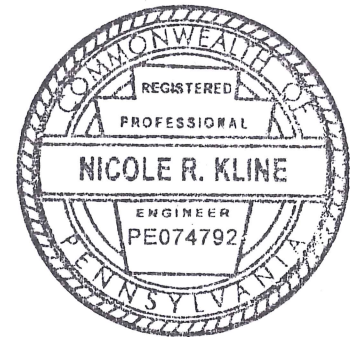


# Transportation Impact Study for the Robinson Tract Westtown Township, Chester County, PA



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## Executive Summary

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Toll Brothers, Inc. proposes a residential development on the Robinson Tract, located along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania (**Figure 1**). The residential development consists of 319 total dwelling units, including 182 detached homes, 135 attached homes, and preservation of two existing homes on the property. With the development, a Collector Road will be constructed through the property between Street Road (S.R. 0926) and West Pleasant Grove Road. Access to the site will be provided via the Collector Road, as well as two accesses along West Pleasant Grove Road. A site plan prepared by ESE Consultants, Inc., dated August 9, 2019, is provided in **Figure 2**.

A Scoping Meeting Application was submitted to PennDOT and Westtown Township on November 7, 2016. A scoping meeting was held at the PennDOT Engineering District's offices on December 2, 2016. PennDOT provided scoping comments in a letter dated December 6, 2016. The scope of this transportation impact study is based on those comments, PennDOT's guidelines, per the Department's publication *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, dated July 2017, and the requirements of the Township ordinances. Correspondence is contained in **Appendix A**.

The purpose of this transportation impact study is to evaluate the traffic impacts of the proposed development. The scope of this study includes an evaluation of the existing weekday morning and weekday afternoon peak hours, as well as the future 2025 build-out year and 2030 design year, five years beyond the anticipated build-out year, both without and with the development at the following study intersections:

- U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)
- U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road
- U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School
- Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road
- Street Road (S.R. 0926) and New Street
- New Street and West Pleasant Grove Road
- West Pleasant Grove Road and Proposed Access (Road K)
- West Pleasant Grove Road and Proposed Access (Road M)
- West Pleasant Grove Road and Proposed Collector Road

Based on trip generation data compiled for Multifamily Housing – Low Rise (ITE Land Use Code 220) and Single Family Detached Housing (ITE Land Use Code 210) contained in the Institute of Transportation Engineers (ITE) publication entitled, *Trip Generation Manual, 10<sup>th</sup> Edition*, the proposed development will generate a total of approximately 198 “new” trips during the weekday morning peak hour and 259 “new” trips during the weekday afternoon peak hour.

## ***Committed Improvements***

Per the traffic evaluation, the following on-site and off-site traffic improvements are committed by the applicant to mitigate the proposed development traffic impacts, pending further coordination and approvals from the Township and PennDOT. Since some of these improvements are within the state's right-of-way, or located at traffic signals under the jurisdiction of PennDOT, coordination with PennDOT will be required to implement these improvements. The Township will be included in all correspondence with PennDOT.

## **Site Accesses**

### Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road

- Collector Road is classified as a high volume driveway per PennDOT criteria.
- Provide one ingress lane for the Collector Road.
- Provide two egress lanes for the Collector Road, including a dedicated left-turn lane and a shared through/right-turn lane.
- Restripe the Bridlewood Boulevard egress approach to modify the existing right-turn lane to a shared through/right-turn lane.
- Provide a 150-foot left-turn lane along Street Road (S.R. 0926).
- Provide a 150-foot right-turn deceleration lane along Street Road (S.R. 0926).
- Install a traffic signal.

### West Pleasant Grove Road and Proposed Access (Road K)

- Access is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.

### West Pleasant Grove Road and Proposed Access (Road M)

- Access is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.

### West Pleasant Grove Road and Collector Road

- Collector Road is classified as a medium volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the Collector Road.
- Provide stop-control on the Collector Road egress approach.

## **Off-Site Traffic Improvements**

### Collector Road

- The applicant will construct the Collector Road through the property between Street Road (S.R. 0926) and West Pleasant Grove Road, which will alleviate traffic at the congested U.S. Route 202 (Wilmington Pike)/Street Road (S.R. 0926) intersection, and reroute traffic currently using West Pleasant Grove Road and New Street as an alternate

route to avoid that delay. The overall delays at several study intersections decrease in the with-development conditions versus without-development conditions, due to the diversion of traffic to the Collector Road.

- Based on the estimated Collector Road weekday peak hour traffic volumes in this report, diverted traffic constitutes approximately 70 to 80 percent of the total, while approximately 20 to 30 percent is site traffic from the Robinson Tract.

#### Street Road (S.R. 0926) and New Street

- The applicant will complete traffic signal retiming optimization.
- Although not necessary to mitigate traffic impact, the applicant will provide a dedicated right-turn lane along westbound Street Road (S.R. 0926) along the Robinson Tract property frontage.
- It is noted that left turn lanes are warranted based on existing traffic volumes. Left-turn lanes along Street Road (S.R. 0926) and New Street cannot be provided within the existing right-of-way or with additional right-of-way from the Robinson Tract alone.

#### U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)

- The applicant will complete traffic signal retiming optimization.

The traffic analyses contained herein reveal that efficient access to and from the proposed development can be provided, and furthermore, site-generated traffic is mitigated at the study area intersections with the committed improvements. Detailed results of the level-of-service and queueing analysis are contained in the matrices provided in **Tables 6 and 7**.



## Existing Transportation Settings and Conditions

Toll Brothers, Inc. proposes a residential development on the Robinson Tract, located along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania (**Figure 1**). The existing roadways and intersections in the vicinity of the site, which comprise the study area roadway network, are described in this section.

### Roadway Characteristics

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

**Table 1 - Existing Roadway Characteristics**

Roadway Name (Jurisdiction)	Average Daily Traffic Volumes (vehicles per day)	Roadway Classification		Travel Lanes (per direction)	Posted Speed Limit (mph)
		Smart Transportation <sup>(1)</sup>	PennDOT/ Township <sup>(2)</sup>		
U.S. Route 202 (Wilmington Pike)	47,301 <sup>(3)</sup>	Regional Arterial	Urban – Principal Arterial	2	45
Street Road (S.R. 0926 – PA)	12,952 <sup>(3)</sup>	Community Arterial	Urban – Minor Arterial	1	45
New Street (Local)	5,056 <sup>(3)</sup>	Neighborhood Collector	Urban – Minor Collector	1	35
West Pleasant Grove Road (Local)	n/a	Local Road	Local Road	1	35
Bridlewood Boulevard (Local)	n/a	Local Road	Local Road	1	25

(1) Based on Table 5.1 – Roadway Categories in the PennDOT publication, *Smart Transportation Guidebook*.

(2) Based on the roadway classifications provided on PennDOT’s Traffic Information Repository (TIRe) website.

(3) Based on traffic data from PennDOT’s Traffic Information Repository (TIRe) website.

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

- U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)
- U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road
- U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School
- Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road
- Street Road (S.R. 0926) and New Street
- New Street and West Pleasant Grove Road
- West Pleasant Grove Road and Proposed Access (Road K)
- West Pleasant Grove Road and Proposed Access (Road M)
- West Pleasant Grove Road and Proposed Collector Road

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

### *Crash Summary*

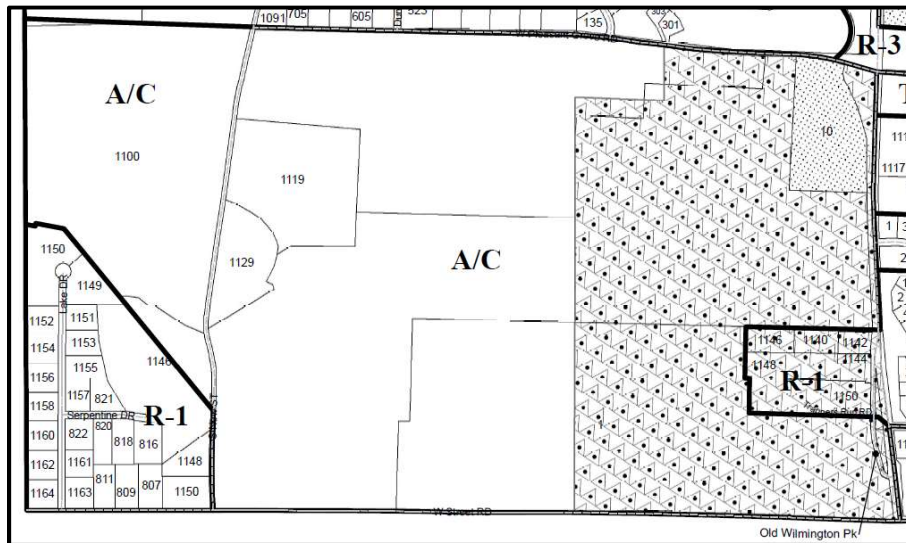
Reportable crash data was provided by the Pennsylvania Department of Transportation's Bureau of Highway Safety and Traffic Engineering for the five-year period from January 1, 2013 to December 31, 2017 throughout the study area. Reportable crashes are defined as crashes in which personal injuries occur or the vehicle must be towed from the scene. Tables summarizing the crash data by location, crashes per year, and type of crash are provided in Appendix B.

Based on the crash data, a total of 65 reportable crashes occurred at the study area intersections. The majority of the study area intersection crashes were rear-end incidents (45 crashes or 69 percent) and angle incidents (12 crashes or 17 percent). The signalized intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) experienced twenty-six (26) crashes, with the majority of these crashes being rear-end incidents (18 crashes) occurring along both northbound (10 crashes) and southbound (8 crashes) U.S. Route 202 (Wilmington Pike). The signalized intersection of U.S. Route 202 (Wilmington Pike) and Stetson School Drive / Skiles Boulevard experienced fifteen (15) crashes, with the majority of these crashes being rear-end incidents (14 crashes) occurring along both southbound (9 crashes) and northbound (5 crashes) U.S. Route 202 (Wilmington Pike). The remaining crash was an angle incident which occurred along the eastbound approach. The unsignalized intersection of U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road experienced sixteen (16) crashes, with the majority of these crashes being rear-end incidents (10 crashes). Six (6) of the rear-end incidents occurred along southbound U.S. Route 202 (Wilmington Pike) with the remainder occurring along the eastbound Pleasant Grove Road approach.

Based on the crash data, a total of 56 reportable crashes occurred at midblock locations within the study area. The majority of the midblock crashes along U.S. Route 202 (Wilmington Pike) were rear-end incidents (25 crashes) and hit-fixed object incidents (9 crashes). Twenty-one (21) of the rear-end incidents occurred along southbound U.S. Route 202 (Wilmington Pike), which is likely associated with the congestion experienced at the signalized intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926). Seven (7) of the hit-fixed object incidents occurred along southbound U.S. Route 202 (Wilmington Pike), with vehicles striking guiderails, curbs, embankments, roadway obstructions, and utility poles. The majority of the midblock crashes along Street Road (S.R. 0926) between U.S. Route 202 (Wilmington Pike) and Bridlewood Boulevard were rear-end incidents (3 crashes) and angle incidents (2 crashes). Both of the angle incidents occurred at the existing CVS driveway along Street Road (S.R. 0926) with vehicles entering via left-turn, which is a prohibited movement. All three (3) of the rear-end incidents occurred along eastbound Street Road (S.R. 0926), which is likely associated with the congestion experienced at the signalized intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926).

**Land Use Context**

The proposed development is located in Westtown Township within the A/C – Agriculture/Cluster Residential District, as well as the R-1 – Rural/Suburban Residential District. The development is located along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), as shown below on a portion of the Westtown Township Zoning Map. Per Westtown Township’s Zoning Ordinance, the proposed residential development is permitted through conditional use within the A/C – Agriculture/Cluster Residential District in accordance with Article V and Article IX.



Source: Westtown Township Zoning Map

**Area Transit Services**

Transit services are currently not provided within the study area. The nearest SEPTA bus stop (SEPTA Bus Route 92) is located just north of the S.R. 0322 (High Street) and U.S. Route 202 intersection, approximately a mile and a half north of the site.

**Pedestrian-Bicycle Facilities**

Currently, there are no sidewalks along U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926). The signalized intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) has limited pedestrian crossing amenities. There are pedestrian crosswalks, signals, and pushbuttons provided to cross the eastern leg of Street Road (S.R. 0926) and the southern leg of U.S. Route 202.

### *Traffic Count Data*

Daily traffic counts were obtained from PennDOT's Traffic Information Repository (TIRe) website. The traffic count data is provided in **Appendix C**. Manual turning movement traffic counts were conducted in accordance with Westtown Township's Ordinance Chapter 149-804.A(3)(g). The majority of the traffic counts were conducted on Thursday, September 8, 2016, during the weekday morning peak period (7:00 AM to 9:00 AM) and the weekday afternoon peak period (4:00 PM to 6:00 PM). Traffic counts were completed at the intersection of New Street and West Pleasant Grove Road on Thursday, April 6, 2017, during the weekday morning peak period (7:00 AM to 9:00 AM) and the weekday afternoon peak period (4:00 PM to 6:00 PM). Traffic counts were completed at the intersection of U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School on November 17, 2015. The results of these traffic counts are tabulated by 15-minute intervals in **Appendix D**. The four highest consecutive 15-minute peak intervals during these traffic count periods constitute the peak hours that are the basis of this traffic analysis. For clarification based on comments received from the Township, the heavy vehicle percentages documented within the traffic counts sheets are calculated for each movement. At signalized intersections, the traffic counts worksheets calculate the heavy vehicle percentages for right-turns versus right-turns on red separately. This information must be combined and the heavy vehicle percentages must be recalculated for input into the traffic analysis. For ease of review, the heavy vehicle percentages for the combined right-turn movements at signalized intersections are included within the traffic counts worksheets provided in Appendix D.

Due to typical day-to-day fluctuations and varying traffic signal operations, some traffic movements counted at the intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) increased and some movements decreased as compared to previous traffic counts at the intersection. The northbound and southbound U.S. Route 202 (Wilmington Pike) traffic volumes counted for this study were generally consistent between the study intersections. The northbound and southbound through volumes counted along U.S. Route 202 (Wilmington Pike) were balanced upwards between West Pleasant Grove Road and Street Road (S.R. 0926) as needed. The resultant peak hour traffic volumes are depicted in **Figure 3A** for the weekday morning and weekday afternoon peak hours. The traffic volumes in Figure 3A were then analyzed to determine the existing operating conditions, and the results of this analysis are shown in **Figure 3B**. Specific details regarding the analysis results and traffic operations are provided later in this report.

### *Existing Queue Observations*

At the intersection of U.S. Route 202 (Wilmington Pike) and PA Route 926 (Street Road) under existing conditions during the weekday morning and weekday afternoon commuter peak periods, oversaturation occurs on some movements. In accordance with the methodology contained in the *Highway Capacity Manual, 6<sup>th</sup> Edition*, queue observations were completed at the beginning of the weekday morning and weekday afternoon peak hours in order to account for these initial queues. The initial queues have been included in the detailed capacity/level-of-service analyses. Documentation of the queue observations is provided in **Appendix E**.

## Site Characteristics

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This section presents the details regarding the proposed site, including the incremental increase in traffic volumes generated by the development during the peak hours and the distribution of site traffic to the study area roadways, as well as the proposed site access configurations, traffic control, and sight distance requirements.

### *Trip Generation*

Traffic volumes generated by the proposed development were prepared based on trip generation data compiled from numerous studies contained in the Institute of Transportation Engineers (ITE) publication, *Trip Generation, 10th Edition*. **Table 2** presents the anticipated vehicular trip generation, and the detailed trip generation calculations are contained in **Appendix F**.

**Table 2. Vehicular Trip Generation**

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Robinson Tract Residential Development <sup>(1)</sup>	319 units	2,802	47	151	198	163	96	259

(1) Consisting of 182 detached homes, 135 attached homes, and preserving 2 existing homes on the property.

### *Trip Distribution and Assignment*

Site-generated traffic will approach and depart the site via different routes depending on factors such as the existing traffic patterns, location of major roadways, and the location of the development's site accesses. The location of the dwelling units, the presence of the Collector Road, and the roadway connections throughout the proposed development were also considered within the site trip distributions. The distribution percentages for the anticipated directions of approach and departure, as well as the traffic assignment percentages at each intersection are illustrated in **Figure 4A**. Application of the percentages illustrated in **Figure 4A** to the new peak hour trips contained in Table 2, provides an estimate of site traffic to be added to the study area. The site-generated trips assignments are provided in **Figure 4B** for the weekday morning and weekday afternoon peak hours.

### *Site Access Configuration and Traffic Control*

With the development, a Collector Road will be constructed through the property between Street Road (S.R. 0926) and West Pleasant Grove Road. The Collector Road will intersect Street Road (S.R. 0926) opposite Bridlewood Boulevard, as required by PennDOT, with installation of a traffic signal. The

Collector Road will intersect West Pleasant Grove Road near the eastern boundary of the Robinson Tract as an unsignalized intersection. Access to the site will be provided via the Collector Road, as well as two unsignalized accesses along West Pleasant Grove Road, with one located opposite Dunvegan Drive and one located approximately 625 feet west of Hidden Pond Way.

The recommendations for the proposed access designs, including auxiliary turn lanes, traffic control, and geometric design, were based on industry accepted criteria and guidelines. Specifically, the need for left- and right-turn deceleration lanes was based on the current PennDOT guidelines in accordance with *Publication 46, Chapter 11 – Traffic Studies*. In addition, a preliminary traffic signal warrant analysis was conducted in accordance with PennDOT criteria contained in the Department’s *Publication 212, Official Traffic Control Devices*, for the Four-Hour and Peak Hour Volume Warrants, which is based on the guidelines contained in the Federal Highway Administration’s, *Manual on Uniform Traffic Control Devices (MUTCD)*. The various warrant/guideline analysis worksheets are contained in **Appendix G**.

Additionally, the geometric design of the proposed site accesses were preliminarily evaluated based on guidelines contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*, as well as local PennDOT District policies.

Based on the results of this evaluation, the following access configurations and traffic controls are recommended, subject to the detailed engineering of the site accesses:

**Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road**

- The Average Daily Traffic for the Collector Road (site traffic and traffic diversions) is estimated as 1,992 vehicles per day, and therefore is classified as a high volume driveway per PennDOT criteria.
- Provide one ingress lane for the Collector Road.
- Provide two egress lanes for the Collector Road, including a dedicated left-turn lane and a shared through/right-turn lane.
- Restripe the Bridlewood Boulevard egress approach to modify the existing right-turn lane to a shared through/right-turn lane.
- A left-turn lane is warranted based on PennDOT guidelines, and therefore, provide a 150-foot long left-turn lane.
- A right-turn deceleration lane is warranted based on PennDOT guidelines, and therefore, provide a 150-foot right-turn deceleration lane.
- Install a traffic signal, which is preliminarily warranted in the build-out year based on the criteria for Warrant 2 (Four-Hour Vehicular Volume) and Warrant 3 (Peak Hour).

**West Pleasant Grove Road and Proposed Access (Road K)**

- The Average Daily Traffic for the site access (Road K) is 196 vehicles per day, and therefore is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.
- A left-turn lane is not warranted based on PennDOT guidelines.
- A right-turn deceleration lane is not warranted based on PennDOT guidelines.

**West Pleasant Grove Road and Proposed Access (Road M)**

- The Average Daily Traffic for the site access (Road M) is 140 vehicles per day, and therefore is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.
- A left-turn lane is not warranted based on PennDOT guidelines.
- A right-turn deceleration lane is not warranted based on PennDOT guidelines.

**West Pleasant Grove Road and Proposed Collector Road**

- The Average Daily Traffic for the Collector Road is estimated as 1,472 vehicles per day, and therefore, is classified as a medium volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the Collector Road.
- Provide stop-control on the site access egress approach.
- A left-turn lane is not warranted based on PennDOT guidelines.
- A right-turn deceleration lane is not warranted based on PennDOT guidelines.

*Sight Distance*

Sight distance field measurements and an evaluation were performed at each of the proposed site accesses. Generally, the prevailing (85<sup>th</sup> percentile) travel speed, roadway grades and profiles, and the number of travel lanes play a role in determining if safe sight distances are available for egress and ingress at the proposed accesses. The existing sight distances at the proposed accesses were measured and compared to PennDOT’s sight distance requirements. These sight distance requirements are contained in *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads*. **Table 3** summarizes the available sight distance measurements, as well as PennDOT’s sight distance requirements at the proposed access locations.

**Table 3. Sight Distance Evaluation  
Street Road (S.R. 0926) and Collector Road opposite Bridlewood Boulevard (proposed signal)**

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Available Sight Distance (feet)
				Desirable <sup>1</sup>	Acceptable <sup>2</sup>	
Exiting	Looking Left	45	-8.0%	635'	45 mph=472'	466' with vegetation clearing
	Looking Right	45	+8.6%	570'	N/A	700'+ with vegetation clearing
Left turn Entering	Looking Ahead	45	-8.0%	445'	N/A	430' with vegetation clearing
	From the Rear	45	+8.6%	N/A	Meets over 70 mph=680'	700'+

**West Pleasant Grove Road and Proposed Access (Road K)**

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Township Requirements (feet) <sup>(3)</sup>	Available Sight Distance (feet)
				Desirable <sup>1</sup>	Acceptable <sup>2</sup>		
Exiting	Looking Left	35	+2.6%	440'	N/A	440'	630'
	Looking Right	35	-2.2%	350'	N/A	440'	1,000'+
Left turn Entering	Looking Ahead	35	+2.6%	300'	N/A	N/A	665'
	From the Rear	35	-2.2%	N/A	Meets over 75 mph=950'	N/A	1,000'+

**West Pleasant Grove Road and Proposed Access (Road M)**

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Township Requirements (feet) <sup>(3)</sup>	Available Sight Distance (feet)
				Desirable <sup>1</sup>	Acceptable <sup>2</sup>		
Exiting	Looking Left	35	+6.4%	440'	N/A	440'	800'+
	Looking Right	35	-3.0%	350'	N/A	440'	440'
Left turn Entering	Looking Ahead	35	+6.4%	300'	N/A	N/A	800'+
	From the Rear	35	-3.0%	N/A	Meets to 45 mph=415'	N/A	415'

**West Pleasant Grove Road and Proposed Collector Road**

Movement	Direction	Posted Speed (mph)	Approximate Grade	PennDOT Requirements (feet)		Township Requirements (feet) <sup>(3)</sup>	Available Sight Distance (feet)
				Desirable <sup>1</sup>	Acceptable <sup>2</sup>		
Exiting	Looking Left	35	+2.1%	440'	N/A	440'	440'
	Looking Right	35	0.0%	350'	N/A	440'	495'
Left turn Entering	Looking Ahead	35	+2.1%	300'	N/A	N/A	415'
	From the Rear	35	0.0%	N/A	Meets to 60 mph=620'	N/A	650'

- (1) Based on the desirable sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and the posted speed limit, unless otherwise noted.
- (2) Based on the safe stopping sight distance requirements contained in the *Pennsylvania Code, Chapter 441, Access to and Occupancy of Highways by Driveways and Local Roads* and posted or travel speeds as noted.
- (3) Based on the clear sight triangle requirements per Westtown Township Code Chapter 149 Article IX Section 149-915, and the posted speed limit.

As shown in **Table 3**, the existing available sight distances at the proposed Collector Road and site access intersections along West Pleasant Grove Road, which is a Township roadway, meet PennDOT and Township requirements for all movements. For the intersection of the Collector Road and Street Road (S.R. 0926) opposite Bridlewood Boulevard with clearing of vegetation along the Robinson Tract property frontage, the existing available sight distances for exiting looking left and left-turn looking ahead are less than PennDOT desirable criteria; however, the intersection is proposed to be signalized.

Proper landscaping must be maintained along the site frontage along Street Road (S.R. 0926) and West Pleasant Grove Road for provision of adequate sight distance according to the above tables. The actual available sight distances should be verified during detailed engineering of the site access. The PennDOT M-950S forms are completed and provided in **Appendix H** for the State road Collector Road intersection.



## Off-Site Intersection Turn Lane Warrants

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Turn lane warrants were completed based on existing and future with-development peak hour traffic volumes at three off-site study intersections in accordance with PennDOT guidelines. The various warrant/guideline analysis worksheets are contained in **Appendix I**.

The following turn lanes are warranted under existing conditions:

- Street Road (S.R. 0926) and New Street
  - Eastbound Street Road (S.R. 0926) left-turn lane
  - Westbound Street Road (S.R. 0926) left- and right-turn lanes
  - Southbound New Street left- and right-turn lanes
  - Legal right-of-way does not currently exist to provide the above warranted lanes along Street Road (S.R. 0926) or New Street. Additional property from the Robinson Tract alone will not accommodate dedicated left-turn lanes or the southbound New Street right-turn lane. Although not necessary to mitigate traffic impact, as demonstrated later in this report, the applicant will provide a dedicated right-turn lane along westbound Street Road (S.R. 0926) along the Robinson Tract property frontage.
  
- New Street and West Pleasant Grove Road
  - No turn lanes are warranted
  
- U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road
  - Southbound U.S. Route 202 (Wilmington Pike) right-turn lane

No additional turn lanes are warranted in the future 2030 conditions with the proposed development. A preliminary aerial exhibit and signal permit plan markup illustrating the conditions at the intersection of Street Road (S.R. 0926) and New Street is provided in Appendix I.

## Future Traffic Conditions

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With an estimated opening in 2020, a five-year build out was assumed based on the proposed development, the residential market, and past projects. This assumption equates to an average delivery of five units per month. Therefore, the traffic analysis was completed for a future build-out year of 2025 and a future design year of 2030, or five years beyond the anticipated build-out year, both without and with the proposed development. The future 2025 build-out year and 2030 design year without-development traffic volumes were estimated by increasing the existing traffic volumes to account for regional growth, as described below. The incremental increase due to the anticipated trip generation for the site was then added, resulting in the future 2025 build-out year and 2030 design year with-development traffic volumes.

### *Regional Traffic Growth*

To account for regional traffic growth, the existing traffic volumes were increased by an annual traffic growth rate of 0.52 percent per year compounded for nine (9) years to 2025 and 14 years to 2030, or 4.78 percent total to 2025 and 7.53 percent total to 2030. This growth rate is consistent with the traffic growth rate recommended by the PennDOT Bureau of Planning and Research *Growth Factors for August 2019 to July 2020* for similar, non-interstate urban roadways in Westtown Township.

### *Local Traffic Growth*

To account for local traffic growth, the municipality was contacted to identify any other nearby future developments. Based upon coordination with Westtown Township, the existing traffic volumes were also increased by nearby approved developments in the vicinity of the proposed development. Specifically, the following developments were included and further information is provided in **Appendix J**:

- **The Malvern School**: 5,375 square-foot daycare/early learning center located on the northeast corner of the intersection of U.S. 202 (Wilmington Pike) and Pleasant Grove Road.
- **Arborview (Fair Share Properties)**: 16,800 square feet of office space and 10,986 square-foot daycare center located on the west side of U.S. Route 202 (Wilmington Pike) between Skiles Boulevard and Pleasant Grove Road. As part of the development, a Collector road named Orvis Way between West Pleasant Grove Road and Stetson School will be provided, which is currently under construction.
- **Condominium Development**: 39 condominiums in two buildings remain to be occupied/constructed on the west side of Gilpin Drive just north of Skiles Boulevard.

## *Planned Roadway Improvements*

### **Orvis Way: West Pleasant Grove Road to Stetson School Collector Road**

In conjunction with the Arborview (Fair Share Properties) development, Orvis Way is currently being constructed to connect West Pleasant Grove Road to Stetson School. In accordance with the Township approved *Arborview Transportation Impact Assessment*, prepared by Traffic Planning & Design and dated January 26, 2015, traffic in the area is anticipated to divert to utilize Orvis Way as follows:

#### Orvis Way Traffic Diversions

- 5 percent of the eastbound left-turns from Street Road (S.R. 0926) to northbound U.S. Route 202 (Wilmington Pike) will divert via New Street and West Pleasant Grove Road to Orvis Way.
- 10 percent of the northbound U.S. Route 202 (Wilmington Pike) jughandle volume onto Stetson School will divert via West Pleasant Grove Road to Orvis Way.
- 50 percent of the eastbound right-turns exiting Stetson School to southbound U.S. Route 202 (Wilmington Pike) to eastbound Street Road (S.R. 0926) will divert to Orvis Way and utilize West Pleasant Grove Road to New Street to eastbound Street Road (S.R. 0926).

The roadway improvements and associated traffic diversions for the Arborview (Fair Share Properties) development have been incorporated into the future without- and with-development conditions within this study. Details are provided in **Appendix K**.

### **Robinson Tract: Street Road (S.R. 0926) to West Pleasant Grove Road Collector Road**

With the development of the Robinson Tract, a Collector Road will be constructed through the property between Street Road (S.R. 0926) and West Pleasant Grove Road. Access to the site will be provided via the Collector Road. Additionally, as envisioned by Westtown Township for many years, the Collector Road will alleviate traffic at the congested U.S. Route 202 (Wilmington Pike)/Street Road (S.R. 0926) intersection, and reroute traffic currently using West Pleasant Grove Road and New Street as an alternate route to avoid that delay. With Orvis Way, currently under construction, this will provide a full connected roadway network on the west side of U.S. Route 202 (Wilmington Pike from Street Road S.R. 0926) to Stetson School, which will provide drivers with access to and from U.S. Route 202 via two signalized intersections.

In this analysis, traffic diversions with the Collector Road have been included in this study based on previous studies completed and accepted by the Township, as summarized below. The traffic diversions are provided in **Appendix K**.

### Collector Road Traffic Diversions

- 15 percent of the weekday morning and 25 percent of the weekday afternoon eastbound left-turns from Street Road (S.R. 0926) to northbound U.S. Route 202 (Wilmington Pike) will divert via the Collector Road to West Pleasant Grove Road to Orvis Way.
- 10 percent of the northbound U.S. Route 202 (Wilmington Pike) jughandle volume onto Stetson School will divert via West Pleasant Grove Road to Orvis Way.
- 50 percent of the eastbound right-turns exiting Stetson School to southbound U.S. Route 202 (Wilmington Pike) to eastbound Street Road (S.R. 0926) will divert to Orvis Way and utilize West Pleasant Grove Road to the Collector Road to eastbound Street Road (S.R. 0926).
- 50 percent of the southbound U.S. Route 202 (Wilmington Pike) right-turns to eastbound Street Road (S.R. 0926) will divert to Orvis Way and utilize West Pleasant Grove Road to the Collector Road to eastbound Street Road (S.R. 0926).
- 66 percent (two-thirds) of the northbound Bridlewood Boulevard right-turns will divert to the Collector Road to West Pleasant Grove to Orvis Way to northbound U.S. Route 202 (Wilmington Pike).
- 40 percent of the southbound U.S. Route 202 (Wilmington Pike) right-turns to West Pleasant Grove Road will divert to Orvis Way and utilize West Pleasant Grove Road to the Collector Road.
- In addition to the above diversions in an alternate traffic analysis presented later in this report, 250 vehicles (approximately 16 percent) of the southbound U.S. Route 202 (Wilmington Pike) through traffic was diverted to Orvis Way and utilize West Pleasant Grove Road to the Collector Road to Bridlewood Boulevard back to U.S. Route 202 (Wilmington Pike) southbound. Based on a travel time comparison (without implementation of PennDOT's US 202/PA 926 intersection improvements), during the weekday afternoon peak hour in the southbound direction when U.S. Route 202 (Wilmington Pike) congestion is highest, the travel time along the Collector Road system may be shorter than staying on U.S. Route 202 (Wilmington Road).

