



**UPPER UWCHLAN TOWNSHIP
PLANNING COMMISSION
AGENDA**

**September 9, 2021
7:00 p.m.**

**LOCATION
Upper Uwchlan Township Building
140 Pottstown Pike, Chester Springs PA 19425**

Masks / face coverings are required.

- I. Call To Order
- II. Outdoor Storage Tank Ordinance Amendments – August 16 Draft

Review revisions suggested by the Commission August 12, 2021.
Make recommendation to the Board of Supervisors.
- III. Toll Brothers / 100 Greenridge Road ~ Conditional Use Application

Review the Township Consultants' review letter.
- IV. Approval of Minutes: August 12, 2021 Meeting
- V. Next Meeting Date: October 14, 2021 7:00 PM
- VI. Open Session
- VII. Old Business
 - A. Village Concept Plan update – discussion
 - B. Village Design & Architectural Guidelines update – discussion
- VIII. Adjournment

**UPPER UWCHLAN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA**

ORDINANCE NO. _____

AN ORDINANCE OF THE TOWNSHIP OF UPPER UWCHLAN, CHESTER COUNTY, PENNSYLVANIA, AMENDING CHAPTER 200 OF THE UPPER UWCHLAN TOWNSHIP CODE, AS AMENDED, ENTITLED "ZONING", AMENDING SECTION 200-7 TO ADD A DEFINITION FOR "INERT"; SECTIONS 200-49.K AND 200-49.M(1) TITLED, "USE REGULATIONS FOR THE PI PLANNED INDUSTRIAL/OFFICE DISTRICT; SECTION 200-49.O TO ADD A NEW SUBSECTION 3 THERETO TO PERMIT ABOVEGROUND STORAGE TANKS AS AN ACCESSORY USE IN THE PI-PLANNED INDUSTRIAL/OFFICE DISTRICT; SECTION 200-80.C(2)(c) TO ADD REGULATIONS FOR THE STORAGE OF FUEL AND OTHER EXPLOSIVE MATERIAL; SECTION 200-80 TO ADD A NEW SUBSECTION E TO PROVIDE ADDITIONAL STANDARDS APPLICABLE TO ABOVEGROUND STORAGE TANKS IN THE PI-PLANNED INDUSTRIAL/OFFICE DISTRICT; AND SECTION 200-90.A(5) TO PERMIT ABOVEGROUND STORAGE TANKS AS AN ACCESSORY USE IN THE PI PLANNED INDUSTRIAL/OFFICE DISTRICT.

NOW THEREFORE BE IT ENACTED AND ORDAINED by the Board of Supervisors of Upper Uwchlan Township, Chester County, Pennsylvania, that Chapter 200 of the Upper Uwchlan Zoning Code, entitled, "Zoning", as amended, shall be amended as follows:

SECTION 1. Section 200-7 shall be amended to add the following definition:

INERT-a nonreactive, nonflammable, noncorrosive material (whether gas, liquid or solid) such as but not limited to argon, helium, krypton, neon, nitrogen and xenon.

SECTION 2. Section 200-49.K shall be amended as follows:

"K. Wholesaling, warehousing and distributing provided there shall be no exterior evidence of such, and, further, no above ground storage tanks shall be allowed on the exterior of the building except as permitted by §200-49.O(3)."

SECTION 3. Section 200-49.M(1) shall be amended as follows:

"(M)(1). Manufacturing and processing provided there shall be no raw materials or finished products permitted on the exterior of the building, and, further, no above ground storage tanks shall be allowed on the exterior of the building except as permitted by §200-49.O(3)."

SECTION 4. Section 200-49.O shall be amended by adding a new subsection (3) which shall provide as follows:

"(3) Aboveground storage tanks for storage of inert gases, non-toxic liquids and non-toxic solids, water and brine; provided, however, that the storage of any materials and/or substances that meet the definition of a Regulated Substance as that term is defined in 25 Pa. Code Chapter 245.1 shall be prohibited."

SECTION 5. Section 200-80.C(2)(c) shall be amended to state as follows:

"(c) For any new aboveground storage tanks that may be permitted under Subsection C(2)(b), the following shall apply:

- [1] In addition to any state and/or federal regulatory requirements, the tank installation shall be designed and its construction supervised by a registered professional engineer and the final installation approved by said engineer. The applicant shall file with the Township and at the time of application for a building permit or zoning permit, as may be applicable, a site plan and details for the tank, including a narrative which describes why a particular site was chosen for the proposed aboveground storage tank, all prepared by a professional engineer. The applicant shall also file a written plan which establishes the safety measures that shall be followed as well as tank operation, inspection frequency and test procedure(s), appropriate coding or labeling of pipes and tanks. The professional engineer's report shall evaluate if the proposed setbacks for the tanks are adequate to protect adjacent properties. Any additional permits or permit applications required by state or federal agencies for the construction of the tank shall also be submitted to the Township at the same time.
- [2] No aboveground storage tanks shall be constructed closer than 50 feet to any property or right-of-way line, except when the lot with the storage tank abuts a lot zoned residential or with a residential use, in which case the setback shall be a minimum of 100 feet.
- [3] All aboveground storage tanks shall be either attached to or enclosed within an area that abuts a side or rear of the principal building located on the property.
- [4] The method of storage of any materials and/or substances shall conform to all applicable federal, state, and local regulations, including, but not limited to, the regulations of the U.S. Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Labor and Industry, the Pennsylvania Fire Marshal, and the Township, and including, without limitation, the Pennsylvania Uniform Construction Code, 34 Pa. Code § 401 *et seq.*,

the International Fire Code incorporated therein, and Chapter 71 of the Upper Uwchlan Township Code of Ordinances.

- [5] Copies of all current federal or state permits that are required for the aboveground storage tanks shall be on file with the Township Zoning Officer.
- [6] Material Safety Data Sheets for the materials stored in the tanks shall be on file with the Township Zoning Officer.
- [7] The ~~facility~~ owner of the aboveground storage tank and/or operator shall assure that a visual inspection of the tank(s) is performed at least once every 72 hours and shall document that these inspections occur.
- [8] At least annually, the tanks shall be inspected by a registered professional engineer. The inspector shall submit a written report to the Township which identifies the storage locations, waste locations and materials and items stored in the storage tanks. If necessary, the Township shall send this report to the Emergency Management Coordinator of the Township, the Zoning Officer and the Fire Chiefs of the first due emergency response organizations as identified by the Township. If requested by the Township or emergency response organizations, the owner shall provide initial and annual training to all first responders so identified and designated by the Township."

SECTION 6. Section 200-80 shall be amended by adding a new subsection E. which shall provide as follows:

"E. Aboveground storage tanks in the PI District.

(1) Aboveground storage tanks for storage of inert gases, non-toxic liquids and non-toxic solids, water and brine, subject to the prohibition on storage of any materials and/or substances that meet the definition of a Regulated Substance in 25 Pa. Code Chapter 245.1, shall be enclosed with a fence or wall compatible with the architectural style employed on the lot in order to completely screen the aboveground storage tanks from view of any public right-of-way and any adjacent uses. The fence or wall shall not exceed the lesser of 20 feet in height or the height of the principal building on the lot; provided that the height of the fence or wall shall exceed the height of the aboveground storage tank by at least one foot. Fences and walls shall be erected in accordance with § 200-88 of this chapter, except that the requirements of this subsection shall apply to fences and walls installed to screen aboveground storage tanks in the PI District in lieu of Section 200-88.A.

- (2) When the lot containing the aboveground storage tank abuts a lot zoned residential or a lot containing a residential use, the aboveground storage tank shall be set back a minimum of 200 feet from the lot line.

- (3) When the lot containing the aboveground storage tank abuts a lot zoned residential or a lot containing a residential use, the aboveground storage tank shall not be located on any side of the building that faces the lot zoned residential or a lot containing a residential use.
- (4) All aboveground storage tanks shall have a capacity not to exceed 10,000 gallons per tank, with no more than three aboveground storage tanks per property.
- (5) In addition to any state and/or federal requirements, the tank installation shall be designed and its construction supervised by a registered professional engineer and the final installation approved by said engineer. The applicant shall file, with the Township and at the time of application for a building permit or zoning permit, as may be applicable, a site plan and details for the tank, including a narrative which describes why a particular site was chosen for the proposed aboveground storage tank, all prepared by a professional engineer. The applicant shall also file a written plan which establishes the safety measures that shall be followed as well as tank operation, inspection frequency and test procedure(s), appropriate coding or labeling of pipes and tanks. The professional engineer's report shall evaluate if the proposed setbacks for the tanks are adequate to protect adjacent properties. Any additional permits or permit applications required by state or federal agencies for the construction of the tank shall also be submitted to the Township at the same time.
- (6) The aboveground storage tank shall be either attached to or enclosed within an area that abuts a side or rear of the principal building located on the property.
- (7) The method of storage shall conform to all applicable federal, state, and local regulations, including, but not limited to, the regulations of the Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Labor and Industry, the Pennsylvania Fire Marshal, and the Township, and including, without limitation, the Pennsylvania Uniform Construction Code, 34 Pa. § 401 *et seq.*, the International Fire Code incorporated therein, and Chapter 71 of the Upper Uwchlan Township Code of Ordinances.
- (8) Copies of all current federal or state permits that are required for the aboveground storage tanks shall be on file with the Township Zoning Officer.
- (9) Material Safety Data Sheets for the materials stored in the tanks shall be on file with the Township Zoning Officer.
- (10) The ~~facility~~-owner of the aboveground storage tankand/or-operator shall assure that a visual inspection of the tank(s) is performed at least once every 72 hours and shall document that these inspections occur.

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- (11) At least annually, the tanks shall be inspected by a registered professional engineer and the inspector shall submit a written report to the Township which identifies the storage locations, waste locations and materials and items stored in the storage tanks. If necessary, the Township shall send this report to the Emergency Management Coordinator of the Township, the Zoning Officer and the Fire Chiefs of the first due emergency response organizations as identified by the Township. If requested by the Township or emergency response organizations, the owner shall provide initial and annual training to all first responders so identified and designated by the Township."

SECTION 7. Section 200-90.A(5) shall be amended as follows:

"(5) Aboveground storage tanks are allowed only in the C-3 Highway Commercial Zoning District, the LI Limited Industrial District or as an accessory use in the PI Planned Industrial/Office District as established by this chapter and in all cases, shall comply with all applicable provisions of § 200-80 of this chapter."

SECTION 8. Severability. If any sentence, clause, section, or part of this Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections, or parts hereof. It is hereby declared as the intent of the Board of Supervisors that this Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included herein.

SECTION 9. Repealer. All ordinances or parts of ordinances conflicting with any provision of this Ordinance are hereby repealed insofar as the same affects this Ordinance.

SECTION 10. Effective Date. This Ordinance shall become effective in five days from the date of adoption.

ENACTED AND ORDAINED this ____ day of _____, 2021.

ATTEST:

**UPPER UWCHLAN TOWNSHIP
BOARD OF SUPERVISORS**

Gwen A. Jonik, Secretary

Sandy M. D'Amico, Chair

Jamie W. Goncharoff, Vice-Chair

Jenn F. Baxter, Member

**UPPER UWCHLAN TOWNSHIP
CHESTER COUNTY, PENNSYLVANIA**

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SECTION 8. Severability. If any sentence, clause, section, or part of this Ordinance is for any reason found to be unconstitutional, illegal or invalid, such unconstitutionality, illegality or invalidity shall not affect or impair any of the remaining provisions, sentences, clauses, sections, or parts hereof. It is hereby declared as the intent of the Board of Supervisors that this Ordinance would have been adopted had such unconstitutional, illegal or invalid sentence, clause, section or part thereof not been included herein.

SECTION 9. Repealer. All ordinances or parts of ordinances conflicting with any provision of this Ordinance are hereby repealed insofar as the same affects this Ordinance.

SECTION 10. Effective Date. This Ordinance shall become effective in five days from the date of adoption.

ENACTED AND ORDAINED this ____ day of _____, 2021.

ATTEST:

**UPPER UWCHLAN TOWNSHIP
BOARD OF SUPERVISORS**

Gwen A. Jonik, Secretary

Sandy M. D'Amico, Chair

Jamie W. Goncharoff, Vice-Chair

Jenn F. Baxter, Member



THE COUNTY OF CHESTER



COMMISSIONERS
Marian D. Moskowitz
Josh Maxwell
Michelle Kichline

Brian N. O'Leary, AICP
Executive Director

PLANNING COMMISSION
Government Services Center, Suite 270
601 Westtown Road
P. O. Box 2747
West Chester, PA 19380-0990
(610) 344-6285 Fax (610) 344-6515

September 3, 2021

Tony Scheivert, Municipal Manager
Upper Uwchlan Township
140 Pottstown Pike
Chester Springs, PA 19425

Re: Zoning Ordinance Amendment - Above Ground Storage Tanks in the PI/O District; Storage Tank Standards
Upper Uwchlan Township - ZA-08-21-16867

Dear Mr. Scheivert:

The Chester County Planning Commission has reviewed the proposed Upper Uwchlan Township Zoning Ordinance amendment as submitted pursuant to the provisions of the Pennsylvania Municipalities Planning Code, Section 609(e). The referral for review was received by this office on August 18, 2021. We offer the following comments to assist in your review of the proposed Zoning Ordinance amendment.

DESCRIPTION:

Upper Uwchlan Township proposes the following amendments to its Zoning Ordinance:

- A. Define "inert" (in the context of gas, liquid or solid contained in a storage tank);
- B. Regulate above-ground storage tanks in the PI-Planned Industrial/Office District as accessory uses;
- C. Add regulations for above-ground storage tanks, including tank size limits (10,000 gallons; not more than three per property), locational and setback requirements, construction code requirements, safety measures, annual inspections by a professional engineer, and other provisions.

BACKGROUND:

The Chester County Planning Commission received an earlier version of this amendment on June 15, 2021, and our comments were forwarded to the Township in a letter dated July 2, 2021 (refer to CCPC # ZA-06-21-16774). The current submission contains changes that relate to the Township Engineer's required report regarding the adequacy of proposed aboveground storage tank setbacks to protect adjacent properties, clarifies that the owner of an aboveground storage tank shall assure that visual inspections are performed, and that the fence or wall enclosing an aboveground storage tank shall exceed the height of the tank by at least one foot.

These currently-proposed provisions are expected to further protect adjacent properties, and we have no further comments on the proposed amendment.

Page: 2

Re: Zoning Ordinance Amendment - Above Ground Storage Tanks in the PI/O District; Storage Tank Standards

Upper Uwchlan Township - ZA-08-21-16867

RECOMMENDATION: The Chester County Planning Commission supports the adoption of the proposed zoning ordinance amendment.

We request an official copy of the decision made by the Upper Uwchlan Township Supervisors, as required by Section 609(g) of the Pennsylvania Municipalities Planning Code. This will allow us to maintain a current file copy of your ordinance.

Sincerely,

A handwritten signature in black ink that reads "Wes Bruckno". The signature is written in a cursive, flowing style.

Wes Bruckno, AICP
Senior Review Planner

cc: Kristin S. Camp



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

September 7, 2021

File No. 21-06024T

Mr. Tony Scheivert
Upper Uwchlan Township Manager
140 Pottstown Pike
Chester Springs, PA 19425

Reference: Greenridge Road Conditional Use Plan (Toll)
Conditional Use Plan Review
Upper Uwchlan Township, Chester County, PA

Dear Tony:

Gilmore & Associates, Inc. (G&A) is in receipt of the following documents:

- Letter from Riley Riper Hollin & Colagreco to Upper Uwchlan Township dated August 11, 2021, outlining submitted items.
- Upper Uwchlan Township Conditional Use Application dated August 10, 2021.
- Plan set consisting of seven (7) sheets titled "Conditional Use Subdivision Plan for Greenridge Road" prepared by ESE Consultants, Inc. and dated August 10, 2021.
- Greenridge Road Development Transportation Impact Study prepared by Traffic Planning and Design, Inc. (TPD) and dated August 10, 2021.
- Fiscal & Recreation Impact Analysis Greenridge Development prepared by David C. Babbit & Associates, LLC and dated August 9, 2021.

G&A, as well as the other Township Consultants, have completed our first review of the above referenced Conditional Use Plan for compliance with the applicable sections of the Township's Zoning Ordinance and Subdivision and Land Development Ordinance, and wish to submit the following comments for your consideration.

Please note that comments with an **(RW)** or **(V)** may require relief from the Township Ordinances. An **(RW)** denotes a requested waiver, and a **(V)** denotes a required variance.

BUILDING ON A FOUNDATION OF EXCELLENCE

184 W. Main Street | Suite 300 | Trappe, PA 19426
Phone: 610-489-4949 | Fax: 610-489-8447
www.gilmore-assoc.com

File No. 21-06024T
September 7, 2021

I. OVERVIEW

The proposed project consists of 64 single-family homes on two (2) existing parcels totaling 65.95 acres at 100 Greenridge Road. The project site is located within the R-2 Residential District with and F1-Flexible Development Overlay. The application is proposing to utilize the F-1 Flexible Overlay District.

The larger (63.07 acres) existing lot includes existing structures, pool, tennis court (all proposed to be removed) and driveway from Greenridge Road to the dwelling (a portion of which is to remain, to be utilized as part of a community trail network). The Applicant is proposing to improve this lot with a loop road (Road "B") and cul-de-sac (Road "A"), with access from Greenridge Road and a right-of-way extension of Lauren Lane to Road "A" as a potential emergency access. The applicant is also proposing to create a 5.4 acre Sanitary Sewer Disposal Lot (Lot 66), indicated to be conveyed to Upper Uwchlan Township. The smaller (2.88 acres) existing lot is also proposed to be a sanitary sewer disposal area, to be conveyed to Upper Uwchlan Township. The larger existing lot contains wetlands and a FEMA-delineated Zone A floodplain. The plans note that a Wetlands Jurisdictional Determination from US Army Corps of Engineers is pending.

II. ZONING ORDINANCE REVIEW

1. Section 200-54.A(2)[3] – The site contains a Zone A (General) Floodplain. No development is proposed within the Floodplain, and a 150-foot DEP Buffer is shown.
2. Section 200-69.C(5) – For any proposed activity requiring the submission of a wetland delineation report, stream or wetland encroachment permit, or mitigation plan to the Pennsylvania Department of Environmental Protection (DEP) and/or U.S. Army Corps of Engineers or successor agencies, a copy of all such documentation shall be submitted to the Township. Note #5 on Sheet 2 indicates that a Wetlands Jurisdictional Determination from US Army Corps of Engineers is pending. A copy shall be provided to the Township upon receipt.
3. Section 200-69.D(1)(a) – To ensure that a significant portion of the restricted open space is potentially usable for a variety of permitted open space purposes, a portion of the minimum required restricted open space (26.38 AC.) equal in area to no less than 15% of the gross tract area (9.92 AC.) shall fully exclude areas

File No. 21-06024T
September 7, 2021

comprised of structures or other impervious surfaces permitted within the open space as set forth herein. Computations should be provided indicating this requirement has been met.

4. Section 200-69.D(1)(b)[1] – Any area within 25 feet of any structure not devoted to open spaces must be exempt from contributing towards required Restricted Open Space. Therefore, a 25' setback line should be provided along the lot lines which abut open space areas which are contributing towards Restricted Open space.
5. Section 200-69.D(1)(b)[2] - Any area narrower than 100 feet must be exempt from contributing towards required Restricted Open Space. The applicant should verify this requirement has been met for all areas being considered as Restricted Open Space.
6. Section 200-69.D(4) – The proposed tot lot seems to be rather smaller relative to the size of the development. It also is rather isolated. We defer to the Township Planning Commission on this matter.
7. Sections 200-72.C(2)(a)[1] and (b)[1] – Where permitted by the Board of Supervisors as a conditional use, an applicant may utilize the flexible/open space development option for development of any of the uses permitted within the R-2 zoning district. Single-family detached dwellings are proposed and are permitted in the R-2 and F-1 Districts.
8. Section 200-72.C(2)(a)[3] and (b)[3] – Open space uses as set forth in § 200-69 of this chapter is permitted within the F-1 District. The plans propose 31.15 ac. of Restricted Open Space; 26.38 ac. is required.
9. Section 200-72.D(1)(a) – We note that the plans list 40% as the required minimum, with 47% actually proposed. However, the Zoning Requirements table Proposed Open Space is incorrectly listed as 51% and should be revised to 47%.
10. Section 200-72.D(2)(a)[3][b] – Any area comprising wetlands under the jurisdiction of the U.S. Army Corps of Engineers and/or the Pennsylvania Department of Environmental Protection shall be excluded. The plans indicate that a USACE JD is pending for the site; therefore, the acreage listed on the plans may change.

File No. 21-06024T
September 7, 2021

11. (V) Section 200-107.D(2) – Prohibitive Steep Slopes will be disturbed to construct at least Road A. A variance would be required for this disturbance and the applicant indicates one will be sought.
12. Section 200-107.D(3)(b)[2] - Although this section does permit disturbance of “Precautionary” Steep Slopes for the construction of a primary access as part of a conditional use process, the applicant has not requested this relief in their conditional use application. If it is being sought, the application should be updated accordingly.
13. Section 200-107.D(3)(b)[4] – Although this section does permit disturbance of “Precautionary” Steep Slopes for the construction of a sanitary and stormwater conveyance systems as part of a conditional use process, the applicant has not requested this relief in their conditional use application. If it is being sought, the application should be updated accordingly.
14. Section 200-107.D(3)(c) – The Applicant shall provide computations which confirm the slope disturbance requirements outlined in this section can be complied with.
15. Section 200-117.E – The applicant shall provide verification adequate screening is provided between the site and the surrounding properties to screen the facility from view, preclude any glare from lighting or excessive noise from being ascertainable beyond the boundaries of the property. We defer to the Township Planning Commission and Brandywine Conservancy as to whether or not this requirement has been met.
16. Section 200-117.G – The applicant shall provide verification adequate water supply is available for normal daily use as well as for fire protection.
17. Section 200-117.I – The applicant is requesting relief from the requirement to submit an historic impact statement that documents conformance to all requirements of Section 162.9.H of Chapter 162. We defer to the Township Planning Commission and Historic Commission on this matter.

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III. SUBDIVISION & LAND DEVELOPMENT ORDINANCE REVIEW

1. **(W)** Section 162-30.A – Maximum grade for a local access road is 10%. The applicant is requesting a waiver to permit a maximum grade of 12%. If this waiver is to be considered as part of the conditional use process, a plan and profile of the roadway should be provided so an evaluation can be made. Otherwise, we would recommend this waiver request be defer until the land development submission
2. **(W)** Section 162-30.D – Under no circumstances shall maximum grades be permitted using the minimum curve radii. Section 162-31.B states that minimum centerline radii on a local street is 150-feet minimum. Neither proposed road slopes nor curve radii are labeled on the plans. However, this section is included in Requested Variances/Waivers on Sheet 4, to allow for maximum road grade and minimum curve radii on Road A between Lot 4 and Lot 64. As stated above, a plan and profile of the roadway should be provided so an evaluation can be made. Otherwise, we would recommend this waiver request be defer until the land development submission
3. **(W)** Section 162-33.D – Single access streets, permanently designed as such, shall be not more than 500 feet in length for lots containing less than one acre. Proposed Road “A” exceeds this length. This section is included in Requested Variances/Waivers on Sheet 4. We defer to The Township Traffic Engineer as well as the Township Fire Marshall as to the acceptability of this waiver.
4. **(W)** Section 162-39.E – All curbs shall conform to specification for Class A concrete. This section is included in Requested Variances/Waivers on Sheet 4, to permit Belgian block curbing. We have no objection to this waiver as Belgian Block is a suitable material substitute and has been successfully installed in several other developments in the Township.
5. **(W)** Section 162-41.A – Sidewalks may be required on both sides of new streets in residential subdivisions or land developments. The plans propose sidewalk on only one side of Road A and Road B. This section is included in Requested Variances/Waivers on Sheet 4. We defer to the Township Planning Commission on this matter.
6. **(W)** Section 162-46.B(1) – All lots shall have direct access to a public street. This section is included in Requested Variances/Waivers on Sheet 4, to permit Lot 65 (The

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sanitary sewer disposal Lot) to exist as an interior lot accessed only via an easement. We defer to the Township Planning Commission and Township Sewer Consultant on this matter.

7. Section 162-46.B(3) – An interior lot shall have an access strip, with a minimum width for its entire depth of 25 feet if a deed restriction prohibits the lot from further subdivision. The trail and access easement for Lot 65 should be increased to meet this requirement.

V. FINANCIAL AND RECREATIONAL ANALYSIS REVIEWS

Recreation Impact Analysis

1. SLDO 162-9.H(3)(d) requires a description of existing municipal recreational facilities. The Recreation Impact Analysis indicates that Hickory Park is 26.7 acres in size, while the Open Space Plan indicates that this park is 42.3 acres in size. Upland Farms Park is shown as 46.9 acres in size, while the Open Space Plan and Township website state this park is 56 acres in size. It appears that the acreage listed for Fellowship Fields is incorrect as well. In addition, the report refers to Upland Farm as a proposed facility, which is incorrect. The report shall be revised to accurately describe the existing Township park facilities.
2. SLDO 162-9.H(3)(d) requires a description of the impact of the proposed development on recreational facilities, using the accepted standards established in the Upper Uwchlan Open Space, Recreation and Environmental Resources Plan and the Township Comprehensive Plan.
 - Page 61 of the Open Space Plan provides a table calculating projected Township park needs based on population projections, prepared in accordance with Chester County Park and Recreation guidelines (which are derived from NRPA guidelines).
 - Page 62 of the Open Space Plan provides a table calculating projected Township outdoor activity/facility needs based on population projections, also prepared in accordance with the Chester County guidelines.

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The report shall be revised to include an analysis of how the proposed population increase and private recreation facilities will affect the Township's adherence with the Chester County Recreational Park Guidelines.

3. SLDO 162-54.C provides recommended guidelines for the provision of playground or neighborhood park acreage in residential land developments. With 64 proposed dwelling units, a total of 3 acres of recreation area is recommended. 2.28 acres of active recreation area are proposed. We defer comment on the suitability of the amount of active recreation area to the Planning Commission.

Fiscal Impact Analysis

1. SLDO 162-9.H(4)(a) requires an analysis of the potential fiscal impact to Public Works, including potential effects on the maintenance, repair and upkeep of roads, signal systems, sewer, water and drainage systems, open space and recreation areas, or any other applicable function of this department. The Fiscal Impact Analysis shall address any projected cost increases for the above items in terms of administration, personnel, equipment and materials. The Fiscal Impact Analysis shall be revised to specifically address this requirement.
2. SLDO 162-9.H(4)(b) requires an analysis of the potential fiscal impact to the Township Administration, including time that would be required by the Board of Supervisors, Manager, Administrative Assistant, and clerical personnel to process the application and handle the project during construction, as well as long-term administrative demands. This should include, but not be limited to, the handling of plans, contracts, various legal instruments or agreements, permits, special problems, and escrow. The analysis shall also address projected demands on code administrative staff. The Fiscal Impact Analysis shall be revised to specifically address this requirement.
3. SLDO 162-9.H(4)(c) requires an analysis of the potential fiscal impact to fire and emergency (ambulance) services, incorporating the development's impact on fire company capabilities, including but not limited to municipal water supply, pumping capacity, specialized equipment and training requirements. The Fiscal Impact Analysis shall be revised to specifically address this requirement.

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4. SLDO 162-9.H(4)(d) requires an analysis of the potential fiscal impact to police services, including a projection of the overall effects of the proposed development on existing Township police personnel numbers, equipment, vehicles and working space. Any facilities or assistance the development will provide to handle emergencies, criminal investigations, armed robbery, or other security-related problems shall be included in the analysis. The Fiscal Impact Analysis shall be revised to specifically address this requirement.
5. On page 2 of the Fiscal Impact Analysis, the assessments paragraph indicates that the total assessed value of all properties in the Downingtown Area School District is \$5,375,400,000. However, the Downingtown Area School District 2021-2022 Final General Fund Budget indicates the total assessed value of all properties as \$5,638,921,798. This section and subsequent calculations shall be revised accordingly.
6. The pass-through funds table on page 4 of the Fiscal Impact Analysis indicates that \$5,000 for Pavilion Rental is to be excluded as a pass-through fund. However, the Upper Uwchlan 2021 Budget indicates that this amount is \$500. The pass-through funds table and subsequent calculations shall be revised accordingly.
7. The monthly mortgage calculation outlined on page 6 of the Fiscal Impact Analysis appears to use a down payment of 10% in order to calculate the monthly mortgage payment. We find that using a standard 20% down payment for the mortgage calculation is more appropriate and would then yield a more accurate household income and EIT estimates.. We recommend that a 20% down payment be used in this calculation.
8. The franchise fee and miscellaneous revenue calculation on page 7 of the Fiscal Impact Analysis indicates a total yearly Cable TV and Miscellaneous Revenue amount of \$11,111. However, the calculated annual cost per person (\$72) multiplied by the number of housing units (64) would equal \$4,608. This section and subsequent calculations shall be revised accordingly.
9. The liquid fuels revenue calculation on page 7 of the Fiscal Impact Analysis indicates a total annual Liquid Fuels revenue of \$6,883. However, following the

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calculation provided in the text results in liquid fuels revenue of \$6,271.54. This section and subsequent calculations shall be revised accordingly.

10. The interest earnings calculation on page 7 of the Fiscal Impact Analysis indicates total annual interest earnings of \$456. However, following the calculation provided in the text results in interest earnings of \$1,303.75. This section and subsequent calculations shall be revised accordingly.
11. The Downingtown Area School District Expenditures calculation on page 8 of the Fiscal Impact Analysis indicates total general fund budgeted expenditures of \$244,248,119. However, the DASD 2021-2022 budget indicates total expenditures of \$244,086,119. This section and subsequent calculations shall be revised accordingly.
12. The Downingtown Area School District Expenditures calculation on page 8 of the Fiscal Impact Analysis indicates a total annual school district expenditure of \$1,065,244. However, following the calculation provided in the text results in expenditures of \$1,060,020. This section and subsequent calculations shall be revised accordingly.
13. The State and Federal revenue calculation on page 9 of the Fiscal Impact Statement indicates total budgeted revenue from State and Federal sources as \$56,560,616. However, the DASD 2021-2022 budget indicates a total of \$56,587,660 for these revenues. In addition, the calculations indicate total annual State and Federal revenues to the School District of \$255,434. However, following the calculation provided in the text results in an amount of \$254,186. This section and subsequent calculations shall be revised accordingly.
14. The earnings on investments calculation on page 9 of the Fiscal Impact Analysis indicates that the School District's total taxable assessed value is \$5,375,400,000. However, the DASD 2021-2022 budget indicates a value of \$5,697,963,007. This section and subsequent calculations shall be revised accordingly.

VI. GENERAL COMMENTS

1. Clarify the sources of the Minimum Front Yard and the Minimum Lot Width at Building Setback Line in the Zoning Requirements table.

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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2. It should be clarified whether or not the proposed trail (existing driveway) will be available for public use.

VII. TOWNSHIP TRAFFIC CONSULTANT COMMENTS
McMAHON ASSOCIATES, INC.

1. SALDO Section 162-9.H(2) – The traffic counts were completed in July 2021, when school was not in session, and during the current COVID-19 pandemic. However, the applicant's engineer increased the July 2021 traffic counts upwards by 69 percent during the weekday morning peak hour and 27 percent during the weekday afternoon peak hour based on historic traffic counts conducted in September 2016. Since the traffic counts were adjusted to reflect typical conditions during the school year, in this instance, we can support the use of the July 2021 traffic counts.
2. SALDO Section 162-9.H(2) – Based on the results of the traffic study, all of the study intersections will operate at overall LOS A, and all movements will operate at acceptable LOS C or better during the study peak hours in the future with the traffic generated by the proposed homes. In addition, no auxiliary turn lanes are warranted at the site access intersection.
3. SALDO Section 162-28.A – Greenridge Road currently provides an approximate 20 to 21-foot cartway width along the site frontage, which does not meet the Township's requirements for a local road of 32 feet. As such, with Greenridge Road classified as a Distributor Road, the southbound Greenridge Road travel lane should be widened along the site frontage to provide a 16-foot half width cartway.
4. SALDO Section 162-28.A – Roads A and B each provide a 32-foot wide cartway, which meets the Township's cartway width requirements for a local road. However, as with other recent residential developments in the Township, we could support a 28-foot wide cartway for Roads A and B, provided parking is only allowed on one side of the street. A 28-foot wide cartway would require a waiver. Furthermore, there is a long section of Road A with no homes, and with an excessively wide road, there is a greater chance for increased speeding.

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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5. SALDO Sections 162-30.A – The applicant is requesting a waiver to allow a 12 percent grade along Road A between Lots 4 and 64, which exceeds the required maximum grade along local streets of 10 percent. In order fully evaluate the waiver request, additional detailed information should be provided to justify the waiver request, and plans should be provided to show detailed information for the vertical geometry for Road A, including roadway profiles which label the stopping sight distance along the vertical curves and the proposed grades along the vertical profile.
6. SALDO Sections 162-30.D and 162-31 – The applicant is requesting a waiver to allow the a section of Road A between Lots 4 and 64 to provide the maximum roadway grade and minimum curve radii. In order to fully evaluate this waiver request, the plans should be revised to provide detailed information for the horizontal geometry for Roads A and B, including roadway stationing, horizontal curve radii, and PC and PT stations.
7. SALDO Sections 162-32.F – Please provide truck turning templates for the largest anticipated delivery vehicle, as well as the Township's largest emergency service vehicle to show the circulation of these vehicles within the site. All curb radii should be a minimum of 35 feet, or larger in order accommodate the anticipated design vehicles.
8. SALDO Section 162-33.A – A single access shall not be approved wherever a through street is practical, except where the single access is clearly the basic principle for design of the subdivision. In this case, it appears a roadway connection to Lauren Lane is feasible, and if so, we recommend providing the road connection. Historically, the Township has endorsed connecting adjacent developments when feasible for creation of better access options, emergency access and community planning purposes. The applicant's proposed plan shows this connection as an emergency access only, which would be a reasonable solution only if the full connection is not feasible or approved for some other reason.
9. SALDO Section 162-33.D – The applicant is requesting a waiver to allow a single access street that exceeds 500 feet. In order justify the waiver request, the applicant proposes the emergency grass paver connection to Lauren Lane, as well as offer a 50-foot wide right-of-way for an extension of Lauren Lane in the future, which would intersect Road A opposite the southern Road A/Road B intersection. Our office

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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recommends the full road connection to Lauren Lane. Also, the Township's emergency service personnel should review the proposed community layout and emergency access.

10. SALDO Section 162-32.A, D, K – The Planning Commission should determine whether other connections should be considered, such as to the existing Shea Lane and/or Foxclove cul-de-sacs; however, it is less clear whether these connections are feasible as there may not be an available receiving right-of-way at the end of these roads.
11. SALDO Section 162-33.J – No driveway locations are shown on the plan. However, it is noted that no more than four lots are permitted to access the cul-de-sac turnaround.
12. SALDO Section 162-41 – The applicant is requesting a waiver to allow sidewalk along only one side of Roads A and B in areas that provide homes on both sides of the road. We will defer to the Township on this; however, it has been our experience that sidewalk on both sides of the road are generally welcomed by the home owners especially in those areas where homes are located.
13. SALDO Section 162-28.B – This section of Greenridge Road is the future location for the Brandywine Trail. This should be explored further with the Township and County in the event the trail is to be located along the site frontage, and in which case an easement or additional right-of-way should be established for the future trail.
14. The existing on-site trail terminates as a dead end in the southwest corner of the site. We recommend modifying the trail for a continuous loop network that also connects to Greenridge Road for a future connection to the Brandywine Trail.
15. ZO Section 200-75.H(3) – Based on the information provided in the traffic study, as well as a brief field view conducted by our office, it appears that adequate sight distance can be provided at the proposed Road A/Greenridge Road intersection. The plans should dimension and label the sight distances for vehicles exiting Road A looking to the left and right along Greenridge Road, as well as for left-turn vehicles entering Road A looking ahead and behind. In addition, the plans should include a

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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PennDOT-style sight distance note which states the required sight distances, as follows:

“All sight distance obstructions (including but not limited to embankments and vegetation) shall be removed by the permittee to provide a minimum of XXX sight distance to the left and XXX sight distance to the right for a driver exiting the proposed driveways onto the through highway. The driver must be considered to be positioned ten feet from the near edge of the closest highway through travel lane (from the curbline if curbing is present) at an eye height of three feet six inches (3' 6") above the pavement surface located in the center of the closest highway travel lane designated for use by approaching traffic. This sight distance shall be maintained by the permittee.”

16. Chapter 79-8.C – The proposed redevelopment is located in the Township's Act 209 Transportation Service Area, and as such, this development is subject to the Townships Transportation Impact Fee of \$2,334 per weekday afternoon peak hour trip. Based on the Institute of Transportation Engineers publication Trip Generation 10th Edition, the proposed 64-unit single family home community will generate 66 new trips during the weekday afternoon peak hour. As such, the number of new weekday afternoon peak hour trips subject to the Township's Transportation Impact Fee is 66, and the resultant Transportation Impact Fee is **\$154,044**.
17. Upon resubmission, the applicant's engineer should compose a response letter that describes how each comment has been addressed and where any plan and/or report revisions are located.
18. Additional comments regarding the traffic improvements and/or land development plans may follow upon receipt of future submissions.

VIII. TOWNSHIP PLANNING CONSULTANT COMMENTS
BRANDYWINE CONSERVANCY

The property, located at 100 Greenridge Road, consists of 65.95 acres in the R-2 Residential District and F-1 Flexible Development Overlay District and is currently in residential use. The Applicant proposes to develop the property with 64 single family

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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dwelling pursuant to the F-1 Flexible Development Overlay District. The proposed residential use is permitted when approved as a Conditional Use by the Board of Supervisors pursuant to § 200-72.B(2) of the Zoning Ordinance. The intent of the R-2 District is to provide for low to moderate density residential development and to encourage continued agricultural and conservation uses. The Flexible/open space development option provides for flexibility in lot designs and building arrangement and for preservation of unique and sensitive landscapes and site features by locating new roads and dwelling sites in the least sensitive areas of the site. Below is a summary of municipal planning documents and ordinances for the Township's consideration relevant to the intent of the F-1 Flexible/open space development option and the Conditional Use application.

Comprehensive Plan

The proposed residential use is consistent with the vision for future land use as articulated in the Upper Uwchlan Township Comprehensive Plan (2014). The Open Space, Recreation, and Environmental Resources Plan (Chapter 6) includes recommendations for municipal open space planning relevant to the Conditional Use application.

1. Municipal Open Space Planning recommendation MP 1 states that recreation needs and wastewater disposal needs should be considered planning priorities whenever the township considers acquisition of open space. The proposed 5.4- acre sanitary sewer disposal lot to be conveyed to Upper Uwchlan Township for sanitary disposal is consistent with the recommendation. The proposed tot lot and neighborhood trails are also consistent with the recommendation.
2. Municipal Open Space Planning recommendation MP 3 states that the Open Space Committee and the Park and Recreation Board should review land development plans for consistency with the Open Space, Recreation, and Environmental Resources Plan and provide their written comments and recommendations to the board of Supervisors.
3. Future Neighborhood Parks recommendation NN 1 states that the Board of Supervisors should consider setting conditions of Conditional Use approval that requires a continuing offer of dedication of any restricted open space to the Township for a public neighborhood park.

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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4. Hiking and Biking Trails recommendation HB 6 is to require a continuing offer of dedication of new trails located in planned residential subdivisions.

Community Trails Master Plan (2005)

We recognize the Applicant's efforts to include neighborhood trails in the subdivision. We are in full support of the adaptive re-use of the existing residential driveway as a low impact, multi-purpose trail for use by residents in the subdivision.

5. The proposed trail connection/emergency access along Lauren Lane promotes pedestrian and bicycle access between neighborhoods and facilitates access to the proposed tot lot. We support the Lauren Lane trail connection as a recreational asset for residents on Stonehedge Drive and on Road A.
6. We strongly discourage the proposed trail between the back yards of the existing Stonehedge Drive lots and the future Road A lots for the following reasons:
 - a. the trail could potentially infringe on the rear yard privacy of neighboring residences that have relatively short rear yards;
 - b. the trail will require clearing of vegetation that provides a vegetated buffer between rear yards;
 - c. the trail has no clear destination or purpose;
 - d. the trail dead-ends in a secluded area behind Lot 63 and is likely to become a security risk; and
 - e. the trail is redundant with the proposed sidewalk along Road A.
7. The Community Trails Master Plan identifies priorities for a future municipal bicycle and pedestrian trail network. Map 6-3 Pedestrian Trails identifies a future Sidepath (6' minimum asphalt trail) located along the property's Greenridge Road frontage. In lieu of the proposed trail adjacent to the Stonehedge Drive subdivision, we recommend that the Township include a condition of Conditional Use approval that requires the

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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Applicant to design, engineer, and construct the Sidepath trail along Greenridge Road as recommended in the Community Trails Master Plan and require a continuing offer of dedication to the Township.

General Regulations

The 100 Greenridge Road site includes sensitive landscapes including areas of precautionary and prohibitive slopes, wetlands, floodplain, woodlands, and surface waters. The existing stream that is located at the eastern corner of the property is a tributary to the Black Marsh Creek and is defined as a high quality stream by the Pennsylvania Department of Environmental Protection. The site generally drains to the east towards Black Marsh Creek.

8. To ensure the protection of water quality in a high quality watershed, we recommend that the land development plans shall strictly adhere to regulations set forth in §152 Stormwater Management.

Zoning Ordinance

9. The Steep Slope Conservation District, § 200-107.D(2) does not provide for access roads as a permitted use in areas of Prohibitive slopes. A short section of Road A is proposed to disturb areas of Prohibitive slopes. The Applicant will be required to seek a zoning variance to disturb areas of Prohibitive slopes along the access road (Road A).
10. The Steep Slope Conservation District, § 200-107.D(3)(b)[2] provides that an access road proposed is permitted within areas of Precautionary slopes when no practical alternative exists in an area of lesser slope and when approved as a Conditional Use by the Board of Supervisors. We recommend that the Applicant consider amending the Conditional Use application pursuant to § 200-107.D(3)(b)[2].

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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Subdivision and Land Development Ordinance

11. The Upper Uwchlan Township Subdivision and Land Development Ordinance § 162-54 Community Facilities and Public Open Space requires that in subdivisions with more than 25 families in which the average lot size is less than 30,000 square feet, the Township shall consider the need for suitable areas for recreation. The standards for said open spaces are 2.0 acres for 25-50 residences plus 1.0 acres for each additional 50 residences or fraction thereof. The Fiscal & Recreation impact analysis prepared by the Applicant states that active recreation land is proposed to be 2.28 acres which includes the re-use of the existing driveway as a trail, the perimeter trail next to the Stonehedge Drive subdivision, and a tot lot. It also states that there are 23.36 acres of usable open space. The Township should decide whether the proposed recreational open space and trails satisfy the standards for recreational open space.
12. The ordinance provides for a maximum disturbance of existing woodlands up to 25% per the Natural and Historic Features Conservation ordinance §162-55.B(3)(c). Disturbance in excess of 25% of any existing area of woodland requires woodland replacement in accordance with Subsections B(6) through B(9). The Applicant shall provide calculations for woodland disturbance and woodland replacement plantings at the time of subdivision and land development application.

Impact Statements

- The adjacent property (UPI No. 32-1-15) is described as having a Class II historic resource which is eligible to be nominated as a Class I historic resource on the National Register. The nearest structure on the adjacent property is over 700 feet from the shared property line. The Applicant requests a waiver for a Historic Resources impact statements due to the location of the proposed improvements.
13. We are in support of this waiver request. However, we recommend that the Upper Uwchlan Township Historical Commission consider potential impacts to historic resources on the adjacent property and provide recommendations regarding measures to mitigate impacts, if applicable.

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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IX . TOWNSHIP SEWER CONSULTANT COMMENTS
ARRO CONSULTING, INC.

1. The Developer is proposing 64 Single family detached lots. Utilizing 225 Gallons Per Day/Equivalent Dwelling Unit (GPD/EDU) the sanitary sewer capacity required is 14,400 GPD. The proposed capacity should be noted on the plan.
2. Note 15 indicates *"The proposed subdivision will be serviced by the Route 100 Sewage Treatment Plant. Disposal of Effluent will occur on-site through drip irrigation, or, as otherwise directed by the Municipal Authority. The proposed drip irrigation fields will be offered for dedication to Upper Uwchlan Township."*
 - **Treatment Component** - The required treatment capacity, from the Phase 3 Expansion, will need to be purchased. Reservation of sanitary sewer capacity is not guaranteed until purchased.
 - **Disposal Component** - The Conceptual Plans indicates proposed disposal areas on-site. The ultimate disposal capacity will be subject to the required evaluation design and permitting as required by the Pennsylvania Department of Environmental Protection (PaDEP).
 - **Storage Component** – There appears to be no storage capacity proposed on this Plan. The adequacy of capacity for the project, within the Authority's existing storage capacity will be reviewed pursuant to PaDEP requirements.
 - **Collection and Conveyance System Component** - Review of the capacity within the downstream collection and conveyance system is necessary in order to determine the extent of improvements necessary to accept the proposed flow 14,400 GPD.
3. Ultimately the above items numbers 1 and 2 will need to be formalized into a Developer's agreement with the Authority. The necessary financial security shall be posted with the Authority, which shall be in a form and amount acceptable to the Authority. The design, sewage planning, permitting and construction shall need to be to the satisfaction of the Authority and PaDEP.

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Upper Uwchlan Township Manager

Reference: Greenridge Road Sketch Plan (Toll)
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4. A note indicating "*All sanitary sewer improvements shall be design and constructed in accordance with the Upper Uwchlan Township Municipal Specifications.*" Shall be on the plans.

The Applicant should address the above referenced comments as well as any comments from the Planning Commission and Board of Supervisors prior to Conditional Use Approval being considered.

Should you have any questions, please do not hesitate to contact me.

Sincerely,

David N. Leh

David N. Leh, P.E.
Municipal Services Manager
Gilmore & Associates, Inc.

cc: Upper Uwchlan Township Planning Commission Members
Upper Uwchlan Township Board of Supervisors
Kristin Camp, Esq. – BBM&M (Via e-mail only)
Sheila E. Fleming, ASLA - Brandywine Conservancy (Via e-mail only)
Christopher J. Williams, P.E. - McMahon Assoc., Inc. (Via e-mail only)
G. Matthew Brown, P.E - ARRO Consulting, Inc. (Via e-mail only)
David Schlott, PE - ARRO Consulting, Inc. (Via e-mail only)
Brian Thierrin- Toll (Via e-mail only)
Michael Downs, PE - Toll (Via e-mail only)
Alyson Zarro, Esq., RRH&C (Via e-mail only)
Guy DiMartino, PE – TPD (Via e-mail only)
Justin Barnett, RLA – ESE (Via e-mail only)
David Babbitt, AICP (Via e-mail only)

ALYSON M. ZARRO
alyson@rrhc.com
extension: 202



August 11, 2021

via hand delivery and e-mail

Tony Scheivert, Township Manager
Upper Uwchlan Township
140 Pottstown Pike
Chester Springs, PA 19425
tscheivert@upperuwchlan-pa.gov

**Re: Toll Brothers/100 Greenridge Road
Conditional Use Application**

Dear Tony:

As you know, this firm represents Toll Mid-Atlantic LP Company, Inc. ("Toll") in connection with a property located at 100 Greenridge Road in Glenmoore, which is further identified as Chester County UPI Nos. 32-1-17.1 and 32-1-11 ("Property"). The Property consists of approximately 65.95 gross acres and is zoned R-2 Residential District and F-1 Flexible Development Overlay District. Toll proposes to develop the Property pursuant to the F-1 Flexible Overlay District with 64 single-family detached dwellings.

Single-family detached dwelling development in accordance with the F-1 flexible/open space development option is permitted by conditional use pursuant to § 200-72.B(2) of the Zoning Ordinance. Accordingly, Toll is hereby filing a conditional use application ("Application") for the proposed development.

Enclosed for filing in connection with the Application are the following materials:

1. One (1) original Conditional Use Application form signed by Toll;
2. Six (6) copies of a Conditional Use Plan prepared by ESE Consultants, Inc. dated August 10, 2021, consisting of seven (7) sheets;
3. Three (3) copies of a Fiscal & Recreation Impact Analysis prepared by David C. Babbitt & Associates, LLC dated August 9, 2021;
4. Three (3) copies of a Transportation Impact Study prepared by Traffic Planning and Design, Inc. dated August 10, 2021; and
5. A check in the amount of \$500.00 made payable to Upper Uwchlan Township for the Application fee.

A link to download electronic copies of all materials has also been included with this Application.

