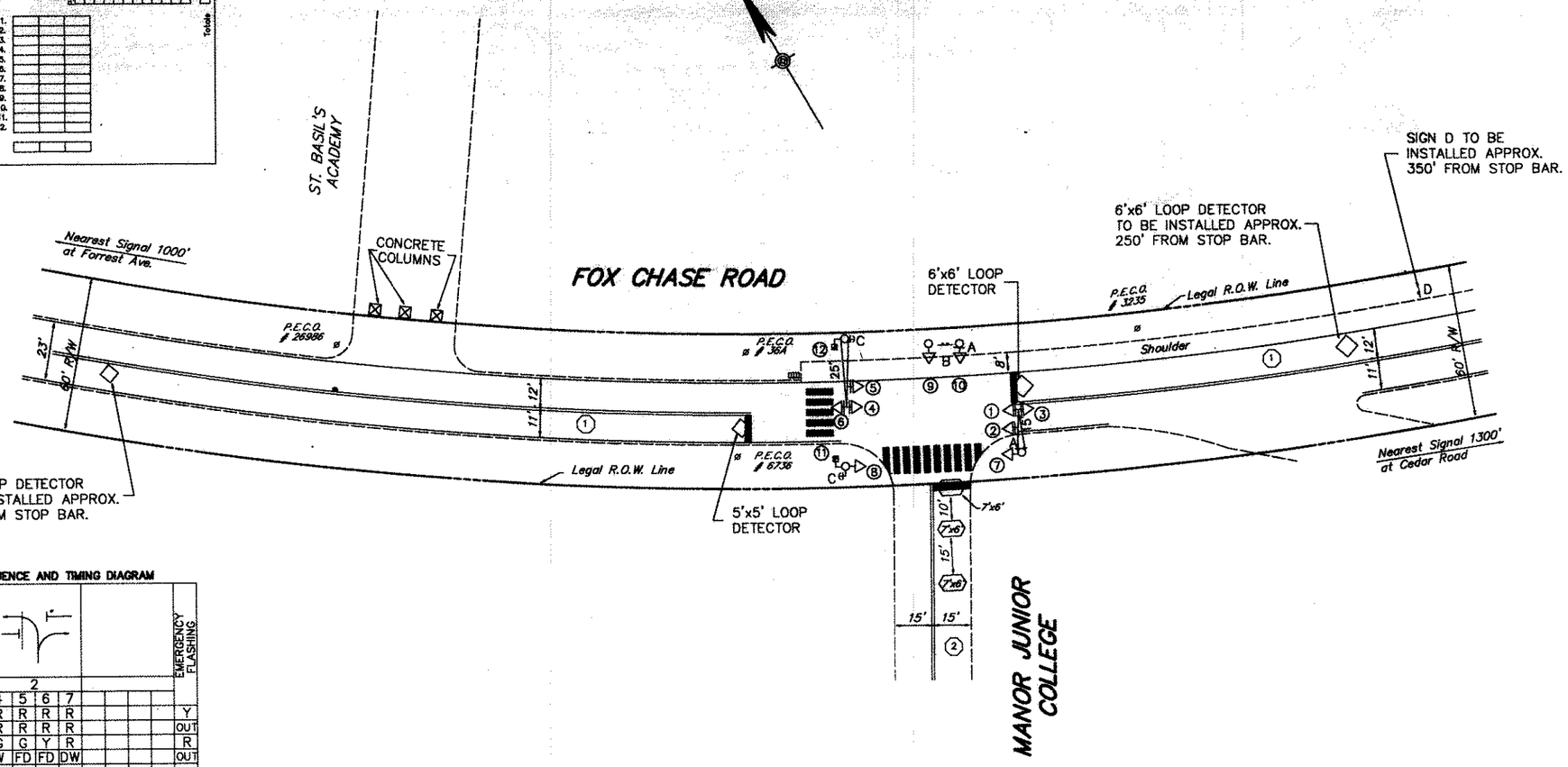
NO.	REVISION	DES./ REVW	DATE	REVW.	DATE	RECOM.	DATE
1	UPGRADE AND NEW MAST ARMS	M.E.P.	8/17/05	MK	9/2/05	LRB	10/3/05
2	REMOVE SIGN 'C' & TURN ARROW	M.E.P.	10/2/05	MLK	11/30/05	LRB	12/9/05
3	ADD COUNTDOWN MAST/HANDS, UPDATE PEDESTRIAN TIMES, REVISE PRE-EMPTION NOTES	KPL	7/13/17	DL	7/17/17	LRB	8/8/17
4							
5							
6							
7							
8							

SHEET 2 OF 2 | PERMIT # 64-0011 | FILE # 0011

PERMIT NO. 64-2762	SHEET 2 OF 2
DATE ISSUED: 3/31/92	

SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R9-3	18"x18"	NO PEDESTRIAN CROSSING
B	W1-7	48"x24"	DOUBLE ARROW SIGN
C	R10-4L	9"x12"	PUSH BUTTON FOR WALK SIGNAL
D	W3-3	36"x36"	SIGNAL AHEAD SIGN





MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE / INTERVAL / SIGNALS	1			2				EMERGENCY FLASHING
	1	2	3	4	5	6	7	
1,2,3,4,5,6	G	Y	R	R	R	R	R	Y
7,8	G	Y	R	R	R	R	R	OUT
9,10	R	R	R	G	G	Y	R	R
**11,12	DW	DW	DW	W	FD	FD	DW	OUT

FIXED		4	2			3	2					
MINIMUM	15			3								
ADDED INITIAL	2											
MAX. INITIAL	26											
PASSAGE	4			3								
TO REDUCE	10											
BEFORE RED	26											
MIN. GAP	2											
MAX. I	36			--15--								
MAX. II *	41			--15--								
PEDESTRIAN				8	7							
MEMORY	MR			NL								

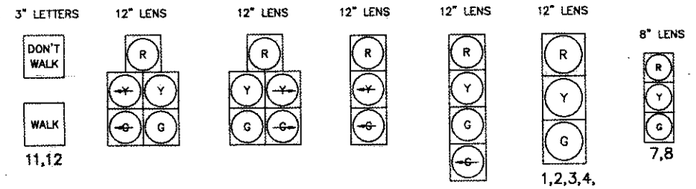
** UPON PEDESTRIAN ACTUATION, OTHERWISE WALK AT ALL TIMES.

5 SEC. DELAY ON MANOR JUNIOR COLLEGE DRIVE

MAX II SHOULD OPERATE 7:00-9:00 AM AND 2:00-6:00 PM

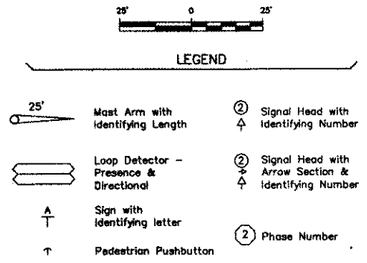
MAX I SHOULD OPERATE ALL OTHER TIMES

SIGNAL INDICATIONS



SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS _____

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS and LOUVERS _____



GENERAL NOTES

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ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.

POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT GRADE.

ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.

THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.

EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.

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PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.

IN ADDITION TO THIS SIGNAL PERMIT THE PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT PRIOR TO ANY OPENINGS BEING MADE IN OR UNDER ANY PORTION OF A STATE HIGHWAY.

THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 172, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 12, 1986.

WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: ABINGTON TOWNSHIP
INTERSECTION: FOX CHASE ROAD AND MANOR JR. COLLEGE DRIVE

REVIEWED:

MUNICIPAL OFFICIAL DATE

RECOMMENDED: 4/2/92
DISTRICT TRAFFIC ENGINEER DATE 4/3/92

Revised: New Dwgs. MV. 3/31/92 MK DWM 4/3/92
Revised: MAX I & II OPER. TIMES, AND DELAY. DWM 4/8/92
Revised:
Revised:

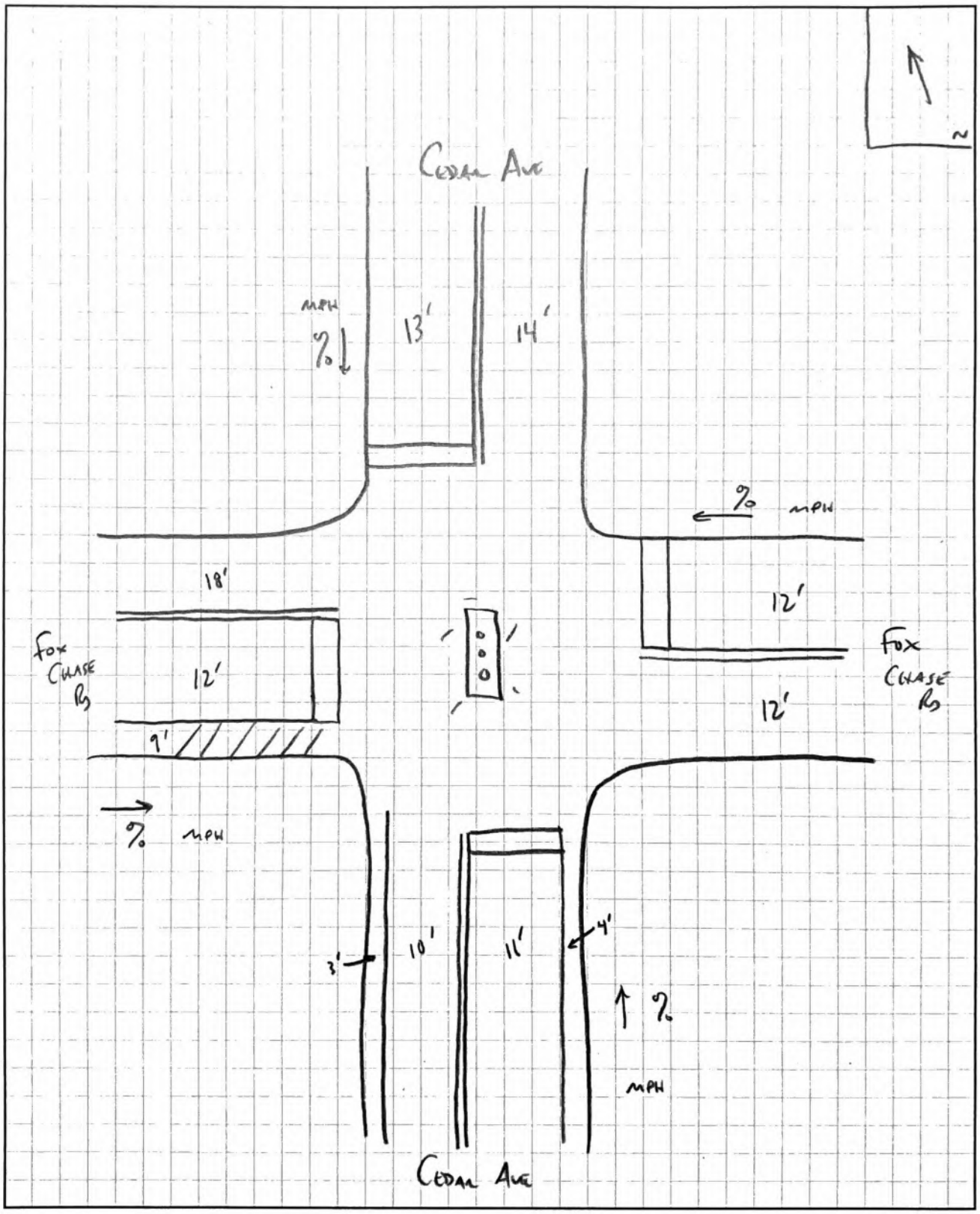
PNDT 8255.007.26 PADOT #: 64-2762-25 3/9/92

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job _____ McMahon Project No. _____ Sheet _____ of ____

Description Fox Chase Rd x _____ Designed By NDB _____ Date _____

Cedar Ave _____ Checked By _____ Date _____

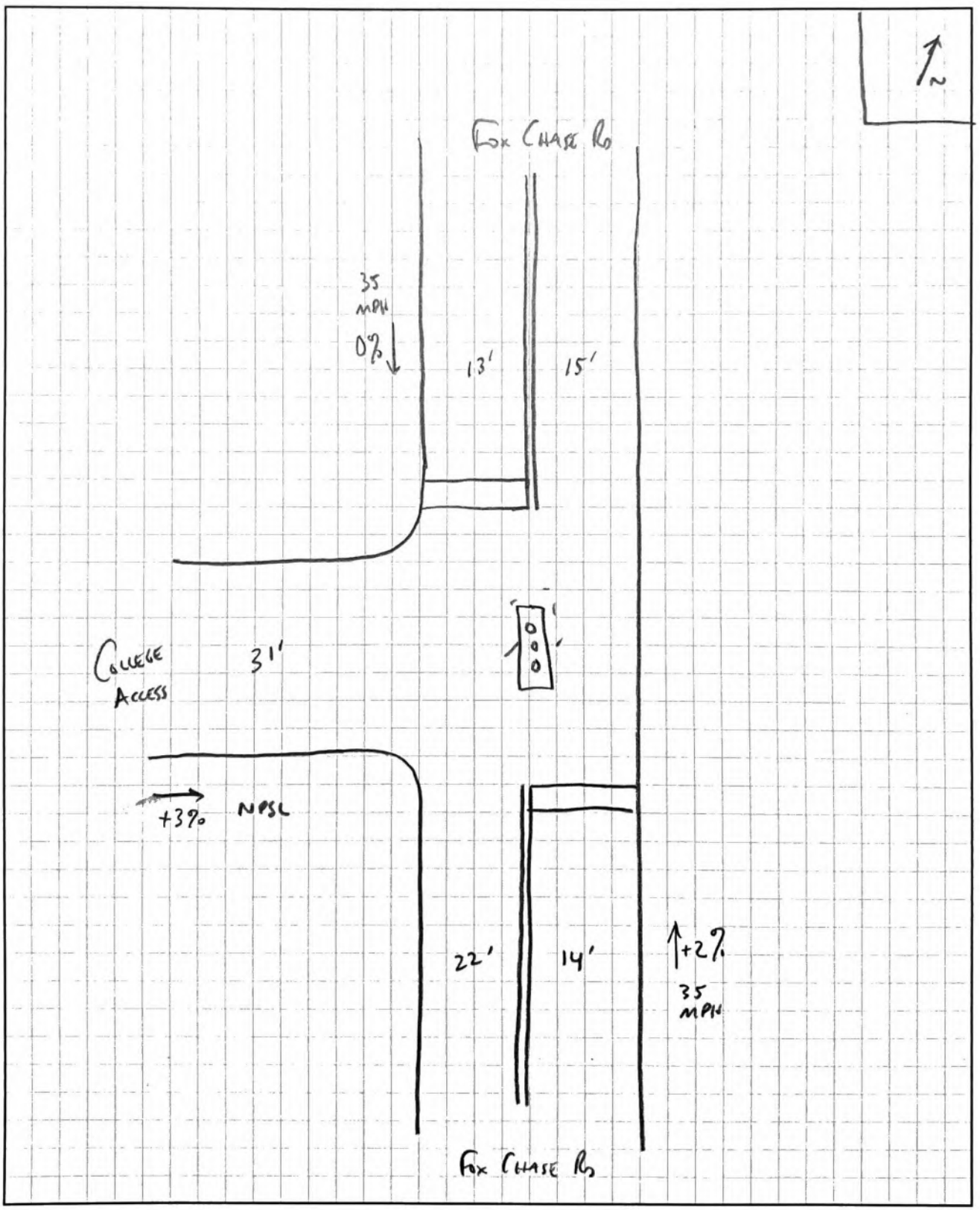


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job _____ McMahon Project No. _____ Sheet _____ of ____

Description Fox Chase Rd Designed By NDB Date _____

Marion College Access Checked By _____ Date _____

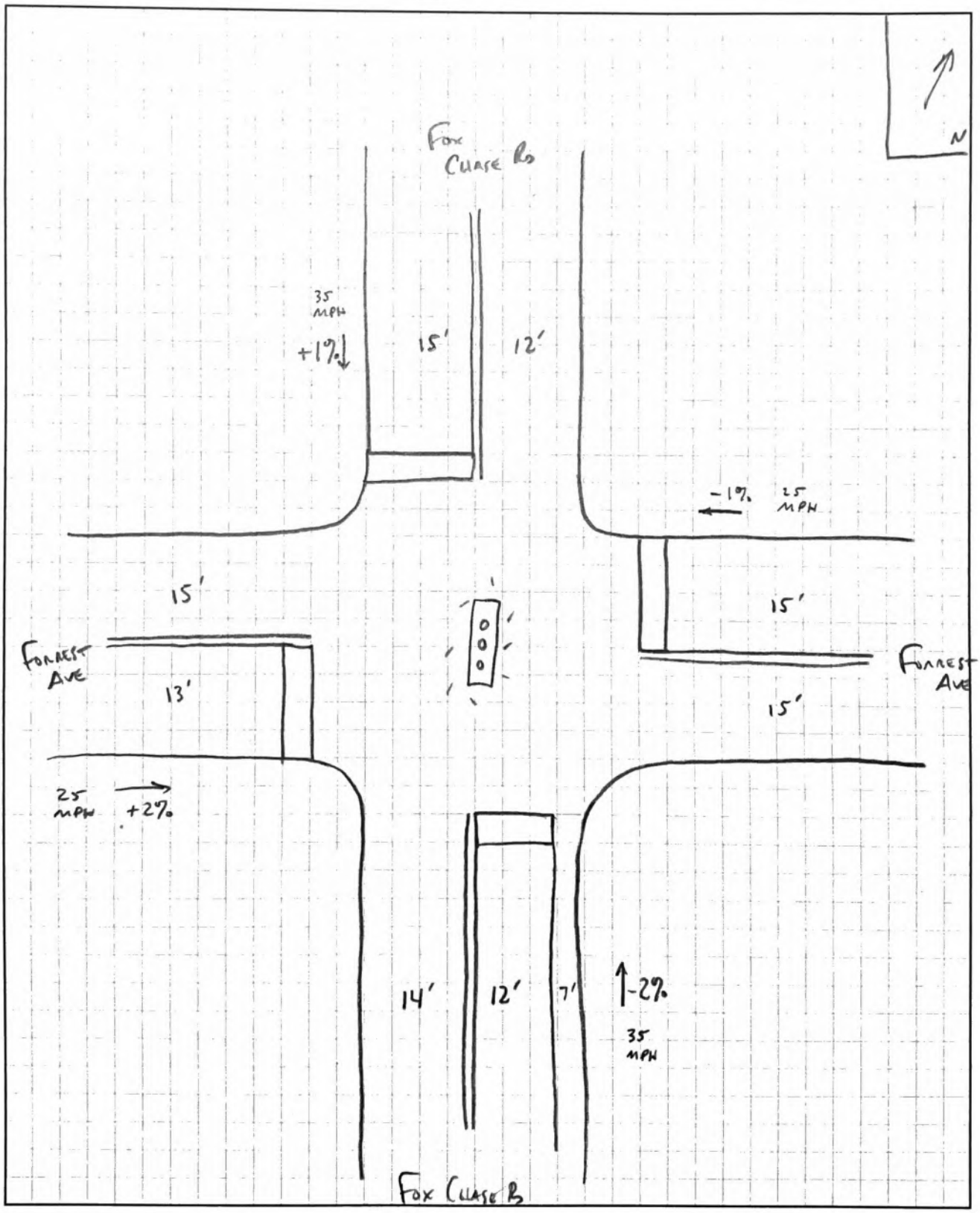


McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

Job _____ McMahon Project No. _____ Sheet _____ of ____

Description Fox Chase Rd & Forest Ave Designed By NOB Date _____

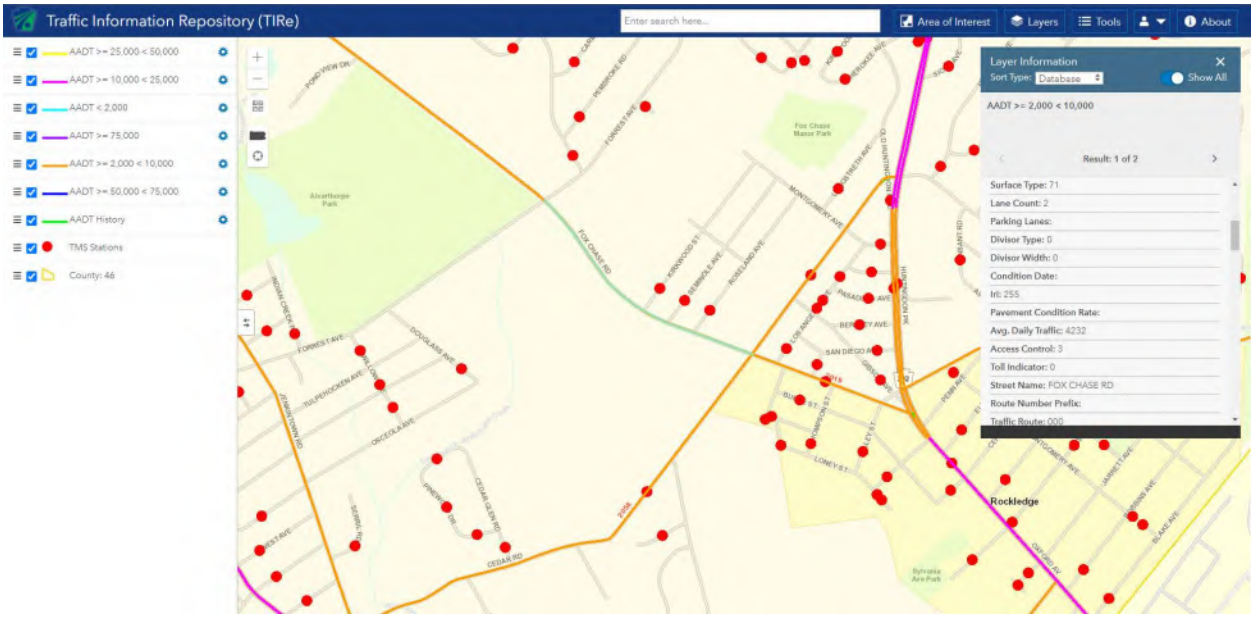
Checked By _____ Date _____



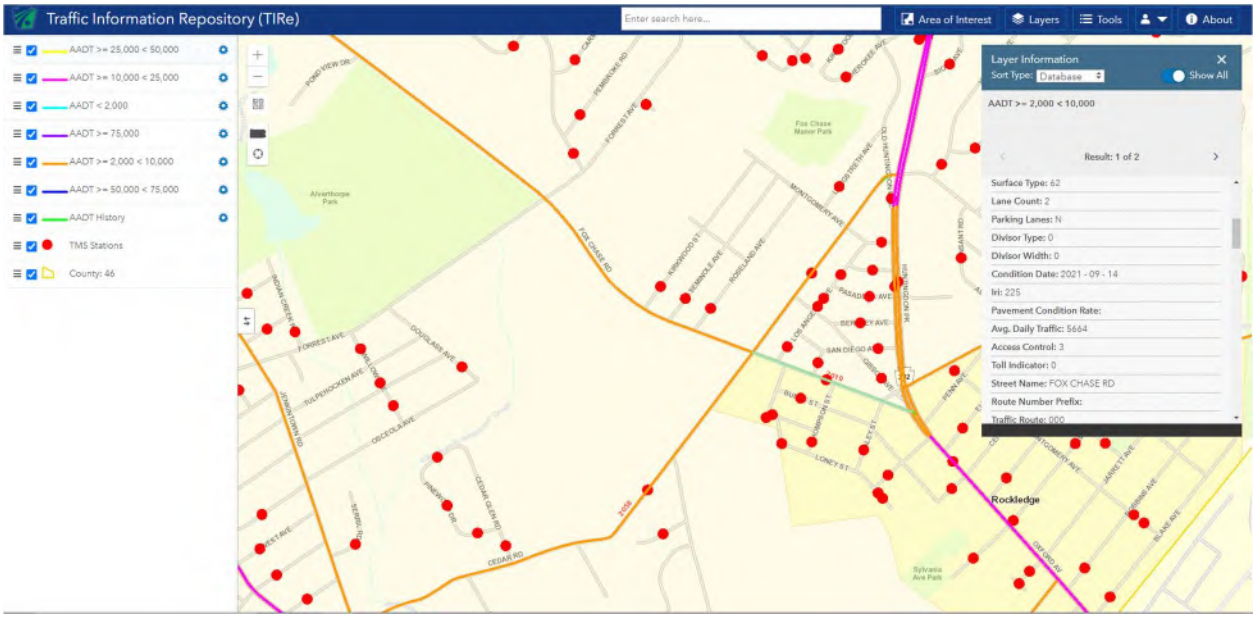
Appendix B

PennDOT TIRe Data

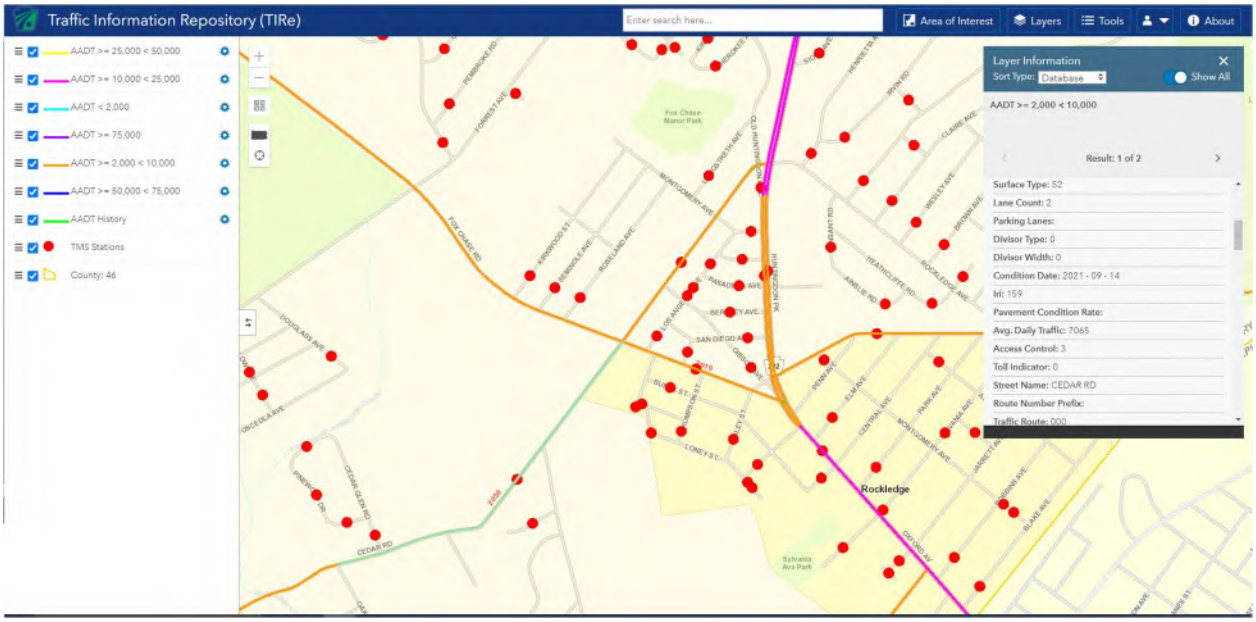
FOX CHASE ROAD



FOX CHASE ROAD (S.R. 2019)



CEDAR ROAD (S.R. 2058)



Appendix C

Turning Movement Counts

McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Forrest Avenue
Counter: M

File Name : stbasils01w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Fox Chase Rd Southbound			Forrest Avenue Westbound			Fox Chase Rd Northbound			Forrest Avenue Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	1	5	0	1	3	8	5	30	5	10	2	0	70
07:15 AM	2	21	1	0	3	4	5	29	3	7	5	1	81
07:30 AM	2	15	1	2	5	6	10	39	7	9	6	5	107
07:45 AM	1	22	1	3	6	12	5	43	6	10	3	6	118
Total	6	63	3	6	17	30	25	141	21	36	16	12	376
08:00 AM	3	35	0	0	0	18	6	39	12	8	2	4	127
08:15 AM	4	34	1	1	4	14	7	46	11	8	4	2	136
08:30 AM	6	33	0	1	2	14	7	44	9	20	6	1	143
08:45 AM	2	30	1	3	7	23	11	41	10	20	2	6	156
Total	15	132	2	5	13	69	31	170	42	56	14	13	562
04:00 PM	4	43	0	0	1	18	16	32	7	20	4	2	147
04:15 PM	1	39	1	0	5	10	6	50	8	21	6	2	149
04:30 PM	2	43	2	1	3	12	10	24	8	20	5	2	132
04:45 PM	2	40	1	2	4	13	10	36	11	21	7	0	147
Total	9	165	4	3	13	53	42	142	34	82	22	6	575
05:00 PM	2	47	1	0	8	11	13	22	9	30	6	0	149
05:15 PM	2	39	2	1	3	14	8	24	8	14	3	2	120
05:30 PM	3	44	0	0	2	10	8	34	12	15	2	0	130
05:45 PM	1	46	2	1	4	5	8	25	10	12	2	3	119
Total	8	176	5	2	17	40	37	105	39	71	13	5	518
Grand Total	38	536	14	16	60	192	135	558	136	245	65	36	2031
Apprch %	6.5	91.2	2.4	6	22.4	71.6	16.3	67.3	16.4	70.8	18.8	10.4	
Total %	1.9	26.4	0.7	0.8	3	9.5	6.6	27.5	6.7	12.1	3.2	1.8	
Passenger Vehicles	33	517	10	15	57	185	127	540	125	230	63	34	1936
% Passenger Vehicles	86.8	96.5	71.4	93.8	95	96.4	94.1	96.8	91.9	93.9	96.9	94.4	95.3
Heavy Vehicles	5	19	4	1	3	7	8	18	11	15	2	2	95
% Heavy Vehicles	13.2	3.5	28.6	6.2	5	3.6	5.9	3.2	8.1	6.1	3.1	5.6	4.7

McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
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Municipality: Abington Township
Location: Fox Chase Road &
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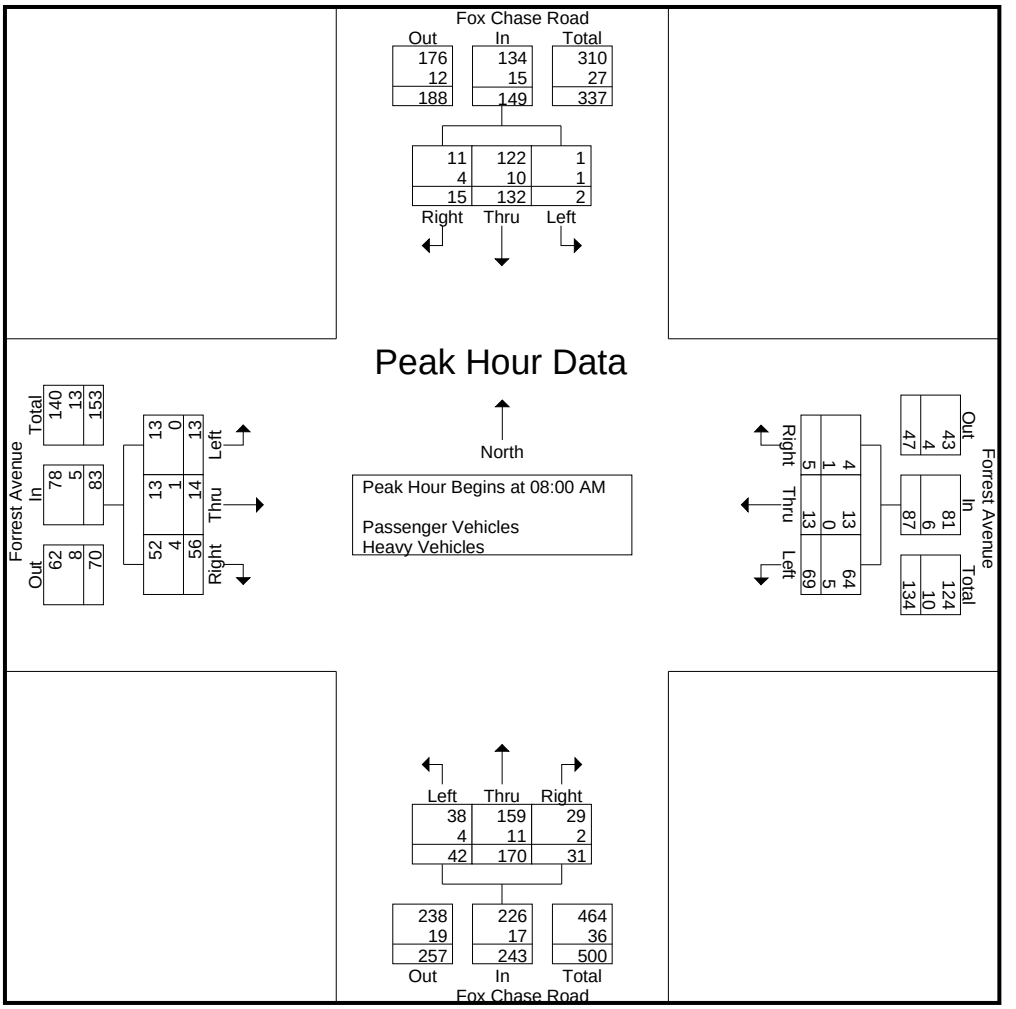
Counter: M

File Name : stbasils01w
Site Code :
Start Date : 1/11/2022
Page No : 2

	FOX CHASE ROAD				FORREST AVENUE				FOX CHASE ROAD				FORREST AVENUE				
	Fox Chase Road Southbound				Forrest Avenue Westbound				Fox Chase Road Northbound				Forrest Avenue Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	**35**	0	38	0	0	18	18	6	39	**12**	57	8	2	4	14	127
08:15 AM	4	34	**1**	**39**	1	4	14	19	7	**46**	11	**64**	8	4	2	14	136
08:30 AM	**6**	33	0	39	1	2	14	17	7	44	9	60	**20**	**6**	1	27	143
08:45 AM	2	30	1	33	**3**	**7**	**23**	**33**	**11**	41	10	62	20	2	**6**	**28**	**156**
Total Volume	15	132	2	149	5	13	69	87	31	170	42	243	56	14	13	83	562
% App. Total	10.1	88.6	1.3		5.7	14.9	79.3		12.8	70	17.3		67.5	16.9	15.7		
PHF	.625	.943	.500	.955	.417	.464	.750	.659	.705	.924	.875	.949	.700	.583	.542	.741	.901
Passenger Vehicles	11	122	1	134	4	13	64	81	29	159	38	226	52	13	13	78	519
% Passenger Vehicles	73.3	92.4	50.0	89.9	80.0	100	92.8	93.1	93.5	93.5	90.5	93.0	92.9	92.9	100	94.0	92.3
Heavy Vehicles	4	10	1	15	1	0	5	6	2	11	4	17	4	1	0	5	43
% Heavy Vehicles	26.7	7.6	50.0	10.1	20.0	0	7.2	6.9	6.5	6.5	9.5	7.0	7.1	7.1	0	6.0	7.7



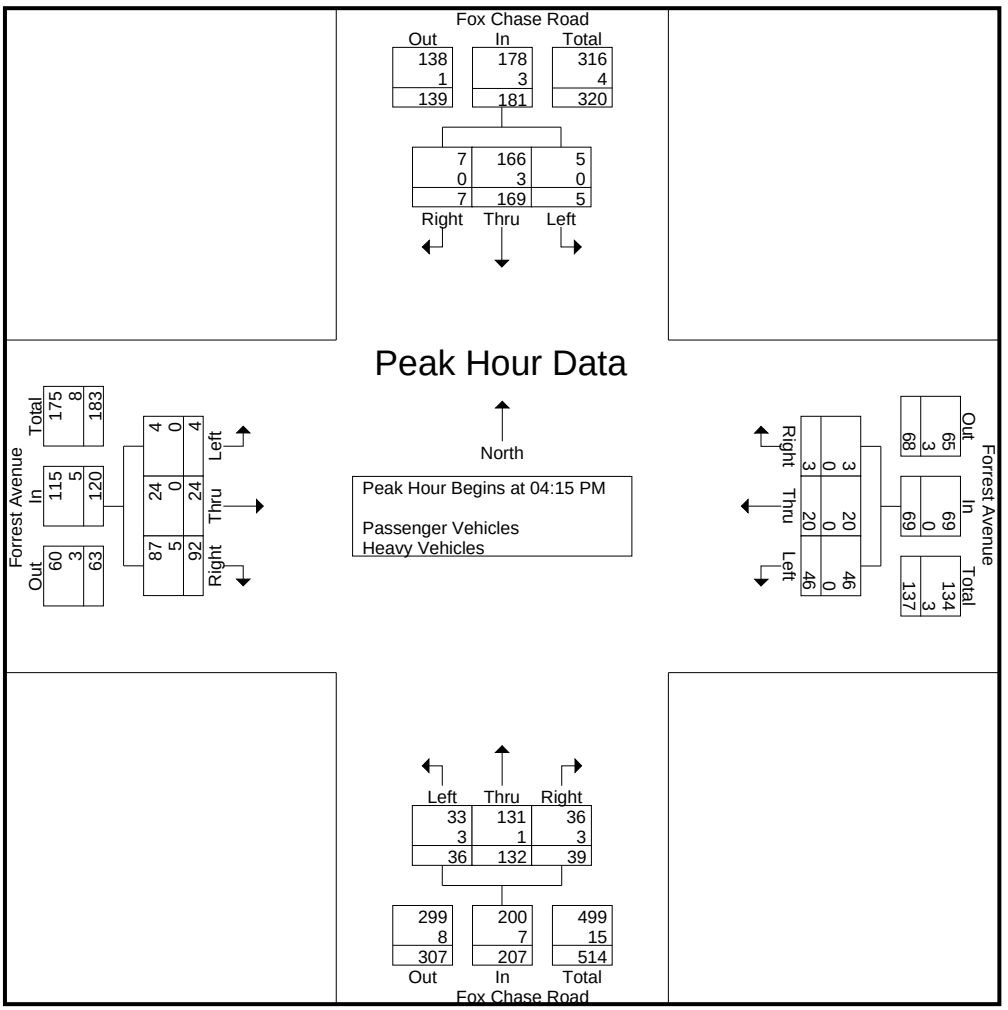
McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Forrest Avenue
Counter: M

File Name : stbasils01w
Site Code :
Start Date : 1/11/2022
Page No : 3

	Fox Chase Road Southbound				Forrest Avenue Westbound				Fox Chase Road Northbound				Forrest Avenue Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	39	1	41	0	5	10	15	6	**50**	8	**64**	21	6	**2**	29	**149**
04:30 PM	**2**	43	**2**	47	1	3	12	16	10	24	8	42	20	5	2	27	132
04:45 PM	2	40	1	43	**2**	4	**13**	**19**	10	36	**11**	57	21	**7**	0	28	147
05:00 PM	2	**47**	1	**50**	0	**8**	11	19	**13**	22	9	44	**30**	6	0	**36**	149
Total Volume	7	169	5	181	3	20	46	69	39	132	36	207	92	24	4	120	577
% App. Total	3.9	93.4	2.8		4.3	29	66.7		18.8	63.8	17.4		76.7	20	3.3		
PHF	.875	.899	.625	.905	.375	.625	.885	.908	.750	.660	.818	.809	.767	.857	.500	.833	.968
Passenger Vehicles	7	166	5	178	3	20	46	69	36	131	33	200	87	24	4	115	562
% Passenger Vehicles	100	98.2	100	98.3	100	100	100	100	92.3	99.2	91.7	96.6	94.6	100	100	95.8	97.4
Heavy Vehicles	0	3	0	3	0	0	0	0	3	1	3	7	5	0	0	5	15
% Heavy Vehicles	0	1.8	0	1.7	0	0	0	0	7.7	0.8	8.3	3.4	5.4	0	0	4.2	2.6



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Transporation Engineers & Planners
425 Commerce Drive, Suite 200
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Municipality: Abington Township
Location: Fox Chase Road &
Forrest Avenue
Counter: M

File Name : stbasils01w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Pedestrians

	Forrest Avenue Southbound			Fox Chase Road Westbound			Forrest Avenue Northbound			Fox Chase Road Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:15 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
07:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	0	1	0	0	4	0	0	0	0	0	1	0	6
08:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	0	0	2
04:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	0	1	0	0	3	0	0	0	0	0	0	0	4
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	1	0	0	3	0	0	0	0	0	1	0	5
Grand Total	0	3	0	0	12	0	0	0	0	0	2	0	17
Apprch %	0	100	0	0	100	0	0	0	0	0	100	0	
Total %	0	17.6	0	0	70.6	0	0	0	0	0	11.8	0	

McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Manor College Access
Counter: M

File Name : stbasils02w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Fox Chase Rd Southbound		Fox Chase Rd Northbound		Manor College Access Eastbound		
Start Time	Right	Thru	Thru	Left	Right	Left	Int. Total
07:00 AM	0	20	43	0	0	0	63
07:15 AM	1	31	35	0	0	0	67
07:30 AM	3	28	54	6	3	0	94
07:45 AM	4	39	55	7	0	0	105
Total	8	118	187	13	3	0	329
08:00 AM	5	55	58	7	1	0	126
08:15 AM	3	55	62	5	1	0	126
08:30 AM	2	64	63	3	0	0	132
08:45 AM	5	67	65	3	0	1	141
Total	15	241	248	18	2	1	525
04:00 PM	2	77	50	0	3	1	133
04:15 PM	0	67	60	1	7	0	135
04:30 PM	0	78	44	1	8	3	134
04:45 PM	0	73	49	3	6	2	133
Total	2	295	203	5	24	6	535
05:00 PM	0	91	36	1	3	8	139
05:15 PM	0	65	36	0	7	1	109
05:30 PM	0	67	53	1	3	1	125
05:45 PM	0	63	46	1	0	0	110
Total	0	286	171	3	13	10	483
Grand Total	25	940	809	39	42	17	1872
Apprch %	2.6	97.4	95.4	4.6	71.2	28.8	
Total %	1.3	50.2	43.2	2.1	2.2	0.9	
Passenger Vehicles	25	899	774	39	42	17	1796
% Passenger Vehicles	100	95.6	95.7	100	100	100	95.9
Heavy Vehicles	0	41	35	0	0	0	76
% Heavy Vehicles	0	4.4	4.3	0	0	0	4.1

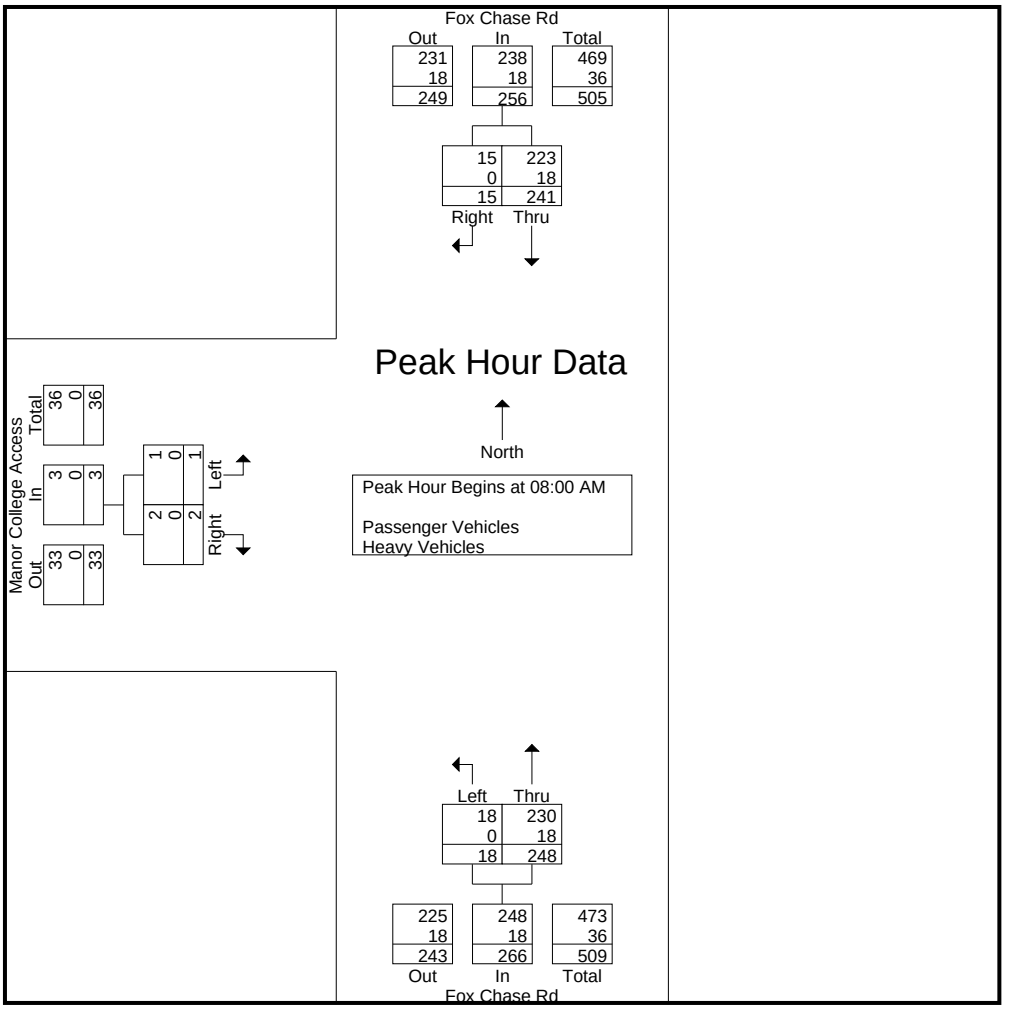
McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Manor College Access
Counter: M

File Name : stbasils02w
Site Code :
Start Date : 1/11/2022

	Fox Chase Rd Southbound			Fox Chase Rd Northbound			Manor College Access Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	**5**	55	60	58	**7**	65	**1**	0	**1**	126
08:15 AM	3	55	58	62	5	67	1	0	1	126
08:30 AM	2	64	66	63	3	66	0	0	0	132
08:45 AM	5	**67**	**72**	**65**	3	**68**	0	**1**	1	**141**
Total Volume	15	241	256	248	18	266	2	1	3	525
% App. Total	5.9	94.1		93.2	6.8		66.7	33.3		
PHF	.750	.899	.889	.954	.643	.978	.500	.250	.750	.931
Passenger Vehicles	15	223	238	230	18	248	2	1	3	489
% Passenger Vehicles	100	92.5	93.0	92.7	100	93.2	100	100	100	93.1
Heavy Vehicles	0	18	18	18	0	18	0	0	0	36
% Heavy Vehicles	0	7.5	7.0	7.3	0	6.8	0	0	0	6.9



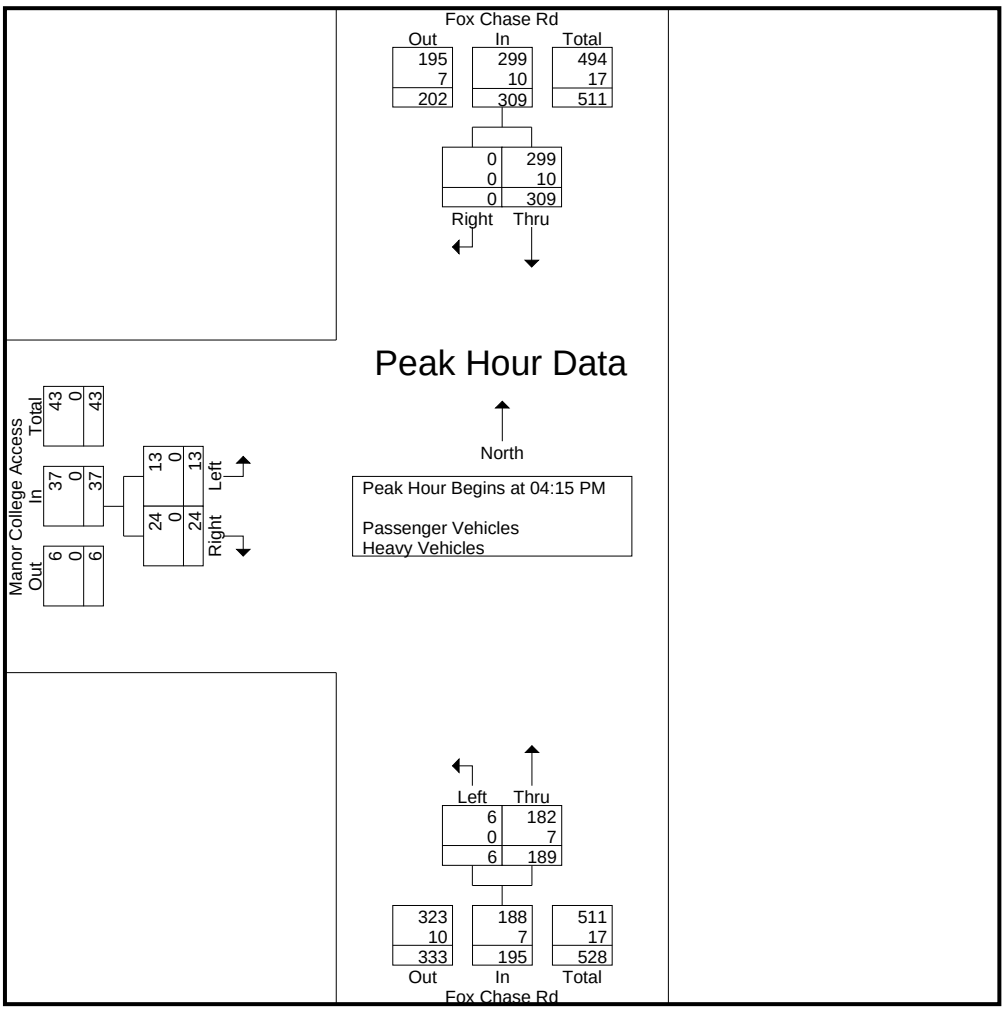
McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Manor College Access
Counter: M

File Name : stbasils02w
Site Code :
Start Date : 1/11/2022
Page No : 3

	Fox Chase Rd Southbound			Fox Chase Rd Northbound			Manor College Access Eastbound			
Start Time	Right	Thru	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	67	67	**60**	1	**61**	7	0	7	135
04:30 PM	0	78	78	44	1	45	**8**	3	**11**	134
04:45 PM	0	73	73	49	**3**	52	6	2	8	133
05:00 PM	0	**91**	**91**	36	1	37	3	**8**	11	**139**
Total Volume	0	309	309	189	6	195	24	13	37	541
% App. Total	0	100		96.9	3.1		64.9	35.1		
PHF	.000	.849	.849	.788	.500	.799	.750	.406	.841	.973
Passenger Vehicles	0	299	299	182	6	188	24	13	37	524
% Passenger Vehicles	0	96.8	96.8	96.3	100	96.4	100	100	100	96.9
Heavy Vehicles	0	10	10	7	0	7	0	0	0	17
% Heavy Vehicles	0	3.2	3.2	3.7	0	3.6	0	0	0	3.1



McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road &
Manor College Access
Counter: M

File Name : stbasils02w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Pedestrians

	Fox Chase Rd Southbound		Fox Chase Rd Northbound		Manor College Access Eastbound		
Start Time	Right	Thru	Thru	Left	Right	Left	Int. Total
08:00 AM	0	1	0	0	1	0	2
08:15 AM	0	1	0	0	0	0	1
Total	0	2	0	0	1	0	3
04:15 PM	0	0	0	0	1	0	1
Total	0	0	0	0	1	0	1
05:30 PM	0	0	0	0	1	0	1
05:45 PM	0	1	0	0	0	0	1
Total	0	1	0	0	1	0	2
Grand Total	0	3	0	0	3	0	6
Apprch %	0	100	0	0	100	0	
Total %	0	50	0	0	50	0	

McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road & Cedar Road
Counter: M

File Name : stbasils03w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

	Cedar Rd Southbound			Fox Chase Rd Westbound			Cedar Rd Northbound			Fox Chase Rd Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	13	43	0	0	20	14	13	34	8	5	17	4	171
07:15 AM	14	35	1	1	20	23	18	43	6	4	19	7	191
07:30 AM	10	71	1	3	37	17	19	59	11	13	20	3	264
07:45 AM	19	59	1	0	31	21	24	50	16	10	21	9	261
Total	56	208	3	4	108	75	74	186	41	32	77	23	887
08:00 AM	15	57	2	0	34	21	16	41	13	18	33	10	260
08:15 AM	21	62	0	3	28	15	24	51	12	24	25	8	273
08:30 AM	16	61	0	1	36	32	23	42	17	31	29	9	297
08:45 AM	12	60	1	3	25	16	17	67	26	19	34	14	294
Total	64	240	3	7	123	84	80	201	68	92	121	41	1124
04:00 PM	23	63	1	0	22	24	28	65	14	15	45	18	318
04:15 PM	17	61	2	3	36	15	31	64	15	14	46	19	323
04:30 PM	15	71	1	0	18	7	22	59	16	15	51	19	294
04:45 PM	14	69	2	2	25	29	31	58	13	18	39	17	317
Total	69	264	6	5	101	75	112	246	58	62	181	73	1252
05:00 PM	9	68	1	1	21	13	30	67	6	13	51	25	305
05:15 PM	7	71	2	2	23	16	29	47	8	13	39	23	280
05:30 PM	14	82	1	1	22	13	19	54	16	12	41	17	292
05:45 PM	13	52	2	1	19	13	24	40	20	8	31	17	240
Total	43	273	6	5	85	55	102	208	50	46	162	82	1117
Grand Total	232	985	18	21	417	289	368	841	217	232	541	219	4380
Apprch %	18.8	79.8	1.5	2.9	57.4	39.8	25.8	59	15.2	23.4	54.5	22.1	
Total %	5.3	22.5	0.4	0.5	9.5	6.6	8.4	19.2	5	5.3	12.4	5	
Passenger Vehicles	219	966	16	17	408	280	364	817	202	219	529	204	4241
% Passenger Vehicles	94.4	98.1	88.9	81	97.8	96.9	98.9	97.1	93.1	94.4	97.8	93.2	96.8
Heavy Vehicles	13	19	2	4	9	9	4	24	15	13	12	15	139
% Heavy Vehicles	5.6	1.9	11.1	19	2.2	3.1	1.1	2.9	6.9	5.6	2.2	6.8	3.2

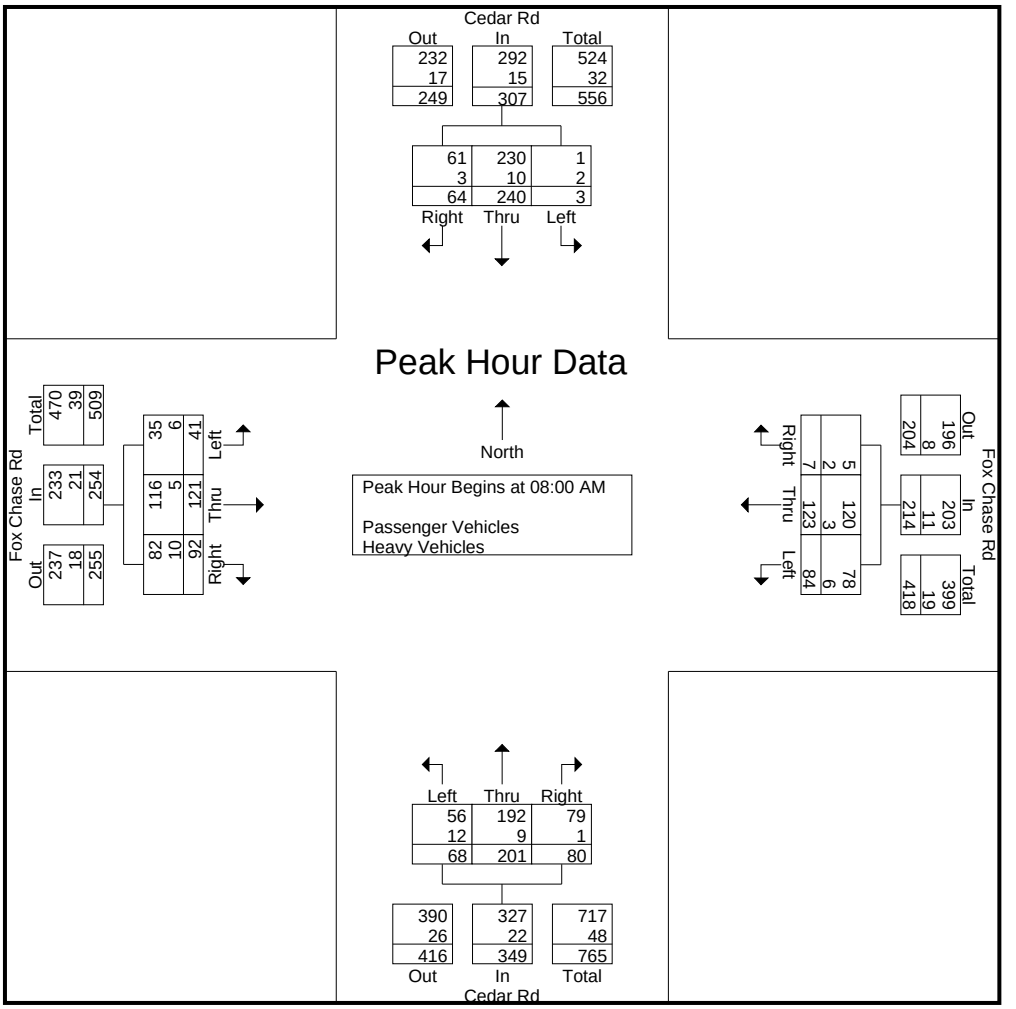
McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road & Cedar Road
Counter: M

File Name : stbasils03w
Site Code :
Start Date : 1/11/2022
Page No : 2

	Cedar Rd Southbound				Fox Chase Rd Westbound				Cedar Rd Northbound				Fox Chase Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	15	57	**2**	74	0	34	21	55	16	41	13	70	18	33	10	61	260
08:15 AM	**21**	**62**	0	**83**	**3**	28	15	46	**24**	51	12	87	24	25	8	57	273
08:30 AM	16	61	0	77	1	**36**	**32**	**69**	23	42	17	82	**31**	29	9	**69**	**297**
08:45 AM	12	60	1	73	3	25	16	44	17	**67**	**26**	**110**	19	**34**	**14**	67	294
Total Volume	64	240	3	307	7	123	84	214	80	201	68	349	92	121	41	254	1124
% App. Total	20.8	78.2	1		3.3	57.5	39.3		22.9	57.6	19.5		36.2	47.6	16.1		
PHF	.762	.968	.375	.925	.583	.854	.656	.775	.833	.750	.654	.793	.742	.890	.732	.920	.946
Passenger Vehicles	61	230	1	292	5	120	78	203	79	192	56	327	82	116	35	233	1055
% Passenger Vehicles	95.3	95.8	33.3	95.1	71.4	97.6	92.9	94.9	98.8	95.5	82.4	93.7	89.1	95.9	85.4	91.7	93.9
Heavy Vehicles	3	10	2	15	2	3	6	11	1	9	12	22	10	5	6	21	69
% Heavy Vehicles	4.7	4.2	66.7	4.9	28.6	2.4	7.1	5.1	1.3	4.5	17.6	6.3	10.9	4.1	14.6	8.3	6.1



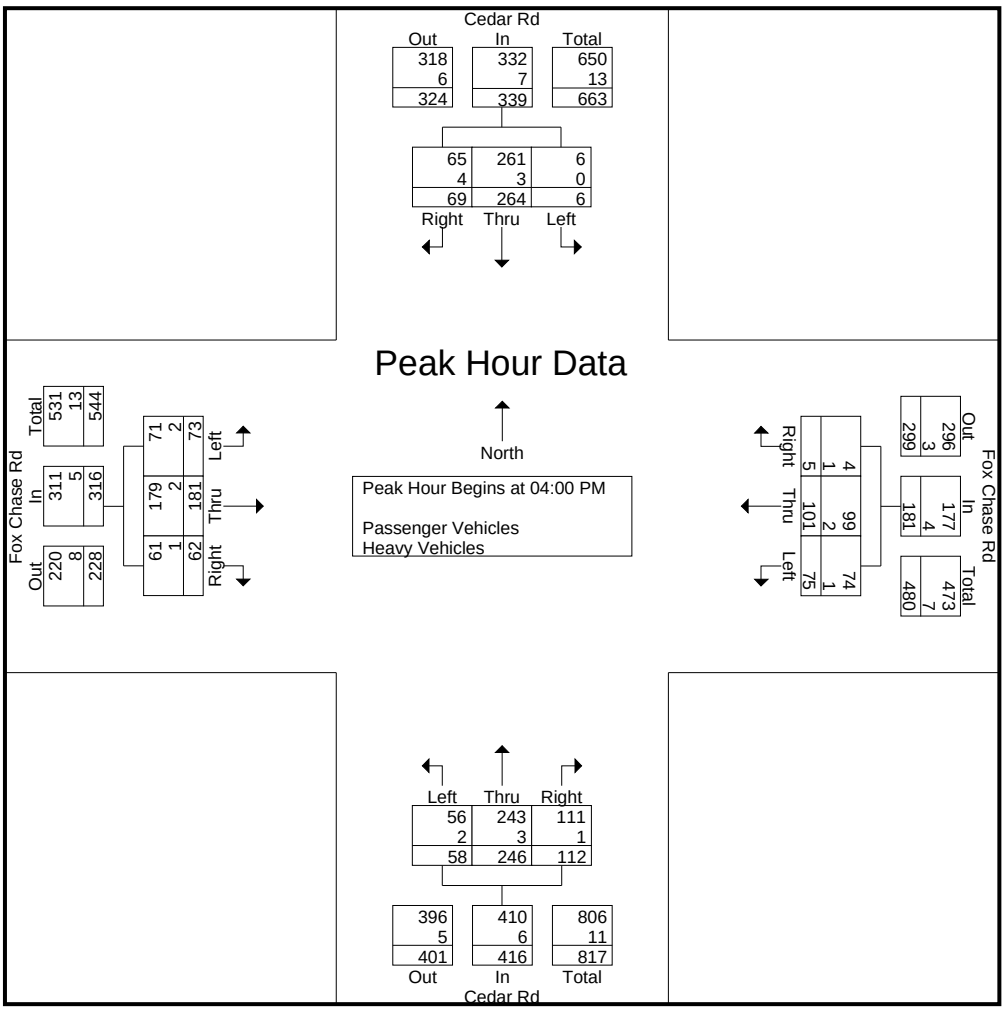
McMahon Associates, Inc.

Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road & Cedar Road
Counter: M

File Name : stbasils03w
Site Code :
Start Date : 1/11/2022
Page No : 3

	Cedar Rd Southbound				Fox Chase Rd Westbound				Cedar Rd Northbound				Fox Chase Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**23**	63	1	**87**	0	22	24	46	28	**65**	14	107	15	45	18	78	318
04:15 PM	17	61	**2**	80	**3**	**36**	15	54	**31**	64	15	**110**	14	46	**19**	79	**323**
04:30 PM	15	**71**	1	87	0	18	7	25	22	59	**16**	97	15	**51**	19	**85**	294
04:45 PM	14	69	2	85	2	25	**29**	**56**	31	58	13	102	**18**	39	17	74	317
Total Volume	69	264	6	339	5	101	75	181	112	246	58	416	62	181	73	316	1252
% App. Total	20.4	77.9	1.8		2.8	55.8	41.4		26.9	59.1	13.9		19.6	57.3	23.1		
PHF	.750	.930	.750	.974	.417	.701	.647	.808	.903	.946	.906	.945	.861	.887	.961	.929	.969
Passenger Vehicles	65	261	6	332	4	99	74	177	111	243	56	410	61	179	71	311	1230
% Passenger Vehicles	94.2	98.9	100	97.9	80.0	98.0	98.7	97.8	99.1	98.8	96.6	98.6	98.4	98.9	97.3	98.4	98.2
Heavy Vehicles	4	3	0	7	1	2	1	4	1	3	2	6	1	2	2	5	22
% Heavy Vehicles	5.8	1.1	0	2.1	20.0	2.0	1.3	2.2	0.9	1.2	3.4	1.4	1.6	1.1	2.7	1.6	1.8



McMahon Associates, Inc.
Transporation Engineers & Planners
425 Commerce Drive, Suite 200
Fort Washington, PA 19034

Municipality: Abington Township
Location: Fox Chase Road & Cedar Road
Counter: M

File Name : stbasils03w
Site Code :
Start Date : 1/11/2022
Page No : 1

Groups Printed- Pedestrians

	Cedar Rd Southbound			Fox Chase Rd Westbound			Cedar Rd Northbound			Fox Chase Rd Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00 PM	0	2	0	0	0	0	0	0	0	0	1	0	3
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	0	0	0	0	0	0	1	0	5
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	7	0	0	0	0	0	0	0	0	1	0	8
Apprch %	0	100	0	0	0	0	0	0	0	0	100	0	
Total %	0	87.5	0	0	0	0	0	0	0	0	12.5	0	

Appendix D

Warrant Analysis Worksheets

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Southbound Fox Chase Road Left-Turn

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	5
	Through	-	248	8.0%	258
	Right	Yes	15	0.0%	15
Opposing	Left	Yes	18	0.0%	18
	Through	-	254	7.0%	263
	Right	Yes	13	2.0%	14

Advancing Volume:	278
Opposing Volume:	295
Left Turn Volume:	5
% Left Turns in Advancing Volume:	1.80%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left		0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	5
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

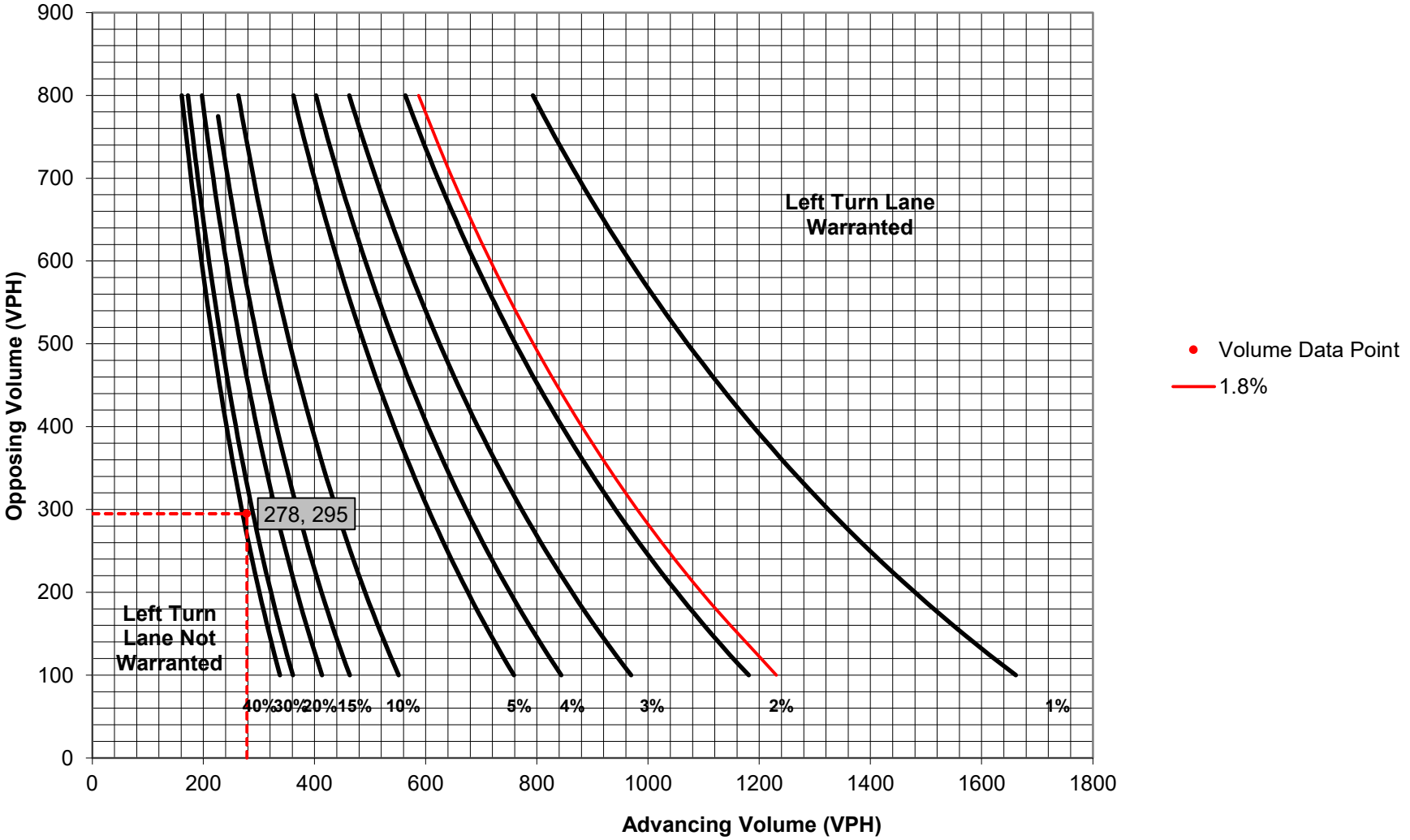
Left Turn Lane Storage Length, Condition A:	**N/A**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**N/A**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Southbound Fox Chase Road Left-Turn Lane

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	9	2.0%	10
	Through	-	316	3.0%	321
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	6	0.0%	6
	Through	-	199	4.0%	203
	Right	Yes	28	2.0%	29

Advancing Volume:	331
Opposing Volume:	238
Left Turn Volume:	10
% Left Turns in Advancing Volume:	3.02%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	10
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

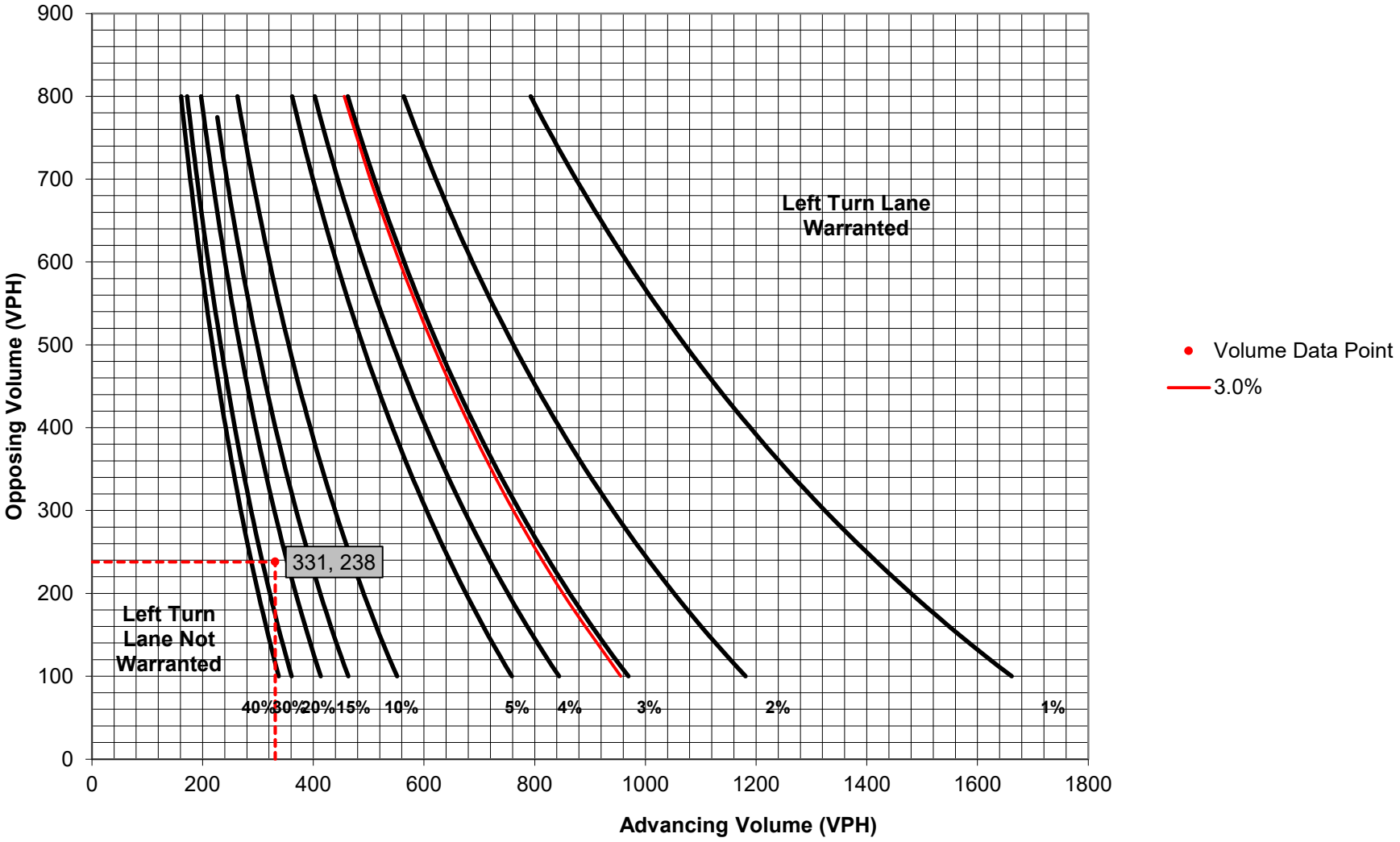
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	**N/A**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**N/A**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Northbound Fox Chase Road Left-Turn

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	18	0.0%	18
	Through	-	254	7.0%	263
	Right	Yes	13	2.0%	14
Opposing	Left	Yes	4	2.0%	5
	Through	-	248	8.0%	258
	Right	Yes	15	0.0%	15

Advancing Volume:	295
Opposing Volume:	278
Left Turn Volume:	18
% Left Turns in Advancing Volume:	6.10%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left				N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	18
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

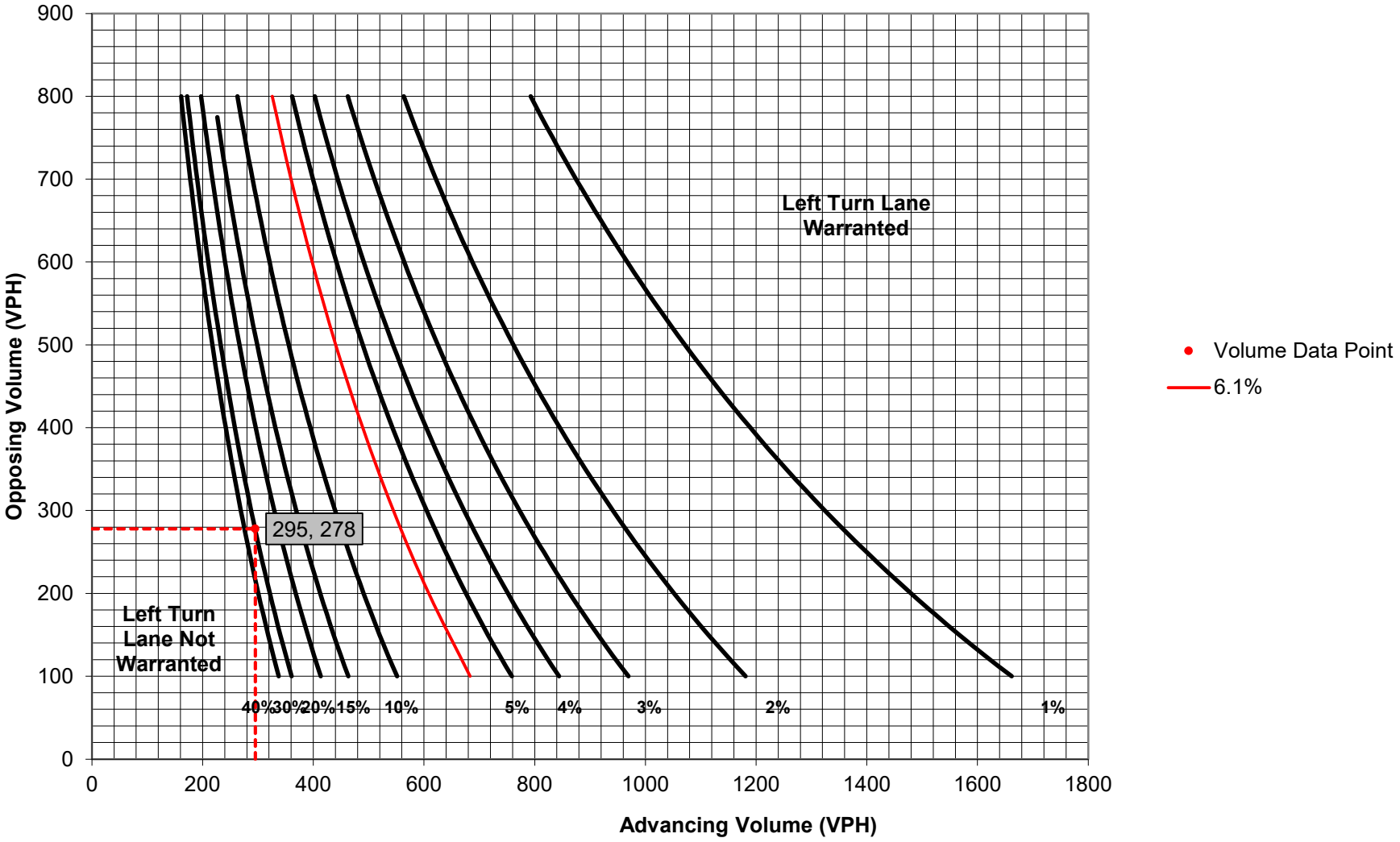
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	**N/A**	**Feet**
Condition B:	**N/A**	**Feet**
Condition C:	**N/A**	**Feet**
Required Left Turn Lane Storage Length:	**N/A**	**Feet**

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Northbound Fox Chase Road Left-Turn Lane

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	6	0.0%	6
	Through	-	199	4.0%	203
	Right	Yes	28	2.0%	29
Opposing	Left	Yes	9	2.0%	10
	Through	-	316	3.0%	321
	Right	Yes	0	0.0%	0

Advancing Volume:	238
Opposing Volume:	331
Left Turn Volume:	6
% Left Turns in Advancing Volume:	2.52%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	-			N/A

Advancing Volume:	N/A
Right Turn Volume:	N/A

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	6
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

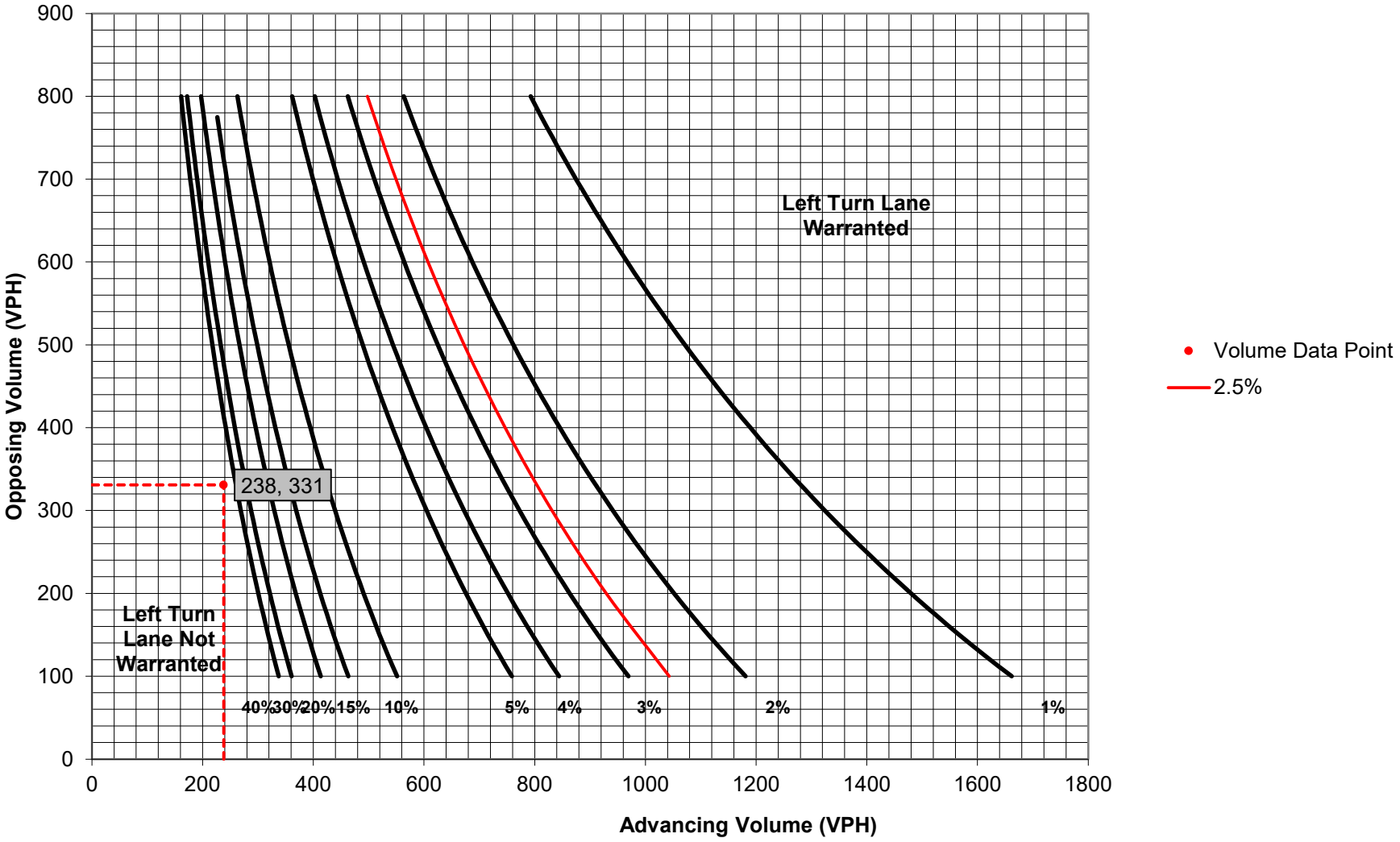
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)
(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Northbound Right-Turn Fox Chase Road

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	N/A
	Through	-	248	8.0%	N/A
	Right	Yes	15	0.0%	N/A
Opposing	Left	Yes	18	0.0%	N/A
	Through	-	254	7.0%	N/A
	Right	Yes	13	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	18	0.0%	18
	Through	-	254	7.0%	263
	Right	-	13	2.0%	14

Advancing Volume:	295
Right Turn Volume:	14

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	14
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

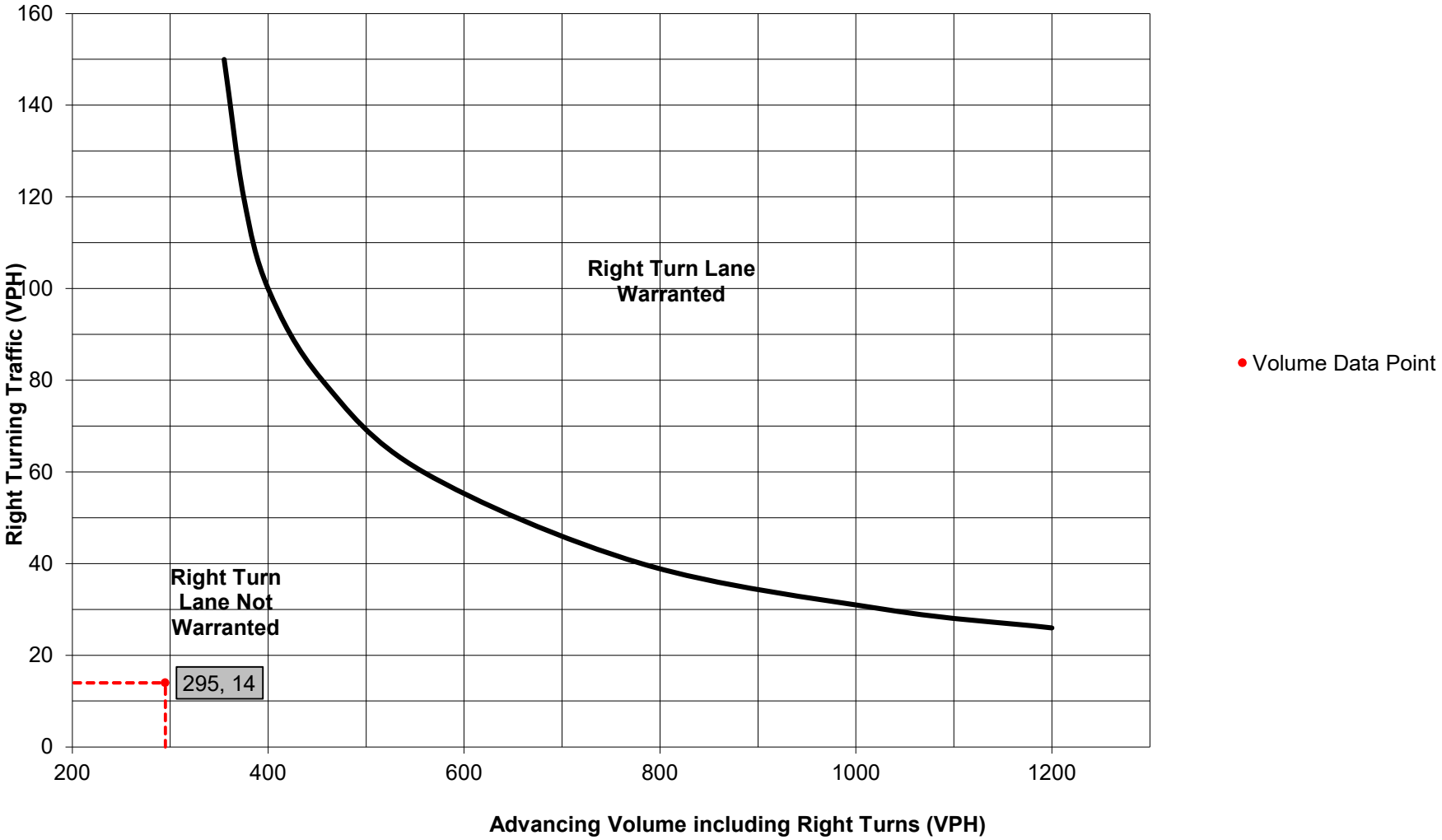
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Abington Township	**Analysis Date:**	1/28/2022
County:	Montgomery County	**Conducted By:**	BGG
PennDOT Engineering District:	6	**Checked By:**	JDG
		Agency/Company Name:	McMahon Associates, Inc.