### **PennDOT U.S. Route 202, Section 100**

Within this section of U.S. Route 202 (Wilmington Pike), designated as Section 100, several studies completed through PennDOT and the Delaware Valley Regional Planning Commission have identified the need for additional roadway capacity. At this time, PennDOT is underway with preliminary engineering for improvements at the U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) intersection. Based on the current State Transportation Improvement Program (TIP) and the Conceptual Intersection Layout prepared by Urban Engineers and dated June 5, 2014, the project will

include improvements that will help reduce traffic congestion and increase safety at the intersection through lane reconfigurations, striping, upgrades to the traffic signal, signal timing, and bicycle and pedestrian improvements. It is our understanding that the following roadway improvements are to be included:

- Southbound 130-foot right-turn deceleration lane on U.S. Route 202.
- Additional eastbound left-turn lane on PA Route 926, creating a double left-turn lane configuration with 380 feet of storage for each lane.
- Pedestrian and bicycle intersection improvements, including high-visibility crosswalks, ADA ramps, and sidewalk extension from the intersection east to Dalmally Drive.
- Traffic signal equipment upgrades, including pedestrian push buttons, countdown signal heads, and lighting.

Based on the TIP, the current project schedule indicates an estimated construction start date in September 2021, with a construction completion date by the end of 2022. However, this schedule is dependent on moving through the project development process, with activities such as evaluation of project effect on the Westtown Inn (eligible for the historic register), Consulting Parties consultations, approval of overall environmental document, preliminary plan approvals, utility coordination, property acquisitions, and preparation of design plans and construction bid package.

### **S.R. 0926 Bridge Replacement over Radley Run**

Through coordination with PennDOT, the Street Road (S.R. 0926) bridge located approximately 700 feet west of Bridlewood Boulevard is scheduled to be replaced. Design activity has been completed, which is being combined with other locations in Bridge Group M (MPMS 102318). The bid was awarded in January 2019, and the entire bridge group is scheduled for estimated completion in November 2020. As with other bridge groups, there is some flexibility in scheduling any one particular bridge within the overall construction duration.

### ***Future Traffic Conditions***

The total background growth, nearby development traffic volumes, and Orvis Way traffic diversions were then added to the existing traffic volumes, resulting in the future 2025 and 2030 without-development traffic volumes. Next, the site generated traffic volumes, as shown in **Figure 4B** and the Collector Road traffic diversions were added to the future 2025 and 2030 without-development traffic volumes, resulting in the future 2025 and 2030 with-development traffic volumes.

The resultant future 2025 build-out year peak hour traffic volumes without-development are illustrated in **Figure 5A**, and the future 2025 build-out year with-development peak hour traffic volumes are illustrated in **Figure 5B**. These traffic volumes were then analyzed to determine the future 2025 without- and with-development operating conditions, and the results of this analysis are shown in **Figures 5C and 5D**. Detailed spreadsheets summarizing the 2025 traffic projections, including regional

growth, other development trip assignments, site trip assignments, and diversions for each intersection, are provided in **Appendix L**.

The resultant future 2030 design year peak hour traffic volumes without-development are illustrated in **Figure 6A**, and the future 2030 design year with-development peak hour traffic volumes are illustrated in **Figure 6B**. These traffic volumes were then analyzed to determine the future 2030 without- and with-development operating conditions, and the results of this analysis are shown in **Figures 6C and 6D**. Detailed spreadsheets summarizing the 2030 traffic projections, including regional growth, other development trip assignments, site trip assignments, and traffic diversions for each intersection, are provided in **Appendix M**.

## Capacity/Level-of-Service Results

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The peak hour traffic volumes were analyzed to determine the existing and future operating conditions, both without and with the proposed development, in accordance with the standard techniques contained in the current *Highway Capacity Manual, 6<sup>th</sup> Edition* for both signalized and unsignalized intersections. The HCM 6<sup>th</sup> Edition Methodology within Synchro 10.3 (build 122, rev. 0) traffic analysis software was utilized in the traffic analyses.

These standard capacity/level-of-service analysis techniques, which calculate total control delay, are described in **Appendix N** for both signalized and unsignalized intersections, as well as the correlation between average total control delay and the respective level-of-service (LOS) criteria for each intersection type.

According to PennDOT's *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permit Plans*, the following procedures and assumptions were utilized:

- For signalized intersections, the Pennsylvania base saturation flow rate (Exhibit 10-9) and Pennsylvania traffic signal control calibration parameters (Exhibit 10-10) outlined in PennDOT's *Publication 46, Traffic Engineering Manual*, were used.
- For unsignalized intersections, the base critical headways at TWSC intersections (Exhibit 10-11) and base follow-up headways at TWSC intersections (Exhibit 10-12) outlined in PennDOT's *Publication 46, Traffic Engineering Manual*, were used.
- All traffic signal timings at signalized intersections were optimized in without-development conditions.
- If the evaluation of without-development to with-development indicates the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase is greater than 10 seconds. If the overall intersection delay increase is less than or equal to 10 seconds, mitigation of the intersection will not be required.

The existing, future build-out year (2025) and design year (2030) traffic conditions, both without and with the proposed development, are summarized in **Figures 3B, 5C, 5D, 6C and 6D** while the detailed capacity/level-of-service analysis worksheets are provided in **Appendices O through S**.

The proposed development has no traffic impact at the study area intersections. With the Collector Road and resulting traffic diversions, vehicle delays are decreased at several study intersections. **Tables 4 and 5** below summarize the overall intersection results of the level-of-service analyses for the off-site study intersections for both peak hours. Detailed results of the level-of-service and queueing analysis are contained in the matrices provided in **Tables 6 and 7**.

**Table 4. Overall Intersection Level-of-Service  
Weekday Morning Peak Hour**

<b>Intersection</b>	<b>Existing</b>	<b>Future 2030 Without Development (optimized)</b>	<b>Future 2030 With Development</b>	<b>Requires Mitigation?</b>
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	F 90.8	F 107.6	F 95.2	NO
U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road	A 0.6	A 1.4	A 1.5	NO
U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School	C 23.2	C 30.2	D 44.5	NO (increase in delay due to traffic diversions, not site traffic)
Street Road (S.R. 0926) and New Street	E 68.7	C 29.5	C 24.5	NO
Street Road (S.R. 0926) and Bridlewood Boulevard/Collector Road	A 1.2	A 1.4	B 14.2 (signalized)	NO
New Street and West Pleasant Grove Road	A 2.5	A 3.3	A 1.8	NO
West Pleasant Grove Road and Dunvegan Drive	A 0.5	A 0.3	A 1.7	NO
West Pleasant Grove Road and Orvis Way	-	A 2.6	A 6.3	NO

**Table 5A. Overall Intersection Level-of-Service  
Weekday Afternoon Peak Hour**

<b>Intersection</b>	<b>Existing</b>	<b>Future 2030 Without Development (optimized)</b>	<b>Future 2030 With Development</b>	<b>Requires Mitigation?</b>
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	F 139.4	F 143.6	F 130.8	NO
U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road	A 0.9	A 1.6	A 1.6	NO
U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School	B 17.6	C 25.3	D 41.0	NO (increase in delay due to traffic diversions, not site traffic)
Street Road (S.R. 0926) and New Street	E 69.2	C 32.6	C 24.0	NO
Street Road (S.R. 0926) and Bridlewood Boulevard/Collector Road	A 1.4	A 1.6	B 13.6 (signalized)	NO
New Street and West Pleasant Grove Road	A 9.0	B 14.3	A 5.3	NO
West Pleasant Grove Road and Dunvegan Drive	A 0.2	A 0.2	A 0.9	NO
West Pleasant Grove Road and Orvis Way	-	A 1.8	A 7.3	NO



**Table 5B. Overall Intersection Level-of-Service  
Weekday Afternoon Peak Hour  
With Additional Southbound US 202 Through Traffic Diverted to Collector Road**

Intersection	Existing	Future 2030 Without Development (optimized)	Future 2030 With Development: Added SB US 202 Diversions	Requires Mitigation?
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	F 139.4	F 143.6	F 102.6	NO
U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road	A 0.9	A 1.6	A 1.6	NO
U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School	B 17.6	C 25.3	D 37.5	NO (increase in delay due to traffic diversions, not site traffic)
Street Road (S.R. 0926) and New Street	E 69.2	C 32.6	C 24.0	NO
Street Road (S.R. 0926) and Bridlewood Boulevard/Collector Road	A 1.4	A 1.6	C 24.2 (signalized)	NO
New Street and West Pleasant Grove Road	A 9.0	B 14.3	A 5.3	NO
West Pleasant Grove Road and Dunvegan Drive	A 0.2	A 0.2	A 0.9	NO
West Pleasant Grove Road and Orvis Way	-	A 1.8	C 16.8	NO

### *Collector Road Access Analysis*

Traffic analysis was completed at the proposed access intersections along the Collector Road through the Robinson Tract for the future 2030 with-development conditions. As shown in **Figure 7**, all of the proposed access intersections along the Collector Road will operate at highly acceptable LOS A overall and LOS B or better for all movements during both peak hours. The detailed traffic volume projections and traffic analysis worksheets are provided in **Appendix T**.

### *Queuing Analysis*

A queuing analysis was completed at the study intersections based on the HCM 6<sup>th</sup> Edition methodology. The detailed results of the queuing analysis are provided in **Table 7** at the end of this report. Based on the results of the queuing analysis and with the recommended site access designs, as outlined previously in this report, the queues at the site access and Collector Road intersections with Street Road (S.R. 0926) and West Pleasant Grove Road are accommodated. Additionally, the queues are accommodated within the available lane storages at the majority of the off-site study intersections.

Significant queues occur at the U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) intersection during both peak hours. With the traffic diversions resulting from the construction of the Collector Road through the Robinson Tract as committed by the applicant, the queues are decreased at this intersection from without- to with-development conditions.

***PennDOT U.S. Route 202, Section 100 Intersection Improvement Project***

For informational purposes, traffic analysis has also been completed with construction of the PennDOT improvement project in preliminary engineering for the intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926). In future 2030 with-development conditions and with implementation of PennDOT's project, the intersection is anticipated to operate at overall level of service E (55.4 seconds average overall delay) during the weekday morning peak hour and overall level of service F (93.8 seconds overall delay) during the weekday afternoon peak hour. Based on this analysis, PennDOT's project will further decrease overall intersection delay by approximately 30 to 40 percent during the peak hours. The detailed capacity/level-of-service worksheets are provided in **Appendix U**.

## Conclusions and Recommendations

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Based on trip generation data compiled for Multifamily Housing – Low Rise (ITE Land Use Code 220) and Single Family Detached Housing (ITE Land Use Code 210) contained in the Institute of Transportation Engineers (ITE) publication entitled, *Trip Generation Manual, 10<sup>th</sup> Edition*, the proposed development will generate a total of approximately 198 “new” trips during the weekday morning peak hour and 259 “new” trips during the weekday afternoon peak hour.

### *Committed Improvements*

Per the traffic evaluation, the following on-site and off-site traffic improvements are committed by the applicant to mitigate the proposed development traffic impacts, pending further coordination and approvals from the Township and PennDOT. Since some of these improvements are within the state’s right-of-way, or located at traffic signals under the jurisdiction of PennDOT, coordination with PennDOT will be required to implement these improvements for issuance of a Highway Occupancy Permit. The Township will be included in all correspondence with PennDOT.

### Site Accesses

#### Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road

- Collector Road is classified as a high volume driveway per PennDOT criteria.
- Install a traffic signal, when warranted in accordance with PennDOT criteria.
- Provide one ingress lane for the Collector Road.
- Provide two egress lanes for the Collector Road, including a dedicated left-turn lane and a shared through/right-turn lane.
- Restripe the Bridlewood Boulevard egress approach to modify the existing right-turn lane to a shared through/right-turn lane.
- Provide a 150-foot left-turn lane along Street Road (S.R. 0926).
- Provide a 150-foot right-turn deceleration lane along Street Road (S.R. 0926).

#### West Pleasant Grove Road and Dunvegan Road/Proposed Access (Road K)

- Access is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.

#### West Pleasant Grove Road and Proposed Access (Road M)

- Access is classified as a low volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the site access.
- Provide stop-control on the site access egress approach.

#### West Pleasant Grove Road and Collector Road

- Collector Road is classified as a medium volume driveway per PennDOT criteria.
- Provide one ingress lane and one egress lane for the Collector Road.
- Provide stop-control on the Collector Road egress approach.

## Off-Site Traffic Improvements

### Collector Road

- The applicant will construct the Collector Road through the property between Street Road (S.R. 0926) and West Pleasant Grove Road, which will alleviate traffic at the congested U.S. Route 202 (Wilmington Pike)/Street Road (S.R. 0926) intersection, and reroute traffic currently using West Pleasant Grove Road and New Street as an alternate route to avoid that delay. The overall delays at several study intersections decrease in the with-development conditions versus without-development conditions, due to the diversion of traffic to the Collector Road.
- Based on the estimated Collector Road weekday peak hour traffic volumes in this report, diverted traffic constitutes approximately 70 to 80 percent of the total, while approximately 20 to 30 percent is site traffic from the Robinson Tract.

### Street Road (S.R. 0926) and New Street

- The applicant will complete traffic signal retiming optimization.
- Although not necessary to mitigate traffic impact, the applicant will provide a dedicated right-turn lane along westbound Street Road (S.R. 0926) along the Robinson Tract property frontage.
- It is noted that left turn lanes are warranted based on existing traffic volumes. Left-turn lanes along Street Road (S.R. 0926) and New Street cannot be provided within the existing right-of-way or with additional right-of-way from the Robinson Tract alone.

### U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)

- The applicant will complete traffic signal retiming optimization.

The traffic analyses contained herein reveal that efficient access to and from the proposed development can be provided, and furthermore, site-generated traffic is mitigated at the study area intersections with the committed improvements.

**Table 6. Level of Service Matrices**  
**Street Road (S.R. 0926) and New Street**

Time Period		Weekday Morning Peak Hour				Weekday Afternoon Peak Hour			
Design Year		2030 Design Year				2030 Design Year			
Development Condition		Existing	w/o Dev Base	w/o Dev <sup>(1)</sup> Optimized	w/ Dev	Existing	w/o Dev Base	w/o Dev <sup>(1)</sup> Optimized	w/ Dev
Street Road (S.R. 0926)	Left EB Thru Right	A 9.3	B 10.9	D 39.3	C 31.1	B 11.9	B 13.1	D 36.5	C 23.7
	Left WB Thru Right	A 5.8	A 5.9	B 14.1	B 13.1	A 9.9	B 10.2	C 23.7	B 19.1
	Left NB Thru Right	C 33.1	C 33.4	B 17.5	B 18.8	C 34.7	D 35.4	B 19.6	C 22.7
	Left SB Thru Right	F 238.3	F 312.1	C 28.2	C 26.1	F 205.5	F 270.9	D 40.5	C 31.8
Overall		E 68.7	F 91.3	C 29.5	C 24.5	E 69.2	F 90.0	C 32.6	C 24.0

(1) Future traffic signal timings have been optimized.

**Table 6. Level of Service Matrices**  
**Street Road (S.R. 0926) and Bridlewood Boulevard / Collector Road**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			
Design Year		2030 Design Year			2030 Design Year			
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/ Dev	w/ Dev Add'l Diversions (2)
Street Road (S.R. 0926)	Left	-	-	A 6.6	-	-	A 9.1	B 13.5
	EB Thru	(1)	(1)	B 13.9	(1)	(1)	B 12.3	C 21.8
	Right	(1)	(1)	A 4.6	(1)	(1)	A 5.4	A 9.0
	Left	B 11.0	B 11.2	C 21.6	B 10.7	B 10.9	C 17.7	C 30.0
	WB Thru	(1)	(1)	B 10.5	(1)	(1)	B 14.6	B 19.9
	Right	-	-	A 9.5	-	-	B 11.9	B 16.5
Bridlewood Boulevard	Left	C 23.5	D 25.6	C 23.3	D 25.5	D 28.6	B 19.1	C 33.2
	NB Thru	-	-	B	-	-	B	B
	Right	B 14.4	B 14.9	17.3	B 13.4	B 13.9	13.2	15.3
Collector Road	Left			C 17.8			B 13.1	B 15.5
	SB Thru	-	-	B	-	-	B	D
	Right			21.7			17.4	35.7
Overall		A 1.2	A 1.4	B 14.2	A 1.4	A 1.6	B 13.6	C 24.2

(1) Movement operates at free-flow conditions.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 6. Level of Service Matrices**

**U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)**

Time Period		Weekday Morning Peak Hour					Weekday Afternoon Peak Hour							
Design Year		2030 Design Year					2030 Design Year							
Development Condition		Existing	w/o Dev Base	w/o Dev <sup>(1)</sup> Optimized	w/ Dev Base	w/ Dev <sup>(1)</sup> Optimized	Existing	w/o Dev Base	w/o Dev <sup>(1)</sup> Optimized	w/ Dev Base	w/ Dev <sup>(1)</sup> Optimized	w/ Dev Add'l Diversions <sup>(2)</sup>		
Street Road (S.R. 0926)	EB	Left	F 198.8	F 220.0	F 194.1	F 164.7	F 196.3	F 86.6	F 100.4	F 113.3	F 110.6	F 117.6	F 97.5	
		Left	F	F	F	F	F	F	F	F	F	F	F	
		Thru	199.8	221.8	192.6	154.0	177.8	93.8	108.6	121.5	88.5	109.2	91.7	
	WB	Left	E 70.6	E 70.6	F 116.6	F 116.6	F 116.6	E 63.8	E 63.5	F 85.8	F 111.7	F 80.9	F 80.9	
		Thru	E 67.2	E 67.0	F 91.9	F 94.8	F 94.8	E 76.6	E 79.0	F 162.7	F 202.1	F 167.4	F 167.4	
		Right	E 60.1	E 60.3	E 68.3	E 68.3	E 68.3	E 57.8	E 57.6	E 65.5	E 68.6	E 64.5	E 64.5	
	U.S. Route 202 (Wilmington Pike)	NB	Left	F 83.6	F 84.1	F 91.0	F 88.8	F 88.8	F 82.3	F 82.9	F 85.8	F 122.1	F 91.8	F 91.8
			Thru	E 61.0	F 110.9	F 85.3	F 85.3	E 77.2	E 58.8	F 102.9	D 53.0	D 49.8	D 48.4	D 53.0
			Right	C 23.7	C 24.5	C 24.6	C 24.6	C 24.0	C 26.2	C 27.1	C 23.0	C 22.1	C 21.9	C 23.0
		SB	Left	F 100.4	F 130.6	F 162.2	F 200.2	F 156.7	F 228.5	F 300.5	F 323.7	F 348.4	F 230.8	F 230.8
Thru			F 69.1 (v/c > 1.0)	F 96.6	F 86.9	F 76.7 (v/c > 1.0)	E 69.1	F 257.8	F 303.3	F 238.8	F 225.6	F 220.2	F 152.9	
Thru			F 73.7 (v/c > 1.0)	F 106.2	F 95.4	F 79.1 (v/c > 1.0)	F 71.4 (v.c > 1.0)	F 251.3	F 301.8	F 236.7	F 219.3	F 213.9	F 142.8	
Right			F 90.8	F 121.7	F 107.6	F 96.7	F 95.2	F 139.4	F 175.7	F 143.6	F 134.0	F 130.8	F 102.6	
Overall		F 90.8	F 121.7	F 107.6	F 96.7	F 95.2	F 139.4	F 175.7	F 143.6	F 134.0	F 130.8	F 102.6		

(1) Future traffic signal timings have been optimized.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 6. Level of Service Matrices**  
**U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			
Design Year		2030 Design Year			2030 Design Year			
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/ Dev	w/ Dev Add'l Diversions <sup>(2)</sup>
West Pleasant Grove Road	EB Right	C 21.6	D 26.5	D 26.4	C 22.1	D 27.5	D 27.7	C 22.4
	WB Right	C 23.8	D 31.3	D 28.9	C 20.8	D 26.7	C 23.8	C 23.8
U.S. Route 202 (Wilmington Pike)	Left	C 17.4	C 20.8	C 19.4	C 20.8	D 25.9	C 24.5	C 19.7
	NB Thru/Right	(1)	(1)	(1)	(1)	(1)	(1)	(1)
		(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Left	C 22.8	D 28.8	D 26.3	C 23.0	D 30.7	D 25.9	D 25.9
	SB Thru/Right	(1)	(1)	(1)	(1)	(1)	(1)	(1)
		(1)	(1)	(1)	(1)	(1)	(1)	(1)
Overall		A 0.6	A 1.4	A 1.5	A 0.9	A 1.6	A 1.6	A 1.6

(1) Movement operates at free-flow conditions.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.



**Table 6 - Level of Service Matrices**  
**West Pleasant Grove Road and Church Full-Movement Access**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev
West Pleasant Grove Road	Thru EB Right	(1)	(1)	(1)	(1)	(1)	(1)
	Left WB Thru	A 8.2	A 8.3	A 8.3	A 8.0	A 8.1	A 8.1
Church Full-Movement Access	Left NB	A 9.6	B 10.2	B 10.5	B 11.1	B 11.8	B 12.4
	Right	A 0.0	A 0.0	A 0.0	A 8.1	A 8.2	A 8.3
Overall		A 0.4	A 0.3	A 0.3	A 0.2	A 0.2	A 0.2

(1) Movement operates at free-flow conditions.

**Table 6 - Level of Service Matrices**  
**West Pleasant Grove Road and Orvis Way (By Others)**

Time Period		Weekday Morning Peak Hour		Weekday Afternoon Peak Hour		
Design Year		2030 Design Year		2030 Design Year		
Development Condition		w/o Dev	w/ Dev	w/o Dev	w/Dev	w/ Dev Add'l Diversions <sup>(2)</sup>
West Pleasant Grove Road	Left EB Thru	A  8.8	A  9.9	A  9.6	B  11.9	B  11.0
	Thru WB Right	(1)	(1)	(1)	(1)	(1)
Orvis Way (By Others)	Left SB Right	A  9.9	B  12.2	B  12.0	C  20.1	E  36.3
Overall		A  2.6	A  6.3	A  1.8	A  7.3	C  16.8

(1) Movement operates at free-flow conditions.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 6 - Level of Service Matrices**  
**West Pleasant Grove Road and Church Egress Only Access**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev
West Pleasant Grove Road	EB Thru	(1)	(1)	(1)	(1)	(1)	(1)
	WB Thru	(1)	(1)	(1)	(1)	(1)	(1)
Church Egress Only Access	Left	A	A	A	A	A	A
	NB Right	0.0	0.0	0.0	0.0	0.0	0.0
Overall		A	A	A	A	A	A
		0.0	0.0	0.0	0.0	0.0	0.0

(1) Movement operates at free-flow conditions.

**Table 6. Level of Service Matrices**  
**West Pleasant Grove Road and Collector Road**

Time Period		Weekday Morning Peak Hour	Weekday Afternoon Peak Hour	
Design Year		2030 Design Year	2030 Design Year	
Development Condition		w/ Dev	w/ Dev	w/ Dev Add'l Diversions <sup>(2)</sup>
West Pleasant Grove Road	EB Thru/ Right	(1)	(1)	(1)
	WB Left/ Thru	A  9.5	A  9.6	B  12.9
Collector Road	Left NB Right	B  10.2	A  9.9	C  15.1
Overall		A  6.0	A  5.7	A  9.3

(1) Movement operates at free-flow conditions.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 6. Level of Service Matrices**  
**West Pleasant Grove Road and Road M**

Time Period		Weekday Morning Peak Hour	Weekday Afternoon Peak Hour
Design Year		2030 Design Year	2030 Design Year
Development Condition		w/ Dev	w/ Dev
West Pleasant Grove Road	EB Thru/ Right	(1)	(1)
	WB Left/ Thru	A  8.2	A  7.4
Road M	Left NB Right	A  8.6	A  9.0
Overall		A  1.0	A  0.6

(1) Movement operates at free-flow conditions.

**Table 6 - Level of Service Matrices**  
**West Pleasant Grove Road and Dunvegan Road / Road K**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev
West Pleasant Grove Road	Left	A	A	A	A	A	A
	EB Thru	0.0	0.0	0.0	9.2	9.4	8.8
	Right	-	-		-	-	
	Left	-	-	A	-	-	A
WB Thru	(1)	(1)	8.2	(1)	(1)	8.3	
Road K	Left			A			A
	NB Thru	-	-	8.9	-	-	9.7
Dunvegan Road	Left	A	A	A	B	B	A
	SB Thru	9.0	9.5	9.1	10.5	11.0	9.9
Overall		A	A	A	A	A	A
		0.5	0.3	1.7	0.2	0.2	0.9

(1) Movement operates at free-flow conditions.

**Table 6. Level of Service Matrices**  
**New Street and West Pleasant Grove Road**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/ Dev
West Pleasant Grove Road	Left	B	C	B	D	E	C
	Right	14.3	17.1	13.6	25.3	40.3	20.5
New Street	Thru	(1)	(1)	(1)	(1)	(1)	(1)
	Right	A	A	A	A	A	A
SB	Left	8.8	9.0	9.0	8.9	9.0	9.1
	Thru	A	A	A	A	B	A
Overall		2.5	3.3	1.8	9.0	14.3	5.3

(1) Movement operates at free-flow conditions.

**Table 6 - Level of Service Matrices**  
**U.S. Route 202 (Wilmington Pike) and Skiles Boulevard / Stetson School Drive**

Time Period		Weekday Morning Peak Hour				Weekday Afternoon Peak Hour				
Design Year		2030 Design Year				2030 Design Year				
Development Condition		Existing	w/o Dev	w/Dev Base	w/ Dev Optimized <sup>(1)</sup>	Existing	w/o Dev	w/Dev Base	w/ Dev Optimized <sup>(1)</sup>	w/ Dev Add'l Diversions <sup>(2)</sup>
Stetson School Drive	Left	D	E	F	F	D	D	F	E	E
	EB Thru	46.5	68.2	271.3	109.6	41.9	49.0	222.6	77.4	64.3
	Right	C	C	C	C	C	C	C	C	C
Skiles Boulevard	Left	33.0	31.2	31.2	27.7	34.8	32.9	32.9	30.8	29.3
	WB Thru		C	C	C		C	C	C	C
	Right		29.0	29.0	25.9		30.8	30.8	29.1	27.7
U.S. Route 202 (Wilmington Pike)	Left	D	D	D	C	D	D	D	D	C
	WB Thru	38.1	37.5	37.5	33.3	39.2	39.2	39.2	36.6	34.8
	Right	D	D	D	C	D	C	C	C	C
	Thru (2)	35.6	35.9	35.9	30.8	35.3	34.0	34.0	31.7	30.2
	NB Right	C	C	C	D	B	C	C	D	D
	SB Thru (2)	23.6	32.8	27.2	49.7	16.6	26.2	20.2	39.7	47.7
Overall	Right	A	A	A	B	A	A	A	B	B
	Thru (2)	8.8	10.0	10.0	14.2	5.6	7.0	7.0	11.6	12.5
	Right	C	C	C	D	B	C	C	D	C
	20.3	27.2	24.0	39.6	15.0	23.2	21.0	43.6	29.5	
	B	B	B	C	A	A	A	B	C	
	12.4	14.7	17.1	24.3	6.5	8.3	9.5	15.5	23.9	
	C	C	D	D	B	C	D	D	D	
	23.2	30.2	42.2	44.5	17.6	25.3	35.1	41.0	37.5	

(1) Future traffic signal timings have been optimized.

(2) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.



**Table 7. 95th Percentile Queue Matrices**  
**Street Road (S.R. 0926) and New Street**

Time Period		Current Storage <sup>(1)</sup>	Future Storage <sup>(1)</sup>	Weekday Morning Peak Hour				Weekday Afternoon Peak Hour				
Design Year				2030 Design Year				2030 Design Year				
Development Condition				Existing	w/o Dev Base	w/o Dev <sup>(2)</sup> Optimized	w/ Dev	Existing	w/o Dev Base	w/o Dev <sup>(2)</sup> Optimized	w/ Dev	
Street Road (S.R. 0926)	Left	EB Thru	2,200'	2,200'	268	310	620	528	315	355	615	460
	Right											
	Left	WB Thru	4,700'	2,350'	105	110	198	213	215	230	358	368
	Right											
New Street	Left	NB Thru	-	-	98	108	68	70	218	235	173	180
	Right											
	Left	SB Thru	-	-	960	1223	348	285	1128	1425	565	373
	Right											

(1) Distance to adjacent signalized intersections shown in italics.

(2) Future traffic signal timings have been optimized.

**Table 7. 95th Percentile Queue Matrices**  
**Street Road (S.R. 0926) and Bridlewood Boulevard / Collector Road**

Time Period		Current Storage <sup>(1)</sup>	Future Storage <sup>(1)</sup>	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour				
				Design Year	Development Condition	Existing	2030 Design Year		Existing	2030 Design Year	
Left	Right	w/o Dev	w/ Dev				w/o Dev	w/ Dev		w/ Dev Add'l Diversions <sup>(3)</sup>	
				Street Road (S.R. 0926)	EB	Left			-		150'
Thru	<i>2,400'</i>	<i>2,400'</i>	-			-	223	-	-	153	320
Right	350'	350'	-			-	25	-	-	25	25
WB	Left	120'	120'		0	0	25	25	25	25	25
	Thru	<i>2,300'</i>	<i>2,300'</i>		-	-	78	-	-	130	218
	Right	-	150'		-	-	25	-	-	25	25
Bridlewood Boulevard	NB	Left	-	-	25	25	25	25	25	25	33
		Thru	-	-	-	-	25	-	-	25	30
		Right	-	-	25	25	25	25	25	25	25
Collector Road	SB	Left	-	-	-	-	25	-	-	25	25
		Thru	-	-	-	-	105	-	-	98	360
		Right	-	-	-	-	-	-	-	-	-

(1) Distance to adjacent signalized intersections shown in italics.