On June 3, 2021, Toll filed Sketch Plan application for the Property and subsequently presented the Sketch Plan to the Township Planning Commission and the Board of Supervisors. The Conditional Use Plan contains updated information and also reflects the following overall changes from the Sketch Plan:

1. Full access from Greenridge Road in place of the previously proposed emergency access;
2. Proposed development of 64 single-family detached dwelling lots rather than 63;
3. Emergency access via grass-pave connection to Lauren Lane with an offer of right-of-way dedication to the Township for an extension of Lauren Lane should the Township desire a full vehicular connection between the Property and the Stonehedge development;
4. Increase in the tract perimeter setback along the Stonehedge development (previously shown at 20 feet and now increased to 50 feet);
5. Inclusion of trails, including utilization of the existing driveway on the Property as part of the trail system;
6. Inclusion of a tot lot; and
7. Inclusion of two lots for sewage disposal.

Section 200-72.B(2)(c)[4] of the Zoning Ordinance requires the applicant to provide a preliminary indication of any waivers or variations from the Subdivision and Land Development Ordinance which may be required for the proposed development. As noted on the Conditional Use Plan, the following waivers have been preliminarily identified:

1. A waiver from Section 162-30.A to increase maximum road grade to 12% from the maximum permitted of 10% and the minimum curve radii on Road A, between Lot 4 and Lot 64. This waiver will allow for a reduction in the amount of disturbance required for construction of Road A.
2. A waiver from Section 162-30.D to permit a maximum road grade and minimum curve radii on Road A, between Lot 4 and Lot 64. This waiver will allow for a reduction in the amount of disturbance required for construction of Road A.
3. A waiver from Section 162-33.D to provide a single access street (Road A) longer than 500 feet. As noted above, emergency access via grass-pave connection to Lauren Lane with an offer of right-of-way dedication to the Township for an extension of Lauren Lane is shown on the Conditional Use Plan. If Lauren Lane is not extended as a full access on the Property, a waiver from this Section will be required to allow for one full access connection at Greenridge Road and the utilization of an emergency access connection at Lauren Lane.
4. A waiver from Section 162-39.E to provide Belgian block curb along all roads within the development instead of concrete curb. This request will allow for curb construction similar to other residential developments in the Township.

5. A waiver from Section 162-41.A to provide a five foot wide sidewalk on one side of the street rather than both sides where residential lots are located on both sides of the street. The trail system and proposed sidewalks will provide continuous pedestrian connections through the development.
6. A waiver from Section 162-46.B(1) to permit sanitary sewer disposal Lot 65 to have access to a public street via an easement over open space rather than frontage on a public street. Neither the open space or Lot 65 are proposed to be development parcels.

Section 200-117.I. of the Zoning Ordinance requires submission of certain impact statements in connection with Conditional Use Applications. Section 200-117.I. incorporates Section 162-9.H. of the Subdivision and Land Development Ordinance, which in subsection (1)(c) allows the Board of Supervisors to waive the requirements of impact statements if they are determined not to be applicable. In this instance, the property identified as UPI No. 32-1-15 abutting the Property to the east is listed as a Class II Historic Resource on the Upper Uwchlan Township Historic Resources Inventory. However, Toll is not aware of any identified historic structures within 250 feet of the proposed development. Further, no impact from the proposed development is anticipated as restricted open space is proposed between the area of the proposed residential development and the common boundary line. To the extent that an historic resource impact study would otherwise be required, Toll is seeking a waiver of this requirement.

Kindly forward the enclosed materials to the Township Consultants and Township Planning Commission for review.

As always, please feel free to contact us with questions or if you need additional information. Thank you for your attention to this matter.

Very truly yours,



ALYSON M. ZARRO

AMZ/mrm
Enclosures

cc: Gwen Jonik, Township Secretary (w/encl. via e-mail)
Andrew Semon, Toll Brothers (w/encl. via e-mail)
Brian Thierrin, Toll Brothers (w/encl. via e-mail)
Mike Downs, Toll Brothers (w/encl. via e-mail)
Robert Hadzor, Toll Brothers (w/encl. via e-mail)
Justin Barnett, RLA, ESE (w/encl. via e-mail)
Guy DiMartino, P.E., TPD (w/encl. via e-mail)
David C. Babbitt, AICP (w/encl. via e-mail)



UPPER UWCHLAN TOWNSHIP
140 Pottstown Pike
Chester Springs, PA 19425
610-458-9400 Fax 610-458-0307

CONDITIONAL USE APPLICATION

Tax Parcel Number: 32-1-17 and 32-1-11 Date: August 10, 2021

Name of Applicant: Toll Mid-Atlantic LP Company, Inc. c/o Brian Thierrin

Address: 1140 Virginia Drive, Fort Washington, PA 19034

Telephone: 215-938-8000 Email: BTHIERRIN@tollbrothers.com

Owner of Parcel: Toll Mid-Atlantic LP Company Inc.

Address / Location of Parcel: 100 Greenridge Road, Glenmoore, PA 19343

Zoning District: R-2 District and F-1 Flexible Development Overlay District Existing Use: Single-Family detached dwelling

Article / Section Authorizing Conditional Use: 200-72

Description of Proposed Conditional Use: Residential development consisting of 64 single-family detached dwellings pursuant to the F-1 Flexible Development Overlay District.

This Application shall be accompanied by:

1. A fee of \$500.00 for Non-Commercial or \$1,000.00 for Commercial/Industrial;
2. Twenty (20) copies of:
 - parcel plot plans (half of which can be of reduced size, i.e. 11 x 17),
 - impact statements (if applicable pursuant to the Township's Zoning Ordinance §200-83),
 - and any other information pursuant to Zoning Ordinance §200-116, §200-117 (Conditional Uses, Conditional Use Standards).

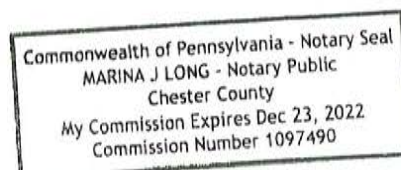
- The Applicant will be responsible for reimbursing the Township for Consultants' Fees and Legal Fees, and if additional Hearings are necessary, a Fee will be charged for each Additional Hearing:
Non-Commercial \$250.00/Hearing; Commercial/Industrial \$500.00/Hearing

I hereby depose and say that all of the above statements, and the statements contained in any papers submitted herewith, are true to the best of my knowledge and belief.

Brian Thierrin
Printed Name of Applicant

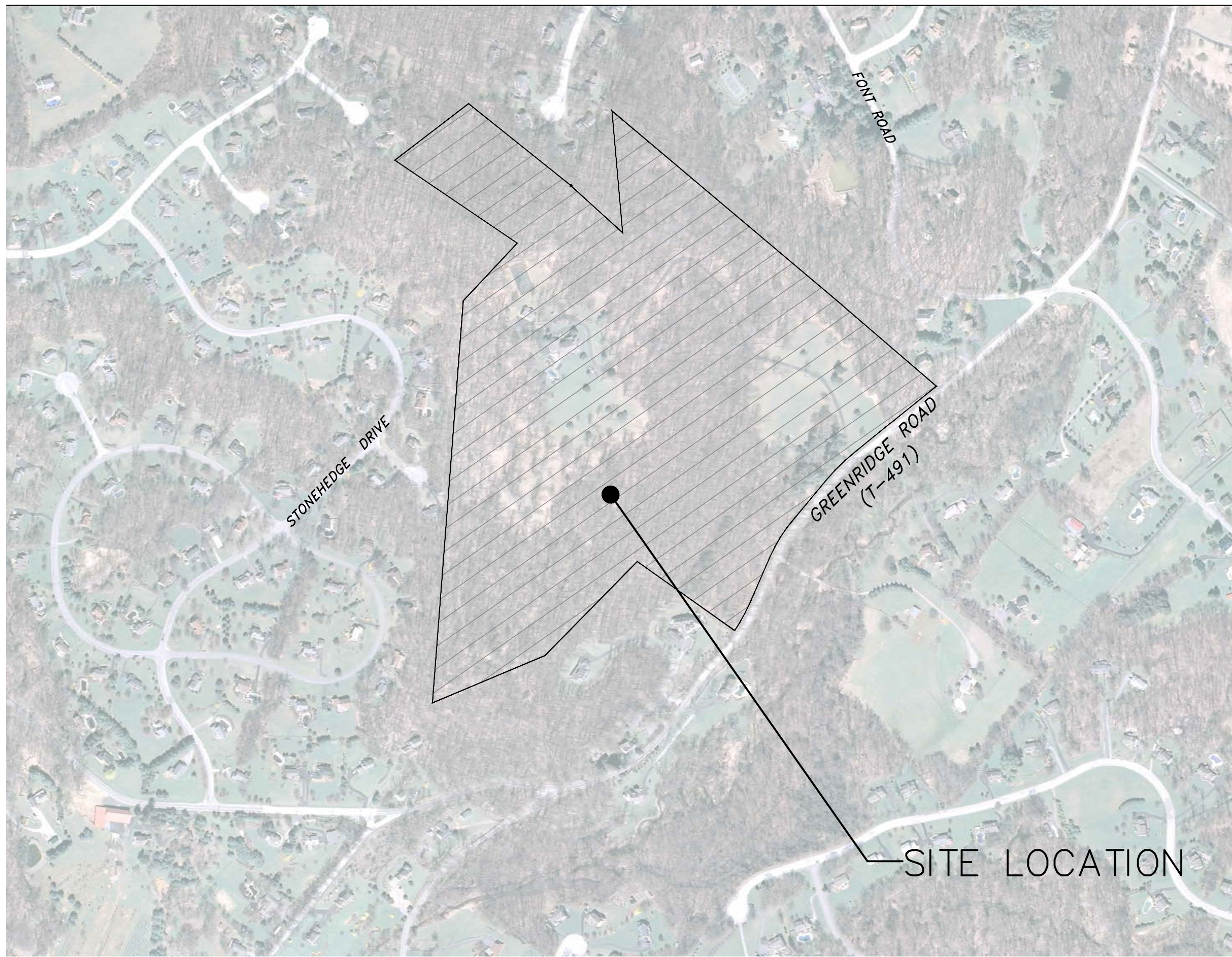
[Signature]
Signature of Applicant

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF CHESTER
Sworn to and subscribed before me this
9th day of August, 20 21.
[Signature]
Notary Public



GREENRIDGE ROAD

100 GREENRIDGE ROAD
TAX MAP PARCELS 32-001-0017.1, 32-001-0011
UPPER UWCHLAN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA



LOCATION MAP

SCALE: 1"=400'

GRAPHIC SCALE



(IN FEET)

1 inch = 400 ft.

SHEET INDEX

SUBDIVISION AND LAND DEVELOPMENT PLANS		
SHEET NO.	REFERENCE NO.	DESCRIPTION
1	SD01.01	COVER SHEET
2-3	SD02.01 – SD02.02	SITE ANALYSIS & IMPACT PLAN
4	SD04.01	SITE PLAN
5-7	SD05.01–SD05.03	OPEN SPACE MANAGEMENT PLANS

OWNERS OF RECORD

RICHARD T. WILLIAMS
BONNIE C. WILLIAMS

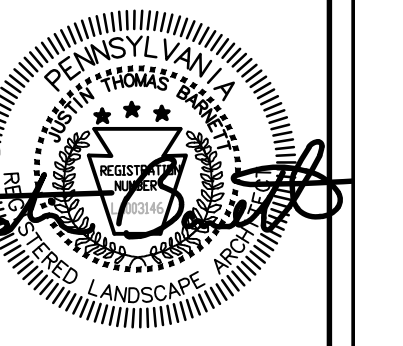
APPLICANT/DEVELOPER

TOLL MID-ATLANTIC LP COMPANY, INC.
1140 VIRGINIA DRIVE
FORT WASHINGTON, PA 19034

ENGINEER, SURVEYOR,
PLANNER, LANDSCAPE ARCHITECT

ESE CONSULTANTS, INC.
1140 VIRGINIA DRIVE
FORT WASHINGTON, PA 19034
(215) 914-2050

LANDSCAPE ARCHITECT: JUSTIN BARNETT



ESE CONSULTANTS
ENGINEERING • PLANNING • SURVEYING • ENVIRONMENTAL

T: 215-914-2050

[illegible]

1880

CONDITIONAL USE
COVER SHEET

GREENRIDGE ROAD

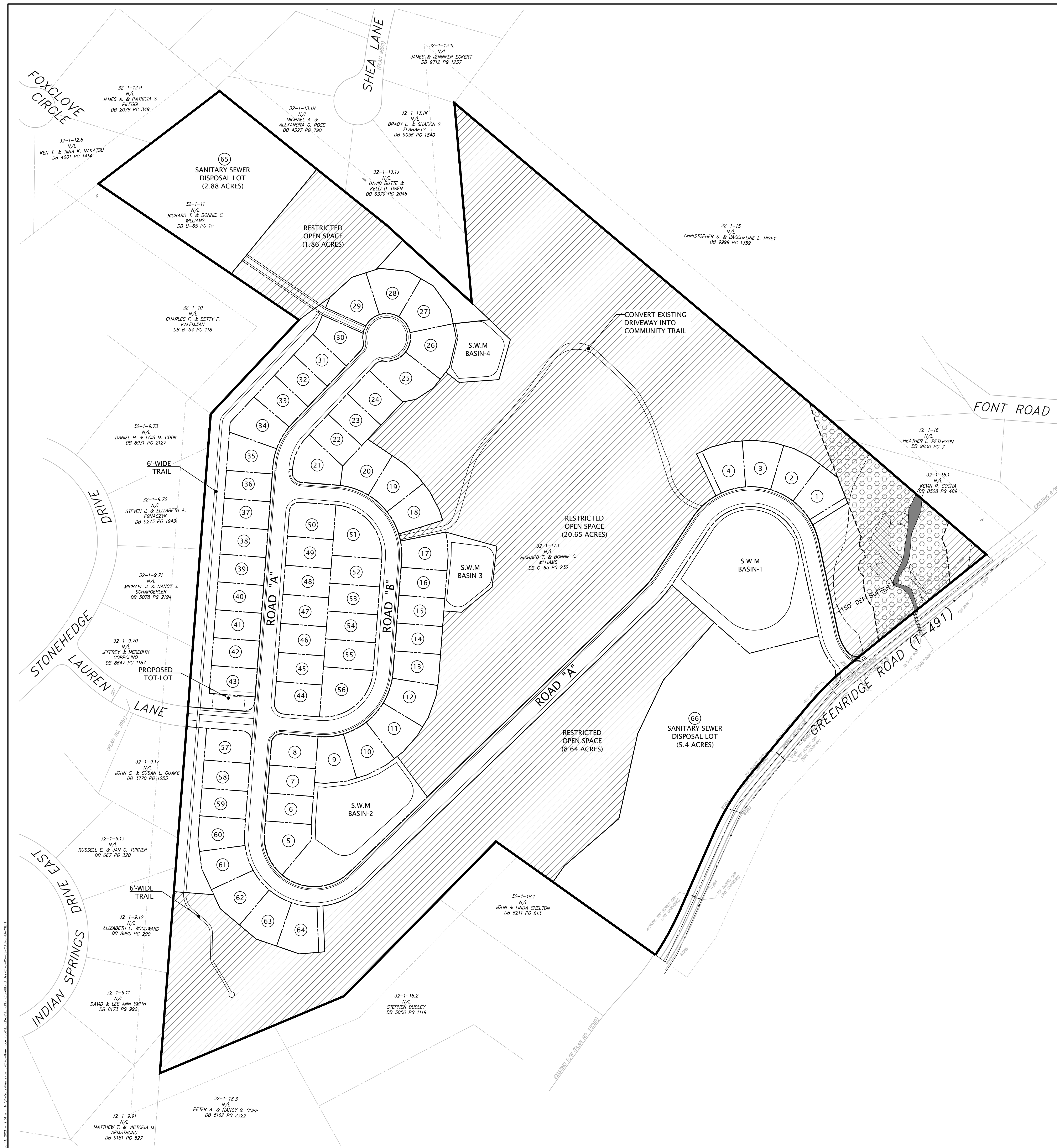
UPPER UICHLAN TOWNSHIP, CHESTER COUNTY, PENNSYLVANIA

DATE: 08.10.2021	SCALE: 1"=400'
DESIGN: JTB	DRAWN: JTB
JOB NO.: 8145	FILE NAME: 8145-01
REF. NO.: SD01.01	
SHEET NO.: 1 OF 7	

[illegible]

1. ALL INDIVIDUAL TREES, STREET TREES, EVERGREENS, AND SHRUBS SHALL BE MULCHED AS NEEDED WITH NO MORE THAN 3" OF TOTAL MULCH ACCUMULATION.
2. MULCH SHALL NOT COVER THE ROOT CROWN OF PLANTS.
3. IN EARLY SPRING, TURN OVER EXISTING MULCH AND ADD NEW TO MAINTAIN 3" MAXIMUM DEPTH.
4. INSPECT PLANTINGS FOR INSECT AND DISEASE INFESTATION AND TREAT AS NECESSARY.
5. PRUNE PLANTINGS TO NATURAL SHAPE IN EARLY SPRING.
6. NOXIOUS & INVASIVE PLANT SPECIES SHALL BE REMOVED.
7. FALLEN LEAVES SHALL BE REMOVED IN THE FALL.

DATE: 08.10.2021	SCALE: 1"=100'
DESIGN: JTB	DRAWN: JTB
JOB NO.: 8145	FILE NAME: 8145-05
REF. NO.: CU-05.01	
SHEET NO. 5 OF 7	



RESTRICTED OPEN SPACE NOTES:



RESTRICTED OPEN SPACE NOTES:

LEGEND

FISCAL & RECREATION IMPACT ANALYSIS
Greenridge Development
Upper Uwchlan Township, Chester County

August 9, 2021

Prepared for:
Toll Mid-Atlantic L.P. Company, Inc.

Prepared by:
David C. Babbitt, AICP
David C. Babbitt & Associates, LLC
P.O. Box 922
Frazer, PA 19355-0922
Phone 610-651-5717
www.babbittplanning.com
david@babbittplanning.com

Fiscal Impact Analysis

Proposed Greenridge Development

Upper Uwchlan Township, Chester County

August 9, 2021

This report examines the annual fiscal impact to Upper Uwchlan Township and the Downingtown Area School District (DASD) of the Greenridge development proposed by Toll Mid-Atlantic L.P., 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 2021 levels of revenue, expenditures, and taxation.

The Greenridge development proposal consists of 64 single family detached dwellings, with four bedrooms each, to be sold for an average price of \$871,495. At buildout, the proposed development will generate \$55,775,680 of market value and \$25,099,056 of assessed value, which is 2.4 percent of the total assessed value of all properties in the Township. At full occupancy, the proposed development will house 224 persons, including 65 school age children (ages 5-17), of whom 60 will attend public schools (DASD).

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	Annual Net Township Impact	Annual Net School District Impact	Annual Net Combined Impact	Annual Net Combined Impact per Unit
4 BR SFD	64	\$59,008	\$-48,499	\$10,508	\$164

The annual net fiscal impact of the proposed development is projected to be moderately favorable for the Township and moderately unfavorable for the School District, creating an overall annual net surplus. **The annual net combined fiscal impact for the proposed Greenridge development is projected to total positive (or surplus) \$10,508, or positive \$164 per unit.** The annual combined revenue is projected to exceed the annual combined expenditures by 0.9 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 \$278,878 to each of the Township and School District. Further, the proposed development will generate \$147,444 in traffic impact fees to the Township over the buildout period.

The most important reason for the annual net surplus to the Township is the relatively high value of the proposed homes. The median housing value in Upper Uwchlan Township in the 2019 American Community Survey (a function of the U.S. Census Bureau) was \$442,300. In comparison, the market value of the proposed homes is projected to be \$871,495, nearly twice as high. The higher housing value translates to higher revenue in the real estate tax, earned income tax, and real estate transfer tax categories, for both the Township and School District. For the School District, the higher revenue from the proposed homes does not offset the higher expenditures generated by the greater number of students, resulting in a small annual deficit to the District.

Assessments

The average market value of the proposed units is projected to be \$871,495 (cell C6). The total market value is determined by multiplying the number of units (64, cell B6) by the market value per unit (\$871,495, cell C6). The market value at buildout is projected to total \$55,775,680 (cell D6).

The assessed value is determined by multiplying the market value (totaling \$55,775,680, cell D6) by the 2021 Chester County common level ratio of 45.0 percent, from the Pennsylvania State Tax Equalization Board (cell D18). The assessed value at buildout is projected to total \$25,099,056 (cell E6). This \$25,099,056 in projected assessed value represents 2.4 percent of the entire assessed value of all properties in Upper Uwchlan Township (\$1,058,654,325, from the Chester County Board of Assessment computer data base as of July 29, 2021), and 0.5 percent of the entire assessed value of all properties in the Downingtown Area School District (\$5,375,400,000, according to the DASD 2021-2022 budget). Please note that the Chester 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 3.50 for the proposed four bedroom single family detached dwellings (cell F6). This demographic multiplier is from *Residential Demographic Multipliers – Estimates of the Occupants of New Housing*, by Robert W. Burchell, David Listokin, and William Dolphin of the Rutgers University Center for Urban Policy Research (CUPR), published in June, 2006. This multiplier is based on the U.S. Bureau of the Census 2000 Public Use Microdata Sample, and is specific to four bedroom SFD dwellings with higher values, built between 1990 and 2000, and specifically in Pennsylvania. The number of persons is determined by multiplying the number of units (64, cell B6) by the number of persons per unit (3.50, cell F6). The number of persons projected to reside in the proposed development at buildout and full occupancy totals 224 (cell G6).

The number of school age children per unit is projected to be 1.02 (cell F32 of the School District spreadsheet), from the same CUPR document on Pennsylvania residential demographic multipliers. The number of public school students is determined by multiplying the number of units (64, cell B32) by the number of school age children per unit (1.02, cell F32), and by 92.4 percent (cell D45), to account for those children who will attend private schools or be schooled at home. The figure of 92.4 percent is from the 2019 American Community Survey (the most recent available), a function of the U.S. Census, specifically for Upper Uwchlan Township, which reported 2,697 public school students out of 2,920 school age children. The number of DASD students projected to reside in the proposed development at buildout and full occupancy totals 60 (cell G32).

Annual Upper Uwchlan Township Expenditures

The 2021 Upper Uwchlan Township budget includes the following seven funds totaling \$10,873,439 in expenditures, shown in the table below with their respective expenditure totals:

Fund	Budgeted Amount
General Fund	\$6,500,327
Capital Reserve Fund	\$2,357,462
Solid Waste Fund	\$1,045,522
Water Resource Protection Fund	\$243,400

Fund	Budgeted Amount
Liquid Fuels Fund	\$397,800
Act 209 Traffic Impact Fee Fund	\$0
Sewer Fund	\$328,928
TOTAL	\$10,873,439

In order to find a more accurate measure of the average annual expenditures for the proposed development, this analysis focuses on the regular, annual ongoing operating expenditures of the Township. Such operations are quantified in the following four funds, shown in the table below with their respective sums in the 2021 budget.

Fund	Budgeted Amount
General Fund	\$6,500,327
Solid Waste Fund	\$1,045,522
Water Resource Protection Fund	\$243,400
Liquid Fuels Fund	\$397,800
TOTAL	\$8,187,049

The four operating funds total \$8,187,049 in expenditures for 2021 (cell D19). These four funds cover nearly all Township expenditures, including general government, executive, audit, tax collection, legal, computer, engineering, Township properties, police, fire, ambulance, codes administration, planning and zoning, emergency operations, signs, signals, public works, park and recreation, historical commissions, solid waste collection and disposal, road maintenance, and water resource protection.

The Sewer Fund is excluded because it is a proprietary fund, where revenue from sewer fees and tapping fees is spent on the sewage collection and treatment system. The Capital Reserve Fund is excluded because it is a capital and not operating fund, where revenue from transfers from the General Fund and Sewer Fund, plus some grant revenue and fund balances from previous years, is spent on capital purchases such as the Township Building expansion, Park Road reconstruction, Upland Farms parkland development, Hickory Park lighting, and work at Fellowship Fields. Please note that though the capital expenditures from the Capital Reserve Fund are excluded from this analysis, the annual debt service of \$243,656 is considered an operating expenditure, and is therefore included in the 2021 Township expenditures. The Act 209 Traffic Impact Fee Fund has no budgeted expenditures for 2021.

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 2021 operating expenditures of \$8,187,049 (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 are as follows, shown in the table below with their respective sums in the Township's 2021 budget.

Source	Fund	Budgeted Amount
State Utility Tax (PURTA)	General	\$5,000
State Aid Police Pension	General	\$122,000
State Aid Non-Uniform Pension	General	\$80,000
Foreign Fire Insurance	General	\$95,000
Reimbursed Police Wages	General	\$3,000
Rental Property Income	General	\$24,000
Alcoholic Beverages Tax	General	\$600
Engineering Fees	General	\$50,000
Administrative Fees from Engineering	General	\$4,000
Administrative Fees from Legal	General	\$1,000
Legal Services Fees	General	\$6,000
Fees from Engineering CU	General	\$20,000
Fees from Advertising Reimbursements	General	\$500
Pavilion Rental	General	\$5,000
Field Program Revenue	General	\$30,000
Turf Field Fees	General	\$45,000
Community Events Donations	General	\$10,000
Municipal Authority Reimbursement	General	\$264,736
Hazardous Waste Event	Solid Waste	\$2,000
Leaf Bags Sold	Solid Waste	\$500
Scrap Metal Sold	Solid Waste	\$500
Solid Waste Performance Grant	Solid Waste	\$25,000
Snow Agreement	Liquid Fuels	\$600
Turnback Maintenance	Liquid Fuels	\$14,520
Motor Fuel Vehicle Taxes	Liquid Fuels	\$362,257
TOTAL		\$1,171,213

The 2021 pass-through funds total \$1,171,213.

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 2021 budget (all are in the General Fund):

Source	Budgeted Amount
Zoning/Subdivision/Land Development	\$6,000
Building Permits	\$425,000
TOTAL	\$431,000

Source	Budgeted Amount
90 Percent Subtracted	\$387,900
10 Percent as Miscellaneous Revenue	\$43,100

Development related funds are excluded because they are in essence a one-time pass-through fund for specific functions normally associated with new development. The funds will be expended on inspections, the administration of permits, etc. while a development is under construction, not on other municipal 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 2021 development related pass-through funds of \$431,000 (or \$387,900) 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 \$43,100) is included in the category of miscellaneous revenue.

3. **Interfund Transfers.** Certain interfund transfers are excluded, for two reasons. Since the General Fund and Water Resources Protection Fund are both operating funds, the transfer of \$245,000 is excluded in order to avoid double counting the same expenditures in two included funds. The transfers from the General Fund and Solid Waste Fund to the Capital Fund are excluded in order to focus on operating – and not capital – expenditures. As noted above, the annual debt service of \$243,656 is considered an operating expenditure, and is therefore included in the 2021 Township expenditures.

Source	Budgeted Amount
General Fund to Capital Fund (minus debt service)	\$656,344
General Fund to Water Resources Protection Fund	\$245,000
Solid Waste Fund to Capital Fund	\$100,000
TOTAL	\$1,001,344

The 2021 excluded pass-through funds, development related funds and interfund transfers total \$2,560,457 (cell D20). The 2021 net Township operating expenditures (minus the excluded pass-through funds, development related funds and interfund transfers) are \$5,626,592 (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 Chester County Board of Assessment Land Use Classification Report as of July 29, 2021, the total assessed value of the 4,474 properties in Upper Uwchlan Township was \$1,058,654,325, yielding an average assessed value of \$236,624. Of those properties, 275 were nonresidential (commercial, industrial, institutional, utility, etc., whether taxable or exempt), with a total assessed value of \$164,027,790 (representing 15.5 percent of the Township total), and an average assessed value of \$596,465.

The proportion of average nonresidential assessed value to average Township assessed value (residential

and nonresidential combined) is 2.52, which is then used to determine the refinement coefficient of 1.56 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 Upper Uwchlan 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 (15.5 percent) is then multiplied by the refinement coefficient of 1.56, and by the 2021 net Township operating expenditures of \$5,626,592 (cell D21). The result of this calculation is that \$1,359,982 of the net Township operating expenditures (representing 24.2 percent) is attributable to existing nonresidential development (cell D22). This sum is subtracted from the 2021 net Township operating expenditures (\$5,626,592, cell D21), and the remainder (\$4,266,610 in expenditures attributable to existing residential development) is divided by the estimated number of Township residents in 2021, which is 11,634 (cell J18). The estimated number of Township residents is determined by taking the U.S. Census American Community Survey estimate for 2019 (the most recent estimate available) of 11,560, and adding one year's worth of the average annual increase between 2010 and 2019 (333 over those nine years, or 37 additional residents per year and 74 over two years) to find the current estimate of 11,634.

The per capita Township operating expenditures attributable to existing residential development are \$366.74 (cell D23), which are then applied to the number of persons projected to reside in the proposed development at buildout and full occupancy (totaling 224, cell G6) to find the total annual Township expenditures for the proposed development of \$82,149 (cell H6), or \$1,284 per unit (cell I6).

Annual Upper Uwchlan Township Revenue

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

- Real estate tax revenue, based on the 2021 Township General Fund tax rate of 1.034 mills (cell J19), applied to the projected assessed value of the proposed development (\$25,099,056, cell E6). Please note that the General Fund tax millage includes the 0.25 mills for ambulance, rescue and emergency services. The annual real estate tax revenue is projected to total \$25,952 (cell B11).
- Earned income tax revenue, based on the tax rate of 0.5 percent (for the General Fund) applied to the household income of residents, which is calculated by determining 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
4BR SFD	\$1,089	\$90	\$127	\$3,263	\$195,780

The monthly real estate taxes are based on a combined Township plus School District plus County tax rate of 33.3106 mills. Insurance costs are projected to be \$90 per month. HOA fees are projected to be \$127 per month. The mortgage costs are based on the conforming rate of 2.77 percent, according to the August 5, 2021 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, multiplying times twelve months, 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 afford the proposed homes and their associated housing costs is projected to be \$195,780 which is then multiplied by the number of units (64, cell B6) and by the Township General Fund tax rate of 0.5 percent. The annual earned income tax revenue is projected to total \$62,650 (cell C11). Please note that this revenue assumes the lowest level of household income needed to afford the mortgage, taxes, insurance and HOA fees. Most households will have significantly higher levels of income, which will result in additional annual revenue to the Township.

- Real estate transfer tax revenue, based on the market value of the units (\$871,495, cell C6) multiplied by the number of units (64, cell B6), multiplied by the projected annual housing turnover rate of 5.0 percent for single family detached dwellings (cell J20), 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 \$13,944 (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 \$278,878 (cell A24).
- Trash and recycling fee revenue, based on the Township's annual trash and recycling fee of \$315 (cell J21) applied to the number of units in the proposed development (64, cell B6). The annual trash and recycling fee revenue is projected to total \$20,160 (cell E11).
- Franchise fee and miscellaneous revenue, based on the Township's budgeted revenue from these sources (totaling \$263,100 comprised of \$220,000 in franchise fee revenue and \$43,100 in development related revenue, representing 10 percent of the total revenue in this category associated with existing and not new development, which is \$431,000; see the expenditure analysis, above) divided by the 2021 estimated number of units in the Township (3,654, cell J22), and that per unit revenue of \$72.00 (cell J23) is applied to the number of units in the proposed development (64, cell B6). The annual franchise fee and miscellaneous revenue is projected to total \$11,111 (cell F11). The estimated number of 3,654 units in the Township (cell J22) is from the U.S. Census American Community Survey estimate for 2019 (the most recent estimate available).
- Liquid Fuels revenue, based on PennDOT's 2021 per person revenue of \$17.8193 (cell I23) applied to the number of persons projected to reside in the proposed development at buildout and full occupancy (totaling 224, cell G6), plus the per mile revenue of \$3,096.7932 applied to the 0.93 linear miles of roadway to be offered for dedication to the Township. The per person revenue and per mile revenue are found in the current Department of Transportation Bureau of Municipal Services *Municipal Liquid Fuels Allocations Report* (dated February 5, 2021). The annual Liquid Fuels revenue is projected to total \$6,883 (cell G11).
- Interest earnings, based on the projected assessed value of the proposed development (\$25,099,056, cell E6) divided by the Township's total taxable assessed value (\$1,012,628,285, according to the Chester County Board of Assessment computer data base), and multiplying by the Township's projected revenue from interest earnings in the 2021 budget, which totals \$52,600 and is shown in the table below.

Fund	Interest Earnings
General Fund	\$35,000
Solid Waste Fund	\$10,000
Water Resource Protection Fund	\$600
Liquid Fuels Fund	\$7,000
TOTAL	\$52,600

The annual interest earnings are projected to total \$456 (cell H11).

The annual Township revenue from all sources is projected to total \$141,156 (cell I11), or \$2,206 per unit (cell J11). The annual net Township impact (revenue minus expenditures) is projected to total positive \$59,008 (cell B15), or positive \$922 per unit (cell C15). Annual revenue is projected to exceed annual expenditures by 71.8 percent (cell D15). Once again, please note that this annual net Township revenue figure does not include the real estate transfer tax revenue of \$278,878 from the initial sales of the units or the \$147,444 in traffic impact fees.

Annual Downingtown Area School District Expenditures

The number of units (64, cell B32 of the School District spreadsheet), average market value per unit (\$871,495, cell C32), total market value (\$55,775,680, cell D32), and total assessed value (\$25,099,056, cell E32) are the same as for the Township impact, above. As noted above, the proposed development is projected to generate 1.02 school age child per unit (cell F32) and 60 public school (DASD) students overall (cell G32).

The Downingtown Area School District General Fund budgeted expenditures total \$244,248,119 for the 2021-2022 year (cell D46). The following pass-through funds are subtracted from this total:

Pass-Through Fund	Budgeted Amount
Public Utility Realty Tax	\$161,900
Revenue from LEA Activities	\$1,640,000
Revenue from Intermediary Sources	\$2,284,636
Rentals	\$450,000
Tuition from Patrons	\$190,000
TOTAL	\$4,726,536

The excluded pass-through funds total \$4,726,536. In addition, the budgetary reserve of \$3,645,000 is excluded, representing funds not projected to be expended during the school year. The pass-through funds and budgetary reserve total \$8,371,536 (cell D47), with the remaining School District net expenditures totaling \$235,876,583 (cell D48). This figure is then divided by the 2021-2022 District-wide projected enrollment of 13,351 students (cell D49, from the District's enrollment projections in the 2020-2021 budget book) to find the 2021-2022 DASD net expenditure of \$17,667 per student (cell I44). 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 (totaling 60, cell G32) to find the annual School District expenditures of \$1,065,244 (cell H32), or \$16,644 per unit (cell I32).

Annual Downingtown Area 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 27.7256 mills (cell I45) applied to the projected assessed value of the proposed development (totaling \$25,099,056, cell E32). Subtracted from this total is the proposed homestead exclusion at \$7,610 of assessed value per unit applied to the number of units (64, cell B32). The proposed homestead exclusion is projected to subtract \$211 per unit (cell I46) or \$13,503 from the total School District real estate tax revenue for the entire proposed development. The annual real estate tax revenue is projected to total \$682,383 (cell B37).

- 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 \$62,650 (cell C37).
- 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 \$13,944 (cell D37). 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 \$278,878 (cell A50).
- State and Federal revenue, based on the projected 2021-2022 DASD budgeted revenue from those sources totaling \$56,560,616 divided by the projected 2021-2022 DASD enrollment of 13,351 (cell D49), or \$4,236 per public school student (cell I48), applied to the projected number of students from the proposed development (totaling 60, cell G32). The annual state and federal revenue is projected to total \$255,434 (cell E37).
- Earnings on investments, based on the projected assessed value of the proposed development (totaling \$25,099,056, cell E32) divided by the School District's total taxable assessed value (\$5,375,400,000, according to the 2021-2022 DASD budget), and multiplying by the School District's 2021-2022 revenue from earnings on investments in the budget (\$500,000, cell I49). The annual earnings on investments are projected to total \$2,335 (cell F37).

The annual School District revenue from all sources is projected to total \$1,016,745 (cell G37), or \$15,887 per unit (cell H37). The annual net School District impact (revenue minus expenditures) is projected to total negative (or deficit) \$48,499 (cell B41), or negative \$758 per unit (cell C41). Annual expenditures are projected to exceed annual revenue by 4.6 percent (cell D41). The projected annual deficit is minimal, representing the DASD expenditures to educate only 2.75 students. Once again, please note that this annual net School District impact does not include the real estate transfer tax revenue of \$278,878 from the initial sales of the units.

Recreation Impact Analysis
Proposed Greenridge Development
Upper Uwchlan Township, Chester County
August 9, 2021

This report examines the recreation impact to Upper Uwchlan Township of the proposed development on the 65.95 acre gross site on the northwest side of Greenridge Road. The proposed development consists of 64 new single family detached dwellings, with four bedrooms each, along with substantial open space. The recreation impact analysis follows the format of Section 162-9.H(3) of the Upper Uwchlan Township Subdivision and Land Development Ordinance.

A. Projected Age Breakdown of the Residents of the Proposed Development

As noted in the fiscal impact analysis, above, the number of persons per unit and school age children per unit are derived from the Rutgers University Center for Urban Policy Research data published in June, 2006 and based on the U.S. Bureau of the Census 2000 Public Use Microdata Sample. The Rutgers CUPR examined housing built between 1990 and 2000 specifically in Pennsylvania, and determined the demographic multipliers for a variety of dwelling types (detached, attached, multifamily, etc.), size (in number of bedrooms), and value. The demographic multiplier of 3.50 used in this analysis is for four bedroom single family detached dwellings with very high values. The number of persons is projected to total 224. The age breakdown of the residents of the proposed development is shown below:

Age	Per Unit	Total 64 Units
Total Persons	3.50	224
0-4	0.35	22
5-13	0.79	51
14-17	0.23	15
18-24	0.12	8
25-44	1.20	77
45-64	0.74	47
65-74	0.05	3
75 and over	0.02	1

The demographic multiplier for number of school age children (ages 5-18) per unit is also from the Rutgers CUPR, and is 1.02 per unit. The breakdown of school age children by grade is shown below:

Grade	Per Unit	Total 64 Units
Total School Age Children	1.02	65
K-2	0.31	20

Grade	Per Unit	Total 64 Units
3-6	0.34	22
7-9	0.21	13
10-12	0.16	10

Of the total 65 school age children, only 92.4 percent are projected to attend public schools (see the fiscal impact analysis, above, for the source of this figure). Therefore, only 60 DASD students are projected from the proposed development.

B. Description of Proposed Recreational Facilities

The proposed development site is 65.95 acres gross. Land within permanent rights-of-way, the Flood Hazard District, wetlands, and prohibitive slopes greater than 25 percent totals 6.87 acres, leaving the net tract area as 59.08 acres. The restricted open space on the site totals 31.15 acres (or approximately 47.2 percent of the gross tract area) and includes all areas not part of individual lots, streets, and lots proposed to be conveyed to the Municipal Authority for sanitary disposal. Of the 31.15 acres of open space, 23.36 acres are proposed usable open space. The active recreation land is proposed to be 2.28 acres. This area includes the area of the existing driveway on the property, to be repurposed into a community trail that will connect Road A with Road B through the open space, and a second trail 6 feet in width that runs along the western side of the property from the proposed cul-de-sac in the northern area of the tract between Lots 29 and 30 to the southern area of the tract behind Lots 63-64. In addition, 5 foot wide sidewalks are proposed for one side of the internal roads throughout the development. The combination of the sidewalks along Roads A and B and the proposed trails will create several pedestrian loops through the entire site.

A tot lot is proposed adjacent to Lot 43, in a central location in the proposed development. The tot lot is accessible from Road A as well as from Road B, which is a potential extension of Lauren Lane to the neighborhood to the west or for emergency access only. The tot lot is also accessible from the western trail through the property. The tot lot will include play equipment for the neighborhood children, along with benches for seating.

C. Ownership and Maintenance of Recreational Facilities

The proposed open space and internal trails will be owned and maintained privately, by the homeowners association of the proposed development. There will be no burden of maintenance or expense borne by Upper Uwchlan Township.

D. Description of Existing Municipal Recreational Facilities, and Impact of Proposed Development

According to the *Open Space, Recreation and Environmental Resources Plan for Upper Uwchlan Township*, adopted October 19, 2009, as well as the Upper Uwchlan Township Comprehensive Plan, adopted April 21, 2014, the Township's primary active recreation facility is Hickory Park, located on Park Road just south of the Turnpike. The park is 26.7 acres in size, with playing fields, tennis courts, basketball courts, play apparatus, paved and unpaved trails, covered picnic tables, bandstand, trash receptacles, restroom building, and parking area. The park is heavily used by organized sports and casual users throughout most of the year.

Uplands Farms is located on the west side of Pottstown Pike north of the Village of Eagle. The park is 46.9 acres in size, and has been proposed as a passive recreation facility with trails. This property also includes an historic farm house and barn, as well as lands for wastewater disposal. Larkins Field is located

at Graphite Mine Road and Byers Road. This park is 7.2 acres in size, and contains playing fields and paved trails. Fellowship Fields is located on Fellowship Road east of Pottstown Pike. This park is 17.0 acres in size, and includes playing fields, paved trails, and a picnic pavilion.

Though not a Township facility, Marsh Creek State Park is also located predominantly within the borders of Upper Uwchlan Township. It is 1,705 acres in size, of which 1,372 acres are in the Township. The park includes a 535 acre lake with boating and fishing, as well as a large swimming pool, picnic areas, and hiking and equestrian trails. While much of the park is for passive recreation and natural feature preservation, the swimming and boating satisfy active recreation needs. The State Park is in the southern part of the Township, along Park Road.

Section 162-54 of the Township Subdivision and Land Development Ordinance recommends a minimum of 2.0 acres of playground and neighborhood park acreage for the first 25-50 families in a subdivision, plus 1.0 acre for each additional 50 families or fraction thereof. Therefore, this provision recommends 3.0 acres of playground and neighborhood park acreage for the proposed Greenridge Road development. This area should be suitable for active recreation uses, have only limited environmental constraints, be interconnected with adjacent open space and recreation areas, and be permanently preserved for open space and recreation.

As noted above, the proposed development has 31.15 acres of restricted open space, 23.36 acres of usable open space, and 2.28 acres of active recreation land, with two internal trails along with internal sidewalks connecting to Greenridge Road. These open space areas constitute the neighborhood park for the proposed development, and should accommodate some of the recreation needs of the prospective residents. But because the on-site facilities do not include all recreation options (i.e., all court and field sports, etc.), the proposed development will likely result in a nominal increase in the use of the existing Township and State recreation facilities, particularly Hickory Park, Marsh Creek State Park, Larkins Field, Upland Farm and Fellowship Field.

E. Proposed Recreation Facilities to Compensate for any Anticipated Deficiencies in Township's Recreation Facilities

As noted above, proposed open space areas and recreation facilities should accommodate some of the recreation needs of the prospective residents. The remaining recreation needs of the prospective residents will be met by the existing Township and State facilities, particularly Hickory Park, Larkins Field, Fellowship Field, Upland Farm and Marsh Creek State Park. The residents of the proposed development will provide funding to operate and maintain the Township recreation facilities (and all other municipal functions) through the projected annual \$141,156 revenue from the real estate tax, earned income tax, real estate transfer tax, trash and recycling fee, cable TV and miscellaneous revenue, liquid fuels revenue, and interest income (see the fiscal impact analysis, above).

F. Accessibility of Proposed Facilities to General Township Residents

The proposed open space and trails will be privately owned and maintained, and will be available for the use of the residents and guests of the development.

G. Contributions from Developer to Compensate for Expected Impacts

Again, given the likelihood that the proposed open space and recreation facilities will accommodate some of the recreation needs of the prospective residents, the nominal increase in the use of existing Township and State facilities, and the significant annual revenue from the proposed development to cover recreation expenditures, no further contributions from the developer are proposed at this time.

	A	B	C	D	E	F	G	H	I	J
1	<u>ANALYSIS OF THE FISCAL IMPACT TO UPPER UWCHLAN TOWNSHIP</u>									
2	Of the Proposed Greenridge Development at Buildout							August 9, 2021		
3										
4	Proposed	Number of	Average Market Value	Market	Total	Persons	Number of	Annual Township	Expenditures	
5	Dwelling Type	Units	per Unit	Value	Assessment	per Unit	Persons	Expenditures	per Unit	
6	4 BR SFD	64	\$871,495	\$55,775,680	\$25,099,056	3.50	224	\$82,149	\$1,284	
7										
8		Annual Township Revenue								
9	Proposed	Real Estate	Earned Income	Real Estate	Trash &	Cable TV &	Liquid Fuels	Interest	Total	Revenue
10	Dwelling Type	Tax	Tax	Transfer Tax **	Recycling Fee	Misc. Revenue	Revenue	Earnings	Revenue	per Unit
11	4 BR SFD	\$25,952	\$62,650	\$13,944	\$20,160	\$11,111	\$6,883	\$456	\$141,156	\$2,206
12										
13	Proposed	Annual Net	Annual Net Township	Revenue >						
14	Dwelling Type	Township Revenue	Revenue per Unit	Expenditures						
15	4 BR SFD	\$59,008	\$922	71.8%						
16										
17	NOTES:									
18	2021-2022 STEB Common Level Ratio for Chester County			45.0%			2021 Estimated Township Population			11,634
19	2021 Total Township Operating Fund Expenditures - 4 Funds			\$8,187,049			2021 Township Real Estate Tax Millage			1.034
20	Minus Pass-Through, Dev. Rel. & Cap. Exp's and Interfund Transfers			\$2,560,457			Annual Housing Turnover Rate - SFD			5.0%
21	2021 Net Township Operating Fund Expenditures - 4 Funds			\$5,626,592			2021 Township Annual Trash & Recycling Fee			\$315
22	Existing Township Nonresidential Expenditures		24.2%	\$1,359,982			2021 Estimated Township Housing Units			3,654
23	2021 Township per Capita Operating Fund Expenditure			\$366.74			2021 Twp. Cable TV & Misc. Revenue per Unit			\$72.00
24	** Does not include the real estate transfer tax revenue of \$278,878 from the initial sales of the units over the buildout period.						2021 Liquid Fuels Revenue per Person			\$17.8193

	A	B	C	D	E	F	G	H	I	J	
27	ANALYSIS OF THE FISCAL IMPACT TO THE DOWNINGTOWN AREA SCHOOL DISTRICT										
28	Of the Proposed Greenridge Development at Buildout							August 9, 2021			
29											
30	Proposed	Number of	Average Market Value	Market	Total	School Age	DASD	Annual DASD	Expenditures		
31	Dwelling Type	Units	per Unit	Value	Assessment	Children per Unit	Students	Expenditures	per Unit		
32	4 BR SFD	64	\$871,495	\$55,775,680	\$25,099,056	1.02	60	\$1,065,244	\$16,644		
33											
34		Annual School District Revenue									
35	Proposed	Real Estate Tax	Earned Income	Real Estate	State & Federal	Earnings on	Total	Revenue			
36	Dwelling Type	(- Homestead Exemption)	Tax	Transfer Tax **	Revenue	Investments	Revenue	per Unit			
37	4 BR SFD	\$682,383	\$62,650	\$13,944	\$255,434	\$2,335	\$1,016,745	\$15,887			
38											
39	Proposed	Annual Net School	Annual Net School Dist.	Revenue >							
40	Dwelling Type	District Revenue	Revenue per Unit	Expenditures							
41	4 BR SFD	-\$48,499	-\$758	-4.6%							
42											
43	NOTES:										
44	2021-2022 STEB Common Level Ratio for Chester County			45.0%		2021-2022 DASD per Student Expenditure			\$17,667		
45	Pct. of Twp. School Age Children attending DASD Schools (2019 ACS)			92.4%		2021-2022 DASD Real Estate Tax Millage			27.7256		
46	2021-2022 DASD Total Expenditures			\$244,248,119		2021-2022 DASD Homestead Exemption per Unit			\$211		
47	Minus Pass-Through Funds, Budgetary Reserve			\$8,371,536		Annual Housing Turnover Rate - SFD			5.0%		
48	2021-2022 DASD Net Expenditures			\$235,876,583		2021-2022 DASD State & Federal Rev. per Student			\$4,236		
49	2021-2022 DASD Projected Student Enrollment			13,351		2021-2022 DASD Earnings on Investments			\$500,000		
50	** Does not include the real estate transfer tax revenue of \$278,878 from the initial sales of the units over the buildout period.										

August 10, 2021

TPD# TOLB.00045



TRAFFIC PLANNING AND DESIGN, INC.