Intersection & Approach Description: Fox Chase Road and Local Road / Manor Access
Northbound Right-Turn Fox Chase Road

Analysis Period:	2029 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Signalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	9	2.0%	N/A
	Through	-	316	3.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	6	0.0%	N/A
	Through	-	199	4.0%	N/A
	Right	Yes	28	2.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume:	N/A

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	6	0.0%	6
	Through	-	199	4.0%	203
	Right	-	28	2.0%	29

Advancing Volume:	238
Right Turn Volume:	29

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	29
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	54

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

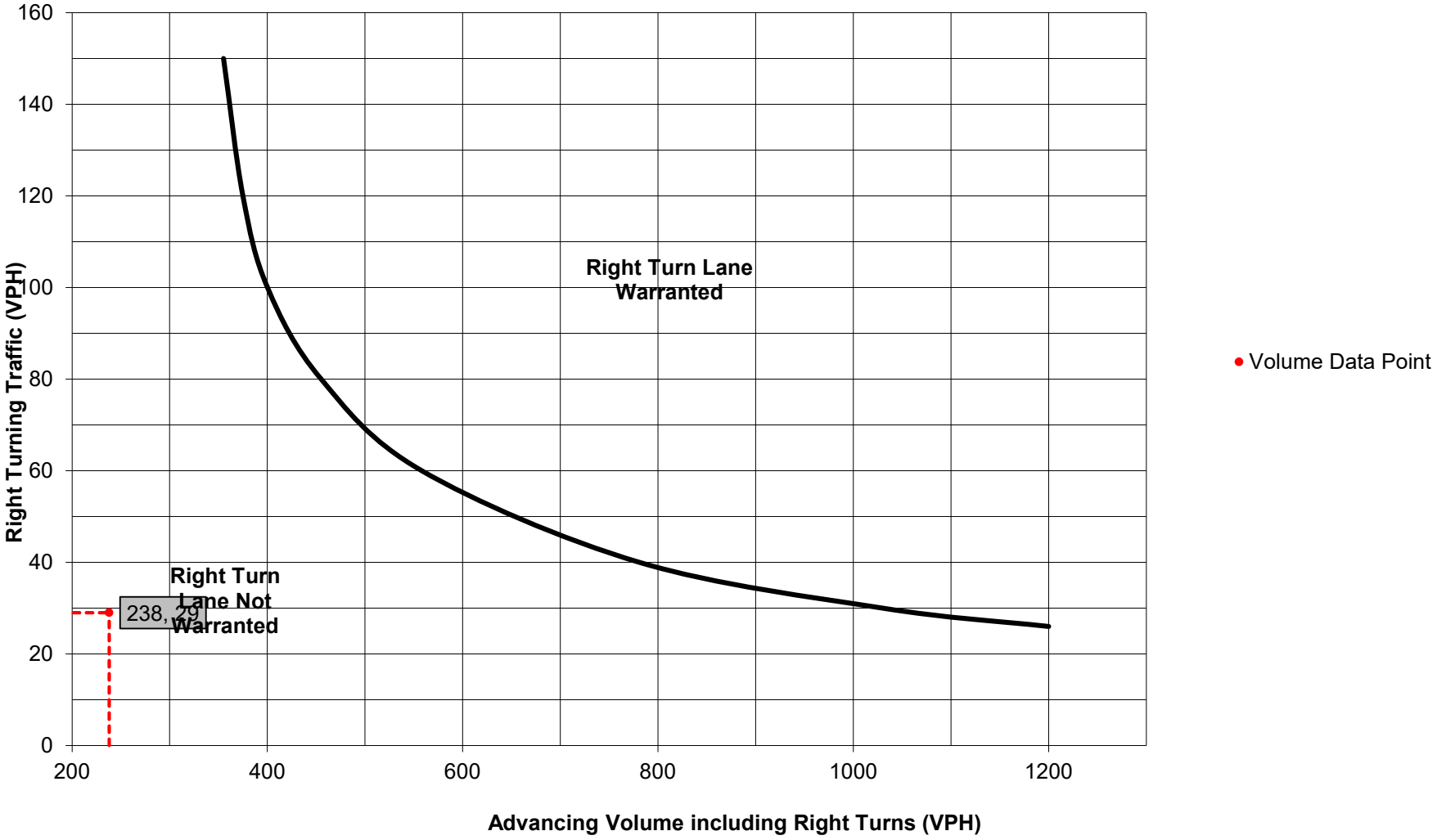
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:
N/A

Additional Comments / Justifications:

Figure 9. Warrant for right turn lanes on two-lane roadways
(40 mph or lower speeds, unsignalized and signalized intersections)



LEFT-TURN CONFLICT FACTOR WORKSHEET

INTERSECTION:	Fox Chase Road and Manor College / Proposed Local Road	**PEMIT NUMBER:**	64-2762
COUNTY:	Montgomery	**MUNICIPALITY:**	Abington Township
		COUNT DATE / SCENARIO:	2029 Projected

INTERSECTION VOLUMES

	NORTHBOUND FOX CHASE ROAD			SOUTHBOUND FOX CHASE ROAD			EASTBOUND MANOR COLLEGE			WESTBOUND PROPOSED LOCAL ROAD			CYCLE LENGTH (sec)
INTERVAL	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	
AM PEAK	18	254	13	4	248	15	1	0	2	27	0	9	67
MIDDAY PEAK													
PM PEAK	6	199	28	9	316	0	13	0	25	18	0	6	67
SAT PEAK													

LEFT-TURN CONFLICT FACTOR CALCULATIONS [1]

NORTHBOUND APPROACH	FOX CHASE ROAD
Exclusive Left-Turn Lane	NO
Number of Opposing Lanes	1
Include Opposing Right-Turn	YES
Required C.F (Prot/Permit)	35,000
Required C.F (Prot/Prohib)	N/A

NOTES

Hour	NB Left	Opposing Volume	Turns per Cycle	NB Conflict Factor	L.T.P. Justified
AM PEAK	18	263	0.34	4734	NO
MIDDAY PEAK	0	0		0	NO
PM PEAK	6	316	0.11	1896	NO
SAT PEAK	0	0		0	NO

SOUTHBOUND APPROACH	FOX CHASE ROAD
Exclusive Left-Turn Lane	NO
Number of Opposing Lanes	1
Include Opposing Right-Turn	YES
Required C.F (Prot/Permit)	35,000
Required C.F (Prot/Prohib)	N/A

NOTES

Hour	SB Left	Opposing Volume	Turns per Cycle	SB Conflict Factor	L.T.P. Justified
AM PEAK	4	267	0.07	1068	NO
MIDDAY PEAK	0	0		0	NO
PM PEAK	9	227	0.17	2043	NO
SAT PEAK	0	0		0	NO

EASTBOUND APPROACH	MANOR COLLEGE
Exclusive Left-Turn Lane	NO
Number of Opposing Lanes	1
Include Opposing Right-Turn	YES
Required C.F (Prot/Permit)	35,000
Required C.F (Prot/Prohib)	N/A

NOTES

Hour	EB Left	Opposing Volume	Turns per Cycle	EB Conflict Factor	L.T.P. Justified
AM PEAK	1	9	0.02	9	NO
MIDDAY PEAK	0	0		0	NO
PM PEAK	13	6	0.24	78	NO
SAT PEAK	0	0		0	NO

WESTBOUND APPROACH	PROPOSED LOCAL ROAD
Exclusive Left-Turn Lane	NO
Number of Opposing Lanes	1
Include Opposing Right-Turn	YES
Required C.F (Prot/Permit)	35,000
Required C.F (Prot/Prohib)	N/A

NOTES

Hour	WB Left	Opposing Volume	Turns per Cycle	WB Conflict Factor	L.T.P. Justified
AM PEAK	27	2	0.50	54	NO
MIDDAY PEAK	0	0		0	NO
PM PEAK	18	25	0.34	450	NO
SAT PEAK	0	0		0	NO

RECOMMENDATIONS:	No dedicated left-turn phases.

COMPLETED BY:	BGG	1/31/2022
QAQC BY:	SAK	2/3/2022

(1) Based on guidelines outlined within PennDOT Publication 149, Chapter 3.1

Appendix E

Traffic Volume Projection Worksheets

Fox Chase Road & Forrest Avenue
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 7 AM - 9 AM

		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
		Forrest Avenue			Forrest Avenue			Fox Chase Road			Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		13	14	56	69	13	5	42	170	31	2	132	15
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	1	1	4	0	0	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**13**	**14**	**56**	**69**	**13**	**5**	**43**	**171**	**35**	**2**	**132**	**15**
Background Growth to 2029	2.33%	0	0	1	2	0	0	1	4	1	0	3	0
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**13**	**14**	**57**	**71**	**13**	**5**	**44**	**175**	**36**	**2**	**135**	**15**
Senior Adult Housing—Single-Family	DIST IN			5%	5%							15%	
	DIST OUT							(5%)	(15%)	(5%)			
	ASSIGN	0	0	0	1	0	0	2	5	2	0	3	0
Total New Site Trip Assignment		*0*	*0*	*0*	*1*	*0*	*0*	*2*	*5*	*2*	*0*	*3*	*0*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**13**	**14**	**57**	**72**	**13**	**5**	**46**	**180**	**38**	**2**	**138**	**15**

Fox Chase Road & Forrest Avenue
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 4 PM - 6 PM

		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
		Forrest Avenue			Forrest Avenue			Fox Chase Road			Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		4	24	92	46	20	3	36	132	39	5	169	7
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	0	0	0	0	2	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**4**	**24**	**92**	**46**	**20**	**3**	**36**	**132**	**39**	**5**	**171**	**7**
Background Growth to 2029	2.33%	0	1	2	1	0	0	1	3	1	0	4	0
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**4**	**25**	**94**	**47**	**20**	**3**	**37**	**135**	**40**	**5**	**175**	**7**
Senior Adult Housing—Single-Family	DIST IN			5%	5%							15%	
	DIST OUT							(5%)	(15%)	(5%)			
	ASSIGN	0	0	1	2	0	0	1	4	1	0	6	0
Total New Site Trip Assignment		*0*	*0*	*1*	*2*	*0*	*0*	*1*	*4*	*1*	*0*	*6*	*0*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**4**	**25**	**95**	**49**	**20**	**3**	**38**	**139**	**41**	**5**	**181**	**7**

Fox Chase Road & Manor Access / Site Access
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 7 AM - 9 AM

		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
		Manor Access			Site Access			Fox Chase Road			Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		1	0	2	0	0	0	18	248	0	0	241	15
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	0	0	0	0	1	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**1**	**0**	**2**	**0**	**0**	**0**	**18**	**248**	**0**	**0**	**242**	**15**
Background Growth to 2029	2.33%	0	0	0	0	0	0	0	6	0	0	6	0
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**1**	**0**	**2**	**0**	**0**	**0**	**18**	**254**	**0**	**0**	**248**	**15**
Senior Adult Housing—Single-Family	DIST IN									75%	25%		
	DIST OUT				(75%)		(25%)						
	ASSIGN	0	0	0	27	0	9	0	0	13	4	0	0
Total New Site Trip Assignment		*0*	*0*	*0*	*27*	*0*	*9*	*0*	*0*	*13*	*4*	*0*	*0*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**1**	**0**	**2**	**27**	**0**	**9**	**18**	**254**	**13**	**4**	**248**	**15**

Fox Chase Road & Manor Access / Site Access
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 4 PM - 6 PM

		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
		Manor Access			Site Access			Fox Chase Road			Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		13	0	24	0	0	0	6	189	0	0	309	0
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	0	5	0	0	0	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**13**	**0**	**24**	**0**	**0**	**0**	**6**	**194**	**0**	**0**	**309**	**0**
Background Growth to 2029	2.33%	0	0	1	0	0	0	0	5	0	0	7	0
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**13**	**0**	**25**	**0**	**0**	**0**	**6**	**199**	**0**	**0**	**316**	**0**
Senior Adult Housing—Single-Family	DIST IN									75%	25%		
	DIST OUT				(75%)		(25%)						
	ASSIGN	0	0	0	18	0	6	0	0	28	9	0	0
Total New Site Trip Assignment		*0*	*0*	*0*	*18*	*0*	*6*	*0*	*0*	*28*	*9*	*0*	*0*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**13**	**0**	**25**	**18**	**0**	**6**	**6**	**199**	**28**	**9**	**316**	**0**

Fox Chase Road & Cedar Road
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 7 AM - 9 AM

		EASTBOUND Cedar Road			WESTBOUND Cedar Road			NORTHBOUND Fox Chase Road			SOUTHBOUND Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		68	201	80	3	240	64	84	123	7	41	121	92
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**68**	**201**	**80**	**3**	**240**	**64**	**84**	**123**	**7**	**41**	**121**	**92**
Background Growth to 2029	2.33%	2	5	2	0	6	1	2	3	0	1	3	2
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**70**	**206**	**82**	**3**	**246**	**65**	**86**	**126**	**7**	**42**	**124**	**94**
Senior Adult Housing—Single-Family	DIST IN	30%					25%		20%				
	DIST OUT										(25%)	(20%)	(30%)
	ASSIGN	5	0	0	0	0	4	0	4	0	9	7	11
Total New Site Trip Assignment		*5*	*0*	*0*	*0*	*0*	*4*	*0*	*4*	*0*	*9*	*7*	*11*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**75**	**206**	**82**	**3**	**246**	**69**	**86**	**130**	**7**	**51**	**131**	**105**

Fox Chase Road & Cedar Road
INTERSECTION VOLUME PROJECTION SUMMARY
Weekday 4 PM - 6 PM

		EASTBOUND Cedar Road			WESTBOUND Cedar Road			NORTHBOUND Fox Chase Road			SOUTHBOUND Fox Chase Road		
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
EXISTING VOLUMES		58	246	112	6	264	69	75	101	5	73	181	62
Seasonal Adjustment Factor	1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
Additional Adjustment		0	0	0	0	0	0	0	0	0	0	0	0
ADJUSTED EXISTING VOLUMES		**58**	**246**	**112**	**6**	**264**	**69**	**75**	**101**	**5**	**73**	**181**	**62**
Background Growth to 2029	2.33%	1	6	3	0	6	2	2	2	0	2	4	1
Total Other Development New Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
Total Other Development Pass-by Trip Assignments		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITHOUT DEVELOPMENT VOLUMES		**59**	**252**	**115**	**6**	**270**	**71**	**77**	**103**	**5**	**75**	**185**	**63**
Senior Adult Housing—Single-Family	DIST IN	30%					25%		20%				
	DIST OUT										(25%)	(20%)	(30%)
	ASSIGN	11	0	0	0	0	9	0	8	0	6	5	7
Total New Site Trip Assignment		*11*	*0*	*0*	*0*	*0*	*9*	*0*	*8*	*0*	*6*	*5*	*7*
Total Pass-by Site Trip Assignment		*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
2029 WITH DEVELOPMENT VOLUMES		**70**	**252**	**115**	**6**	**270**	**80**	**77**	**111**	**5**	**81**	**190**	**70**

Appendix F

LOS / Capacity Analysis Methodology

CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

The detailed capacity/level-of-service analysis contained in this transportation impact study was performed in accordance with the standard techniques contained in the *Highway Capacity Manual 6th Edition.* By definition, capacity represents "the maximum sustainable hourly flow rate at which persons or vehicles reasonably can be expected to traverse a point or a uniform section of a lane or roadway during a given time period under prevailing roadway, environmental, traffic, and control conditions." The level at which an intersection or a uniform section of a lane or roadway function can be expressed in terms of a level of service. Level of service (LOS) is defined as "a quantitative stratification of a performance measure or measures that represent quality of service, measured on an A-F scale, with LOS A representing the best operating conditions from the traveler's perspective and LOS F the worst."

Signalized Intersections

At three or four-legged signalized intersections, a methodology for evaluating the capacity and quality of service provided to road users traveling through the signalized intersection. For signalized intersections, the level of service can be characterized for the entire intersection, each approach, and each lane group. The level of service is based upon the control delay and volume-to-capacity ratio. The delay quantifies the increase in travel time due to the traffic signal control and is a surrogate measure of driver discomfort and fuel consumption, while the volume-to-capacity ratio quantifies the degree to which a phase's capacity is utilized by a lane group. Input data in determining the delay and volume-to-capacity ratio include:

- Demand flow rate for each entering vehicular movement and pedestrian crossing movement, including right-turn on red volumes and percent of heavy vehicles;
- Initial queue for each lane group;
- Number and configuration of lanes on each approach;
- Type of signal control and phase sequence;
- Allocation of minimum/maximum green times and clearance intervals (Yellow plus All Red phases); and
- Phase recall.

At signalized intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for signalized intersections.

Control Delay (Sec/Veh)	**LOS by Volume-to-Capacity Ratio**	
	v/c ≤ 1.0	**v/c > 1.0**
≤ 10	A	F
> 10 – 20	B	F
> 20 – 35	C	F
> 35 – 55	D	F
> 55 – 80	E	F
> 80	F	F

Appendix G

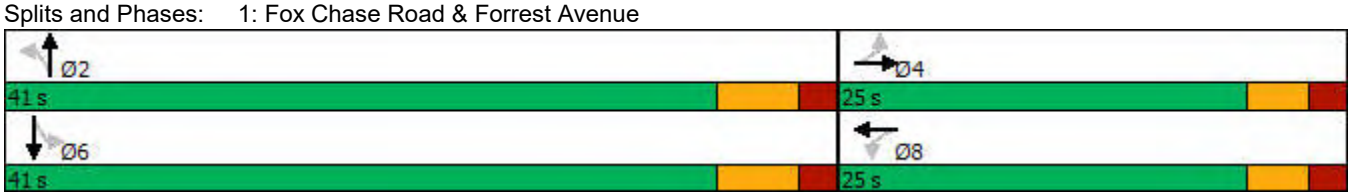
Existing
Capacity / LOS Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	14	56	69	13	5	43	171	35	2	132	15
Future Volume (vph)	13	14	56	69	13	5	43	171	35	2	132	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.909			0.992			0.981			0.986	
Flt Protected		0.992			0.962			0.991			0.999	
Satd. Flow (prot)	0	1567	0	0	1776	0	0	1644	0	0	1757	0
Flt Permitted		0.940			0.796			0.935			0.998	
Satd. Flow (perm)	0	1485	0	0	1469	0	0	1551	0	0	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62			5			20			14	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	7%	7%	7%	0%	20%	10%	7%	7%	50%	8%	27%
Adj. Flow (vph)	14	16	62	77	14	6	48	190	39	2	147	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	97	0	0	277	0	0	166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	25.0	25.0		25.0	25.0		41.0	41.0		41.0	41.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		62.1%	62.1%		62.1%	62.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 56	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	14	56	69	13	5	43	171	35	2	132	15
Future Volume (veh/h)	13	14	56	69	13	5	43	171	35	2	132	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1747	1747	1807	1911	1615	1732	1775	1775	1136	1749	1472
Adj Flow Rate, veh/h	14	16	62	77	14	6	48	190	39	2	147	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	7	7	7	0	20	10	7	7	50	8	27
Cap, veh/h	98	52	146	289	50	14	219	818	157	71	1053	120
Arrive On Green	0.12	0.14	0.12	0.12	0.14	0.12	0.67	0.68	0.67	0.67	0.68	0.67
Sat Flow, veh/h	130	362	1017	1156	350	99	203	1194	229	3	1537	176
Grp Volume(v), veh/h	92	0	0	97	0	0	277	0	0	166	0	0
Grp Sat Flow(s),veh/h/ln	1509	0	0	1605	0	0	1626	0	0	1716	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	2.6	0.0	0.0	3.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	0.15		0.67	0.79		0.06	0.17		0.14	0.01		0.10
Lane Grp Cap(c), veh/h	267	0	0	323	0	0	1163	0	0	1212	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.30	0.00	0.00	0.24	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	645	0	0	686	0	0	1163	0	0	1212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	0.0	0.0	20.7	0.0	0.0	3.2	0.0	0.0	2.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0	0.0	2.0	0.0	0.0	1.3	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	0.0	0.0	21.3	0.0	0.0	3.7	0.0	0.0	3.1	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		92			97			277			166	
Approach Delay, s/veh		21.6			21.3			3.7			3.1	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	20.0	35.0	20.0
Max Q Clear Time (g_c+I1), s	0.0	4.9	0.0	4.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

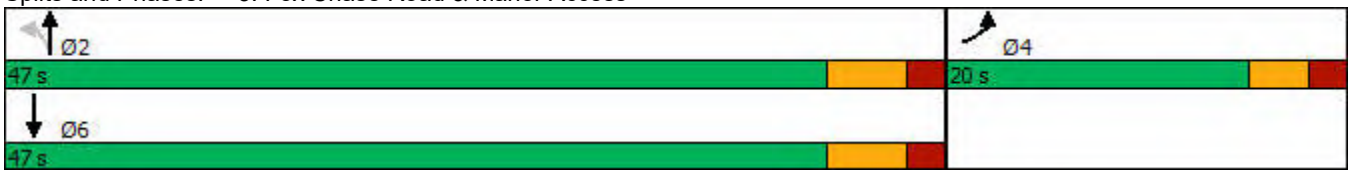
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	18	248	242	15
Future Volume (vph)	1	2	18	248	242	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	13	13
Grade (%)	3%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	1.00	
Frt	0.910				0.992	
Flt Protected	0.984			0.997		
Satd. Flow (prot)	1746	0	0	1779	1714	0
Flt Permitted	0.984			0.976		
Satd. Flow (perm)	1744	0	0	1741	1714	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2				9	
Link Speed (mph)	30			35	35	
Link Distance (ft)	250			379	876	
Travel Time (s)	5.7			7.4	17.1	
Confl. Peds. (#/hr)	2		1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	7%	8%	0%
Adj. Flow (vph)	1	2	19	267	260	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	0	286	276	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	1.03	1.03
Turning Speed (mph)	15	9	15			9
Number of Detectors	3		1	2	2	
Detector Template			Left			
Leading Detector (ft)	40		20	256	255	
Trailing Detector (ft)	-3		0	0	0	
Detector 1 Position(ft)	-3		0	0	0	
Detector 1 Size(ft)	6		20	6	5	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	5.0	
Detector 2 Position(ft)	13			250	250	
Detector 2 Size(ft)	6			6	5	
Detector 2 Type	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0	0.0	
Detector 3 Position(ft)	34					
Detector 3 Size(ft)	6					
Detector 3 Type	Cl+Ex					
Detector 3 Channel						
Detector 3 Extend (s)	0.0					
Turn Type	Prot		Perm	NA	NA	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	3.0		15.0	15.0	15.0	
Minimum Split (s)	8.0		21.0	21.0	21.0	
Total Split (s)	20.0		47.0	47.0	47.0	
Total Split (%)	29.9%		70.1%	70.1%	70.1%	
Maximum Green (s)	15.0		41.0	41.0	41.0	
Yellow Time (s)	3.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	4.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		4.0	4.0	4.0	
Minimum Gap (s)	3.0		2.0	2.0	2.0	
Time Before Reduce (s)	0.0		26.0	26.0	26.0	
Time To Reduce (s)	0.0		10.0	10.0	10.0	
Recall Mode	None		Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 64.2	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Fox Chase Road & Manor Access



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	2	18	248	242	15
Future Volume (veh/h)	1	2	18	248	242	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1820	1820	1849	1747	1755	1872
Adj Flow Rate, veh/h	1	2	19	267	260	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	7	8	0
Cap, veh/h	9	18	117	1333	1317	81
Arrive On Green	0.02	0.00	0.79	0.81	0.81	0.79
Sat Flow, veh/h	409	818	53	1656	1636	101
Grp Volume(v), veh/h	4	0	286	0	0	276
Grp Sat Flow(s),veh/h/ln	1635	0	1709	0	0	1737
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s	0.1	0.0	2.0	0.0	0.0	1.9
Prop In Lane	0.25	0.50	0.07			0.06
Lane Grp Cap(c), veh/h	37	0	1417	0	0	1398
V/C Ratio(X)	0.11	0.00	0.20	0.00	0.00	0.20
Avail Cap(c_a), veh/h	501	0	1417	0	0	1398
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	1.2	0.0	0.0	1.2
Incr Delay (d2), s/veh	1.3	0.0	0.3	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.5	0.0	1.5	0.0	0.0	1.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	4			286	276	
Approach Delay, s/veh	26.5			1.5	1.5	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		47.0		5.2		47.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		41.0		15.0		41.0
Max Q Clear Time (g_c+I1), s		4.0		2.6		3.9
Green Ext Time (p_c), s		5.6		0.0		5.3

Intersection Summary	
HCM 6th Ctrl Delay	1.7
HCM 6th LOS	A

Notes

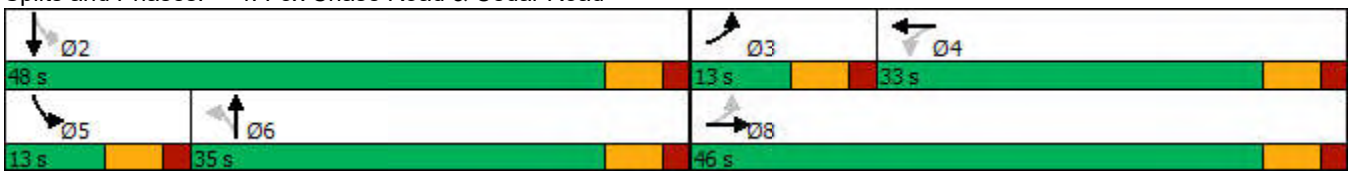
User approved volume balancing among the lanes for turning movement.

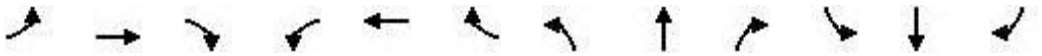
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	68	201	80	3	240	64	84	123	7	41	121	92
Future Volume (vph)	68	201	80	3	240	64	84	123	7	41	121	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.972			0.996			0.951	
Flt Protected		0.990						0.981			0.992	
Satd. Flow (prot)	0	1565	0	0	1790	0	0	1670	0	0	1560	0
Flt Permitted		0.760			0.996			0.760			0.942	
Satd. Flow (perm)	0	1202	0	0	1783	0	0	1294	0	0	1481	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		20			14						40	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	18%	5%	1%	67%	4%	5%	7%	2%	29%	15%	4%	11%
Adj. Flow (vph)	72	212	84	3	253	67	88	129	7	43	127	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	368	0	0	323	0	0	224	0	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		32.6			19.3			19.7			33.0	
Actuated g/C Ratio		0.43			0.25			0.26			0.44	
v/c Ratio		0.65			0.70			0.67			0.40	
Control Delay		22.7			33.8			36.3			14.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.7			33.8			36.3			14.8	
LOS		C			C			D			B	
Approach Delay		22.7			33.8			36.3			14.8	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		113			128			93			67	
Queue Length 95th (ft)		234			246			184			144	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		713			682			523			884	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.47			0.43			0.30	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 75.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 26.5		Intersection LOS: C	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	24	92	46	20	3	36	132	39	5	171	7
Future Volume (vph)	4	24	92	46	20	3	36	132	39	5	171	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.897			0.994			0.975			0.995	
Flt Protected		0.998			0.968			0.991			0.999	
Satd. Flow (prot)	0	1588	0	0	1913	0	0	1697	0	0	1921	0
Flt Permitted		0.988			0.742			0.937			0.994	
Satd. Flow (perm)	0	1571	0	0	1466	0	0	1604	0	0	1911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95			3			24			4	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	4					4	2					2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	8%	0%	2%	0%
Adj. Flow (vph)	4	25	95	47	21	3	37	136	40	5	176	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	71	0	0	213	0	0	188	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0		41.0	41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%		58.6%	58.6%	
Maximum Green (s)	24.0	24.0		24.0	24.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 54.8	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	24	92	46	20	3	36	132	39	5	171	7
Future Volume (veh/h)	4	24	92	46	20	3	36	132	39	5	171	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1849	1776	1911	1911	1911	1761	1860	1761	1866	1837	1866
Adj Flow Rate, veh/h	4	25	95	47	21	3	37	136	40	5	176	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	5	0	0	0	8	1	8	0	2	0
Cap, veh/h	74	51	177	247	99	10	225	792	217	77	1192	46
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.67	0.68	0.67	0.67	0.68	0.67
Sat Flow, veh/h	22	351	1224	923	686	71	211	1158	316	10	1741	68
Grp Volume(v), veh/h	124	0	0	71	0	0	213	0	0	188	0	0
Grp Sat Flow(s),veh/h/ln	1598	0	0	1679	0	0	1685	0	0	1819	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.8	0.0	0.0	1.8	0.0	0.0	2.3	0.0	0.0	1.9	0.0	0.0
Prop In Lane	0.03		0.77	0.66		0.04	0.17		0.19	0.03		0.04
Lane Grp Cap(c), veh/h	271	0	0	324	0	0	1202	0	0	1281	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.22	0.00	0.00	0.18	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	797	0	0	800	0	0	1202	0	0	1281	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.3	0.0	0.0	20.3	0.0	0.0	3.0	0.0	0.0	2.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	0.0	1.4	0.0	0.0	1.0	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	20.7	0.0	0.0	3.4	0.0	0.0	3.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		124			71			213			188	
Approach Delay, s/veh		22.5			20.7			3.4			3.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	24.0	35.0	24.0
Max Q Clear Time (g_c+I1), s	0.0	5.8	0.0	3.8
Green Ext Time (p_c), s	0.0	0.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