(2) Future storage shown if different from existing conditions.

(3) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

Table 7. 95th Percentile Queue Matrices

U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)

Time Period		Current Storage <sup>(1)</sup>	Future Storage <sup>(2)</sup>	Weekday Morning Peak Hour					Weekday Afternoon Peak Hour						
Design Year				2030 Design Year					2030 Design Year						
Development Condition				Existing	w/o Dev Base	w/o Dev <sup>(3)</sup> Optimized	w/ Dev Base	w/ Dev <sup>(3)</sup> Optimized	Existing	w/o Dev Base	w/o Dev <sup>(3)</sup> Optimized	w/ Dev Base	w/ Dev <sup>(3)</sup> Optimized	w/ Dev Add'l Diversions <sup>(4)</sup>	
Street Road (S.R. 0926)	EB	Left	450'	450'	928	1013	990	878	938	543	610	653	490	568	523
		Left	4700'	2,200'	1020	1113	1078	890	943	625	695	738	493	565	523
		Thru													
	Right														
	WB	Left	200'	200'	265	285	373	373	373	263	280	328	320	318	318
		Thru	680'	680'	240	258	310	320	320	408	443	610	670	653	653
Right		215'	215'	48	68	75	75	75	65	83	93	90	90	90	
U.S. Route 202 (Wilmington Pike)	NB	Left	305'	305'	30	33	35	58	75	78	85	88	193	163	163
		Thru	2,800'	2,800'	1020	1368	1330	1330	1293	1010	1338	1088	1053	1048	1088
		Right	170'	170'	133	145	153	153	150	123	138	128	123	123	128
	SB	Left	375'	375'	135	183	208	245	225	300	368	380	408	358	358
		Thru	4,400'	4,400'	1108	1360	1368	1243	1193	2195	2558	2310	2148	2138	1680
		Right	4,400'	4,400'	1163	1465	1468	1303	1255	2230	2650	2385	2200	2188	1688

(1) Distance to adjacent signalized intersections shown in italics.

(2) Future storage shown if different from existing conditions.

(3) Future traffic signal timings have been optimized.

(4) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 7. 95th Percentile Queue Matrices**  
**U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road**

Time Period		Current Storage <sup>(1)</sup>	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			
			Design Year	2030 Design Year			Existing	2030 Design Year	
Development Condition	Existing			w/o Dev	w/ Dev	w/o Dev		w/ Dev	w/ Dev Add'l Diversions <sup>(2)</sup>
West Pleasant Grove Road	EB Right	-	25	33	40	25	25	25	25
	WB Right	-	25	25	25	25	25	25	25
U.S. Route 202 (Wilmington Pike)	Left	350'	25	25	25	25	25	25	25
	NB Thru	3,100'	-	-	-	-	-	-	-
	Thru/Right	3,100'	-	-	-	-	-	-	-
	Left	380'	25	35	30	40	65	55	55
	SB Thru	1,200'	-	-	-	-	-	-	-
	Thru/Right	1,200'	-	-	-	-	-	-	-

(1) Distance to adjacent signalized intersections shown in italics.

(2) Assumes additional diversion of 250 U.S. Route 202 (Wilmington Pike) vehicles destined to the south.

(3) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 7. 95th Percentile Queue Matrices**  
**West Pleasant Grove Road and Church Full-Movement Access**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev
West Pleasant Grove Road	Thru EB Right	-	-	-	-	-	-
	Left WB Thru	0	0	0	0	0	0
Church Full-Movement Access	Left NB	0	0	0	0	0	0
	Right	0	0	0	0	0	0

**Table 7. 95th Percentile Queue Matrices**  
**West Pleasant Grove Road and Orvis Way (By Others)**

Time Period		Weekday Morning Peak Hour		Weekday Afternoon Peak Hour		
Design Year		2030 Design Year		2030 Design Year		
Development Condition		w/o Dev	w/ Dev	w/o Dev	w/Dev	w/ Dev Add'l Diversions <sup>(1)</sup>
West Pleasant Grove Road	Left EB Thru	25	25	25	35	28
	Thru WB Right	-	-	-	-	-
Orvis Way (By Others)	Left SB Right	25	33	25	68	230

(1) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.

**Table 7. 95th Percentile Queue Matrices**  
**West Pleasant Grove Road and Church Egress Only Access**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev
West Pleasant Grove Road	EB Thru	-	-	-	-	-	-
	WB Thru	-	-	-	-	-	-
Church Egress Only Access	Left NB Right	0	0	0	0	0	0

**Table 7. 95th Percentile Queue Matrices**  
**West Pleasant Grove Road and Collector Road**

Time Period		Weekday Morning Peak Hour	Weekday Afternoon Peak Hour	
Design Year		2030 Design Year	2030 Design Year	
Development Condition		w/ Dev	w/ Dev	w/ Dev Add'l Diversions <sup>(1)</sup>
West Pleasant Grove Road	EB Thru/ Right	-	-	-
	WB Left/ Thru	25	35	108
Collector Road	NB Left Right	25	25	45

(1) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study area.



**Table 7. 95th Percentile Queue Matrices**

**West Pleasant Grove Road and Road M**

Time Period		Weekday Morning Peak Hour	Weekday Afternoon Peak Hour
Design Year		2030 Design Year	2030 Design Year
Development Condition		w/ Dev	w/ Dev
West Pleasant Grove Road	EB Thru/ Right	-	-
	WB Left/ Thru	0	0
Road M	NB Left Right	25	0

**Table 7. 95th Percentile Queue Matrices**  
**West Pleasant Grove Road and Dunvegan Road / Road K**

Time Period		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year		2030 Design Year			2030 Design Year		
Development Condition		Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/Dev Base
West Pleasant Grove Road	Left	0	0	0	0	0	0
	EB Thru						
	Right	-	-	-	-	-	-
	Left	-	-	-	-	-	-
WB Thru	Right	-	-	0	-	-	0
	Right	-	-	-	-	-	-
Road K	Left	-	-	25	-	-	25
	NB Thru						
Dunvegan Road	Right	0	0	0	0	0	0
	SB Thru						
	Right						

**Table 7. 95th Percentile Queue Matrices**

**New Street and West Pleasant Grove Road**

Time Period		Current Storage <sup>(1)</sup>	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
Design Year			2030 Design Year			2030 Design Year		
Development Condition			Existing	w/o Dev	w/ Dev	Existing	w/o Dev	w/ Dev
West Pleasant Grove Road	Left WB	-	25	40	25	123	203	73
	Right	-						
New Street	Thru NB	<i>3,350'</i>	-	-	-	-	-	-
	Right							
	Left SB	-	25	25	25	0	25	25
	Thru							

(1) Distance to adjacent signalized intersections shown in italics.

Table 7. 95th Percentile Queue Matrices

U.S. Route 202 (Wilmington Pike) and Skiles Boulevard / Stetson School Drive

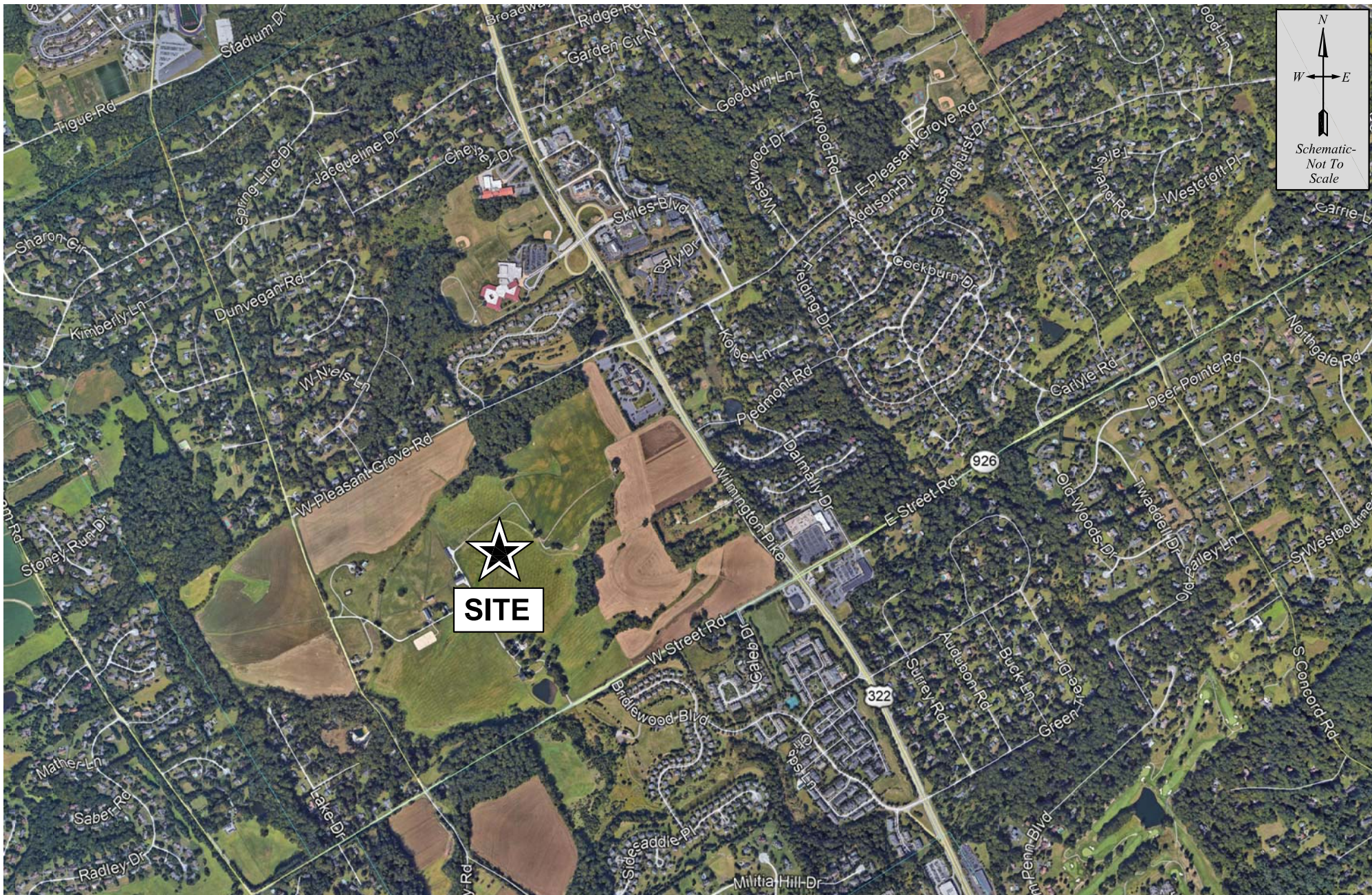
Time Period		Current Storage <sup>(1)</sup>	Future Storage <sup>(2)</sup>	Weekday Morning Peak Hour				Weekday Afternoon Peak Hour				
Design Year				2030 Design Year				2030 Design Year				
Development Condition				Existing	w/o Dev	w/Dev Base	w/ Dev Optimized <sup>(3)</sup>	Existing	w/o Dev	w/Dev Base	w/ Dev Optimized <sup>(3)</sup>	w/ Dev Add'l Diversions <sup>(4)</sup>
Stetson School Drive	Left	200'	200'	145	268	863	568	118	218	790	515	478
	EB Thru	-	-	223	193	193	190	173	163	163	175	170
	Right	-	200'		30	30	30		25	25	25	25
Skiles Boulevard	Left	350'	350'	43	85	85	83	55	95	95	103	98
	WB Thru	-	-	260	283	283	273	155	170	170	180	175
	Right	-	-									
U.S. Route 202 (Wilmington Pike)	Thru (2)	<i>4,400'</i>	<i>4,400'</i>	573	723	630	888	450	633	520	838	910
	NB Right	220'	220'	25	38	38	50	25	25	25	40	43
	Thru (2)	<i>4,600'</i>	<i>4,600'</i>	520	665	595	805	455	645	595	983	718
	SB Right	200'	200'	205	260	338	430	65	100	165	248	490

(1) Distance to adjacent signalized intersections shown in italics.

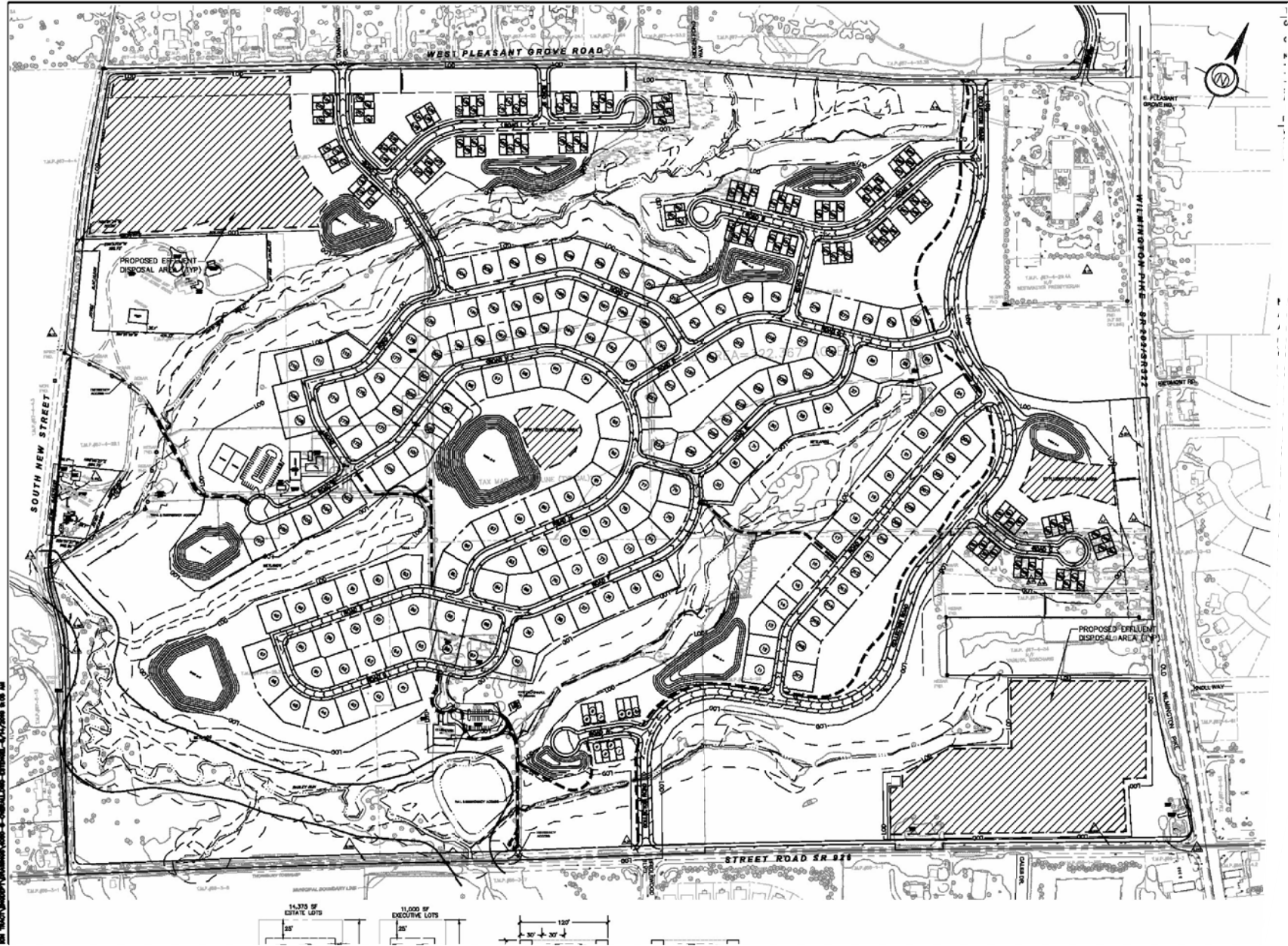
(2) Future storage shown if different from existing conditions.

(3) Future traffic signal timings have been optimized.

(4) Alternate weekday afternoon including the diversion of an additional 250 peak hour vehicles to the Collector Road that is traveling southbound along U.S. Route 202 through the study

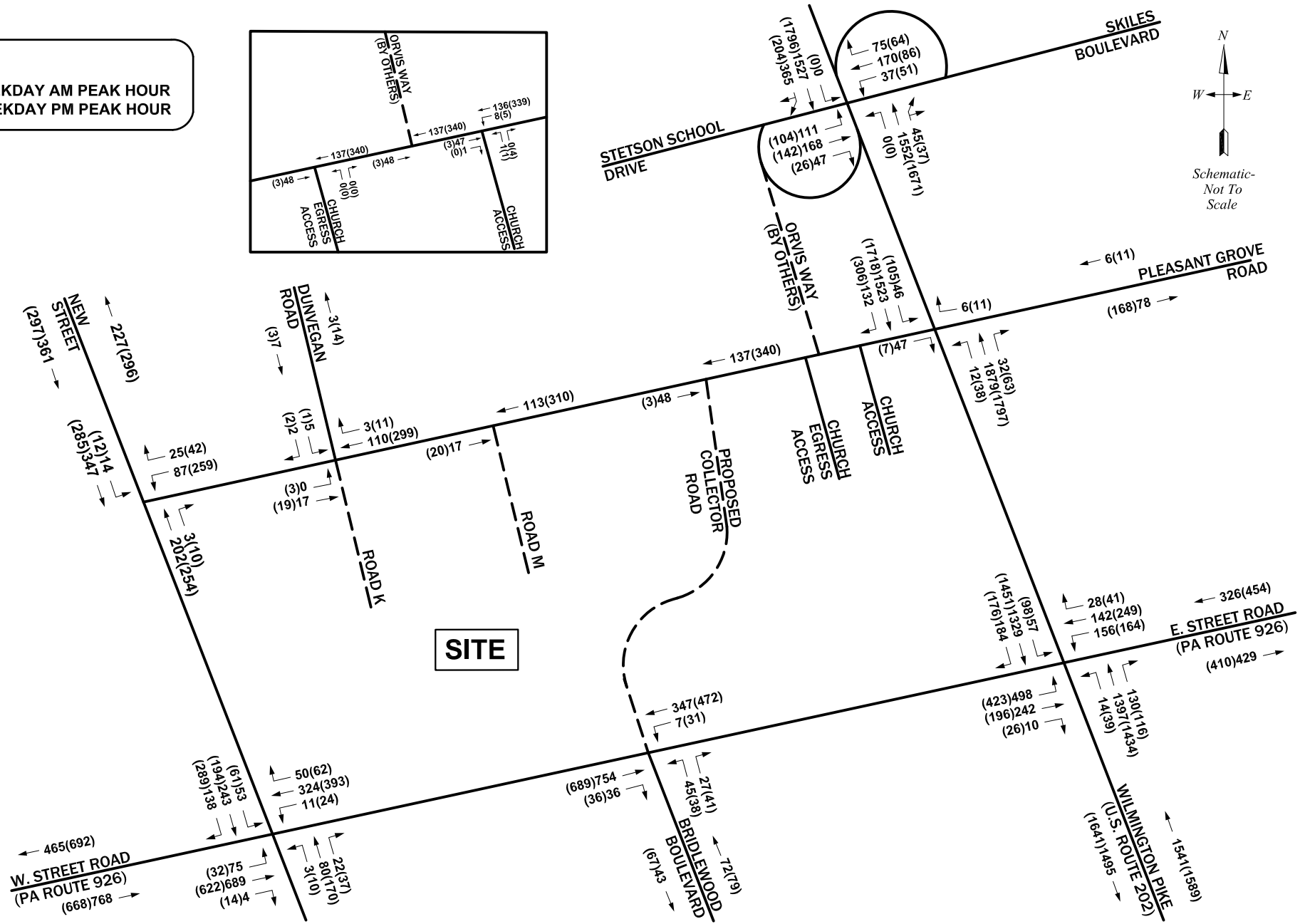
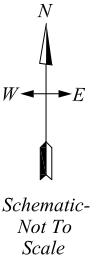
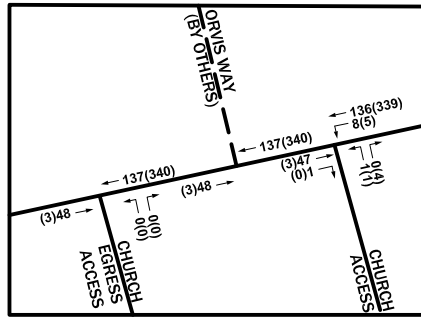


**FIGURE 1**  
 Site Location Map  
**ROBINSON TRACT**  
**WESTTOWN TOWNSHIP, CHESTER COUNTY, PA**



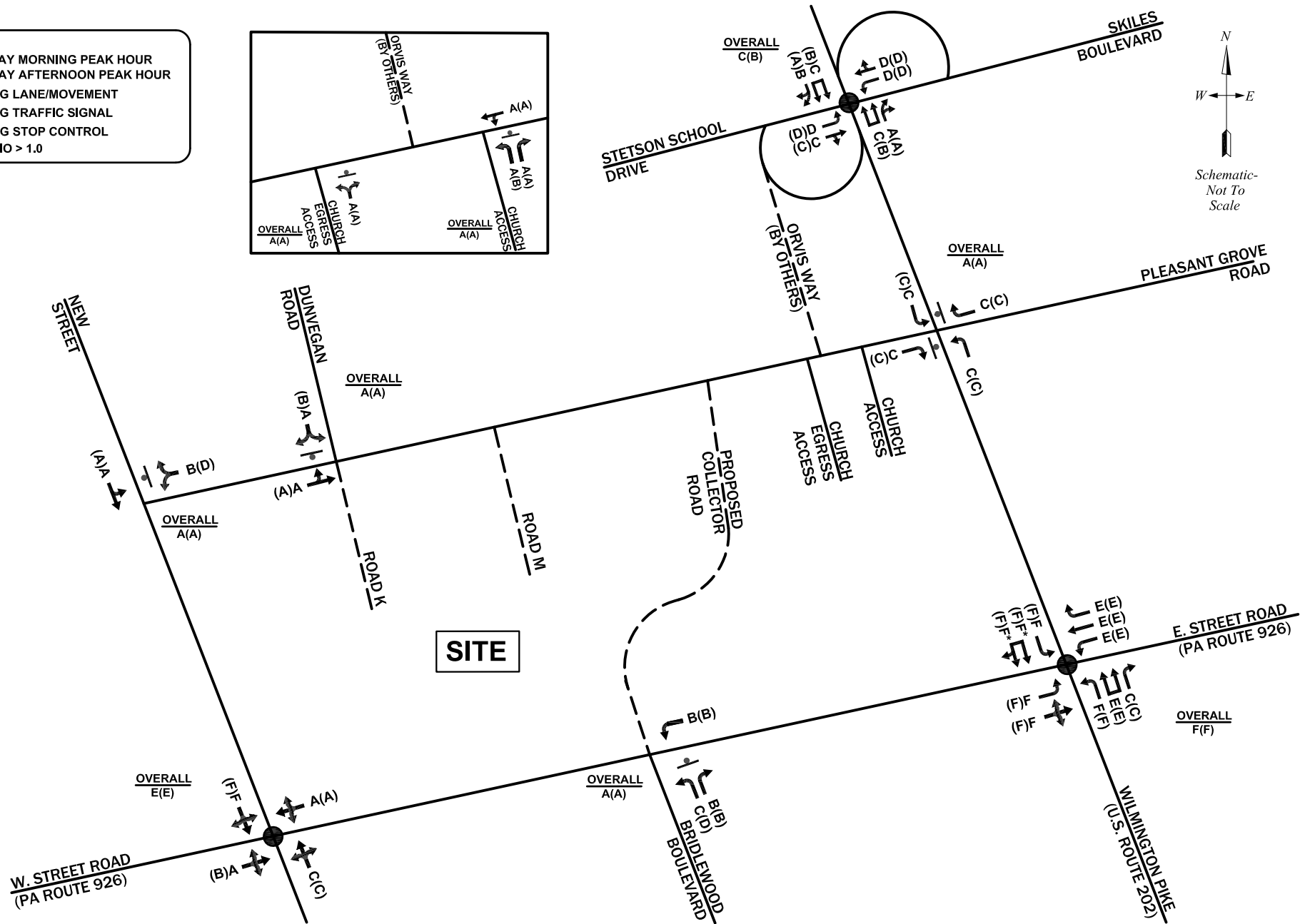
**FIGURE 2**  
 Site Plan  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 3A**  
 Existing Peak Hour Traffic Volumes  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

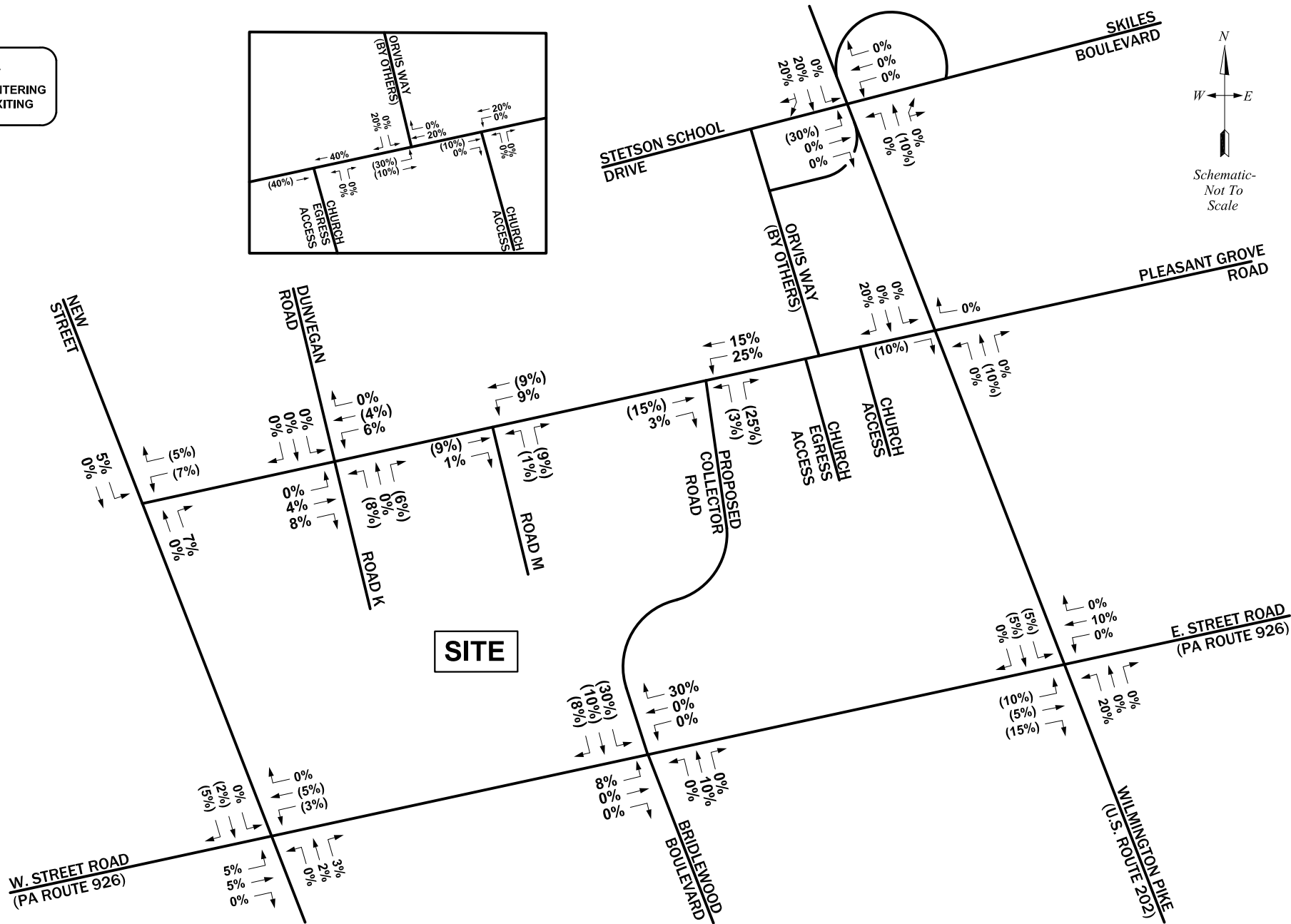
- LEGEND:**
- A WEEKDAY MORNING PEAK HOUR
  - (A) WEEKDAY AFTERNOON PEAK HOUR
  - EXISTING LANE/MOVEMENT
  - EXISTING TRAFFIC SIGNAL
  - EXISTING STOP CONTROL
  - \* V/C RATIO > 1.0