Greenridge Road Development

Transportation Impact Study

Upper Uwchlan Township, Chester County, PA

For Submission To:

Upper Uwchlan Township

GREENRIDGE ROAD DEVELOPMENT TRANSPORTATION IMPACT STUDY

FOR SUBMISSION TO:

Upper Uwchlan Township, Chester County, PA

Prepared For:

Toll Mid-Atlantic LP Company, L.P

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Fort Washington, PA 19034

August 10, 2021

TPD # TOLB.00045



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FIGURES 1 – 10

TECHNICAL APPENDICES

- Appendix A: Manual Traffic Count Printouts
- Appendix B: Volume Development Worksheets
- Appendix C: Capacity Analyses
- Appendix D: Auxiliary Turn Lane Warrant Analyses

EXECUTIVE SUMMARY

The purpose of this study is to examine the potential traffic impact associated with the proposed development on the roadway network in Upper Uwchlan Township, Chester County, PA. Based on this evaluation, the following conclusions were reached:

1. The study area intersections included in this TIS are as follows:
 - Greenridge Road & Stonehedge Drive;
 - Greenridge Road & Styer Road;
 - Greenridge Road & Font Road;
 - Greenridge Road & Krauser Road;
 - Krauser Road & Milford Road.
2. The project site is located on the west side of Greenridge Road, southeast of Stonehedge Drive. The proposed site will consist of 64 single-family homes.
3. Access to the site is proposed via a full-access driveway to Greenridge Road, between Font Road and Styer Road, and a connection to Lauren Lane.
4. All proposed driveway location sight distances will exceed PennDOT's Desirable and Safe Stopping Sight Distance (SSSD) criteria.
5. Based on a conservative trip generation analysis for 70-units, the proposed development will generate approximately 55 new trips during the weekday A.M. peak hour and 72 new trips during the weekday P.M. peak hour. Please note, the trip generation is conservative (i.e. high) as it is based on 70-units, which is 10% more than the proposed 64-units.
6. Under 2026 project conditions, all overall intersection levels of service (ILOS) are anticipated to operate at LOS A.
7. Under the 2026 projected conditions, all approaches and turning movements at the site driveway intersection with the external roadway network are anticipated to operate at LOS A during weekday A.M. and P.M. peak hours.
8. Levels of Service (LOS) for the study area intersections have been summarized in matrix form. **Table I** details the overall intersection LOS for each study area intersection.

TABLE I
OVERALL INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
	Existing	2026 Conditions		Existing	2026 Conditions	
		Base	Projected		Base	Projected
Greenridge Road & Stonehedge Drive	A (2.0)	A (2.0)	A (2.4)	A (1.1)	A (1.2)	A (1.6)
Styer Road & Greenridge Road	A (7.7)	A (7.7)	A (7.8)	A (7.6)	A (7.6)	A (7.7)
Styer Road & Extension	A (4.0)	A (4.1)	A (4.0)	A (2.3)	A (2.4)	A (2.2)
Greenridge Road & Extension	A (1.0)	A (1.0)	A (1.0)	A (0.6)	A (0.6)	A (0.6)
Krauser Road & Greenridge Road	A (1.4)	A (1.5)	A (1.6)	A (1.4)	A (1.4)	A (1.6)
Font Road & Greenridge Road/St. Andrews Lane	A (5.8)	A (5.6)	A (6.1)	A (4.9)	A (4.8)	A (5.3)
Milford Road & Krauser Road	A (3.7)	A (3.7)	A (3.9)	A (3.0)	A (3.0)	A (3.3)
Greenridge Road & Site Driveway	--	--	A (1.1)	--	--	A (0.8)
Stonehedge Road & Lauren Lane/Site Access	--	--	A (1.1)	--	--	A (0.8)

Base = No-Build scenario; Projected = Build scenario

INTRODUCTION

Traffic Planning and Design, Inc. (TPD) has completed a Transportation Impact Study (TIS) for the proposed development in Upper Uwchlan Township, Chester County, Pennsylvania. The project site is located on the west side of Greenridge Road, southeast of Stonehedge Drive as shown in **Figure 1**. As shown in **Figure 2**, the proposed site will consist of 64 single-family homes. The proposed site will be served by a full-access driveway to Greenridge Road, between Font Road and Styer Road, and a connection to Lauren Lane.

This report has been prepared in accordance with PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated July, 2017.

EXISTING ROADWAY NETWORK

A field review of the existing roadway system in the study area was conducted. The existing roadway characteristics within the study area are summarized in **Table 1**.

TABLE 1
ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Roadway	Ownership	Functional Classification/ Roadway Type	Predominant Directional Orientation	Average Daily Traffic ¹	Posted Speed Limit
Greenridge Road		Local	East-West	1,415	35 mph
Stonehedge Drive		Local	North-South	550	25 mph
Styer Road		Local	North-South	1,175	35 mph
Font Road		Local	North-South	1,935	30 mph
Krasuer Road		Local	North-South	495	25 mph
Milford Road		Local	East-West	1,610	40 mph

¹Based on existing traffic volumes and a k-factor

Bicycle and Pedestrian Facilities

Based on observations during field visits at the study area intersections, there are no pedestrian accommodations present in the vicinity of the proposed development.

Mass Transit Facilities

There is no public transportation in the vicinity of the proposed development

Crash Data Investigation

Crash data were obtained from PennDOT for the study area intersections. PennDOT defines a reportable crash as follows, "A reportable (crash) is one in which an injury or fatality occurs or if at least one of the vehicles involved requires towing from the scene." Reportable crashes were tabulated for the five-year time period beginning 1/1/2016 and ending 12/31/2020. For a given intersection, PennDOT considers a crash occurrence of 5 reportable, correctable crashes over a continuous twelve-month period during the past five years to be a threshold value, above which the intersection design should be reviewed to examine if corrective measures can be taken to enhance safety. The number of reportable crashes at the study area intersections is shown in **Table 2**.

TABLE 2
PENNDOT REPORTABLE CRASH DATA

Study Area Intersection	Number of Reportable Crashes				
	2016	2017	2018	2019	2020
Greenridge Road & Stonehedge Drive	0	0	0	1	0
Styer Road & Greenridge Road	0	0	0	0	0
Greenridge Road & Krauser Road	0	0	0	0	0
Font Road & Greenridge Road/St. Andrews Lane	0	0	1	0	0
Milford Road & Krauser Road	0	0	0	0	0

Based on a review of the crash data, there were no continuous twelve-month periods during the past five years where 5 or more crashes occurred that were deemed correctable.

EXISTING TRAFFIC CONDITIONS

Manual traffic counts were conducted on 15-minute intervals during the weekday morning (7:00 to 9:00 A.M.), weekday evening (4:00 to 6:00 P.M.) peak periods. Peak hours and count dates for the study area intersections are identified in **Table 3**.

TABLE 3
MANUAL TRAFFIC COUNT INFORMATION

Intersection	Date of Traffic Counts	Time Period	Intersection Peak Hour ¹
Greenridge Road & Stonehedge Drive	Tuesday July 20, 2021	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
Greenridge Road & Styer Road	Tuesday July 20, 2021	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
Styer Road & Extension	Tuesday July 20, 2021	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
Greenridge Road & Extension	Tuesday July 20, 2021	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
Krauser Road & Greenridge Road	Tuesday July 20, 2021	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	5:00 to 6:00 P.M.
Font Road & Greenridge Road/St. Andrews Lane	Tuesday July 20, 2021	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
Milford Road & Krauser Road	Tuesday July 20, 2021	Weekday A.M.	7:45 to 8:45 A.M.
		Weekday P.M.	4:00 to 5:00 P.M.
Milford Road & Font Road ²	Tuesday July 20, 2021	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	4:30 to 5:30 P.M.

¹Peak Hour consists of the four consecutive 15-minute intervals where the highest traffic volumes occur.

²Utilized to calculate COVID adjustment factor only, not analyzed as part of study area.

Due to the current COVID-19 traffic conditions and the summer conditions, a comparison of the 2021 counts to the 2016 counts at the Milford Road/Font Road intersection was completed. Based on the comparison and coordination with the Township Traffic Engineer, McMahon Associates, an adjustment factor of 1.69 for the weekday AM peak hour and 1.27 for the weekday PM peak hour was applied to the 2021 turning movement counts at each of study area intersections. The adjusted existing condition traffic volumes for the weekday A.M. and weekday P.M. peak hours are illustrated in **Figures 3 and 4**, respectively. Manual traffic count data sheets and adjustment calculations are provided in **Appendix A**.

BASE (NO-BUILD) CONDITIONS

Annual Background Growth

A background growth factor for the roadways in the study area was developed based on growth factors for August 2021 to July 2022 obtained from the PennDOT Bureau of Planning and Research (BPR). The PennDOT BPR suggests using a background growth trend factor of 0.61% per year in Chester County for urban non-interstate roadways. As such, the background growth factor was applied annually to yield overall growth percentages of 3.09% (0.61% per year, compounded over 5 years) for the 2026 opening year.

Nearby Proposed Developments

Base (no-build) traffic conditions were calculated to include traffic volumes from proposed developments. Please note, at the time of the traffic counts, a significant portion of most of the developments were occupied. However, in order to provide a conservative evaluation (i.e. highest traffic volumes) and due to the COVID traffic count adjustment, the full development traffic was considered. Based on recent experience in the Study Area, the following nearby planned development were specifically included in this study:

- **Village at Byers Station (5C)** - residential development consisting of 121 townhomes. The site is bounded by Route 100, Station Boulevard, Graphite Mine Road, and Darrell Drive. Trip generation and distribution for this site were developed based on the 5/18/16 TIS prepared by TPD.
- **Byers Station** - portions consisting of 40 townhomes (located along Sunderland Avenue), the Ewing Tract Phase 2 (located along Eagle Farms Road), and Parcel 6C (located on the eastern side of Graphite Mine Road, north of Byers Road). Trip generations and distribution for these sites were developed based on the 8/21/2014 and the 4/4/18 studies prepared by TPD.
- **McKee-Fetters Tract** - residential development consisting of 114 age-restricted single-family homes and 261 age-restricted townhomes located on the eastern side of Milford Road, south of Patricia Drive opposite Krauser Road. As such, a fourth leg to the existing Milford Road/Krauser Road intersection was considered in base (no-build) conditions. Trip generation and distribution for this site were developed based on the 5/18/2017 TIS prepared by TPD.
- **Gunner Property** - residential development consisting of 40 townhomes. The site is located at 270-290 Park Road, west of Little Conestoga Road. Trip generation and distribution for this site were developed based ITE data and existing travel patterns, respectively.

The additional traffic volumes due to background growth and nearby developments were added to the existing traffic data to produce 2026 base (no-build) condition traffic volumes. Base condition volumes for the weekday A.M. and weekday P.M. peak hours are illustrated in **Figures 5 and 6**.

PROPOSED SITE ACCESS

The proposed site will be served by a full-access driveway to Greenridge Road, between Font Road and Styer Road, and a connection to Lauren Lane.

Sight Distance Analysis

A sight distance analysis was prepared for the proposed site driveway to Greenridge Road. In general, recommended safe sight distances depend upon the posted speed limit and roadway grades. The existing sight distances at the proposed driveways were measured in accordance with PennDOT Publication 282 Highway Occupancy Permit Operations Manual and compared to PennDOT's desirable sight distance standard, which is identified in 67 PA Code Chapter 441.8(h), "Access to and Occupancy of Highways by Driveways and Local Roads." In addition, measured sight distances at the proposed driveways were compared to PennDOT's safe stopping sight distance standard, which is calculated by the following equation:

$$SSSD = 1.47VT + V^2/[30(f \pm g)]$$

SSSD = safe stopping sight distance (acceptable sight distance)

V = Vehicle Speed

T = Perception Reaction Time of Driver (2.5 seconds)

f = Coefficient of Friction for Wet Pavements

g = Percent of Roadway Grade Divided by 100

Table 4 shows the measured, desirable, acceptable (SSSD), and required sight distances at the Greenridge Road site driveway for vehicles entering and exiting the site.

TABLE 4
SIGHT DISTANCE ANALYSIS
SITE DRIVEWAY TO GREENRIDGE ROAD

	Direction	Speed	Grade ¹	Sight Distances (feet)		
				DES	SSSD	EXIST
Exiting Movements	To the left	35 mph	1%	440	245	600+
	To the right	35 mph	-1%	350	252	500+
Entering Left Turns	Approaching same direction	35 mph	-1%	300	252	505
	Approaching opposite direction	35 mph	1%	300	245	600+

DES = PennDOT Desirable Sight Distance

1 = Roadway Grade Approaching Driveway

SSSD = PennDOT Acceptable Sight Distance

EXIST = Existing (measured) Sight Distance

As shown in **Table 4** above, the measured sight distances at the site driveway exceed PennDOT's desirable sight distance requirements.

TRIP GENERATION

The trip generation rates for the proposed development were obtained from the *Trip Generation Manual*, Tenth Edition, 2017, an institute of Transportation Engineers (ITE) Informational Report. For the proposed development, Land Use Code 210 (Single-family Detached Housing) from *Trip Generation* was used to calculate the number of vehicular trips the development will generate during the following time periods: (1) average weekday; (2) weekday A.M. peak hour; and (3) weekday P.M. peak hour. **Table 5** shows the rates/equations and directional percentages for the analyzed time periods.

TABLE 5
ITE TRIP GENERATION DATA

Land Use	ITE #	Time Period	Equations/Rates	Entering %	Exiting %
Single-Family Detached Housing	210	Weekday A.M. Peak Hour	$T = 0.71*(X)+4.80$	25%	75%
		Weekday P.M. Peak Hour	$\ln(T) = 0.96*\ln(X)+0.20$	63%	37%
		Weekday	$\ln(T) = 0.92*\ln(X)+2.71$	50%	50%

T = number of site-generated vehicular trips; X = independent variable (dwelling units)

The calculated trip generation for the proposed development is shown in **Table 6**. Please note, the trip generation shown in the table below is based on 70-units and provides a conservative evaluation, as it is 10% more than the proposed 64-units.

TABLE 6
TRIP GENERATION SUMMARY

Time Period	Greenridge Road Development		
	Total	Enter	Exit
Weekday	750	375	375
A.M. Peak Hour	55	14	41
P.M. Peak Hour	72	45	27

Based on the conservative trip generation analysis summarized in **Table 6** for 70-units, the proposed development will generate approximately 55 new trips during the weekday A.M. peak hour, and 72 new trips during the weekday P.M. peak hour.

TRIP DISTRIBUTION

The distribution of trips generated by the proposed development was based on the local road network, the existing traffic patterns, the proposed use of the site, and the site driveway locations. The trips for the proposed development were distributed to the local roadway network based on the percentages shown in **Table 7**.

TABLE 7
TRIP DISTRIBUTION PERCENTAGES

Direction - To/From	Assignment (To/From)	Distribution Percentage
East	via Greenridge Road	4%
	via Milford Road	11%
West	via Greenridge Road	12%
	via Milford Road	14%
North	via Font Road	17%
South	via Font Road	33%
	via Styer Road	9%

The assignment of site-generated trips for the proposed development during the weekday A.M. and P.M. peak hours are shown in **Figures 7 and 8**, respectively.

PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES

The site-generated trips for the proposed development were added to the 2026 base (no-build) condition traffic volumes to develop 2026 projected (build) condition traffic volumes. The 2026 projected condition traffic volumes for the weekday A.M. and P.M. peak hours are shown in **Figures 9 and 10**, respectively. Traffic volume development worksheets are contained in **Appendix B**.

LEVELS OF SERVICE FOR AN INTERSECTION

For analysis of intersections, level of service is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. LOS criteria is stated in terms of control delay per vehicle for a one-hour analysis period. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The criteria are shown in **Table 8**. Delay, as it relates to level of service, is a complex measure and is dependent upon a number of variables. For signalized intersections, these variables include the quality of vehicle progression, the cycle length, the green time ratio, and the volume/capacity ratio for the lane group in question. For unsignalized intersections, delay is related to the availability of gaps in the flow of traffic on the major street and the driver's discretion in selecting an appropriate gap for a particular movement from the minor street (straight across, left or right turn).

TABLE 8
LEVEL OF SERVICE CRITERIA
UNSIGNALIZED AND SIGNALIZED INTERSECTIONS ¹

Level of Service	Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80 or $v/c > 1.0$	> 50 or $v/c > 1.0$

¹ Obtained from Exhibits 18-4 and 19-1 of the Transportation Research Board's Highway Capacity Manual 2010

CAPACITY ANALYSIS METHODOLOGY

Capacity analyses were conducted for the weekday A.M. and P.M. peak hours at the study area intersections. These analyses were conducted according to the methodologies contained in the *Highway Capacity Manual 6th Edition* (HCM) using *Synchro 10* software, a Trafficware product. The following conditions were analyzed, as applicable:

- Existing conditions;
- 2026 Base conditions (Future year without development);
- 2026 Projected conditions (Future year with development);

In addition, capacity analyses were conducted at the proposed site driveway intersection under the 2026 projected conditions. The capacity analysis worksheets are included in **Appendix C**.

PennDOT's Transportation Impact Study Guidelines outlined in PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated July, 2017 contain the following criteria regarding levels of service:

Page 29 of the Guidelines state that if evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase in overall intersection 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.

Page 29 of the Guidelines state that for mitigation scenarios, applicants are expected to mitigate the overall intersection LOS to the original Without Development LOS; the 10-second delay variance is not applied to mitigation scenarios. Applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall LOS requirements are met.

Page 31 of the Guidelines state that if signalization is the preferred alternative for mitigation, overall intersection LOS C in rural areas and LOS D in urban areas is acceptable.

Page 31 of the Guidelines states new signalized or unsignalized intersection established to serve as access to the development shall be designed to operate at minimum LOS C for rural areas, and minimum LOS D for urban areas.

LEVELS OF SERVICE IN THE STUDY AREA

Level of service (LOS) matrices for the study area intersections are shown in **Table 9** for the weekday A.M., and weekday P.M. peak hours.

TABLE 9
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Movement	Weekday A.M. Peak Hour			Weekday P.M. Peak Hour		
		Existing Condition	2026 Future Conditions Base	2026 Future Conditions Projected	Existing Condition	2026 Future Conditions Base	2026 Future Conditions Projected
Greenridge Road & Stonehedge Drive	EB L	A	A	A	A	A	A
	SB LR	A	A	A	A	A	A
	ILOS	A (2.0)	A (2.0)	A (2.4)	A (1.1)	A (1.2)	A (1.6)
Styer Road & Greenridge Road	EB TR	A	A	A	A	A	A
	WB LT	A	A	A	A	A	A
	NB LR	A	A	A	A	A	A
	ILOS	A (7.7)	A (7.7)	A (7.8)	A (7.6)	A (7.6)	A (7.7)
Styer Road & Extension	EB L	A	A	A	A	A	A
	SB LR	A	A	A	A	A	A
	ILOS	A (4.0)	A (4.1)	A (4.0)	A (2.3)	A (2.4)	A (2.2)
Greenridge Road & Extension	WB L	A	A	A	A	A	A
	NB LR	B	B	B	A	A	A
	ILOS	A (1.0)	A (1.0)	A (1.0)	A (0.6)	A (0.6)	A (0.6)
Krauser Road & Greenridge Road	WB L	A	A	A	A	A	A
	NB LR	A	A	A	A	A	A
	ILOS	A (1.4)	A (1.5)	A (1.6)	A (1.4)	A (1.4)	A (1.6)
Font Road & Greenridge Road/St. Andrews Lane	EB LTR	B	B	B	B	B	B
	WB LTR	B	B	B	B	C	C
	NB L	A	A	A	A	A	A
	SB L	A	A	A	A	A	A
	ILOS	A (5.8)	A (5.6)	A (6.1)	A (4.9)	A (4.8)	A (5.3)
Milford Road & Krauser Road	EB L	A	A	A	A	A	A
	WB L	--	A	A	--	A	A
	NB LTR	--	A	A	--	A	A
	SB L(T)R	A	A	A	A	A	A
	ILOS	A (3.7)	A (3.7)	A (3.9)	A (3.0)	A (3.0)	A (3.3)
Greenridge Road & Site Driveway	EB L	--	--	A	--	--	A
	SB LR	--	--	A	--	--	A
	ILOS	--	--	A (1.1)	--	--	A (0.8)
Stonehedge Road & Lauren Lane/Site Access	EB L	--	--	A	--	--	A
	NB LR	--	--	A	--	--	A
	ILOS	--	--	A (1.1)	--	--	A (0.8)

Base = No-Build scenario; Projected = Build scenario

As shown in **Table 9**, under 2026 projected conditions with the development of the proposed site, the study area intersections will operate at the same overall intersection level of service (ILOS) as under 2026 base conditions, during the weekday A.M. and P.M. peak hours.

All approaches and turning movements at the site driveway intersection are anticipated to operate at LOS A under 2026 projected conditions during the weekday A.M. and P.M. peak hours.

In addition, all levels of service at the study area intersection comply with the requirement outlined in PennDOT's TIS Guidelines.

95TH PERCENTILE QUEUE ANALYSIS

Queue analyses were conducted at the study area intersections using *Synchro 10* software. For this analysis, the 95th percentile queue is defined as the queue length that is exceeded during 5% of the peak hour. As an example, during the peak hour, this means that the 95th percentile queue length will be exceeded during 3 of the 60-minutes during the peak hour. The queue analysis results are summarized in **Table 10** for the analyzed peak hours.

TABLE 10
95TH PERCENTILE QUEUE ANALYSIS

Intersection	Movement	Available Storage	2026 Future Conditions			
			Weekday A.M. Peak Hour		Weekday P.M. Peak Hour	
			Base	Projected	Base	Projected
Greenridge Road & Stonehedge Drive	EB L	50+	0	0	0	0
	SB LR	50+	5	8	3	3
Styer Road & Greenridge Road	EB TR	50+	15	18	5	5
	WB LT	50+	8	8	15	15
	NB LR	50+	5	5	3	3
Styer Road & Extension	EB L	50+	3	3	0	0
	SB LR	50+	3	5	3	3
Greenridge Road & Extension	WB L	50+	0	0	0	0
	NB LR	50+	3	3	0	3
Krauser Road & Greenridge Road	WB L	50+	0	0	3	3
	NB LR	50+	5	5	3	3
Font Road & Greenridge Road/St. Andrews Lane	EB LTR	50+	23	28	10	13
	WB LTR	50+	3	3	5	8
	NB L	50+	3	3	10	13
	SB L	50+	0	0	0	0
Milford Road & Krauser Road	EB L	50+	0	0	3	3
	WB L	50+	0	0	0	0
	NB LTR	50+	3	3	3	3
	SB L(T)R	50+	8	8	3	5
Greenridge Road & Site Driveway	EB L	50+	--	0	--	0
	SB LR	50+	--	3	--	3
Stonehedge Road & Lauren Lane/Site Access	EB L	50+	--	0	--	0
	NB LR	50+	--	0	--	0

Base = No-Build scenario; Projected = Build scenario

As shown in **Table 10**, adequate queue storage will be provided under 2026 conditions. Queue analysis worksheets are included with the capacity analysis worksheets provided in **Appendix C**.

AUXILIARY TURN LANE ANALYSIS

TPD evaluated auxiliary turn lane warrants at the site driveway intersection and at the Stonehedge Road/Lauren Lane intersection. The warrant analysis methodology contained within Chapter 11 of PennDOT's *Publication 46*, Section 11.17 and Strike-Off Letter 470-08-07 was utilized for this evaluation. **Table 11** summarizes the results of the auxiliary turn lane analysis at the site access intersection.

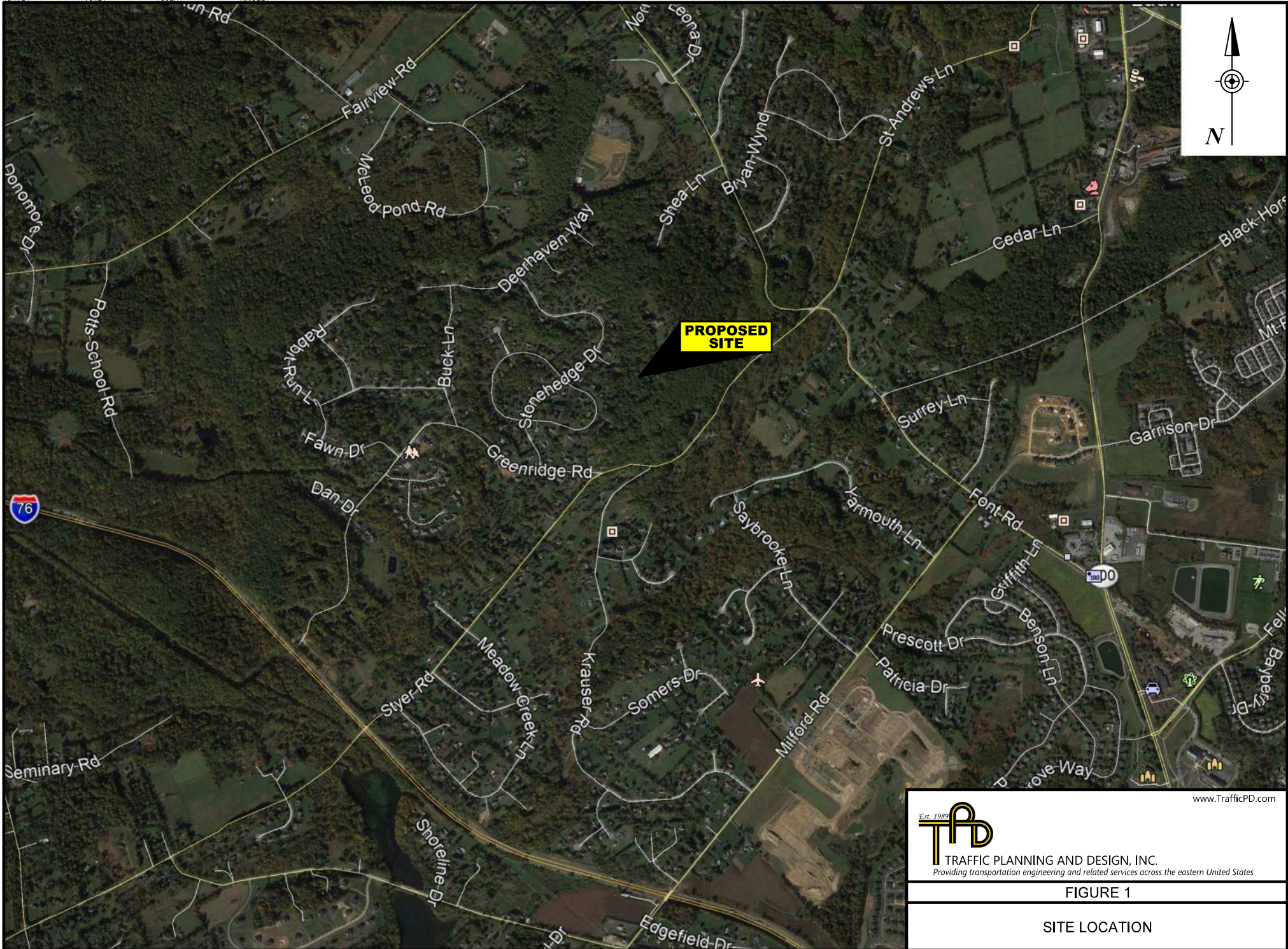
TABLE 11
AUXILIARY TURN LANE ANALYSIS SUMMARY

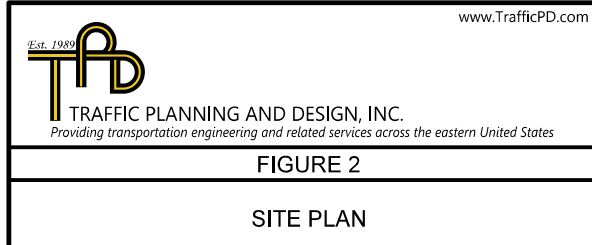
Intersection	Auxiliary Lane	Warrant Satisfied?	Required Lane Length
Greenridge Road & Site Driveway	EB Left Turn Lane	No	--
	WB Right Turn Lane	No	--
Stonehedge Road & Lauren Lane/Site Access	EB Left Turn Lane	No	--
	WB Right Turn Lane	No	--

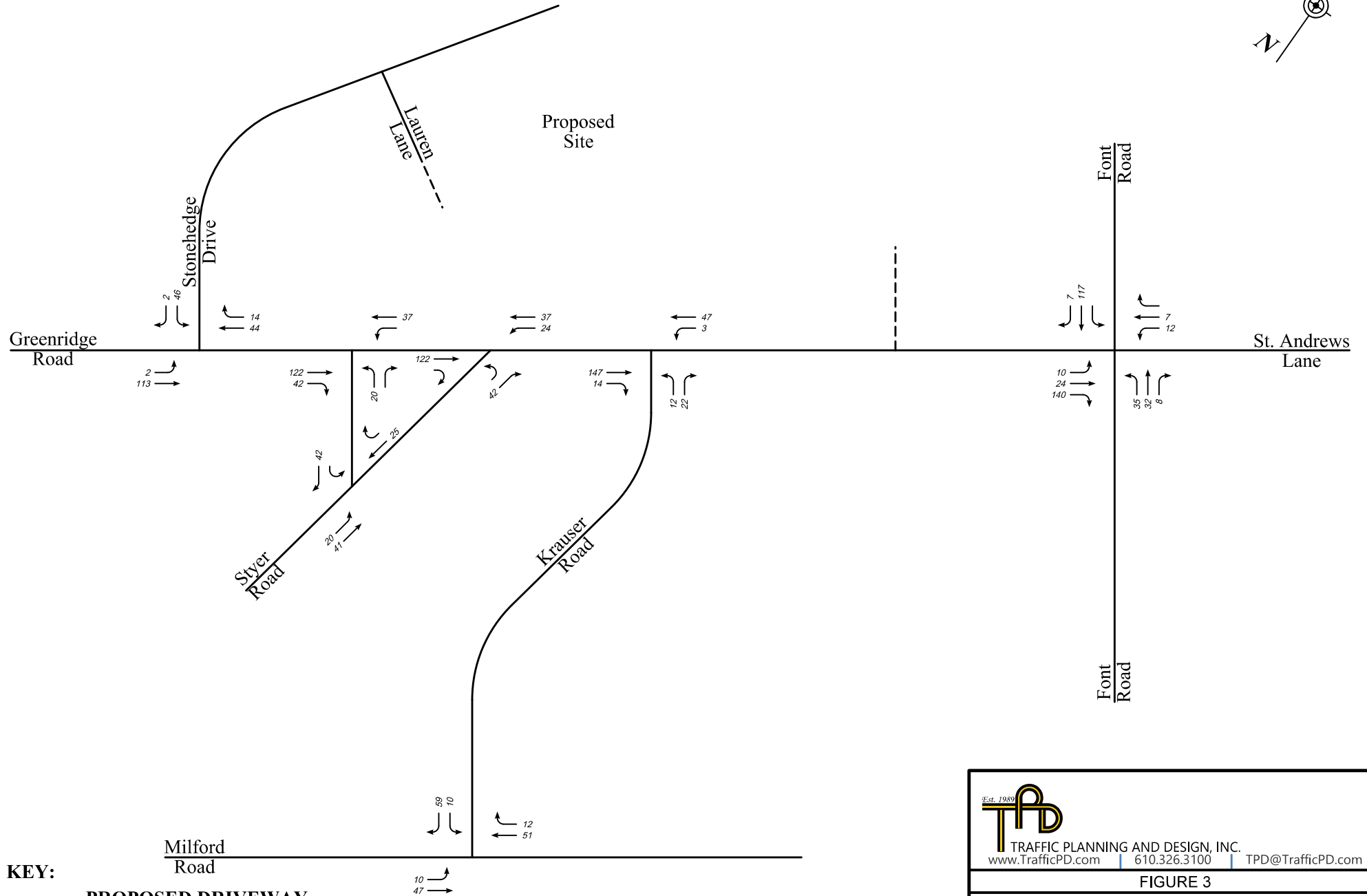
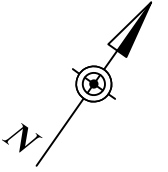
The calculations for the auxiliary turn lane warrants are included in **Appendix D**.

CONCLUSIONS

See the executive summary for the conclusions.



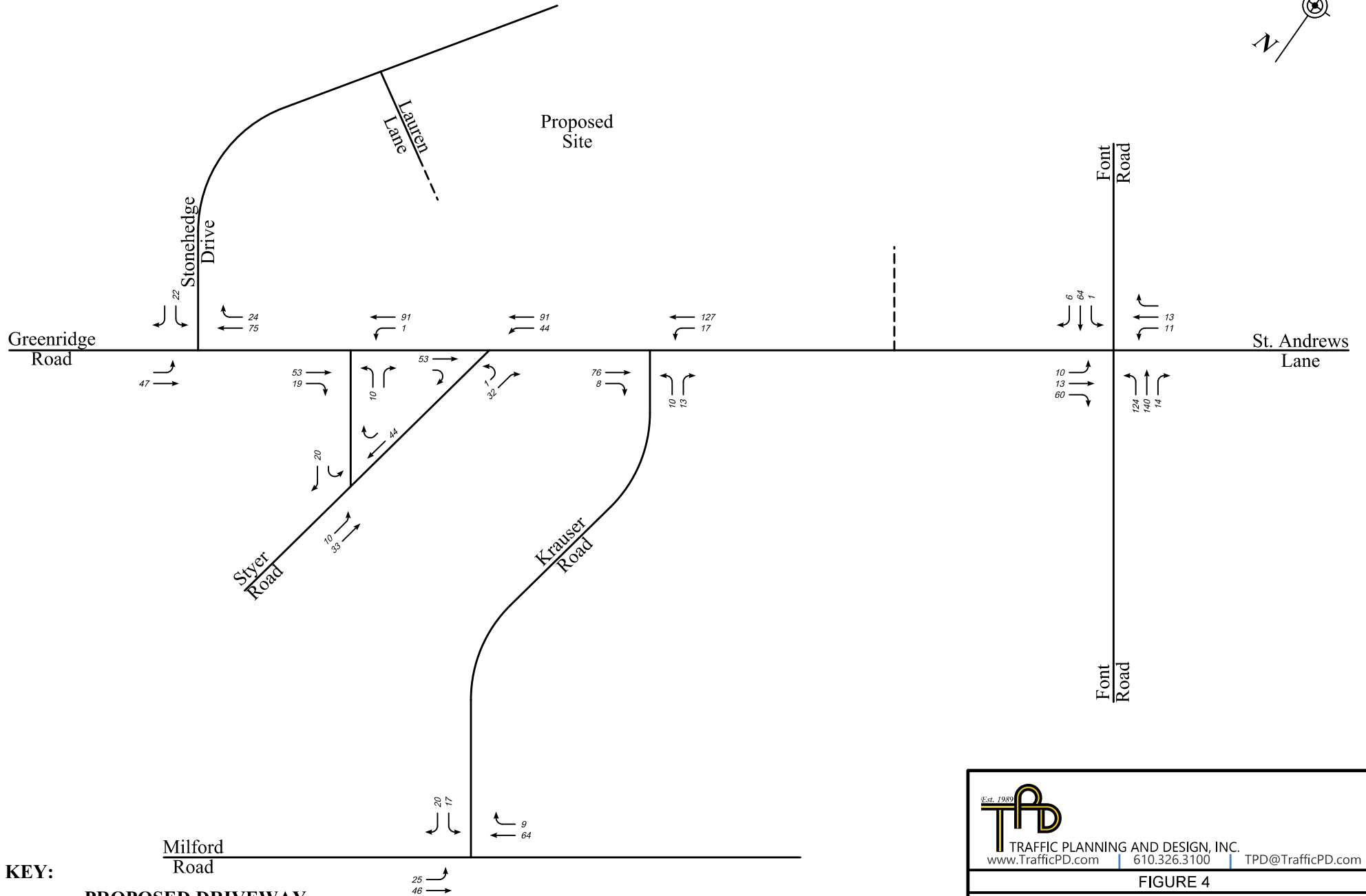
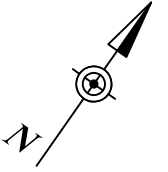




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FIGURE 3

EXISTING CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



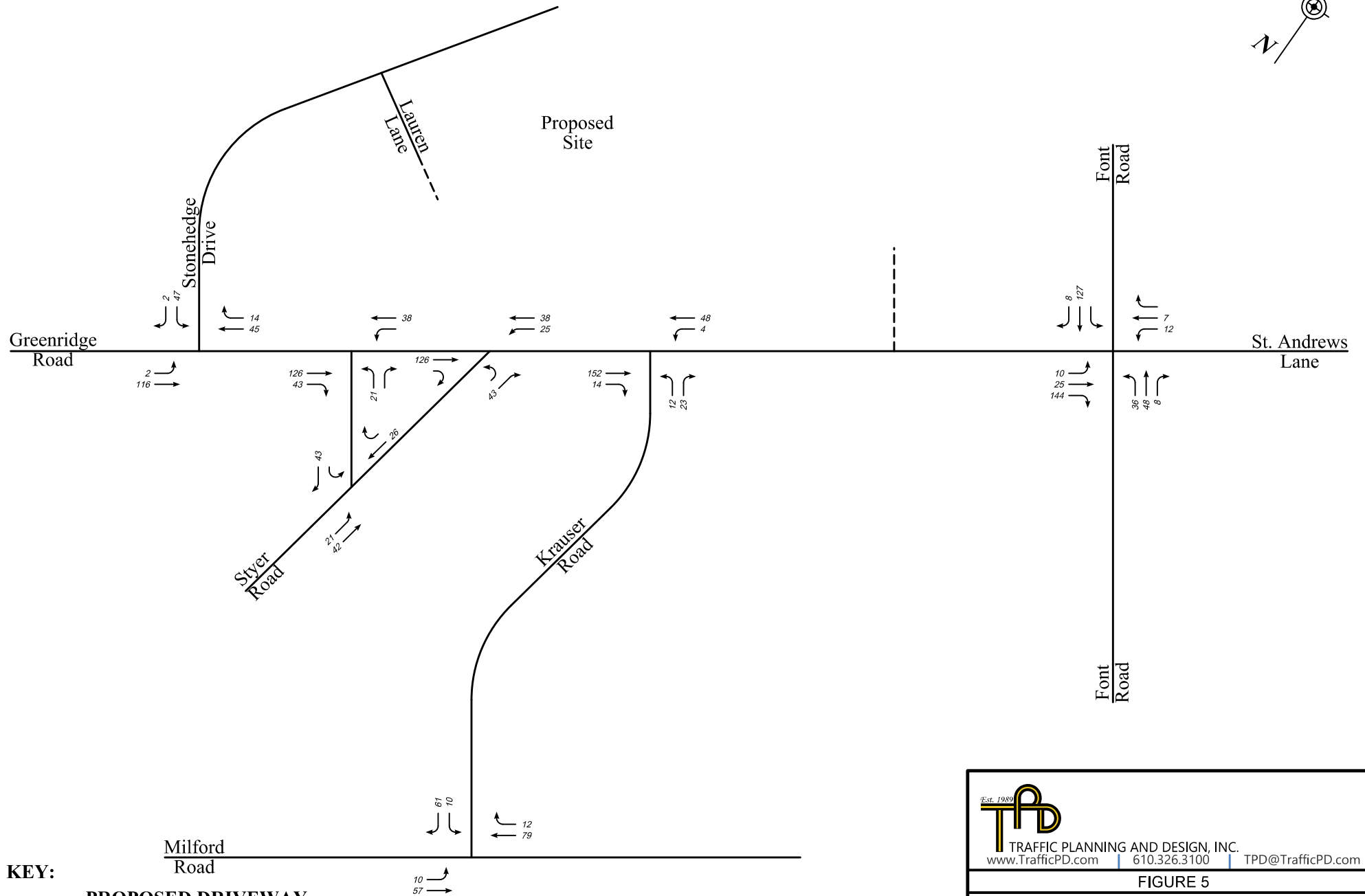
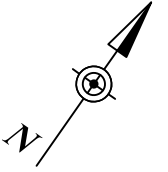
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FIGURE 4

EXISTING CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES

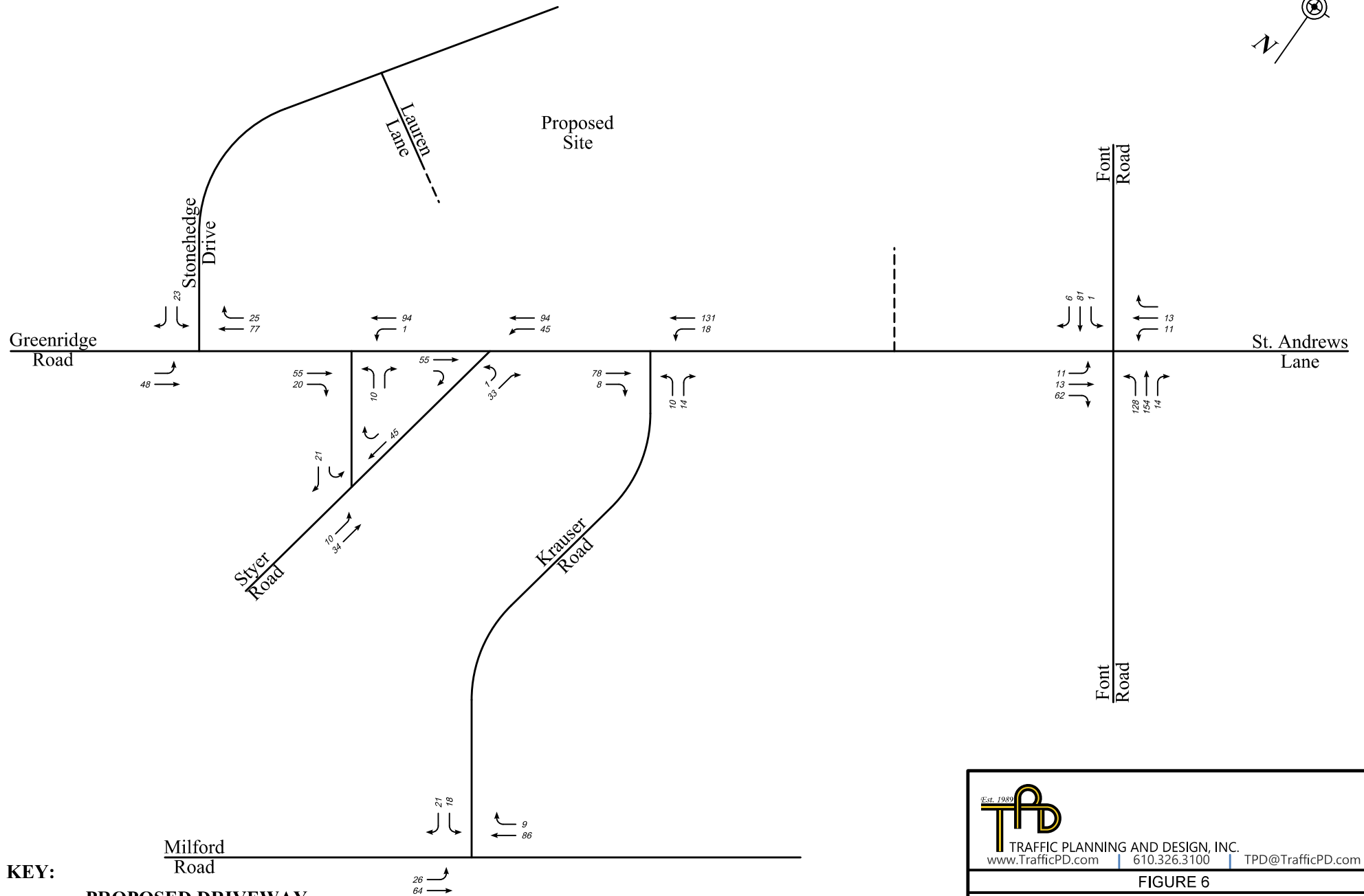
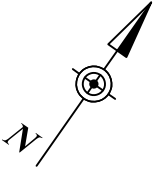




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FIGURE 5

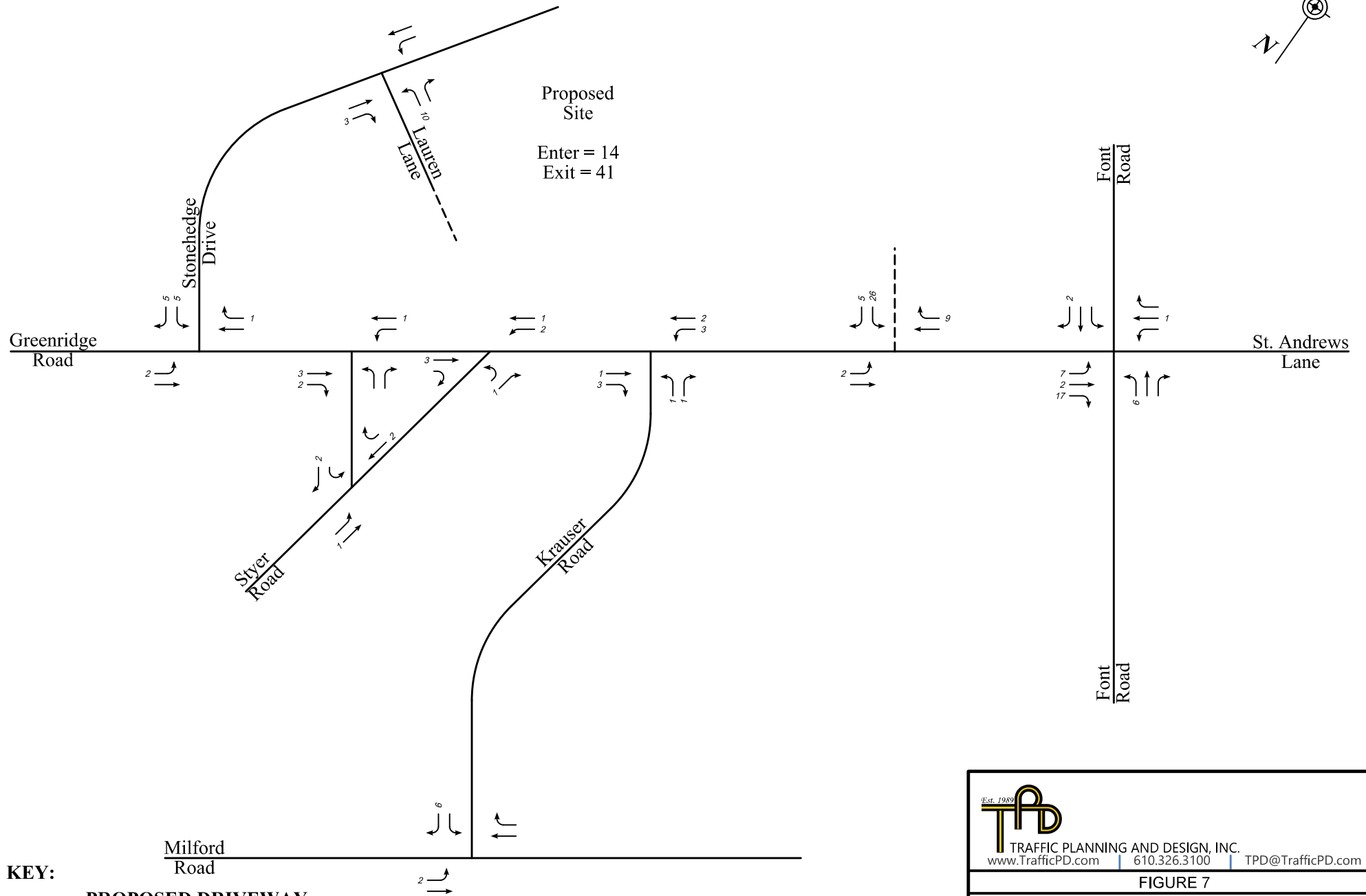
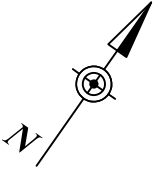
2026 BASE CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