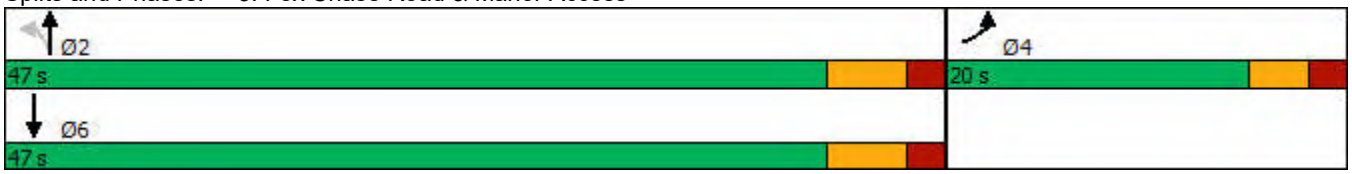
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	24	6	194	309	0
Future Volume (vph)	13	24	6	194	309	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	13	13
Grade (%)	3%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00		
Frt	0.911					
Flt Protected	0.983			0.999		
Satd. Flow (prot)	1747	0	0	1828	1806	0
Flt Permitted	0.983			0.992		
Satd. Flow (perm)	1747	0	0	1815	1806	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	25					
Link Speed (mph)	30			35	35	
Link Distance (ft)	250			379	876	
Travel Time (s)	5.7			7.4	17.1	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Adj. Flow (vph)	13	25	6	200	319	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	0	0	206	319	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	1.03	1.03
Turning Speed (mph)	15	9	15			9
Number of Detectors	3		1	2	2	
Detector Template			Left			
Leading Detector (ft)	40		20	256	255	
Trailing Detector (ft)	-3		0	0	0	
Detector 1 Position(ft)	-3		0	0	0	
Detector 1 Size(ft)	6		20	6	5	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	5.0	
Detector 2 Position(ft)	13			250	250	
Detector 2 Size(ft)	6			6	5	
Detector 2 Type	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0	0.0	
Detector 3 Position(ft)	34					
Detector 3 Size(ft)	6					
Detector 3 Type	Cl+Ex					
Detector 3 Channel						
Detector 3 Extend (s)	0.0					
Turn Type	Prot		Perm	NA	NA	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	3.0		15.0	15.0	15.0	
Minimum Split (s)	8.0		21.0	21.0	21.0	
Total Split (s)	20.0		47.0	47.0	47.0	
Total Split (%)	29.9%		70.1%	70.1%	70.1%	
Maximum Green (s)	15.0		41.0	41.0	41.0	
Yellow Time (s)	3.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	4.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		4.0	4.0	4.0	
Minimum Gap (s)	3.0		2.0	2.0	2.0	
Time Before Reduce (s)	0.0		26.0	26.0	26.0	
Time To Reduce (s)	0.0		10.0	10.0	10.0	
Recall Mode	None		Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 60.9	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Fox Chase Road & Manor Access



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	24	6	194	309	0
Future Volume (veh/h)	13	24	6	194	309	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1820	1820	1849	1790	1828	1872
Adj Flow Rate, veh/h	13	25	6	200	319	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	3	0
Cap, veh/h	27	52	79	1382	1430	0
Arrive On Green	0.05	0.03	0.76	0.78	0.78	0.00
Sat Flow, veh/h	536	1030	13	1767	1828	0
Grp Volume(v), veh/h	39	0	206	0	319	0
Grp Sat Flow(s),veh/h/ln	1607	0	1780	0	1828	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	2.5	0.0
Cycle Q Clear(g_c), s	1.3	0.0	1.5	0.0	2.5	0.0
Prop In Lane	0.33	0.64	0.03			0.00
Lane Grp Cap(c), veh/h	80	0	1429	0	1430	0
V/C Ratio(X)	0.48	0.00	0.14	0.00	0.22	0.00
Avail Cap(c_a), veh/h	479	0	1429	0	1430	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	25.1	0.0	1.4	0.0	1.5	0.0
Incr Delay (d2), s/veh	4.5	0.0	0.2	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0	0.3	0.0	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.6	0.0	1.7	0.0	1.9	0.0
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	39			206	319	
Approach Delay, s/veh	29.6			1.7	1.9	
Approach LOS	C			A	A	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	47.0		6.7		47.0
Change Period (Y+Rc), s	6.0		5.0		6.0
Max Green Setting (Gmax), s	41.0		15.0		41.0
Max Q Clear Time (g_c+I1), s	3.5		3.8		5.0
Green Ext Time (p_c), s	3.8		0.0		6.2

Intersection Summary	
HCM 6th Ctrl Delay	3.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	246	112	6	264	69	75	101	5	73	181	62
Future Volume (vph)	58	246	112	6	264	69	75	101	5	73	181	62
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.964			0.973			0.996			0.973	
Flt Protected		0.993			0.999			0.980			0.989	
Satd. Flow (prot)	0	1645	0	0	1831	0	0	1713	0	0	1687	0
Flt Permitted		0.842			0.990			0.727			0.886	
Satd. Flow (perm)	0	1394	0	0	1814	0	0	1268	0	0	1512	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		25			14						17	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Confl. Peds. (#/hr)	1					1	4					4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	1%	1%	0%	1%	6%	1%	2%	20%	3%	1%	2%
Adj. Flow (vph)	60	254	115	6	272	71	77	104	5	75	187	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	429	0	0	349	0	0	186	0	0	326	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		32.9			19.7			17.8			31.0	
Actuated g/C Ratio		0.44			0.27			0.24			0.42	
v/c Ratio		0.65			0.71			0.61			0.49	
Control Delay		20.7			32.8			35.4			18.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.7			32.8			35.4			18.4	
LOS		C			C			D			B	
Approach Delay		20.7			32.8			35.4			18.4	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		127			134			75			97	
Queue Length 95th (ft)		256			253			155			191	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		823			706			522			920	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.52			0.49			0.36			0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 74.1			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 25.5		Intersection LOS: C	
Intersection Capacity Utilization 76.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road

Appendix H

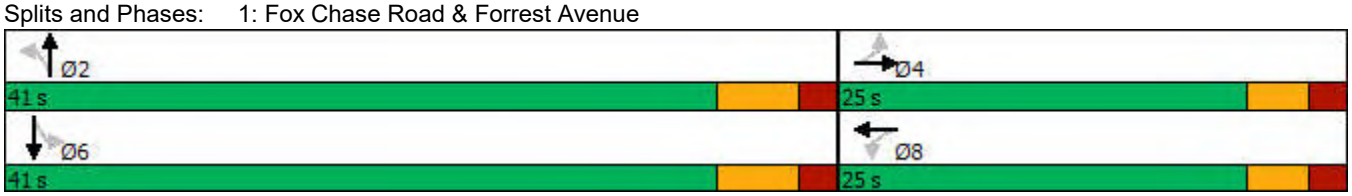
2029 Future without Development Capacity / LOS Analysis Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	14	57	71	13	5	44	175	36	2	135	15
Future Volume (vph)	13	14	57	71	13	5	44	175	36	2	135	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.909			0.992			0.981			0.986	
Flt Protected		0.993			0.962			0.991			0.999	
Satd. Flow (prot)	0	1569	0	0	1776	0	0	1644	0	0	1758	0
Flt Permitted		0.941			0.792			0.934			0.998	
Satd. Flow (perm)	0	1486	0	0	1462	0	0	1549	0	0	1756	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			5			20			13	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	7%	7%	7%	0%	20%	10%	7%	7%	50%	8%	27%
Adj. Flow (vph)	14	16	63	79	14	6	49	194	40	2	150	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	99	0	0	283	0	0	169	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	25.0	25.0		25.0	25.0		41.0	41.0		41.0	41.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		62.1%	62.1%		62.1%	62.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 56.2	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	14	57	71	13	5	44	175	36	2	135	15
Future Volume (veh/h)	13	14	57	71	13	5	44	175	36	2	135	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1747	1747	1807	1911	1615	1732	1775	1775	1136	1749	1472
Adj Flow Rate, veh/h	14	16	63	79	14	6	49	194	40	2	150	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	7	7	7	0	20	10	7	7	50	8	27
Cap, veh/h	97	52	147	291	49	14	219	817	157	71	1055	118
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.67	0.68	0.67	0.67	0.68	0.67
Sat Flow, veh/h	128	358	1022	1165	342	97	203	1193	230	3	1541	173
Grp Volume(v), veh/h	93	0	0	99	0	0	283	0	0	169	0	0
Grp Sat Flow(s),veh/h/ln	1508	0	0	1605	0	0	1625	0	0	1716	0	0
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	2.6	0.0	0.0	3.3	0.0	0.0	1.8	0.0	0.0
Prop In Lane	0.15		0.68	0.80		0.06	0.17		0.14	0.01		0.10
Lane Grp Cap(c), veh/h	267	0	0	324	0	0	1162	0	0	1212	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.31	0.00	0.00	0.24	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	645	0	0	685	0	0	1162	0	0	1212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	0.0	0.0	20.8	0.0	0.0	3.2	0.0	0.0	2.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0	0.0	2.0	0.0	0.0	1.4	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	0.0	0.0	21.3	0.0	0.0	3.7	0.0	0.0	3.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		93			99			283			169	
Approach Delay, s/veh		21.7			21.3			3.7			3.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	20.0	35.0	20.0
Max Q Clear Time (g_c+I1), s	0.0	4.9	0.0	4.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

Notes

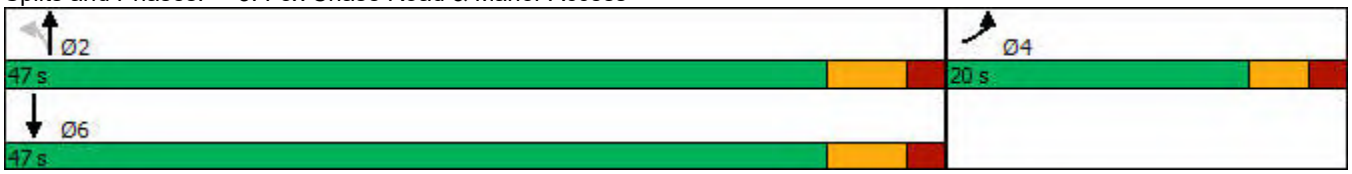
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	2	18	254	248	15
Future Volume (vph)	1	2	18	254	248	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	13	13
Grade (%)	3%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00			1.00	1.00	
Frt	0.910				0.992	
Flt Protected	0.984			0.997		
Satd. Flow (prot)	1746	0	0	1779	1714	0
Flt Permitted	0.984			0.976		
Satd. Flow (perm)	1744	0	0	1741	1714	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	2				9	
Link Speed (mph)	30			35	35	
Link Distance (ft)	250			379	876	
Travel Time (s)	5.7			7.4	17.1	
Confl. Peds. (#/hr)	2		1			1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	7%	8%	0%
Adj. Flow (vph)	1	2	19	273	267	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	0	0	292	283	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	1.03	1.03
Turning Speed (mph)	15	9	15			9
Number of Detectors	3		1	2	2	
Detector Template			Left			
Leading Detector (ft)	40		20	256	255	
Trailing Detector (ft)	-3		0	0	0	
Detector 1 Position(ft)	-3		0	0	0	
Detector 1 Size(ft)	6		20	6	5	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	5.0	
Detector 2 Position(ft)	13			250	250	
Detector 2 Size(ft)	6			6	5	
Detector 2 Type	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0	0.0	
Detector 3 Position(ft)	34					
Detector 3 Size(ft)	6					
Detector 3 Type	Cl+Ex					
Detector 3 Channel						
Detector 3 Extend (s)	0.0					
Turn Type	Prot		Perm	NA	NA	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	3.0		15.0	15.0	15.0	
Minimum Split (s)	8.0		21.0	21.0	24.0	
Total Split (s)	20.0		47.0	47.0	47.0	
Total Split (%)	29.9%		70.1%	70.1%	70.1%	
Maximum Green (s)	15.0		41.0	41.0	41.0	
Yellow Time (s)	3.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	4.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		4.0	4.0	4.0	
Minimum Gap (s)	3.0		2.0	2.0	2.0	
Time Before Reduce (s)	0.0		26.0	26.0	26.0	
Time To Reduce (s)	0.0		10.0	10.0	10.0	
Recall Mode	None		Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 64.2	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Fox Chase Road & Manor Access



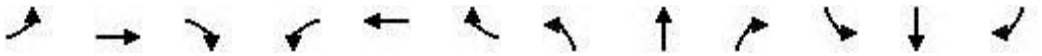
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	2	18	254	248	15
Future Volume (veh/h)	1	2	18	254	248	15
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	0.98	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1820	1820	1849	1747	1755	1872
Adj Flow Rate, veh/h	1	2	19	273	267	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	0	0	7	8	0
Cap, veh/h	9	18	115	1335	1320	79
Arrive On Green	0.02	0.00	0.79	0.81	0.81	0.79
Sat Flow, veh/h	409	818	52	1658	1639	98
Grp Volume(v), veh/h	4	0	292	0	0	283
Grp Sat Flow(s),veh/h/ln	1635	0	1710	0	0	1737
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	2.0
Cycle Q Clear(g_c), s	0.1	0.0	2.1	0.0	0.0	2.0
Prop In Lane	0.25	0.50	0.07			0.06
Lane Grp Cap(c), veh/h	37	0	1417	0	0	1399
V/C Ratio(X)	0.11	0.00	0.21	0.00	0.00	0.20
Avail Cap(c_a), veh/h	501	0	1417	0	0	1399
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	1.2	0.0	0.0	1.2
Incr Delay (d2), s/veh	1.3	0.0	0.3	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.5	0.0	1.5	0.0	0.0	1.5
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	4			292	283	
Approach Delay, s/veh	26.5			1.5	1.5	
Approach LOS	C			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		47.0		5.2		47.0
Change Period (Y+Rc), s		6.0		5.0		6.0
Max Green Setting (Gmax), s		41.0		15.0		41.0
Max Q Clear Time (g_c+I1), s		4.1		2.6		4.0
Green Ext Time (p_c), s		5.7		0.0		5.5

Intersection Summary	
HCM 6th Ctrl Delay	1.7
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

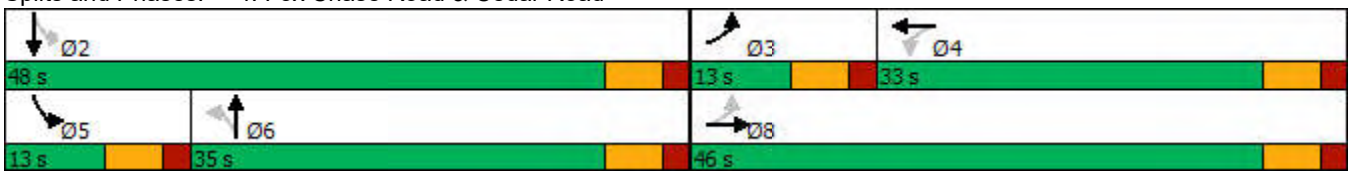


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	206	82	3	246	65	86	126	7	42	124	94
Future Volume (vph)	70	206	82	3	246	65	86	126	7	42	124	94
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.972			0.996			0.951	
Flt Protected		0.990						0.981			0.992	
Satd. Flow (prot)	0	1565	0	0	1790	0	0	1670	0	0	1560	0
Flt Permitted		0.748			0.996			0.756			0.939	
Satd. Flow (perm)	0	1183	0	0	1783	0	0	1287	0	0	1477	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		20			14						40	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	18%	5%	1%	67%	4%	5%	7%	2%	29%	15%	4%	11%
Adj. Flow (vph)	74	217	86	3	259	68	91	133	7	44	131	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	0	0	330	0	0	231	0	0	274	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		32.9			19.6			20.1			33.4	
Actuated g/C Ratio		0.43			0.26			0.26			0.44	
v/c Ratio		0.67			0.71			0.68			0.41	
Control Delay		23.8			34.4			37.2			15.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.8			34.4			37.2			15.1	
LOS		C			C			D			B	
Approach Delay		23.8			34.4			37.2			15.1	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		119			133			97			70	
Queue Length 95th (ft)		242			253			192			149	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		698			675			515			874	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.54			0.49			0.45			0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 76.6			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 27.3		Intersection LOS: C	
Intersection Capacity Utilization 77.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	25	94	47	20	3	37	135	40	5	175	7
Future Volume (vph)	4	25	94	47	20	3	37	135	40	5	175	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.897			0.994			0.975			0.995	
Flt Protected		0.998			0.968			0.991			0.999	
Satd. Flow (prot)	0	1588	0	0	1913	0	0	1697	0	0	1921	0
Flt Permitted		0.989			0.731			0.936			0.994	
Satd. Flow (perm)	0	1573	0	0	1444	0	0	1602	0	0	1911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			3			25			4	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	4					4	2					2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	8%	0%	2%	0%
Adj. Flow (vph)	4	26	97	48	21	3	38	139	41	5	180	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	72	0	0	218	0	0	192	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0		41.0	41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%		58.6%	58.6%	
Maximum Green (s)	24.0	24.0		24.0	24.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 54.9	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	25	94	47	20	3	37	135	40	5	175	7
Future Volume (veh/h)	4	25	94	47	20	3	37	135	40	5	175	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1849	1776	1911	1911	1911	1761	1860	1761	1866	1837	1866
Adj Flow Rate, veh/h	4	26	97	48	21	3	38	139	41	5	180	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	5	0	0	0	8	1	8	0	2	0
Cap, veh/h	74	52	177	249	98	10	225	790	217	77	1193	45
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.67	0.68	0.67	0.67	0.68	0.67
Sat Flow, veh/h	22	356	1221	936	677	70	212	1155	317	10	1743	66
Grp Volume(v), veh/h	127	0	0	72	0	0	218	0	0	192	0	0
Grp Sat Flow(s),veh/h/ln	1599	0	0	1682	0	0	1683	0	0	1819	0	0
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.9	0.0	0.0	1.8	0.0	0.0	2.3	0.0	0.0	2.0	0.0	0.0
Prop In Lane	0.03		0.76	0.67		0.04	0.17		0.19	0.03		0.04
Lane Grp Cap(c), veh/h	272	0	0	326	0	0	1200	0	0	1280	0	0
V/C Ratio(X)	0.47	0.00	0.00	0.22	0.00	0.00	0.18	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	797	0	0	799	0	0	1200	0	0	1280	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.3	0.0	0.0	20.3	0.0	0.0	3.1	0.0	0.0	2.9	0.0	0.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	0.0	0.0	1.4	0.0	0.0	1.0	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.5	0.0	0.0	20.7	0.0	0.0	3.4	0.0	0.0	3.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		127			72			218			192	
Approach Delay, s/veh		22.5			20.7			3.4			3.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	24.0	35.0	24.0
Max Q Clear Time (g_c+I1), s	0.0	5.9	0.0	3.8
Green Ext Time (p_c), s	0.0	0.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	9.4
HCM 6th LOS	A

Notes

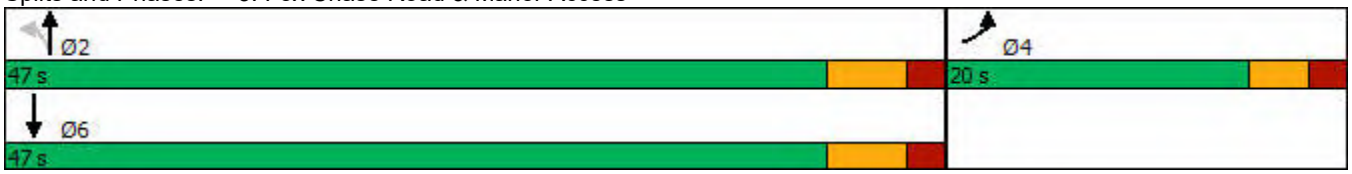
User approved pedestrian interval to be less than phase max green.

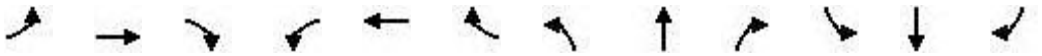
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	25	6	199	316	0
Future Volume (vph)	13	25	6	199	316	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	14	14	13	13
Grade (%)	3%			2%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				1.00		
Frt	0.910					
Flt Protected	0.984			0.999		
Satd. Flow (prot)	1746	0	0	1828	1806	0
Flt Permitted	0.984			0.992		
Satd. Flow (perm)	1746	0	0	1815	1806	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26					
Link Speed (mph)	30			35	35	
Link Distance (ft)	250			379	876	
Travel Time (s)	5.7			7.4	17.1	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	0%	4%	3%	0%
Adj. Flow (vph)	13	26	6	205	326	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	0	211	326	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	15			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	0.97	0.97	1.00	1.00	1.03	1.03
Turning Speed (mph)	15	9	15			9
Number of Detectors	3		1	2	2	
Detector Template			Left			
Leading Detector (ft)	40		20	256	255	
Trailing Detector (ft)	-3		0	0	0	
Detector 1 Position(ft)	-3		0	0	0	
Detector 1 Size(ft)	6		20	6	5	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	5.0	
Detector 2 Position(ft)	13			250	250	
Detector 2 Size(ft)	6			6	5	
Detector 2 Type	Cl+Ex			Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0	0.0	
Detector 3 Position(ft)	34					
Detector 3 Size(ft)	6					
Detector 3 Type	Cl+Ex					
Detector 3 Channel						
Detector 3 Extend (s)	0.0					
Turn Type	Prot		Perm	NA	NA	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Protected Phases	4			2	6	
Permitted Phases			2			
Detector Phase	4		2	2	6	
Switch Phase						
Minimum Initial (s)	3.0		15.0	15.0	15.0	
Minimum Split (s)	8.0		21.0	21.0	21.0	
Total Split (s)	20.0		47.0	47.0	47.0	
Total Split (%)	29.9%		70.1%	70.1%	70.1%	
Maximum Green (s)	15.0		41.0	41.0	41.0	
Yellow Time (s)	3.0		4.0	4.0	4.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0	-1.0	
Total Lost Time (s)	4.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		4.0	4.0	4.0	
Minimum Gap (s)	3.0		2.0	2.0	2.0	
Time Before Reduce (s)	0.0		26.0	26.0	26.0	
Time To Reduce (s)	0.0		10.0	10.0	10.0	
Recall Mode	None		Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 60.9	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Fox Chase Road & Manor Access





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	252	115	6	270	71	77	103	5	75	185	63
Future Volume (vph)	59	252	115	6	270	71	77	103	5	75	185	63
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.963			0.972			0.996			0.974	
Flt Protected		0.993			0.999			0.980			0.989	
Satd. Flow (prot)	0	1643	0	0	1829	0	0	1713	0	0	1689	0
Flt Permitted		0.834			0.990			0.723			0.882	
Satd. Flow (perm)	0	1380	0	0	1812	0	0	1262	0	0	1506	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		25			14						17	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Confl. Peds. (#/hr)	1					1	4					4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	1%	1%	0%	1%	6%	1%	2%	20%	3%	1%	2%
Adj. Flow (vph)	61	260	119	6	278	73	79	106	5	77	191	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	440	0	0	357	0	0	190	0	0	333	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		33.2			20.0			18.1			31.4	
Actuated g/C Ratio		0.44			0.27			0.24			0.42	
v/c Ratio		0.67			0.72			0.62			0.50	
Control Delay		21.7			33.5			35.8			18.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.7			33.5			35.8			18.7	
LOS		C			C			D			B	
Approach Delay		21.7			33.5			35.8			18.7	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		134			140			78			101	
Queue Length 95th (ft)		268			263			158			195	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		810			699			515			908	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.54			0.51			0.37			0.37	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 74.8			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	25	6	199	316	0
Future Volume (veh/h)	13	25	6	199	316	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1820	1820	1849	1790	1828	1872
Adj Flow Rate, veh/h	13	26	6	205	326	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	0	4	3	0
Cap, veh/h	27	53	79	1382	1429	0
Arrive On Green	0.05	0.03	0.76	0.78	0.78	0.00
Sat Flow, veh/h	522	1044	13	1768	1828	0
Grp Volume(v), veh/h	40	0	211	0	326	0
Grp Sat Flow(s),veh/h/ln	1606	0	1780	0	1828	0
Q Serve(g_s), s	1.3	0.0	0.0	0.0	2.5	0.0
Cycle Q Clear(g_c), s	1.3	0.0	1.6	0.0	2.5	0.0
Prop In Lane	0.32	0.65	0.03			0.00
Lane Grp Cap(c), veh/h	82	0	1427	0	1429	0
V/C Ratio(X)	0.49	0.00	0.15	0.00	0.23	0.00
Avail Cap(c_a), veh/h	478	0	1427	0	1429	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	25.1	0.0	1.5	0.0	1.6	0.0
Incr Delay (d2), s/veh	4.5	0.0	0.2	0.0	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0	0.3	0.0	0.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	29.6	0.0	1.7	0.0	1.9	0.0
LnGrp LOS	C	A	A	A	A	A
Approach Vol, veh/h	40			211	326	
Approach Delay, s/veh	29.6			1.7	1.9	
Approach LOS	C			A	A	

Timer - Assigned Phs	2		4		6
Phs Duration (G+Y+Rc), s	47.0		6.7		47.0
Change Period (Y+Rc), s	6.0		5.0		6.0
Max Green Setting (Gmax), s	41.0		15.0		41.0
Max Q Clear Time (g_c+I1), s	3.6		3.8		5.0
Green Ext Time (p_c), s	3.9		0.1		6.3

Intersection Summary	
HCM 6th Ctrl Delay	3.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

Appendix I

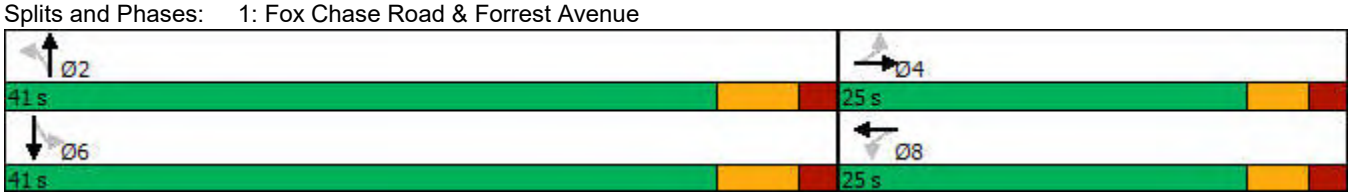
2029 Future with Development Capacity / LOS Analysis Worksheets

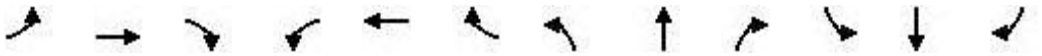
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	14	57	72	13	5	46	180	38	2	138	15
Future Volume (vph)	13	14	57	72	13	5	46	180	38	2	138	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.909			0.992			0.981			0.987	
Flt Protected		0.993			0.962			0.991			0.999	
Satd. Flow (prot)	0	1569	0	0	1776	0	0	1644	0	0	1760	0
Flt Permitted		0.942			0.792			0.932			0.998	
Satd. Flow (perm)	0	1488	0	0	1462	0	0	1546	0	0	1758	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63			5			20			13	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	2					2						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	7%	7%	7%	0%	20%	10%	7%	7%	50%	8%	27%
Adj. Flow (vph)	14	16	63	80	14	6	51	200	42	2	153	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	100	0	0	293	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	25.0	25.0		25.0	25.0		41.0	41.0		41.0	41.0	
Total Split (%)	37.9%	37.9%		37.9%	37.9%		62.1%	62.1%		62.1%	62.1%	
Maximum Green (s)	20.0	20.0		20.0	20.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 66	
Actuated Cycle Length: 56.2	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	14	57	72	13	5	46	180	38	2	138	15
Future Volume (veh/h)	13	14	57	72	13	5	46	180	38	2	138	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1747	1747	1807	1911	1615	1732	1775	1775	1136	1749	1472
Adj Flow Rate, veh/h	14	16	63	80	14	6	51	200	42	2	153	17
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	7	7	7	0	20	10	7	7	50	8	27
Cap, veh/h	97	52	147	292	49	14	220	813	159	71	1057	116
Arrive On Green	0.13	0.14	0.13	0.13	0.14	0.13	0.67	0.68	0.67	0.67	0.68	0.67
Sat Flow, veh/h	128	358	1022	1169	339	96	204	1187	233	3	1544	170
Grp Volume(v), veh/h	93	0	0	100	0	0	293	0	0	172	0	0
Grp Sat Flow(s),veh/h/ln	1508	0	0	1604	0	0	1623	0	0	1717	0	0
Q Serve(g_s), s	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.9	0.0	0.0	2.6	0.0	0.0	3.5	0.0	0.0	1.9	0.0	0.0
Prop In Lane	0.15		0.68	0.80		0.06	0.17		0.14	0.01		0.10
Lane Grp Cap(c), veh/h	268	0	0	324	0	0	1161	0	0	1212	0	0
V/C Ratio(X)	0.35	0.00	0.00	0.31	0.00	0.00	0.25	0.00	0.00	0.14	0.00	0.00
Avail Cap(c_a), veh/h	645	0	0	685	0	0	1161	0	0	1212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	20.9	0.0	0.0	20.8	0.0	0.0	3.2	0.0	0.0	2.9	0.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0	0.0	2.1	0.0	0.0	1.5	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	0.0	0.0	21.3	0.0	0.0	3.7	0.0	0.0	3.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		93			100			293			172	
Approach Delay, s/veh		21.7			21.3			3.7			3.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	20.0	35.0	20.0
Max Q Clear Time (g_c+I1), s	0.0	4.9	0.0	4.6
Green Ext Time (p_c), s	0.0	0.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.8
HCM 6th LOS	A

Notes

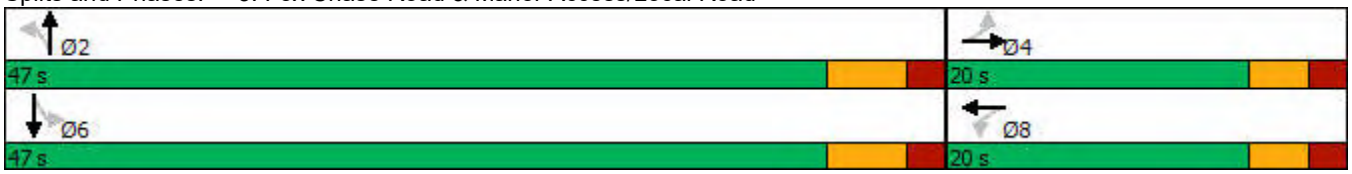
User approved pedestrian interval to be less than phase max green.