**FIGURE 3B**  
 Existing Peak Hour Levels-of-Service  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

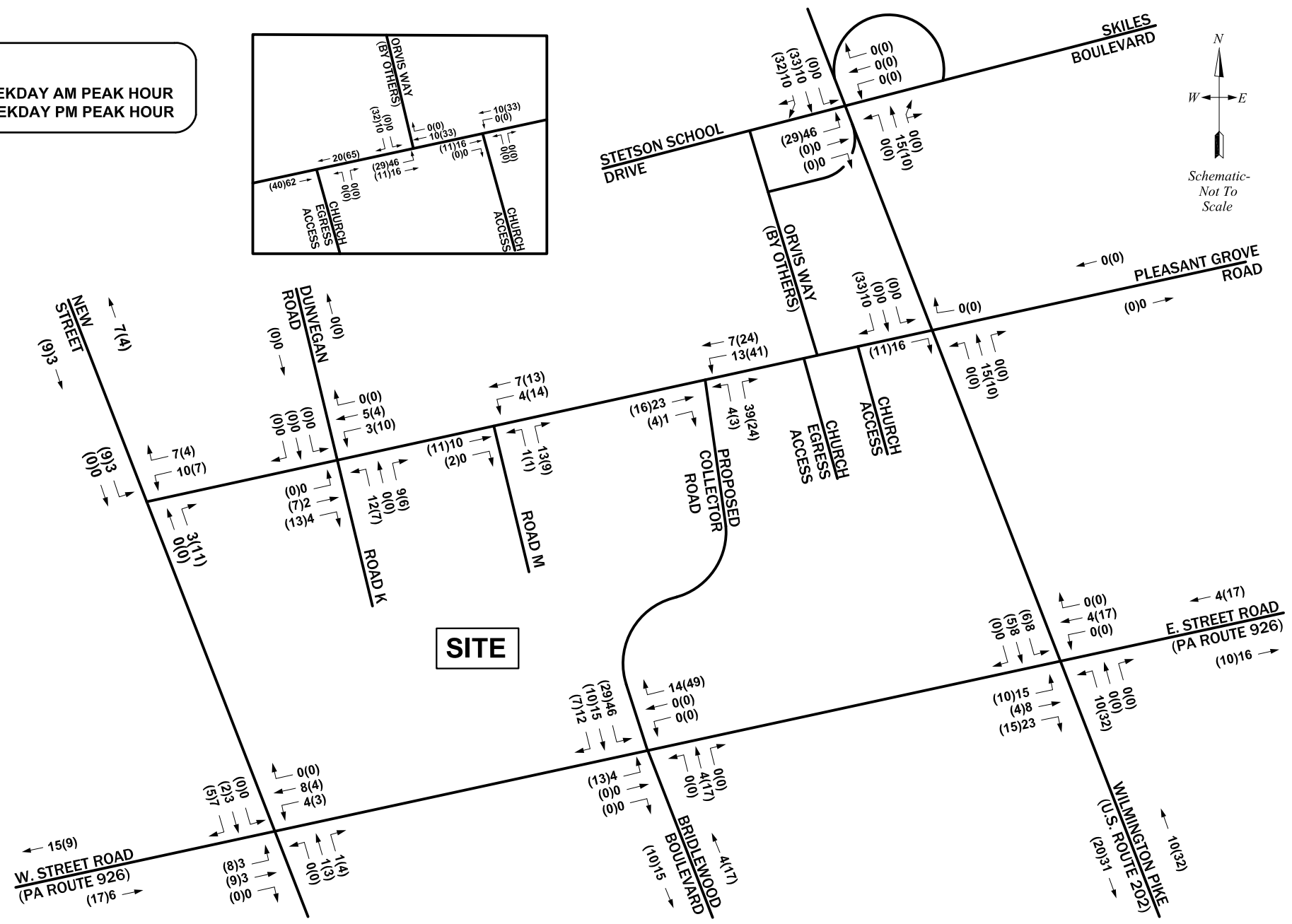


**LEGEND:**  
 10% ENTERING  
 (10%) EXITING



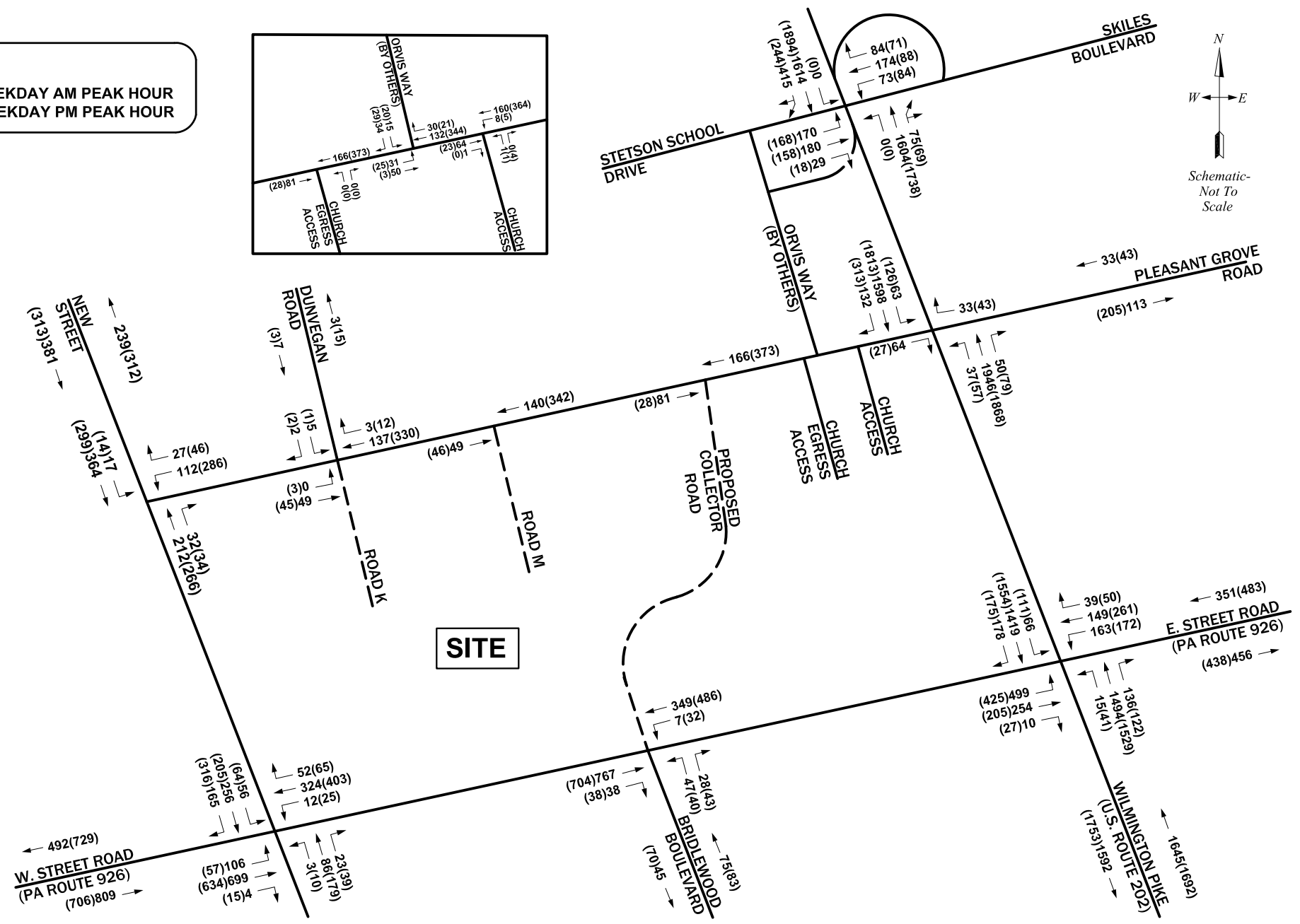
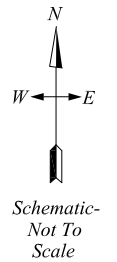
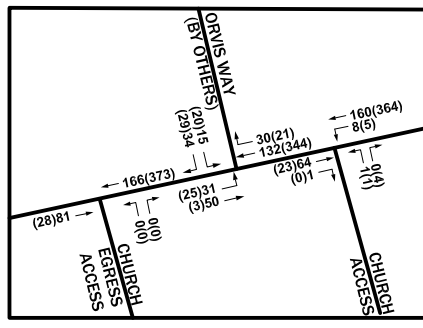
**FIGURE 4A**  
 New Site Trip Distributions  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



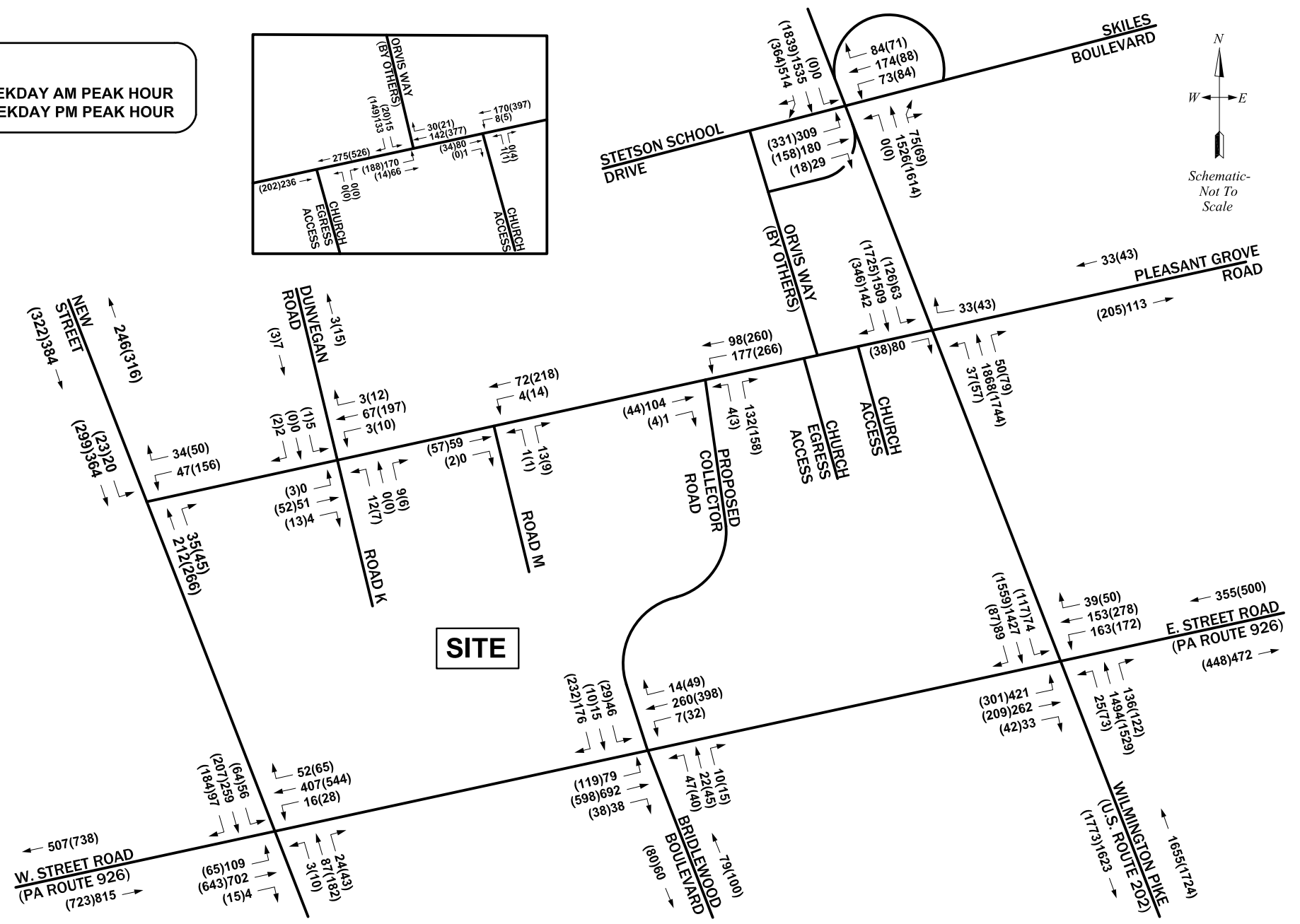
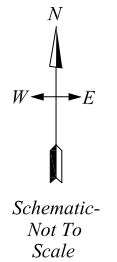
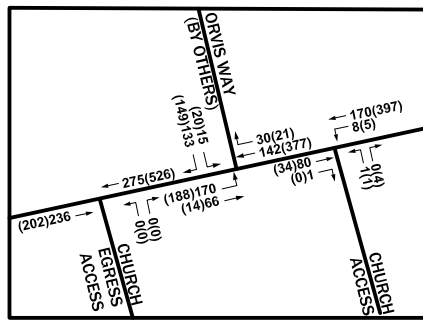
**FIGURE 4B**  
 New Site Trip Assignments  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



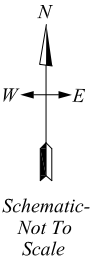
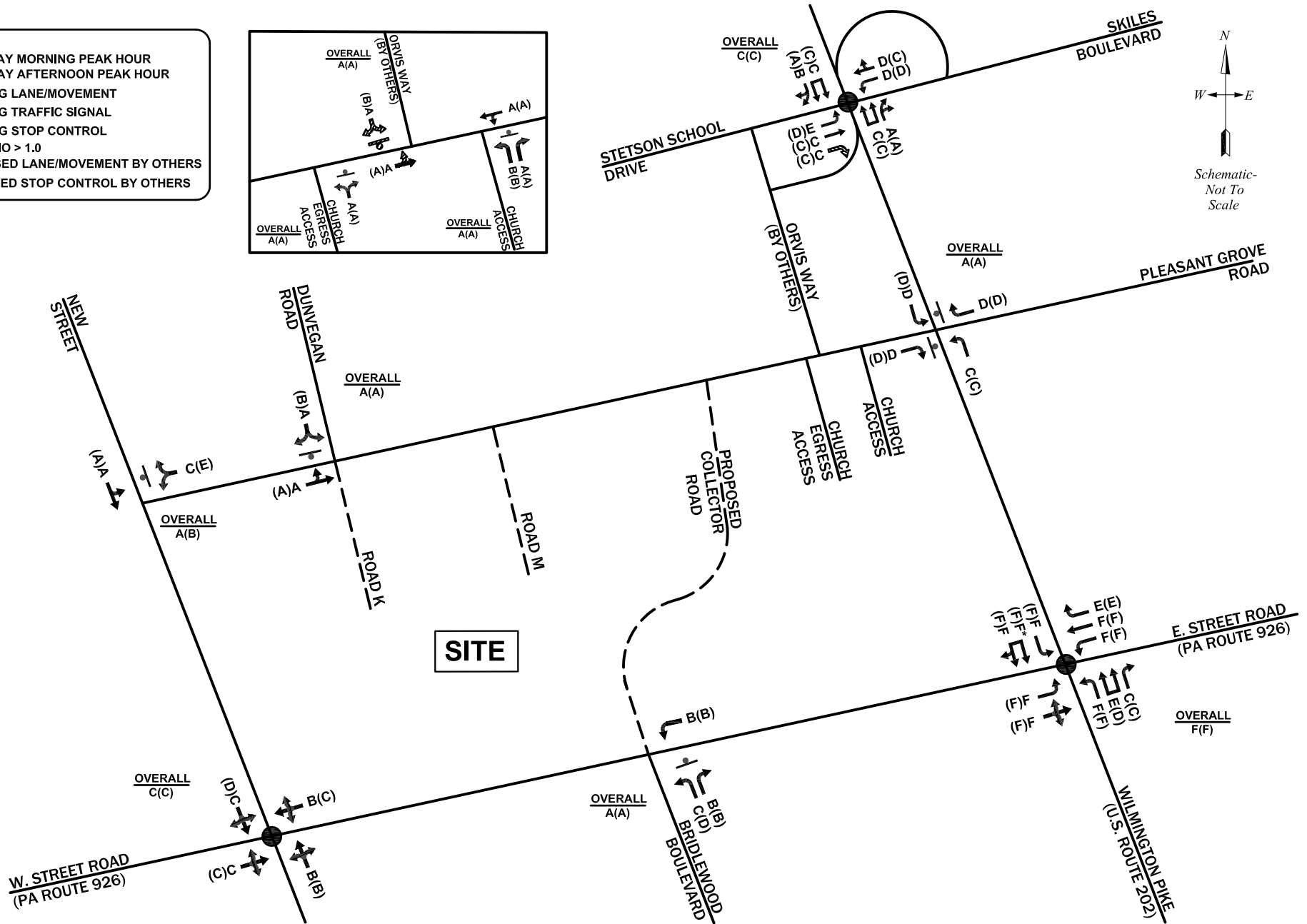
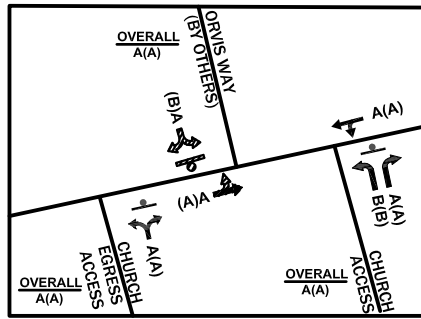
**FIGURE 5A**  
 2025 Build-Out Year without Development Peak Hour Traffic Volumes  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



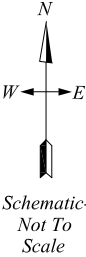
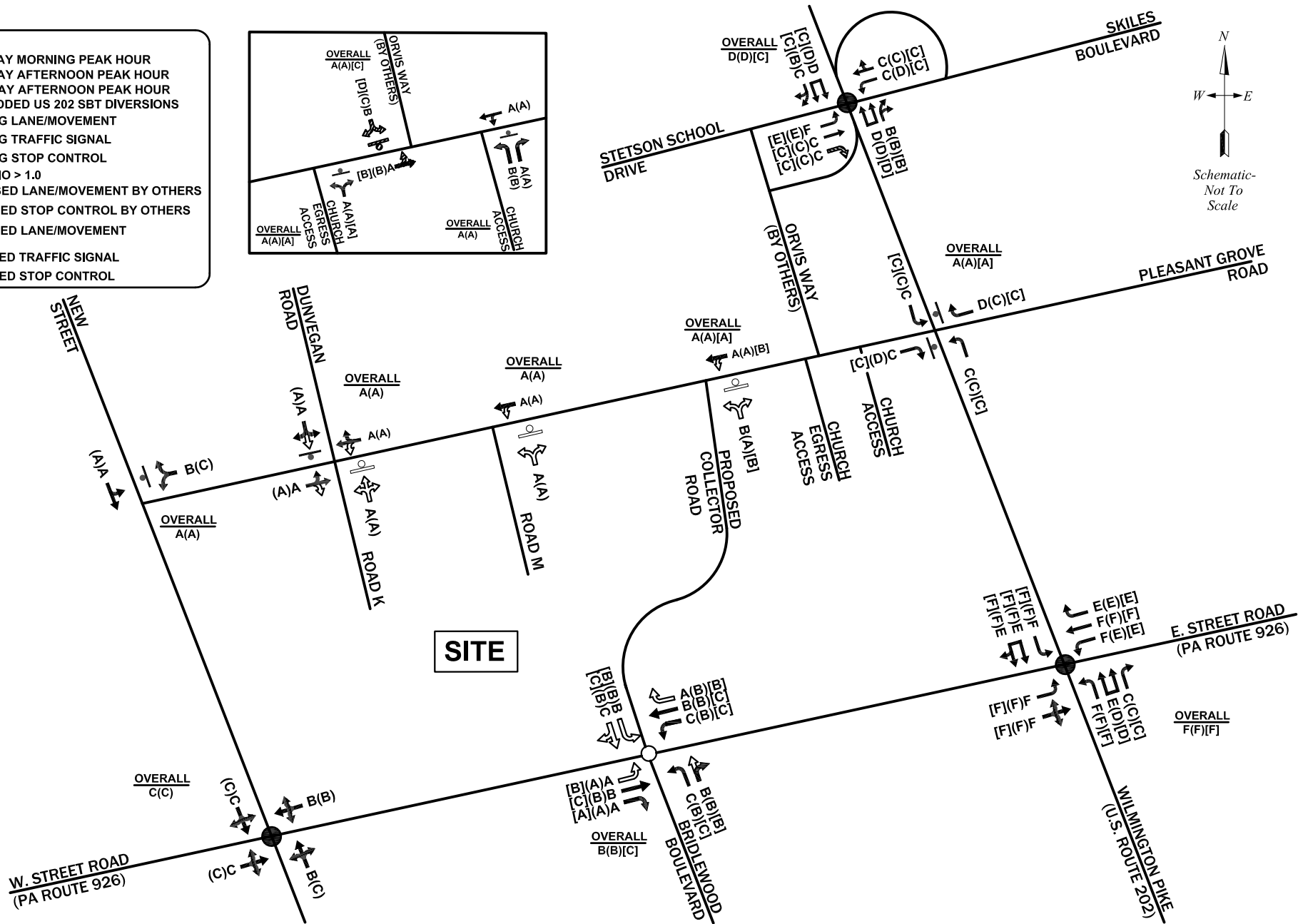
**FIGURE 5B**  
 2025 Build-Out Year with Development Peak Hour Traffic Volumes  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

- LEGEND:**
- A WEEKDAY MORNING PEAK HOUR
  - (A) WEEKDAY AFTERNOON PEAK HOUR
  - EXISTING LANE/MOVEMENT
  - EXISTING TRAFFIC SIGNAL
  - EXISTING STOP CONTROL
  - \* V/C RATIO > 1.0
  - PROPOSED LANE/MOVEMENT BY OTHERS
  - PROPOSED STOP CONTROL BY OTHERS



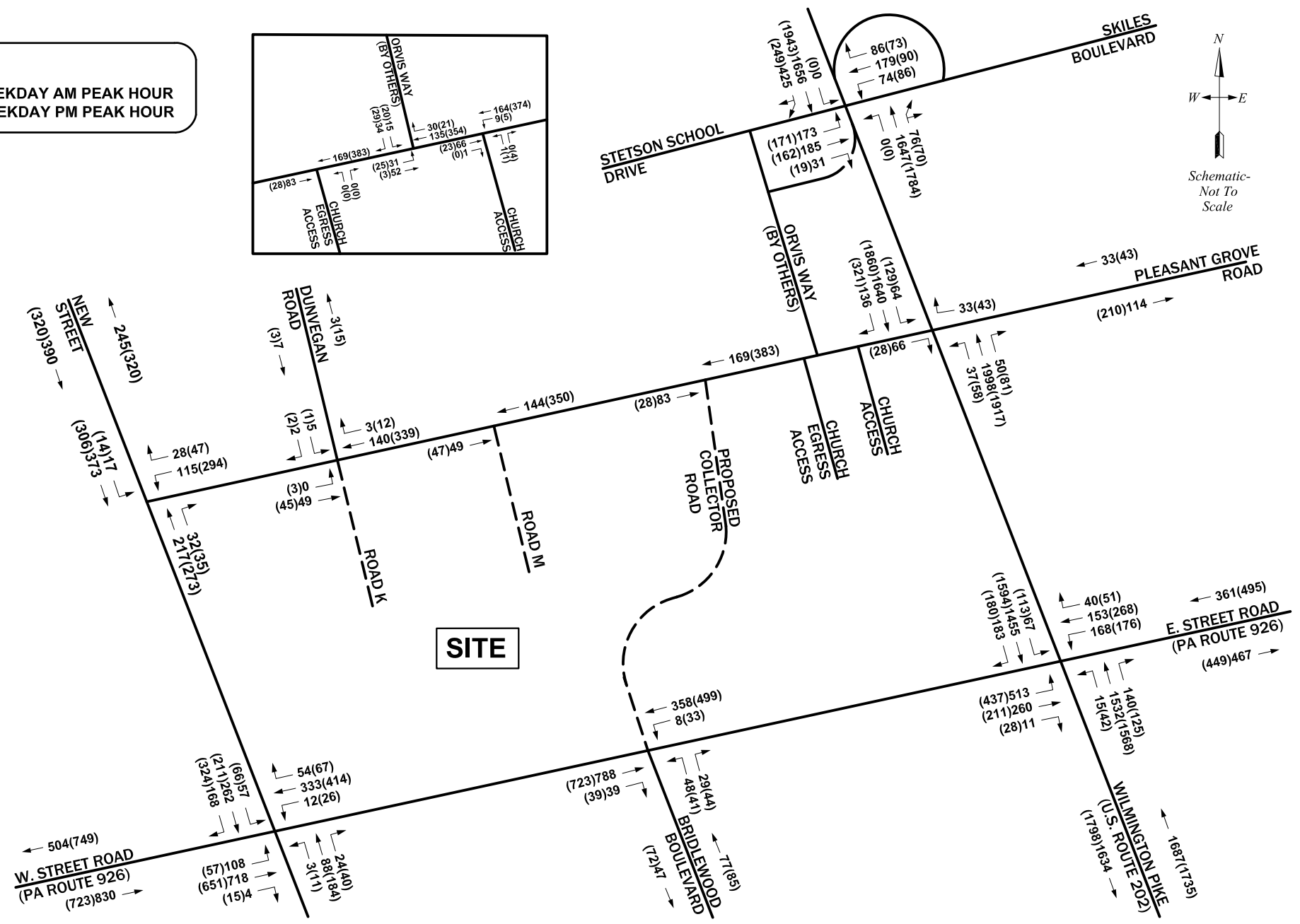
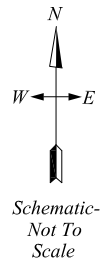
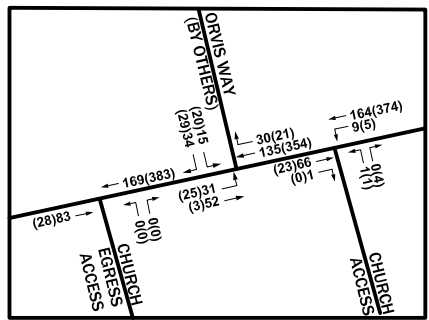
**FIGURE 5C**  
 2025 Build-Out Year without Development Peak Hour Levels-of-Service  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

- LEGEND:**
- A WEEKDAY MORNING PEAK HOUR
  - (A) WEEKDAY AFTERNOON PEAK HOUR
  - [A] WEEKDAY AFTERNOON PEAK HOUR WITH ADDED US 202 DIVERSIONS
  - EXISTING LANE/MOVEMENT
  - EXISTING TRAFFIC SIGNAL
  - EXISTING STOP CONTROL
  - \* V/C RATIO > 1.0
  - PROPOSED LANE/MOVEMENT BY OTHERS
  - PROPOSED STOP CONTROL BY OTHERS
  - PROPOSED LANE/MOVEMENT
  - PROPOSED TRAFFIC SIGNAL
  - PROPOSED STOP CONTROL



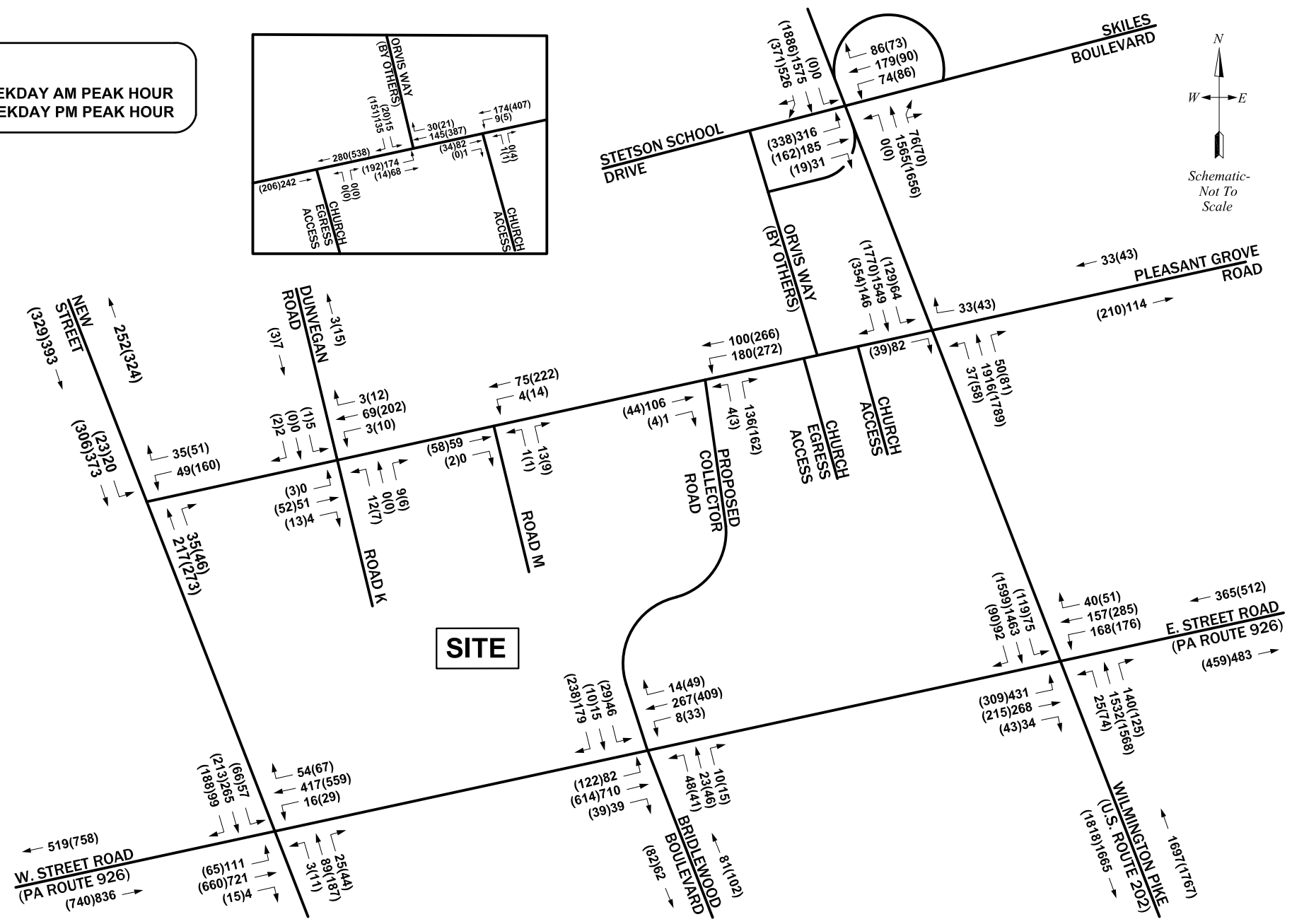
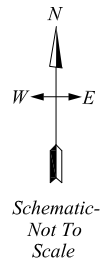
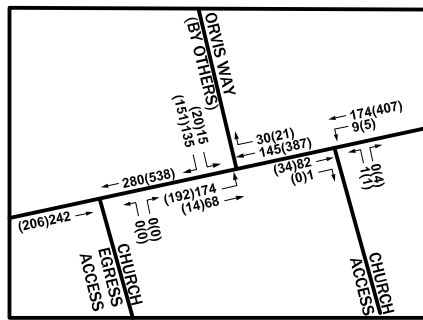
**FIGURE 5D**  
 2025 Build-Out Year with Development Peak Hour Levels-of-Service  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 6A**  
 2030 Design Year without Development Peak Hour Traffic Volumes  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA