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FIGURE 6

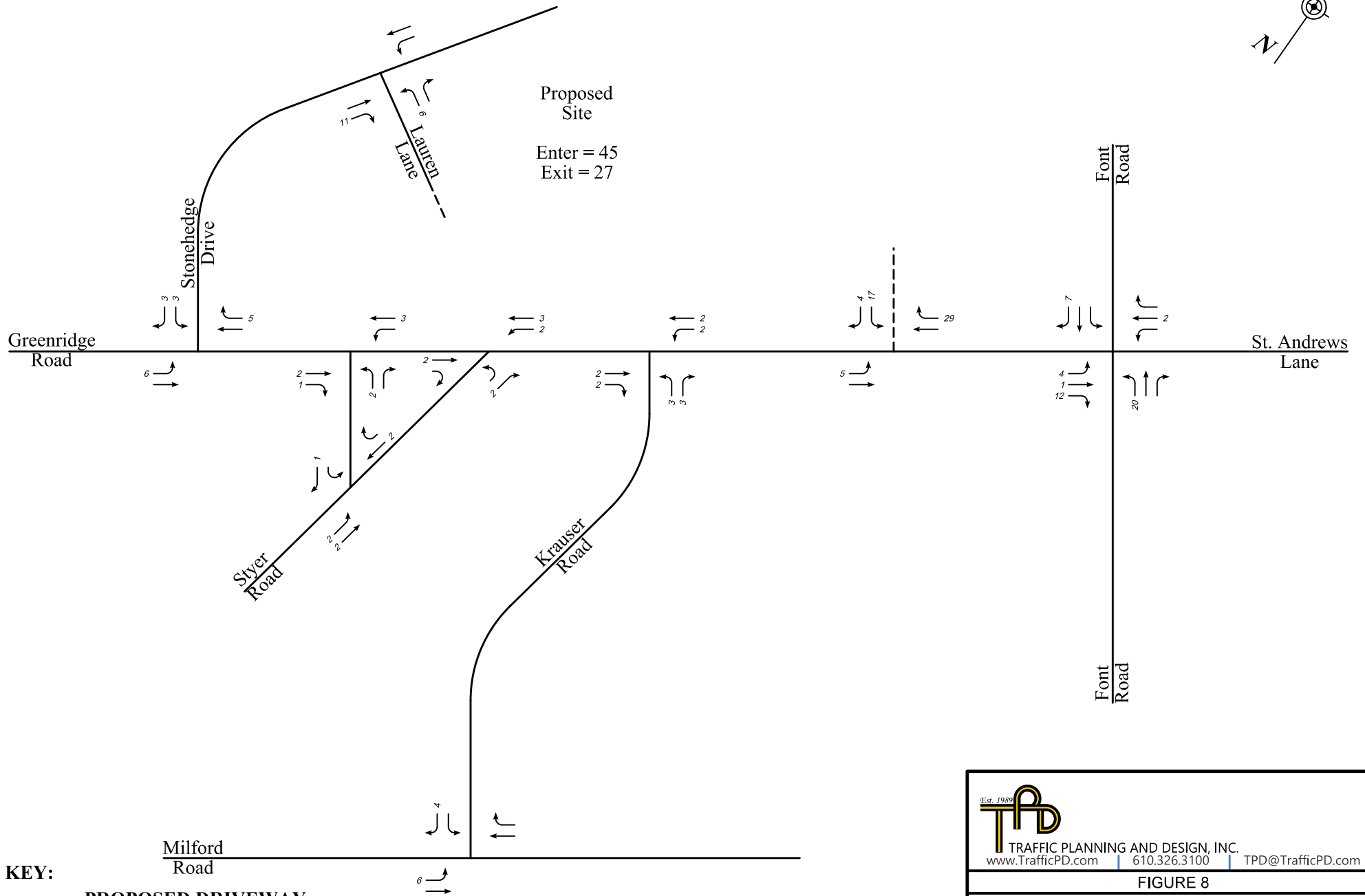
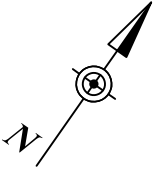
2026 BASE CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



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FIGURE 7

TRIP DISTRIBUTION
WEEKDAY A.M. PEAK HOUR



KEY:

----- PROPOSED DRIVEWAY

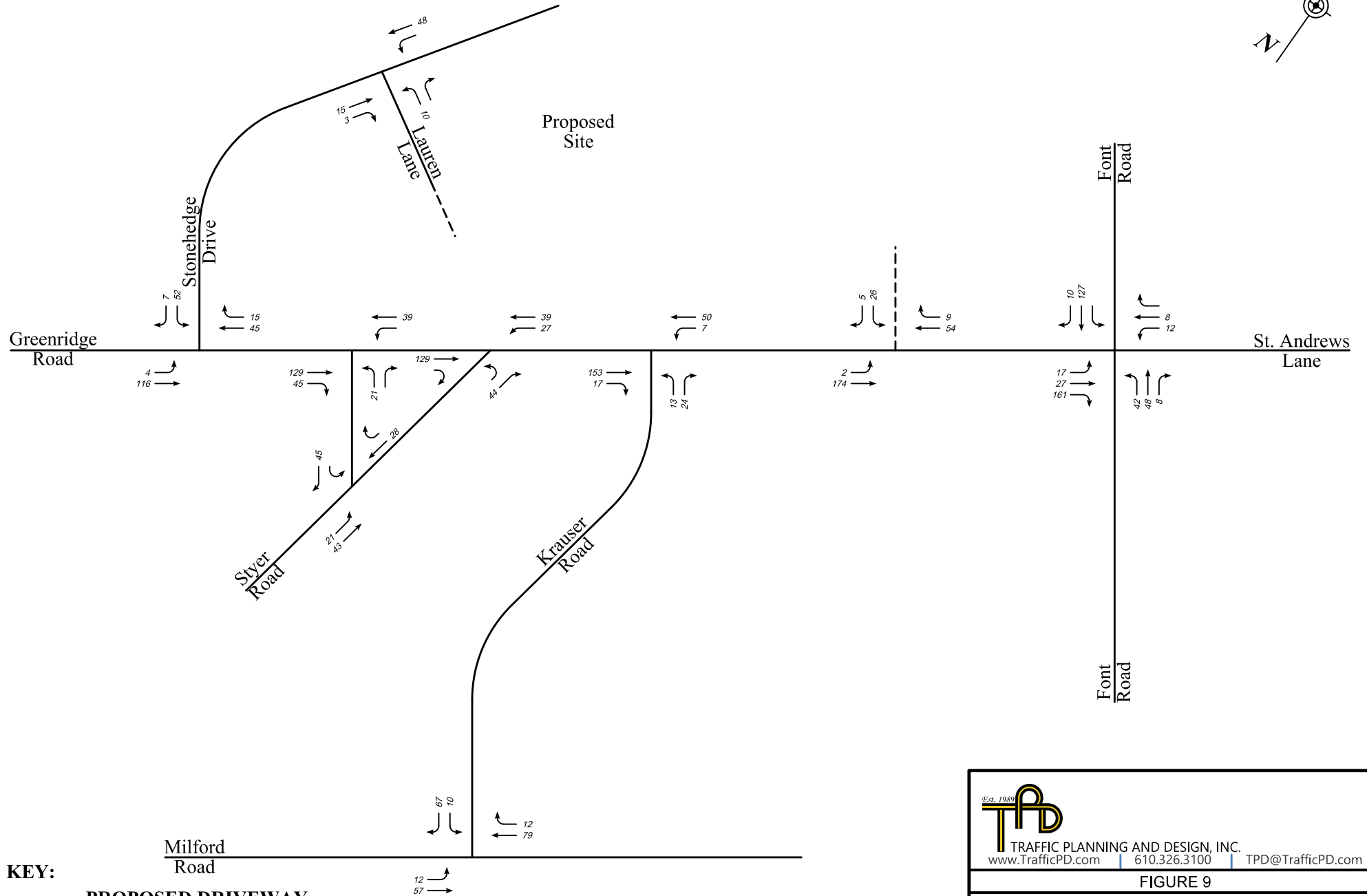
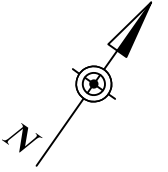
SCHEMATIC DRAWING: NOT TO SCALE



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FIGURE 8

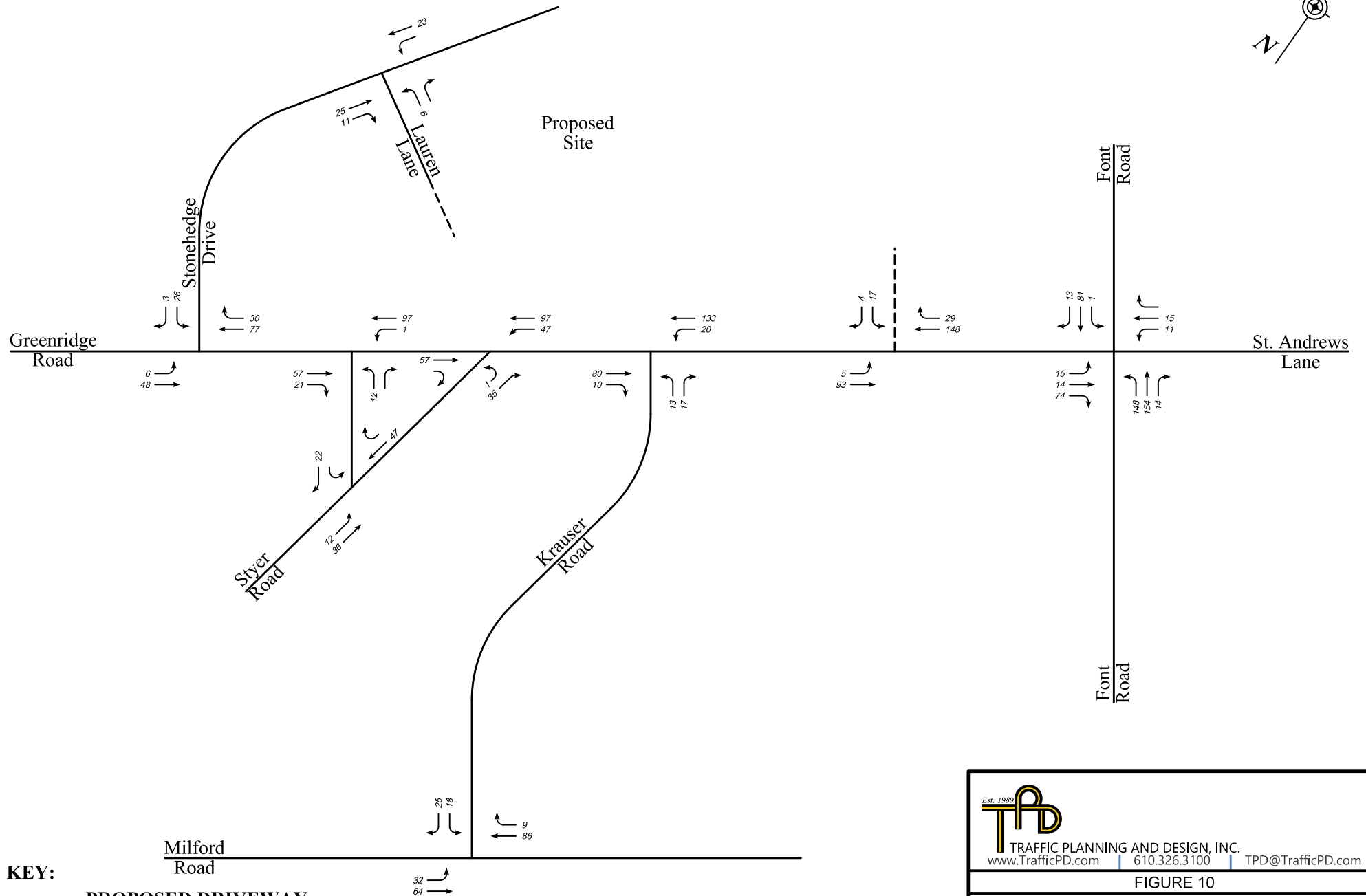
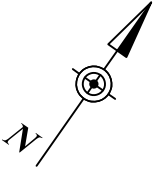
TRIP DISTRIBUTION
WEEKDAY P.M. PEAK HOUR



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FIGURE 9

2026 PROJECTED CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

----- **PROPOSED DRIVEWAY**

SCHEMATIC DRAWING:NOT TO SCALE



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FIGURE 10

**2026 PROJECTED CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES**

APPENDIX A:

Manual Traffic Count Printouts



Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100 mosmulski@trafficpd.com

Count Name: Greenridge Road
& Stonhedge Drive
Site Code:
Start Date: 07/20/2021
Page No: 1

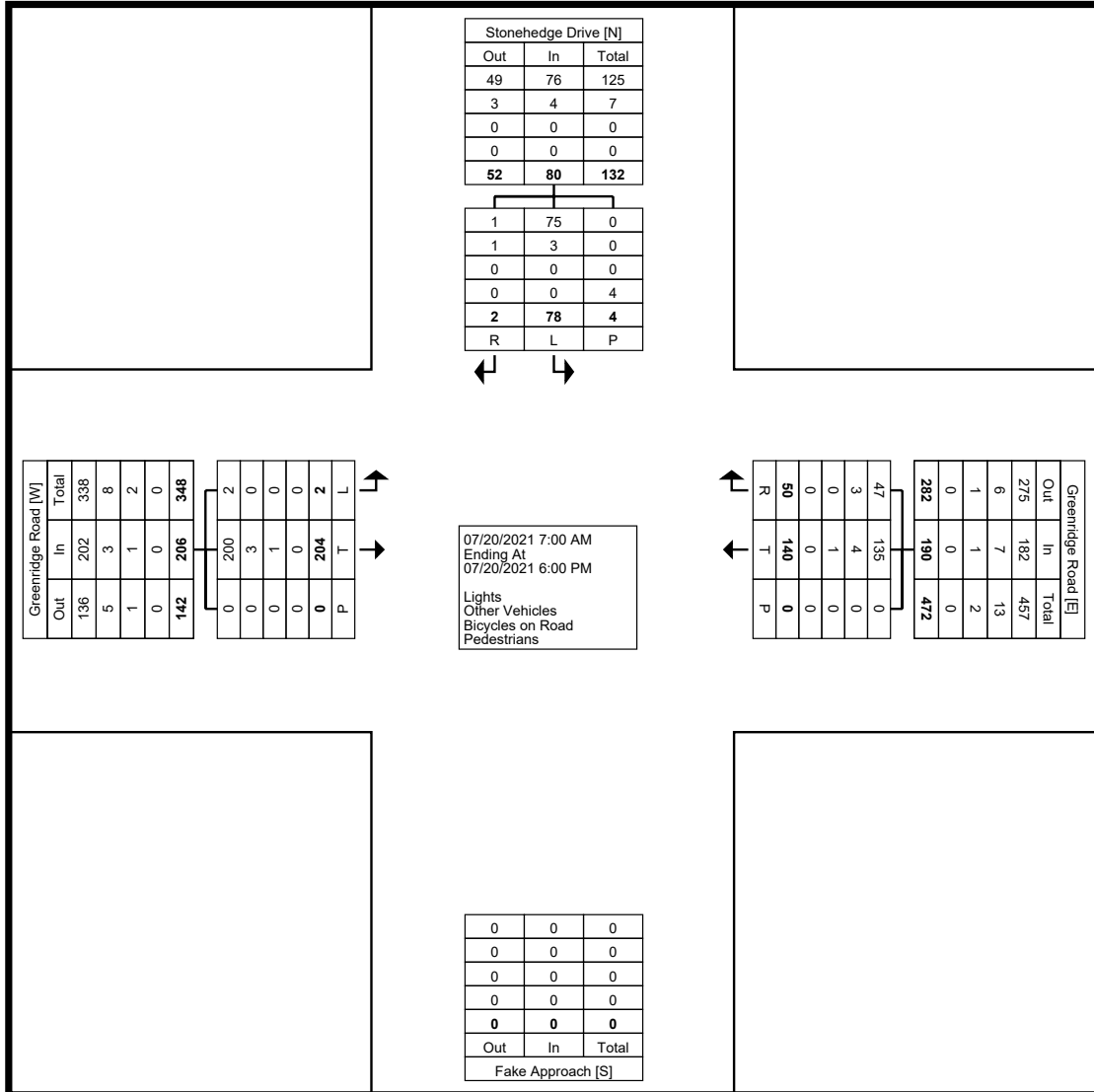
Turning Movement Data

Start Time	Greenridge Road Eastbound				Greenridge Road Westbound				Stonhedge Drive Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	0	12	0	12	2	2	0	4	5	0	2	5	21
7:15 AM	0	19	0	19	2	1	0	3	4	0	0	4	26
7:30 AM	0	11	0	11	5	0	0	5	5	0	0	5	21
7:45 AM	0	15	0	15	3	3	0	6	5	0	0	5	26
Hourly Total	0	57	0	57	12	6	0	18	19	0	2	19	94
8:00 AM	0	23	0	23	9	0	0	9	8	1	1	9	41
8:15 AM	0	18	0	18	10	2	0	12	8	0	0	8	38
8:30 AM	1	11	0	12	4	3	0	7	6	0	0	6	25
8:45 AM	0	17	0	17	1	2	0	3	4	0	0	4	24
Hourly Total	1	69	0	70	24	7	0	31	26	1	1	27	128
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	10	0	11	7	3	0	10	5	0	0	5	26
4:15 PM	0	15	0	15	9	4	0	13	6	1	0	7	35
4:30 PM	0	7	0	7	14	10	0	24	3	0	0	3	34
4:45 PM	0	9	0	9	15	1	0	16	2	0	0	2	27
Hourly Total	1	41	0	42	45	18	0	63	16	1	0	17	122
5:00 PM	0	6	0	6	22	3	0	25	2	0	0	2	33
5:15 PM	0	8	0	8	11	5	0	16	2	0	1	2	26
5:30 PM	0	11	0	11	17	4	0	21	6	0	0	6	38
5:45 PM	0	12	0	12	9	7	0	16	7	0	0	7	35
Hourly Total	0	37	0	37	59	19	0	78	17	0	1	17	132
Grand Total	2	204	0	206	140	50	0	190	78	2	4	80	476
Approach %	1.0	99.0	-	-	73.7	26.3	-	-	97.5	2.5	-	-	-
Total %	0.4	42.9	-	43.3	29.4	10.5	-	39.9	16.4	0.4	-	16.8	-
Lights	2	200	-	202	135	47	-	182	75	1	-	76	460
% Lights	100.0	98.0	-	98.1	96.4	94.0	-	95.8	96.2	50.0	-	95.0	96.6
Other Vehicles	0	3	-	3	4	3	-	7	3	1	-	4	14
% Other Vehicles	0.0	1.5	-	1.5	2.9	6.0	-	3.7	3.8	50.0	-	5.0	2.9
Bicycles on Road	0	1	-	1	1	0	-	1	0	0	-	0	2
% Bicycles on Road	0.0	0.5	-	0.5	0.7	0.0	-	0.5	0.0	0.0	-	0.0	0.4
Pedestrians	-	-	0	-	-	-	0	-	-	-	4	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Greenridge Road
& Stonhedge Drive
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Turning Movement Data Plot



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Count Name: Greenridge Road
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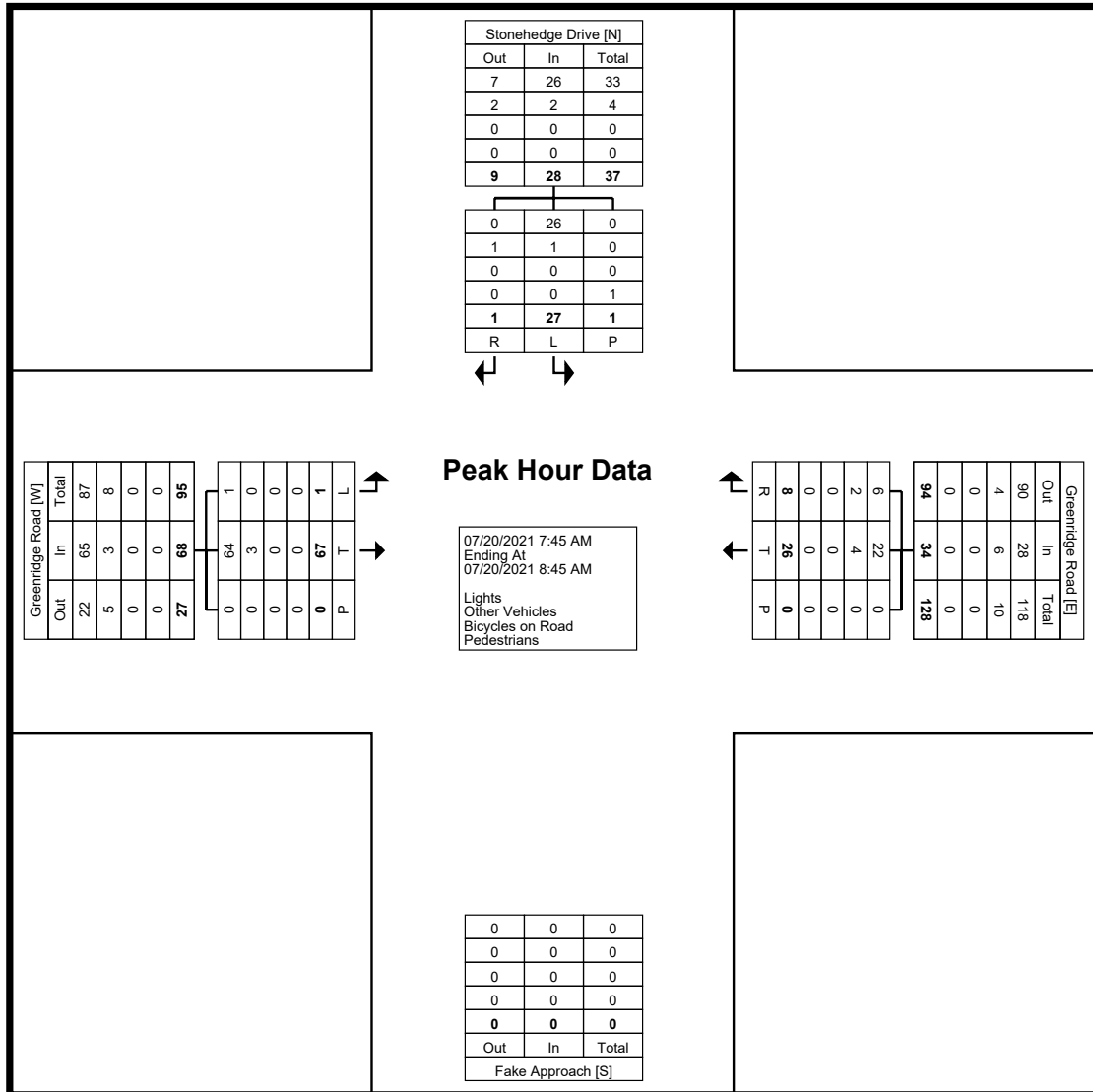
Turning Movement Peak Hour Data (7:45 AM)

Start Time	Greenridge Road Eastbound				Greenridge Road Westbound				Stonhedge Drive Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
7:45 AM	0	15	0	15	3	3	0	6	5	0	0	5	26
8:00 AM	0	23	0	23	9	0	0	9	8	1	1	9	41
8:15 AM	0	18	0	18	10	2	0	12	8	0	0	8	38
8:30 AM	1	11	0	12	4	3	0	7	6	0	0	6	25
Total	1	67	0	68	26	8	0	34	27	1	1	28	130
Approach %	1.5	98.5	-	-	76.5	23.5	-	-	96.4	3.6	-	-	-
Total %	0.8	51.5	-	52.3	20.0	6.2	-	26.2	20.8	0.8	-	21.5	-
PHF	0.250	0.728	-	0.739	0.650	0.667	-	0.708	0.844	0.250	-	0.778	0.793
Lights	1	64	-	65	22	6	-	28	26	0	-	26	119
% Lights	100.0	95.5	-	95.6	84.6	75.0	-	82.4	96.3	0.0	-	92.9	91.5
Other Vehicles	0	3	-	3	4	2	-	6	1	1	-	2	11
% Other Vehicles	0.0	4.5	-	4.4	15.4	25.0	-	17.6	3.7	100.0	-	7.1	8.5
Bicycles on Road	0	0	-	0	0	0	-	0	0	0	-	0	0
% Bicycles on Road	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (7:45 AM)



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Count Name: Greenridge Road
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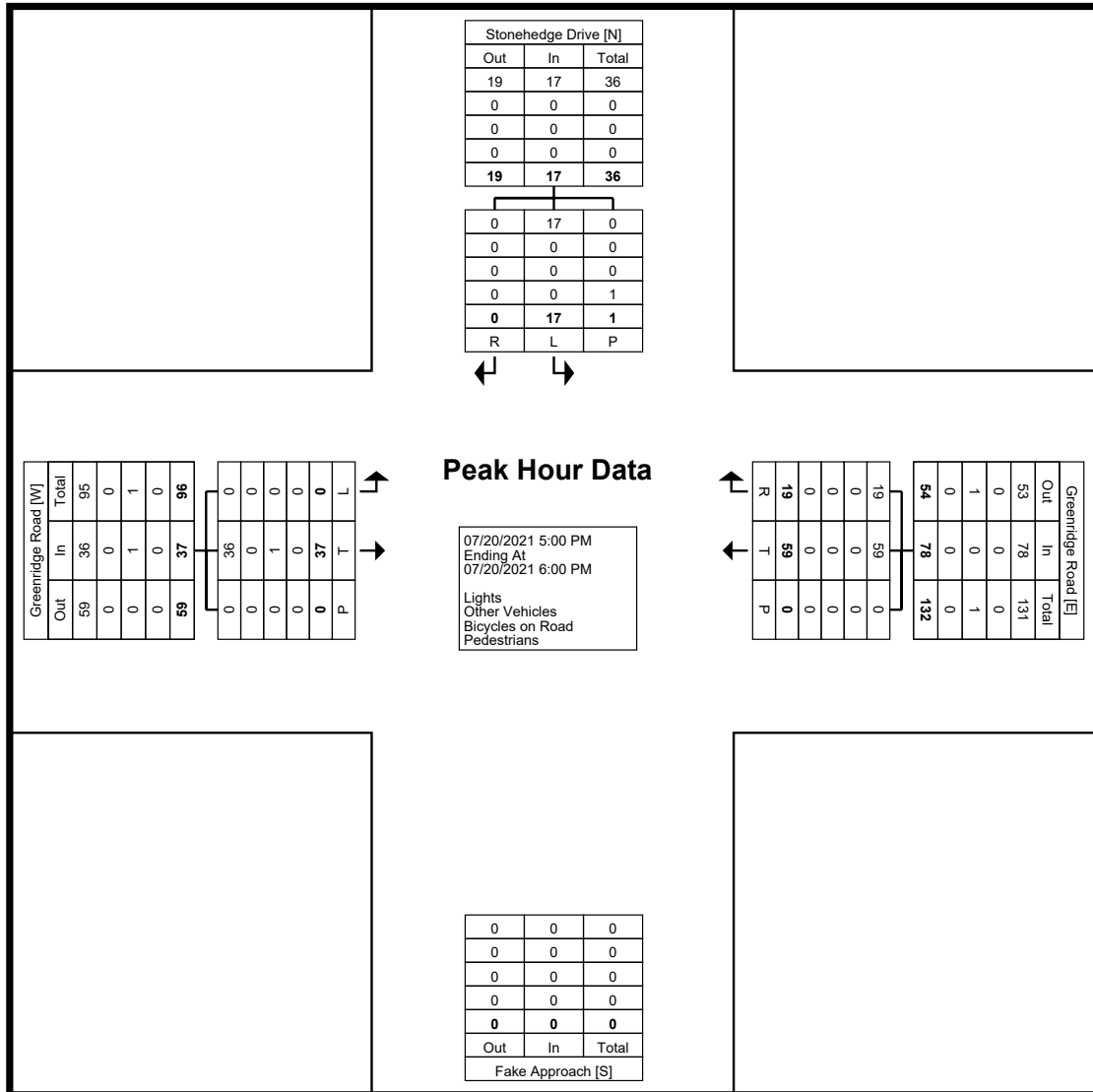
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Greenridge Road Eastbound				Greenridge Road Westbound				Stonhedge Drive Southbound				Int. Total
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	
5:00 PM	0	6	0	6	22	3	0	25	2	0	0	2	33
5:15 PM	0	8	0	8	11	5	0	16	2	0	1	2	26
5:30 PM	0	11	0	11	17	4	0	21	6	0	0	6	38
5:45 PM	0	12	0	12	9	7	0	16	7	0	0	7	35
Total	0	37	0	37	59	19	0	78	17	0	1	17	132
Approach %	0.0	100.0	-	-	75.6	24.4	-	-	100.0	0.0	-	-	-
Total %	0.0	28.0	-	28.0	44.7	14.4	-	59.1	12.9	0.0	-	12.9	-
PHF	0.000	0.771	-	0.771	0.670	0.679	-	0.780	0.607	0.000	-	0.607	0.868
Lights	0	36	-	36	59	19	-	78	17	0	-	17	131
% Lights	-	97.3	-	97.3	100.0	100.0	-	100.0	100.0	-	-	100.0	99.2
Other Vehicles	0	0	-	0	0	0	-	0	0	0	-	0	0
% Other Vehicles	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	1	-	1	0	0	-	0	0	0	-	0	1
% Bicycles on Road	-	2.7	-	2.7	0.0	0.0	-	0.0	0.0	-	-	0.0	0.8
Pedestrians	-	-	0	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Turning Movement Peak Hour Data Plot (5:00 PM)

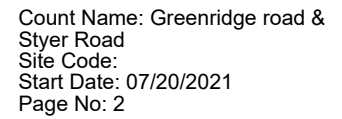


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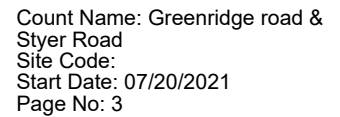
Count Name: Greenridge road &
Styer Road
Site Code:
Start Date: 07/20/2021
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Turning Movement Data

Start Time	Greenridge Road Eastbound				Greenridge Road Westbound				Styer Road Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
7:00 AM	14	0	0	14	2	3	0	5	0	2	0	2	21
7:15 AM	19	0	0	19	3	2	0	5	0	2	0	2	26
7:30 AM	15	0	0	15	2	5	0	7	0	2	0	2	24
7:45 AM	16	0	0	16	7	3	0	10	0	10	0	10	36
Hourly Total	64	0	0	64	14	13	0	27	0	16	0	16	107
8:00 AM	26	0	0	26	3	6	0	9	0	6	0	6	41
8:15 AM	15	0	0	15	2	8	0	10	0	7	0	7	32
8:30 AM	15	0	0	15	3	5	0	8	0	1	0	1	24
8:45 AM	13	0	0	13	3	2	0	5	0	5	0	5	23
Hourly Total	69	0	0	69	11	21	0	32	0	19	0	19	120
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	13	0	0	13	10	8	0	18	0	2	0	2	33
4:15 PM	19	0	0	19	8	12	0	20	0	4	0	4	43
4:30 PM	9	0	0	9	11	19	0	30	0	5	0	5	44
4:45 PM	10	0	0	10	8	12	0	20	0	4	0	4	34
Hourly Total	51	0	0	51	37	51	0	88	0	15	0	15	154
5:00 PM	8	0	0	8	4	26	1	30	0	7	0	7	45
5:15 PM	9	0	0	9	12	13	0	25	0	4	0	4	38
5:30 PM	9	0	0	9	11	19	0	30	1	6	0	7	46
5:45 PM	16	0	0	16	8	14	0	22	0	8	0	8	46
Hourly Total	42	0	0	42	35	72	1	107	1	25	0	26	175
Grand Total	226	0	0	226	97	157	1	254	1	75	0	76	556
Approach %	100.0	0.0	-	-	38.2	61.8	-	-	1.3	98.7	-	-	-
Total %	40.6	0.0	-	40.6	17.4	28.2	-	45.7	0.2	13.5	-	13.7	-
Lights	222	0	-	222	97	155	-	252	1	74	-	75	549
% Lights	98.2	-	-	98.2	100.0	98.7	-	99.2	100.0	98.7	-	98.7	98.7
Other Vehicles	3	0	-	3	0	1	-	1	0	1	-	1	5
% Other Vehicles	1.3	-	-	1.3	0.0	0.6	-	0.4	0.0	1.3	-	1.3	0.9
Bicycles on Road	1	0	-	1	0	1	-	1	0	0	-	0	2
% Bicycles on Road	0.4	-	-	0.4	0.0	0.6	-	0.4	0.0	0.0	-	0.0	0.4
Pedestrians	-	-	0	-	-	-	1	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	-	-



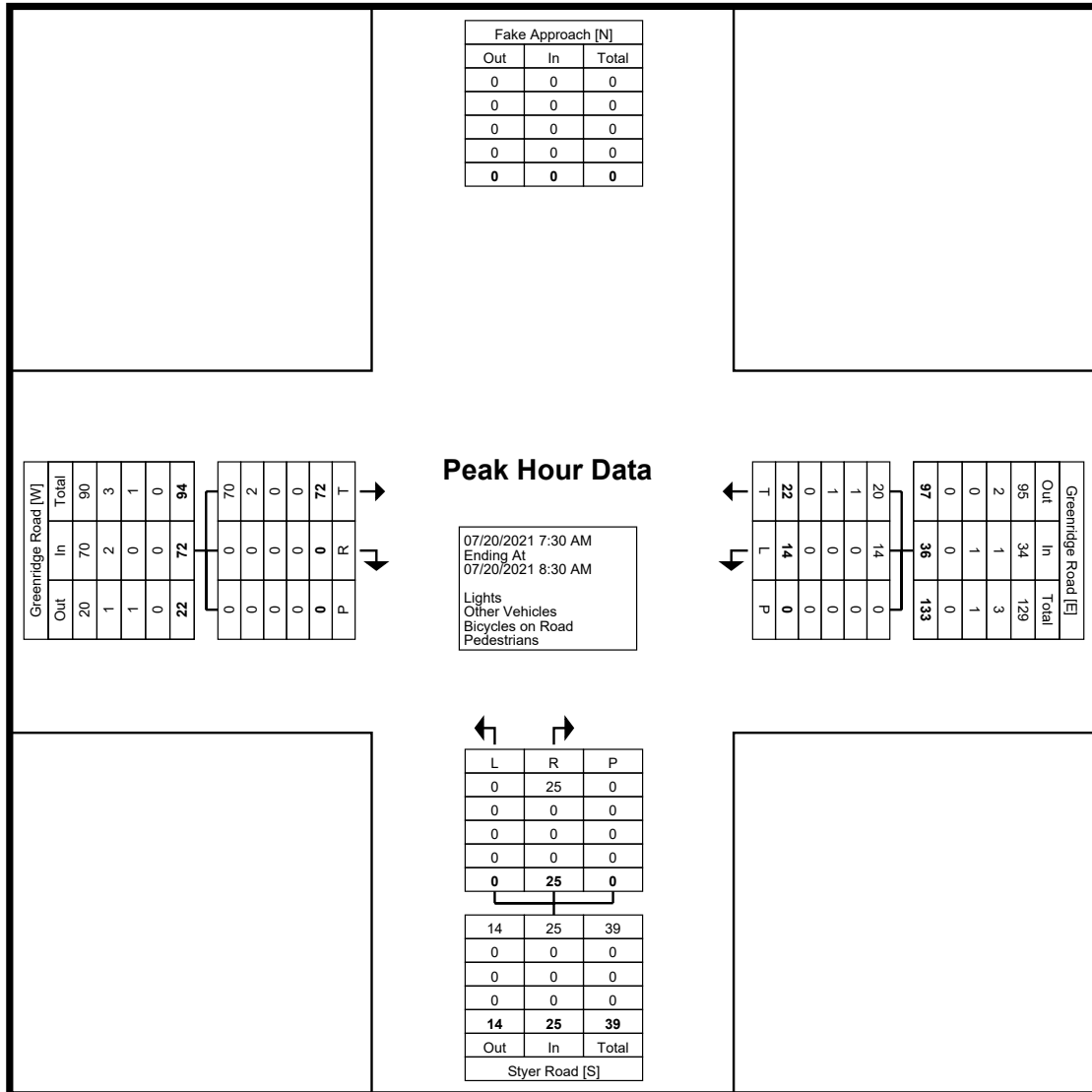
Turning Movement Data Plot

[illegible]



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Count Name: Greenridge road &
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Turning Movement Peak Hour Data Plot (7:30 AM)



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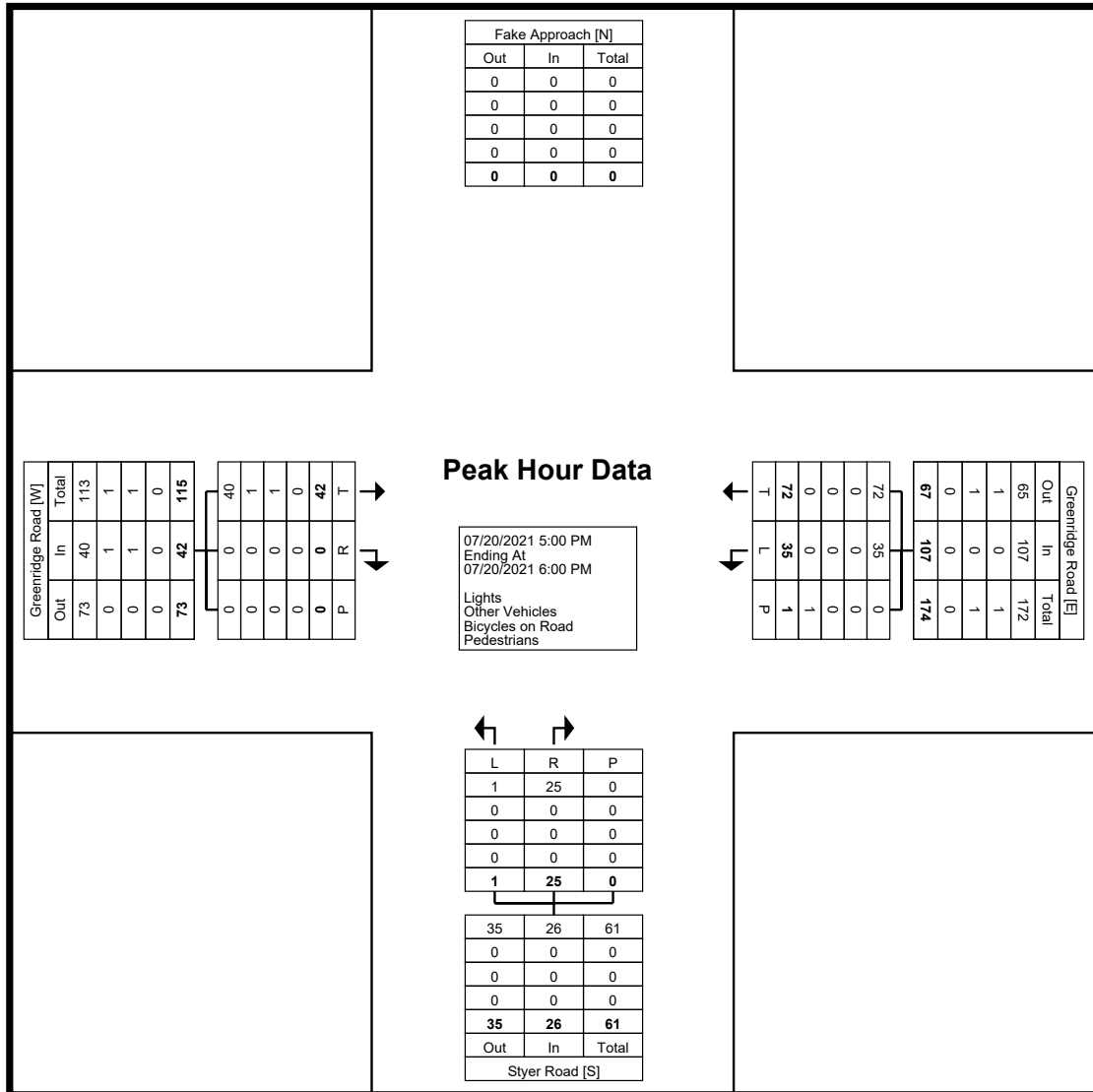
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Greenridge Road Eastbound				Greenridge Road Westbound				Styer Road Northbound				Int. Total
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	
5:00 PM	8	0	0	8	4	26	1	30	0	7	0	7	45
5:15 PM	9	0	0	9	12	13	0	25	0	4	0	4	38
5:30 PM	9	0	0	9	11	19	0	30	1	6	0	7	46
5:45 PM	16	0	0	16	8	14	0	22	0	8	0	8	46
Total	42	0	0	42	35	72	1	107	1	25	0	26	175
Approach %	100.0	0.0	-	-	32.7	67.3	-	-	3.8	96.2	-	-	-
Total %	24.0	0.0	-	24.0	20.0	41.1	-	61.1	0.6	14.3	-	14.9	-
PHF	0.656	0.000	-	0.656	0.729	0.692	-	0.892	0.250	0.781	-	0.813	0.951
Lights	40	0	-	40	35	72	-	107	1	25	-	26	173
% Lights	95.2	-	-	95.2	100.0	100.0	-	100.0	100.0	100.0	-	100.0	98.9
Other Vehicles	1	0	-	1	0	0	-	0	0	0	-	0	1
% Other Vehicles	2.4	-	-	2.4	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Bicycles on Road	1	0	-	1	0	0	-	0	0	0	-	0	1
% Bicycles on Road	2.4	-	-	2.4	0.0	0.0	-	0.0	0.0	0.0	-	0.0	0.6
Pedestrians	-	-	0	-	-	-	1	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	-	-	-

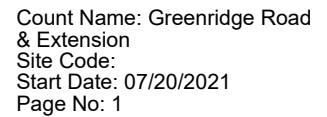


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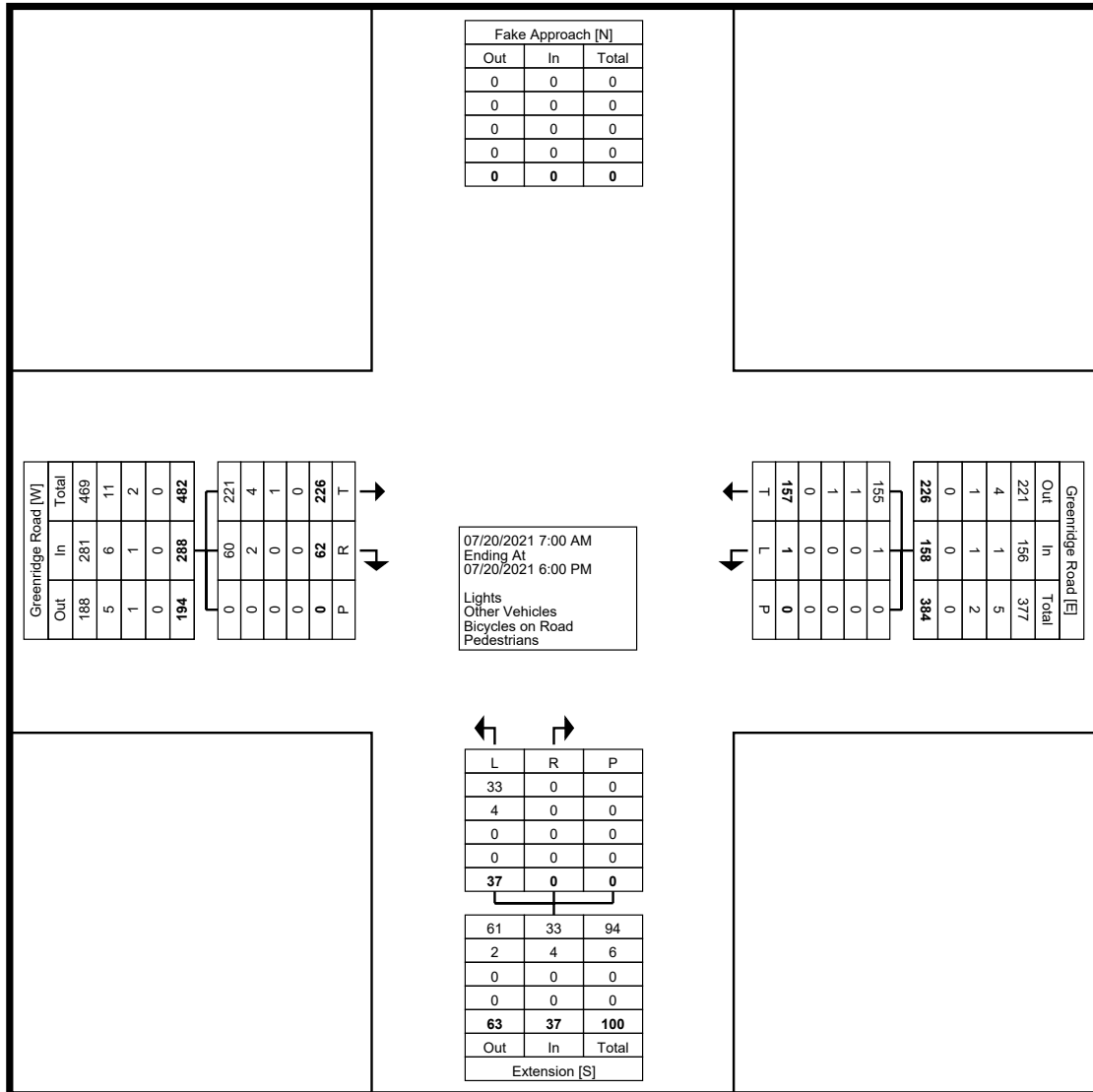
Turning Movement Peak Hour Data Plot (5:00 PM)

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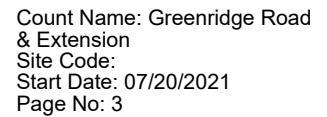


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Count Name: Greenridge Road
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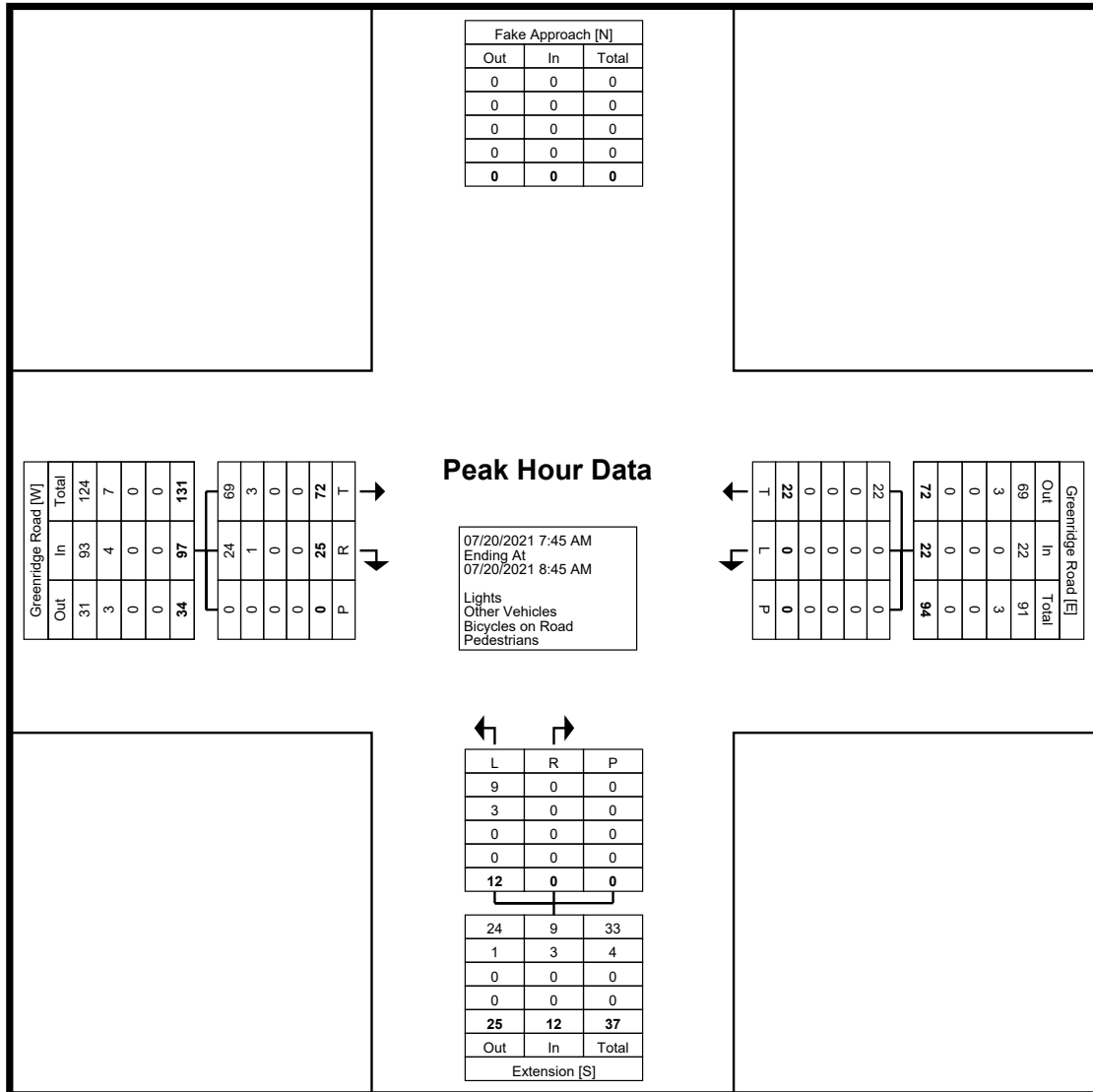
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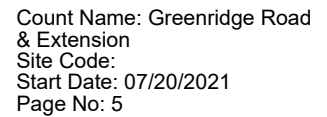