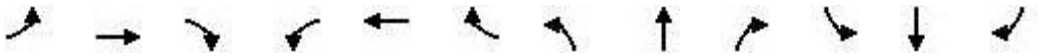
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	2	27	0	9	18	254	13	4	248	15
Future Volume (vph)	1	0	2	27	0	9	18	254	13	4	248	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	15	15	16	16	16	14	14	14	13	13	13
Grade (%)		3%			0%			2%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						1.00			1.00	
Frt		0.910			0.965			0.994			0.992	
Flt Protected		0.984			0.964			0.997			0.999	
Satd. Flow (prot)	0	1746	0	0	1861	0	0	1771	0	0	1713	0
Flt Permitted		0.874			0.942			0.977			0.997	
Satd. Flow (perm)	0	1549	0	0	1818	0	0	1736	0	0	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			49			7			9	
Link Speed (mph)		30			25			35			35	
Link Distance (ft)		250			253			379			876	
Travel Time (s)		5.7			6.9			7.4			17.1	
Confl. Peds. (#/hr)	2						1					1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	7%	2%	2%	8%	0%
Adj. Flow (vph)	1	0	2	29	0	10	19	273	14	4	267	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	39	0	0	306	0	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	0.97	0.97	0.91	0.91	0.91	1.00	1.00	1.00	1.03	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	3	1		1	1		1	2		1	2	
Detector Template				Left			Left			Left		
Leading Detector (ft)	40	35		20	35		20	236		20	236	
Trailing Detector (ft)	-3	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	-3	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	6	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	5.0	
Detector 2 Position(ft)	13							230			230	
Detector 2 Size(ft)	6							6			6	
Detector 2 Type	Cl+Ex							Extend			Extend	
Detector 2 Channel												
Detector 2 Extend (s)	0.0							0.0			0.0	
Detector 3 Position(ft)	34											
Detector 3 Size(ft)	6											
Detector 3 Type	Cl+Ex											
Detector 3 Channel												
Detector 3 Extend (s)	0.0											
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	8.0	8.0		8.0	8.0		21.0	21.0		21.0	21.0	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	29.9%	29.9%		29.9%	29.9%		70.1%	70.1%		70.1%	70.1%	
Maximum Green (s)	15.0	15.0		15.0	15.0		41.0	41.0		41.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		26.0	26.0		26.0	26.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0		10.0	10.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 60.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: Fox Chase Road & Manor Access/Local Road

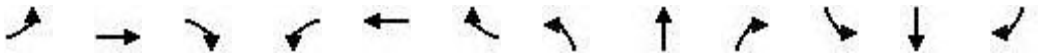




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	2	27	0	9	18	254	13	4	248	15
Future Volume (veh/h)	1	0	2	27	0	9	18	254	13	4	248	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.97		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1820	1791	1820	1843	1843	1843	1849	1747	1820	1843	1755	1872
Adj Flow Rate, veh/h	1	0	2	29	0	10	19	273	14	4	267	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	0	2	0	2	2	2	0	7	2	2	8	0
Cap, veh/h	114	0	49	172	0	19	109	1234	61	72	1281	76
Arrive On Green	0.05	0.00	0.03	0.03	0.00	0.03	0.77	0.78	0.77	0.77	0.78	0.77
Sat Flow, veh/h	515	0	1029	1137	0	392	48	1574	78	4	1633	97
Grp Volume(v), veh/h	3	0	0	39	0	0	306	0	0	287	0	0
Grp Sat Flow(s),veh/h/ln	1544	0	0	1529	0	0	1699	0	0	1735	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.3	0.0	0.0	2.5	0.0	0.0	2.3	0.0	0.0
Prop In Lane	0.33		0.67	0.74		0.26	0.06		0.05	0.01		0.06
Lane Grp Cap(c), veh/h	164	0	0	162	0	0	1372	0	0	1396	0	0
V/C Ratio(X)	0.02	0.00	0.00	0.24	0.00	0.00	0.22	0.00	0.00	0.21	0.00	0.00
Avail Cap(c_a), veh/h	524	0	0	514	0	0	1372	0	0	1396	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	25.4	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	0.9	0.0	0.0	0.5	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	0.0	26.1	0.0	0.0	1.9	0.0	0.0	1.8	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		3			39			306			287	
Approach Delay, s/veh		24.7			26.1			1.9			1.8	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	47.0	6.6	47.0	6.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	41.0	15.0	41.0	15.0
Max Q Clear Time (g_c+I1), s	4.5	2.6	4.3	3.3
Green Ext Time (p_c), s	5.6	0.0	5.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	3.5
HCM 6th LOS	A

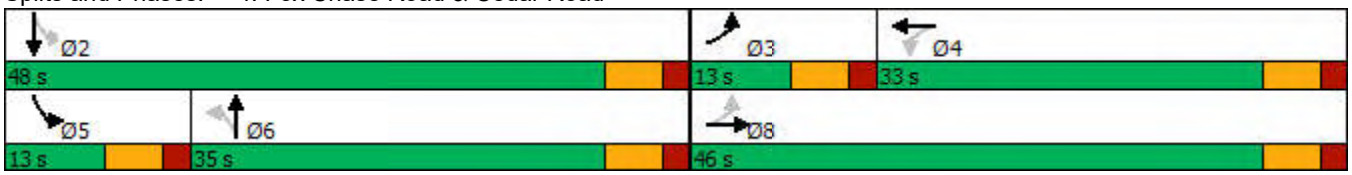


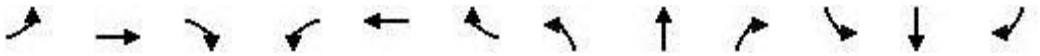
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	206	82	3	246	69	86	130	7	51	131	105
Future Volume (vph)	75	206	82	3	246	69	86	130	7	51	131	105
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.970			0.971			0.996			0.951	
Flt Protected		0.990						0.981			0.991	
Satd. Flow (prot)	0	1565	0	0	1788	0	0	1671	0	0	1555	0
Flt Permitted		0.721			0.996			0.748			0.918	
Satd. Flow (perm)	0	1140	0	0	1781	0	0	1274	0	0	1441	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		20			15						41	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	18%	5%	1%	67%	4%	5%	7%	2%	29%	15%	4%	11%
Adj. Flow (vph)	79	217	86	3	259	73	91	137	7	54	138	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	382	0	0	335	0	0	235	0	0	303	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		33.3			20.0			20.6			33.9	
Actuated g/C Ratio		0.43			0.26			0.27			0.44	
v/c Ratio		0.70			0.71			0.70			0.46	
Control Delay		25.2			34.7			38.0			16.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.2			34.7			38.0			16.1	
LOS		C			C			D			B	
Approach Delay		25.2			34.7			38.0			16.1	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		123			137			100			82	
Queue Length 95th (ft)		245			256			196			167	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		672			669			505			849	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.57			0.50			0.47			0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 77.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	25	95	49	20	3	38	139	41	5	181	7
Future Volume (vph)	4	25	95	49	20	3	38	139	41	5	181	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	13	13	13	15	15	15	12	12	12	15	15	15
Grade (%)		2%			-1%			-2%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.897			0.995			0.975			0.995	
Flt Protected		0.998			0.967			0.991			0.999	
Satd. Flow (prot)	0	1588	0	0	1913	0	0	1697	0	0	1921	0
Flt Permitted		0.989			0.725			0.934			0.994	
Satd. Flow (perm)	0	1573	0	0	1434	0	0	1599	0	0	1911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			3			24			4	
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		345			428			876			325	
Travel Time (s)		9.4			11.7			17.1			6.3	
Confl. Peds. (#/hr)	4					4	2					2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%	8%	1%	8%	0%	2%	0%
Adj. Flow (vph)	4	26	98	51	21	3	39	143	42	5	187	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	75	0	0	224	0	0	199	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	0.94	0.94	0.94	1.06	1.06	1.06	0.95	0.95	0.95
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	0		20	0	
Trailing Detector (ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Position(ft)	0	-5		0	-5		0	0		0	0	
Detector 1 Size(ft)	20	40		20	40		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		21.0	21.0		21.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0		41.0	41.0		41.0	41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%		58.6%	58.6%		58.6%	58.6%	
Maximum Green (s)	24.0	24.0		24.0	24.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 55	
Natural Cycle: 40	
Control Type: Semi Act-Uncoord	

Splits and Phases: 1: Fox Chase Road & Forrest Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	25	95	49	20	3	38	139	41	5	181	7
Future Volume (veh/h)	4	25	95	49	20	3	38	139	41	5	181	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1849	1849	1776	1911	1911	1911	1761	1860	1761	1866	1837	1866
Adj Flow Rate, veh/h	4	26	98	51	21	3	39	143	42	5	187	7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	0	5	0	0	0	8	1	8	0	2	0
Cap, veh/h	74	51	178	255	94	10	225	790	216	77	1194	44
Arrive On Green	0.13	0.15	0.13	0.13	0.15	0.13	0.66	0.68	0.66	0.66	0.68	0.66
Sat Flow, veh/h	22	353	1224	964	649	67	211	1156	315	9	1746	64
Grp Volume(v), veh/h	128	0	0	75	0	0	224	0	0	199	0	0
Grp Sat Flow(s),veh/h/ln	1599	0	0	1680	0	0	1682	0	0	1820	0	0
Q Serve(g_s), s	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	1.9	0.0	0.0	2.4	0.0	0.0	2.1	0.0	0.0
Prop In Lane	0.03		0.77	0.68		0.04	0.17		0.19	0.03		0.04
Lane Grp Cap(c), veh/h	272	0	0	327	0	0	1198	0	0	1280	0	0
V/C Ratio(X)	0.47	0.00	0.00	0.23	0.00	0.00	0.19	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	796	0	0	797	0	0	1198	0	0	1280	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	21.3	0.0	0.0	20.4	0.0	0.0	3.1	0.0	0.0	3.0	0.0	0.0
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.7	0.0	0.0	1.5	0.0	0.0	1.0	0.0	0.0	0.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.6	0.0	0.0	20.7	0.0	0.0	3.4	0.0	0.0	3.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		128			75			224			199	
Approach Delay, s/veh		22.6			20.7			3.4			3.2	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	41.0	11.6	41.0	11.6
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	35.0	24.0	35.0	24.0
Max Q Clear Time (g_c+I1), s	0.0	6.0	0.0	3.9
Green Ext Time (p_c), s	0.0	0.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

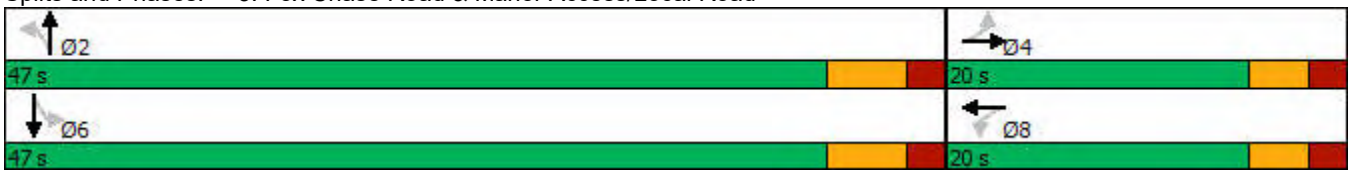
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	0	25	18	0	6	6	199	28	9	316	0
Future Volume (vph)	13	0	25	18	0	6	6	199	28	9	316	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	15	12	15	12	12	12	14	14	12	12	13	13
Grade (%)		3%			0%			2%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								1.00				
Frt		0.910			0.968			0.984				
Flt Protected		0.984			0.963			0.999			0.999	
Satd. Flow (prot)	0	1588	0	0	1645	0	0	1803	0	0	1804	0
Flt Permitted		0.879			0.951			0.993			0.993	
Satd. Flow (perm)	0	1418	0	0	1625	0	0	1792	0	0	1794	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			49			20				
Link Speed (mph)		30			25			35			35	
Link Distance (ft)		250			228			379			876	
Travel Time (s)		5.7			6.2			7.4			17.1	
Confl. Peds. (#/hr)							1					1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	4%	2%	2%	3%	0%
Adj. Flow (vph)	13	0	26	19	0	6	6	205	29	9	326	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	25	0	0	240	0	0	335	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	0.97	1.09	0.97	1.07	1.07	1.07	1.00	1.00	1.09	1.07	1.03	1.03
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	3	1		1	1		1	2		1	2	
Detector Template				Left			Left			Left		
Leading Detector (ft)	40	35		20	35		20	236		20	236	
Trailing Detector (ft)	-3	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	-3	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	6	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	5.0	
Detector 2 Position(ft)	13							230			230	
Detector 2 Size(ft)	6							6			6	
Detector 2 Type	Cl+Ex							Extend			Extend	
Detector 2 Channel												
Detector 2 Extend (s)	0.0							0.0			0.0	
Detector 3 Position(ft)	34											
Detector 3 Size(ft)	6											
Detector 3 Type	Cl+Ex											
Detector 3 Channel												
Detector 3 Extend (s)	0.0											
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	8.0	8.0		8.0	8.0		21.0	21.0		21.0	21.0	
Total Split (s)	20.0	20.0		20.0	20.0		47.0	47.0		47.0	47.0	
Total Split (%)	29.9%	29.9%		29.9%	29.9%		70.1%	70.1%		70.1%	70.1%	
Maximum Green (s)	15.0	15.0		15.0	15.0		41.0	41.0		41.0	41.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		4.0			4.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
Minimum Gap (s)	3.0	3.0		3.0	3.0		2.0	2.0		2.0	2.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		26.0	26.0		26.0	26.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		10.0	10.0		10.0	10.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 67	
Actuated Cycle Length: 57.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

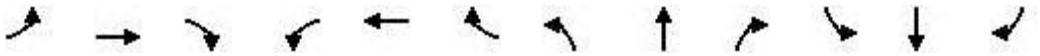
Splits and Phases: 3: Fox Chase Road & Manor Access/Local Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	0	25	18	0	6	6	199	28	9	316	0
Future Volume (veh/h)	13	0	25	18	0	6	6	199	28	9	316	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			Yes			No			No	
Adj Sat Flow, veh/h/ln	1820	1722	1820	1772	1772	1772	1849	1790	1750	1772	1828	1872
Adj Flow Rate, veh/h	13	0	26	19	0	6	6	205	29	9	326	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	0	2	0	2	2	2	0	4	2	2	3	0
Cap, veh/h	118	0	60	195	0	25	75	1175	163	78	1394	0
Arrive On Green	0.06	0.00	0.05	0.05	0.00	0.05	0.75	0.77	0.75	0.75	0.77	0.00
Sat Flow, veh/h	475	0	949	1238	0	391	10	1524	211	13	1807	0
Grp Volume(v), veh/h	39	0	0	25	0	0	240	0	0	335	0	0
Grp Sat Flow(s),veh/h/ln	1424	0	0	1629	0	0	1745	0	0	1820	0	0
Q Serve(g_s), s	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.4	0.0	0.0	0.8	0.0	0.0	2.0	0.0	0.0	2.8	0.0	0.0
Prop In Lane	0.33		0.67	0.76		0.24	0.02		0.12	0.03		0.00
Lane Grp Cap(c), veh/h	179	0	0	190	0	0	1381	0	0	1438	0	0
V/C Ratio(X)	0.22	0.00	0.00	0.13	0.00	0.00	0.17	0.00	0.00	0.23	0.00	0.00
Avail Cap(c_a), veh/h	501	0	0	501	0	0	1381	0	0	1438	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.8	0.0	0.0	24.7	0.0	0.0	1.7	0.0	0.0	1.8	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0	0.0	0.6	0.0	0.0	0.5	0.0	0.0	0.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.5	0.0	0.0	25.0	0.0	0.0	1.9	0.0	0.0	2.1	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	A	A	A	A	A	A
Approach Vol, veh/h		39			25			240			335	
Approach Delay, s/veh		25.5			25.0			1.9			2.1	
Approach LOS		C			C			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	47.0	7.5	47.0	7.5
Change Period (Y+Rc), s	6.0	5.0	6.0	5.0
Max Green Setting (Gmax), s	41.0	15.0	41.0	15.0
Max Q Clear Time (g_c+I1), s	4.0	3.9	4.8	2.8
Green Ext Time (p_c), s	4.2	0.0	6.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	4.4
HCM 6th LOS	A



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	252	115	6	270	80	77	111	5	81	190	70
Future Volume (vph)	70	252	115	6	270	80	77	111	5	81	190	70
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	14	14	14	12	12	12	12	12	12
Grade (%)		0%			-1%			1%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.964			0.970			0.997			0.972	
Flt Protected		0.992			0.999			0.980			0.988	
Satd. Flow (prot)	0	1642	0	0	1822	0	0	1715	0	0	1683	0
Flt Permitted		0.780			0.991			0.725			0.865	
Satd. Flow (perm)	0	1291	0	0	1808	0	0	1267	0	0	1474	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)		24			16						18	
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		299			432			438			399	
Travel Time (s)		5.8			8.4			8.5			7.8	
Confl. Peds. (#/hr)	1					1	4					4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	1%	1%	0%	1%	6%	1%	2%	20%	3%	1%	2%
Adj. Flow (vph)	72	260	119	6	278	82	79	114	5	84	196	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	451	0	0	366	0	0	198	0	0	352	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.12	1.12	1.12	0.98	0.98	0.98	1.08	1.08	1.08	1.08	1.08	1.08
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	35		20	35		20	35		20	35	
Trailing Detector (ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Position(ft)	0	-5		0	-5		0	-5		0	-5	
Detector 1 Size(ft)	20	40		20	40		20	40		20	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Detector Phase	3	8		4	4		6	6		5	2	
Switch Phase												
Minimum Initial (s)	3.0	10.0		10.0	10.0		12.0	12.0		3.0	12.0	
Minimum Split (s)	9.0	16.0		16.0	16.0		18.0	18.0		9.0	18.0	
Total Split (s)	13.0	46.0		33.0	33.0		35.0	35.0		13.0	48.0	
Total Split (%)	13.8%	48.9%		35.1%	35.1%		37.2%	37.2%		13.8%	51.1%	
Maximum Green (s)	7.0	40.0		27.0	27.0		29.0	29.0		7.0	42.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0			-1.0			-1.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag		Lag	Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	None		None	None		None	None		Max	None	
Act Effct Green (s)		34.0			20.7			18.7			32.0	
Actuated g/C Ratio		0.45			0.27			0.25			0.42	
v/c Ratio		0.72			0.73			0.64			0.54	
Control Delay		24.1			33.8			36.6			19.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		24.1			33.8			36.6			19.7	
LOS		C			C			D			B	
Approach Delay		24.1			33.8			36.6			19.7	
Approach LOS		C			C			D			B	
Queue Length 50th (ft)		142			146			83			110	
Queue Length 95th (ft)		284			273			165			208	
Internal Link Dist (ft)		219			352			358			319	
Turn Bay Length (ft)												
Base Capacity (vph)		757			688			509			879	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.53			0.39			0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 94			
Actuated Cycle Length: 76.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 80.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Fox Chase Road & Cedar Road

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SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

March 6, 2022

SUBJECT: Sketch Plan and Zoning Ordinance: Age-Restricted Carriage Homes on Fox Chase Road

TO: Rich Manfredi, Manager
Cc: Michael P. Clarke, Esq., Solicitor; Terry Castorina, Executive Assistant to the Township Manager

FROM: Mike Narcowich, AICP, Community Planning Assistant Manager
and Abington Township Planning Consultant

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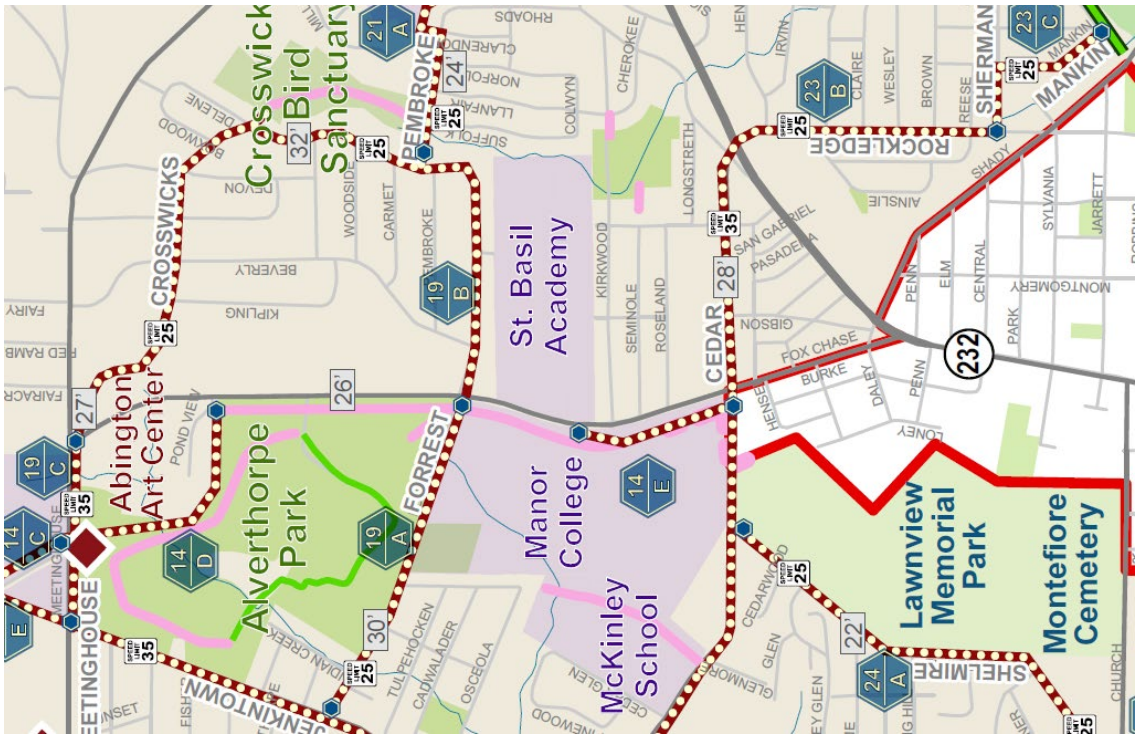
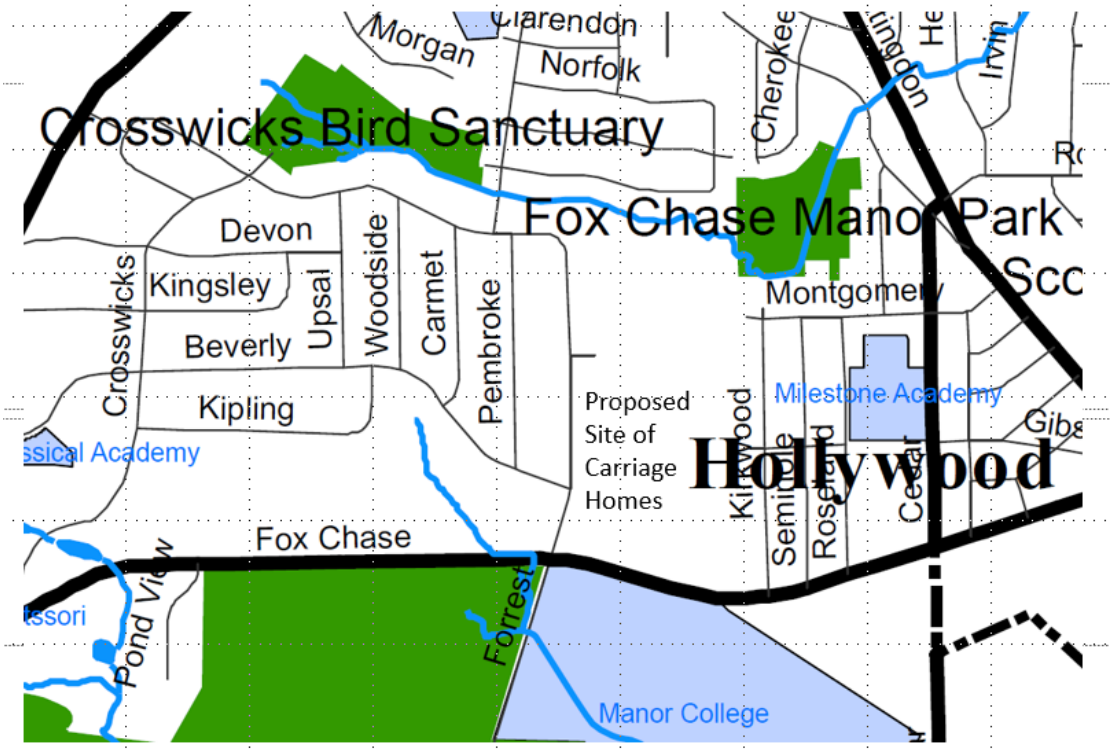
1. Spot-Zoning. We defer to the solicitor, but to us, this appears to be a case of spot zoning. It would allow townhomes/carriage homes in an area that is not distinguishable from the surrounding area. Why not have the SNR Senior Neighborhood Residential zoning district apply to this site? The SNR allows a density of 3.2 dwelling units (DU) per acre; this proposal is for only slightly more (3.4 DU/Ac.).
2. Transportation and Parking.
    a. The street grid, including sidewalks, should be interconnected. There are existing streets that should be continued onto the site to strengthen the vehicular and pedestrian transportation network. This would improve access for residents and emergency vehicles, promote walking and healthy lifestyles, and make it easier to access the bus routes, amenities, and services on Huntingdon Pike.
    b. The curving road intersections appear as if they are intended to calm traffic. Calming traffic is a desirable goal, but this design appears unnatural and may be confusing and disruptive to traffic flow (example: intersection of Roads A and E).
    c. The Abington Township Master Bicycle Plan (see p.94) recommends that a bicycle route "14E-Manor College Trail Extension Shared Use Path" be added, that would connect the site to the Cedar Road bicycle route to the east (see map). The full route would connect McKinley Elementary to Seminole Road. It would consist of a 10-foot asphalt trail, wayfinding signage and bicycle crossing bollards.
    d. Parking. We should clarify parking requirements for this use. Subdivisions for the purposes of building townhouses require 2 spaces (not counting garages) plus ¼ space per unit for developments over 16 units.



3. Open Space.
    a. There is not enough usable open space.
    b. Open space is subject to the requirements of §2601.K.
        i. Open space shall be visible from dwellings and roadways.
        ii. Open space area must have safe and convenient pedestrian and maintenance access, without obstruction of an intervening lot(s), structures, fences, or other impediments.
        iii. No more than three noncontiguous areas may count towards the open space requirements.
    c. Guest parking should not be allowed in the open space.

d. Could a trail be located in the stream corridor? Eventually it might connect to Fox Chase Manor Park. Short, through-block trails might also be considered.



e. Proposed amendment, section 1712.C.: Land preserved for open space purposes shall be in compliance with Open Space Standards of the SALDO ~~for the~~ and Township Zoning Ordinance; provided however that …

f. The tract buffer seems unnecessarily large. We recommend locating a trail in the buffer.

4. Housing Types and Design.

a. Zoning's H-9 Townhouse Dwelling Unit (Single-Family Attached) Use should be used as a point of reference and should influence this text amendment. Some requirements from that use should be added to this text amendment. For example, the requirement that end units have side-loaded garages (intended to prevent a "snout house" development, with garages and driveways dominating the façade/front of house). There is a requirement that off-street parking spaces be located to the side or rear, and for a small planting strip to separate adjacent driveways. Internal townhouse units have a limit on the percentage (30%) of the front façade that the garage may occupy.

b. Types. We recommend the ordinance be more flexible regarding permitted unit types, so that more than simply townhomes are permitted. What about duplexes? Triplexes? Quadruplexes? Twins? Adding those uses would make the site more adaptable to changing real estate market conditions and housing unit type preferences.

c. Design.

i. Will there be room for street trees, interspersed throughout the development? Street trees are shown, but space appears limited. When sidewalks are added to the plans it may turn out that there is not room for some of the trees.

ii. Garages. The siting of the garages may create a façade dominated by garage doors. Are renderings available?

5. County Comprehensive Plan. The site lies in the "Suburban Residential Area" future land use category of MONTCO2040: A Shared Vision, the Comprehensive Plan for Montgomery County. This land use category says that appropriate landscaping and street trees should be provided by all developments, and that recreation facilities and central open space should be provided.

6. Landscaping.

a. Stormwater Basin. The basin along Fox Chase Road will be located in a prominent location, and should be sufficiently naturalized and landscaped.

b. Where the backs of two rows of homes abut one another, we recommend adding landscaping for buffering the homes and creating a greater sense of privacy and visual interest, similar to that behind units # 57-61.

c. The pool and clubhouse should be screened from units #140-143.

7. Riparian Corridor. The site is subject to the requirements of Article XV: the Riparian Corridor Conservation District. We recommend the boundaries of the corridor be designated on the plan.

8. Fiscal Impact Study. The township may wish to request a fiscal impact study from the applicant.

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March 7, 2022

ABINT17000.19

Mr. Richard Manfredi, Township Manager
Abington Township
1176 Old York Road
Abington, PA 19001

RE: 711 Fox Chase Road (Sisters of St. Basil the Great)
PARID: 30-00-22424-001 & 30-00-22420-005
Proposed Zoning Text Amendment Review

Dear Mr. Manfredi

We have received a copy of the 'Concept L' Plan dated January 19, 2022, as prepared by ESE Planning; a Traffic Impact Assessment dated February 10, 2022, as prepared by McMahon Associates, Inc.; and a draft Text Amendment for the site; as received on February 22, 2022 for the above referenced project.

Under this Application, the Applicant is proposing to amend the current CS - Community Service zoning district to establish a new AR - Age-Restricted Carriage Home Overlay District and Age-Restricted Carriage Home Dwelling Unit land use category.