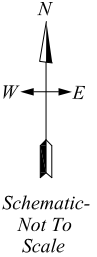
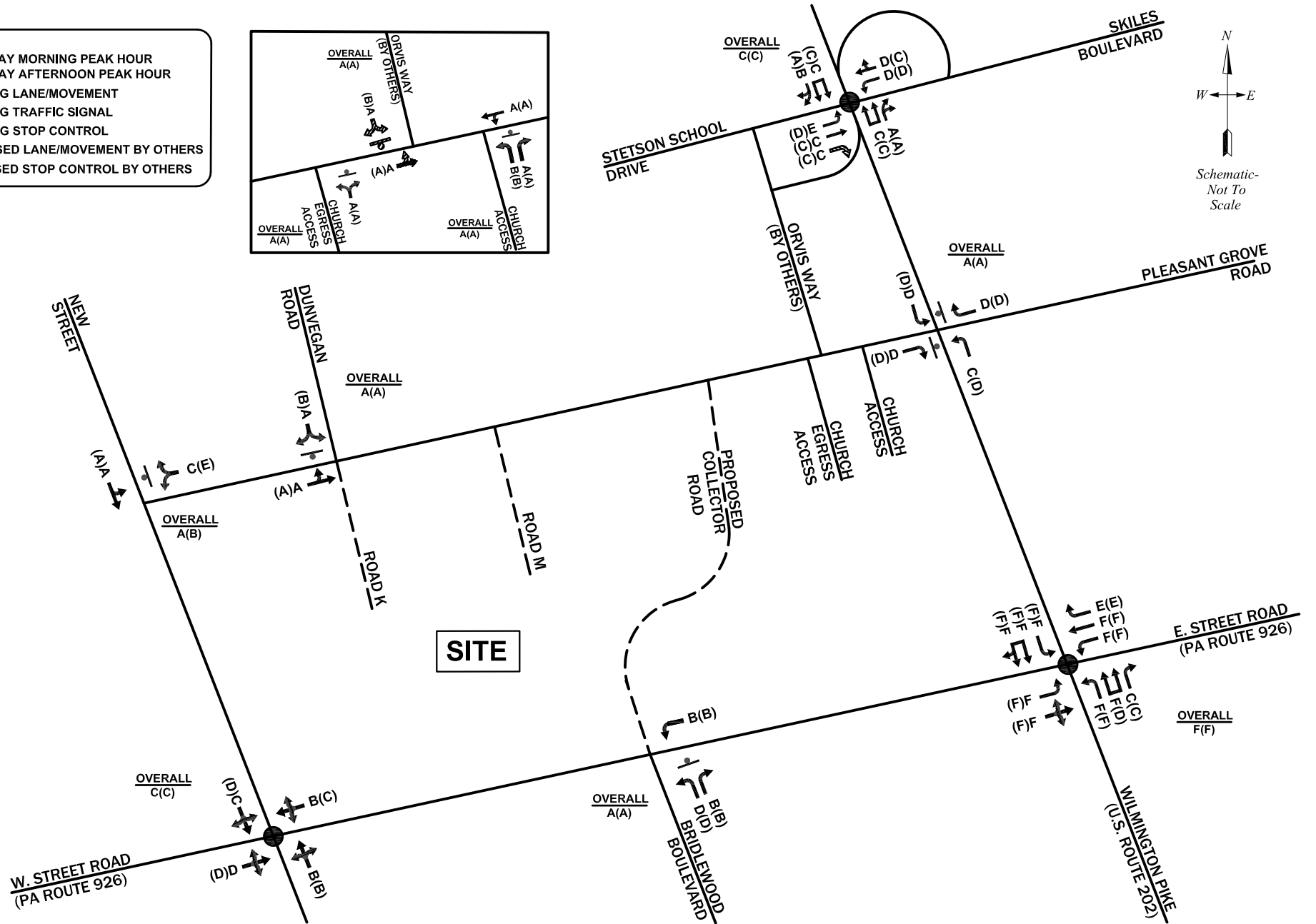
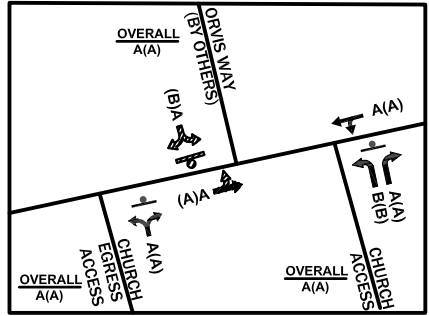
**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 6B**  
 2030 Design Year with Development Peak Hour Traffic Volumes  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



- LEGEND:**
- A WEEKDAY MORNING PEAK HOUR
  - (A) WEEKDAY AFTERNOON PEAK HOUR
  - EXISTING LANE/MOVEMENT
  - EXISTING TRAFFIC SIGNAL
  - EXISTING STOP CONTROL
  - PROPOSED LANE/MOVEMENT BY OTHERS
  - PROPOSED STOP CONTROL BY OTHERS



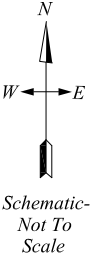
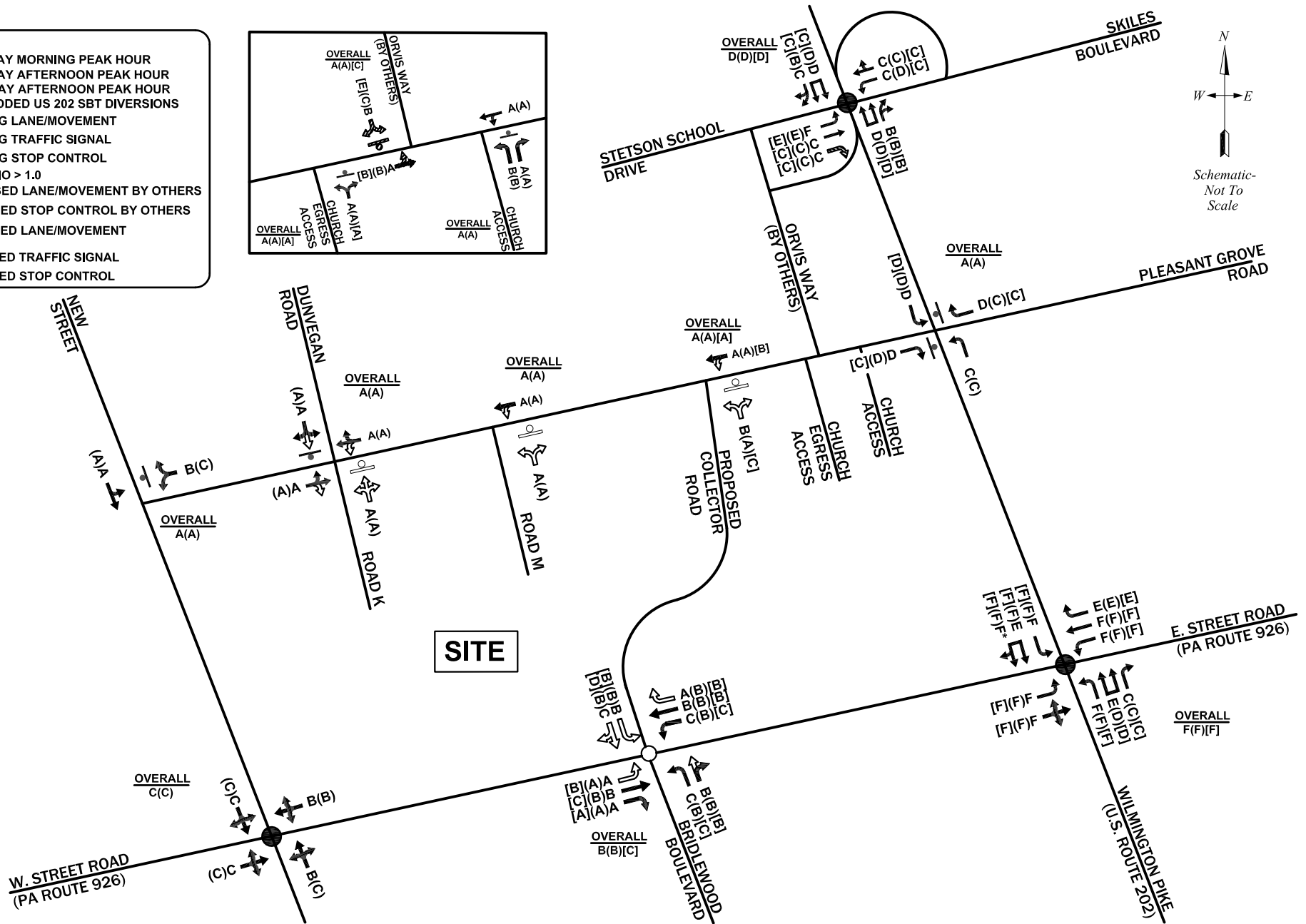
**FIGURE 6C**  
 2030 Design Year without Development Peak Hour Levels-of-Service  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



(2019-08-07) I:\eng\816451 - Crebilly Farm\dwg\2019-08 Robinson Tract TIS\Figure 6C.dwg

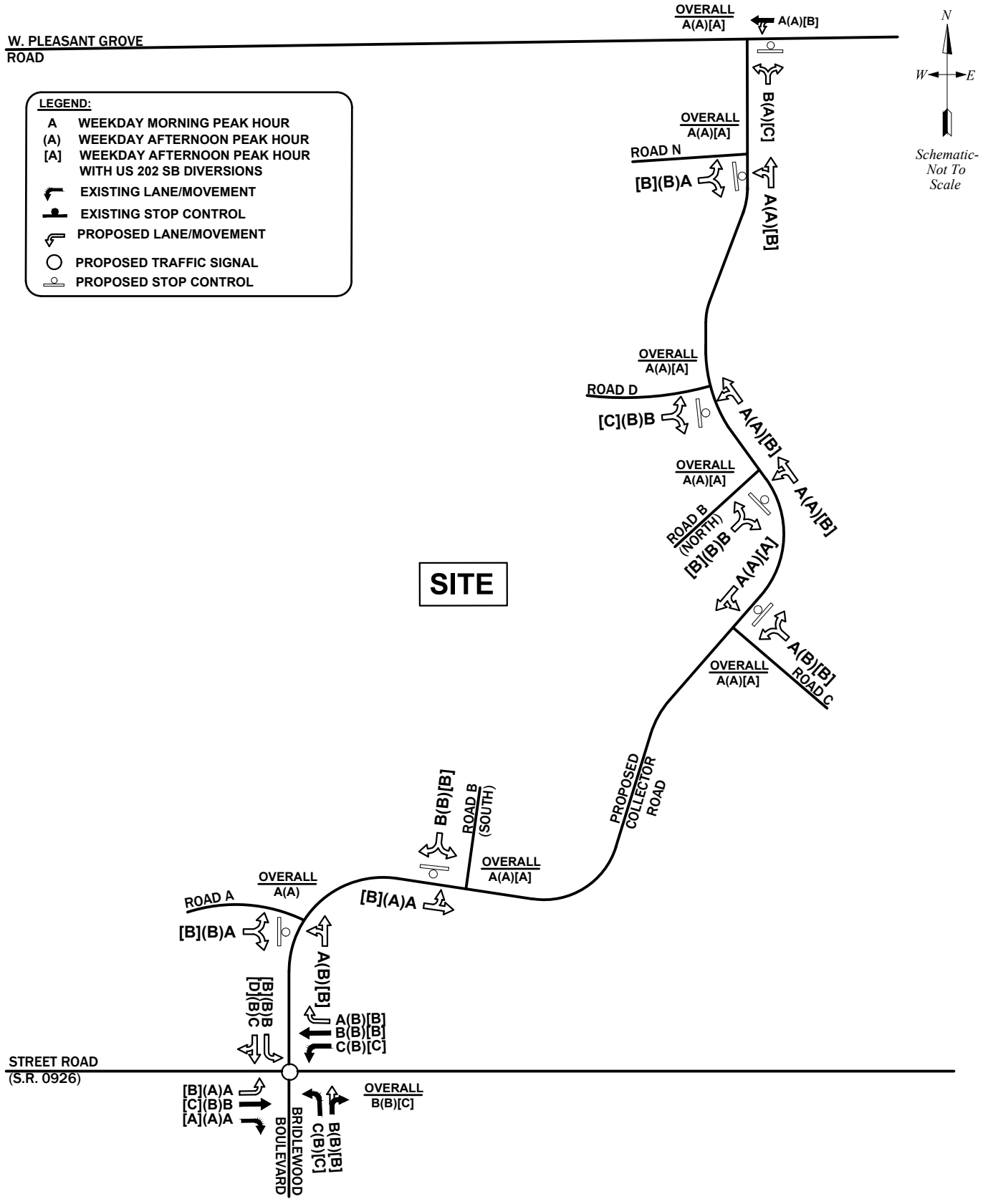
**LEGEND:**

- A WEEKDAY MORNING PEAK HOUR
- (A) WEEKDAY AFTERNOON PEAK HOUR
- [A] WEEKDAY AFTERNOON PEAK HOUR WITH ADDED US 202 SBT DIVERSIONS
- ← EXISTING LANE/MOVEMENT
- EXISTING TRAFFIC SIGNAL
- ⊘ EXISTING STOP CONTROL
- \* V/C RATIO > 1.0
- ↔ PROPOSED LANE/MOVEMENT BY OTHERS
- ⊘ PROPOSED STOP CONTROL BY OTHERS
- ↔ PROPOSED LANE/MOVEMENT
- PROPOSED TRAFFIC SIGNAL
- ⊘ PROPOSED STOP CONTROL



**FIGURE 6D**  
 2030 Design Year with Development Peak Hour Levels-of-Service  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA





**FIGURE 7**  
 2030 Connector Road with Development Peak Hour Levels-of-Service

**ROBINSON TRACT**

WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



(2019/08/12) I:\eng\816451 - Crebilly Farm\dwg\2019-08 Robinson Tract TIS\Figure 7.dwg



# Appendix A

# Correspondence



PRINCIPALS

Joseph W. McMahon, P.E.  
Joseph J. DeSantis, P.E., PTOE  
John S. DePalma  
William T. Steffens  
Casey A. Moore, P.E.  
Gary R. McNaughton, P.E., PTOE

ASSOCIATES

John J. Mitchell, P.E.  
Christopher J. Williams, P.E.  
R. Trent Ebersole, P.E.  
Matthew M. Kozsuch, P.E.  
Maureen Chlebek, P.E., PTOE  
Dean A. Carr, P.E.

January 20, 2017

Mr. Francis J. Hanney  
Pennsylvania Department of Transportation  
District Traffic Services Manager, Engineering District 6-0  
7000 Geerdes Boulevard  
King of Prussia, PA 19406

RE: **Crebilly Farm Residential Development**  
**Traffic Log No.: C16-010XP**  
**Westtown Township, Chester County, PA**  
**McMahon Project No. 816451.11**

Dear Mr. Hanney:

McMahon Associates, Inc. is in receipt of the Department's comment letter, dated December 6, 2016, in regards to the Transportation Impact Study Scoping Meeting Application for the Crebilly Farm Residential Development. The development is proposed to be located on the Crebilly Farm property along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania. On behalf of the applicant, below is a summary of the comments in italics, with our responses following each comment.

**Preliminary Comments**

*Comment #1: The following scoping application elements appear to be acceptable:*

- a. Trip Generation: Residential Condominium/Townhouse (230), Single Family Detached Housing (210)*
- b. Study Type: Transportation Impact Study (TIS)*
- c. Study Area Type: Urban*
- d. Growth rate factor 1.71%/year*
- e. Pass-by Trucks: None*

Response: No response needed.

*Comment #2: As a regional roadway network improvement, the Department has interest in the provision of a connector road through the subject parcel to be constructed as part of this development. The road should provide a direct connection between SR 0926 (Street Road) and West Pleasant Grove*

*Road. The Department strongly encourages the Development and the Township to work toward this goal.*

Response: The applicant will continue to coordinate with the Township and PennDOT regarding a connector road through the site between Street Road (S.R. 0926) and West Pleasant Grove Road.

Comment #3: *The site access road to SR 0926 (Street Road) should be aligned with Bridlewood Boulevard for improved intersection spacing along SR 0926, and to eliminate unnecessary left turn movements for traffic traveling to/from Bridlewood Boulevard and the site. Also, there is excessive queuing on the eastbound approach of SR 0926 to SR 0202, therefore the distance between the site access and SR 020 should be increased. Locating the site access to align with Bridlewood Boulevard increased the distance from SR 020.*

Response: The applicant is willing to relocated signalized access along Street Road (S.R. 0926) opposite Bridlewood Boulevard, pending further coordination with Westtown Township, Thornbury Township, and PennDOT. The applicant cannot align opposite the location of the proposed Arborview access along West Pleasant Grove Road since they do not own the property.

Comment #4: *The Traffic Impact Study must analyze both the "With PennDOT Improvements" and the "Without PennDOT Improvements" scenarios.*

Response: Will comply.

Comment #5: *Since the trips between the site and the Borough of West Chester will likely utilize the intersection of New Street and West Pleasant Grove Road, the TIS Study Area should be revised to include this intersection.*

Response: Will comply.

Comment #6: *The TIS must include a Crash Analysis for the study area.*

Response: Will comply.

Comment #7: *Please be aware that the installation of drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities. Specific information relating to five potential drainage scenarios, as well each scenario's submission requirements, is presented in PennDOT Strike-Off Letter 470-10-03. PennDOT is legally bound by Section 421 of the State Highway Law (36 P.S. § 670-421 to enforce this maintenance responsibility for stormwater facilities relating to HOP projects. Please be guided accordingly.*



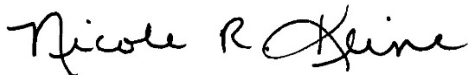
Response: No response needed.

Comment #8: *Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for any driveway. It is the designer's responsibility to ensure that this minimum requirement is satisfied. Furthermore, it should also be understood that any comments made (or guidance given) in this correspondence are preliminary in nature and the Department reserves the right to change, alter, withdraw, or amend them as it deems necessary in the future.*

Response: No response needed.

If there are any questions or if additional information is needed, please feel free to contact me at [nkline@mcmahonassociates.com](mailto:nkline@mcmahonassociates.com) or (610) 594-9995.

Sincerely,



Nicole R. Kline, P.E., PTOE  
Senior Project Manager

NRK

cc: Robert Pingar, P.E., Westtown Township  
Chris Patriarca, AICP, Westtown Township  
Andrew Semon, Toll Brothers  
Michael Downs, P.E., Toll Brothers  
Gregg Adelman, Esq., Kaplin Stewart



December 6, 2016

CHESTER COUNTY, WESTTOWN TOWNSHIP  
SR 0202 (WILMINGTON PIKE) SEG. 0051 OFF. 0000 TO SEG. 0061 OFF. 0000  
SR 0926 (STREET ROAD) SEG. 0390 OFF. 0000 TO SEG. 0400 OFF. 0679  
HIGHWAY OCCUPANCY PERMIT APPLICATION NO. PRE1354  
CREBILLY FARM – MIXED RESIDENTIAL LAND USE  
TRAFFIC LOG NO.: C16-010XP  
**PRELIMINARY REVIEW**

Nicole Kline, PE, PTOE  
McMahon Associates, Inc.  
840 Springdale Drive  
Exton, PA 19341

Dear Ms. Kline:

The Department has reviewed the preliminary scoping application submission for compliance with applicable Department Regulations. This preliminary review has identified deficiencies that must be addressed in order for your application submission to be processed as efficiently as possible.

The Department understands that the provided traffic impact analysis is preliminary in nature. As such, the Department reserves the right to make future additional comments based on a formal submission with a complete Transportation Impact Study.

Our comments on your preliminary submission are as follows:

### **PRELIMINARY COMMENTS**

1. The following scoping application elements appear to be acceptable:
  - a. Trip Generation: Residential Condominium/Townhouse (230), Single Family Detached Housing (210)
  - b. Study Type: Transportation Impact Study (TIS)
  - c. Study Area Type: Urban
  - d. Growth rate factor: 1.71%/year
  - e. Pass-by Trips: None
  
2. As a regional roadway network improvement, the Department has interest in the provision of a connector road through the subject parcel to be constructed as part of this development. The road should provide a direct connection between SR 0926 (Street Road) and West Pleasant Grove Road. The Department strongly encourages the Developer and the Township to work toward this goal.

3. The site access road to SR 0926 (Street Road) should be aligned with Bridlewood Boulevard for improved intersection spacing along SR 0926, and to eliminate unnecessary left turn movements for traffic travelling to/from Bridlewood Boulevard and the site. Also, there is excessive queuing on the eastbound approach of SR 0926 to SR 0202, therefore the distance between the site access and SR 0202 should be increased. Locating the site access to align with Bridlewood Boulevard increases the distance from SR 0202.
4. The Traffic Impact Study must analyze both the “With PennDOT Improvements” and the “Without PennDOT Improvements” scenarios at the intersection of SR 0202 and SR 0926.
5. Since trips between the site and the Borough of West Chester will likely utilize the intersection of New Street and West Pleasant Grove Road, the TIS Study Area should be revised to include this intersection.
6. The TIS must include a Crash Analysis for the study area.
7. Please be aware that the installation of drainage facilities within the Legal Right-of-Way may necessitate additional permitting requirements, including, but not limited to, a separate Highway Occupancy Permit from the Municipality for the future maintenance of the new drainage facilities. Specific information relating to five potential drainage scenarios, as well as each scenario’s submission requirements, is presented in PennDOT Strike-Off Letter 470-10-03. PennDOT is legally bound by Section 421 of the State Highway Law (36 P.S. § 670-421) to enforce this maintenance responsibility for stormwater facilities relating to HOP projects. Please be guided accordingly.
8. Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for any driveway. It is the designer’s responsibility to ensure that this minimum requirement is satisfied. Furthermore, it should also be understood that any comments made (or guidance given) in this correspondence are preliminary in nature and the Department reserves the right to change, alter, withdraw, or amend them as it deems necessary in the future.
9. Please be aware that the Department’s policy is that TISs are to be submitted via the ePermitting System. The PennDOT project number, C16-010XP, for this preliminary review must be referenced in the ePermitting System when the application is submitted.

The Department has performed this preliminary review based only on the limited information provided. We reserve the right to make future, additional, detailed comments based on the formal submission and application for a Highway Occupancy Permit. If you have any questions pertaining to the technical aspects of this review, please contact Drew E. Sirianni, PE, PTOE of Pennoni at (215) 254-7893 or DSirianni@pennoni.com.

Respectfully,



Francis J. Hanney  
District Traffic Services Manager  
Engineering District 6-0

cc: Matthew Miele, PE  
Ashwin Patel, PE  
Traffic Services File  
Westtown Township  
Thornbury Township  
Chester County Planning Commission

PRINCIPALS

Joseph W. McMahon, P.E.  
Joseph J. DeSantis, P.E., PTOE  
John S. DePalma  
William T. Steffens  
Casey A. Moore, P.E.  
Gary R. McNaughton, P.E., PTOE

ASSOCIATES

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Christopher J. Williams, P.E.  
R. Trent Ebersole, P.E.  
Matthew M. Kozsuch, P.E.  
Maureen Chlebek, P.E., PTOE  
Dean A. Carr, P.E.

November 7, 2016

Mr. Francis J. Hanney  
District Traffic Services Manager  
PennDOT District 6-0  
7000 Geerdes Boulevard  
King of Prussia, PA 19406

RE: **Transportation Impact Study Scoping Meeting Application  
Crebilly Farm Residential Development**  
Westtown Township, Chester County, PA  
McMahon Project No. 816451.11

Dear Mr. Hanney:

McMahon Associates, Inc. (McMahon) is pleased to submit the following Transportation Impact Study (TIS) Scoping Meeting Application, per the *Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits*, Revised October 21, 2013 (Strike-off Letter 494-13-13) for the proposed development, located on the Crebilly Farm property along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania. Three potential alternatives are proposed for the development, as follows:

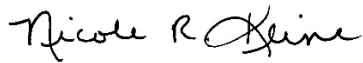
- **Alternative A (Plan A – Proposed Development):** The plan includes 317 new dwelling units and 2 existing dwelling units. Access is provided via two full-movement accesses along West Pleasant Grove Road, a right-in/right-out access along U.S. Route 202 (Wilmington Pike), and a full-movement access along Street Road (S.R. 0926). This development alternative does not provide a public connector road.
- **Alternative B (Plan B – Proposed Density Bonus Development):** The plan includes 395 new dwelling units and 2 existing dwelling units. Access is identical to Alternative A. This development alternative does not provide a public connector road.
- **Alternative C (Plan B – Proposed Density Bonus Development with Connector Road):** The plan includes 395 new dwelling units and 2 existing dwelling units. Access is identical to Alternatives A and B, with the addition of a third full-movement access along West Pleasant Grove Road, which will serve as a connector road provided for public use between U.S. Route 202 (Wilmington Pike), Street Road (S.R. 0926), and West Pleasant Grove Road.

Based on the anticipated trip generation, the site requires a Transportation Impact Study. A Transportation Impact Study has been prepared and submitted to Westtown Township, generally in accordance with the scope outlined in this application.

*The applicant would like to request a meeting with the Department to discuss this project.* During the Department's review of this scoping application, the applicant respectfully requests available dates and times for a meeting. A preliminary list of meeting attendees is included with this scoping submission, including Westtown Township.

If you have any questions or need additional information, please feel free to contact me.

Sincerely,



Nicole R. Kline, P.E., PTOE  
Senior Project Manager

NRK  
Attachment

cc: John Otten, PennDOT  
Robert Pingar, P.E., Westtown Township  
Chris Patriarca, AICP, Westtown Township  
Andrew Semon, Toll Brothers  
Michael Downs, P.E., Toll Brothers

**Crebilly Farm Residential Development  
Scoping Meeting Attendees**

<u>Name</u>	<u>Company</u>	<u>Phone</u>	<u>Email</u>
<b>APPLICANT:</b>			
Nicole Kline, P.E., PTOE	McMahon Associates, Inc.	610-594-9995	<a href="mailto:nkline@mcmahonassociates.com">nkline@mcmahonassociates.com</a>
Michael Downs, P.E.	Toll Brothers	610-358-3611	<a href="mailto:asemon@tollbrothersinc.com">asemon@tollbrothersinc.com</a>
Andrew Semon	Toll Brothers	215-293-5448	<a href="mailto:mdowns@tollbrothersinc.com">mdowns@tollbrothersinc.com</a>
<b>PRELIMINARY MUNICIPAL INVITEES:</b>			
Robert Pingar, P.E.	Westtown Township	610-692-1930	<a href="mailto:rpingar@westtown.org">rpingar@westtown.org</a>
Chris Patriarca, AICP	Westtown Township	610-692-1930	<a href="mailto:cpatriarca@westtown.org">cpatriarca@westtown.org</a>

*The municipality can include additional attendees, as desired.*

## TRANSPORTATION IMPACT STUDY (TIS) SCOPING MEETING APPLICATION

Scoping Meeting Date: TBD

Applicant: Toll Brothers, Inc.

Applicant's Consultant: McMahon Associates, Inc.

Applicant's Primary Contact: Nicole Kline, P.E., PTOE

*(Attach a list of meeting attendees along with phone numbers and email addresses)*

(1) LOCATION OF PROPOSED DEVELOPMENT: (Attach location map if available)

PennDOT Engineering Dist.: 6-0 County: Chester County

Municipality: Westtown Township

State Route(s) (SR): U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)

Segment(s)/Offset(s):	S.R. 0202:	0051/0000 to 0061/0000
	S.R. 0926:	0390/0000 to 0400/0679

(2) DESCRIPTION OF PROPOSED DEVELOPMENT: (Attach site plan if available)

There are currently three proposed alternatives for the development. Conceptual site plans for all alternatives, prepared by ESE Consultants and last revised October 7, 2016, are provided with this scoping submission.

**Proposed site access:** Access is provided via two full-movement accesses along West Pleasant Grove Road, a right-in/right-out access along U.S. Route 202 (Wilmington Pike), and a full-movement access along Street Road (S.R. 0926) for all three alternatives. Alternative C includes a third full-movement access along West Pleasant Grove Road, which will serve as a connector road provided for public use between U.S. Route 202 (Wilmington Pike), Street Road (S.R. 0926), and West Pleasant Grove Road.

**Proposed land uses:**

- *Alternative A (Plan A – Proposed Development):* 319 residential units (2 existing and 200 new single-family homes and 117 new carriage homes).
- *Alternatives B and C (Plan B – Proposed Density Bonus Development):* 397 residential units (2 existing and 152 new single-family homes and 243 new carriage homes).



**Community linkages** (*access to neighboring properties, cross easements, pedestrian and transit accommodations*):

Transit services are currently not provided within the study area. The nearest SEPTA bus stop (SEPTA Bus Route 92) is located just north of the S.R. 0322 (High Street) and U.S. Route 202 intersection, approximately a mile and a half north of the site.

Currently, there are no sidewalks along U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926). The signalized intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) has limited pedestrian crossing amenities. There are pedestrian crosswalks, signals, and pushbuttons provided to cross the eastern leg of Street Road (S.R. 0926) and the southern leg of U.S. Route 202 (Wilmington Pike).

(3) DEVELOPMENT SCHEDULE AND STAGING:

Anticipated Opening Date: 2018

Full Build-Out Date: 2023

Describe Proposed Development Schedule/Staging: No staging is proposed with the development.

(4) TRIP GENERATION

(Use the most recent edition of "Institute of Transportation Engineers (ITE) Trip Generation," unless the Department approves another source. Non-ITE methods must be fully justified based on surveys of multiple sites of the same land use type and size.)

Trip generation for the proposed development will be based on:

  X   ITE Trip Generation Manual.  
(List proposed development land uses and associated ITE Land Use Codes)

       Other independent surveys.  
(Attach justification for non-ITE methods)

List land development and trip generation information, as appropriate. If necessary, attach additional sheets to indicate additional land uses or development phases.

**Table 1** provides the total trips anticipated to be generated by the development. Details regarding the trip generation for each of the alternatives are provided in **Attachment 1**.

**Table 1. Trip Generation – Crebilly Residential Development**

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Alternative A <sup>(1)</sup>	319 units	2,742	48	162	210	171	95	266
Alternatives B & C <sup>(2)</sup>	397 units	2,955	48	175	223	182	98	280

(1) Consisting of 2 existing and 200 new single-family dwelling units and 117 new carriage homes.

(2) Consisting of 2 existing and 152 new single-family dwelling units and 243 new carriage homes.

(5) ESTIMATED DAILY TRIP GENERATION/DRIVEWAY CLASSIFICATION:

(a) Estimated Daily Trip Generation of Proposed Development – Assuming One Access Point and Full Build out/Occupancy of Entire Tract: 2,742 trips/day for Alternative A or 2,955 trips/day for Alternatives B and C.

(b) Driveway Classification Based on Trip Generation and One Access Point:

Medium Volume:  X

High Volume: \_\_\_\_\_

(6) TRANSPORTATION IMPACT STUDY REQUIRED?

\_\_\_\_\_ No

X  Yes, based on: \_\_\_\_\_ 3,000 or more vehicle trips/day generated

X  During any one-hour time period, 100 or more new (added) vehicle trips generated entering or 100 or more new (added) vehicle trips generated exiting development

\_\_\_\_\_ Other considerations as described below:

(7) TRAFFIC IMPACT ASSESSMENT REQUIRED?  X  No \_\_\_\_\_ Yes

(If a TIS is required, the following sections of this checklist will be discussed at the TIS Scoping Meeting. The applicant may provide preliminary information.)

(8) TIS STUDY AREA: (Describe; attach map and/or diagram)

Roadway and Study Intersections

- U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) (signalized)
- U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road (unsignalized)
- Street Road (S.R. 0926) and Bridlewood Boulevard (unsignalized)
- Street Road (S.R. 0926) and New Street (signalized)

A location map is provided, see **Figure 1**.