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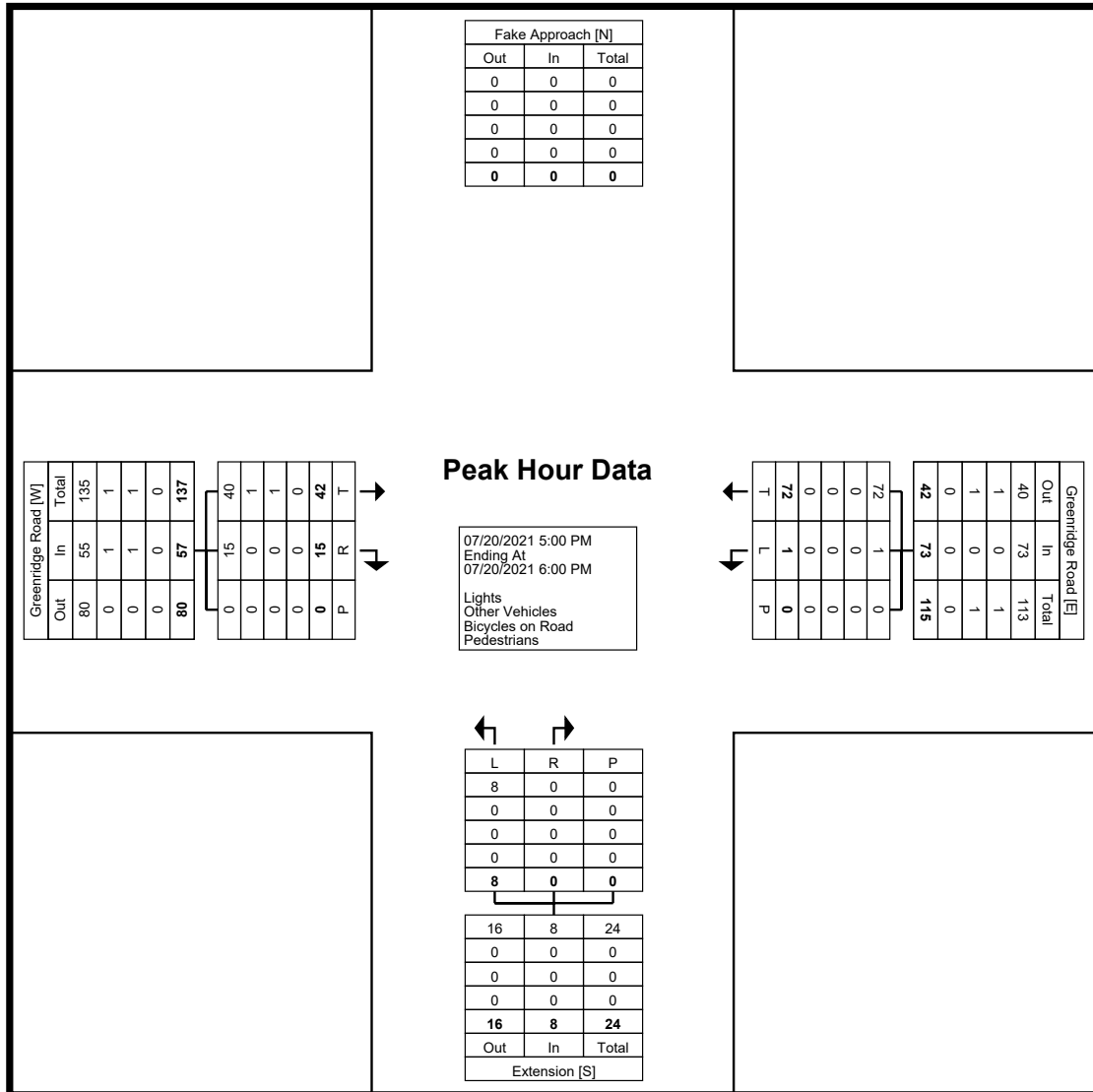
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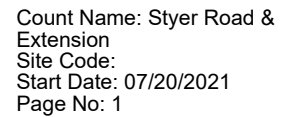


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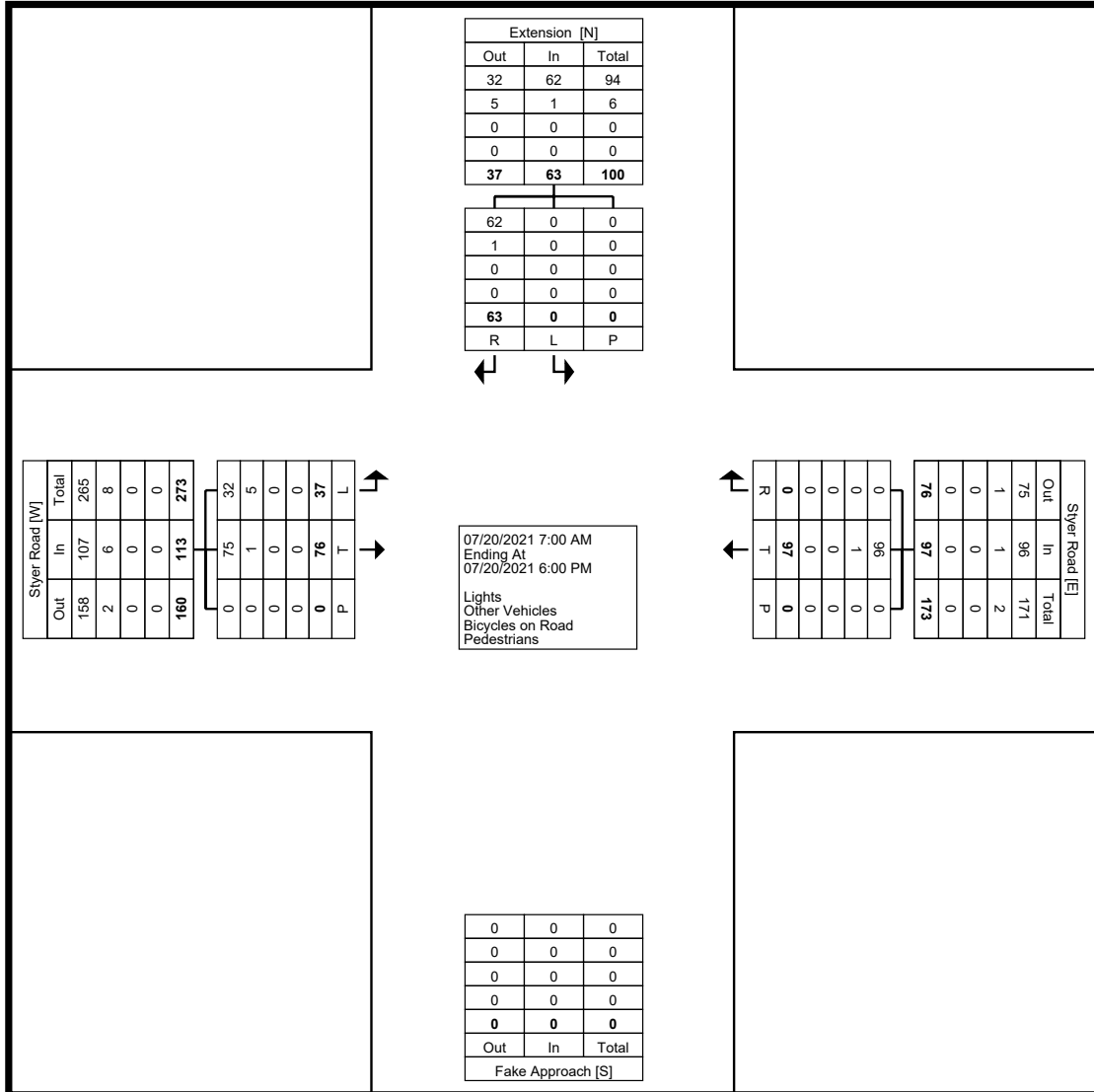
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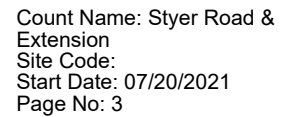


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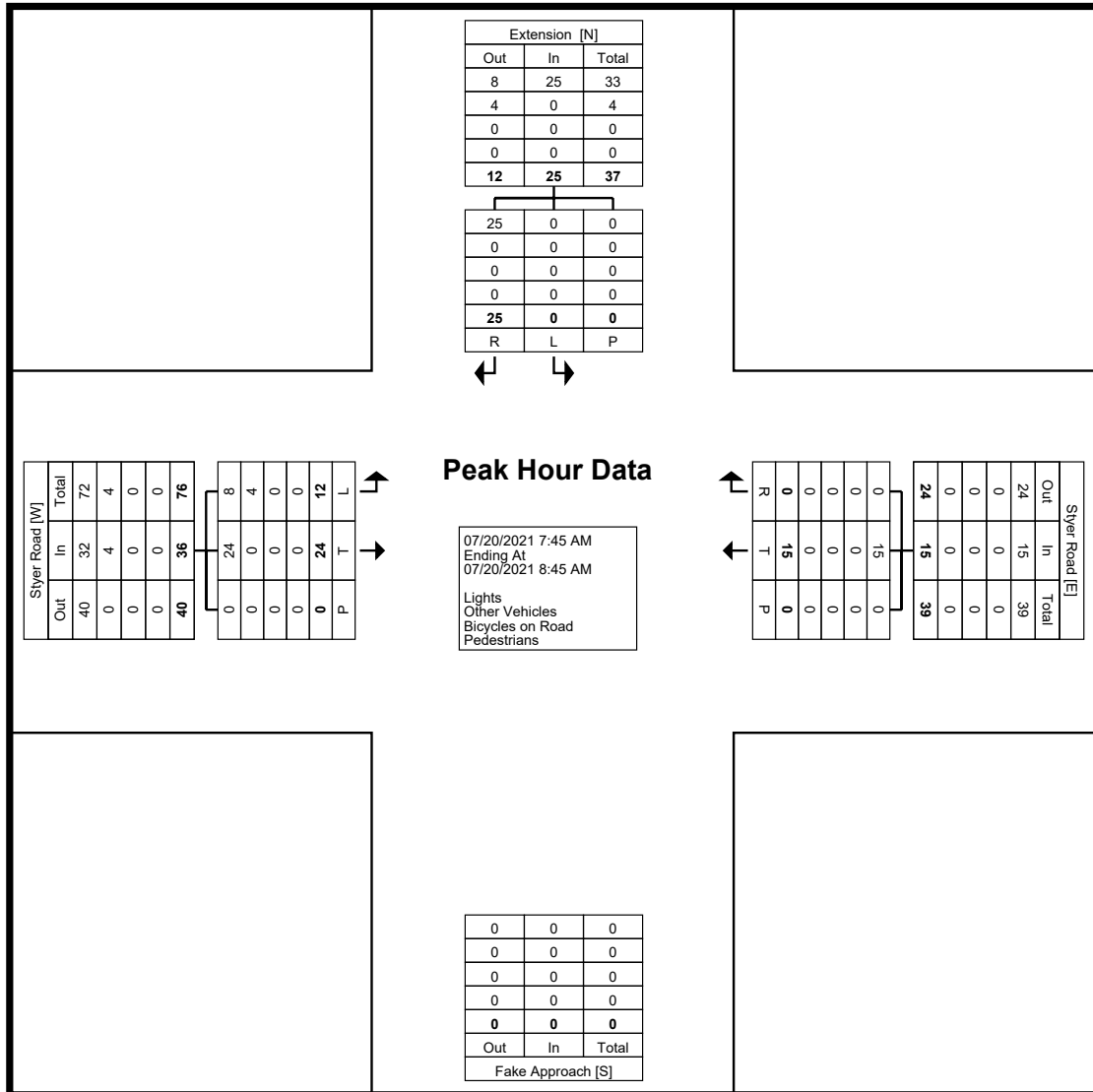
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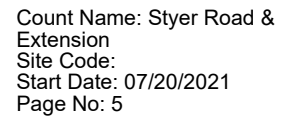


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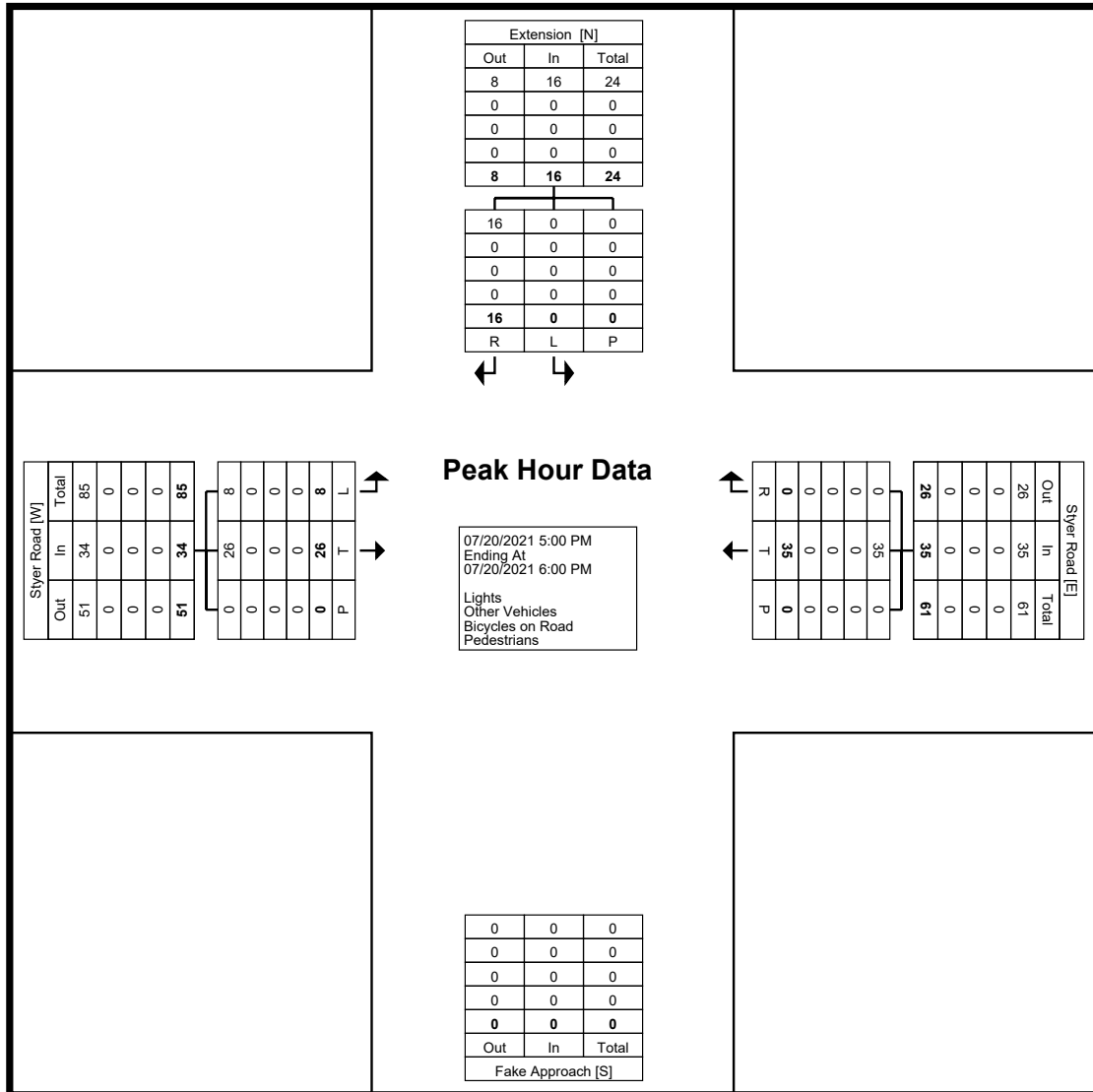
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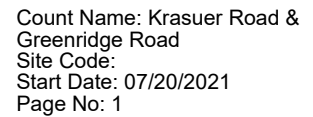


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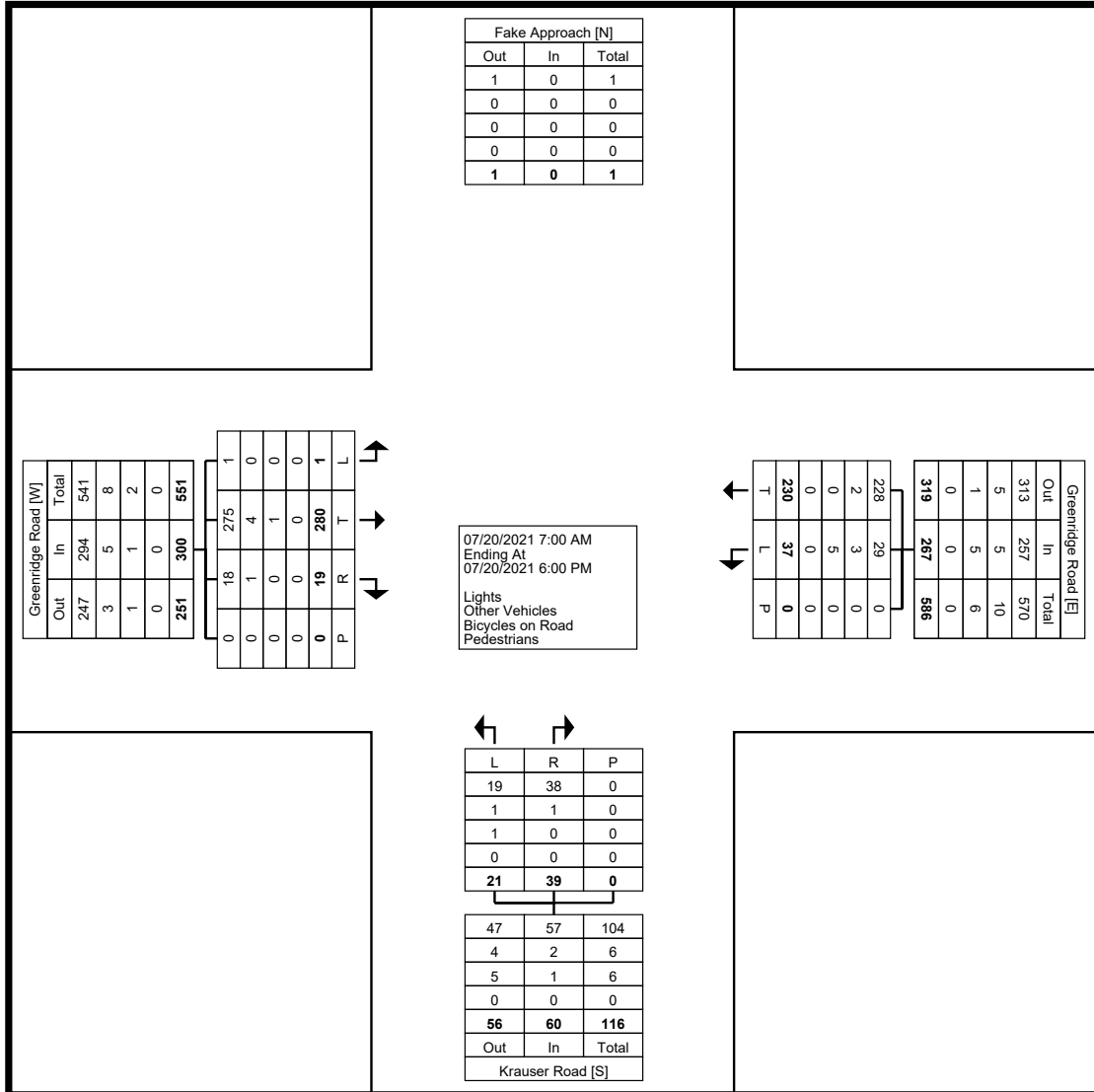
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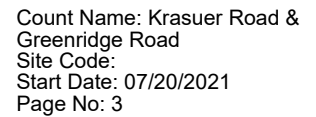


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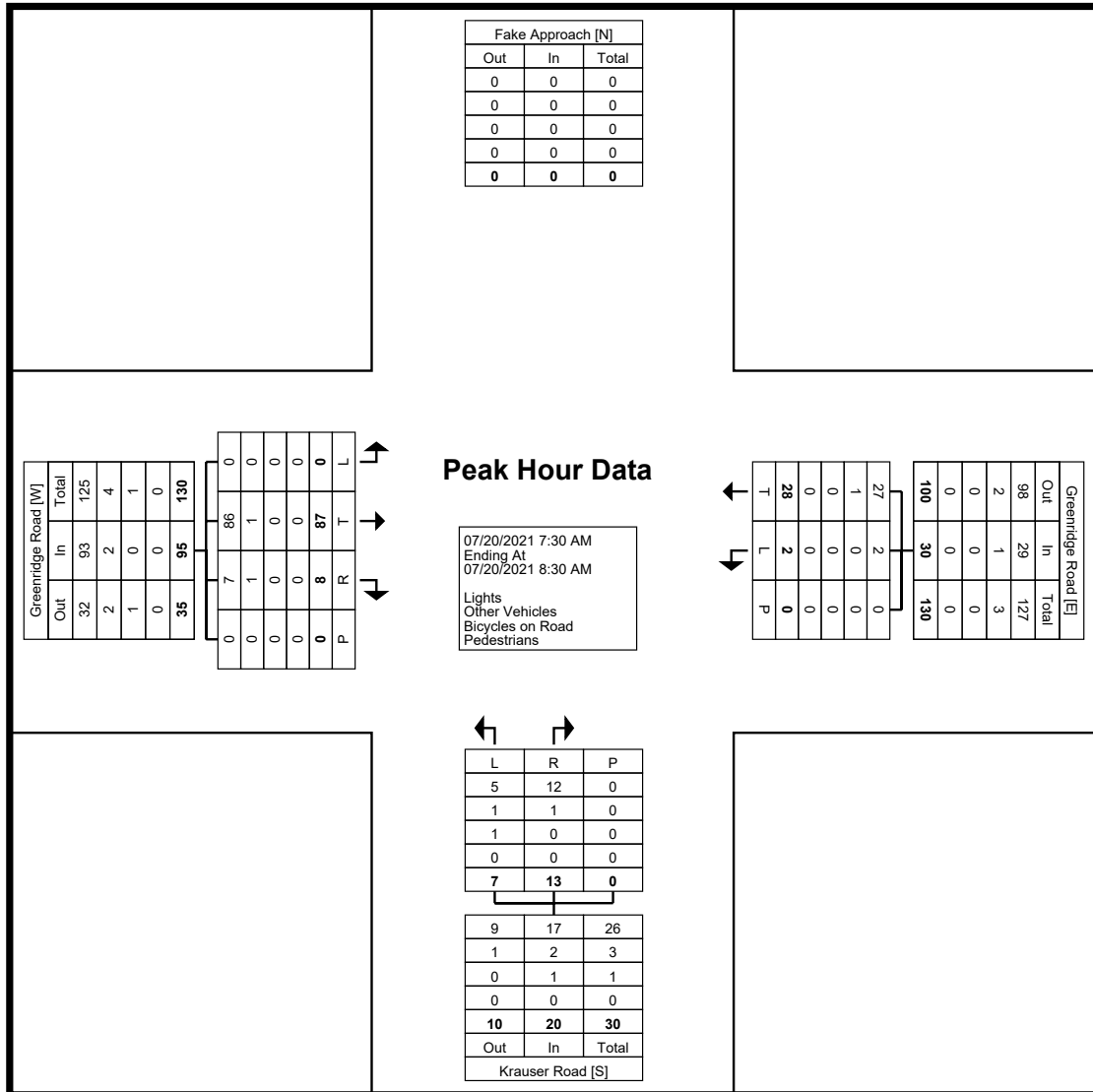
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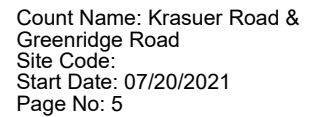


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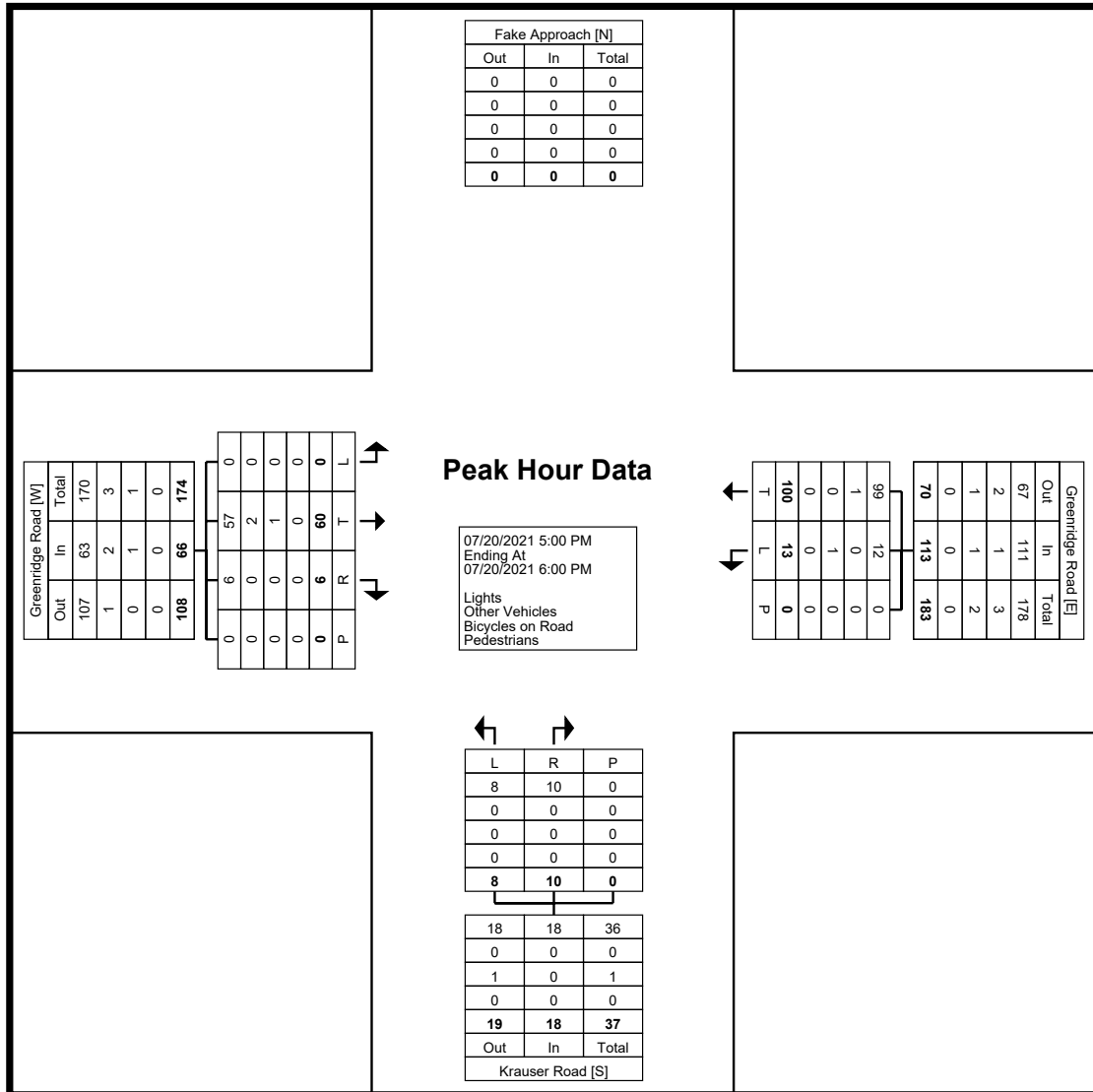
Turning Movement Peak Hour Data Plot (7:30 AM)

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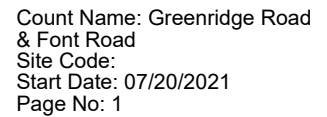


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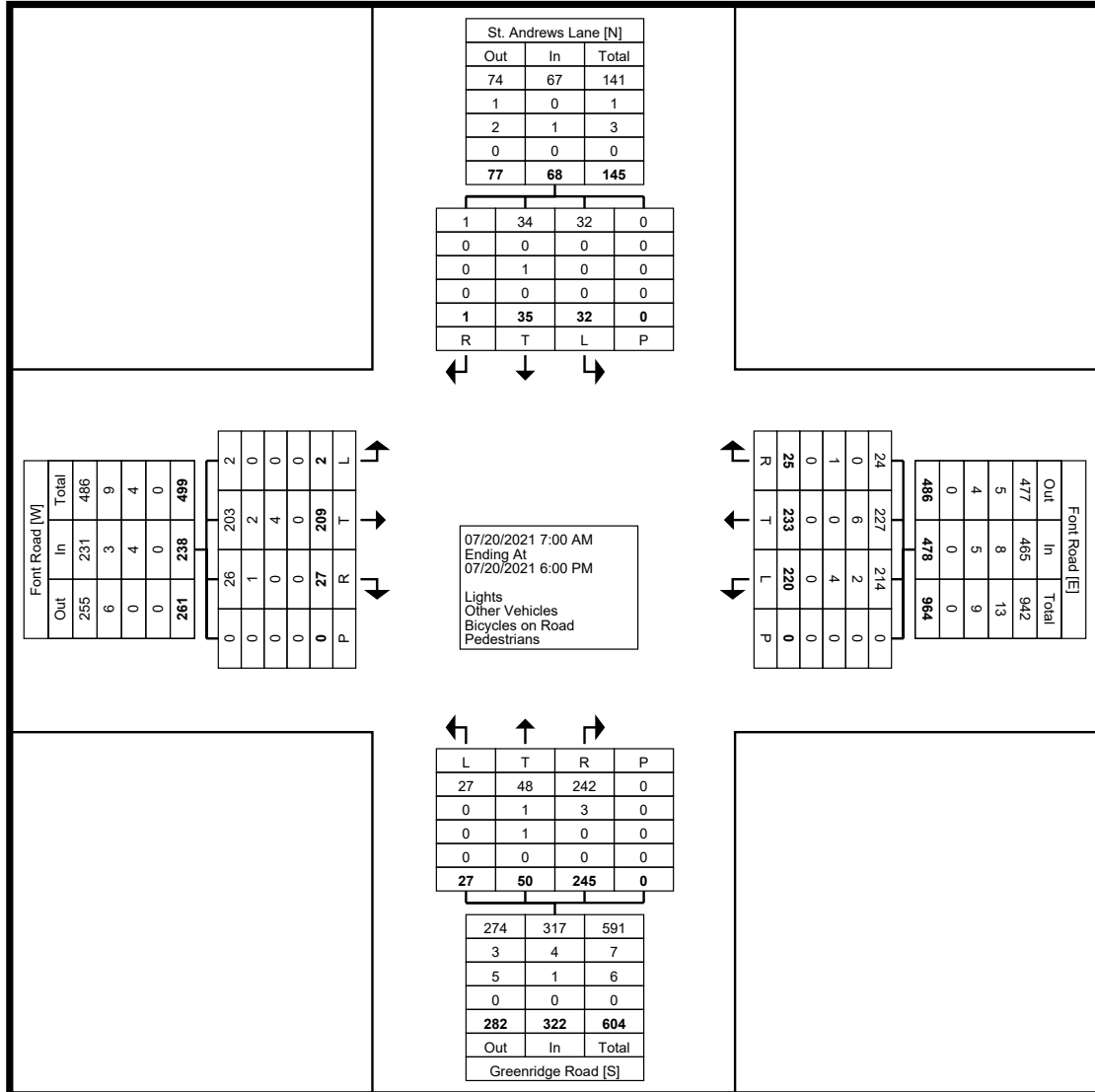
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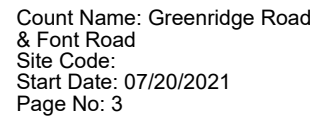


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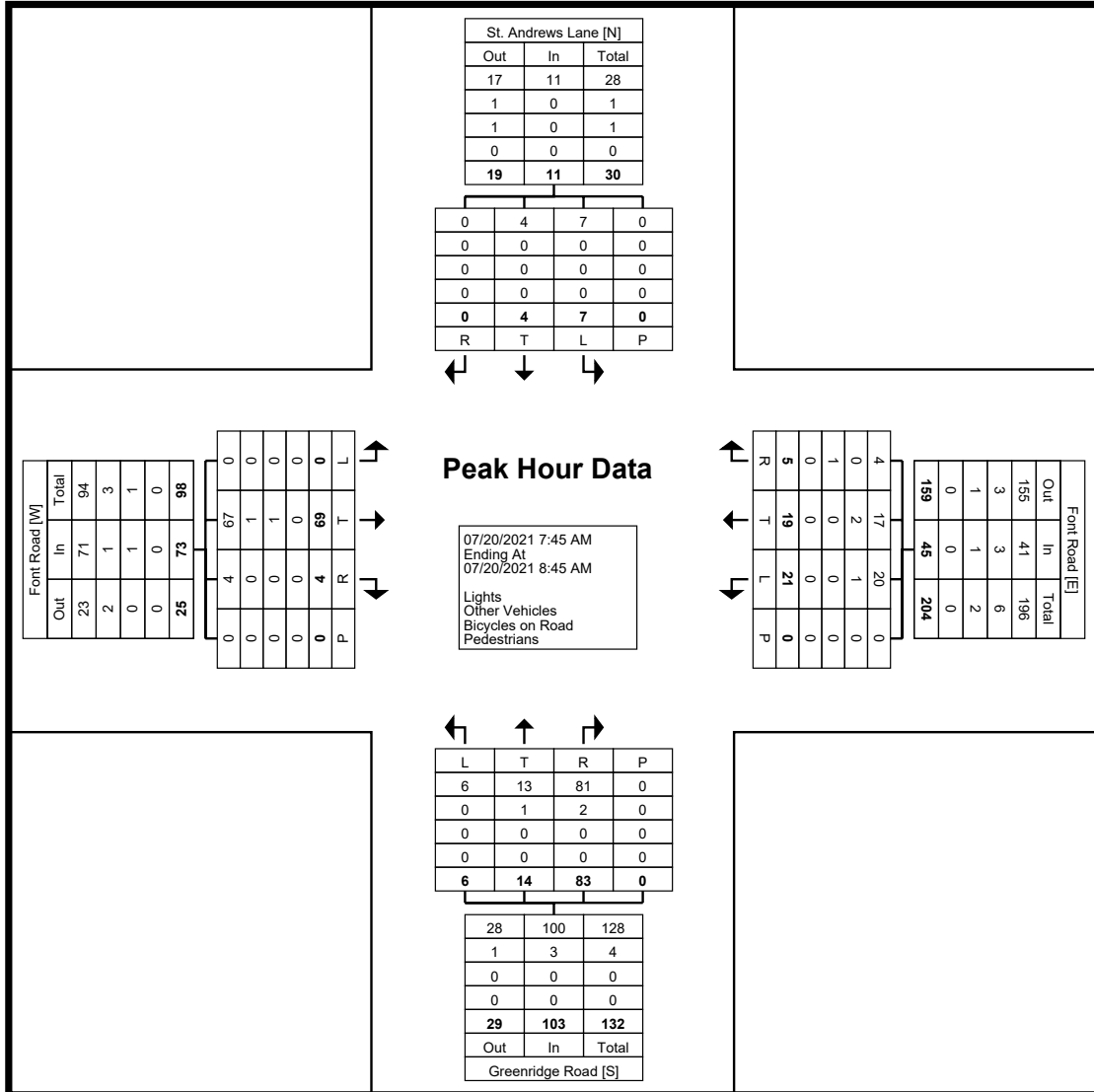
Turning Movement Data Plot



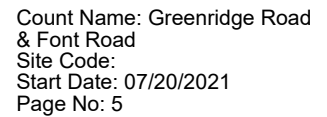


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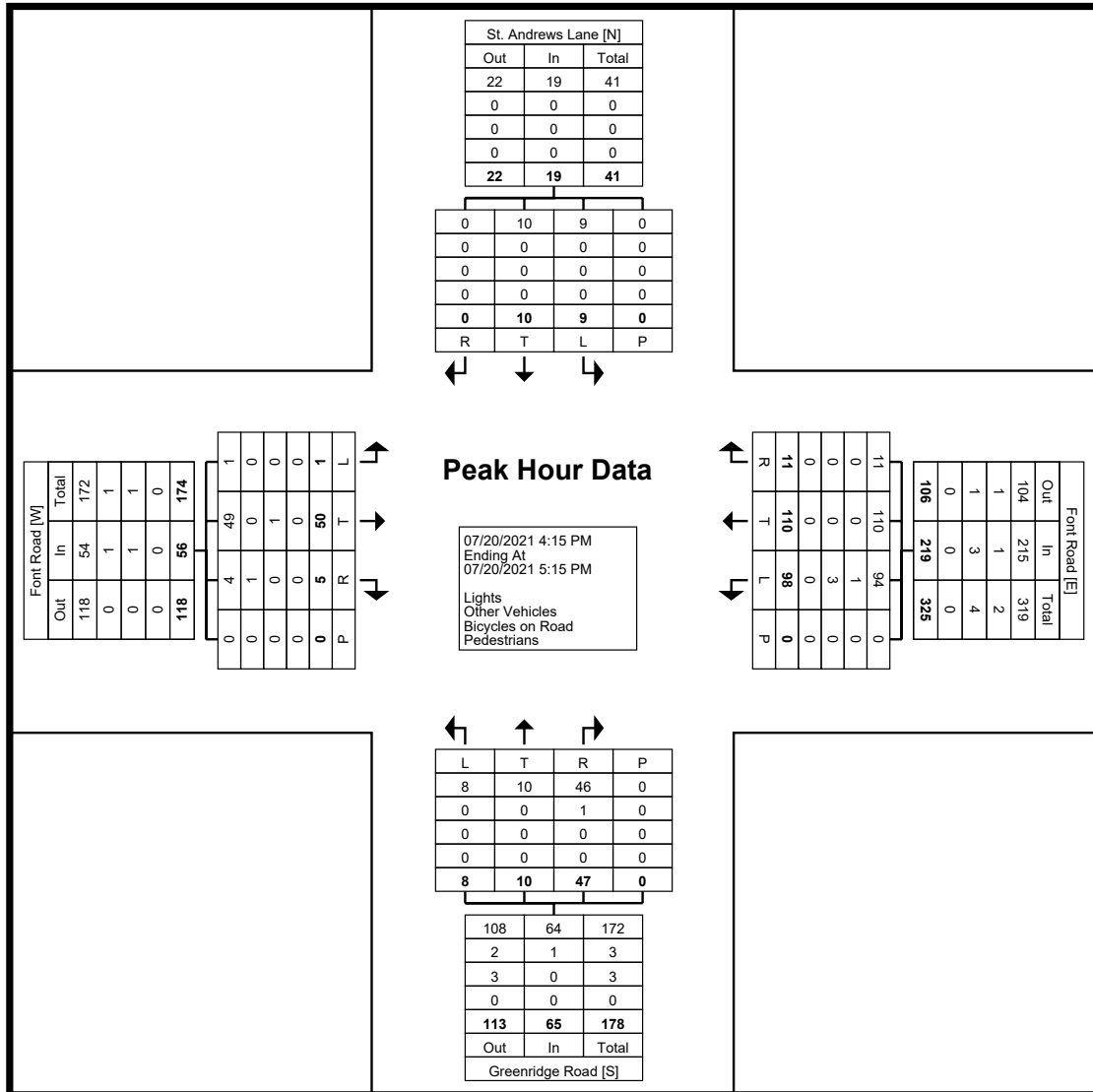
Turning Movement Peak Hour Data Plot (7:45 AM)

[illegible]



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Count Name: Greenridge Road
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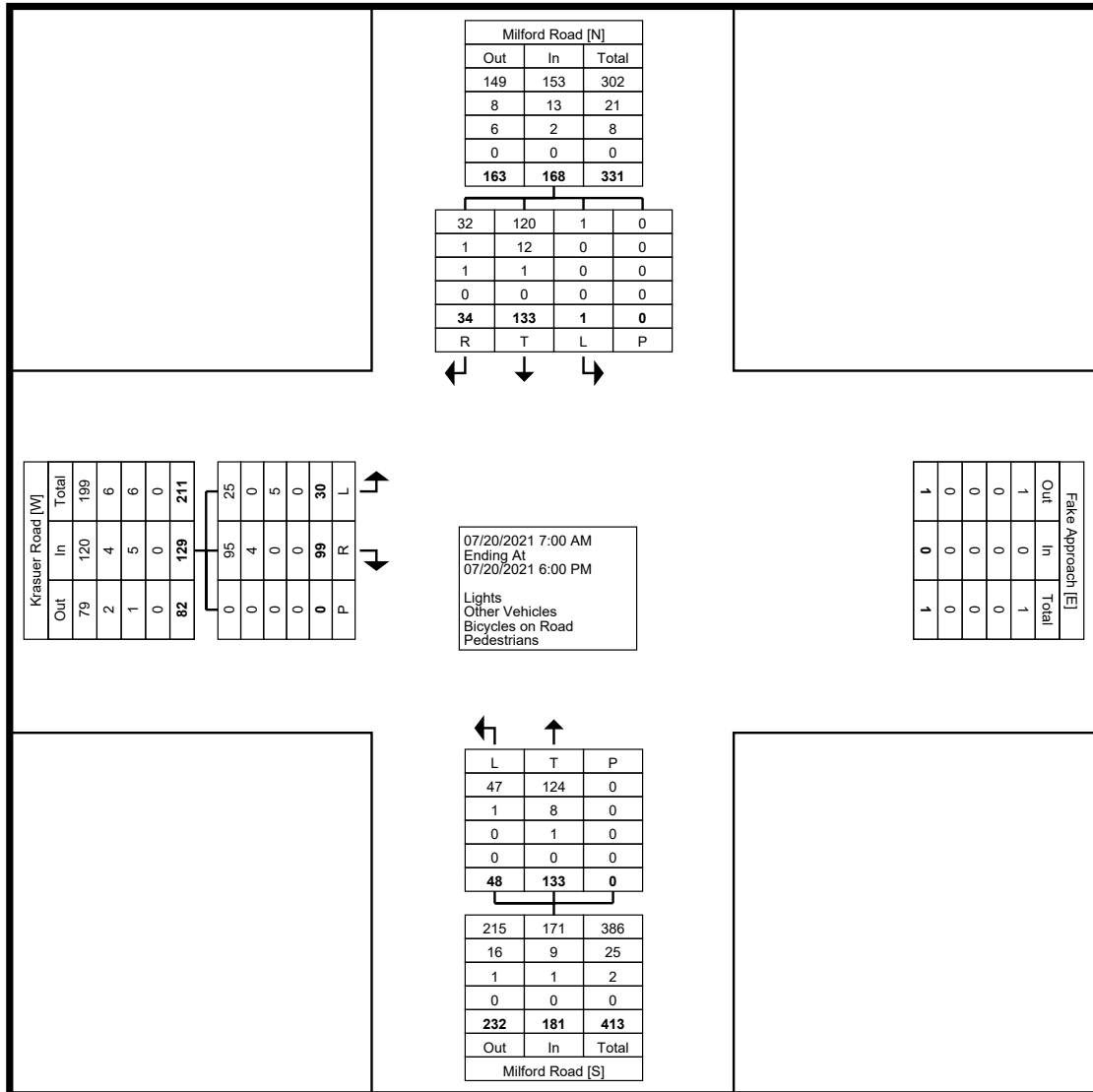
Turning Movement Peak Hour Data Plot (4:15 PM)

[illegible]



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Count Name: Milford Road &
Krauser Road
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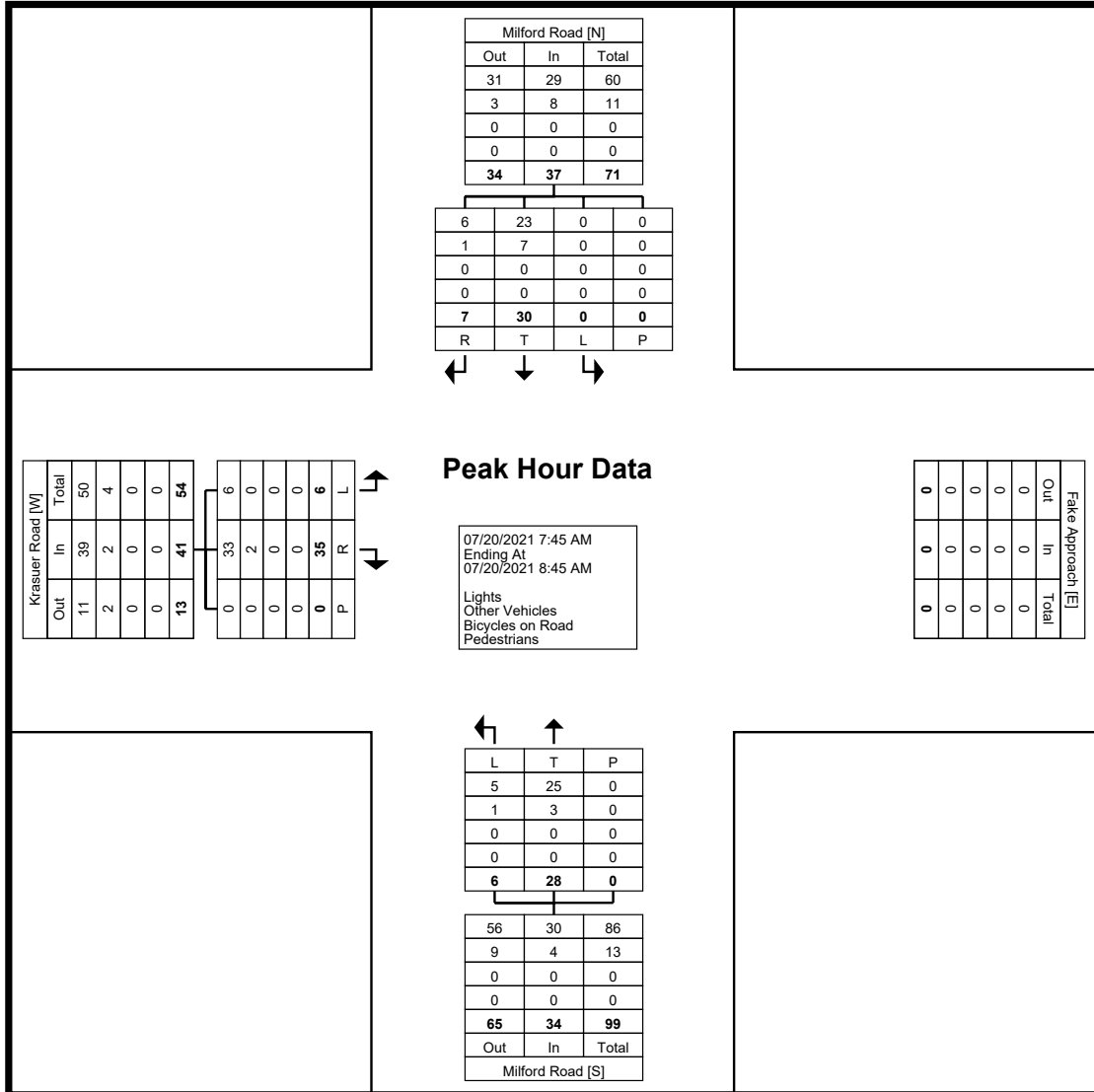
Turning Movement Data Plot

[illegible]



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610.326.3100 mosmulski@trafficpd.com

Count Name: Milford Road &
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Site Code:
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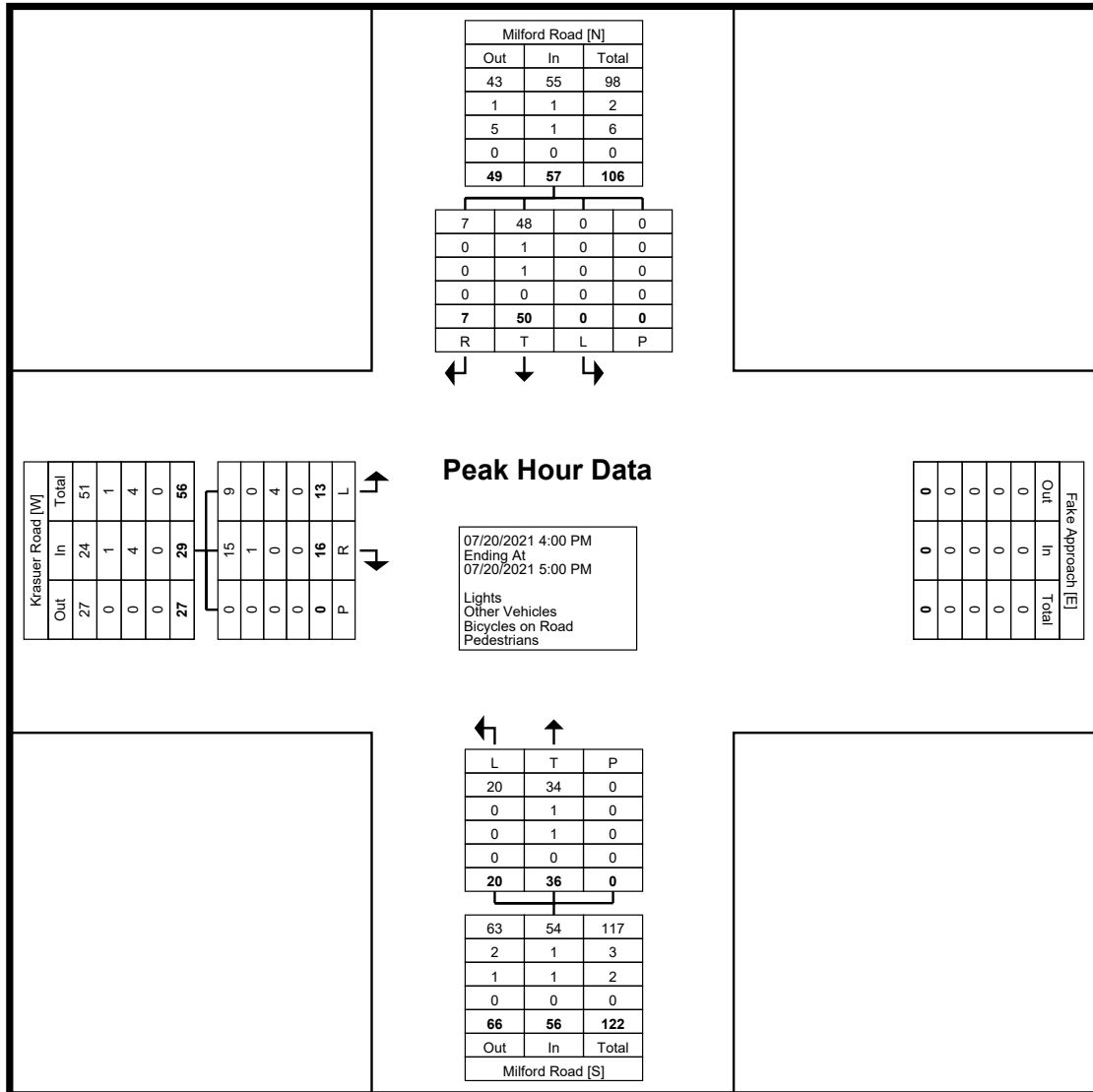
Turning Movement Peak Hour Data Plot (7:45 AM)