The Applicant is seeking a future land development application to demolish the existing parochial school facility and associated parking lot and access drive; to construct 150 new age-restricted carriage dwellings with front facing 2-car garages; and associated driveways, curbing, sidewalks, a clubhouse with pool, parking, landscaping, stormwater facilities, and an internal roadway network that includes two (2) cul-de-sacs. Access to the site will be by way of a new 'Road A' accessed off of Fox Chase Road.

The entire site consists of approx. 46.37 acres and is located within the CS – Community Service Zoning District. The site is fronted by Fox Chase Road to the southwest; residential properties zoned in the R-2 – Low Medium Density Residential Zoning District to the north or northeast; residential properties zoned in the R-3 – Medium Density Residential Zoning District, as well as, the RC – Recreation/Conservation Zoning District, to the southeast; and residential properties zoned in the R-4 – High Density Residential Zoning District to the south. In addition, a tributary of the Pennypack Creek traverses from north to south within the eastern corner of the track. This tract is identified in Figure 15.2 as a parcel intersecting a Riparian Corridor.

In accordance with the FEMA, Flood Insurance Rate Map (FIRM) Panel No. 42091C0403G, effective March 2, 2016, the tract is identified to be primarily located within Zone X, an area outside the 0.2% chance flood and minimal flood hazard. However, the area where the Pennypack Creek tributary traverses the site is located within Flood Zone X, an area of 0.2% annual chance flood hazard, areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile.

We have been requested by the Township to perform a review of the text amendment and concept plan for the above referenced site. Based on our review of the Abington Township Zoning Ordinance for this submittal, we offer the following comments for your consideration:

CURRENT ZONING ORDINANCE COMMENTS

1. Per the Abington Comprehensive Use Matrix, Uses E-15-Senior Living Community and H-9 – Townhouse Dwelling Unit (Single-Family Attached) are not permitted uses within the CS – Community Service Zoning District. However, Use E-15-Senior Living Community is a permitted use within the SNR – Senior Neighborhood Residential Zoning District.

2. The Applicant has not provided the base zoning district on the concept plan.

PROPOSED ZONING TEXT AMENDMENT COMMENTS

3. The dimensional regulations align closely with the dimensional requirements as set forth in the SNR-Senior Neighborhood Residential Zoning District.

4. Section I.1. & Section I.2- The Applicant shall correct the referenced Section 2310 for Categories of Permitted Uses to Section 2103.

5. Section 1710.B. – Use Regulations – the following noted Accessory Uses for recreational use are permitted uses within the CS – Community Service and SNR – Senior Neighborhood Residential Zoning Districts as follows:
    a. Use A-6 – Clubhouse
    b. Use A-16 – Nonresidential Accessory Structure*
    c. Use A-18 - Outdoor Recreation, Uses Accessory to*
    d. Use A-24 – Swimming pool
    e. Use A-25 – Tennis/Sports Courts

    **Note: No determination indicated in the Comprehensive Matrix for the SNR Zoning District.*

    In addition, the entertainment uses noted for fitness center or indoor recreation are not permitted uses within the CS- Community Service and SNR – Senior Neighborhood Residential Zoning Districts. The Comprehensive matrix does not specify "dog park" and will be considered outdoor recreation.

6. In Figure 17.2 – AR - Age-Restricted Carriage Home Overlay District: Dimensional Requirements table for the minimum front yard setback, is missing the rest of the reference statement to reference the 30' dwelling setback from face of curb/edge of cartway.

7. In Figure 17.2 – AR - Age-Restricted Carriage Home Overlay District: Dimensional Requirements table for the maximum building dimension length is proposing 160'. The SNR maximum dimensional building length criteria is only 120'. To reduce the density of the site, we would suggest not changing the maximum length to 160' as proposed. In addition, since each carriage home is 30' wide and the proposed maximum number of carriage homes in a group is 5, the total length would add up to 150' rather than 160'. However, we would suggest keeping the existing SNR maximum dimensional building length criteria is only 120' to reduce the proposed density.

8. Section 1712.C – Open Space Requirements – Consider adding a restriction or distinction between the recreational and entertainment uses to the list of recreational uses proposed so that future development of recreational facilities overcrowd the intent of open spaces.

9. Use H-12.3 – A minimum lot size requirement should be defined, or this sentence line item should be removed.

10. Use H-12.4 – The minimum 24' wide carriage home width appears to be narrow for a carriage home. This appears to be more in line with a townhome width.

11. Use H-12.6 – The minimum 20' building separation is double the existing 10' SNR maximum dimensional building separation distance. However, should suggest 30' separation to align with residential cluster development guidelines.

12. We are concerned that this proposal may be subject to "spot zoning", however, we defer to the Township solicitor's office to confirm.

GENERAL COMMENTS

13. The proposed improvement to the site constitutes land development by definition. Therefore, this project would be subject to land development; and the Applicant shall be required to submit a land development application for land development approval in accordance with §149-9.

14. Additional stormwater bmps should be considered for the area along the southern tract abutting the residential properties zoned in the R-4 High Density Residential zoning district.

15. Traffic calming measures should be considered within the site due to the long stretches of straight roadway. However, clear sight triangles should be provided at the intersection of Road A at Road E and Road B at Road D due to the curved alignment at those locations.

16. Pedestrian accommodations, including marked crosswalks and signage should be provided as appropriate within the site.

17. A signage and pavement marking plan should be provided for the internal site roadways and intersections.

18. More parking may be needed at the clubhouse facility.

19. An off-road multi-use trail should be considered along the frontage of the property.

20. Due to the age-restricted nature of the proposed development, left-turn lanes should be provided on Fox Chase Road for traffic turning onto the main site entrance/Manor College driveway.

21. The signal at Fox Chase Road and the main site entrance/Manor College driveway must be fully modernized and including ADA compliant pedestrian facilities.

22. During the design process of the modernized traffic signal, a speed study should be conducted along Fox Chase Road to verify the need for dilemma zone protection and confirm sight distance requirements.

If you have any questions or comments with this submittal, please do not hesitate to contact me.

Sincerely,

PENNONI

Khaled R. Hassan, PE
Township Engineer

cc: Terry Castorina, Executive Assistant to the Township Manager
Ashley McIlvaine, Special Assistant to the Township Manager

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FISCAL IMPACT ANALYSIS
Proposed St. Basil's Active Adult Development
Abington Township, Montgomery County

March 16, 2022

Prepared for:
Toll Brothers, Inc.

Prepared by:
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Fiscal Impact Analysis

Proposed St. Basil's Development

Abington Township, Montgomery County

March 16, 2022

This report examines the annual fiscal impact to Abington Township and the Abington School District (ASD) of the St. Basil's active adult development proposed by Toll Brothers, Inc. The report examines the fiscal impact to the Township and School District during any given year after the completion of the proposed project and full occupancy, based on 2022 levels of revenue, expenditures, and taxation.

The proposed St. Basil's active adult development consists of 150 attached carriage homes, to be sold for an average price of $614,995. According to federal law, each unit in an age qualified development must house at least one person who is 55 years old or older, and no resident can be under the age of 18. Therefore, no school age children are projected to reside in the proposed development.

At buildout and full occupancy, the proposed development is projected to generate $92,249,250 in market value, $41,235,415 in assessed value, 209 residents, 0 school age children and 0 public school (ASD) students.

The table below shows the annual net fiscal impact (revenue minus expenditures) to the Township and School District of the proposed development. Below the table are sections on assessments, demographics, Township expenditures and revenue, and School District expenditures and revenue. At the end of this report are the spreadsheets for the Township and School District impact, which show the major expenditure and revenue categories for each entity. All cell addresses in the text refer to these spreadsheets.

Proposed Dwelling Type	Number of Units	Number of Residents	Annual Net Township Impact	Annual Net School District Impact	**Annual Net Combined Impact**	Annual Net Combined Impact per Unit
Carriage Homes	150	209	$332,698	$1,420,251	**$1,752,949**	$11,686

The annual net fiscal impact of the proposed development is projected to be highly favorable for the Township and School District, creating annual net surpluses for each entity. **The annual net combined fiscal impact for the proposed St. Basil's active adult development is projected to total positive (or surplus) $1,752,949, or positive $11,686 per unit.** The annual combined revenue is projected to exceed the annual combined expenditures by 3,410.4 percent.

In addition to the annual net impact figures shown in the table above, the proposed development will also generate one-time real estate transfer tax revenue from the initial sales of the units over the buildout period, projected to total $461,246 to each of the Township and School District.

There are three important reasons for the positive annual net fiscal impacts projected for the proposed St. Basil's age qualified development:

- First, the proposed development is comprised of smaller homes, which house fewer persons than four bedroom single family detached dwellings, the predominant dwelling type in the Township. The lower number of persons results in lower expenditures for the Township, which leads to annual surpluses.

- Second, the age restriction itself also results in fewer persons in the proposed units and no school age

children at all, eliminating all School District expenditures, as well as reducing Township expenditures on a per capita basis. The only impact of the proposed age qualified development on the School District is significant annual revenue of $1.4 million.

- Third, the proposed age qualified development consists of relatively high value homes, which generate considerable revenue in the real estate tax, earned income tax, and real estate transfer tax categories.

The combination of reduced Township expenditures and eliminated School District expenditures plus the high revenue results in annual net surpluses from the proposed age qualified development.

Assessments

The average market value (sales price) of the proposed carriage homes is projected to be $614,995 (cell C6). The total market value is determined by multiplying the number of units (150, cell B6) by the average market value per unit ($614,995, cell C6). The market value at buildout is projected to total $92,249,250 (cell D6).

The assessed value is determined by multiplying the market value ($92,249,250, cell D6) by the 2021-2022 Montgomery County common level ratio of 44.7 percent, from the Pennsylvania State Tax Equalization Board (cell D18). The assessed value at buildout is projected to total $41,235,415 (cell E6). This $41,235,415 in projected assessed value represents 1.0 percent of the total assessed value of all properties in Abington Township ($4,058,499,548, according to the Montgomery County *Land Use Classification Report* from the Board of Assessment, as of December 17, 2021, the most recent report available). Please note that the Montgomery County Board of Assessment will determine the actual assessments only when the proposed development is constructed and inspected.

Demographics

The number of persons per unit is projected to be 1.39 for the proposed carriage homes (cell F6). This demographic multiplier for age qualified development is from *Who Lives in New Jersey Housing?*, by David Listokin, Ioan Voicu, William Dolphin and Matthew Camp of the Rutgers University Center for Urban Policy Research (CUPR), November, 2006. In addition to the demographic multipliers for different dwelling types in the state of New Jersey (which were not used in this report), this document also presents demographic multipliers for age qualified developments in the northeastern United States, from the 2003 American Housing Survey of the U.S. Census Bureau. The multipliers are 1.57 persons per unit for all single family detached dwellings, 1.39 persons per unit for all attached dwellings (including twins, townhomes, carriage homes, etc.), and 1.20 persons per unit for all multifamily dwellings (including apartments). Please note that, unlike the Rutgers University CUPR demographic multipliers for standard development, these multipliers for age qualified development do not differentiate by dwelling size or value, only by dwelling type.

The number of persons projected to reside in the proposed development is determined by multiplying the number of units (150, cell B6) by the number of persons per unit (1.39, cell F6). The number of persons projected to reside in the proposed development at buildout and full occupancy totals 209 (cell G6).

The number of school age children per unit is projected to be 0.00 for the proposed age qualified development (cell F33 of the School District spreadsheet). The number of public school students is determined by multiplying the number of units (150, cell B33) by the number of school age children per unit (0.00, cell F33). The number of ASD students projected to reside in the proposed development at buildout and full occupancy is 0 (cell G33).

Annual Abington Township Expenditures

The Abington Township budget includes the following funds, shown in the table below with their respective 2022 expenditure totals:

Budget	Amount
Operating Funds	
General Fund	$42,597,990
Debt Service Fund	$521,371
Fire Fund	$3,156,349
Sewer Operations Fund	$7,572,199
Highway Aid Fund	$2,012,283
OPEB (Retirement) Fund	$1,407,640
Workers Comp Fund	$64,000
Refuse Fund	$5,843,665
Subtotal Operating Funds	**$63,175,497**
Capital Funds	
Sewer Operations Fund	$350,000
Fire Capital Fund	$1,073,521
Capital-Permanent Improvement Fund	$3,339,481
Refuse Capital Fund	$335,000
Sewer Capital Fund	$585,000
Subtotal Capital Funds	**$5,683,002**
American Rescue Plan (ARPA) Fund	$8,370,424
TOTAL	**$77,228,923**

In order to find a more accurate measure of the average annual expenditures for the proposed development, this analysis focuses on the regular, ongoing operating expenditures of the Township. Such operations are quantified in the following six funds, shown in the table below with their respective sums in the 2022 budget.

Fund	Amount
General Fund	$42,597,990
Debt Service Fund	$521,371
Fire Fund	$3,156,349
Highway Aid Fund	$2,012,283
OPEB (Retirement) Fund	$1,407,640
Workers Comp Fund	$64,000
Total Operating Funds	**$49,759,633**

The six operating funds total $49,759,633 in expenditures for 2022 (cell D19). These six funds cover

nearly all Township expenditures, including police general services (administration), culture and recreation administration, libraries, participant recreation, executive, code enforcement, traffic safety, financial administration, engineering services, tax collection, street lighting, solicitor and legal services, parks, general government building and plant, legislative, ambulance services, animal control, health insurance, insurance, unemployment, shade trees, repair of vehicles, IT networking services, community development and housing, fire protection, debt service, road maintenance, and other employee benefits.

The following funds are excluded from this analysis, because they are either capital funds, proprietary funds (including special revenue funds), or fiduciary funds:

- The Sewer Fund and Refuse Fund are proprietary funds, where revenue from previous fund balances, sewer rents and connection fees, and refuse fees are spent on sewage collection and disposal, and refuse collection and disposal. If the Township required additional revenue to cover costs in these funds, it would increase the fees in these funds, not taxes.

- The Sewer Operations Fund, Fire Capital Fund, Capital-Permanent Improvement Fund, Refuse Capital Fund, and Sewer Capital Fund are all capital funds, where revenue from previous fund balances, transfers from other funds, grants, and other sources is used to pay for capital expenditures such as vehicles, equipment, building improvements, etc.

- The American Rescue Plan Fund was created using proceeds from the federal American Rescue Plan Act of 2021, and is a mixed fund used to pay for operating and capital expenditures (such as the Township Building renovations). The vast majority of the money in this fund is projected to be expended in the next two years, and the annual expenditures in 2024 and beyond are projected to be minimal.

In order to find a more accurate measure of the average annual operating expenditures for future residents of the proposed development, three categories of funds are subtracted from the total 2022 operating expenditures of $49,759,633 (cell D19):

1. Pass-Through Funds. Pass-through funds are excluded because the proposed development will have no net impact on these funds, since revenue always equals expenditures. Pass-through funds that are excluded total $6,443,596 and are shown in the table below with their respective sums in the Township's 2022 budget.

Source	Fund	Budgeted Amount
State/County Snow Reimbursement	General	$156,541
Police Reimbursable Overtime	General	$292,505
Video Arraignment Process	General	$65,000
Beverage Licenses	General	$11,050
Rent of Property	General	$375,000
DEA Task Force	General	$100,000
Bodehits Fees	General	$5,000
Recyclable Materials	General	$2,000
Public Utility Realty Tax	General	$30,000
State Reimbursement Pension Plans	General	$1,530,000
Payment In-Lieu-Of	General	$665,000
Parks & Recreation Program Revenue	General	$710,000

Source	Fund	Budgeted Amount
Insurance Claims	General	$55,000
Cobra Reimbursement	General	$50,000
Refunds	General	$714,000
Fire Permits	Fire	$35,000
Fire Inspection Fees	Fire	$30,000
Health Costs Reimbursement	Retirement (OPEB)	$118,000
State Liquid Fuels Grant	Highway Aid	$1,499,500
TOTAL		**$6,443,596**

2. Development Related Funds. The other pass-through category is charges related to the processing and administration of proposed subdivisions and land developments in the Township, shown in the table below with their respective sums in the Township's 2022 budget (all are in the General Fund).

Source	Budgeted Amount
Building Permits	$1,000,000
Plumbing Permits	$70,000
Engineering Permit Fees	$160,000
TOTAL	**$1,230,000**
90 Percent Subtracted	**$1,107,000**
10 Percent as Miscellaneous Revenue	**$123,000**

Development related revenue is excluded because it is in essence a one-time pass-through fund for specific functions normally associated with new development. For example, the building permit revenue will be expended on building inspections and the administration of those permits while a development is under construction, not on other functions associated with the time after a development is completed. Once a development is completed, the revenue and expenditures for such permits and application fees decrease significantly, but not completely. Ninety percent of the 2022 development related pass-through funds of $1,230,000 (or $1,107,000) is excluded from the total expenditures. Only 90 percent of the development related funds is excluded from the expenditure analysis, in acknowledgment that there will still be some expenditures on subdivisions and land developments once they are complete, for things like building renovations and inspections for violations. Please note that in the revenue analysis, below, only 10 percent of the revenue from development related funds (or $123,000) is included in the category of miscellaneous revenue.

3. Interfund Transfers. The following transfers between funds totaling $1,239,640 are excluded.

Source	Budgeted Amount
General Fund to Retirement (OPEB) Fund	$1,045,355
Sewer Fund to Retirement (OPEB) Fund	$116,000
Refuse Fund to Retirement (OPEB) Fund	$78,285
TOTAL	**$1,239,640**

The transfer from the General Fund to the Retirement Fund is excluded in order to avoid double

counting the same funds, since both the source and destination funds are included in this analysis. The transfers from the Sewer Fund and Refuse Fund to the Retirement Fund are excluded because they represent costs associated with those two proprietary funds, which are excluded.

The 2022 excluded pass-through funds, development related funds and interfund transfers total $8,790,236 (cell D20). The 2022 net Township operating expenditures (minus pass-through funds, development related funds and interfund transfers) are $40,969,397 (cell D21). Please note that just as the expenditures for the above funds are not included in the expenditure calculations of this section, the revenue from these sources is also not included in the revenue analysis, below.

Then, the Township expenditures associated with existing nonresidential development are subtracted from the net expenditures using the "proportional valuation method" of *The New Practitioner's Guide to Fiscal Impact Analysis*, by Robert W. Burchell, David Listokin, and William R. Dolphin, Rutgers Center for Urban Policy Research, 1985. First, a portion of the total Township expenditures is assigned to existing nonresidential development, based on the average value of property. According to the Montgomery County Board of Assessment *Land Use Classification Report* as of December 17, 2021, the total assessed value of the 20,088 properties in Abington Township was $4,058,499,548, yielding an average assessed value of $202,036. Of those properties, 1,085 were nonresidential (commercial, industrial, institutional, utility, etc., whether taxable or exempt), with a total assessed value of $1,190,772,880 (representing 29.3 percent of the Township total), and an average assessed value of $1,097,487.

The proportion of average nonresidential assessed value to average Township assessed value (residential and nonresidential combined) is 5.43, which is then used to determine the refinement coefficient of 1.05 from a graph in *The New Practitioner's Guide.* The refinement coefficient is based on empirical research by the Rutgers University CUPR, and is necessary to adjust the costs of existing nonresidential development in communities without extensive nonresidential development of very high average assessed value, such as Abington Township. By comparison, in communities where the ratio between the average nonresidential assessment and the average overall assessment is above 6, an economy of scale reduces the nonresidential expenditures on a per square foot basis, and the refinement coefficient is below 1.00.

The proportion of Township assessed value in nonresidential uses (29.3 percent) is then multiplied by the refinement coefficient of 1.05, and by the 2022 net Township operating expenditures of $40,969,397 (cell D21). The result of this calculation is that $12,621,539 of the net Township operating expenditures (representing 30.8 percent) is attributable to existing nonresidential development (cell D22). This sum is subtracted from the 2022 net Township operating expenditures ($40,969,397, cell D21), and the remainder ($28,347,858 in expenditures attributable to existing residential development, cell D23) is divided by the estimated number of Township residents in 2022, which is 59,140 (cell I18). The estimated number of Township residents is determined by taking the 2020 U.S. Census count of 58,502 and adding two years' worth of the average annual increase between 2010 and 2020 (3,192 over those ten years, or 319 additional residents per year and 638 over two years) to find the current 2022 estimate of 59,140. The per capita Township operating expenditures attributable to existing standard residential development are $479.33 (cell D24).

On average, residents of an age qualified development generate far lower Township expenditures when compared to residents of standard housing. A study by the Del Webb corporation (the industry leader in age qualified development) estimated that its Sun City Grand development in Surprise, Arizona near Phoenix imposed lower demands on most municipal services when compared to standard housing, in numerous demand categories (as cited in *Developing Active Adult Retirement Communities*, by Diane R. Schuman, et. al., The Urban Land Institute, 2001, pp. 21-26). The table below shows each of the eight demand categories studied; for each category, the table shows the 2022 Abington Township expenditure (if any), and the modified expenditure, which is the Township expenditure multiplied by the percent of level of demand imposed by age qualified developments.

Demand Category	Level of Demand	Budgeted Expenditure	Modified Expenditure
Traffic volume	33%	$0	$0
Street maintenance	35%	$7,393,213	$2,587,625
Water consumption	60%	$0	$0
Wastewater generation	74%	$0	$0
Solid waste generation	67%	$0	$0
Police protection	25%	$23,021,730	$5,755,433
Fire protection services	33%	$3,156,349	$1,041,595
Emergency medical services	110%	$187,500	$206,250
Total		$33,758,792	$9,590,902
Difference			$24,167,890
Minus Pass-Thru (17.7%)		$4,269,353	$19,898,536
Residential Share (69.2%)		$6,130,189	$13,768,347
Difference per Capita			$232.81

Other than emergency medical services (for which the Abington Township budget has very limited expenditures), an age qualified facility has far lower expenditure impacts compared to other housing. The area of greatest expenditure in Abington Township – police protection – is the precise area in which an age qualified development's expenditure is significantly lower than that of standard housing. Please note that all road maintenance expenditures are in the Street Maintenance category, instead of the Traffic Volume category, since the former is slightly higher, resulting in a more conservative (and higher) annual expenditure.

The difference between the total Township expenditures for the listed demand categories ($33,758,792) and the modified Township expenditures ($9,590,902) is $24,167,890. This figure is then further modified to account for the pass-through funds, development related funds and interfund transfers by subtracting 17.7 percent (or $4,269,353), similar to the total Township expenditures (see above). Of the remaining $19,898,536 in expenditures, 30.8 percent (or $6,130,189) is attributable to existing nonresidential development and only 69.2 percent (or $13,768,347) is attributable to existing residential development. The resulting $13,768,347 represents the difference between the Township expenditures for these Township functions for standard housing versus age qualified housing. This figure is then divided by the estimated 2022 Township population of 59,140 (cell I18) to find a per capita difference of $232.81. This figure is then subtracted from the Township per capita expenditure for standard development ($479.33, cell D24) to find the Township per capita expenditure for age qualified development ($246.52, cell D25).

This per capita figure of $246.52 (cell D25) is then applied to the number of persons projected to reside in the proposed age qualified development at buildout and full occupancy (209, cell G6) to find the total annual Township expenditures of $51,400 (cell H6) or $343 per unit (cell I6).

Annual Abington Township Revenue

The annual Township revenue is determined by adding the following sources:

- Real estate tax revenue, based on the 2022 Township tax rate of 5.922 mills (cell I19) applied to the projected assessed value of the proposed development ($41,235,415, cell E6). The 2022 millage rates of the operating funds are shown in the table below.

Fund	Millage Rates
General Levy	
General Purposes	3.787
Fire	0.920
Library	0.430
Parks & Recreation	0.250
Special Levy	
Ambulance	0.050
Debt Service	0.155
Retirement (OPEB)	0.330
TOTAL	**5.922**

The annual real estate tax revenue is projected to total $244,196 (cell B11). Please note that the this one revenue source exceeds the total projected annual Township expenditures ($51,400, cell H6) by $192,796 or 375 percent.

- Earned income tax revenue, based on the tax rate of 0.5 percent applied to the household income of residents, which is calculated by multiplying the monthly housing costs, including a combination of real estate taxes, insurance, homeowners association fees and mortgage costs, as shown in the table below.

Proposed Dwelling Type	Monthly RE Taxes	Monthly Insurance	Monthly HOA Fee	Monthly Mortgage	Minimum Annual Income
Age Qualified Carriage Homes	$976	$90	$250	$2,595	$187,720

The monthly real estate taxes are based on the combined Township plus School District plus County (including Community College) tax rate of 42.6040 mills. Insurance costs are assumed to be $90 per month. HOA fees are projected to be $250 per month. The mortgage costs are based on the conforming rate of 3.85 percent, according to the March 10, 2022 Primary Mortgage Market Survey by Freddie Mac (available on www.freddiemac.com). The minimum annual household income is determined by adding all the monthly housing costs and dividing by 28 percent, according to Fannie Mae criteria that no more than 28 percent of annual household income be used for housing costs. The minimum annual household income necessary to pay for the real estate taxes, insurance, HOA fees and mortgage is projected to be $187,720. To determine the annual earned income tax revenue, this minimum annual household income figure is multiplied by the number of units (150, cell B6) and by the Township tax rate of 0.5 percent. This revenue is then reduced by 50 percent to reflect the likelihood that many residents of the proposed age qualified development will be retired and have no earned income, though they may have interest or dividend income, which is not subject to the earned income tax. This revenue is then further reduced by subtracting 25.1 percent (cell I20), representing the percentage of Abington Township residents working in the City of Philadelphia and therefore paying the City wage tax and not paying the Township's earned income tax, from the 2019 American Community Survey of the U.S. Census Bureau, which reported 7,080 residents working in the City of Philadelphia out of 28,175 working residents. The annual earned income tax revenue is projected to total $52,706 (cell C11). Please note that this one revenue source offsets the projected annual Township expenditures of $51,400 (cell H6). Finally, please note that the household income level shown here is the minimum income levels necessary to afford the proposed homes. Most households will have higher levels of income, which will result in higher levels of annual Township earned income tax revenue.

- Real estate transfer tax revenue, based on the market value of the units ($614,995, cell C6) multiplied by the number of units (150, cell B6), multiplied by the projected annual housing turnover rate of 15 percent for the carriage homes (cell I21), and multiplied by the Township's tax rate of 0.5 percent of market value. The annual real estate transfer tax revenue is projected to total $69,187 (cell D11). Please note that this annual revenue figure does not include the one-time real estate transfer tax revenue from the initial sales of the units over the buildout period, projected to total $461,246 (cell A26). Once again, please note that the projected annual real estate transfer tax revenue exceeds the projected annual Township expenditures of $51,400 (cell H6).

- Franchise fee and miscellaneous revenue. The franchise fee and miscellaneous revenue is based on the Township's budgeted revenue from these sources ($1,248,000 comprised of $1,125,000 in franchise fee revenue and $123,000 in development related revenue, representing 10 percent of the total revenue in this category associated with existing and not new development, which is $1,230,000; see the expenditure analysis, above) divided by the 2022 estimated number of units in the Township (23,192, cell I22), and that per unit revenue of $53.81 (cell I23) is applied to the number of units in the proposed development (150, cell B6). The estimated number of 23,192 units in the Township is determined by taking the 2020 U.S. Census count of 23,055 and adding two years' worth of the average annual increase between 2010 and 2020 (686 over those ten years, or 68.6 additional units per year and 137 over two years). The annual franchise fee and miscellaneous revenue is projected to total $8,072 (cell E11).

- Liquid fuels revenue, based on PennDOT's 2022 per person revenue of $17.5304 (cell I24) applied to the number of persons projected to reside in the proposed development at buildout and full occupancy (209, cell G6). The annual liquid fuels revenue is projected to total $3,655 (cell F11). No subsidy per mile is projected from the proposed development, because the proposed roads are projected to be owned and maintained by the homeowners associations and not the Township.

- Interest earnings, based on the projected assessed value of the proposed development ($41,235,415, cell E6) divided by the Township's total taxable assessed value ($3,386,399,113, according to the Montgomery County Board of Assessment *Land Use Classification Report*), and multiplying by the Township's revenue from interest earnings in the 2022 budget, totaling $516,000 and shown in the table below. The annual interest earnings are projected to total $6,283 (cell G11).

Fund	Interest Earnings
General Fund	$250,000
Retirement (OPEB) Fund	$250,000
Highway Aid Fund	$16,000
TOTAL	**$516,000**

The annual Township revenue from all sources is projected to total $384,099 (cell H11), or $2,561 per unit (cell I11). The annual net Township impact (revenue minus expenditures) is projected to total positive $332,698 (cell B15) or positive $2,218 per unit (cell C15). Annual revenue is projected to exceed annual expenditures by 647.3 percent (cell D15). Overall, annual revenue is projected to be more than six times annual expenditures.

Annual Abington School District Expenditures

The number of units (150, cell B33 of the School District spreadsheet), average market value per unit ($614,995, cell C33), total market value ($92,249,250, cell D33), and total assessed value ($41,235,415, cell E33) are the same as for the Township impact, above. As noted above, the proposed St. Basil's Development is age qualified and is therefore projected to generate 0 school age children per unit (cell

F33) and 0 public school (ASD) students overall (cell G33).