Land use context (Refer to Smart Transportation Handbook)

Land Use Context – Suburban Corridor

Transportation Context:

- Wilmington Pike (S.R. 0202) – Regional Arterial
- Street Road (S.R. 0926) – Community Arterial
- New Street – Neighborhood Collector
- West Pleasant Grove Road – Local Road
- Bridlewood Boulevard – Local Road

Known Congestion Areas

The U.S. Route 202 (Wilmington Pike) corridor within the vicinity of the site is a known congestion area. It is our understanding that PennDOT currently has a design project providing improvements to the U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926) intersection.

Known Safety Concerns

Not known at this time.

Known Environmental Constraints

Not known at this time.

Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.)

Stetson Middle School and Sarah W. Starkweather Elementary School are located along Wilmington Pike (S.R. 0202), approximately 0.5 miles north of the site.

Transit Review (Current routes/stops)

The nearest SEPTA bus stop (SEPTA Bus Route 139) is located at the intersection of Schuylkill Road (S.R. 0724) and Park Road/Cypress Avenue, approximately 0.75 miles south of the site. This bus route continues along New Street (S.R. 1043) and services Limerick, Royersford, Spring City, Phoenixville, and King of Prussia.

(9) STUDY AREA TYPE: Urban  X  Rural \_\_\_\_\_

(10) TIS ANALYSIS PERIODS AND TIMES:

(List periods and times. Normal analysis periods are existing conditions, 5 years in the future without development, and 5 years in the future with development. Normal analysis times for each period are the AM peak hour, the PM peak hour, and the peak hour of site-generated traffic).

Study Analysis Periods:

- Existing Conditions
- 2023 Future Build-Out Year Conditions (both without and with the proposed development)
- 2028 Future Design Year Conditions (both without and with the proposed development)

Study Time Periods:

- Weekday morning peak period (7:00 AM to 9:00 AM)
- Weekday afternoon peak period (4:00 PM to 6:00 PM)

(11) TRAFFIC ADJUSTMENT FACTORS:

(a) Seasonal Adjustment: (Identify counts requiring adjustment and methodology)

The traffic counts were completed on September 8, 2016 while school was in session, and therefore, the use of any seasonal adjustment factors is not required.

(b) Annual Base Traffic Growth: 1.71 %/yr.

Source: Bureau of Planning and Research for similar roadways in Chester County

If there are other developments within the study area that must be included as part of the background traffic growth and which have a significant effect on future traffic volumes, then it may be proposed to use a lower annual base traffic growth rate.

(c) Pass-By Trips: (Attach justification where required)

(d) Captured Trips for Multi-Use Sites:

(List % and manner of application. Attach justification where required.)

(e) Modal Split Reductions

No reduction proposed.

(f) Other Reductions

No other reductions proposed.

(12) OTHER PROJECTS WITHIN STUDY AREA TO BE ADDED TO BASE TRAFFIC:

(Identify proposed developments with issues permits that need to be included.)

Please provide information regarding any proposed developments that will have an effect on traffic operations within the study area and should be included in the Transportation Impact Study.

- *Police Station Redevelopment*: 30,000 square feet of office space located on the northeast corner of the intersection of U.S. 202 (Wilmington Pike) and Pleasant Grove Road.

- *Arborview*: 16,800 square feet of office space and an 8,665 square-foot daycare center located on the west side of U.S. Route 202 (Wilmington Pike) between Skiles Boulevard and Pleasant Grove Road.

- *Condominium Development*: 39 condominiums in two buildings remain to be occupied/constructed on the west side of Gilpin Drive just north of Skiles Boulevard.

(13) TRIP DISTRIBUTION AND ASSIGNMENT:  
(Describe; explain/justify; attach diagram and related information.)

Trip distributions and assignments have been prepared based on existing traffic patterns and the location of the site accesses upon completion of the data collection efforts. Site distribution and assignment figures are provided in **Attachment 2**.

(14) APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:

<u>Location</u>	<u>Period</u>	<u>Type</u>
U.S. Route 202 and Street Road (S.R. 0926)	Weekday 7-9 AM and 4-6 PM	MTM
U.S. Route 202 and West Pleasant Grove Road		
Street Road (S.R. 0926) and New Street		
Street Road (S.R. 0926) and Bridlewood Boulevard		

Traffic counts were conducted on September 8, 2016, while school was in session and are provided in **Attachment 3**. Existing peak hour traffic volume figures are also provided in **Attachment 3**.

(15) CAPACITY/LOS ANALYSIS:

<u>Location</u>	<u>Period</u>	<u>Type</u>
U.S. Route 202 and Street Road (S.R. 0926)	Weekday 7-9 AM and 4-6 PM	HCM 2010
U.S. Route 202 and West Pleasant Grove Road		utilizing
Street Road (S.R. 0926) and New Street		Synchro 8
Street Road (S.R. 0926) and Bridlewood Boulevard		
All proposed site accesses		

(16) ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:  
(Projects programmed for construction of other developments with issued permits.)

It is our understanding that a PennDOT project to improve the intersection of U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926). Based on the current State Transportation Improvement Program (TIP) and the Conceptual Intersection Layout prepared by Urban Engineers and dated June 5, 2014, the project will include improvements that will help reduce traffic congestion and increase safety at the intersection through lane reconfigurations, striping, upgrades to the traffic signal, signal timing, and bicycle and pedestrian improvements. It is our understanding that the following roadway improvements are to be included:

- Southbound 130-foot right-turn deceleration lane on U.S. Route 202.
- Additional eastbound left-turn lane on PA Route 926, creating a double left-turn lane configuration with 380 feet of storage for each lane.

- Pedestrian and bicycle intersection improvements, including high-visibility crosswalks, ADA ramps, and sidewalk extension from the intersection east to Dalmally Drive.
- Traffic signal equipment upgrades, including pedestrian push buttons, countdown signal heads, and lighting.

Based on the TIP, the current project schedule indicates an estimated let date of July 2018; however, in light of the favorable state transportation funding situation, and the high priority for this project within Chester County, we understand this project may be accelerated to be completed more quickly.

(17) OTHER NEEDED ANALYSES:

- (a) Sight Distance Analysis:  
(Required for all site access driveways; identify other locations)

Will be completed for all site accesses.

- (b) Signal Warrant Analysis:  
(Identify locations)

Will be completed for the proposed traffic signal at Street Road (S.R. 0926) and Site Access.

- (c) Required Signal Phasing/Timing Modifications:  
(Determine for all signalized intersections; specify methodology)

Any recommendations regarding proposed traffic signal phasing/timing modifications will be completed based on the results of the traffic analyses completed in Synchro, and based on the calculation of conflict factors, in accordance with PennDOT warrants and guidelines.

- (d) Traffic Signal Corridor/Network Analysis:  
(Identify locations/methodology)

Traffic signal coordination will be included within the traffic analyses in Synchro, as needed.

- (e) Analysis of the Need for Turning Lanes:  
(Identify locations/methodology)

The need for auxiliary turning lanes will be evaluated based on PennDOT guidelines, as contained in PennDOT's *Publication 46, Chapter 11*, for the proposed site accesses.

- (f) Turning Lane Lengths:  
(Identify methodology to be used)

Turning lane lengths will be evaluated based on PennDOT guidelines, as contained in PennDOT's *Publication 46, Chapter 11*, including the 95<sup>th</sup> percentile queues from the Synchro analyses.

- (g) Left Turn Signal Phasing Analysis:  
(Identify locations/methodology)

Will be completed at the proposed Street Road (S.R. 0926) Site Access.

- (h) Queuing Analysis:  
(Identify locations/methodology)

Will be completed at all study intersections and proposed site accesses utilizing Synchro 8.

- (i) Gap Studies:  
(Identify locations/methodology)

Not proposed at this time.

- (j) Crash Analysis:  
(Identify locations)

Crash data will be reviewed, upon request.

- (k) Weaving Analysis:  
(Identify locations)

N/A

- (l) Other Required Studies:  
(Specify locations/methodology)

None proposed at this time.

(18) ADDITIONAL COMMENTS OR RECOMMENDATIONS RELATIVE TO THE SCOPE OF THE TIS:

\_\_\_\_\_  
Signature of Applicant's Engineer

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of District Traffic PennDOT Representative

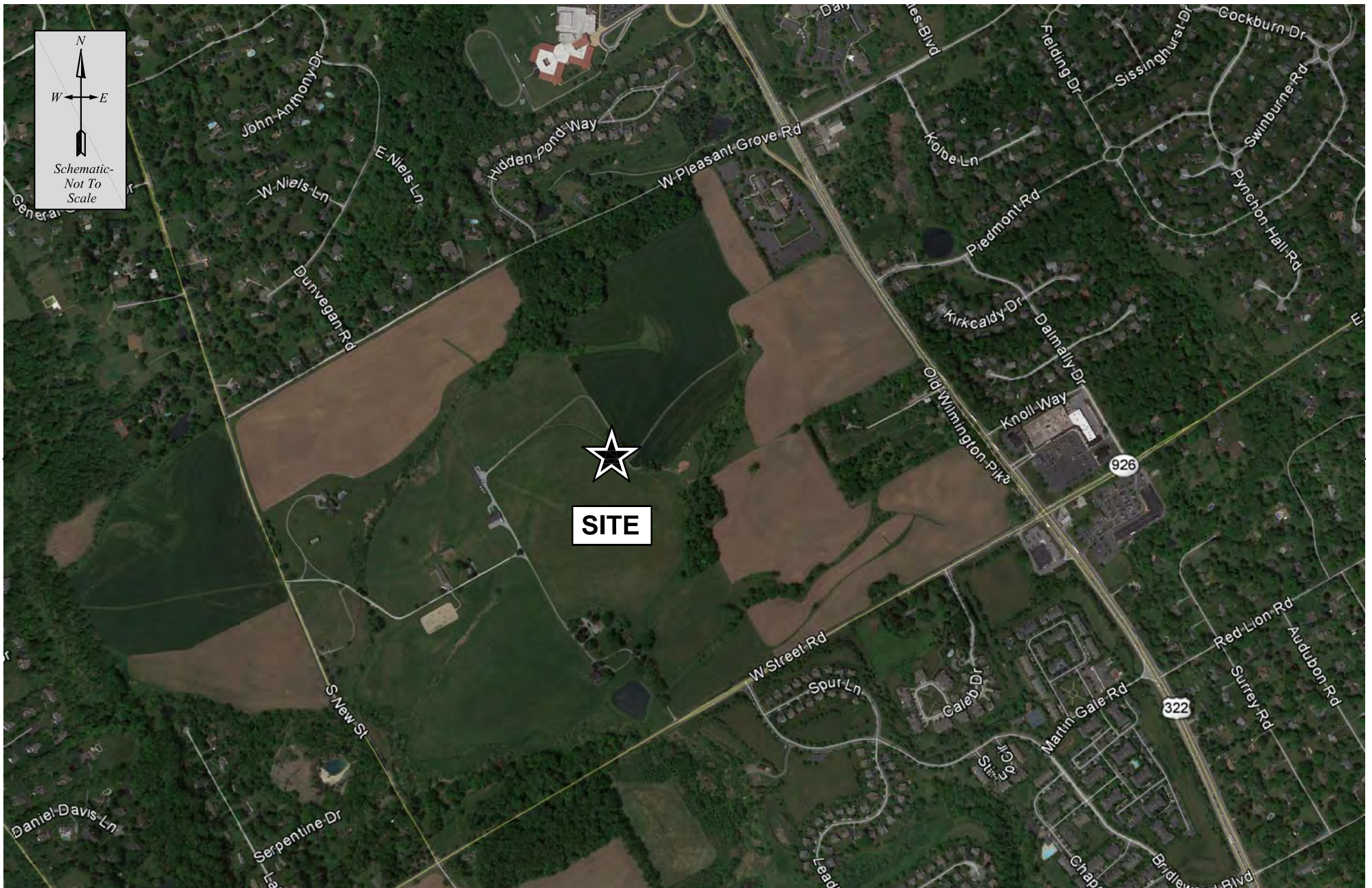
Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of District Permit PennDOT Representative (if present)

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of Municipal Traffic Representative

Date: \_\_\_\_\_



**FIGURE 1**  
Site Location Map

# CREBILLY FARM RESIDENTIAL DEVELOPMENT



**WESTTOWN TOWNSHIP, CHESTER COUNTY, PA**



Project Information	
Project Name:	Crebily Farm Residential Development - Alternative A
McMahon Project No:	816451
Date:	10/3/2016
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 9th Edition

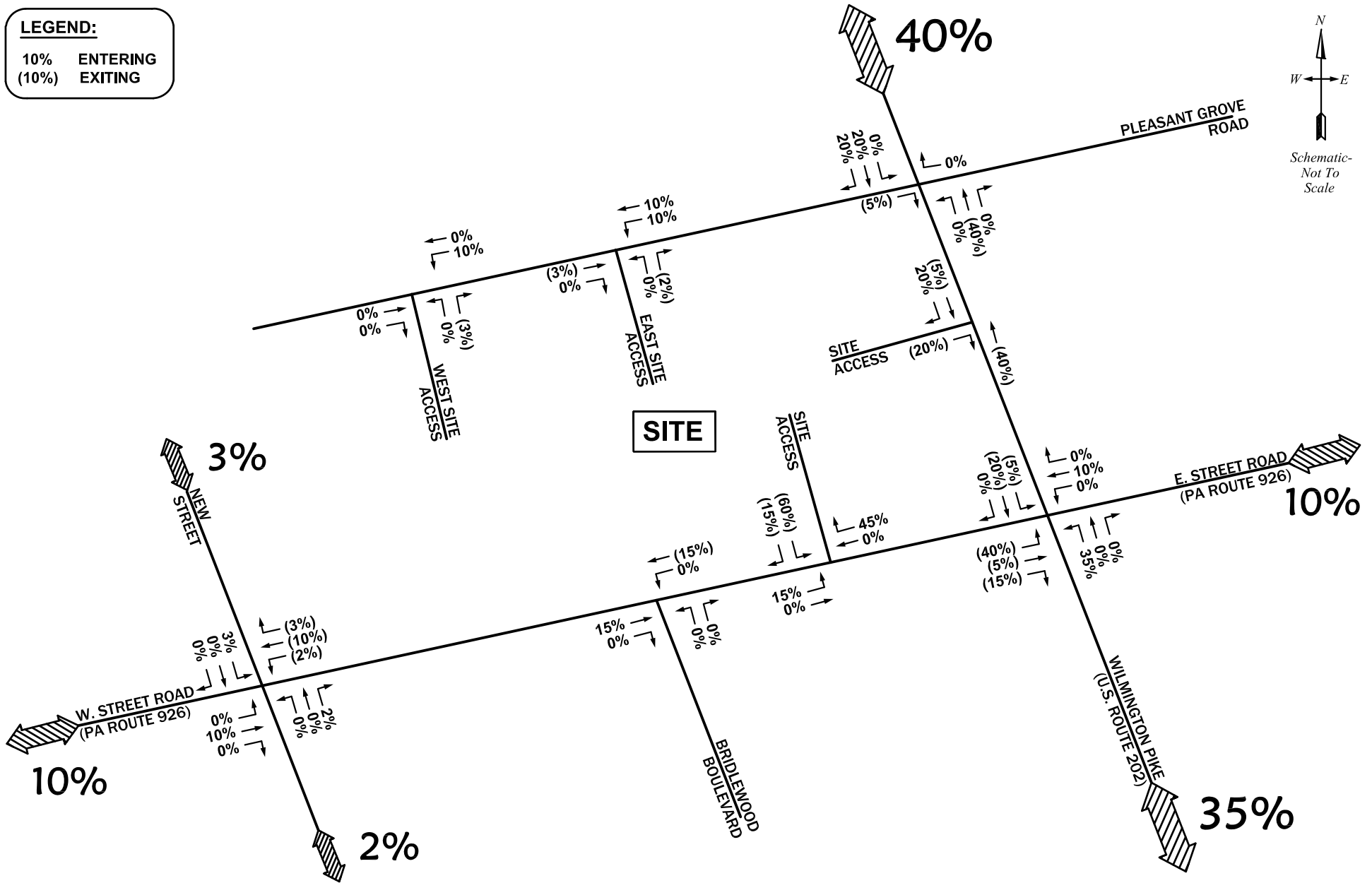
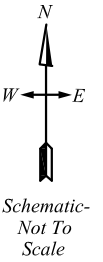
Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
<b>230 - Residential Condominium / Townhouse</b>	117 dwelling units	737	10	49	59	46	22	68
<b>210 - Single Family Detached Housing</b>	202 dwelling units	2,005	38	113	151	125	73	198
<b>Total Trips</b>		<b>2,742</b>	<b>48</b>	<b>162</b>	<b>210</b>	<b>171</b>	<b>95</b>	<b>266</b>

Project Information	
Project Name:	Crebily Farm Residential Development - Alternatives B and C
McMahon Project No:	816451
Date:	10/10/2016
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 9th Edition

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
<b>230 - Residential Condominium / Townhouse</b>	243 dwelling units	1,393	18	87	105	84	41	125
<b>210 - Single Family Detached Housing</b>	154 dwelling units	1,562	30	88	118	98	57	155
<b>Total Trips</b>		<b>2,955</b>	<b>48</b>	<b>175</b>	<b>223</b>	<b>182</b>	<b>98</b>	<b>280</b>

## **ATTACHMENT 2**

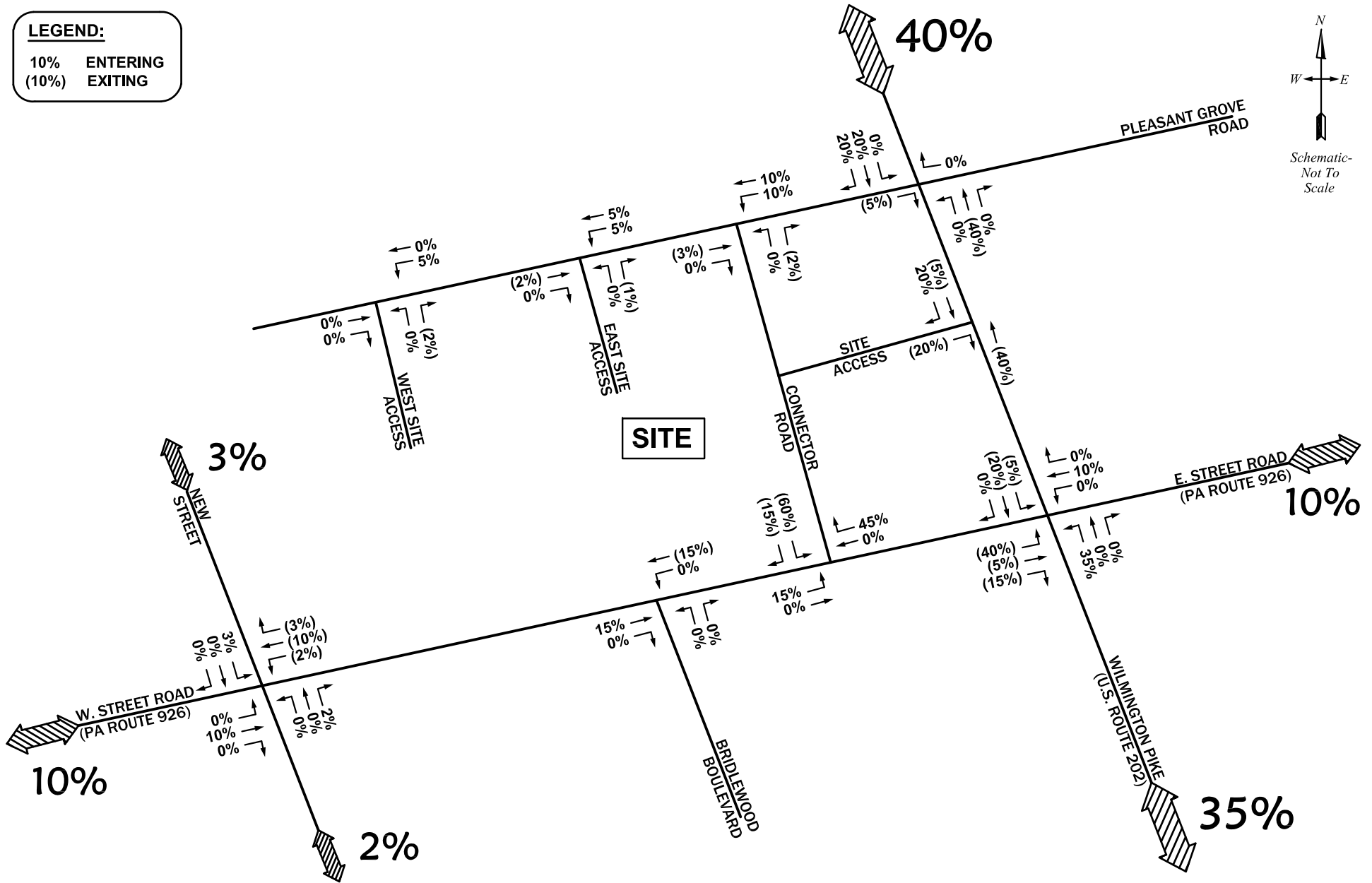
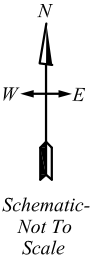
**LEGEND:**  
 10% ENTERING  
 (10%) EXITING



**FIGURE 4A**  
 Site Trip Distribution  
 Alternatives A and B

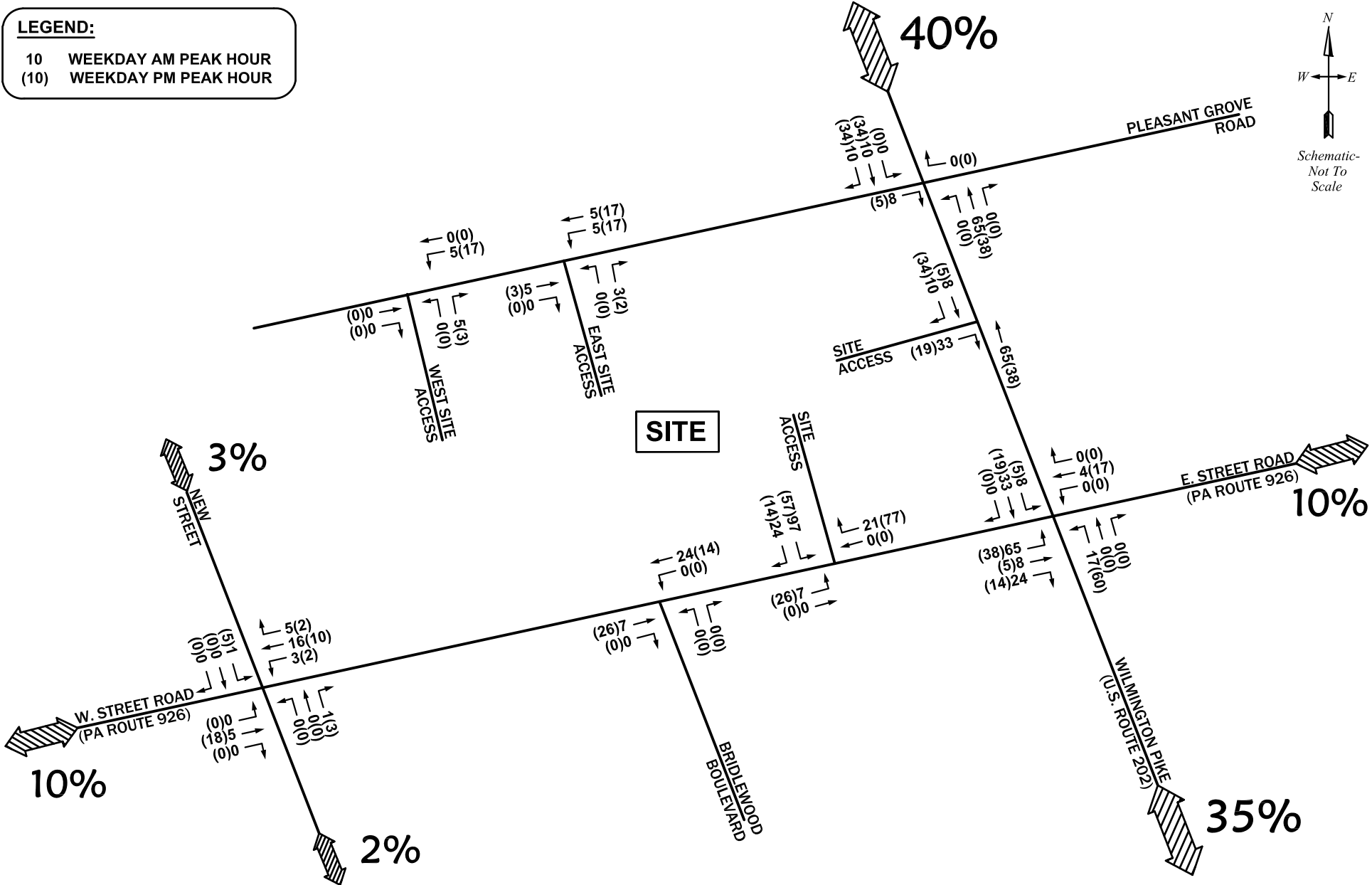
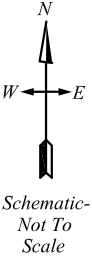
**LEGEND:**

10% ENTERING  
(10%) EXITING



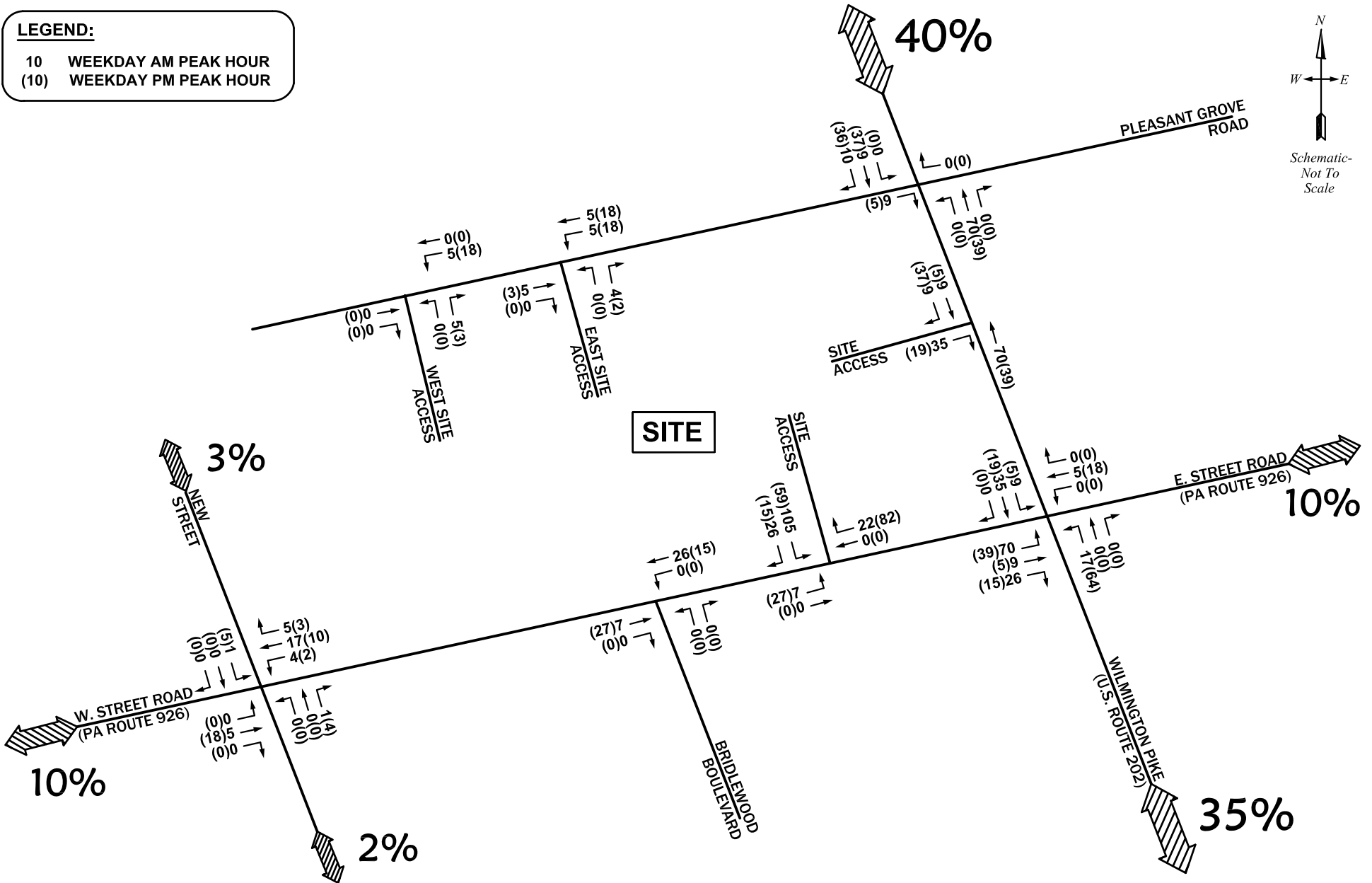
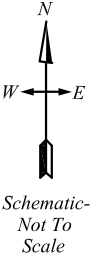
**FIGURE 4B**  
Site Trip Distribution  
Alternative C

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 4C**  
 Site Trip Assignment  
 Alternative A