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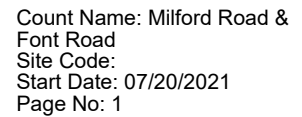
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Turning Movement Peak Hour Data Plot (4:00 PM)

COVID Adjustment

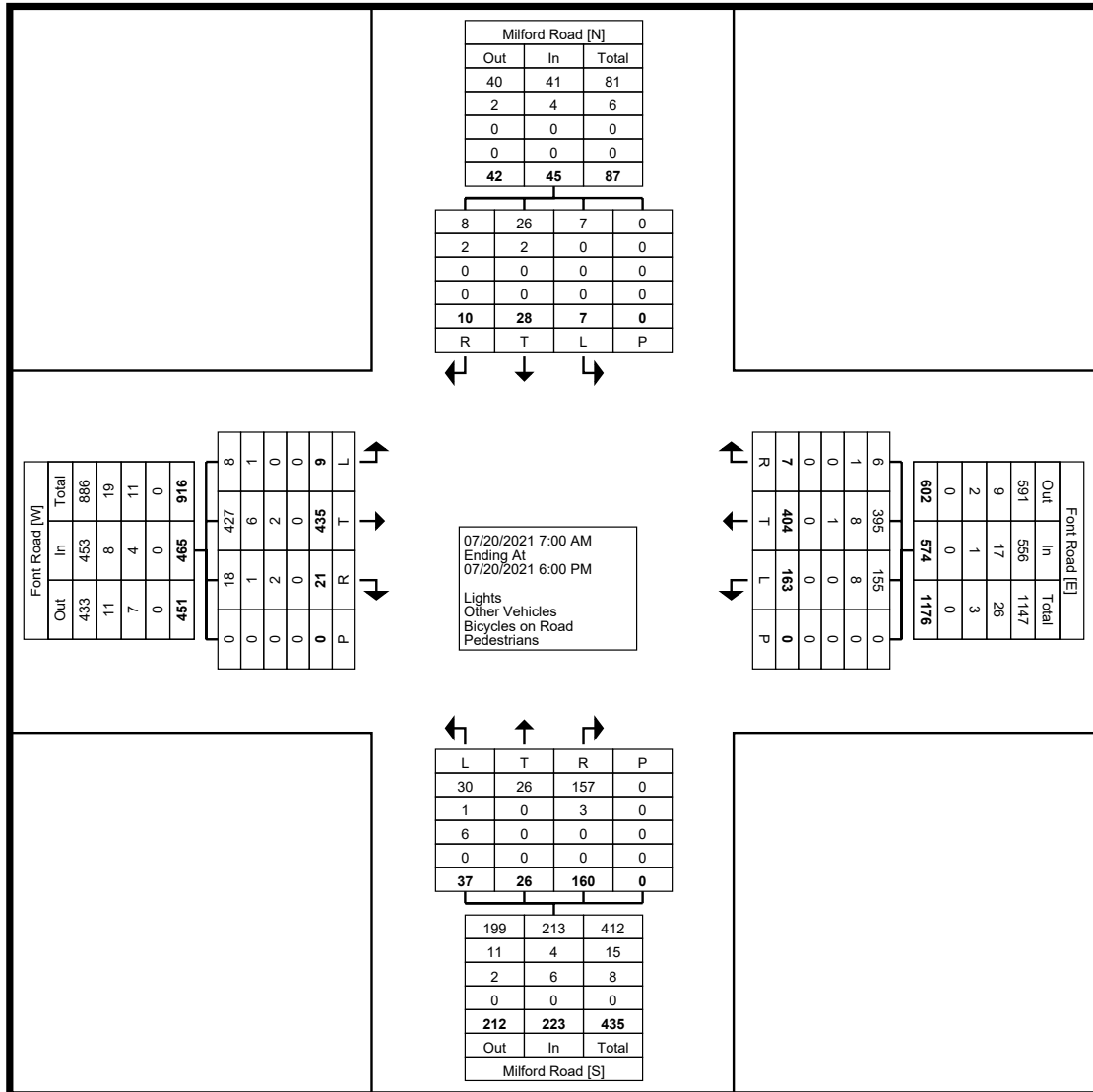


Start Time	Font Road Westbound					Font Road Eastbound					Milford Road Southbound					Milford Road Northbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	2	9	1	0	12	2	29	0	0	31	0	3	1	0	4	2	0	5	0	7	54
7:15 AM	7	9	0	0	16	0	32	2	0	34	0	0	4	0	4	1	2	9	0	12	66
7:30 AM	6	8	0	0	14	0	31	2	0	33	0	2	0	0	2	1	2	12	0	15	64
7:45 AM	5	7	0	0	12	3	25	0	0	28	0	3	1	0	4	0	1	10	0	11	55
Hourly Total	20	33	1	0	54	5	117	4	0	126	0	8	6	0	14	4	5	36	0	45	239
8:00 AM	10	13	0	0	23	0	41	1	0	42	0	3	0	0	3	1	4	5	0	10	78
8:15 AM	4	11	0	0	15	1	40	1	0	42	1	1	0	0	2	0	2	14	0	16	75
8:30 AM	7	7	0	0	14	0	27	0	0	27	0	1	0	0	1	0	0	5	0	5	47
8:45 AM	9	11	1	0	21	0	18	0	0	18	1	2	0	0	3	0	1	14	0	15	57
Hourly Total	30	42	1	0	73	1	126	2	0	129	2	7	0	0	9	1	7	38	0	46	257
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	14	28	0	0	42	2	22	4	0	28	0	2	2	0	4	2	0	21	0	23	97
4:15 PM	14	29	0	0	43	1	20	3	0	24	0	2	0	0	2	2	2	12	0	16	85
4:30 PM	9	58	0	0	67	0	27	1	0	28	0	3	1	0	4	6	4	8	0	18	117
4:45 PM	14	38	0	0	52	0	23	0	0	23	3	1	0	0	4	6	1	10	0	17	96
Hourly Total	51	153	0	0	204	3	92	8	0	103	3	8	3	0	14	16	7	51	0	74	395
5:00 PM	8	53	1	0	62	0	20	2	0	22	0	2	0	0	2	4	1	9	0	14	100
5:15 PM	21	45	1	0	67	0	25	1	0	26	0	1	0	0	1	4	0	12	0	16	110
5:30 PM	13	38	2	0	53	0	27	2	0	29	1	1	0	0	2	5	2	9	0	16	100
5:45 PM	20	40	1	0	61	0	28	2	0	30	1	1	1	0	3	3	4	5	0	12	106
Hourly Total	62	176	5	0	243	0	100	7	0	107	2	5	1	0	8	16	7	35	0	58	416
Grand Total	163	404	7	0	574	9	435	21	0	465	7	28	10	0	45	37	26	160	0	223	1307
Approach %	28.4	70.4	1.2	-	-	1.9	93.5	4.5	-	-	15.6	62.2	22.2	-	-	16.6	11.7	71.7	-	-	-
Total %	12.5	30.9	0.5	-	43.9	0.7	33.3	1.6	-	35.6	0.5	2.1	0.8	-	3.4	2.8	2.0	12.2	-	17.1	-
Lights	155	395	6	-	556	8	427	18	-	453	7	26	8	-	41	30	26	157	-	213	1263
% Lights	95.1	97.8	85.7	-	96.9	88.9	98.2	85.7	-	97.4	100.0	92.9	80.0	-	91.1	81.1	100.0	98.1			

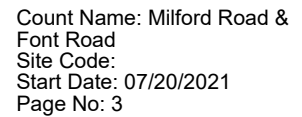


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Count Name: Milford Road &
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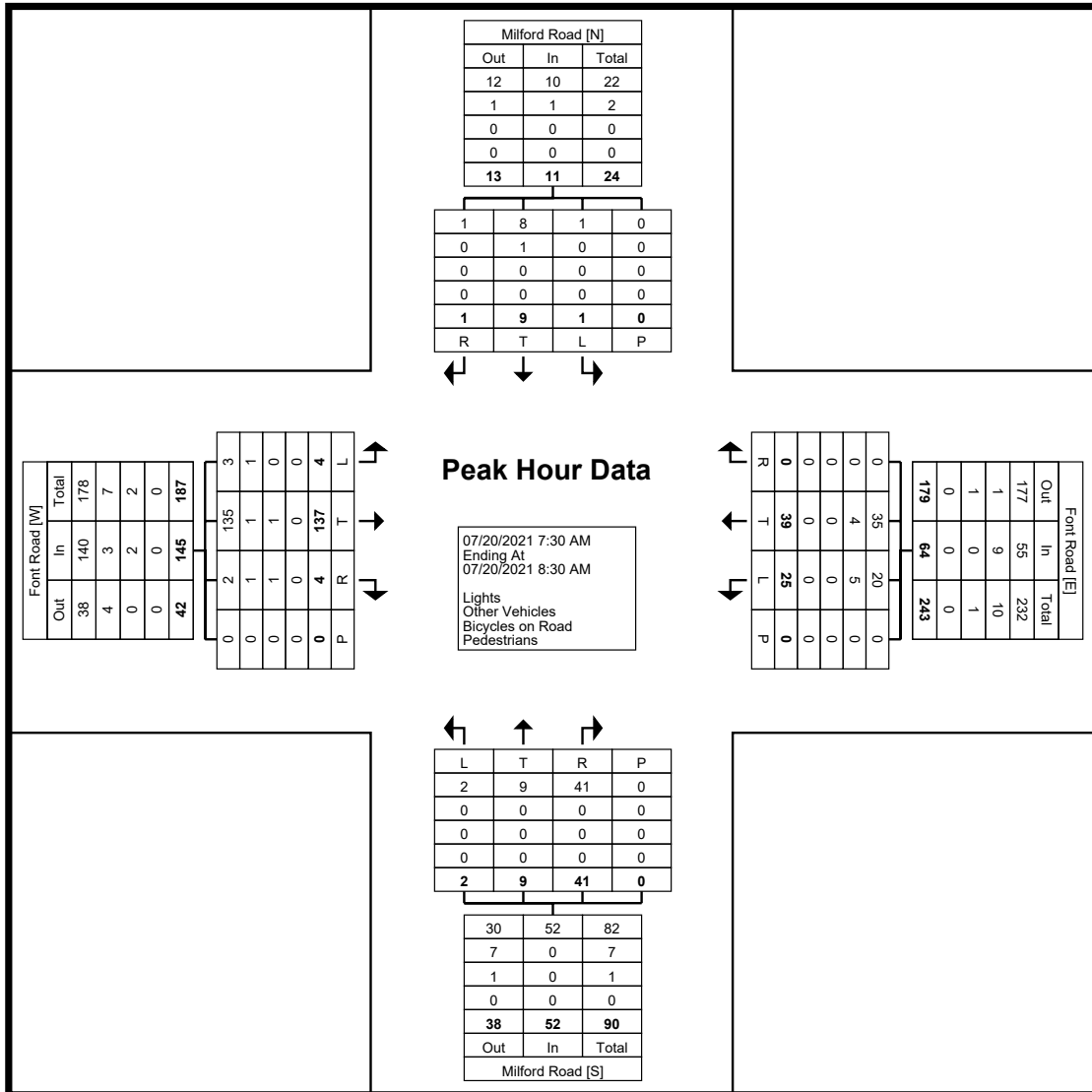
Turning Movement Data Plot

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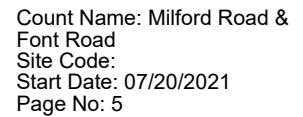


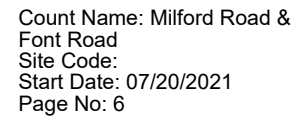
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Count Name: Milford Road &
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Turning Movement Peak Hour Data Plot (7:30 AM)

[illegible]





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Weather:: Clear

Count Name: Milford Rd & Font
Rd Am/Pm
Site Code:
Start Date: 09/13/2016
Page No: 1

Turning Movement Data

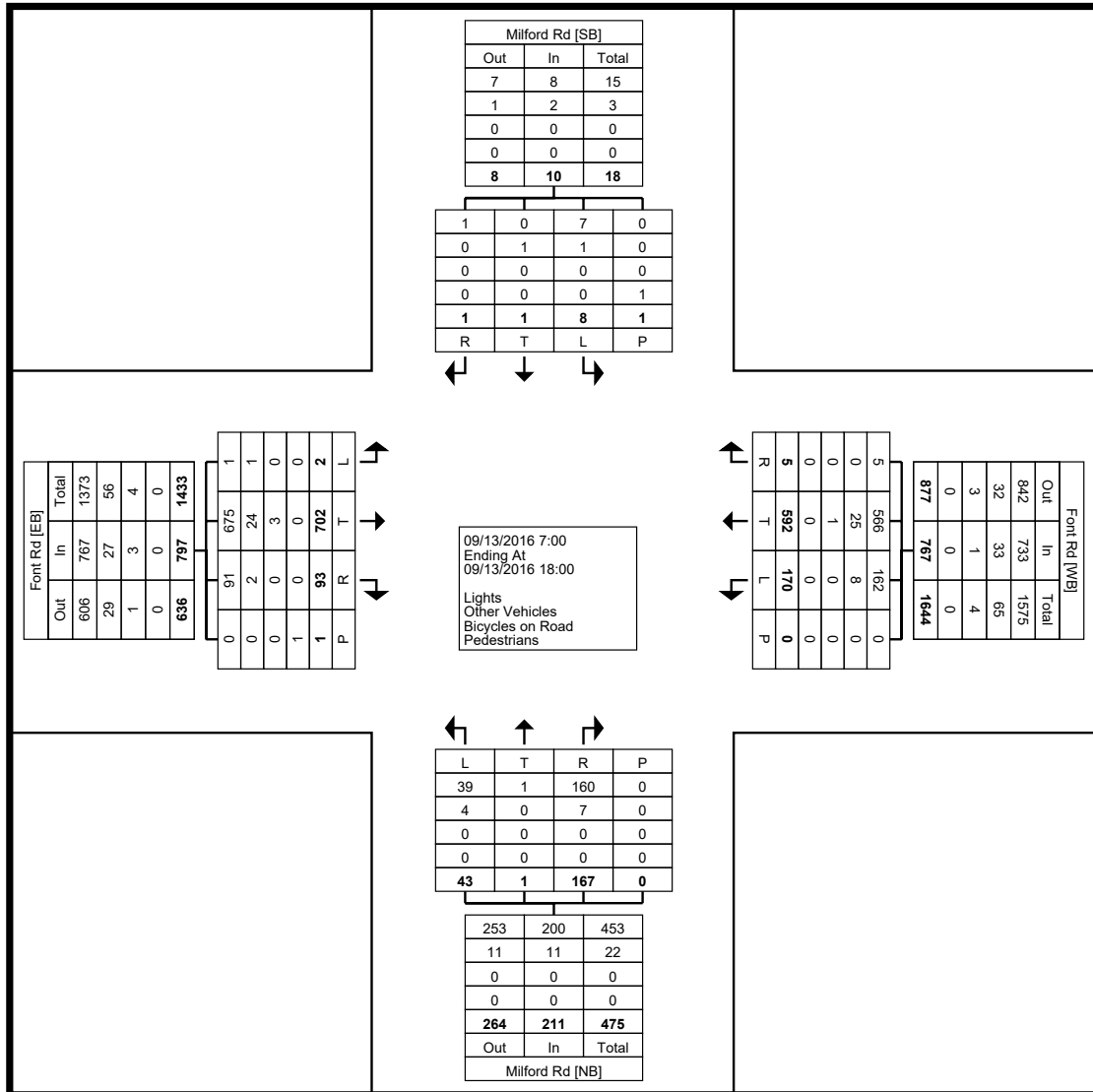
Start Time	Font Rd Eastbound					Font Rd Westbound					Milford Rd Northbound					Milford Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00	0	62	8	0	70	4	11	0	0	15	2	1	19	0	22	1	1	0	0	2	109
7:15	0	62	5	0	67	7	7	1	0	15	1	0	13	0	14	1	0	0	0	1	97
7:30	0	67	11	0	78	6	17	0	0	23	1	0	15	0	16	1	0	0	0	1	118
7:45	0	75	17	0	92	4	16	0	0	20	3	0	7	0	10	0	0	0	0	0	122
Hourly Total	0	266	41	0	307	21	51	1	0	73	7	1	54	0	62	3	1	0	0	4	446
8:00	0	67	15	0	82	5	18	0	0	23	3	0	9	0	12	1	0	0	1	1	118
8:15	0	66	5	0	71	8	14	0	0	22	1	0	8	0	9	0	0	0	0	0	102
8:30	1	52	4	0	57	5	17	0	0	22	2	0	11	0	13	0	0	0	0	0	92
8:45	0	29	6	0	35	7	10	0	0	17	3	0	11	0	14	0	0	0	0	0	66
Hourly Total	1	214	30	0	245	25	59	0	0	84	9	0	39	0	48	1	0	0	1	1	378
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16:00	0	21	3	1	24	7	48	0	0	55	3	0	9	0	12	0	0	0	0	0	91
16:15	0	29	3	0	32	8	45	0	0	53	4	0	5	0	9	1	0	0	0	0	95
16:30	1	27	3	0	31	18	57	2	0	77	4	0	10	0	14	1	0	0	0	1	123
16:45	0	23	1	0	24	17	58	0	0	75	6	0	9	0	15	1	0	0	0	1	115
Hourly Total	1	100	10	1	111	50	208	2	0	260	17	0	33	0	50	3	0	0	0	3	424
17:00	0	26	4	0	30	15	69	1	0	85	5	0	5	0	10	1	0	1	0	2	127
17:15	0	29	0	0	29	20	57	0	0	77	0	0	7	0	7	0	0	0	0	0	113
17:30	0	31	5	0	36	19	85	1	0	105	3	0	17	0	20	0	0	0	0	0	161
17:45	0	36	3	0	39	20	63	0	0	83	2	0	12	0	14	0	0	0	0	0	136
Hourly Total	0	122	12	0	134	74	274	2	0	350	10	0	41	0	51	1	0	1	0	2	537
Grand Total	2	702	93	1	797	170	592	5	0	767	43	1	167	0	211	8	1	1	1	10	1785
Approach %	0.3	88.1	11.7	-	-	22.2	77.2	0.7	-	-	20.4	0.5	79.1	-	-	80.0	10.0	10.0	-	-	-
Total %	0.1	39.3	5.2	-	44.6	9.5	33.2	0.3	-	43.0	2.4	0.1	9.4	-	11.8	0.4	0.1	0.1	-	0.6	-
Lights	1	675	91	-	767	162	566	5	-	733	39	1	160	-	200	7	0	1	-	8	1708
% Lights	50.0	96.2	97.8	-	96.2	95.3	95.6	100.0	-	95.6	90.7	100.0	95.8	-	94.8	87.5	0.0	100.0	-	80.0	95.7
Other Vehicles	1	24	2	-	27	8	25	0	-	33	4	0	7	-	11	1	1	0	-	2	73
% Other Vehicles	50.0	3.4	2.2	-	3.4	4.7	4.2	0.0	-	4.3	9.3	0.0	4.2	-	5.2	12.5	100.0	0.0	-	20.0	4.1
Bicycles on Road	0	3	0	-	3	0	1	0	-	1	0	0	0	-	0	0	0	0	-	0	4
% Bicycles on Road	0.0	0.4	0.0	-	0.4	0.0	0.2	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.2
Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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Count Name: Milford Rd & Font
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Site Code:
Start Date: 09/13/2016
Page No: 3

Turning Movement Peak Hour Data (7:30)

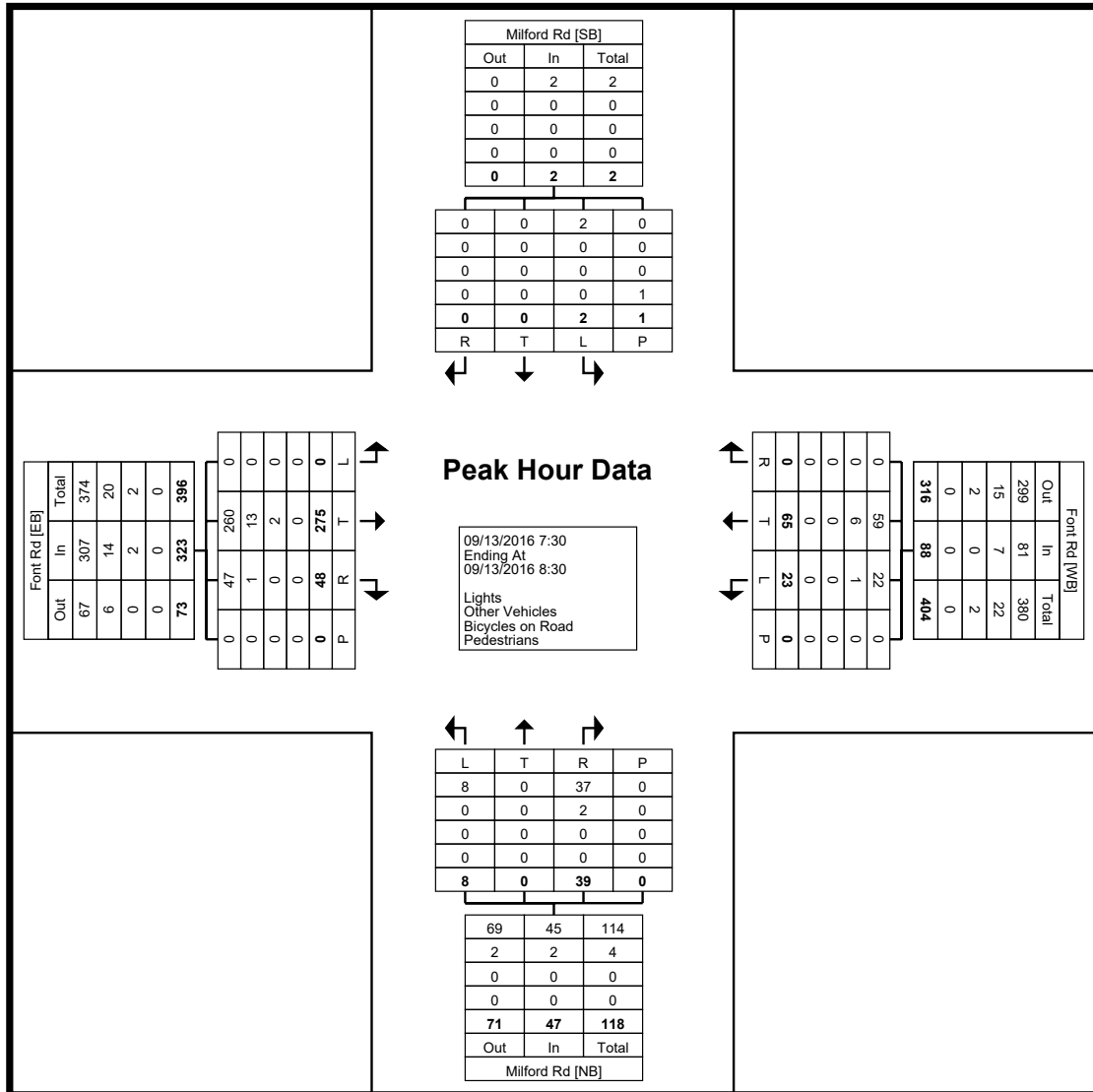
Start Time	Font Rd Eastbound					Font Rd Westbound					Milford Rd Northbound					Milford Rd Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:30	0	67	11	0	78	6	17	0	0	23	1	0	15	0	16	1	0	0	0	1	118
7:45	0	75	17	0	92	4	16	0	0	20	3	0	7	0	10	0	0	0	0	0	122
8:00	0	67	15	0	82	5	18	0	0	23	3	0	9	0	12	1	0	0	1	1	118
8:15	0	66	5	0	71	8	14	0	0	22	1	0	8	0	9	0	0	0	0	0	102
Total	0	275	48	0	323	23	65	0	0	88	8	0	39	0	47	2	0	0	1	2	460
Approach %	0.0	85.1	14.9	-	-	26.1	73.9	0.0	-	-	17.0	0.0	83.0	-	-	100.0	0.0	0.0	-	-	-
Total %	0.0	59.8	10.4	-	70.2	5.0	14.1	0.0	-	19.1	1.7	0.0	8.5	-	10.2	0.4	0.0	0.0	-	0.4	-
PHF	0.000	0.917	0.706	-	0.878	0.719	0.903	0.000	-	0.957	0.667	0.000	0.650	-	0.734	0.500	0.000	0.000	-	0.500	0.943
Lights	0	260	47	-	307	22	59	0	-	81	8	0	37	-	45	2	0	0	-	2	435
% Lights	-	94.5	97.9	-	95.0	95.7	90.8	-	-	92.0	100.0	-	94.9	-	95.7	100.0	-	-	-	100.0	94.6
Other Vehicles	0	13	1	-	14	1	6	0	-	7	0	0	2	-	2	0	0	0	-	0	23
% Other Vehicles	-	4.7	2.1	-	4.3	4.3	9.2	-	-	8.0	0.0	-	5.1	-	4.3	0.0	-	-	-	0.0	5.0
Bicycles on Road	0	2	0	-	2	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	2
% Bicycles on Road	-	0.7	0.0	-	0.6	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	0.0	-	-	-	0.0	0.4
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



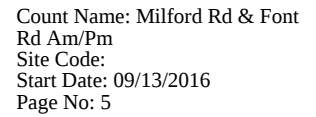
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Count Name: Milford Rd & Font
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Turning Movement Peak Hour Data Plot (7:30)

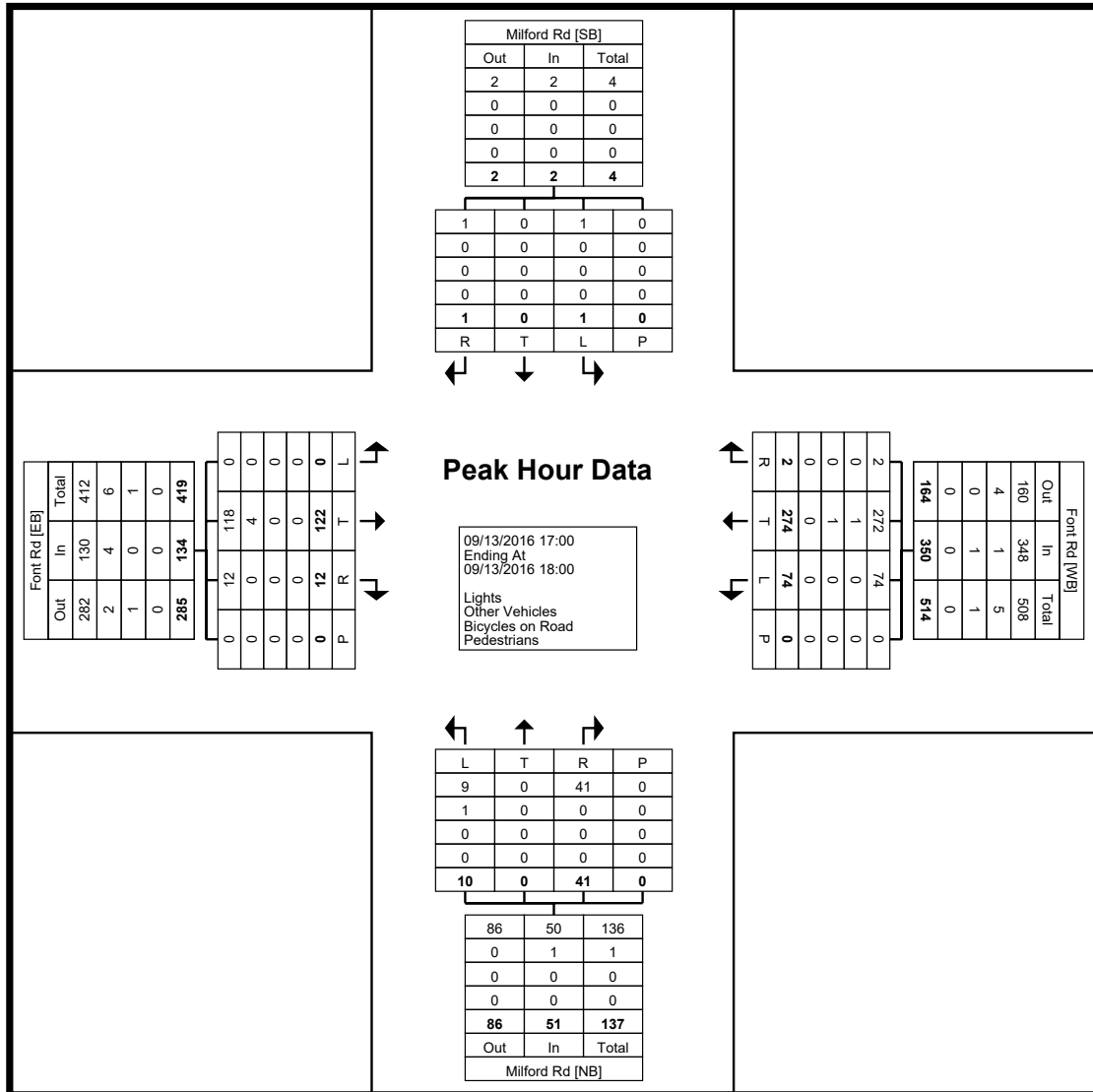
[illegible]



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Weather:: Clear



Turning Movement Peak Hour Data Plot (17:00)

TPD# TOLB.00045

7/27/2021

Traffic Volumes Worksheet

Intersection:

Synchro Node:

Milford Road & Font Road											
12	Adjacent intersections:	West		East		North		South			

Time Period: Weekday A.M. Peak Hour

	Eastbound (Font Rd)			Westbound (Font Rd)			Northbound (Milford Rd)			Southbound (Milford Rd)			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts	4	137	4	25	39	0	2	9	41	1	9	1	272
2016 Counts	0	275	48	23	65	0	8	0	39	2	0	0	460
Difference	-4	138	44	-2	26	0	6	-9	-2	1	-9	-1	188
% Difference													

Time Period: Weekday P.M. Peak Hour

	Eastbound (Font Rd)			Westbound (Font Rd)			Northbound (Milford Rd)			Southbound (Milford Rd)			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts	0	95	4	52	194	2	20	6	39	3	7	1	423
2016 Counts	0	122	12	74	274	2	10	0	41	1	0	1	537
Difference	0	27	8	22	80	0	-10	-6	2	-2	-7	0	114
% Difference													

APPENDIX B:

Volume Development Worksheets

TPD# TOLB.00045

8/10/2021

Traffic Volumes Worksheet

Intersection:

Synchro Node:

Greenridge Road & Stonehedge Drive												
1	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	1	67			26	8				27		1	130
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	2	113	0	0	44	14	0	0	0	46	0	2	220
Base growth (0.61% compounded for 5 yrs)	0	3	0	0	1	0	0	0	0	1	0	0	5
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	2	116	0	0	45	14	0	0	0	47	0	2	225
New Trips	2					1				5		5	
Pass By Trips													
													0
Total Trip Distribution	2	0	0	0	0	1	0	0	0	5	0	5	13
2026 Projected Volumes	4	116	0	0	45	15	0	0	0	52	0	7	238

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	0	37			59	19				17		0	132
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	47	0	0	75	24	0	0	0	22	0	0	168
Base growth (0.61% compounded for 5 yrs)	0	1	0	0	2	1	0	0	0	1	0	0	5
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	0	48	0	0	77	25	0	0	0	23	0	0	173
New Trips	6					5				3		3	
Pass By Trips													
0													
0													0
Total Trip Distribution	6	0	0	0	0	5	0	0	0	3	0	3	17
2026 Projected Volumes	6	48	0	0	77	30	0	0	0	26	0	3	190

TPD# TOLB.00045

8/10/2021

Traffic Volumes Worksheet

Intersection:

Synchro Node:

Styer Road & Greenridge Road												
2	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		72		14	22				25				133
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	0	122	0	24	37	0	0	0	42	0	0	0	225
Base growth (0.61% compounded for 5 yrs)	0	4	0	1	1	0	0	0	1	0	0	0	7
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	0	126	0	25	38	0	0	0	43	0	0	0	232
New Trips		3		2	1				1				
Pass By Trips													
													0
Total Trip Distribution	0	3	0	2	1	0	0	0	1	0	0	0	7
2026 Projected Volumes	0	129	0	27	39	0	0	0	44	0	0	0	239

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		42		35	72		1		25				175
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	53	0	44	91	0	1	0	32	0	0	0	222
Base growth (0.61% compounded for 5 yrs)	0	2	0	1	3	0	0	0	1	0	0	0	7
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	0	55	0	45	94	0	1	0	33	0	0	0	229
New Trips		2		2	3				2				
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	0	2	0	2	3	0	0	0	2	0	0	0	9
2026 Projected Volumes	0	57	0	47	97	0	1	0	35	0	0	0	238

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Styer Road & Extension												
8	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts	12	24			15							25	76
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	20	41	0	0	25	0	0	0	0	0	0	42	128
Base growth (0.61% compounded for 5 yrs)	1	1	0	0	1	0	0	0	0	0	0	1	4
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	21	42	0	0	26	0	0	0	0	0	0	43	132
New Trips		1			2							2	
Pass By Trips													
													0
Total Trip Distribution	0	1	0	0	2	0	0	0	0	0	0	2	5
2026 Projected Volumes	21	43	0	0	28	0	0	0	0	0	0	45	137

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts	8	26			35							16	85
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	10	33	0	0	44	0	0	0	0	0	0	20	108
Base growth (0.61% compounded for 5 yrs)	0	1	0	0	1	0	0	0	0	0	0	1	3
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	10	34	0	0	45	0	0	0	0	0	0	21	111
New Trips	2	2			2							1	
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	2	2	0	0	2	0	0	0	0	0	0	1	7
2026 Projected Volumes	12	36	0	0	47	0	0	0	0	0	0	22	118

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Greenridge Road & Extension												
9	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts		72	25		22		12						131
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	0	122	42	0	37	0	20	0	0	0	0	0	221
Base growth (0.61% compounded for 5 yrs)	0	4	1	0	1	0	1	0	0	0	0	0	7
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	0	126	43	0	38	0	21	0	0	0	0	0	228
New Trips		3	2		1								
Pass By Trips													
													0
Total Trip Distribution	0	3	2	0	1	0	0	0	0	0	0	0	6
2026 Projected Volumes	0	129	45	0	39	0	21	0	0	0	0	0	234

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts		42	15	1	72		8						138
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	53	19	1	91	0	10	0	0	0	0	0	175
Base growth (0.61% compounded for 5 yrs)	0	2	1	0	3	0	0	0	0	0	0	0	6
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property													
McKee Feters Tract													
2026 Base Volumes	0	55	20	1	94	0	10	0	0	0	0	0	181
New Trips		2	1		3		2						
Pass By Trips													
0													0
0													0
Total Trip Distribution	0	2	1	0	3	0	2	0	0	0	0	0	8
2026 Projected Volumes	0	57	21	1	97	0	12	0	0	0	0	0	189

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Krauser Road & Greenridge Road											
3	Adjacent intersections:	West		East		North		South			

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		87	8	2	28		7		13				145
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	0	147	14	3	47	0	12	0	22	0	0	0	245
Base growth (0.61% compounded for 5 yrs)	0	5	0	0	1	0	0	0	1	0	0	0	7
Byers Station 5C				0					0				
Byers Station - 40 Town Homes				0					0				
Byers Station - Ewing Tract				0					0				
Byers Station - Parcel 6C				0					0				
Gunner Property				1					0				
McKee Feters Tract				0					0				
2026 Base Volumes	0	152	14	4	48	0	12	0	23	0	0	0	253
New Trips		1	3	3	2		1		1				
Pass By Trips													
													0
Total Trip Distribution	0	1	3	3	2	0	1	0	1	0	0	0	11
2026 Projected Volumes	0	153	17	7	50	0	13	0	24	0	0	0	264

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		60	6	13	100		8		10				197
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	76	8	17	127	0	10	0	13	0	0	0	250
Base growth (0.61% compounded for 5 yrs)	0	2	0	1	4	0	0	0	0	0	0	0	7
Byers Station 5C				0					0				
Byers Station - 40 Town Homes				0					0				
Byers Station - Ewing Tract				0					0				
Byers Station - Parcel 6C				0					0				
Gunner Property				0					1				
McKee Feters Tract				0					0				
2026 Base Volumes	0	78	8	18	131	0	10	0	14	0	0	0	258
New Trips		2	2	2	2		3		3				
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	0	2	2	2	2	0	3	0	3	0	0	0	14
2026 Projected Volumes	0	80	10	20	133	0	13	0	17	0	0	0	272

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Font Road & Greenridge Road/St. Andrews Lane												
4	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	6	14	83	7	4	0	21	19	5	0	69	4	232
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	10	24	140	12	7	0	35	32	8	0	117	7	392
Base growth (0.61% compounded for 5 yrs)	0	1	4	0	0	0	1	1	0	0	4	0	11
Byers Station 5C	0							2				0	
Byers Station - 40 Town Homes	0							1				0	
Byers Station - Ewing Tract	0							3			1	0	
Byers Station - Parcel 6C	0							1			1	0	
Gunner Property	0							1				1	
McKee Fetters Tract	0							7			4	0	
2026 Base Volumes	10	25	144	12	7	0	36	48	8	0	127	8	425
New Trips	7	2	17		1		6					2	
Pass By Trips													
													0
Total Trip Distribution	7	2	17	0	1	0	6	0	0	0	0	2	35
2026 Projected Volumes	17	27	161	12	8	0	42	48	8	0	127	10	460

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	8	10	47	9	10	0	98	110	11	1	50	5	359
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	10	13	60	11	13	0	124	140	14	1	64	6	456
Base growth (0.61% compounded for 5 yrs)	0	0	2	0	0	0	4	4	0	0	2	0	12
Byers Station 5C	0							1			1	0	
Byers Station - 40 Town Homes	0										1	0	
Byers Station - Ewing Tract	0							2			3	0	
Byers Station - Parcel 6C	0							2			2	0	
Gunner Property	1										1	0	
McKee Fetters Tract	0							5			7	0	
2026 Base Volumes	11	13	62	11	13	0	128	154	14	1	81	6	494
New Trips	4	1	12		2		20					7	
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	4	1	12	0	2	0	20	0	0	0	0	7	46
2026 Projected Volumes	15	14	74	11	15	0	148	154	14	1	81	13	540

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Milford Road & Krauser Road												
5	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	6	28			30	7				6		35	112
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	10	47	0	0	51	12	0	0	0	10	0	59	189
Base growth (0.61% compounded for 5 yrs)	0	1	0	0	2	0	0	0	0	0	0	2	5
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property											1		
McKee Fetters Tract		(9)	4	5	26		12		5				
2026 Base Volumes	10	57	4	5	79	12	12	0	5	10	1	61	256
New Trips	2											6	
Pass By Trips													
													0
Total Trip Distribution	2	0	0	0	0	0	0	0	0	0	0	6	8
2026 Projected Volumes	12	57	4	5	79	12	12	0	5	10	1	67	264

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection Volume
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	
2021 Counts	20	36			50	7				13		16	142
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	25	46	0	0	64	9	0	0	0	17	0	20	180
Base growth (0.61% compounded for 5 yrs)	1	1	0	0	2	0	0	0	0	1	0	1	6
Byers Station 5C													
Byers Station - 40 Town Homes													
Byers Station - Ewing Tract													
Byers Station - Parcel 6C													
Gunner Property								1					
McKee Fetters Tract		17	8	9	20		9		3				
2026 Base Volumes	26	64	8	9	86	9	9	1	3	18	0	21	253
New Trips	6											4	
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	6	0	0	0	0	0	0	0	0	0	0	4	10
2026 Projected Volumes	32	64	8	9	86	9	9	1	3	18	0	25	263

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Traffic Volumes Worksheet
Intersection:
Synchro Node:

Greenridge Road & Site Driveway												
6	Adjacent intersections:	West		East		North		South				

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		100			30								130
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	0	169	0	0	51	0	0	0	0	0	0	0	220
Base growth (0.61% compounded for 5 yrs)	0	5	0	0	2	0	0	0	0	0	0	0	7
Byers Station 5C					0								
Byers Station - 40 Town Homes					0								
Byers Station - Ewing Tract					0								
Byers Station - Parcel 6C					0								
Gunner Property					1								
McKee Feters Tract					0								
2026 Base Volumes	0	174	0	0	54	0	0	0	0	0	0	0	228
New Trips	2					9				26		5	
Pass By Trips													
													0
Total Trip Distribution	2	0	0	0	0	9	0	0	0	26	0	5	42
2026 Projected Volumes	2	174	0	0	54	9	0	0	0	26	0	5	270

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		70			113								183
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	89	0	0	144	0	0	0	0	0	0	0	232
Base growth (0.61% compounded for 5 yrs)	0	3	0	0	4	0	0	0	0	0	0	0	7
Byers Station 5C					0								
Byers Station - 40 Town Homes					0								
Byers Station - Ewing Tract					0								
Byers Station - Parcel 6C					0								
Gunner Property		(1)			0								
McKee Feters Tract					0								
2026 Base Volumes	0	93	0	0	148	0	0	0	0	0	0	0	240
New Trips	5					29				17		4	
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	5	0	0	0	0	29	0	0	0	17	0	4	55
2026 Projected Volumes	5	93	0	0	148	29	0	0	0	17	0	4	295

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Traffic Volumes Worksheet

Intersection:

Synchro Node:

Stonehedge Drive & Site Driveway/Lauren Lane													
7	Adjacent intersections:	West		East		North		South					

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		9			28								37
Adjustment	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	1.69	20
Existing Volumes (Adjusted)	0	15	0	0	47	0	0	0	0	0	0	0	63
Base growth (0.61% compounded for 5 yrs)	0	0	0	0	1	0	0	0	0	0	0	0	1
Byers Station 5C		0			0								
Byers Station - 40 Town Homes		0			0								
Byers Station - Ewing Tract		0			0								
Byers Station - Parcel 6C		0			0								
Gunner Property		0			0								
McKee Fetters Tract		0			0								
2026 Base Volumes	0	15	0	0	48	0	0	0	0	0	0	0	64
New Trips			3				10						
Pass By Trips													
													0
Total Trip Distribution	0	0	3	0	0	0	10	0	0	0	0	0	13
2026 Projected Volumes	0	15	3	0	48	0	10	0	0	0	0	0	77

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2021 Counts		19			17								36
Adjustment	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	1.27	15
Existing Volumes (Adjusted)	0	24	0	0	22	0	0	0	0	0	0	0	46
Base growth (0.61% compounded for 5 yrs)	0	1	0	0	1	0	0	0	0	0	0	0	2
Byers Station 5C		0			0								
Byers Station - 40 Town Homes		0			0								
Byers Station - Ewing Tract		0			0								
Byers Station - Parcel 6C		0			0								
Gunner Property		0			0								
McKee Fetters Tract		0			0								
2026 Base Volumes	0	25	0	0	23	0	0	0	0	0	0	0	48
New Trips			11				6						
Pass By Trips													
	0												0
	0												0
Total Trip Distribution	0	0	11	0	0	0	6	0	0	0	0	0	17
2026 Projected Volumes	0	25	11	0	23	0	6	0	0	0	0	0	65

APPENDIX C:

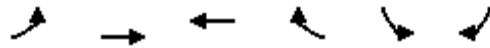
Capacity Analyses

Existing Conditions

1: Greenridge Road & Stonehedge Drive

Existing Conditions

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	113	44	14	46	2
Future Volume (vph)	2	113	44	14	46	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	5%	15%	25%	4%	100%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

Existing Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	113	44	14	46	2
Future Vol, veh/h	2	113	44	14	46	2
Conflicting Peds, #/hr	1	0	0	1	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	-3	-	-4	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	5	15	25	4	100
Mvmt Flow	3	143	56	18	58	3
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	75	0	-	0	215	66
Stage 1	-	-	-	-	66	-
Stage 2	-	-	-	-	149	-
Critical Hdwy	4.4	-	-	-	5.64	5.9
Critical Hdwy Stg 1	-	-	-	-	4.64	-
Critical Hdwy Stg 2	-	-	-	-	4.64	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1129	-	-	-	936	1040
Stage 1	-	-	-	-	1133	-
Stage 2	-	-	-	-	1053	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1128	-	-	-	931	1039
Mov Cap-2 Maneuver	-	-	-	-	931	-
Stage 1	-	-	-	-	1128	-
Stage 2	-	-	-	-	1052	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		9.1		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1128	-	-	-	935	
HCM Lane V/C Ratio	0.002	-	-	-	0.065	
HCM Control Delay (s)	8.2	0	-	-	9.1	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

2: Styer Road & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	122	0	24	37	0	42
Future Volume (vph)	122	0	24	37	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

Intersection

Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	0	24	37	0	42
Future Vol, veh/h	122	0	24	37	0	42
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	151	0	30	46	0	52
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	7.6	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	39%
Vol Thru, %	0%	100%	61%
Vol Right, %	100%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	42	122	61
LT Vol	0	0	24
Through Vol	0	122	37
RT Vol	42	0	0
Lane Flow Rate	52	151	75
Geometry Grp	1	1	1
Degree of Util (X)	0.055	0.171	0.088
Departure Headway (Hd)	3.793	4.099	4.184
Convergence, Y/N	Yes	Yes	Yes
Cap	950	874	852
Service Time	1.793	2.135	2.234
HCM Lane V/C Ratio	0.055	0.173	0.088
HCM Control Delay	7	8	7.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.6	0.3

3: Krauser Road & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	147	14	3	47	12	22
Future Volume (vph)	147	14	3	47	12	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	1%	13%	0%	4%	14%	8%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	14	3	47	12	22
Future Vol, veh/h	147	14	3	47	12	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	13	0	4	14	8
Mvmt Flow	171	16	3	55	14	26

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	187
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1037
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1037
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	-	-	1037	-
HCM Lane V/C Ratio	0.047	-	-	0.003	-
HCM Control Delay (s)	9.5	-	-	8.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

4: Font Road & Greenridge Road/St. Andrews Lane

Existing Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	24	140	12	7	0	35	32	8	0	117	7
Future Volume (vph)	10	24	140	12	7	0	35	32	8	0	117	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	7%	2%	0%	0%	0%	5%	11%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

Existing Conditions

Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	24	140	12	7	0	35	32	8	0	117	7
Future Vol, veh/h	10	24	140	12	7	0	35	32	8	0	117	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	7	2	0	0	0	5	11	0	0	1	0
Mvmt Flow	11	27	159	14	8	0	40	36	9	0	133	8
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	262	262	137	351	262	41	141	0	0	45	0	0
Stage 1	137	137	-	121	121	-	-	-	-	-	-	-
Stage 2	125	125	-	230	141	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.17	6.02	7.3	6.8	6.3	4.4	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4.063	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	820	653	979	679	632	1100	1071	-	-	1159	-	-
Stage 1	1022	786	-	1021	794	-	-	-	-	-	-	-
Stage 2	1037	794	-	882	778	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	788	628	979	534	608	1100	1071	-	-	1159	-	-
Mov Cap-2 Maneuver	788	628	-	534	608	-	-	-	-	-	-	-
Stage 1	983	786	-	982	764	-	-	-	-	-	-	-
Stage 2	987	764	-	713	778	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		11.7		4		0					
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1071	-	-	897	559	1159	-	-				
HCM Lane V/C Ratio	0.037	-	-	0.22	0.039	-	-	-				
HCM Control Delay (s)	8.5	0	-	10.1	11.7	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.1	0	-	-				

5: Milford Road & Kauser Road

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	47	51	12	10	59
Future Volume (vph)	10	47	51	12	10	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	16	16
Grade (%)		1%	-1%		2%	
Link Speed (mph)		40	40		25	
Link Distance (ft)		1442	2003		508	
Travel Time (s)		24.6	34.1		13.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	11%	23%	14%	0%	6%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