The 2021-2022 Abington School District General Fund budgeted expenditures total $176,932,262 (cell D46). The following pass-through funds are subtracted from this total:

Pass-Through Fund	Budgeted Amount
Public Utility Realty Tax	$113,650
Revenue from Intermediary Sources	$1,162,542
Rentals	$40,000
Tuition from Patrons	$20,000
TOTAL	**$1,336,192**

The pass-through funds total $1,336,192 (cell D47), with the remaining School District net expenditures totaling $175,596,070 (cell D48). This figure is then divided by the current 2021-2022 District-wide enrollment of 8,292 students (cell D49, from the School District web site) to find the 2021-2022 ASD net expenditure of $21,177 per student (cell D50). This per student expenditure is applied to the number of students projected to attend public schools from the proposed development at buildout and full occupancy (0, cell G33). The annual School District expenditures are projected to total $0 (cell H33), or $0 per unit (cell I33).

Annual Abington School District Revenue

The annual School District revenue is determined by adding the following sources:

- Real estate tax revenue, based on the School District's 2021-2022 tax rate of 32.7200 mills (cell I45) applied to the projected assessed value of the proposed development ($41,235,415, cells E33). Subtracted from this revenue total is the District's homestead exclusion at $10,765 of assessed value per unit (cell I47) applied to the number of units in the proposed development (150, cell B33). The proposed homestead exclusion is projected to subtract $352.23 per unit and $52,835 overall from the total real estate tax revenue. The annual School District real estate tax revenue is projected to total $1,296,388 (cell B38).

- Earned income tax revenue, determined using the same method as was used for the Township impact, above. The annual earned income tax revenue is projected to total $52,706 (cell C38).

- Real estate transfer tax revenue, determined using the same method as was used for the Township impact, above. The annual real estate transfer tax revenue is projected to total $69,187 (cell D38). As noted above, this annual revenue figure does not include the one-time real estate transfer tax revenue to the School District from the initial sales of the units over the buildout period, projected to total $461,246 (cell A51).

- State and Federal revenue, based on the 2021-2022 ASD budgeted revenue from those sources totaling $43,699,263 divided by the 2021-2022 ASD enrollment of 8,292 (cell D49), and that $5,270 subsidy per public school student (cell I48) is applied to the projected number of students from the proposed development (0, cell G33). The annual state and federal revenue is projected to total $0 (cell E38).

- Earnings on investments, based on the projected assessed value of the proposed development ($41,235,415, cell E33) divided by the School District's total taxable assessed value ($3,558,245,783, according to the 2021-2022 ASD budget), and multiplying by the School District's 2021-2022 revenue

from earnings on investments in the budget ($170,000, cell I49). The annual earnings on investments are projected to total $1,970 (cell F38).

The annual School District revenue from all sources is projected to total $1,420,251 (cell G38) or $9,468 per unit (cell I38). The annual net School District impact (revenue minus expenditures) is projected to total positive $1,420,251 (cell B42) or positive $9,468 per unit (cell C42). Since there are no School District expenditures associated with the proposed age qualified development, every dollar of the annual $1,420,251 in revenue becomes surplus.

ANALYSIS OF THE ANNUAL FISCAL IMPACT TO ABINGTON TOWNSHIP

Of the Proposed St. Basil's Active Adult Development

March 16, 2022

Proposed Dwelling Type	Number of Units	Average Price per Unit	Total Market Value	Total Assessed Value	Persons per Unit	Total Persons	**Annual Township Expenditures**	Expenditures per Unit
Carriage Homes	150	$614,995	$92,249,250	$41,235,415	1.39	209	**$51,400**	$343

Annual Township Revenue

Proposed Dwelling Type	Real Estate Tax	Earned Income Tax	Real Estate Transfer Tax **	Franchise Fee & Misc. Revenue	Liquid Fuels Revenue	Interest Earnings	**Total Annual Revenue**	Revenue per per Unit
Carriage Homes	$244,196	$52,706	$69,187	$8,072	$3,655	$6,283	**$384,099**	$2,561

Proposed Dwelling Type	**Annual Net Township Revenue**	Net Township Revenue per Unit	Revenue > Expenditure
Carriage Homes	**$332,698**	$2,218	647.3%

NOTES:

2021-2022 STEB Common Level Ratio (Market Value to Assessed Value)		44.7%	2022 Township Population Estimate		59,140
2022 Township Operating Expenditures (6 Funds)		$49,759,633	2022 Township Real Estate Tax Millage (7 Funds)		5.922
Minus 2022 Pass-Through and Excluded Expenditures		$8,790,236	Pct. of Twp. Residents Working in Phila. (2019 ACS)		25.1%
2022 Net Township Operating Expenditures		$40,969,397	Annual Housing Turnover Rate (SFA)		15%
2022 Township Non-Residential Expenditures	30.8%	$12,621,539	2022 Township Housing Unit Estimate		23,192
2022 Township Residential Expenditures		$28,347,858	2022 Township Franchise Fee & Misc. Revenue per Unit		$53.81
2022 Township per Capita Expenditure (Standard Development)		$479.33	2022 State Liquid Fuels Revenue per Capita		$17.5304
2022 Township per Capita Expenditure (Age Qualified Development)		$246.52	2022 Township Interest Earnings		$516,000

** Does not include the real estate transfer tax revenue from the initial sales of the units, or $461,246 over the buildout period.

ANALYSIS OF THE ANNUAL FISCAL IMPACT TO THE ABINGTON SCHOOL DISTRICT

Of the Proposed St. Basil's Active Adult Development

March 16, 2022

Proposed Dwelling Type	Number of Units	Average Price per Unit	Total Market Value	Total Assessed Value	School Age Children per Unit	ASD Students	**Annual School District Expenditures**	Expenditures per Unit
Carriage Homes	150	$614,995	$92,249,250	$41,235,415	0.00	0	**$0**	$0

	Annual School District Revenue						
Proposed Dwelling Type	Real Estate Tax Minus Homestead Excl.	Earned Income Tax	Real Estate Transfer Tax **	State & Federal Revenue	Earnings on Investments	**Total Annual Revenue**	Revenue per Unit
Carriage Homes	$1,296,388	$52,706	$69,187	$0	$1,970	**$1,420,251**	$9,468

Proposed Dwelling Type	**Annual Net School District Revenue**	Net School District Revenue per Unit	Revenue > Expenditure
Carriage Homes	**$1,420,251**	$9,468	--

NOTES:

2021-2022 STEB Common Level Ratio (Market Value to Assessed Value)	44.7%	2021-2022 ASD Real Estate Tax Millage	32.7200
2021-2022 ASD Total Expenditures	$176,932,262	Annual Housing Turnover Rate (SFA)	15%
Minus Pass-Through Expenditures	$1,336,192	2021-2022 ASD Homestead Exclusion per Unit	$10,765
2021-2022 ASD Net Expenditures	$175,596,070	2021-2022 ASD State/Federal Revenue per Student	$5,270
2021-2022 ASD Student Enrollment	8,292	2021-2022 ASD Earnings on Investments	$170,000
2021-2022 ASD Net Expenditure per Student	$21,177		

** Does not include the real estate transfer tax revenue from the initial sales of the units, or $461,246 over the buildout period.

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SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

March 31, 2021

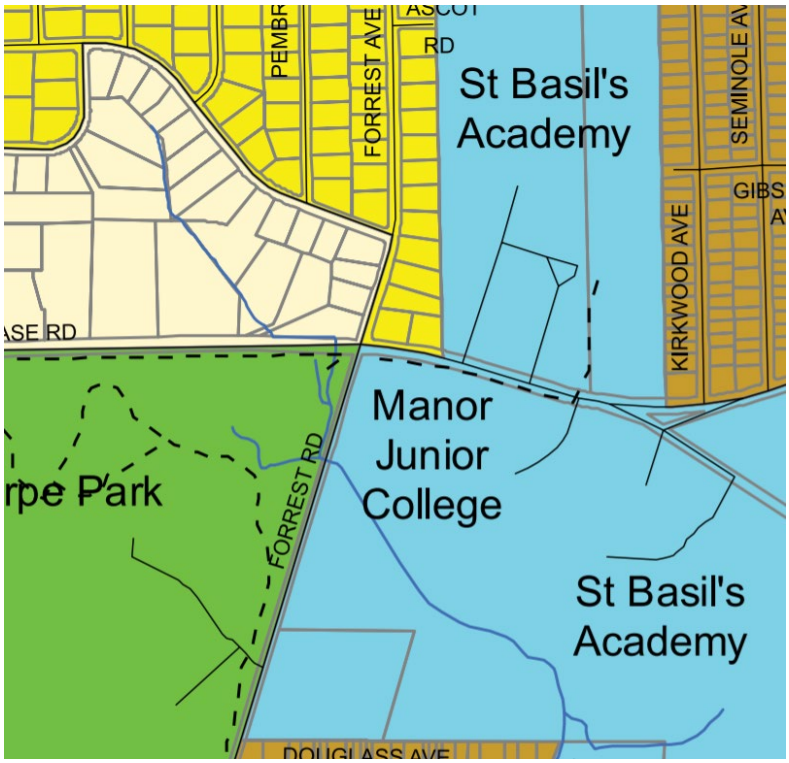
SUBJECT: 1. Proposed E-18 University Campus Use and Effects on Manor College
2. Ownership Status of R-1 Properties Eligible for E-18 Use

TO: Rich Manfredi, Manager

FROM: Mike Narcowich, AICP, Assistant Section Chief: Community Planning
Abington Township Planning Consultant

I took a look at how the proposed E-18 University Campus Use zoning text amendment would affect Manor College.

1. Applicability to Properties Zoned R-1 Low-Density Residential: Regarding the provision to allow faculty housing in the R-1 District, it seems as if it (most likely) does not apply to Manor College. Since the only R-1 use near Manor College lies diagonally opposite the college, across the intersection of Fox Chase Road and Forrest Road, and the proposed zoning text amendment says *"Properties zoned R1 Low Density Residential with existing houses owned by the college or university which (1) abut the college or university campus or* ***(2) which are separated by a public or private***



street *may be used for faculty housing by conditional use.*" To me, that means that this provision would not be applicable to Manor College, although I suppose it could be argued that one 0.84 acre lot on the corner of Fox Chase Road and Forrest Road would be eligible

I have a couple questions for Michael: (1) Do you feel that the R-1 lot on Forrest and Fox Chase would be eligible? (2) Just to do our due diligence, if that lot is not eligible, does that mean that the proposed zoning text amendment, which would then seem only to apply to PSU-Abington at present, would run a risk of being spot zoning?

2. Regarding the following paragraph, we should consider whether we want this changed as follows (it occurs to me that there may be confusion over whether "owned by the college or university" applies to the "properties" or "existing houses":

> *Properties zoned R1 Low Density Residential with existing houses <u>that are, at time of the adoption of this zoning text amendment,</u> owned by the college or university which (1) abut the college or university campus or (2) which are separated by a public or private street may be used for faculty housing by conditional use. This includes temporary housing for visiting professors and scholars, and administrative functions, including, but not limited to development, alumni relations, business office, and admissions. Administrative functions shall be limited to the first floor. These uses shall not exceed 140,000 square feet of property and a maximum of two structures.*

3. From MCPC Peer Review: In the interest of transparency, the provision to extend CS regulations into the R-1 District should be evident in the R-1 District. I suggest adding a mark in the Use Matrix where R-1 District and University Campus use intersect, linked to a footnote explaining when CS regulations may affect the R-1 District.

4. From MCPC Peer Review: It is recommended that there not be limitations on which floor office uses can be located on when located in a property in the R-1 District. The building may function better without such limitations, and there should be no negative effect on neighboring properties.

5. From MCPC Peer Review: It is recommended that it be clarified whether CS or R-1 regulations apply to the R-1 property, when such property is included in a University Campus use.

PROPERTY DATA:

TOTAL SITE AREA:	± 46.37 AC
60' ROW AREA:	± 0.62 AC
GROSS SITE AREA:	± 45.75 AC

PROPOSED DATA BASED ON GROSS SITE AREA:

PROPOSED PERIMTER SETBACKS:	
FRONT:	100'
SIDE:	125'
REAR:	125'
PROPOSED INTERNAL FRONT SETBACKS (FROM FACE OF CURB):	30'
PROPOSED BUILDING COVERAGE:	±7.5 AC (16%)
PROPOSED IMPERVIOUS COVERAGE:	±13.8 AC (30%)
PROPOSED OPEN SPACE:	±23.3 AC (51%)
PROPOSED DENSITY:	150 DU (3.3 DU/AC)
PROPOSED BUILDING HEIGHT:	<35'
PROPOSED BUILDING LENGTH:	150'
PROPOSED BUILDING SEPARATION:	25'

SOURCES:

1. THIS PLAN IS THE EXCLUSIVE PROPERTY OF ESE CONSULTANTS INC., AND TOLL BROTHERS INC. ALL RIGHTS AND REMEDIES ARE HEREBY RESERVED. THIS PLAN MAY NOT BE REPRODUCED OR DISTRIBUTED IN ANY WAY WITHOUT THE WRITTEN CONSENT OF ESE CONSULTANTS INC., AND TOLL BROTHERS INC.
2. AERIAL PHOTOGRAPH PROVIDED BY: MONTGOMERY COUNTY AERIAL IMAGES DATED: 2010.
3. TOPOGRAPHIC INFORMATION PROVIDED BY: PAMAP PROGRAM -3.2' DIGITAL ELEVATION MODEL 2006-2008 DCNR - PASDA DATE ACCESSED: 01.25.2019.
4. FLOODPLAIN LOCATION TAKEN FROM FEMA COMMUNITY PANEL: 403 OF 451 MONTGOMERY COUNTY PA DATED: MARCH 2, 2016.
5. SOILS INFORMATION TAKEN FROM NATURAL RESOURCE CONSERVATION SERVICES.
6. PENNYPACK CREEK TRIBUTARY CLASSIFIED AS A TROUT STOCKING WATER RESOURCE ACCORDING TO PA DEP.
7. PARCEL BOUNDARY AND ADDTIONAL SITE INFORMATION TAKEN FROM PLAN OF SURVEY LANDS N/F SISTERS OF ST. BASIL THE GREAT BY NAVE NEWELL DATED 3.17.21.
8. ALL BASE INFORMATION IS CONSIDERED PRELIMINARY AND SUBJECT TO FIELD VERIFICATION AND SURVEY. SITE PLAN MAY VARY PENDING MORE ACCURATE INFORMATION.

TYPICAL DIMENSIONS

SCALE: 1" = 50'

LIBERTY COLLECTION

CAREY, RADLEY, AND VINLAND
2,000 SF LIVING AREA
SCALE: N.T.S.

LEGEND:

FLOODPLAIN | STEEP SLOPES (15-25%) | STEEP SLOPES (>25%) | OPEN SPACE ±23.3 AC (51%) | STREAM

ESE PLANNING

NORTH

FEET
100 0 50 100 200
GRAPHIC SCALE 1 inch = 100 ft.

CONCEPT "L"
150 ACTIVE ADULT CARRIAGE HOMES
SISTERS OF ST. BASIL
ABINGTON TOWNSHIP, MONTGOMERY COUNTY, PA

PLAN SUMMARY

(150) TOTAL DWELLINGS

±3,925 LF OF CARTWAY
±285 LF OF BOULEVARD
±330 LF OF EMERGENCY ACCESS

±2.9 AC STORM WATER**

PROP. ZONING DISTRICT TBD

**INCLUDED IN OPEN SPACE CALCULATION

SITE DATA:

ADDRESS: 711 FOX CHASE ROAD, JENKINTOWN, PA 19046

PARCEL(S): 30-00-22424-001
30-00-22420-005

SITE AREA: ± 45.75 AC

CURRENT ZONING: COMMUNITY SERVICE

OFFICE DATA:

PROJECT NUMBER: 7662
DATE: 2022.01.19
SCALE: 1" = 100'
DRAWN BY: EED

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SCOTT FRANCE, AICP
EXECUTIVE DIRECTOR

March 6, 2022

SUBJECT: Sketch Plan and Zoning Ordinance: Age-Restricted Carriage Homes on Fox Chase Road

TO: Rich Manfredi, Manager
Cc: Michael P. Clarke, Esq., Solicitor; Terry Castorina, Executive Assistant to the Township Manager

FROM: Mike Narcowich, AICP, Community Planning Assistant Manager
and Abington Township Planning Consultant

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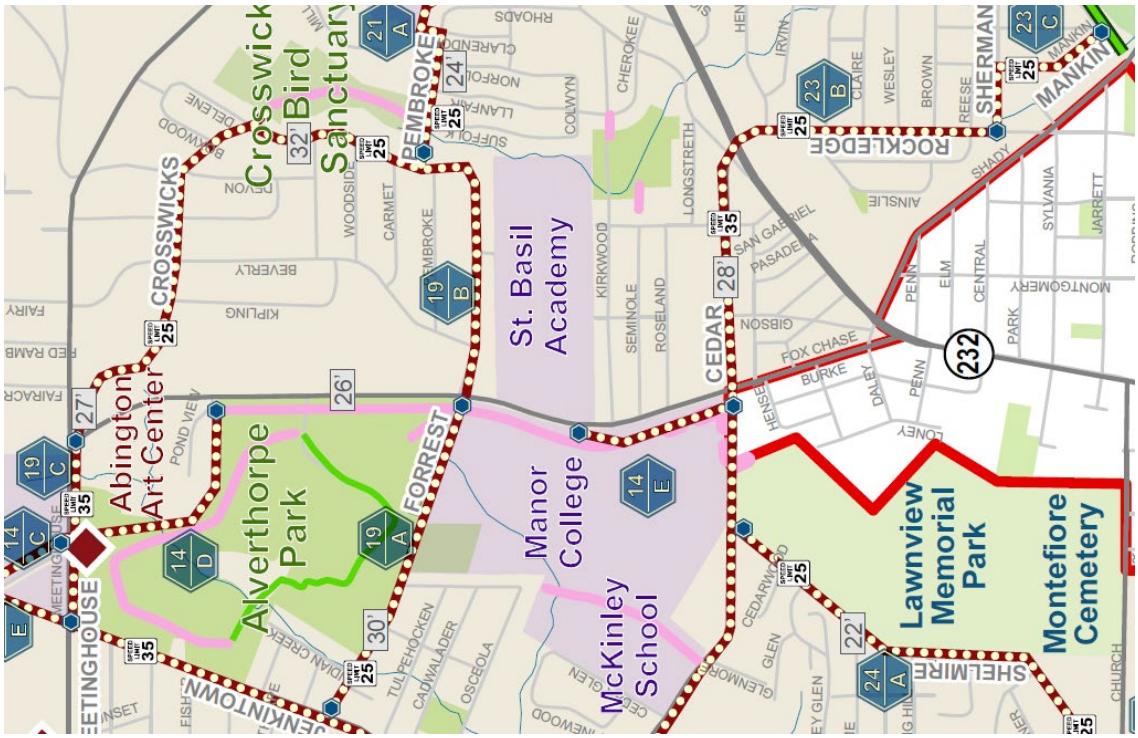
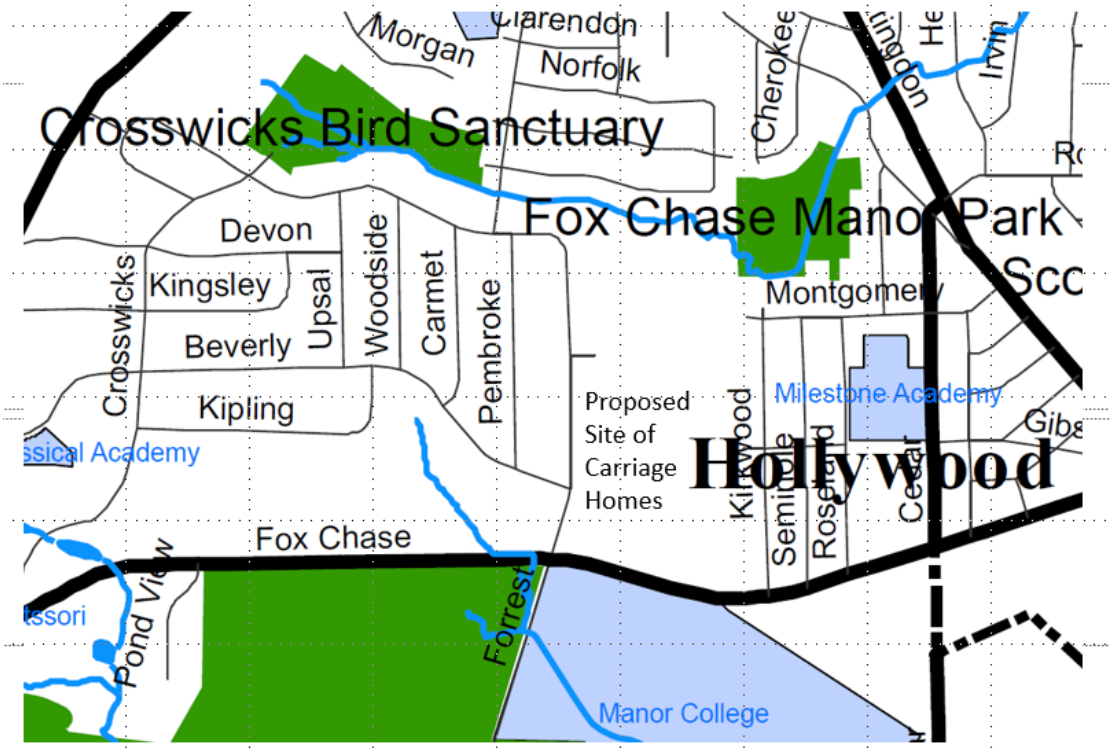
1. Spot-Zoning. We defer to the solicitor, but to us, this appears to be a case of spot zoning. It would allow townhomes/carriage homes in an area that is not distinguishable from the surrounding area. Why not have the SNR Senior Neighborhood Residential zoning district apply to this site? The SNR allows a density of 3.2 dwelling units (DU) per acre; this proposal is for only slightly more (3.4 DU/Ac.).
2. Transportation and Parking.
    a. The street grid, including sidewalks, should be interconnected. There are existing streets that should be continued onto the site to strengthen the vehicular and pedestrian transportation network. This would improve access for residents and emergency vehicles, promote walking and healthy lifestyles, and make it easier to access the bus routes, amenities, and services on Huntingdon Pike. ADDITION: It also strengthens community. Abingtonians want to have safe and comfortable walking options.
    b. The curving road intersections appear as if they are intended to calm traffic. Calming traffic is a desirable goal, but this design appears unnatural and may be confusing and disruptive to traffic flow (example: intersection of Roads A and E).
    c. The Abington Township Master Bicycle Plan (see p.94) recommends that a bicycle route "14E-Manor College Trail Extension Shared Use Path" be added, that would connect the site to the Cedar Road bicycle route to the east (see map). The full route would connect McKinley Elementary to Seminole Road. It would consist of a 10-foot asphalt trail, wayfinding signage and bicycle crossing bollards.
    d. Parking. We should clarify parking requirements for this use. Subdivisions for the purposes of building townhouses require 2 spaces (not counting garages) plus ¼ space per unit for developments over 16 units.



3. Open Space.
    a. There is not enough usable open space.
    b. Open space is subject to the requirements of §2601.K.
        i. Open space shall be visible from dwellings and roadways.
        ii. Open space area must have safe and convenient pedestrian and maintenance access, without obstruction of an intervening lot(s), structures, fences, or other impediments.
        iii. No more than three noncontiguous areas may count towards the open space requirements.
    c. Guest parking should not be allowed in the open space.

d. Could a trail be located in the stream corridor? Eventually it might connect to Fox Chase Manor Park. Short, through-block trails might also be considered.



e. Proposed amendment, section 1712.C.: Land preserved for open space purposes shall be in compliance with Open Space Standards of the SALDO ~~for the~~ and Township Zoning Ordinance; provided however that …

f. The tract buffer seems unnecessarily large. We recommend locating a trail in the buffer.

4. Housing Types and Design.

a. Zoning's H-9 Townhouse Dwelling Unit (Single-Family Attached) Use should be used as a point of reference and should influence this text amendment. Some requirements from that use should be added to this text amendment. For example, the requirement that end units have side-loaded garages (intended to prevent a "snout house" development, with garages and driveways dominating the façade/front of house). There is a requirement that off-street parking spaces be located to the side or rear, and for a small planting strip to separate adjacent driveways. Internal townhouse units have a limit on the percentage (30%) of the front façade that the garage may occupy.

b. Types. We recommend the ordinance be more flexible regarding permitted unit types, so that more than simply townhomes are permitted. What about duplexes? Triplexes? Quadruplexes? Twins? Adding those uses would make the site more adaptable to changing real estate market conditions and housing unit type preferences.

c. Design.

i. Will there be room for street trees, interspersed throughout the development? Street trees are shown, but space appears limited. When sidewalks are added to the plans it may turn out that there is not room for some of the trees.

ii. Garages. The siting of the garages may create a façade dominated by garage doors. Are renderings available?

5. County Comprehensive Plan. The site lies in the "Suburban Residential Area" future land use category of MONTCO2040: A Shared Vision, the Comprehensive Plan for Montgomery County. This land use category says that appropriate landscaping and street trees should be provided by all developments, and that recreation facilities and central open space should be provided.

6. Landscaping.

a. Stormwater Basin. The basin along Fox Chase Road will be located in a prominent location, and should be sufficiently naturalized and landscaped.

b. Where the backs of two rows of homes abut one another, we recommend adding landscaping for buffering the homes and creating a greater sense of privacy and visual interest, similar to that behind units # 57-61.

c. The pool and clubhouse should be screened from units #140-143.

d. ADDITION: grass has very little habitat value. It results in an overcrowded development with very little room for street trees and centrally-located, usable open space.

7. Riparian Corridor. The site is subject to the requirements of Article XV: the Riparian Corridor Conservation District. We recommend the boundaries of the corridor be designated on the plan.

8. Fiscal Impact Study. The township may wish to request a fiscal impact study from the applicant.

TRAFFIC PLANNING AND DESIGN, INC.

WWW.TRAFFICPD.COM

Memorandum

To: Richard Manfredi, Manager - Abington Township

From: Greg Richardson, P.E.

Date: August 16, 2022

Re: Sister of St. Basil – Active-Adult Development
Traffic Review #1
Abington Township, Montgomery County, PA
TPD No. ABTO.00033

cc: Board of Commissioners
Planning Commission
Tim Clark
Ashley McIlvaine
Terry Castorina
Khal Hassan, P.E.
Allison A. Lee, P.E.

Per your request and on behalf of Abington Township, Traffic Planning and Design, Inc. (TPD) has completed a traffic review of the above-referenced application. TPD reviewed the following documents:

- Traffic Impact Assessment prepared by McMahon Associates, Inc. – Dated February 10, 2022
- Concept "L" Plan prepared by ESE Planning – Dated January 19, 2022.

The following are our comments:

Traffic Impact Study

1. The turning movement counts used in the TIS were conducted in January 2022. The Applicant's engineer should confirm that Manor College was in session during the time of the data collection. Otherwise, seasonal adjustments should be made to study area traffic volumes to account for college commuter traffic.
2. The trip generation projections for the former use should be based on ITE Land Use Code 534 (Private High School), as this land use is more representative of the student demographics.

3. It does not appear that right turn on red (RTOR) volumes were collected during the data collection. Unless RTOR volumes were field measured, turn off the RTOR setting in the capacity analysis for the study area intersections.
4. The timing inputs for the Fox Chase Road and Forrest Avenue should be revised for the weekday PM peak hour analysis to reflect Max 1 splits for the Forest Avenue approaches.
5. The Applicant should coordinate with SEPTA to review the existing bus stops in the immediate project area and explore the possibility of providing shelters and pedestrian connectivity along the site frontage.
6. Modifications to the northbound Manor College Drive will be necessary to provide proper alignment with the proposed boulevard-style access driveway for the development.
7. It is recommended that the Applicant fully modernize the traffic signal in conjunction with the roadway improvements for the development.

Sketch Plan

1. Due to the type of proposed development (active-adult), separate left and right turn lanes should be provided on Fox Chase Road at its intersection with the Manor College driveway and the proposed site driveway.
2. The anticipated parking for the development should be specified and clearly identified on the plan. Consideration should be given to providing on-street parking which is spread evenly throughout the development to accommodate visitors, special events, families, etc. The Applicant should explore traffic calming measures in conjunction with on-street parking, such as curb extensions and midblock bump-outs, to reduce vehicle speeds on the long and straight internal roads.
3. Additional details should be provided on the clubhouse operations to determine the appropriate amount of parking that may be necessary to service its intended use.
4. Sight lines should be shown on the plans indicating conformance with the sight distance measurement and clear sight line requirements outlined in the Abington Township Subdivision and Land Development Ordinance.
5. The need for streetlighting along the internal roads and along the property frontage on Fox Chase Road should be discussed with the Township.
6. The Township Fire Chief should review the plan and approve the proposed circulation patterns.

General

1. Since any modifications to the signalized intersection of Fox Chase Road, the Manor College driveway, and the proposed site driveway is subject to PennDOT review and approval, any correspondence to and from the Department must also be coordinated with our office and the Township, and evaluated and addressed accordingly in subsequent submissions.

2. A response letter must be provided with the resubmission detailing how each comment above has been addressed, and where each can be found in the resubmission materials (i.e., plan sheet number(s), page number(s), etc.) to assist in the re-review process.

TPD reserves the right to make additional comments upon receipt of additional documents or changes to the plan and studies