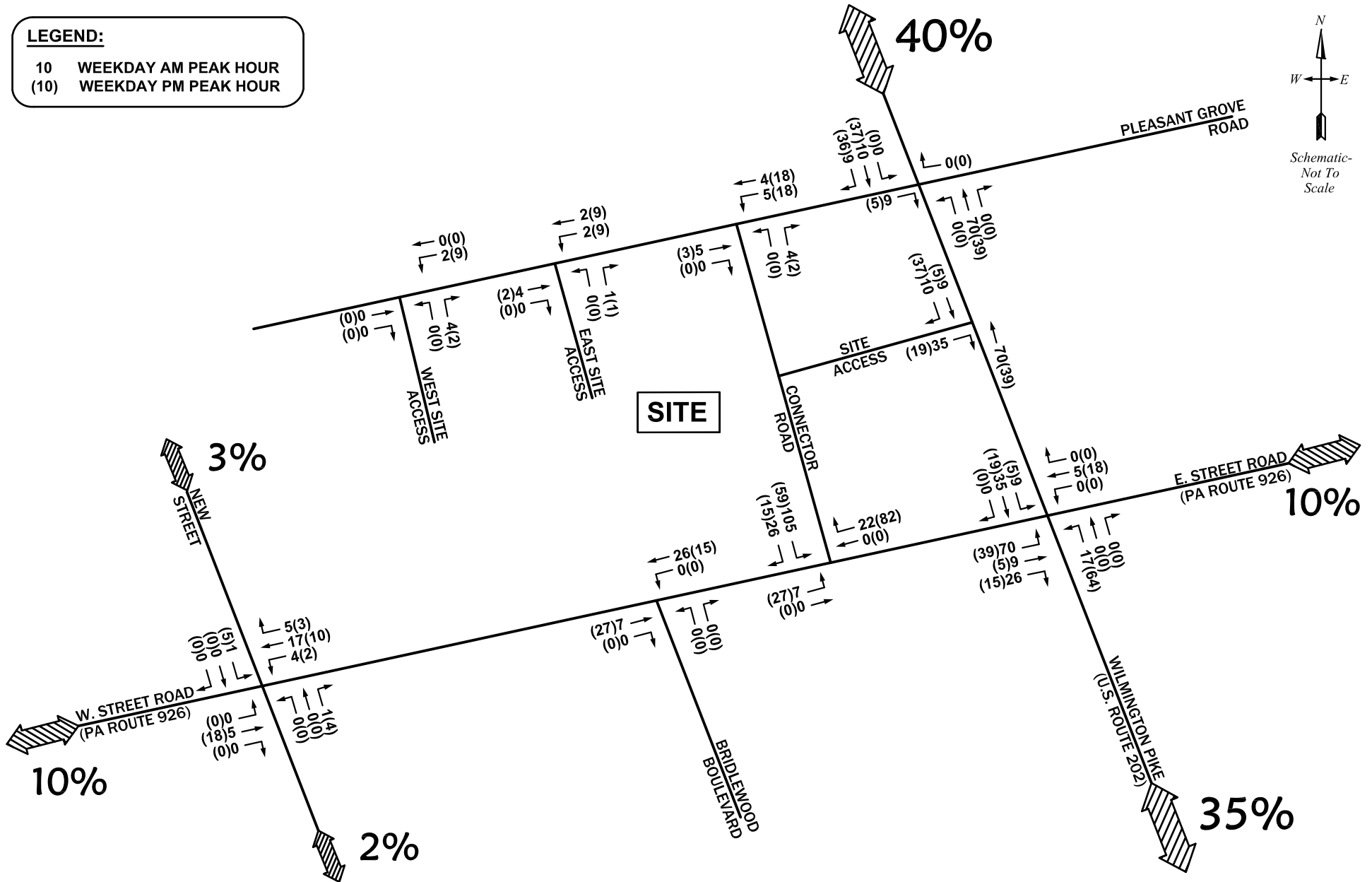
**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 4D**  
 Site Trip Assignment  
 Alternative B

**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR

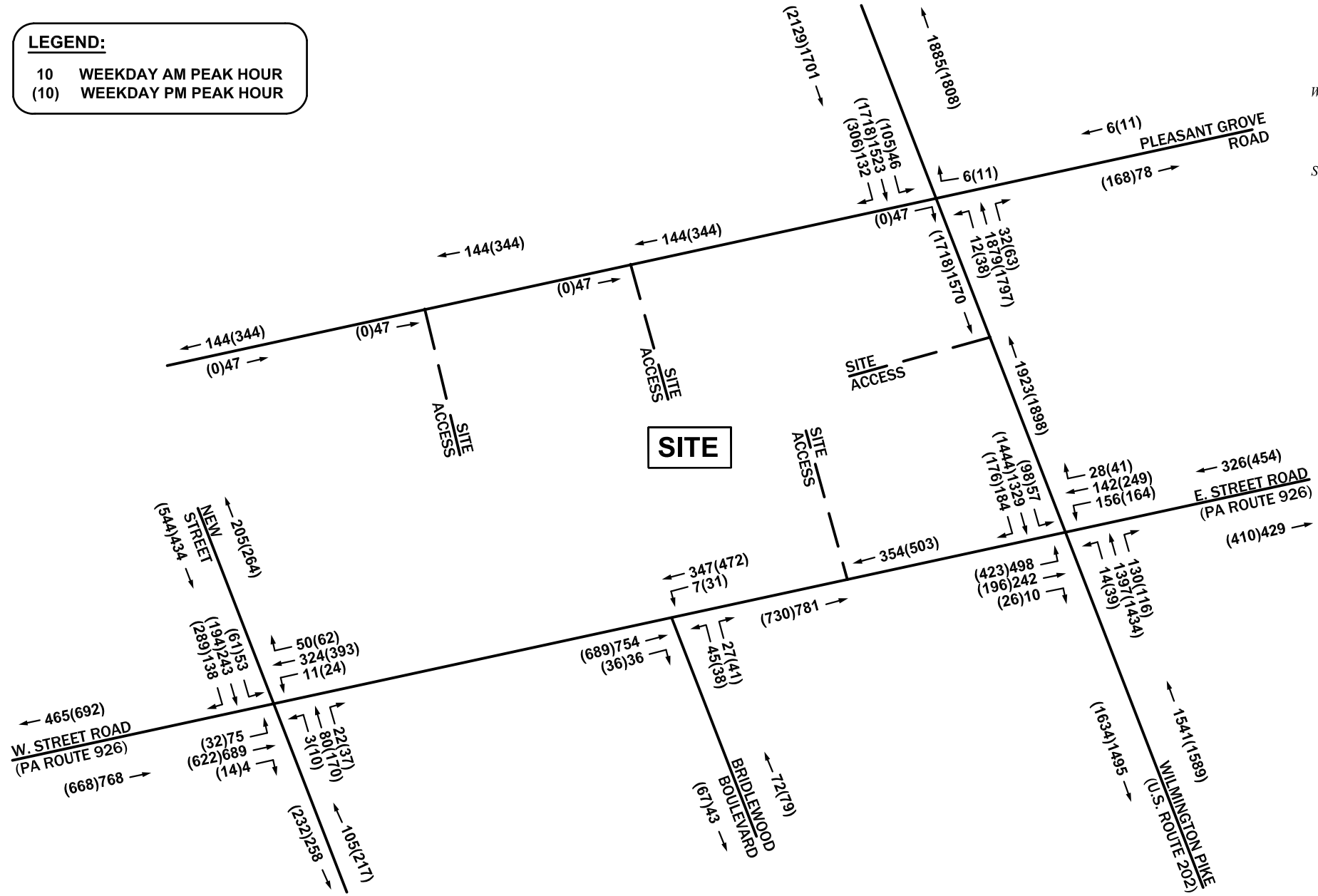
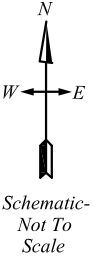


**FIGURE 4E**  
 Site Trip Assignment  
 Alternative C



## **ATTACHMENT 3**

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



**FIGURE 3A**  
 2016 Existing Peak Hour Traffic Volumes

**CREBILLY FARM RESIDENTIAL DEVELOPMENT**



**WESTTOWN TOWNSHIP, CHESTER COUNTY, PA**

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	14	44	0	12	3	79	2	3	6	7	1	9	9	206	0	0	395
07:15	10	50	0	20	4	85	3	4	3	21	0	5	26	173	0	0	404
07:30	6	46	0	29	2	82	2	14	2	27	0	4	16	167	0	6	403
07:45	15	61	0	28	4	86	1	19	0	23	0	7	25	173	0	1	443
Total	45	201	0	89	13	332	8	40	11	78	1	25	76	719	0	7	1645
08:00	4	66	0	41	0	82	0	11	0	22	0	5	22	172	1	1	427
08:15	14	63	0	37	7	83	0	8	1	17	0	3	16	154	0	0	403
08:30	20	53	0	32	0	73	2	9	2	18	0	7	12	190	0	1	419
08:45	10	40	0	41	1	66	0	12	0	18	0	9	11	155	0	0	363
Total	48	222	0	151	8	304	2	40	3	75	0	24	61	671	1	2	1612
16:00	21	39	0	67	2	107	0	19	5	23	0	3	6	130	0	2	424
16:15	22	46	0	77	2	117	1	14	5	32	0	3	7	120	0	4	450
16:30	14	37	0	86	1	102	1	19	2	23	0	5	5	149	0	1	445
16:45	16	57	0	72	1	104	1	18	2	32	0	4	5	139	0	1	452
Total	73	179	0	302	6	430	3	70	14	110	0	15	23	538	0	8	1771
17:00	15	52	0	75	2	96	2	16	4	62	1	8	6	138	1	3	481
17:15	20	52	0	64	4	86	2	13	2	43	0	10	7	160	0	3	466
17:30	17	34	0	80	5	124	2	11	3	28	0	11	8	160	0	3	486
17:45	9	56	0	70	13	87	1	15	1	37	0	7	11	164	0	4	475
Total	61	194	0	289	24	393	7	55	10	170	1	36	32	622	1	13	1908
Grand Total	227	796	0	831	51	1459	20	205	38	433	2	100	192	2550	2	30	6936
Apprch %	12.2	42.9	0	44.8	2.9	84.1	1.2	11.8	6.6	75.6	0.3	17.5	6.9	91.9	0.1	1.1	
Total %	3.3	11.5	0	12	0.7	21	0.3	3	0.5	6.2	0	1.4	2.8	36.8	0	0.4	
Passenger Vehicles	221	792	0	814	46	1398	20	201	34	425	2	96	189	2473	2	30	6743
% Passenger Vehicles	97.4	99.5	0	98	90.2	95.8	100	98	89.5	98.2	100	96	98.4	97	100	100	97.2
Heavy Vehicles	6	4	0	17	5	61	0	4	4	8	0	4	3	77	0	0	193
% Heavy Vehicles	2.6	0.5	0	2	9.8	4.2	0	2	10.5	1.8	0	4	1.6	3	0	0	2.8

Zero Pedestrians were observed during this study.

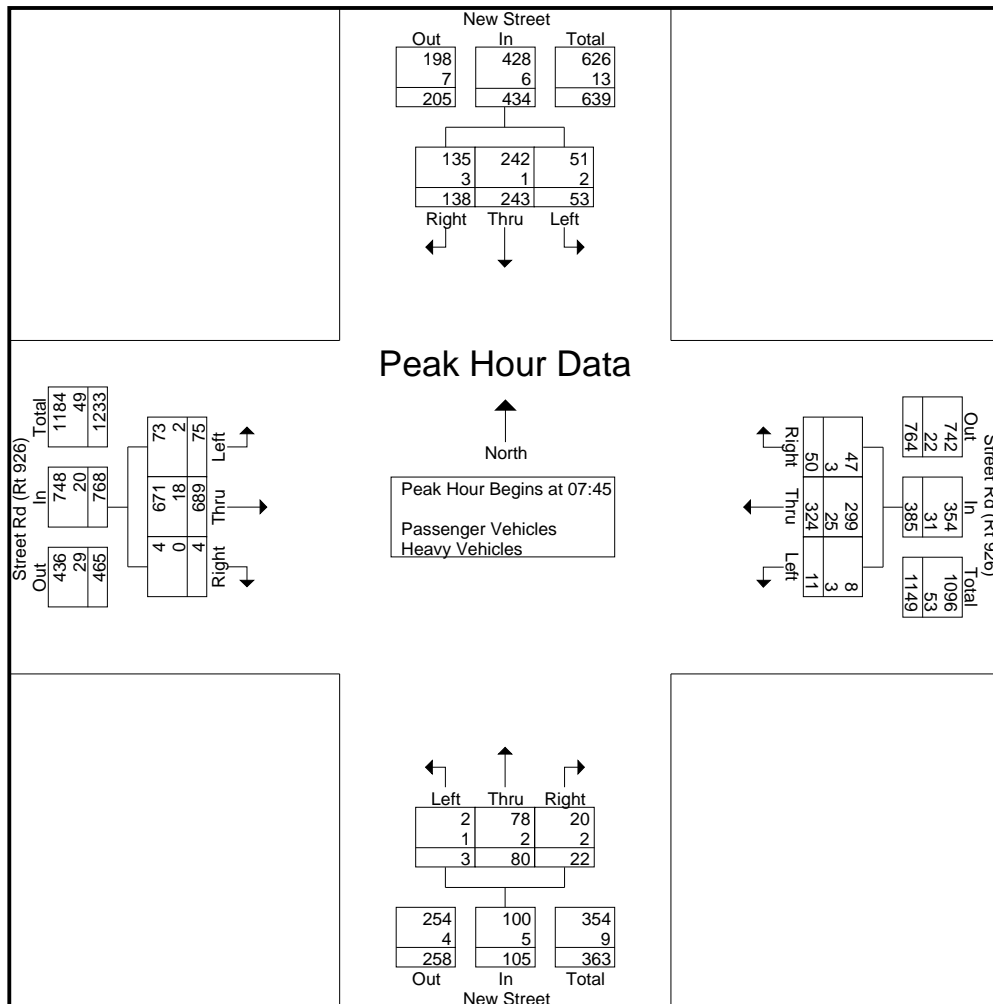
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Start Time	New Street Southbound					Street Rd (Rt 926) Westbound					New Street Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	RO	Rig	App. Total	Left	Thru	RO	Rig	App. Total	Left	Thru	RO	Rig	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	15	61	0	28	104	4	86	1	19	110	0	23	0	7	30	25	173	0	1	199	443
08:00	4	66	0	41	111	0	82	0	11	93	0	22	0	5	27	22	172	1	1	196	427
08:15	14	63	0	37	114	7	83	0	8	98	1	17	0	3	21	16	154	0	0	170	403
08:30	20	53	0	32	105	0	73	2	9	84	2	18	0	7	27	12	190	0	1	203	419
Total Volume	53	243	0	138	434	11	324	3	47	385	3	80	0	22	105	75	689	1	3	768	1692
% App. Total	12.2	56	0	31.8		2.9	84.2	0.8	12.2		2.9	76.2	0	21		9.8	89.7	0.1	0.4		
PHF	.663	.920	.000	.841	.952	.393	.942	.375	.618	.875	.375	.870	.000	.786	.875	.750	.907	.250	.750	.946	.955
Passenger Vehicles																					
% Passenger Vehicles	96.2	99.6	0	97.8	98.6	72.7	92.3	100	93.6	91.9	66.7	97.5	0	90.9	95.2	97.3	97.4	100	100	97.4	96.3
Heavy Vehicles																					
% Heavy Vehicles	3.8	0.4	0	2.2	1.4	27.3	7.7	0	6.4	8.1	33.3	2.5	0	9.1	4.8	2.7	2.6	0	0	2.6	3.7



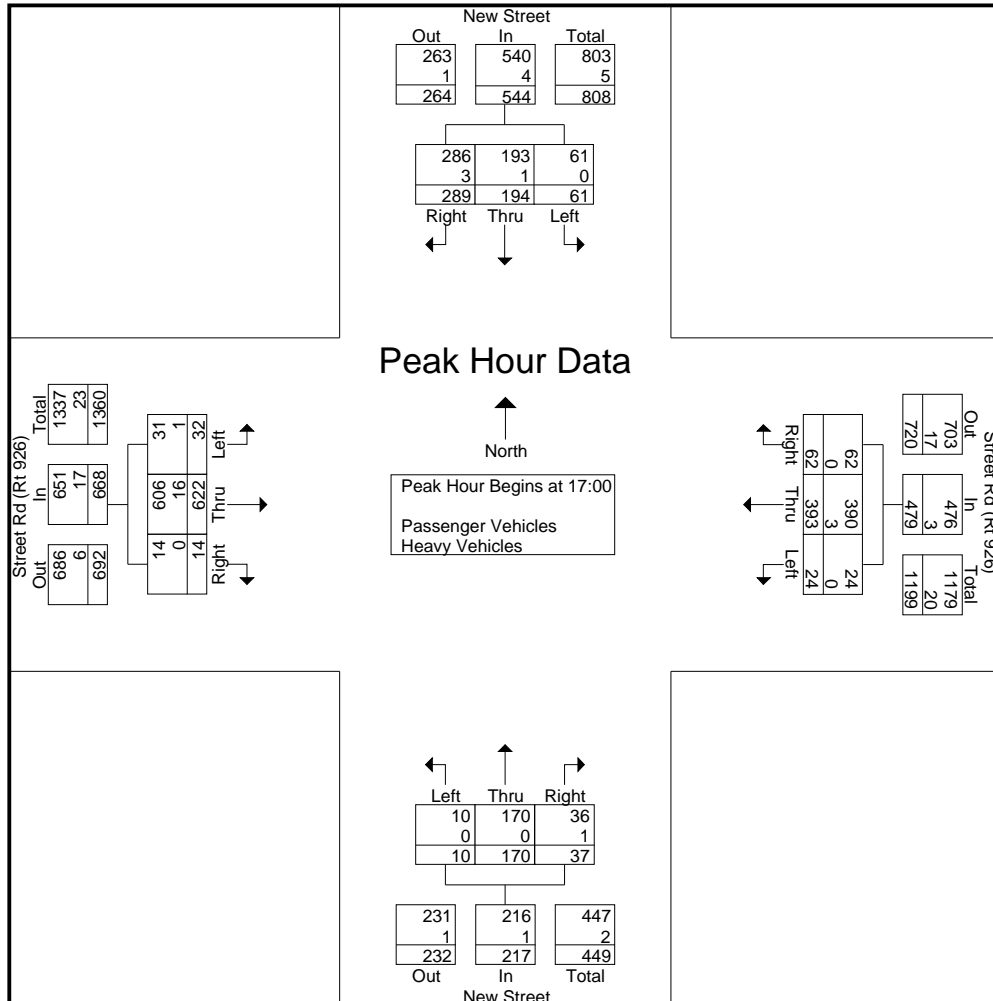
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425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 3

Start Time	New Street Southbound					Street Rd (Rt 926) Westbound					New Street Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	15	52	0	75	142	2	96	2	16	116	4	62	1	8	75	6	138	1	3	148	481
17:15	20	52	0	64	136	4	86	2	13	105	2	43	0	10	55	7	160	0	3	170	466
17:30	17	34	0	80	131	5	124	2	11	142	3	28	0	11	42	8	160	0	3	171	486
17:45	9	56	0	70	135	13	87	1	15	116	1	37	0	7	45	11	164	0	4	179	475
Total Volume	61	194	0	289	544	24	393	7	55	479	10	170	1	36	217	32	622	1	13	668	1908
% App. Total	11.2	35.7	0	53.1		5	82	1.5	11.5		4.6	78.3	0.5	16.6		4.8	93.1	0.1	1.9		
PHF	.763	.866	.000	.903	.958	.462	.792	.875	.859	.843	.625	.685	.250	.818	.723	.727	.948	.250	.813	.933	.981
Passenger Vehicles																					
% Passenger Vehicles	100	99.5	0	99.0	99.3	100	99.2	100	100	99.4	100	100	100	97.2	99.5	96.9	97.4	100	100	97.5	98.7
Heavy Vehicles																					
% Heavy Vehicles	0	0.5	0	1.0	0.7	0	0.8	0	0	0.6	0	0	0	2.8	0.5	3.1	2.6	0	0	2.5	1.3



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	1	0	0	0	1	6	0	0	0	0	0	0	0	3	0	0	11
07:15	0	0	0	0	1	5	0	1	1	0	0	1	0	2	0	0	11
07:30	2	0	0	1	0	6	0	0	0	1	0	0	0	10	0	0	20
07:45	0	0	0	0	0	5	0	2	0	1	0	0	0	4	0	0	12
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>22</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>54</b>
08:00	0	0	0	1	0	9	0	0	0	0	0	0	0	10	0	0	20
08:15	0	0	0	1	3	4	0	1	0	0	0	0	2	1	0	0	12
08:30	2	1	0	1	0	7	0	0	1	1	0	2	0	3	0	0	18
08:45	0	0	0	3	0	4	0	0	0	1	0	0	0	6	0	0	14
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>3</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>64</b>
16:00	1	1	0	1	0	4	0	0	1	2	0	0	0	7	0	0	17
16:15	0	0	0	2	0	4	0	0	1	1	0	0	0	7	0	0	15
16:30	0	1	0	3	0	1	0	0	0	1	0	0	0	4	0	0	10
16:45	0	0	0	1	0	3	0	0	0	0	0	0	0	4	0	0	8
<b>Total</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>50</b>
17:00	0	0	0	2	0	2	0	0	0	0	0	1	0	5	0	0	10
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
17:45	0	0	0	1	0	1	0	0	0	0	0	0	1	5	0	0	8
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>25</b>
<b>Grand Total</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>61</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>193</b>
Approch %	22.2	14.8	0	63	7.1	87.1	0	5.7	25	50	0	25	3.8	96.2	0	0	
Total %	3.1	2.1	0	8.8	2.6	31.6	0	2.1	2.1	4.1	0	2.1	1.6	39.9	0	0	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	13	44	0	12	2	73	2	3	6	7	1	9	9	203	0	0	384
07:15	10	50	0	20	3	80	3	3	2	21	0	4	26	171	0	0	393
07:30	4	46	0	28	2	76	2	14	2	26	0	4	16	157	0	6	383
07:45	15	61	0	28	4	81	1	17	0	22	0	7	25	169	0	1	431
Total	42	201	0	88	11	310	8	37	10	76	1	24	76	700	0	7	1591
08:00	4	66	0	40	0	73	0	11	0	22	0	5	22	162	1	1	407
08:15	14	63	0	36	4	79	0	7	1	17	0	3	14	153	0	0	391
08:30	18	52	0	31	0	66	2	9	1	17	0	5	12	187	0	1	401
08:45	10	40	0	38	1	62	0	12	0	17	0	9	11	149	0	0	349
Total	46	221	0	145	5	280	2	39	2	73	0	22	59	651	1	2	1548
16:00	20	38	0	66	2	103	0	19	4	21	0	3	6	123	0	2	407
16:15	22	46	0	75	2	113	1	14	4	31	0	3	7	113	0	4	435
16:30	14	36	0	83	1	101	1	19	2	22	0	5	5	145	0	1	435
16:45	16	57	0	71	1	101	1	18	2	32	0	4	5	135	0	1	444
Total	72	177	0	295	6	418	3	70	12	106	0	15	23	516	0	8	1721
17:00	15	52	0	73	2	94	2	16	4	62	1	7	6	133	1	3	471
17:15	20	52	0	64	4	86	2	13	2	43	0	10	7	156	0	3	462
17:30	17	33	0	80	5	124	2	11	3	28	0	11	8	158	0	3	483
17:45	9	56	0	69	13	86	1	15	1	37	0	7	10	159	0	4	467
Total	61	193	0	286	24	390	7	55	10	170	1	35	31	606	1	13	1883
Grand Total	221	792	0	814	46	1398	20	201	34	425	2	96	189	2473	2	30	6743
Apprch %	12.1	43.3	0	44.6	2.8	84	1.2	12.1	6.1	76.3	0.4	17.2	7	91.8	0.1	1.1	
Total %	3.3	11.7	0	12.1	0.7	20.7	0.3	3	0.5	6.3	0	1.4	2.8	36.7	0	0.4	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	5	82	5	10	192	4	298
07:15	2	94	6	11	191	12	316
07:30	5	92	6	6	165	7	281
07:45	4	94	11	5	189	10	313
Total	16	362	28	32	737	33	1208
08:00	0	90	9	6	184	2	291
08:15	3	86	13	3	178	7	290
08:30	0	77	12	13	203	17	322
08:45	0	75	10	8	183	11	287
Total	3	328	44	30	748	37	1190
16:00	3	128	4	3	140	14	292
16:15	2	112	4	4	143	3	268
16:30	5	129	5	5	163	8	315
16:45	6	110	6	7	142	6	277
Total	16	479	19	19	588	31	1152
17:00	5	115	10	9	158	11	308
17:15	6	110	14	11	186	7	334
17:30	8	134	7	12	164	9	334
17:45	12	113	7	9	181	9	331
Total	31	472	38	41	689	36	1307
Grand Total	66	1641	129	122	2762	137	4857
Apprch %	3.9	96.1	51.4	48.6	95.3	4.7	
Total %	1.4	33.8	2.7	2.5	56.9	2.8	
Passenger Vehicles	66	1558	129	122	2649	136	4660
% Passenger Vehicles	100	94.9	100	100	95.9	99.3	95.9
Heavy Vehicles	0	83	0	0	113	1	197
% Heavy Vehicles	0	5.1	0	0	4.1	0.7	4.1

Zero Pedestrians were observed during this study.



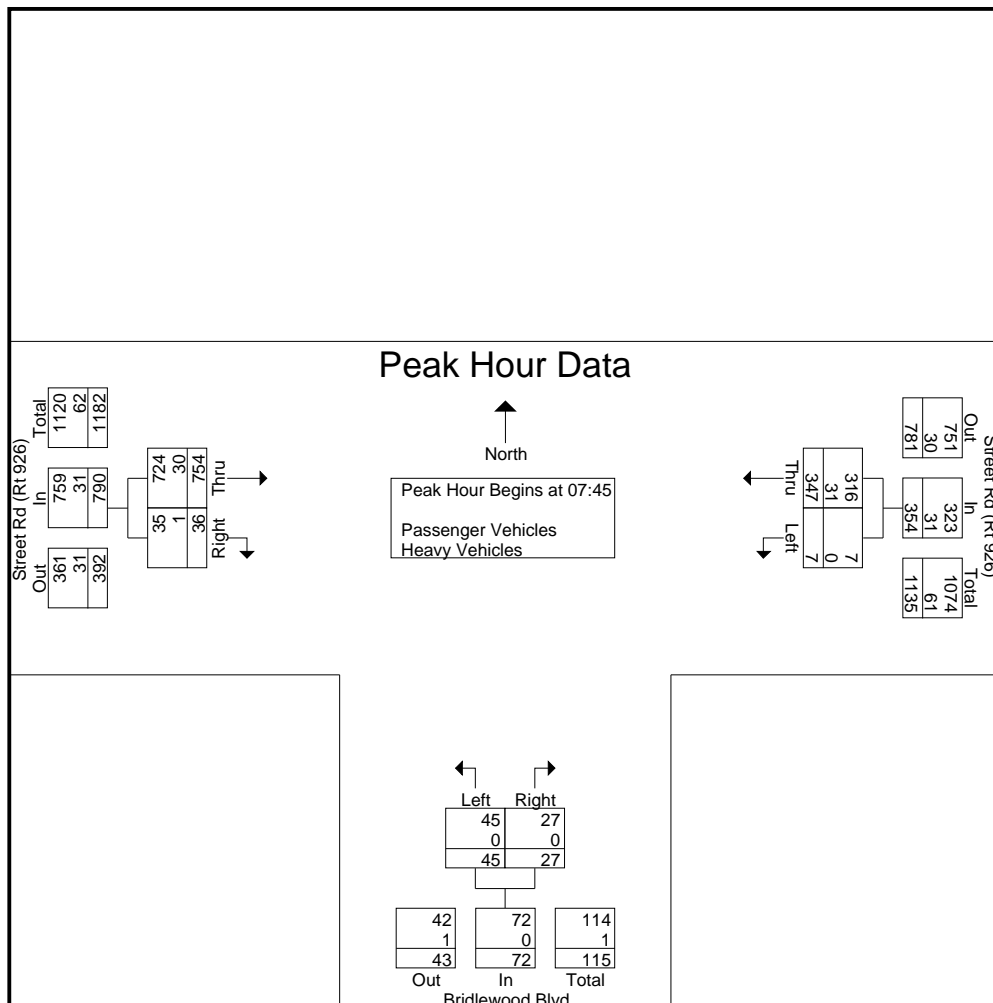
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 2

Start Time	Street Rd (Rt 926) Westbound			Bridlewood Blvd Northbound			Street Rd (Rt 926) Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45										
07:45	4	94	98	11	5	16	189	10	199	313
08:00	0	90	90	9	6	15	184	2	186	291
08:15	3	86	89	13	3	16	178	7	185	290
08:30	0	77	77	12	13	25	203	17	220	322
<b>Total Volume</b>	<b>7</b>	<b>347</b>	<b>354</b>	<b>45</b>	<b>27</b>	<b>72</b>	<b>754</b>	<b>36</b>	<b>790</b>	<b>1216</b>
<b>% App. Total</b>	<b>2</b>	<b>98</b>		<b>62.5</b>	<b>37.5</b>		<b>95.4</b>	<b>4.6</b>		
<b>PHF</b>	<b>.438</b>	<b>.923</b>	<b>.903</b>	<b>.865</b>	<b>.519</b>	<b>.720</b>	<b>.929</b>	<b>.529</b>	<b>.898</b>	<b>.944</b>
Passenger Vehicles	7	316	323	45	27	72	724	35	759	1154
% Passenger Vehicles	100	91.1	91.2	100	100	100	96.0	97.2	96.1	94.9
Heavy Vehicles	0	31	31	0	0	0	30	1	31	62
% Heavy Vehicles	0	8.9	8.8	0	0	0	4.0	2.8	3.9	5.1



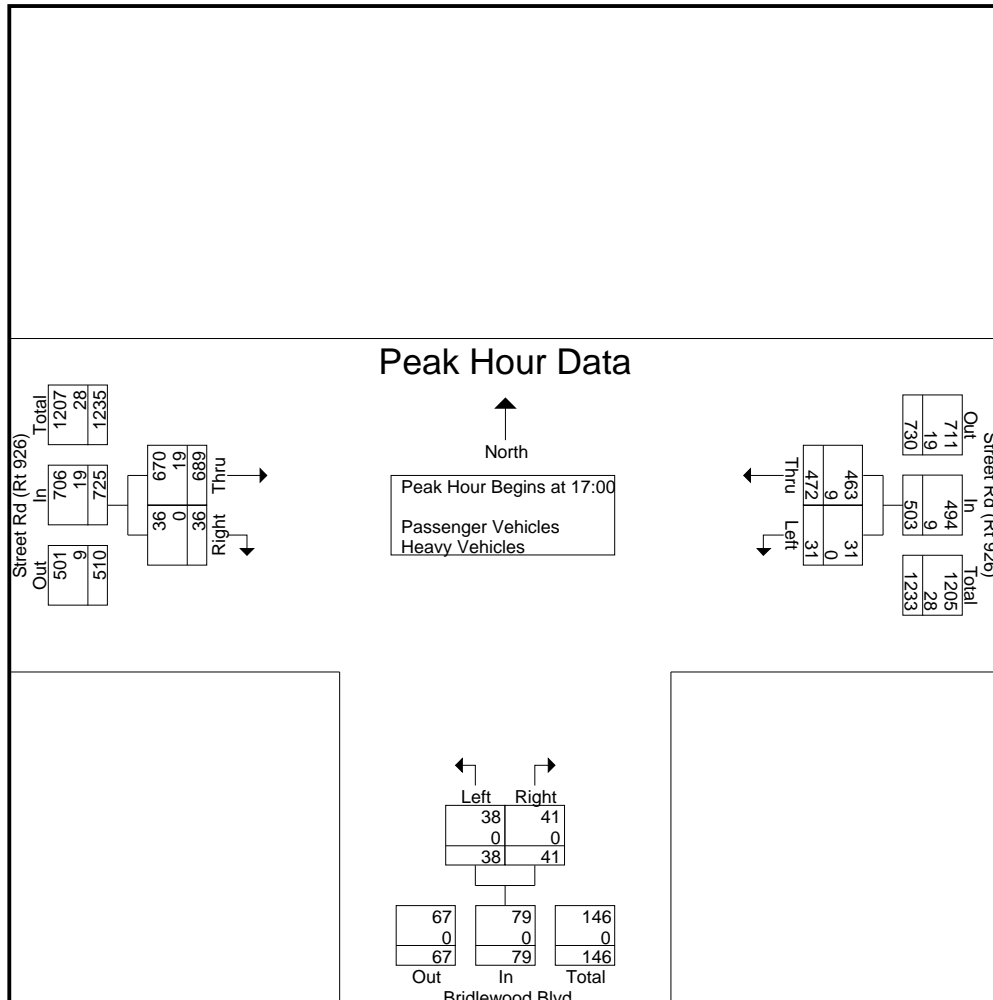
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 3