5: Milford Road & Kauser Road

Existing Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 10 47 51 12 10 59

Future Vol, veh/h 10 47 51 12 10 59

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 1 -1 - 2 -

Peak Hour Factor 85 85 85 85 85 85

Heavy Vehicles, % 17 11 23 14 0 6

Mvmt Flow 12 55 60 14 12 69

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All 74 0 - 0 146 67

Stage 1 - - - - 67 -

Stage 2 - - - - 79 -

Critical Hdwy 4.4 - - - 6.8 6.46

Critical Hdwy Stg 1 - - - - 5.8 -

Critical Hdwy Stg 2 - - - - 5.8 -

Follow-up Hdwy 3.1 - - - 3 3.2

Pot Cap-1 Maneuver 1095 - - - 967 1028

Stage 1 - - - - 1108 -

Stage 2 - - - - 1092 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1095 - - - 956 1028

Mov Cap-2 Maneuver - - - - 956 -

Stage 1 - - - - 1096 -

Stage 2 - - - - 1092 -

Approach	EB	WB	SB
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HCM Control Delay, s 1.5 0 8.8

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1095 - - - 1017

HCM Lane V/C Ratio 0.011 - - - 0.08

HCM Control Delay (s) 8.3 0 - - 8.8

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.3

7: Greenridge Road & Site Driveway

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Greenridge Road & Site Driveway

Existing Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1199	-	-	-	1198	1160
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1199	-	-	-	1198	1160
Mov Cap-2 Maneuver	-	-	-	-	1198	-
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1199	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

8: Styer Road & Extension

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	20	41	25	0	0	42
Future Volume (vph)	20	41	25	0	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

Existing Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	41	25	0	0	42
Future Vol, veh/h	20	41	25	0	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	7	2	-	-15	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	33	0	0	0	0	0
Mvmt Flow	24	49	30	0	0	51
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	30	0	-	0	127	30
Stage 1	-	-	-	-	30	-
Stage 2	-	-	-	-	97	-
Critical Hdwy	4.43	-	-	-	4.4	5.2
Critical Hdwy Stg 1	-	-	-	-	2.4	-
Critical Hdwy Stg 2	-	-	-	-	2.4	-
Follow-up Hdwy	3.1	-	-	-	3	3.1
Pot Cap-1 Maneuver	1134	-	-	-	1083	1126
Stage 1	-	-	-	-	1191	-
Stage 2	-	-	-	-	1171	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1134	-	-	-	1059	1126
Mov Cap-2 Maneuver	-	-	-	-	1059	-
Stage 1	-	-	-	-	1165	-
Stage 2	-	-	-	-	1171	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.7	0		8.3		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1134	-	-	-	-	1126
HCM Lane V/C Ratio	0.021	-	-	-	-	0.045
HCM Control Delay (s)	8.2	0	-	-	-	8.3
HCM Lane LOS	A	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.1

9: Extension & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	122	42	0	37	20	0
Future Volume (vph)	122	42	0	37	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	4%	4%	0%	0%	25%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

Existing Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	122	42	0	37	20	0
Future Vol, veh/h	122	42	0	37	20	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	4	4	0	0	25	0
Mvmt Flow	165	57	0	50	27	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	222	0	244	194
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.3	-	9.65	7.7
Critical Hdwy Stg 1	-	-	-	-	8.65	-
Critical Hdwy Stg 2	-	-	-	-	8.65	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1008	-	669	833
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	1052	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1008	-	669	833
Mov Cap-2 Maneuver	-	-	-	-	669	-
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	1052	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0		10.6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	669	-	-	1008	-	
HCM Lane V/C Ratio	0.04	-	-	-	-	
HCM Control Delay (s)	10.6	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

1: Greenridge Road & Stonehedge Drive

Existing Conditions

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↩	↩		↩	
Traffic Volume (vph)	0	47	75	24	22	0
Future Volume (vph)	0	47	75	24	22	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

Existing Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 0 47 75 24 22 0

Future Vol, veh/h 0 47 75 24 22 0

Conflicting Peds, #/hr 1 0 0 1 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 -3 - -4 -

Peak Hour Factor 87 87 87 87 87 87

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 54 86 28 25 0

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 115 0 - 0 155 101

Stage 1 - - - - 101 -

Stage 2 - - - - 54 -

Critical Hdwy 4.4 - - - 5.6 5.8

Critical Hdwy Stg 1 - - - - 4.6 -

Critical Hdwy Stg 2 - - - - 4.6 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1093 - - - 1005 1030

Stage 1 - - - - 1100 -

Stage 2 - - - - 1145 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1092 - - - 1003 1029

Mov Cap-2 Maneuver - - - - 1003 -

Stage 1 - - - - 1099 -

Stage 2 - - - - 1144 -

Approach	EB	WB	SB
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HCM Control Delay, s 0 0 8.7

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1092 - - - 1003

HCM Lane V/C Ratio - - - - 0.025

HCM Control Delay (s) 0 - - - 8.7

HCM Lane LOS A - - - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

2: Styer Road & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	53	0	44	91	1	32
Future Volume (vph)	53	0	44	91	1	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

Intersection

Intersection Delay, s/veh 7.6

Intersection LOS A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	0	44	91	1	32
Future Vol, veh/h	53	0	44	91	1	32
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	56	0	46	96	1	34
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.9	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	3%	0%	33%
Vol Thru, %	0%	100%	67%
Vol Right, %	97%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	33	53	135
LT Vol	1	0	44
Through Vol	0	53	91
RT Vol	32	0	0
Lane Flow Rate	35	56	142
Geometry Grp	1	1	1
Degree of Util (X)	0.035	0.064	0.161
Departure Headway (Hd)	3.662	4.102	4.069
Convergence, Y/N	Yes	Yes	Yes
Cap	959	870	882
Service Time	1.755	2.14	2.089
HCM Lane V/C Ratio	0.036	0.064	0.161
HCM Control Delay	6.9	7.4	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.6

3: Krauser Road & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	76	8	17	127	10	13
Future Volume (vph)	76	8	17	127	10	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	8	17	127	10	13
Future Vol, veh/h	76	8	17	127	10	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	84	9	19	141	11	14

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	93
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1116
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1116
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	869	-	-	1116	-
HCM Lane V/C Ratio	0.029	-	-	0.017	-
HCM Control Delay (s)	9.3	-	-	8.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

4: Font Road & Greenridge Road/St. Andrews Lane

Existing Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	13	60	11	13	0	124	140	14	1	64	6
Future Volume (vph)	10	13	60	11	13	0	124	140	14	1	64	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	20%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

Existing Conditions

Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	13	60	11	13	0	124	140	14	1	64	6
Future Vol, veh/h	10	13	60	11	13	0	124	140	14	1	64	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	2	0	0	0	1	0	0	0	0	20
Mvmt Flow	11	14	64	12	14	0	132	149	15	1	68	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	501	501	71	533	497	157	74	0	0	164	0	0
Stage 1	73	73	-	421	421	-	-	-	-	-	-	-
Stage 2	428	428	-	112	76	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.02	7.3	6.8	6.3	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	578	502	1063	504	458	943	1133	-	-	1055	-	-
Stage 1	1102	845	-	681	579	-	-	-	-	-	-	-
Stage 2	724	617	-	1033	832	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	507	437	1063	417	399	943	1133	-	-	1055	-	-
Mov Cap-2 Maneuver	507	437	-	417	399	-	-	-	-	-	-	-
Stage 1	961	844	-	594	505	-	-	-	-	-	-	-
Stage 2	614	538	-	954	831	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.2		14.4		3.8		0.1	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1133	-	-	784	407	1055	-
HCM Lane V/C Ratio	0.116	-	-	0.113	0.063	0.001	-
HCM Control Delay (s)	8.6	0	-	10.2	14.4	8.4	0
HCM Lane LOS	A	A	-	B	B	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.4	0.2	0	-

5: Milford Road & Kauser Road

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	46	64	9	17	20
Future Volume (vph)	25	46	64	9	17	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	16	16
Grade (%)		1%	-1%		2%	
Link Speed (mph)		40	40		25	
Link Distance (ft)		1442	2003		508	
Travel Time (s)		24.6	34.1		13.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	2%	0%	0%	6%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

5: Milford Road & Kauser Road

Existing Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 25 46 64 9 17 20

Future Vol, veh/h 25 46 64 9 17 20

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 1 -1 - 2 -

Peak Hour Factor 96 96 96 96 96 96

Heavy Vehicles, % 0 3 2 0 0 6

Mvmt Flow 26 48 67 9 18 21

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 76 0 - 0 172 72

Stage 1 - - - - 72 -

Stage 2 - - - - 100 -

Critical Hdwy 4.3 - - - 6.8 6.46

Critical Hdwy Stg 1 - - - - 5.8 -

Critical Hdwy Stg 2 - - - - 5.8 -

Follow-up Hdwy 3 - - - 3 3.2

Pot Cap-1 Maneuver 1131 - - - 931 1021

Stage 1 - - - - 1101 -

Stage 2 - - - - 1065 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1131 - - - 909 1021

Mov Cap-2 Maneuver - - - - 909 -

Stage 1 - - - - 1075 -

Stage 2 - - - - 1065 -

Approach	EB	WB	SB
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HCM Control Delay, s 2.9 0 8.9

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1131 - - - 966

HCM Lane V/C Ratio 0.023 - - - 0.04

HCM Control Delay (s) 8.3 0 - - 8.9

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0.1 - - - 0.1

7: Greenridge Road & Site Driveway

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Greenridge Road & Site Driveway

Existing Conditions

Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	1	0	-	0	1	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	0	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1199	-	-	-	1198	1160
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1199	-	-	-	1198	1160
Mov Cap-2 Maneuver	-	-	-	-	1198	-
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1199	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	-	-	0	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	-	

8: Styer Road & Extension

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	33	44	0	0	20
Future Volume (vph)	10	33	44	0	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

Existing Conditions

Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	33	44	0	0	20
Future Vol, veh/h	10	33	44	0	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	7	2	-	-15	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	14	46	62	0	0	28
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	62	0	-	0	136	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	4.3	-	-	-	4.4	5.2
Critical Hdwy Stg 1	-	-	-	-	2.4	-
Critical Hdwy Stg 2	-	-	-	-	2.4	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1143	-	-	-	1075	1090
Stage 1	-	-	-	-	1181	-
Stage 2	-	-	-	-	1178	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1143	-	-	-	1061	1090
Mov Cap-2 Maneuver	-	-	-	-	1061	-
Stage 1	-	-	-	-	1166	-
Stage 2	-	-	-	-	1178	-
Approach	EB	WB		SB		
HCM Control Delay, s	1.9	0		8.4		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1143	-	-	-	1090	
HCM Lane V/C Ratio	0.012	-	-	-	0.026	
HCM Control Delay (s)	8.2	0	-	-	8.4	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

9: Extension & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	53	19	1	91	10	0
Future Volume (vph)	53	19	1	91	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

Existing Conditions

Timing Plan: PM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	19	1	91	10	0
Future Vol, veh/h	53	19	1	91	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	58	21	1	100	11	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	79	0	171	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	-	-	4.3	-	9.4	7.7
Critical Hdwy Stg 1	-	-	-	-	8.4	-
Critical Hdwy Stg 2	-	-	-	-	8.4	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1128	-	824	1032
Stage 1	-	-	-	-	1051	-
Stage 2	-	-	-	-	987	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1128	-	823	1032
Mov Cap-2 Maneuver	-	-	-	-	823	-
Stage 1	-	-	-	-	1051	-
Stage 2	-	-	-	-	986	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.1		9.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	823	-	-	1128	-	
HCM Lane V/C Ratio	0.013	-	-	0.001	-	
HCM Control Delay (s)	9.4	-	-	8.2	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Base Conditions

1: Greenridge Road & Stonehedge Drive

2026 Base Conditions

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	116	45	14	47	2
Future Volume (vph)	2	116	45	14	47	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	5%	15%	25%	4%	100%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations

Traffic Vol, veh/h 2 116 45 14 47 2

Future Vol, veh/h 2 116 45 14 47 2

Conflicting Peds, #/hr 1 0 0 1 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 -3 - -4 -

Peak Hour Factor 79 79 79 79 79 79

Heavy Vehicles, % 0 5 15 25 4 100

Mvmt Flow 3 147 57 18 59 3

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 76 0 - 0 220 67

Stage 1 - - - - 67 -

Stage 2 - - - - 153 -

Critical Hdwy 4.4 - - - 5.64 5.9

Critical Hdwy Stg 1 - - - - 4.64 -

Critical Hdwy Stg 2 - - - - 4.64 -

Follow-up Hdwy 3 - - - 3 3.2

Pot Cap-1 Maneuver 1129 - - - 930 1038

Stage 1 - - - - 1132 -

Stage 2 - - - - 1049 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1128 - - - 925 1037

Mov Cap-2 Maneuver - - - - 925 -

Stage 1 - - - - 1127 -

Stage 2 - - - - 1048 -

Approach	EB	WB	SB
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HCM Control Delay, s 0.1 0 9.2

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1128 - - - 929

HCM Lane V/C Ratio 0.002 - - - 0.067

HCM Control Delay (s) 8.2 0 - - 9.2

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.2

2: Styer Road & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	126	0	25	38	0	43
Future Volume (vph)	126	0	25	38	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	0	25	38	0	43
Future Vol, veh/h	126	0	25	38	0	43
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	156	0	31	47	0	53
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	7.7	7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	40%
Vol Thru, %	0%	100%	60%
Vol Right, %	100%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	43	126	63
LT Vol	0	0	25
Through Vol	0	126	38
RT Vol	43	0	0
Lane Flow Rate	53	156	78
Geometry Grp	1	1	1
Degree of Util (X)	0.056	0.177	0.091
Departure Headway (Hd)	3.81	4.103	4.19
Convergence, Y/N	Yes	Yes	Yes
Cap	945	873	850
Service Time	1.81	2.139	2.242
HCM Lane V/C Ratio	0.056	0.179	0.092
HCM Control Delay	7	8	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.6	0.3

3: Krauser Road & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	152	14	4	48	12	23
Future Volume (vph)	152	14	4	48	12	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	1%	13%	0%	4%	14%	8%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	152	14	4	48	12	23
Future Vol, veh/h	152	14	4	48	12	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	13	0	4	14	8
Mvmt Flow	177	16	5	56	14	27

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	193	0	251	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	66	-
Critical Hdwy	-	-	4.3	-	7.34	6.68
Critical Hdwy Stg 1	-	-	-	-	6.34	-
Critical Hdwy Stg 2	-	-	-	-	6.34	-
Follow-up Hdwy	-	-	3	-	3.1	3.2
Pot Cap-1 Maneuver	-	-	1032	-	774	866
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	1064	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1032	-	770	866
Mov Cap-2 Maneuver	-	-	-	-	770	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	1059	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	830	-	-	1032	-
HCM Lane V/C Ratio	0.049	-	-	0.005	-
HCM Control Delay (s)	9.6	-	-	8.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Base Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	25	144	12	7	0	36	48	8	0	127	8
Future Volume (vph)	10	25	144	12	7	0	36	48	8	0	127	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	7%	2%	0%	0%	0%	5%	11%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	25	144	12	7	0	36	48	8	0	127	8
Future Vol, veh/h	10	25	144	12	7	0	36	48	8	0	127	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	7	2	0	0	0	5	11	0	0	1	0
Mvmt Flow	11	28	164	14	8	0	41	55	9	0	144	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	295	295	149	387	295	60	153	0	0	64	0	0
Stage 1	149	149	-	142	142	-	-	-	-	-	-	-
Stage 2	146	146	-	245	153	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.17	6.02	7.3	6.8	6.3	4.4	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4.063	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	782	628	964	640	605	1073	1060	-	-	1142	-	-
Stage 1	1008	777	-	992	777	-	-	-	-	-	-	-
Stage 2	1011	779	-	864	768	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	750	603	964	497	581	1073	1060	-	-	1142	-	-
Mov Cap-2 Maneuver	750	603	-	497	581	-	-	-	-	-	-	-
Stage 1	968	777	-	952	746	-	-	-	-	-	-	-
Stage 2	960	748	-	691	768	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.3		12.2		3.3		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1060	-	-	877 525	1142	-	-
HCM Lane V/C Ratio	0.039	-	-	0.232 0.041	-	-	-
HCM Control Delay (s)	8.5	0	-	10.3 12.2	0	-	-
HCM Lane LOS	A	A	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9 0.1	0	-	-

5: Future Driveway/Kauser Road & Milford Road

2026 Base Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	57	4	5	79	12	12	0	5	10	1	61
Future Volume (vph)	10	57	4	5	79	12	12	0	5	10	1	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	10	10	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			2%	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1442			2003			524			508	
Travel Time (s)		24.6			34.1			14.3			13.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	11%	2%	2%	23%	14%	2%	2%	2%	0%	2%	6%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

5: Future Driveway/Kauser Road & Milford Road

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 3.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	57	4	5	79	12	12	0	5	10	1	61
Future Vol, veh/h	10	57	4	5	79	12	12	0	5	10	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	2	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	17	11	2	2	23	14	2	2	2	0	2	6
Mvmt Flow	12	67	5	6	93	14	14	0	6	12	1	72

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	72	0	0	243	213	70	209	208	100
Stage 1	-	-	-	-	-	-	94	94	-	112	112	-
Stage 2	-	-	-	-	-	-	149	119	-	97	96	-
Critical Hdwy	4.4	-	-	4.4	-	-	7.12	6.52	6.22	7.5	6.92	6.46
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3	4.018	3.2	3	4.018	3.2
Pot Cap-1 Maneuver	1067	-	-	1097	-	-	820	684	1028	846	673	983
Stage 1	-	-	-	-	-	-	1063	817	-	1027	793	-
Stage 2	-	-	-	-	-	-	991	797	-	1048	807	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1097	-	-	749	672	1028	830	661	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	749	672	-	830	661	-
Stage 1	-	-	-	-	-	-	1050	807	-	1015	788	-
Stage 2	-	-	-	-	-	-	912	792	-	1029	797	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.4	9.5	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	814	1067	-	-	1097	-	-	952
HCM Lane V/C Ratio	0.025	0.011	-	-	0.005	-	-	0.089
HCM Control Delay (s)	9.5	8.4	0	-	8.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

7: Greenridge Road & Site Driveway

2026 Base Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Greenridge Road & Site Driveway

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations

Traffic Vol, veh/h 0 0 0 0 0 0

Future Vol, veh/h 0 0 0 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 0 0 0 0 0

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 1 0 - 0 1 1

Stage 1 - - - - 1 -

Stage 2 - - - - 0 -

Critical Hdwy 4.3 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1199 - - - 1198 1160

Stage 1 - - - - 1199 -

Stage 2 - - - - - -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1199 - - - 1198 1160

Mov Cap-2 Maneuver - - - - 1198 -

Stage 1 - - - - 1199 -

Stage 2 - - - - - -

Approach	EB	WB	SB
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HCM Control Delay, s 0 0 0

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1199 - - - -

HCM Lane V/C Ratio - - - -

HCM Control Delay (s) 0 - - - 0

HCM Lane LOS A - - - - A

HCM 95th %tile Q(veh) 0 - - - -

8: Styer Road & Extension

2026 Base Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	42	26	0	0	43
Future Volume (vph)	21	42	26	0	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	42	26	0	0	43
Future Vol, veh/h	21	42	26	0	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	7	2	-	-15	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	33	0	0	0	0	0
Mvmt Flow	25	51	31	0	0	52

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	31	0	0 132 31
Stage 1	-	-	- 31 -
Stage 2	-	-	- 101 -
Critical Hdwy	4.43	-	- 4.4 5.2
Critical Hdwy Stg 1	-	-	- 2.4 -
Critical Hdwy Stg 2	-	-	- 2.4 -
Follow-up Hdwy	3.1	-	- 3 3.1
Pot Cap-1 Maneuver	1133	-	- 1078 1125
Stage 1	-	-	- 1191 -
Stage 2	-	-	- 1170 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1133	-	- 1053 1125
Mov Cap-2 Maneuver	-	-	- 1053 -
Stage 1	-	-	- 1164 -
Stage 2	-	-	- 1170 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1133	-	-	-	1125
HCM Lane V/C Ratio	0.022	-	-	-	0.046
HCM Control Delay (s)	8.2	0	-	-	8.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

9: Extension & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	126	43	0	38	21	0
Future Volume (vph)	126	43	0	38	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	4%	4%	0%	0%	25%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

2026 Base Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	43	0	38	21	0
Future Vol, veh/h	126	43	0	38	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	4	4	0	0	25	0
Mvmt Flow	170	58	0	51	28	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	228
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1003
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1003
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

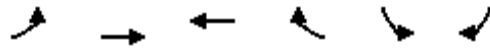
Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	660	-	-	1003	-
HCM Lane V/C Ratio	0.043	-	-	-	-
HCM Control Delay (s)	10.7	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

1: Greenridge Road & Stonehedge Drive

2026 Base Conditions

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	48	77	25	23	0
Future Volume (vph)	0	48	77	25	23	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.2

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 0 48 77 25 23 0

Future Vol, veh/h 0 48 77 25 23 0

Conflicting Peds, #/hr 1 0 0 1 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 -3 - -4 -

Peak Hour Factor 87 87 87 87 87 87

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 0 55 89 29 26 0

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 119 0 - 0 160 105

Stage 1 - - - - 105 -

Stage 2 - - - - 55 -

Critical Hdwy 4.4 - - - 5.6 5.8

Critical Hdwy Stg 1 - - - - 4.6 -

Critical Hdwy Stg 2 - - - - 4.6 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1090 - - - 999 1026

Stage 1 - - - - 1096 -

Stage 2 - - - - 1144 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1089 - - - 997 1025

Mov Cap-2 Maneuver - - - - 997 -

Stage 1 - - - - 1095 -

Stage 2 - - - - 1143 -

Approach EB WB SB

HCM Control Delay, s 0 0 8.7

HCM LOS A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1089 - - - 997

HCM Lane V/C Ratio - - - - 0.027

HCM Control Delay (s) 0 - - - 8.7

HCM Lane LOS A - - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

2: Styer Road & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	55	0	45	94	1	33
Future Volume (vph)	55	0	45	94	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Intersection Delay, s/veh	7.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	0	45	94	1	33
Future Vol, veh/h	55	0	45	94	1	33
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	58	0	47	99	1	35
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.4	7.9	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	3%	0%	32%
Vol Thru, %	0%	100%	68%
Vol Right, %	97%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	34	55	139
LT Vol	1	0	45
Through Vol	0	55	94
RT Vol	33	0	0
Lane Flow Rate	36	58	146
Geometry Grp	1	1	1
Degree of Util (X)	0.036	0.066	0.165
Departure Headway (Hd)	3.671	4.107	4.071
Convergence, Y/N	Yes	Yes	Yes
Cap	957	870	882
Service Time	1.765	2.145	2.092
HCM Lane V/C Ratio	0.038	0.067	0.166
HCM Control Delay	6.9	7.4	7.9
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.6

3: Krauser Road & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	78	8	18	131	10	14
Future Volume (vph)	78	8	18	131	10	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	78	8	18	131	10	14
Future Vol, veh/h	78	8	18	131	10	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	87	9	20	146	11	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	96
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1113
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1113
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	864	-	-	1113	-
HCM Lane V/C Ratio	0.031	-	-	0.018	-
HCM Control Delay (s)	9.3	-	-	8.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Base Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	13	62	11	13	0	128	154	14	1	81	6
Future Volume (vph)	11	13	62	11	13	0	128	154	14	1	81	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	20%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	13	62	11	13	0	128	154	14	1	81	6
Future Vol, veh/h	11	13	62	11	13	0	128	154	14	1	81	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	2	0	0	0	1	0	0	0	0	20
Mvmt Flow	12	14	66	12	14	0	136	164	15	1	86	6
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	542	542	89	575	538	172	92	0	0	179	0	0
Stage 1	91	91	-	444	444	-	-	-	-	-	-	-
Stage 2	451	451	-	131	94	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.02	7.3	6.8	6.3	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	544	478	1040	471	433	925	1117	-	-	1043	-	-
Stage 1	1079	832	-	660	565	-	-	-	-	-	-	-
Stage 2	705	604	-	1007	817	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	474	413	1040	385	374	925	1117	-	-	1043	-	-
Mov Cap-2 Maneuver	474	413	-	385	374	-	-	-	-	-	-	-
Stage 1	933	831	-	571	489	-	-	-	-	-	-	-
Stage 2	593	522	-	927	816	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.4		15.2		3.7		0.1					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1117	-	-	752	379	1043	-	-				
HCM Lane V/C Ratio	0.122	-	-	0.122	0.067	0.001	-	-				
HCM Control Delay (s)	8.7	0	-	10.4	15.2	8.5	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0.4	-	-	0.4	0.2	0	-	-				

5: Future Driveway/Kauser Road & Milford Road

2026 Base Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	64	8	9	86	9	9	1	3	18	0	21
Future Volume (vph)	26	64	8	9	86	9	9	1	3	18	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	10	10	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			2%	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1442			2003			577			508	
Travel Time (s)		24.6			34.1			15.7			13.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	2%	2%	2%	0%	2%	2%	2%	0%	2%	6%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

5: Future Driveway/Kauser Road & Milford Road

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	64	8	9	86	9	9	1	3	18	0	21
Future Vol, veh/h	26	64	8	9	86	9	9	1	3	18	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	2	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	3	2	2	2	0	2	2	2	0	2	6
Mvmt Flow	27	67	8	9	90	9	9	1	3	19	0	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	99	0	0	75	0	0	249	242	71	240	242	95
Stage 1	-	-	-	-	-	-	125	125	-	113	113	-
Stage 2	-	-	-	-	-	-	124	117	-	127	129	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.12	6.52	6.22	7.5	6.92	6.46
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Follow-up Hdwy	3	-	-	3	-	-	3	4.018	3.2	3	4.018	3.2
Pot Cap-1 Maneuver	1111	-	-	1132	-	-	812	660	1027	803	642	989
Stage 1	-	-	-	-	-	-	1022	792	-	1025	792	-
Stage 2	-	-	-	-	-	-	1023	799	-	1005	778	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1111	-	-	1132	-	-	774	638	1027	780	621	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	774	638	-	780	621	-
Stage 1	-	-	-	-	-	-	996	772	-	999	786	-
Stage 2	-	-	-	-	-	-	992	793	-	976	759	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.2			0.7			9.5			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	807	1111	-	-	1132	-	-	880				
HCM Lane V/C Ratio	0.017	0.024	-	-	0.008	-	-	0.046				
HCM Control Delay (s)	9.5	8.3	0	-	8.2	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1				

7: Greenridge Road & Site Driveway

2026 Base Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Greenridge Road & Site Driveway

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 0 0 0 0 0 0

Future Vol, veh/h 0 0 0 0 0 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 0 0 0 0 0 0

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All 1 0 - 0 1 1

Stage 1 - - - - 1 -

Stage 2 - - - - 0 -

Critical Hdwy 4.3 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1199 - - - 1198 1160

Stage 1 - - - - 1199 -

Stage 2 - - - - - -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1199 - - - 1198 1160

Mov Cap-2 Maneuver - - - - 1198 -

Stage 1 - - - - 1199 -

Stage 2 - - - - - -

Approach	EB	WB	SB
----------	----	----	----

HCM Control Delay, s 0 0 0

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-----	-------

Capacity (veh/h) 1199 - - - -

HCM Lane V/C Ratio - - - -

HCM Control Delay (s) 0 - - - 0

HCM Lane LOS A - - - - A

HCM 95th %tile Q(veh) 0 - - - -

8: Styer Road & Extension

2026 Base Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	34	45	0	0	21
Future Volume (vph)	10	34	45	0	0	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 10 34 45 0 0 21

Future Vol, veh/h 10 34 45 0 0 21

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 7 2 - -15 -

Peak Hour Factor 71 71 71 71 71 71

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 14 48 63 0 0 30

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 63 0 - 0 139 63

Stage 1 - - - - 63 -

Stage 2 - - - - 76 -

Critical Hdwy 4.3 - - - 4.4 5.2

Critical Hdwy Stg 1 - - - - 2.4 -

Critical Hdwy Stg 2 - - - - 2.4 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1142 - - - 1072 1089

Stage 1 - - - - 1181 -

Stage 2 - - - - 1177 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1142 - - - 1058 1089

Mov Cap-2 Maneuver - - - - 1058 -

Stage 1 - - - - 1166 -

Stage 2 - - - - 1177 -

Approach	EB	WB	SB
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HCM Control Delay, s 1.9 0 8.4

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-----	-------

Capacity (veh/h) 1142 - - - 1089

HCM Lane V/C Ratio 0.012 - - - 0.027

HCM Control Delay (s) 8.2 0 - - 8.4

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

9: Extension & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	
Traffic Volume (vph)	55	20	1	94	10	0
Future Volume (vph)	55	20	1	94	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

2026 Base Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	20	1	94	10	0
Future Vol, veh/h	55	20	1	94	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	60	22	1	103	11	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	82
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1126
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1126
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	814	-	-	1126	-
HCM Lane V/C Ratio	0.014	-	-	0.001	-
HCM Control Delay (s)	9.5	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Projected Conditions

1: Greenridge Road & Stonehedge Drive

2026 Projected Conditions

Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	116	45	15	52	7
Future Volume (vph)	4	116	45	15	52	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	0%	5%	15%	25%	4%	100%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 2.4

Movement EBL EBT WBT WBR SBL SBRLane Configurations 

Traffic Vol, veh/h 4 116 45 15 52 7

Future Vol, veh/h 4 116 45 15 52 7

Conflicting Peds, #/hr 1 0 0 1 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 -3 - -4 -

Peak Hour Factor 79 79 79 79 79 79

Heavy Vehicles, % 0 5 15 25 4 100

Mvmt Flow 5 147 57 19 66 9

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 77 0 - 0 225 68

Stage 1 - - - - 68 -

Stage 2 - - - - 157 -

Critical Hdwy 4.4 - - - 5.64 5.9

Critical Hdwy Stg 1 - - - - 4.64 -

Critical Hdwy Stg 2 - - - - 4.64 -

Follow-up Hdwy 3 - - - 3 3.2

Pot Cap-1 Maneuver 1128 - - - 925 1037

Stage 1 - - - - 1131 -

Stage 2 - - - - 1046 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1127 - - - 919 1036

Mov Cap-2 Maneuver - - - - 919 -

Stage 1 - - - - 1124 -

Stage 2 - - - - 1045 -

Approach EB WB SB

HCM Control Delay, s 0.3 0 9.2

HCM LOS A

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1127 - - - 931

HCM Lane V/C Ratio 0.004 - - - 0.08

HCM Control Delay (s) 8.2 0 - - 9.2

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.3

2: Styer Road & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	129	0	27	39	0	44
Future Volume (vph)	129	0	27	39	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	3%	0%	0%	5%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection

Intersection Delay, s/veh	7.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	0	27	39	0	44
Future Vol, veh/h	129	0	27	39	0	44
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	3	0	0	5	0	0
Mvmt Flow	159	0	33	48	0	54
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.1	7.7	7.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	0%	0%	41%
Vol Thru, %	0%	100%	59%
Vol Right, %	100%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	44	129	66
LT Vol	0	0	27
Through Vol	0	129	39
RT Vol	44	0	0
Lane Flow Rate	54	159	81
Geometry Grp	1	1	1
Degree of Util (X)	0.058	0.182	0.095
Departure Headway (Hd)	3.827	4.107	4.198
Convergence, Y/N	Yes	Yes	Yes
Cap	941	871	848
Service Time	1.827	2.147	2.252
HCM Lane V/C Ratio	0.057	0.183	0.096
HCM Control Delay	7.1	8.1	7.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.7	0.3

3: Krauser Road & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	153	17	7	50	13	24
Future Volume (vph)	153	17	7	50	13	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	1%	13%	0%	4%	14%	8%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	153	17	7	50	13	24
Future Vol, veh/h	153	17	7	50	13	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	13	0	4	14	8
Mvmt Flow	178	20	8	58	15	28
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	198	0	262	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	74	-
Critical Hdwy	-	-	4.3	-	7.34	6.68
Critical Hdwy Stg 1	-	-	-	-	6.34	-
Critical Hdwy Stg 2	-	-	-	-	6.34	-
Follow-up Hdwy	-	-	3	-	3.1	3.2
Pot Cap-1 Maneuver	-	-	1028	-	760	862
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	1052	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1028	-	754	862
Mov Cap-2 Maneuver	-	-	-	-	754	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	1044	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		9.6	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	821	-	-	1028	-	
HCM Lane V/C Ratio	0.052	-	-	0.008	-	
HCM Control Delay (s)	9.6	-	-	8.5	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Projected Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	27	161	12	8	0	42	48	8	0	127	10
Future Volume (vph)	17	27	161	12	8	0	42	48	8	0	127	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	7%	2%	0%	0%	0%	5%	11%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	27	161	12	8	0	42	48	8	0	127	10
Future Vol, veh/h	17	27	161	12	8	0	42	48	8	0	127	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	7	2	0	0	0	5	11	0	0	1	0
Mvmt Flow	19	31	183	14	9	0	48	55	9	0	144	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	310	310	150	413	311	60	155	0	0	64	0	0
Stage 1	150	150	-	156	156	-	-	-	-	-	-	-
Stage 2	160	160	-	257	155	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.17	6.02	7.3	6.8	6.3	4.4	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.17	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4.063	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	765	617	963	614	592	1073	1058	-	-	1142	-	-
Stage 1	1007	777	-	974	766	-	-	-	-	-	-	-
Stage 2	995	770	-	850	767	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	728	588	963	461	564	1073	1058	-	-	1142	-	-
Mov Cap-2 Maneuver	728	588	-	461	564	-	-	-	-	-	-	-
Stage 1	960	777	-	928	730	-	-	-	-	-	-	-
Stage 2	936	734	-	661	767	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		12.6		3.7		0	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1058	-	-	867 497	1142	-	-
HCM Lane V/C Ratio	0.045	-	-	0.269 0.046	-	-	-
HCM Control Delay (s)	8.6	0	-	10.7 12.6	0	-	-
HCM Lane LOS	A	A	-	B B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1 0.1	0	-	-

5: Future Driveway/Kauser Road & Milford Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	57	4	5	79	12	12	0	5	10	1	67
Future Volume (vph)	12	57	4	5	79	12	12	0	5	10	1	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	10	10	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			2%	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1442			2003			524			508	
Travel Time (s)		24.6			34.1			14.3			13.9	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	11%	2%	2%	23%	14%	2%	2%	2%	0%	2%	6%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

5: Future Driveway/Kauser Road & Milford Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	57	4	5	79	12	12	0	5	10	1	67
Future Vol, veh/h	12	57	4	5	79	12	12	0	5	10	1	67
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	2	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	17	11	2	2	23	14	2	2	2	0	2	6
Mvmt Flow	14	67	5	6	93	14	14	0	6	12	1	79

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	72	0	0	250	217	70	213	212	100
Stage 1	-	-	-	-	-	-	98	98	-	112	112	-
Stage 2	-	-	-	-	-	-	152	119	-	101	100	-
Critical Hdwy	4.4	-	-	4.4	-	-	7.12	6.52	6.22	7.5	6.92	6.46
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3	4.018	3.2	3	4.018	3.2
Pot Cap-1 Maneuver	1067	-	-	1097	-	-	811	681	1028	840	669	983
Stage 1	-	-	-	-	-	-	1058	814	-	1027	793	-
Stage 2	-	-	-	-	-	-	987	797	-	1043	803	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1067	-	-	1097	-	-	734	667	1028	822	656	983
Mov Cap-2 Maneuver	-	-	-	-	-	-	734	667	-	822	656	-
Stage 1	-	-	-	-	-	-	1043	803	-	1013	788	-
Stage 2	-	-	-	-	-	-	901	792	-	1023	792	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0.4	9.6	9.2
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	801	1067	-	-	1097	-	-	953
HCM Lane V/C Ratio	0.025	0.013	-	-	0.005	-	-	0.096
HCM Control Delay (s)	9.6	8.4	0	-	8.3	0	-	9.2
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.3

6: Greenridge Road & Site Driveway

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	174	54	9	26	5
Future Volume (vph)	2	174	54	9	26	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

6: Greenridge Road & Site Driveway

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	174	54	9	26	5
Future Vol, veh/h	2	174	54	9	26	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	189	59	10	28	5
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	69	0	-	0	257	64
Stage 1	-	-	-	-	64	-
Stage 2	-	-	-	-	193	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1137	-	-	-	843	1069
Stage 1	-	-	-	-	1119	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1137	-	-	-	841	1069
Mov Cap-2 Maneuver	-	-	-	-	841	-
Stage 1	-	-	-	-	1117	-
Stage 2	-	-	-	-	972	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.1	0		9.3		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1137	-	-	-	871	
HCM Lane V/C Ratio	0.002	-	-	-	0.039	
HCM Control Delay (s)	8.2	0	-	-	9.3	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

7: Site Driveway & Stonehedge Drive

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	15	3	0	48	10	0
Future Volume (vph)	15	3	0	48	10	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	1086			335	499	
Travel Time (s)	29.6			9.1	13.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Site Driveway & Stonehedge Drive

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	15	3	0	48	10	0
Future Vol, veh/h	15	3	0	48	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	3	0	52	11	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	19	0	70	18
Stage 1	-	-	-	-	18	-
Stage 2	-	-	-	-	52	-
Critical Hdwy	-	-	4.3	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1182	-	1090	1134
Stage 1	-	-	-	-	1177	-
Stage 2	-	-	-	-	1134	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1182	-	1090	1134
Mov Cap-2 Maneuver	-	-	-	-	1090	-
Stage 1	-	-	-	-	1177	-
Stage 2	-	-	-	-	1134	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		8.3	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1090	-	-	1182	-	
HCM Lane V/C Ratio	0.01	-	-	-	-	
HCM Control Delay (s)	8.3	-	-	0	-	
HCM Lane LOS	A	-	-	A	-	
HCM 95th %tile Q(veh)	0	-	-	0	-	

8: Styer Road & Extension

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	21	43	28	0	0	45
Future Volume (vph)	21	43	28	0	0	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	33%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations

Traffic Vol, veh/h 21 43 28 0 0 45

Future Vol, veh/h 21 43 28 0 0 45

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 7 2 - -15 -

Peak Hour Factor 83 83 83 83 83 83

Heavy Vehicles, % 33 0 0 0 0 0

Mvmt Flow 25 52 34 0 0 54

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 34 0 - 0 136 34

Stage 1 - - - - 34 -

Stage 2 - - - - 102 -

Critical Hdwy 4.43 - - - 4.4 5.2

Critical Hdwy Stg 1 - - - - 2.4 -

Critical Hdwy Stg 2 - - - - 2.4 -

Follow-up Hdwy 3.1 - - - 3 3.1

Pot Cap-1 Maneuver 1130 - - - 1075 1122

Stage 1 - - - - 1190 -

Stage 2 - - - - 1169 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1130 - - - 1050 1122

Mov Cap-2 Maneuver - - - - 1050 -

Stage 1 - - - - 1163 -

Stage 2 - - - - 1169 -

Approach	EB	WB	SB
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HCM Control Delay, s 2.7 0 8.4

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1130 - - - 1122

HCM Lane V/C Ratio 0.022 - - - 0.048

HCM Control Delay (s) 8.3 0 - - 8.4

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0.1 - - - 0.2

9: Extension & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	129	45	0	39	21	0
Future Volume (vph)	129	45	0	39	21	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74
Heavy Vehicles (%)	4%	4%	0%	0%	25%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

2026 Projected Conditions

Timing Plan: AM Peak Hour

Intersection

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	45	0	39	21	0
Future Vol, veh/h	129	45	0	39	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	4	4	0	0	25	0
Mvmt Flow	174	61	0	53	28	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	235
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	998
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	998
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	649	-	-	998	-
HCM Lane V/C Ratio	0.044	-	-	-	-
HCM Control Delay (s)	10.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

1: Greenridge Road & Stonehedge Drive

2026 Projected Conditions

Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	6	48	77	30	26	3
Future Volume (vph)	6	48	77	30	26	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Grade (%)		-2%	-3%		-4%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		356	601		828	
Travel Time (s)		6.9	11.7		22.6	
Confl. Peds. (#/hr)	1			1		
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

1: Greenridge Road & Stonehedge Drive

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations

Traffic Vol, veh/h 6 48 77 30 26 3

Future Vol, veh/h 6 48 77 30 26 3

Conflicting Peds, #/hr 1 0 0 1 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 -3 - -4 -

Peak Hour Factor 87 87 87 87 87 87

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 7 55 89 34 30 3

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All 124 0 - 0 176 107

Stage 1 - - - - 107 -

Stage 2 - - - - 69 -

Critical Hdwy 4.4 - - - 5.6 5.8

Critical Hdwy Stg 1 - - - - 4.6 -

Critical Hdwy Stg 2 - - - - 4.6 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1085 - - - 981 1023

Stage 1 - - - - 1094 -

Stage 2 - - - - 1131 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1084 - - - 972 1022

Mov Cap-2 Maneuver - - - - 972 -

Stage 1 - - - - 1085 -

Stage 2 - - - - 1130 -

Approach	EB	WB	SB
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HCM Control Delay, s 0.9 0 8.8

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h) 1084 - - - 977

HCM Lane V/C Ratio 0.006 - - - 0.034

HCM Control Delay (s) 8.3 0 - - 8.8

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

2: Styer Road & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	57	0	47	97	1	35
Future Volume (vph)	57	0	47	97	1	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	10	10
Grade (%)	-10%			10%	2%	
Link Speed (mph)	35			35	35	
Link Distance (ft)	115			786	165	
Travel Time (s)	2.2			15.3	3.2	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Stop	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

2: Styer Road & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Intersection Delay, s/veh 7.7

Intersection LOS A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	0	47	97	1	35
Future Vol, veh/h	57	0	47	97	1	35
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	60	0	49	102	1	37
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.5	8	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	3%	0%	33%
Vol Thru, %	0%	100%	67%
Vol Right, %	97%	0%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	36	57	144
LT Vol	1	0	47
Through Vol	0	57	97
RT Vol	35	0	0
Lane Flow Rate	38	60	152
Geometry Grp	1	1	1
Degree of Util (X)	0.04	0.069	0.172
Departure Headway (Hd)	3.783	4.115	4.077
Convergence, Y/N	Yes	Yes	Yes
Cap	952	866	879
Service Time	1.783	2.159	2.103
HCM Lane V/C Ratio	0.04	0.069	0.173
HCM Control Delay	6.9	7.5	8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0.2	0.6

3: Krauser Road & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	80	10	20	133	13	17
Future Volume (vph)	80	10	20	133	13	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	-7%			-3%	4%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	786			699	259	
Travel Time (s)	15.3			13.6	7.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	0%	0%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

3: Krauser Road & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	80	10	20	133	13	17
Future Vol, veh/h	80	10	20	133	13	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-7	-	-	-3	4	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	0	0	1	0	0
Mvmt Flow	89	11	22	148	14	19

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	100
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1110
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1110
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	851	-	-	1110	-
HCM Lane V/C Ratio	0.039	-	-	0.02	-
HCM Control Delay (s)	9.4	-	-	8.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Projected Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	14	74	11	15	0	148	154	14	1	81	13
Future Volume (vph)	15	14	74	11	15	0	148	154	14	1	81	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	11	11	11	11	11	11
Grade (%)		-2%			1%			-5%			1%	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		1076			903			900			964	
Travel Time (s)		21.0			17.6			20.5			21.9	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%	0%	20%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

4: Font Road & Greenridge Road/St. Andrews Lane

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	14	74	11	15	0	148	154	14	1	81	13
Future Vol, veh/h	15	14	74	11	15	0	148	154	14	1	81	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	1	-	-	-5	-	-	1	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	2	0	0	0	1	0	0	0	0	20
Mvmt Flow	16	15	79	12	16	0	157	164	15	1	86	14
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	589	588	93	628	588	172	100	0	0	179	0	0
Stage 1	95	95	-	486	486	-	-	-	-	-	-	-
Stage 2	494	493	-	142	102	-	-	-	-	-	-	-
Critical Hdwy	6.7	6.1	6.02	7.3	6.8	6.3	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.7	5.1	-	6.3	5.7	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	507	453	1034	431	404	925	1110	-	-	1043	-	-
Stage 1	1074	829	-	623	540	-	-	-	-	-	-	-
Stage 2	670	581	-	992	810	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	430	381	1034	340	340	925	1110	-	-	1043	-	-
Mov Cap-2 Maneuver	430	381	-	340	340	-	-	-	-	-	-	-
Stage 1	905	828	-	525	455	-	-	-	-	-	-	-
Stage 2	545	490	-	899	809	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.9		16.5			4.1			0.1			
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1110	-	-	719	340	1043	-	-				
HCM Lane V/C Ratio	0.142	-	-	0.152	0.081	0.001	-	-				
HCM Control Delay (s)	8.8	0	-	10.9	16.5	8.5	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0.5	-	-	0.5	0.3	0	-	-				

5: Future Driveway/Kauser Road & Milford Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	64	8	9	86	9	9	1	3	18	0	25
Future Volume (vph)	32	64	8	9	86	9	9	1	3	18	0	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	12	12	10	10	12	12	12	16	12	16
Grade (%)		1%			-1%			0%			2%	
Link Speed (mph)		40			40			25			25	
Link Distance (ft)		1442			2003			577			508	
Travel Time (s)		24.6			34.1			15.7			13.9	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	3%	2%	2%	2%	0%	2%	2%	2%	0%	2%	6%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

5: Future Driveway/Kauser Road & Milford Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	32	64	8	9	86	9	9	1	3	18	0	25
Future Vol, veh/h	32	64	8	9	86	9	9	1	3	18	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	1	-	-	-1	-	-	0	-	-	2	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	3	2	2	2	0	2	2	2	0	2	6
Mvmt Flow	33	67	8	9	90	9	9	1	3	19	0	26
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	99	0	0	75	0	0	263	254	71	252	254	95
Stage 1	-	-	-	-	-	-	137	137	-	113	113	-
Stage 2	-	-	-	-	-	-	126	117	-	139	141	-
Critical Hdwy	4.3	-	-	4.3	-	-	7.12	6.52	6.22	7.5	6.92	6.46
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.5	5.92	-
Follow-up Hdwy	3	-	-	3	-	-	3	4.018	3.2	3	4.018	3.2
Pot Cap-1 Maneuver	1111	-	-	1132	-	-	794	650	1027	787	631	989
Stage 1	-	-	-	-	-	-	1006	783	-	1025	792	-
Stage 2	-	-	-	-	-	-	1020	799	-	989	768	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1111	-	-	1132	-	-	750	625	1027	760	606	989
Mov Cap-2 Maneuver	-	-	-	-	-	-	750	625	-	760	606	-
Stage 1	-	-	-	-	-	-	975	759	-	993	786	-
Stage 2	-	-	-	-	-	-	985	793	-	954	744	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	2.6			0.7			9.7			9.3		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	787	1111	-	-	1132	-	-	878				
HCM Lane V/C Ratio	0.017	0.03	-	-	0.008	-	-	0.051				
HCM Control Delay (s)	9.7	8.3	0	-	8.2	0	-	9.3				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2				

6: Greenridge Road & Site Driveway

2026 Projected Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	93	148	29	17	4
Future Volume (vph)	5	93	148	29	17	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)		-2%	0%		0%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		1101	1076		881	
Travel Time (s)		21.4	21.0		24.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

6: Greenridge Road & Site Driveway

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 5 93 148 29 17 4

Future Vol, veh/h 5 93 148 29 17 4

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - -2 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 5 101 161 32 18 4

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All 193 0 - 0 288 177

Stage 1 - - - - 177 -

Stage 2 - - - - 111 -

Critical Hdwy 4.3 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1032 - - - 808 922

Stage 1 - - - - 989 -

Stage 2 - - - - 1063 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1032 - - - 804 922

Mov Cap-2 Maneuver - - - - 804 -

Stage 1 - - - - 984 -

Stage 2 - - - - 1063 -

Approach	EB	WB	SB
----------	----	----	----

HCM Control Delay, s 0.4 0 9.5

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-----	-------

Capacity (veh/h) 1032 - - - 824

HCM Lane V/C Ratio 0.005 - - - 0.028

HCM Control Delay (s) 8.5 0 - - 9.5

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

7: Site Driveway & Stonehedge Drive

2026 Projected Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	25	11	0	23	6	0
Future Volume (vph)	25	11	0	23	6	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	25			25	25	
Link Distance (ft)	1088			391	532	
Travel Time (s)	29.7			10.7	14.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

7: Site Driveway & Stonehedge Drive

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 0.8

Movement EBT EBR WBL WBT NBL NBRLane Configurations 

Traffic Vol, veh/h 25 11 0 23 6 0

Future Vol, veh/h 25 11 0 23 6 0

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # 0 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 27 12 0 25 7 0

Major/Minor Major1 Major2 Minor1

Conflicting Flow All 0 0 39 0 58 33

Stage 1 - - - - 33 -

Stage 2 - - - - 25 -

Critical Hdwy - - 4.3 - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy - - 3 - 3 3.1

Pot Cap-1 Maneuver - - 1164 - 1108 1113

Stage 1 - - - - 1158 -

Stage 2 - - - - 1168 -

Platoon blocked, % - - -

Mov Cap-1 Maneuver - - 1164 - 1108 1113

Mov Cap-2 Maneuver - - - - 1108 -

Stage 1 - - - - 1158 -

Stage 2 - - - - 1168 -

Approach EB WB NB

HCM Control Delay, s 0 0 8.3

HCM LOS A

Minor Lane/Major Mvmt NBLn1 EBT EBR WBL WBT

Capacity (veh/h) 1108 - - 1164 -

HCM Lane V/C Ratio 0.006 - - - -

HCM Control Delay (s) 8.3 - - 0 -

HCM Lane LOS A - - A -

HCM 95th %tile Q(veh) 0 - - 0 -

8: Styer Road & Extension

2026 Projected Conditions

Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	36	47	0	0	22
Future Volume (vph)	12	36	47	0	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	9	9	10	10	12	12
Grade (%)		7%	2%		-15%	
Link Speed (mph)		35	35		25	
Link Distance (ft)		2939	165		120	
Travel Time (s)		57.3	3.2		3.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

8: Styer Road & Extension

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations

Traffic Vol, veh/h 12 36 47 0 0 22

Future Vol, veh/h 12 36 47 0 0 22

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 7 2 - -15 -

Peak Hour Factor 71 71 71 71 71 71

Heavy Vehicles, % 0 0 0 0 0 0

Mvmt Flow 17 51 66 0 0 31

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All 66 0 - 0 151 66

Stage 1 - - - - 66 -

Stage 2 - - - - 85 -

Critical Hdwy 4.3 - - - 4.4 5.2

Critical Hdwy Stg 1 - - - - 2.4 -

Critical Hdwy Stg 2 - - - - 2.4 -

Follow-up Hdwy 3 - - - 3 3.1

Pot Cap-1 Maneuver 1140 - - - 1062 1086

Stage 1 - - - - 1180 -

Stage 2 - - - - 1175 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1140 - - - 1046 1086

Mov Cap-2 Maneuver - - - - 1046 -

Stage 1 - - - - 1162 -

Stage 2 - - - - 1175 -

Approach	EB	WB	SB
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HCM Control Delay, s 2.1 0 8.4

HCM LOS A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-----	-------

Capacity (veh/h) 1140 - - - 1086

HCM Lane V/C Ratio 0.015 - - - 0.029

HCM Control Delay (s) 8.2 0 - - 8.4

HCM Lane LOS A A - - A

HCM 95th %tile Q(veh) 0 - - - 0.1

9: Extension & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↘↙	
Traffic Volume (vph)	57	21	1	97	12	0
Future Volume (vph)	57	21	1	97	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	10	10	14	14
Grade (%)	-10%			-3%	15%	
Link Speed (mph)	35			35	25	
Link Distance (ft)	601			115	120	
Travel Time (s)	11.7			2.2	3.3	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

9: Extension & Greenridge Road

2026 Projected Conditions

Timing Plan: PM Peak Hour

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	21	1	97	12	0
Future Vol, veh/h	57	21	1	97	12	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-10	-	-	-3	15	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	0	0	0	0	0
Mvmt Flow	63	23	1	107	13	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	86
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1122
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1122
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	800	-	-	1122	-
HCM Lane V/C Ratio	0.016	-	-	0.001	-
HCM Control Delay (s)	9.6	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

APPENDIX D:

Auxiliary Turn Lane Warrant Analyses

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Upper Uwchlan Township County: Chester County PennDOT Engineering District: 6	Analysis Date: 8/5/2021 Conducted By: SL Checked By: Agency/Company Name: Traffic Planning and Design, Inc.
Intersection & Approach Description: Greenridge Road & Site Driveway	
Analysis Period: 2026 Projected Design Hour: AM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 35 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	2.0%	3
	Through	-	174	2.0%	176
	Right	Yes	0	2.0%	0
Opposing	Left	Yes	0	2.0%	0
	Through	-	54	2.0%	55
	Right	Yes	9	2.0%	10
Advancing Volume: 179 Opposing Volume: 65 Left Turn Volume: 3 % Left Turns in Advancing Volume: 1.68%					
Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	54	2.0%	N/A
	Right	-	9	2.0%	N/A
Advancing Volume: N/A Right Turn Volume: N/A					

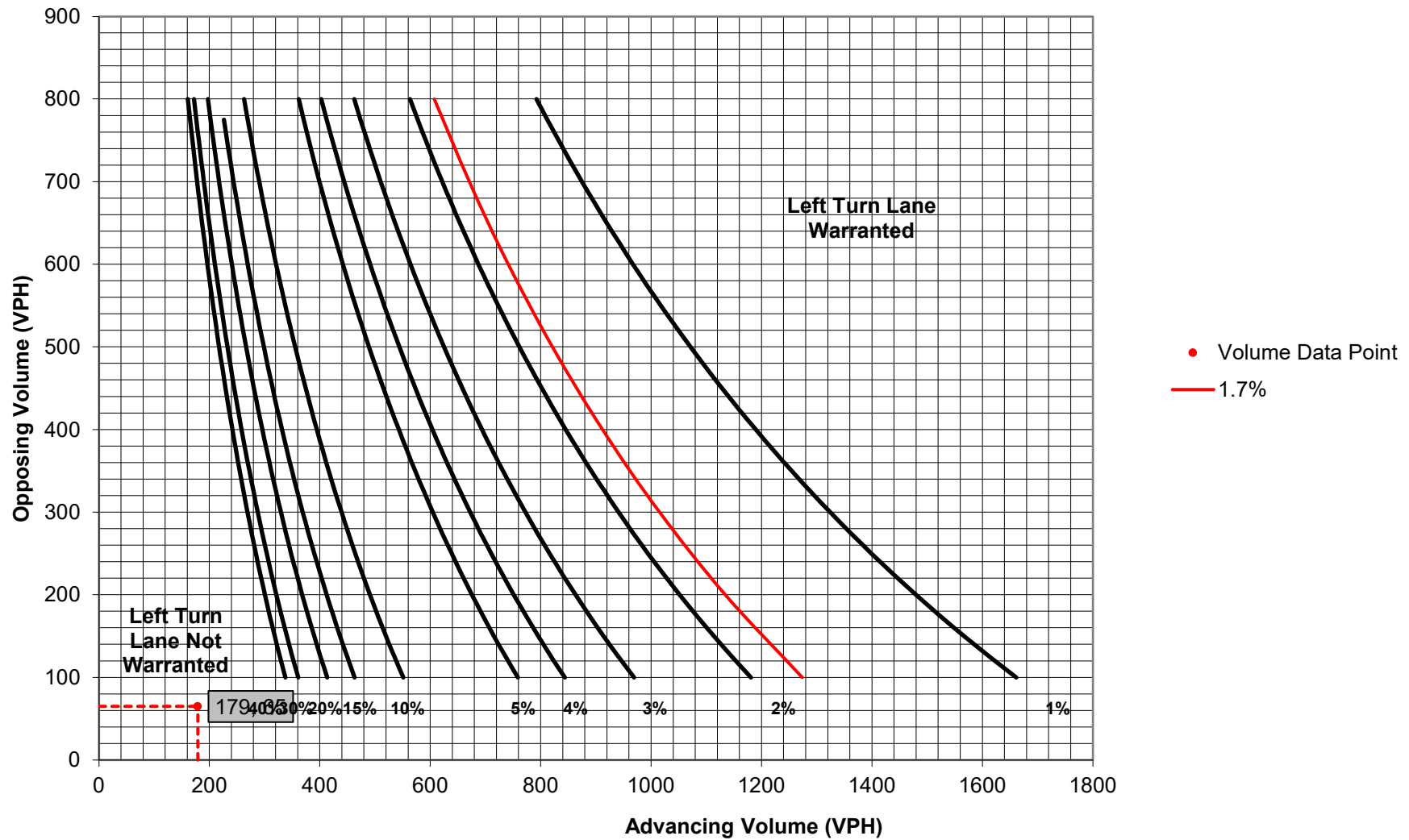
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: Figure 1 Warrant Met?: No	Applicable Warrant Figure: N/A Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 3 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known):	Average # of Vehicles/Cycle: N/A																																							
PennDOT Publication 46, Exhibit 11-6																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th rowspan="4" style="width: 15%;">Type of Traffic Control</th> <th colspan="6" style="background-color: #f5deb3;">Speed (MPH)</th> </tr> <tr> <th colspan="2" style="background-color: #f5deb3;">25-35</th> <th colspan="2" style="background-color: #f5deb3;">40-45</th> <th colspan="2" style="background-color: #f5deb3;">50-60</th> </tr> <tr> <th colspan="6" style="background-color: #f5deb3;">Turn Demand Volume</th> </tr> <tr> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> </tr> <tr> <td style="text-align: center;">Signalized</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> </tr> <tr> <td style="text-align: center;">Unsignalized</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">C</td> <td style="text-align: center;">B</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B</td> </tr> </table>		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
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: Upper Uwchlan Township County: Chester County PennDOT Engineering District: 6	Analysis Date: 8/5/2021 Conducted By: SL Checked By: Agency/Company Name: Traffic Planning and Design, Inc.
Intersection & Approach Description: Greenridge Road & Site Driveway	
Analysis Period: 2026 Projected Design Hour: AM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 35 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	2.0%	N/A
	Through	-	174	2.0%	N/A
	Right	Yes	0	2.0%	N/A
Opposing	Left	Yes	0	2.0%	N/A
	Through	-	54	2.0%	N/A
	Right	Yes	9	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	0	2.0%	0
	Through	-	54	2.0%	55
	Right	-	9	2.0%	10
Advancing Volume: 65 Right Turn Volume: 10					

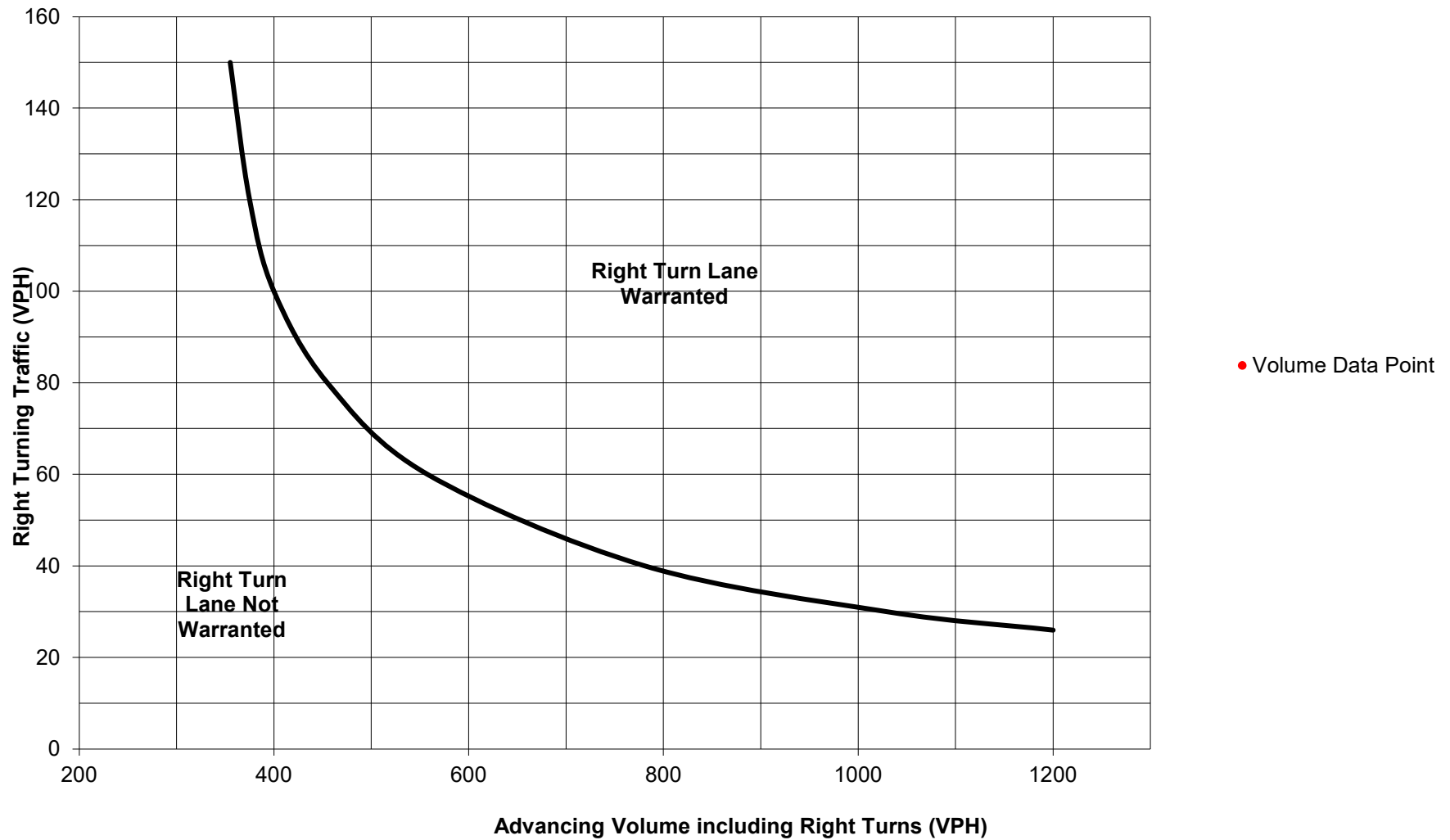
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: N/A Warrant Met?: N/A	Applicable Warrant Figure: Figure 9 Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 10 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known): 	Average # of Vehicles/Cycle: N/A																																							
PennDOT Publication 46, Exhibit 11-6																																								
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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: Upper Uwchlan Township County: Chester County PennDOT Engineering District: 6	Analysis Date: 8/5/2021 Conducted By: SL Checked By: Agency/Company Name: Traffic Planning and Design, Inc.
Intersection & Approach Description: Greenridge Road & Site Driveway	
Analysis Period: 2026 Projected Design Hour: PM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 35 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	5	2.0%	6
	Through	-	93	2.0%	94
	Right	Yes	0	2.0%	0
Opposing	Left	Yes	0	2.0%	0
	Through	-	148	2.0%	150
	Right	Yes	29	2.0%	30
Advancing Volume: 100 Opposing Volume: 180 Left Turn Volume: 6 % Left Turns in Advancing Volume: 6.00%					
Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	148	2.0%	N/A
	Right	-	29	2.0%	N/A
Advancing Volume: N/A Right Turn Volume: N/A					

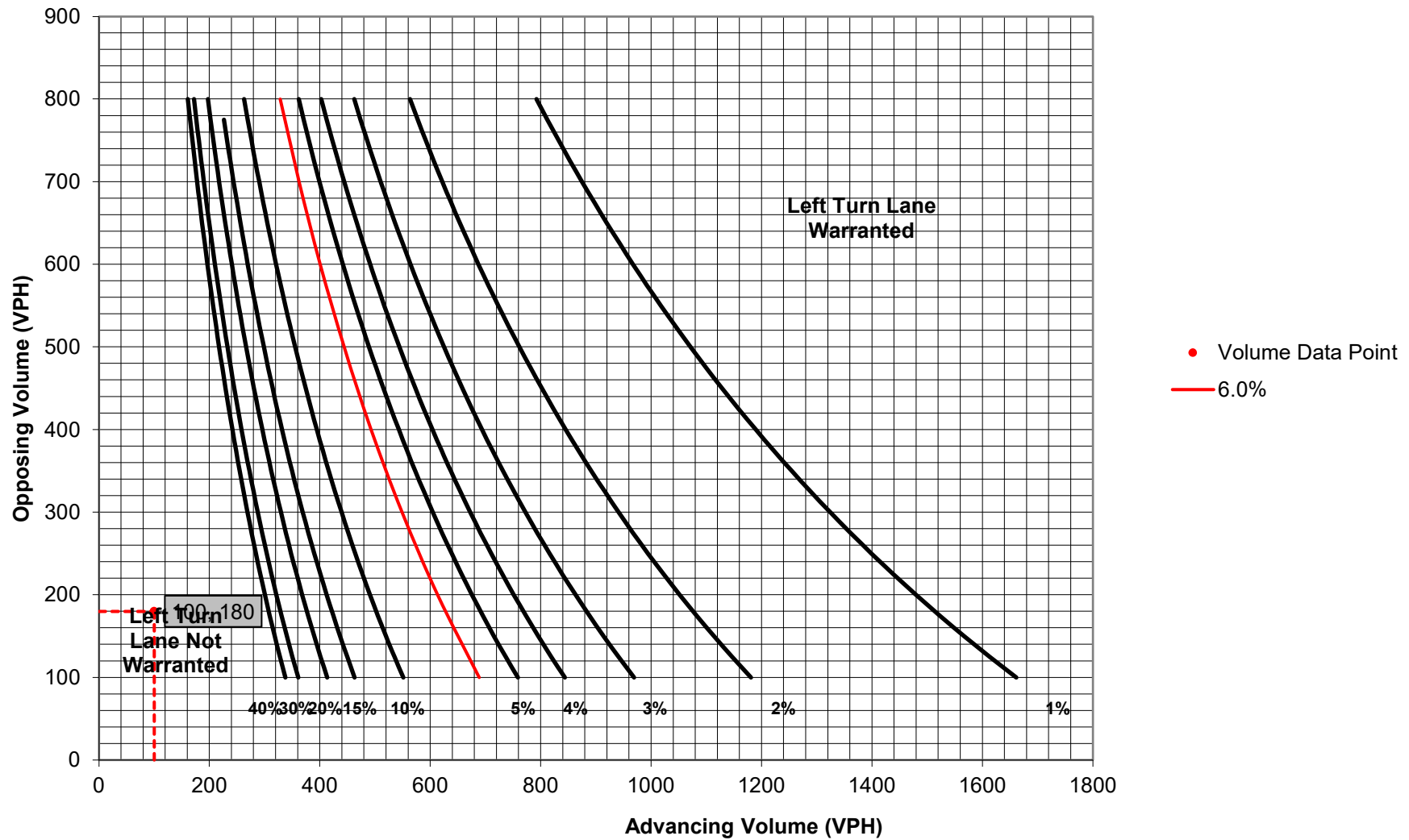
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: Figure 1 Warrant Met?: No	Applicable Warrant Figure: N/A Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 6 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known): 	Average # of Vehicles/Cycle: N/A																																								
PennDOT Publication 46, Exhibit 11-6																																									
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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																																									
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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: Upper Uwchlan Township County: Chester County PennDOT Engineering District: 6	Analysis Date: 8/5/2021 Conducted By: SL Checked By: Agency/Company Name: Traffic Planning and Design, Inc.
Intersection & Approach Description: Greenridge Road & Site Driveway	
Analysis Period: 2026 Projected Design Hour: PM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 35 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	5	2.0%	N/A
	Through	-	93	2.0%	N/A
	Right	Yes	0	2.0%	N/A
Opposing	Left	Yes	0	2.0%	N/A
	Through	-	148	2.0%	N/A
	Right	Yes	29	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	0	2.0%	0
	Through	-	148	2.0%	150
	Right	-	29	2.0%	30
Advancing Volume: 180 Right Turn Volume: 30					

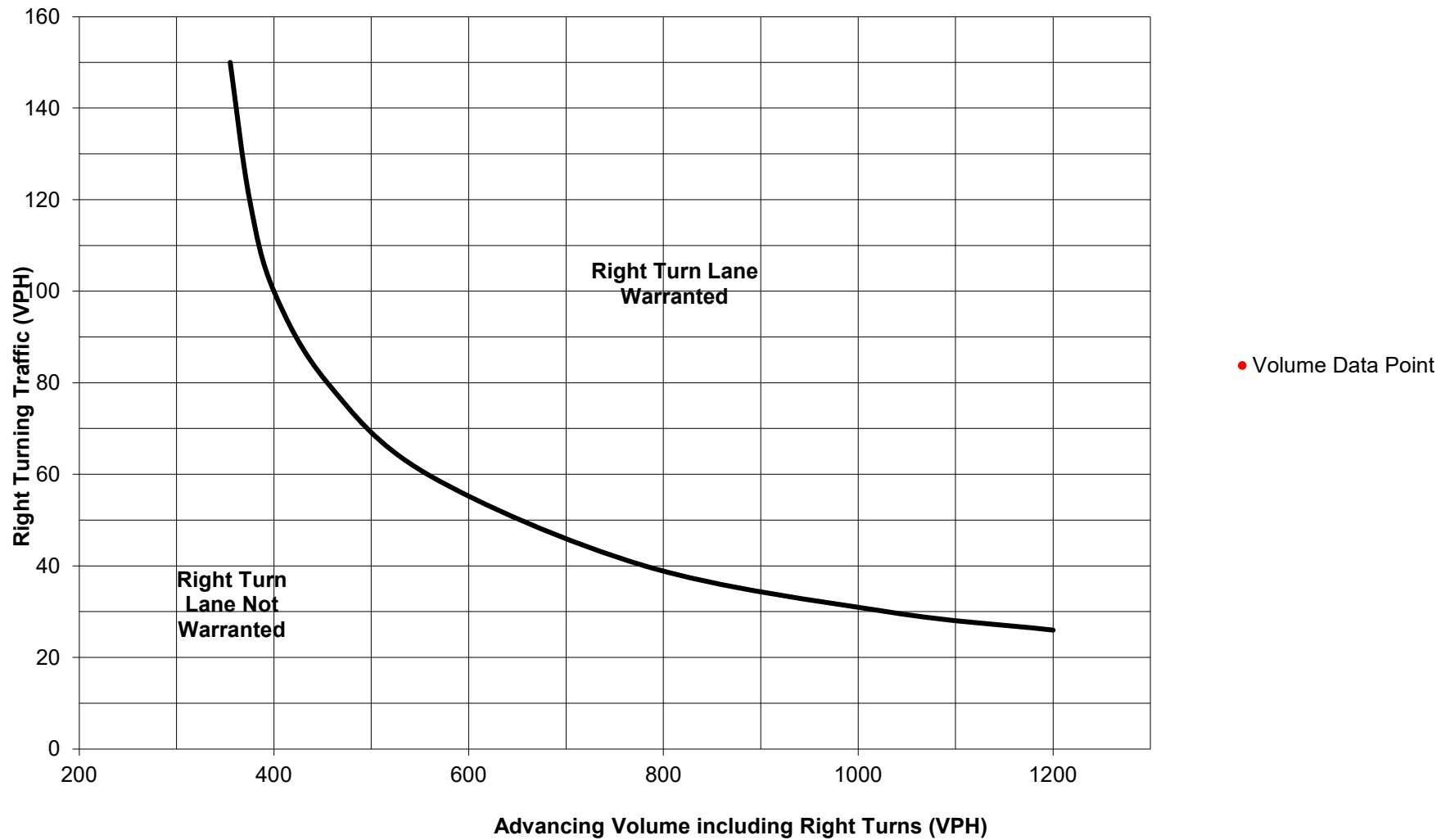
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: N/A Warrant Met?: N/A	Applicable Warrant Figure: Figure 9 Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 30 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known): 	Average # of Vehicles/Cycle: N/A																																								
PennDOT Publication 46, Exhibit 11-6																																									
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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																																									
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**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: Upper Uwchlan Township County: Chester County PennDOT Engineering District: 6	Analysis Date: 8/5/2021 Conducted By: SL Checked By: Agency/Company Name: Traffic Planning and Design, Inc.
Intersection & Approach Description: Stonehedge Road & Site Driveway/Lauren Lane	
Analysis Period: 2026 Projected Design Hour: AM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 25 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis: Left Turn Lane Left or Right-Turn Lane Analysis?: Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	0
	Through	-	48	2.0%	49
	Right	Yes	0	2.0%	0
Opposing	Left	Yes	0	2.0%	0
	Through	-	15	2.0%	16
	Right	Yes	3	2.0%	4
Advancing Volume: 49 Opposing Volume: 20 Left Turn Volume: 0 % Left Turns in Advancing Volume: 0.00%					
Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	15	2.0%	N/A
	Right	-	3	2.0%	N/A
Advancing Volume: N/A Right Turn Volume: N/A					

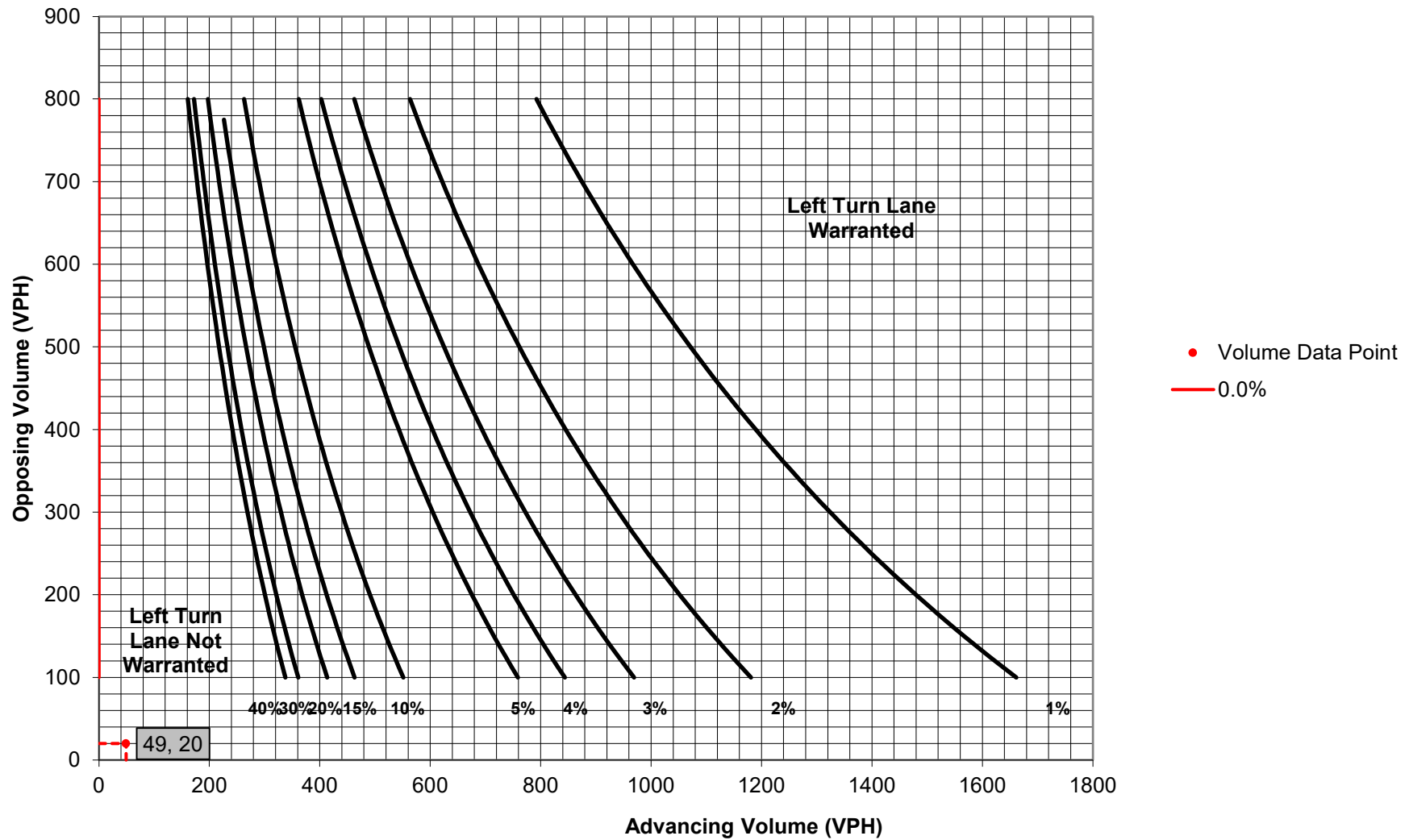
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: Figure 1 Warrant Met?: #DIV/0!	Applicable Warrant Figure: N/A Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 0 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known):	Average # of Vehicles/Cycle: #DIV/0!																																								
PennDOT Publication 46, Exhibit 11-6																																									
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Unsignalized	A	A	C	B	B or C	B																																			
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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

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Intersection & Approach Description: Stonehedge Road & Site Driveway/Lauren Lane	
Analysis Period: 2026 Projected Design Hour: AM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 25 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	48	2.0%	N/A
	Right	Yes	0	2.0%	N/A
Opposing	Left	Yes	0	2.0%	N/A
	Through	-	15	2.0%	N/A
	Right	Yes	3	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	0	2.0%	0
	Through	-	15	2.0%	16
	Right	-	3	2.0%	4
Advancing Volume: 20 Right Turn Volume: 4					

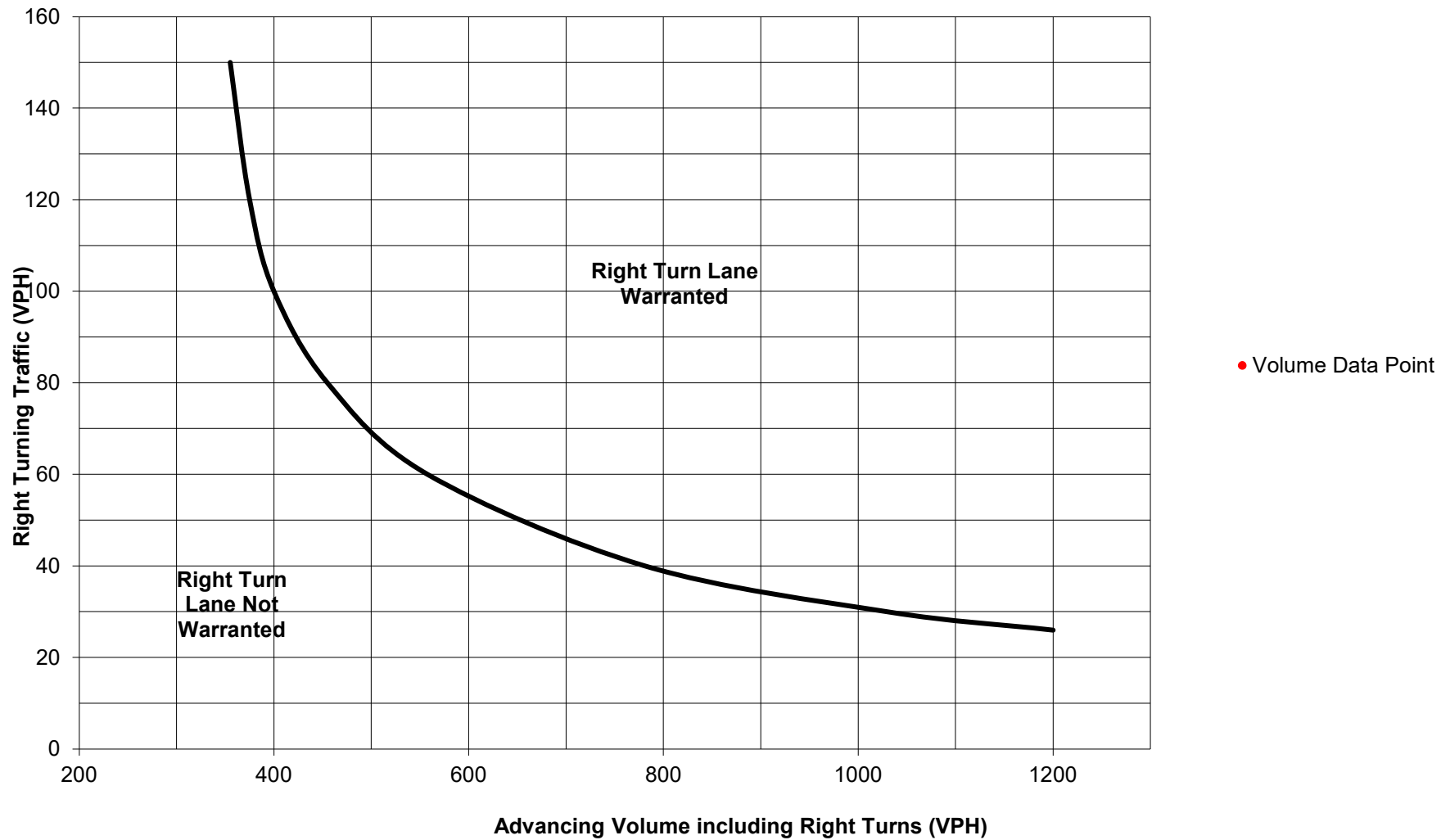
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: N/A Warrant Met?: N/A	Applicable Warrant Figure: Figure 9 Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 4 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known):	Average # of Vehicles/Cycle: N/A																																							
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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																																								
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**Figure 9. Warrant for right turn lanes on two-lane roadways
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Intersection & Approach Description: Stonehedge Road & Site Driveway/Lauren Lane	
Analysis Period: 2026 Projected Design Hour: PM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 25 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis: Left Turn Lane Left or Right-Turn Lane Analysis?: Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	0
	Through	-	23	2.0%	24
	Right	Yes	0	2.0%	0
Opposing	Left	Yes	0	2.0%	0
	Through	-	25	2.0%	26
	Right	Yes	11	2.0%	12
Advancing Volume: 24 Opposing Volume: 38 Left Turn Volume: 0 % Left Turns in Advancing Volume: 0.00%					
Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	25	2.0%	N/A
	Right	-	11	2.0%	N/A
Advancing Volume: N/A Right Turn Volume: N/A					

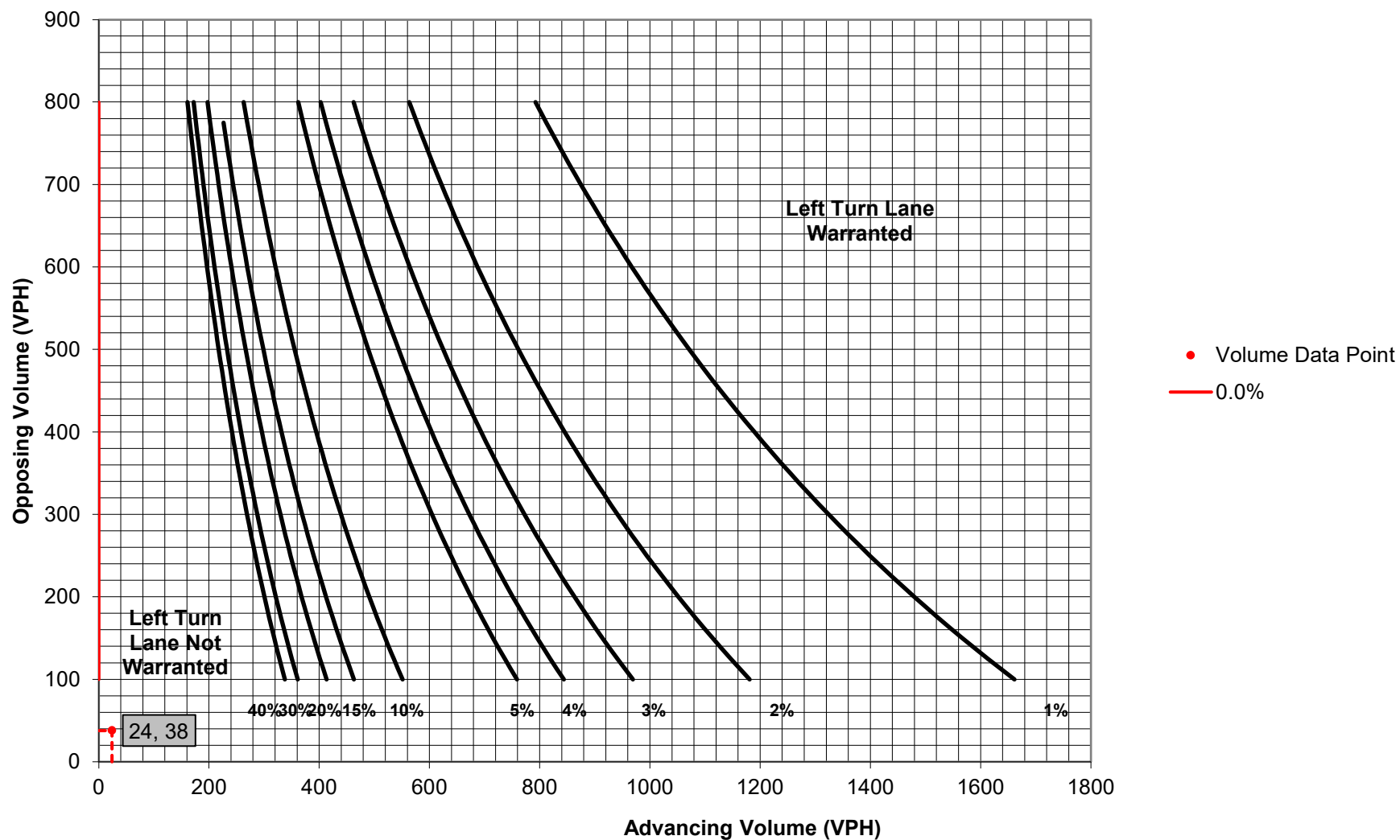
TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: Figure 1 Warrant Met?: #DIV/0!	Applicable Warrant Figure: N/A Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 0 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known):	Average # of Vehicles/Cycle: #DIV/0!																																								
PennDOT Publication 46, Exhibit 11-6 <table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th rowspan="3">Type of Traffic Control</th> <th colspan="6">Speed (MPH)</th> </tr> <tr> <th colspan="2">25-35</th> <th colspan="2">40-45</th> <th colspan="2">50-60</th> </tr> <tr> <th colspan="6">Turn Demand Volume</th> </tr> <tr> <th></th> <th>High</th> <th>Low</th> <th>High</th> <th>Low</th> <th>High</th> <th>Low</th> </tr> </thead> <tbody> <tr> <td>Signalized</td> <td>A</td> <td>A</td> <td>B or C</td> <td>B or C</td> <td>B or C</td> <td>B or C</td> </tr> <tr> <td>Unsignalized</td> <td>A</td> <td>A</td> <td>C</td> <td>B</td> <td>B or C</td> <td>B</td> </tr> </tbody> </table>		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
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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: #DIV/0! Feet Condition B: #DIV/0! Feet Condition C: #DIV/0! Feet Required Left Turn Lane Storage Length: #DIV/0! Feet																																									
Additional Findings: #DIV/0!																																									
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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)



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Intersection & Approach Description: Stonehedge Road & Site Driveway/Lauren Lane	
Analysis Period: 2026 Projected Design Hour: PM Peak Hour Intersection Control: Unsignalized Posted Speed Limit (MPH): 25 Type of Terrain: Level	Number of Approach Lanes: 1 Undivided or Divided Highway: Undivided Type of Analysis Left or Right-Turn Lane Analysis?: Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	2.0%	N/A
	Through	-	23	2.0%	N/A
	Right	Yes	0	2.0%	N/A
Opposing	Left	Yes	0	2.0%	N/A
	Through	-	25	2.0%	N/A
	Right	Yes	11	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	0	2.0%	0
	Through	-	25	2.0%	26
	Right	-	11	2.0%	12
Advancing Volume: 38 Right Turn Volume: 12					

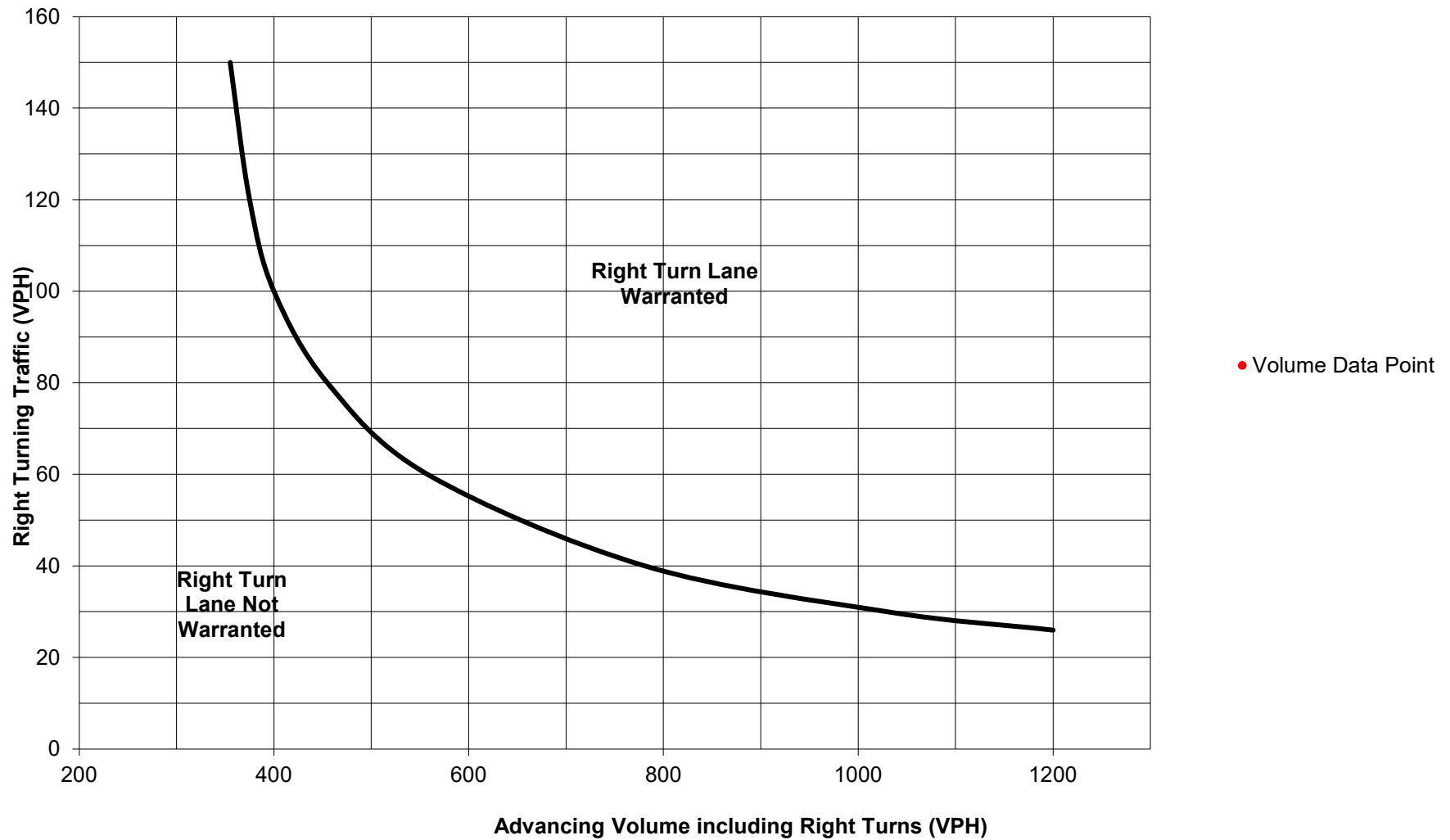
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Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: N/A Warrant Met?: N/A	Applicable Warrant Figure: Figure 9 Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control: Unsignalized Design Hour Volume of Turning Lane: 12 Cycles Per Hour (Assumed): 60 Cycles Per Hour (If Known):	Average # of Vehicles/Cycle: N/A																																							
PennDOT Publication 46, Exhibit 11-6																																								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th rowspan="4" style="width: 15%;">Type of Traffic Control</th> <th colspan="6" style="background-color: #f5deb3;">Speed (MPH)</th> </tr> <tr> <th colspan="2" style="background-color: #f5deb3;">25-35</th> <th colspan="2" style="background-color: #f5deb3;">40-45</th> <th colspan="2" style="background-color: #f5deb3;">50-60</th> </tr> <tr> <th colspan="6" style="background-color: #f5deb3;">Turn Demand Volume</th> </tr> <tr> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> <th style="background-color: #f5deb3;">High</th> <th style="background-color: #f5deb3;">Low</th> </tr> <tr> <td style="text-align: center;">Signalized</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B or C</td> </tr> <tr> <td style="text-align: center;">Unsignalized</td> <td style="text-align: center;">A</td> <td style="text-align: center;">A</td> <td style="text-align: center;">C</td> <td style="text-align: center;">B</td> <td style="text-align: center;">B or C</td> <td style="text-align: center;">B</td> </tr> </table>		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
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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)**





UPPER UWCHLAN TOWNSHIP

Planning Commission Meeting

August 12, 2021

7:00 p.m.

Minutes

Draft

LOCATION: The meeting was held in person at the Township Building, 140 Pottstown Pike, Chester Springs PA 19425

In attendance:

Members: Sally Winterton, Chair (remote); Joe Stoyack, Vice-Chair;
Chad Adams, Jim Dewees, David Colajezzi (remote), Jim Shrimp

Aaron Stoyack (remote), Historical Commission Liaison
Matt Brown (remote), Municipal Authority Administrator
Bill Bohner (remote), ARRO
Kristin Camp, Esq. (remote), Township Solicitor
Gwen Jonik, Planning Commission Secretary

Chair Sally Winterton called the meeting to order at 7:04 p.m. A quorum was present.
Four citizens were in attendance.

Outdoor Storage Tank Ordinance Amendments

Kristin Camp, Esq., provided guidance as to what the Planning Commission was reviewing. The Board of Supervisors had requested that experts be hired to review the draft amendments and provide advice as to what types and quantities of materials can be safely stored in outdoor tanks, and at what distances from residential uses. The State Association of Township Supervisors suggested Babst Calland. They reviewed the draft and provided advice in relation to types of materials and protection of the neighbors. Their suggestions are included in the June 2021 draft ordinance. The June 2021 draft includes the text and clarifying language that the Planning Commission had recommended late 2020.

Discussion included:

1. Enforcement. There are responsibilities by the property owner, but as with other Township Codes, the Zoning Officer is responsible for enforcement.
2. Setbacks aren't consistent. Tanks are already allowed in Highway Commercial (C3) and Limited Industrial (LI) Districts so those setbacks have been in place. Proposing allowing tanks as an accessory structure in Planned Industrial/Office District (PI/O) and adding setbacks specific to that District. A 200' setback if abutting residential uses should be consistent across Zoning Districts. An analysis hadn't been done of where tanks exist in the C3 and LI District and how many parcels abut residential uses.
3. This draft proposes limits the outdoor storage of materials to inert gases, water and brine, establishes safety regulations and increases the regulations for aesthetics. Tanks require annual inspections and tenants are to report to the township. They'll be certified

by a Professional Engineer and any violations are enforceable through the regular code violation process.

4. Inert gases aren't hazardous. The 200' setback in the PI/O is for aesthetic reasons.
5. The experts advised that there are other levels of regulation (State, etc.) that determine what kind of industry can have what kind of gases. Only in the PI/O district might there be larger-size tanks.
6. It was suggested that a statement be added that the Professional Engineer provide an analysis for the adequacy of the setback. *(Action item)*
7. Fence/wall height – 20'. The 20' maximum keeps it under the height of the buildings in the PI/O.
The existing Codes for accessory structure height might already limit it to 20'. This will be confirmed. *(Action item)*
8. Visual inspection. The onus is on the owner or operator. Commission members would like that changed to owner or tenant. *(Action item)*

Joe Stoyack suggested the Commission see a revised draft at their September meeting that includes the changes discussed this evening and make a recommendation to the Board of Supervisors at that time. No further action was taken.

Upper Uwchlan Township Act 537 Plan Update – Draft -- Review

Matt Brown and Bill Bohner of ARRO were in attendance. The Act 537 Plan sets the roadmap for the next 10-15 years as to where public sewer could be extended expeditiously and feasibly in the township, and which areas will remain on-lot disposal systems (OLDS). The Authority has been planning over the years to make the most of expanding public sewer as far as possible. There are 6 remote wastewater facilities along with the Route 100 facilities, and we'd like to tie those together if possible. The Township Municipal Authority has reviewed and made comment on the draft. The Township Planning Commission, County Planning Commission and County Health Department also review and provide comments prior to the Plan being advertised for the public review period. Following that period, all comments are memorialized in the Plan, responded to in written form, and the Plan is sent to the Pennsylvania Department of Environmental Protection (PaDEP) for review and approval.

The Planning Commission members have reviewed the document and their questions and comments will be formalized and provided to Mr. Brown and Mr. Bohner. The responses will be reviewed at the Planning Commission's September meeting.

Approval of Minutes

Joe Stoyack moved, seconded by Jim Dewees, to approve as presented the minutes of the June 10, 2021 Planning Commission meeting. The motion carried unanimously.

Open Session

Gwen Jonik advised that a Conditional Use Application has been received from Toll Brothers for 100 Greenridge Road.

Joe Stoyack commented that he's been reviewing the Pennsylvania Municipalities Planning Code (MPC) and has learned that the Planning Commission is to provide an annual report to the Board of Supervisors of their activities, all recommendations to the Board should include whether the project complies with our Comprehensive Plan, and the Commission is to review and update existing ordinances. The Commission provides activity reports to the Board at the semi-annual Boards & Commissions Workshops and review of existing ordinance is on-going.

Joe Stoyack plans to attend the next Supervisors' Meeting to advise them that the Commission is starting to work on updating the Comprehensive Plan and will need their input.

Mrs. Quake commented on the Greenridge Road Plan submission and will make arrangements to view the Plan.

Sally Winterton announced the next Planning Commission meeting – September 9, 2021.

Adjournment

David Colajezzi moved, seconded by Chad Adams, to adjourn the meeting at 8:14 p.m.
All were in favor.

Respectfully submitted,

Gwen A. Jonik
Planning Commission Secretary