Start Time	Street Rd (Rt 926) Westbound			Bridlewood Blvd Northbound			Street Rd (Rt 926) Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	5	115	120	10	9	19	158	11	169	308
17:15	6	110	116	14	11	25	186	7	193	334
17:30	8	134	142	7	12	19	164	9	173	334
17:45	12	113	125	7	9	16	181	9	190	331
Total Volume	31	472	503	38	41	79	689	36	725	1307
% App. Total	6.2	93.8		48.1	51.9		95	5		
PHF	.646	.881	.886	.679	.854	.790	.926	.818	.939	.978
Passenger Vehicles	31	463	494	38	41	79	670	36	706	1279
% Passenger Vehicles	100	98.1	98.2	100	100	100	97.2	100	97.4	97.9
Heavy Vehicles	0	9	9	0	0	0	19	0	19	28
% Heavy Vehicles	0	1.9	1.8	0	0	0	2.8	0	2.6	2.1



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	0	6	0	0	6	0	12
07:15	0	9	0	0	6	0	15
07:30	0	6	0	0	12	0	18
07:45	0	6	0	0	6	0	12
Total	0	27	0	0	30	0	57
08:00	0	10	0	0	14	0	24
08:15	0	7	0	0	3	0	10
08:30	0	8	0	0	7	1	16
08:45	0	6	0	0	10	0	16
Total	0	31	0	0	34	1	66
16:00	0	4	0	0	11	0	15
16:15	0	5	0	0	9	0	14
16:30	0	4	0	0	6	0	10
16:45	0	3	0	0	4	0	7
Total	0	16	0	0	30	0	46
17:00	0	3	0	0	6	0	9
17:15	0	1	0	0	6	0	7
17:30	0	2	0	0	2	0	4
17:45	0	3	0	0	5	0	8
Total	0	9	0	0	19	0	28
Grand Total	0	83	0	0	113	1	197
Apprch %	0	100	0	0	99.1	0.9	
Total %	0	42.1	0	0	57.4	0.5	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	5	76	5	10	186	4	286
07:15	2	85	6	11	185	12	301
07:30	5	86	6	6	153	7	263
07:45	4	88	11	5	183	10	301
Total	16	335	28	32	707	33	1151
08:00	0	80	9	6	170	2	267
08:15	3	79	13	3	175	7	280
08:30	0	69	12	13	196	16	306
08:45	0	69	10	8	173	11	271
Total	3	297	44	30	714	36	1124
16:00	3	124	4	3	129	14	277
16:15	2	107	4	4	134	3	254
16:30	5	125	5	5	157	8	305
16:45	6	107	6	7	138	6	270
Total	16	463	19	19	558	31	1106
17:00	5	112	10	9	152	11	299
17:15	6	109	14	11	180	7	327
17:30	8	132	7	12	162	9	330
17:45	12	110	7	9	176	9	323
Total	31	463	38	41	670	36	1279
Grand Total	66	1558	129	122	2649	136	4660
Apprch %	4.1	95.9	51.4	48.6	95.1	4.9	
Total %	1.4	33.4	2.8	2.6	56.8	2.9	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound				Street Rd (Rt 926) Westbound				Route 202 Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	25	278	2	41	32	26	1	1	2	261	5	33	131	68	0	4	910
07:15	10	321	5	45	49	37	0	11	1	319	6	32	114	54	0	2	1006
07:30	9	283	6	37	28	37	0	6	5	309	2	21	128	63	0	1	935
07:45	13	267	5	43	47	42	2	7	6	264	5	26	125	57	0	3	912
<b>Total</b>	<b>57</b>	<b>1149</b>	<b>18</b>	<b>166</b>	<b>156</b>	<b>142</b>	<b>3</b>	<b>25</b>	<b>14</b>	<b>1153</b>	<b>18</b>	<b>112</b>	<b>498</b>	<b>242</b>	<b>0</b>	<b>10</b>	<b>3763</b>
08:00	14	306	1	25	24	40	1	9	4	274	4	27	92	56	0	0	877
08:15	13	267	5	30	41	43	0	6	6	230	5	30	131	57	0	2	866
08:30	10	279	1	34	40	31	0	8	3	238	1	30	118	55	0	3	851
08:45	13	275	4	48	42	17	1	9	3	247	4	28	111	50	0	5	857
<b>Total</b>	<b>50</b>	<b>1127</b>	<b>11</b>	<b>137</b>	<b>147</b>	<b>131</b>	<b>2</b>	<b>32</b>	<b>16</b>	<b>989</b>	<b>14</b>	<b>115</b>	<b>452</b>	<b>218</b>	<b>0</b>	<b>10</b>	<b>3451</b>
16:00	28	312	15	31	29	58	0	9	16	355	1	26	105	49	0	6	1040
16:15	13	343	7	40	44	62	3	11	5	384	9	22	87	41	0	4	1075
16:30	22	287	13	30	43	67	5	3	12	338	10	14	130	62	0	8	1044
16:45	35	358	11	29	48	62	6	4	6	357	14	20	101	44	0	8	1103
<b>Total</b>	<b>98</b>	<b>1300</b>	<b>46</b>	<b>130</b>	<b>164</b>	<b>249</b>	<b>14</b>	<b>27</b>	<b>39</b>	<b>1434</b>	<b>34</b>	<b>82</b>	<b>423</b>	<b>196</b>	<b>0</b>	<b>26</b>	<b>4262</b>
17:00	21	303	10	25	38	57	1	5	7	312	13	17	77	35	0	7	928
17:15	33	318	13	35	37	47	1	6	7	335	10	18	113	69	0	4	1046
17:30	22	336	9	37	41	63	3	0	9	356	7	18	102	33	0	7	1043
17:45	12	319	13	33	62	73	1	2	11	364	7	19	113	41	0	3	1073
<b>Total</b>	<b>88</b>	<b>1276</b>	<b>45</b>	<b>130</b>	<b>178</b>	<b>240</b>	<b>6</b>	<b>13</b>	<b>34</b>	<b>1367</b>	<b>37</b>	<b>72</b>	<b>405</b>	<b>178</b>	<b>0</b>	<b>21</b>	<b>4090</b>
<b>Grand Total</b>	<b>293</b>	<b>4852</b>	<b>120</b>	<b>563</b>	<b>645</b>	<b>762</b>	<b>25</b>	<b>97</b>	<b>103</b>	<b>4943</b>	<b>103</b>	<b>381</b>	<b>1778</b>	<b>834</b>	<b>0</b>	<b>67</b>	<b>15566</b>
<b>Apprch %</b>	5	83.3	2.1	9.7	42.2	49.8	1.6	6.3	1.9	89.4	1.9	6.9	66.4	31.1	0	2.5	
<b>Total %</b>	1.9	31.2	0.8	3.6	4.1	4.9	0.2	0.6	0.7	31.8	0.7	2.4	11.4	5.4	0	0.4	
<b>Passenger Vehicles</b>	<b>280</b>	<b>4505</b>	<b>120</b>	<b>520</b>	<b>622</b>	<b>747</b>	<b>25</b>	<b>82</b>	<b>98</b>	<b>4640</b>	<b>103</b>	<b>351</b>	<b>1743</b>	<b>797</b>	<b>0</b>	<b>64</b>	<b>14697</b>
<b>% Passenger Vehicles</b>	<b>95.6</b>	<b>92.8</b>	<b>100</b>	<b>92.4</b>	<b>96.4</b>	<b>98</b>	<b>100</b>	<b>84.5</b>	<b>95.1</b>	<b>93.9</b>	<b>100</b>	<b>92.1</b>	<b>98</b>	<b>95.6</b>	<b>0</b>	<b>95.5</b>	<b>94.4</b>
<b>Heavy Vehicles</b>	<b>13</b>	<b>347</b>	<b>0</b>	<b>43</b>	<b>23</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>5</b>	<b>303</b>	<b>0</b>	<b>30</b>	<b>35</b>	<b>37</b>	<b>0</b>	<b>3</b>	<b>869</b>
<b>% Heavy Vehicles</b>	<b>4.4</b>	<b>7.2</b>	<b>0</b>	<b>7.6</b>	<b>3.6</b>	<b>2</b>	<b>0</b>	<b>15.5</b>	<b>4.9</b>	<b>6.1</b>	<b>0</b>	<b>7.9</b>	<b>2</b>	<b>4.4</b>	<b>0</b>	<b>4.5</b>	<b>5.6</b>

Zero Pedestrians were observed during this study.

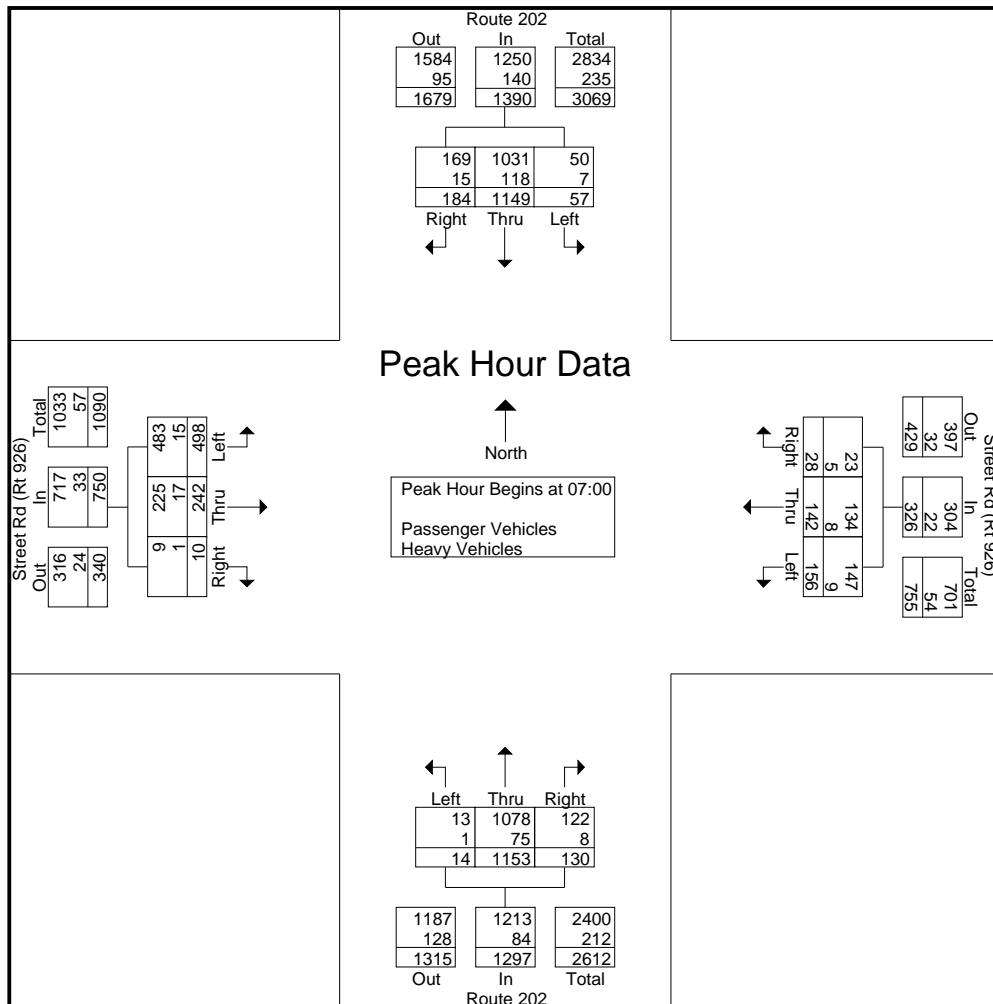
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 2

Start Time	Route 202 Southbound					Street Rd (Rt 926) Westbound					Route 202 Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	RO	Rig ht	App. Total	Left	Thru	RO	Rig ht	App. Total	Left	Thru	RO	Rig ht	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	25	278	2	41	346	32	26	1	1	60	2	261	5	33	301	131	68	0	4	203	910
07:15	10	321	5	45	381	49	37	0	11	97	1	319	6	32	358	114	54	0	2	170	1006
07:30	9	283	6	37	335	28	37	0	6	71	5	309	2	21	337	128	63	0	1	192	935
07:45	13	267	5	43	328	47	42	2	7	98	6	264	5	26	301	125	57	0	3	185	912
Total Volume	57	1149	18	166	1390	156	142	3	25	326	14	1153	18	112	1297	498	242	0	10	750	3763
% App. Total	4.1	82.7	1.3	11.9		47.9	43.6	0.9	7.7		1.1	88.9	1.4	8.6		66.4	32.3	0	1.3		
PHF	.570	.895	.750	.922	.912	.796	.845	.375	.568	.832	.583	.904	.750	.848	.906	.950	.890	.000	.625	.924	.935
Passenger Vehicles	1031					1078															
% Passenger Vehicles	87.7	89.7	100	91.0	89.9	94.2	94.4	100	80.0	93.3	92.9	93.5	100	92.9	93.5	97.0	93.0	0	90.0	95.6	92.6
Heavy Vehicles																					
% Heavy Vehicles	12.3	10.3	0	9.0	10.1	5.8	5.6	0	20.0	6.7	7.1	6.5	0	7.1	6.5	3.0	7.0	0	10.0	4.4	7.4



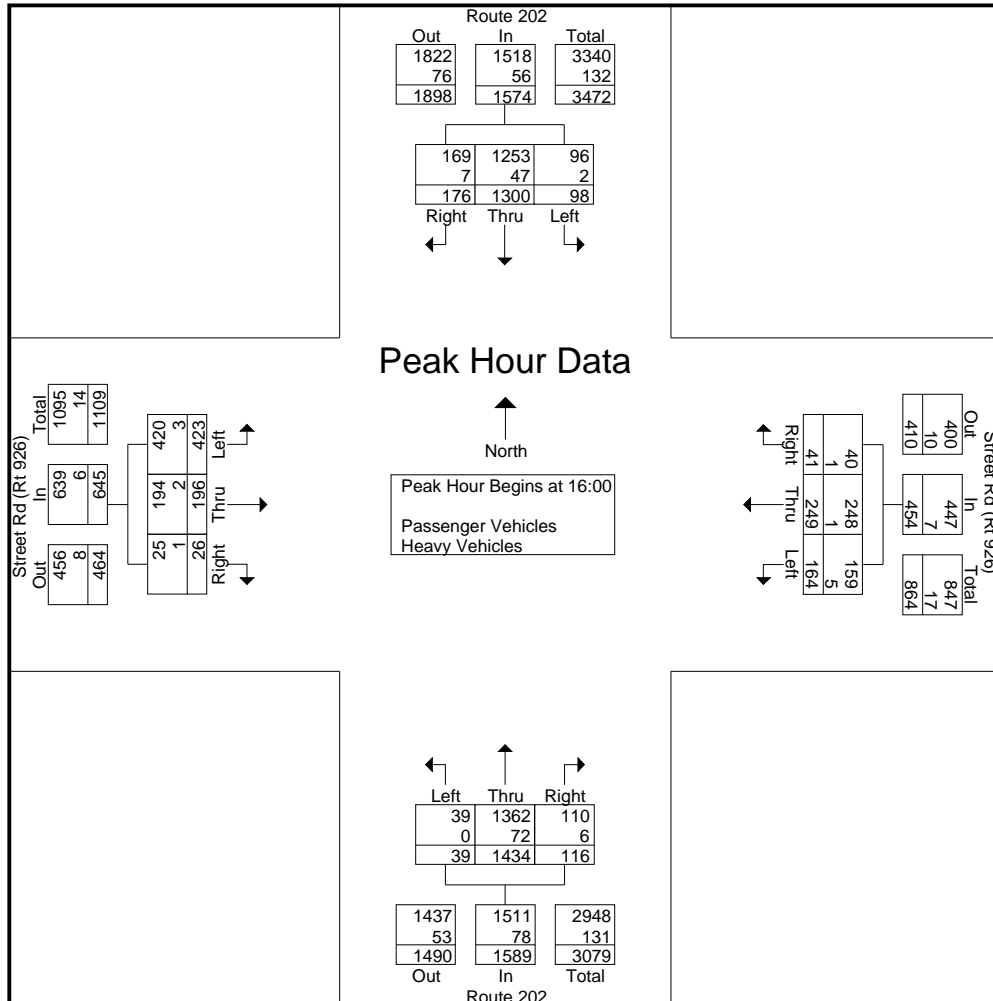
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 3

Start Time	Route 202 Southbound					Street Rd (Rt 926) Westbound					Route 202 Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	28	312	15	31	386	29	58	0	9	96	16	355	1	26	398	105	49	0	6	160	1040
16:15	13	343	7	40	403	44	62	3	11	120	5	384	9	22	420	87	41	0	4	132	1075
16:30	22	287	13	30	352	43	67	5	3	118	12	338	10	14	374	130	62	0	8	200	1044
16:45	35	358	11	29	433	48	62	6	4	120	6	357	14	20	397	101	44	0	8	153	1103
Total Volume	98	1300	46	130	1574	164	249	14	27	454	39	1434	34	82	1589	423	196	0	26	645	4262
% App. Total	6.2	82.6	2.9	8.3		36.1	54.8	3.1	5.9		2.5	90.2	2.1	5.2		65.6	30.4	0	4		
PHF	.700	.908	.767	.813	.909	.854	.929	.583	.614	.946	.609	.934	.607	.788	.946	.813	.790	.000	.813	.806	.966
Passenger Vehicles	1253					1362															
% Passenger Vehicles	98.0	96.4	100	94.6	96.4	97.0	99.6	100	96.3	98.5	100	95.0	100	92.7	95.1	99.3	99.0	0	96.2	99.1	96.6
Heavy Vehicles																					
% Heavy Vehicles	2.0	3.6	0	5.4	3.6	3.0	0.4	0	3.7	1.5	0	5.0	0	7.3	4.9	0.7	1.0	0	3.8	0.9	3.4



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File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Route 202 Southbound				Street Rd (Rt 926) Westbound				Route 202 Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	3	31	0	4	2	1	0	1	1	17	0	3	1	5	0	0	69
07:15	0	36	0	6	3	4	0	3	0	12	0	2	1	4	0	0	71
07:30	2	26	0	2	2	1	0	1	0	21	0	0	5	2	0	0	62
07:45	2	25	0	3	2	2	0	0	0	25	0	3	8	6	0	1	77
Total	7	118	0	15	9	8	0	5	1	75	0	8	15	17	0	1	279
08:00	2	38	0	4	1	3	0	1	2	28	0	3	4	3	0	0	89
08:15	0	25	0	6	1	2	0	0	1	25	0	4	3	7	0	0	74
08:30	0	32	0	6	2	1	0	0	1	26	0	3	3	2	0	0	76
08:45	1	34	0	4	2	0	0	1	0	21	0	2	2	6	0	1	74
Total	3	129	0	20	6	6	0	2	4	100	0	12	12	18	0	1	313
16:00	1	12	0	2	1	1	0	1	0	23	0	3	0	0	0	1	45
16:15	0	14	0	4	1	0	0	0	0	22	0	2	2	2	0	0	47
16:30	1	11	0	1	3	0	0	0	0	13	0	1	1	0	0	0	31
16:45	0	10	0	0	0	0	0	0	0	14	0	0	0	0	0	0	24
Total	2	47	0	7	5	1	0	1	0	72	0	6	3	2	0	1	147
17:00	0	17	0	1	0	0	0	2	0	11	0	0	2	0	0	0	33
17:15	1	12	0	0	2	0	0	5	0	16	0	3	1	0	0	0	40
17:30	0	11	0	0	1	0	0	0	0	15	0	0	1	0	0	0	28
17:45	0	13	0	0	0	0	0	0	0	14	0	1	1	0	0	0	29
Total	1	53	0	1	3	0	0	7	0	56	0	4	5	0	0	0	130
Grand Total	13	347	0	43	23	15	0	15	5	303	0	30	35	37	0	3	869
Apprch %	3.2	86.1	0	10.7	43.4	28.3	0	28.3	1.5	89.6	0	8.9	46.7	49.3	0	4	
Total %	1.5	39.9	0	4.9	2.6	1.7	0	1.7	0.6	34.9	0	3.5	4	4.3	0	0.3	



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Route 202 Southbound				Street Rd (Rt 926) Westbound				Route 202 Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	22	247	2	37	30	25	1	0	1	244	5	30	130	63	0	4	841
07:15	10	285	5	39	46	33	0	8	1	307	6	30	113	50	0	2	935
07:30	7	257	6	35	26	36	0	5	5	288	2	21	123	61	0	1	873
07:45	11	242	5	40	45	40	2	7	6	239	5	23	117	51	0	2	835
Total	50	1031	18	151	147	134	3	20	13	1078	18	104	483	225	0	9	3484
08:00	12	268	1	21	23	37	1	8	2	246	4	24	88	53	0	0	788
08:15	13	242	5	24	40	41	0	6	5	205	5	26	128	50	0	2	792
08:30	10	247	1	28	38	30	0	8	2	212	1	27	115	53	0	3	775
08:45	12	241	4	44	40	17	1	8	3	226	4	26	109	44	0	4	783
Total	47	998	11	117	141	125	2	30	12	889	14	103	440	200	0	9	3138
16:00	27	300	15	29	28	57	0	8	16	332	1	23	105	49	0	5	995
16:15	13	329	7	36	43	62	3	11	5	362	9	20	85	39	0	4	1028
16:30	21	276	13	29	40	67	5	3	12	325	10	13	129	62	0	8	1013
16:45	35	348	11	29	48	62	6	4	6	343	14	20	101	44	0	8	1079
Total	96	1253	46	123	159	248	14	26	39	1362	34	76	420	194	0	25	4115
17:00	21	286	10	24	38	57	1	3	7	301	13	17	75	35	0	7	895
17:15	32	306	13	35	35	47	1	1	7	319	10	15	112	69	0	4	1006
17:30	22	325	9	37	40	63	3	0	9	341	7	18	101	33	0	7	1015
17:45	12	306	13	33	62	73	1	2	11	350	7	18	112	41	0	3	1044
Total	87	1223	45	129	175	240	6	6	34	1311	37	68	400	178	0	21	3960
Grand Total	280	4505	120	520	622	747	25	82	98	4640	103	351	1743	797	0	64	14697
Apprch %	5.2	83	2.2	9.6	42.1	50.6	1.7	5.6	1.9	89.4	2	6.8	66.9	30.6	0	2.5	
Total %	1.9	30.7	0.8	3.5	4.2	5.1	0.2	0.6	0.7	31.6	0.7	2.4	11.9	5.4	0	0.4	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 20 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 81645104  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	370	14	0	0	2	2	455	5	0	0	14	881
07:15	9	433	31	0	0	2	2	545	6	0	0	13	1041
07:30	5	397	37	0	0	0	2	522	4	0	0	10	977
07:45	13	323	50	0	0	2	6	357	17	0	0	10	778
<b>Total</b>	<b>46</b>	<b>1523</b>	<b>132</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>12</b>	<b>1879</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>3677</b>
08:00	13	367	50	0	0	2	4	407	4	0	1	4	852
08:15	9	252	37	0	0	0	3	290	5	1	0	6	603
08:30	19	275	37	0	0	0	1	231	0	0	0	10	573
08:45	13	332	57	0	0	2	17	304	5	0	0	8	738
<b>Total</b>	<b>54</b>	<b>1226</b>	<b>181</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>25</b>	<b>1232</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>2766</b>
16:00	22	430	79	0	0	4	15	469	8	0	0	0	1027
16:15	18	424	71	0	0	2	8	518	7	0	0	0	1048
16:30	23	401	91	0	0	0	9	490	4	0	0	0	1018
16:45	19	452	67	0	0	2	7	503	6	0	0	0	1056
<b>Total</b>	<b>82</b>	<b>1707</b>	<b>308</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>39</b>	<b>1980</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4149</b>
17:00	32	412	67	0	0	2	5	523	13	0	0	0	1054
17:15	25	461	72	0	0	2	13	545	8	0	0	0	1126
17:30	29	531	90	0	0	0	8	534	14	0	0	0	1206
17:45	19	428	77	0	0	7	12	522	28	0	0	0	1093
<b>Total</b>	<b>105</b>	<b>1832</b>	<b>306</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>38</b>	<b>2124</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4479</b>
<b>Grand Total</b>	<b>287</b>	<b>6288</b>	<b>927</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>114</b>	<b>7215</b>	<b>134</b>	<b>1</b>	<b>1</b>	<b>75</b>	<b>15071</b>
Apprch %	3.8	83.8	12.4	0	0	100	1.5	96.7	1.8	1.3	1.3	97.4	
Total %	1.9	41.7	6.2	0	0	0.2	0.8	47.9	0.9	0	0	0.5	
Passenger Vehicles	281	5903	908	0	0	26	109	6869	130	1	1	75	14303
% Passenger Vehicles	97.9	93.9	98	0	0	89.7	95.6	95.2	97	100	100	100	94.9
Heavy Vehicles	6	385	19	0	0	3	5	346	4	0	0	0	768
% Heavy Vehicles	2.1	6.1	2	0	0	10.3	4.4	4.8	3	0	0	0	5.1

Zero Pedestrians were observed during this study.

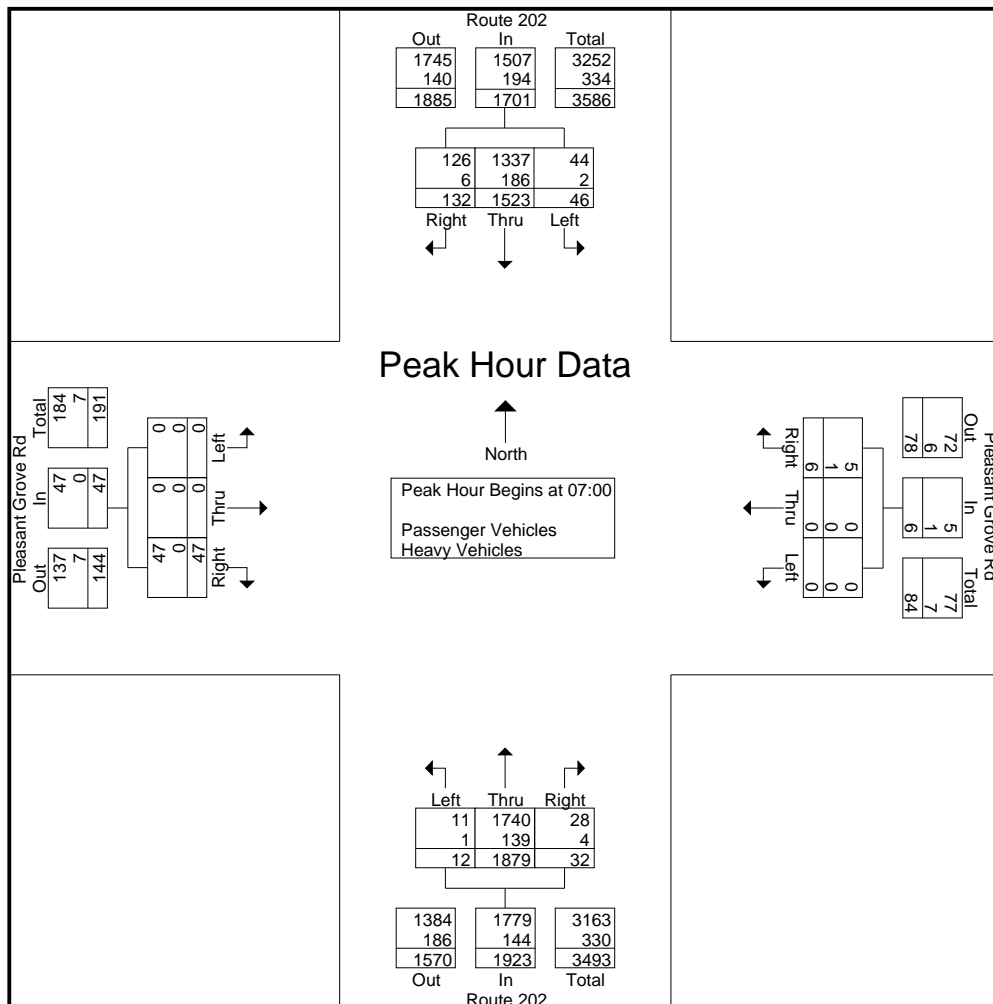
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 20 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 81645104  
Start Date : 9/8/2016  
Page No : 2

Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	19	370	14	403	0	0	2	2	2	455	5	462	0	0	14	14	881
07:15	9	433	31	473	0	0	2	2	2	545	6	553	0	0	13	13	1041
07:30	5	397	37	439	0	0	0	0	2	522	4	528	0	0	10	10	977
07:45	13	323	50	386	0	0	2	2	6	357	17	380	0	0	10	10	778
Total Volume	46	1523	132	1701	0	0	6	6	12	1879	32	1923	0	0	47	47	3677
% App. Total	2.7	89.5	7.8		0	0	100		0.6	97.7	1.7		0	0	100		
PHF	.605	.879	.660	.899	.000	.000	.750	.750	.500	.862	.471	.869	.000	.000	.839	.839	.883
Passenger Vehicles	44	1337	126	1507	0	0	5	5	11	1740	28	1779	0	0	47	47	3338
% Passenger Vehicles	95.7	87.8	95.5	88.6	0	0	83.3	83.3	91.7	92.6	87.5	92.5	0	0	100	100	90.8
Heavy Vehicles	2	186	6	194	0	0	1	1	1	139	4	144	0	0	0	0	339
% Heavy Vehicles	4.3	12.2	4.5	11.4	0	0	16.7	16.7	8.3	7.4	12.5	7.5	0	0	0	0	9.2



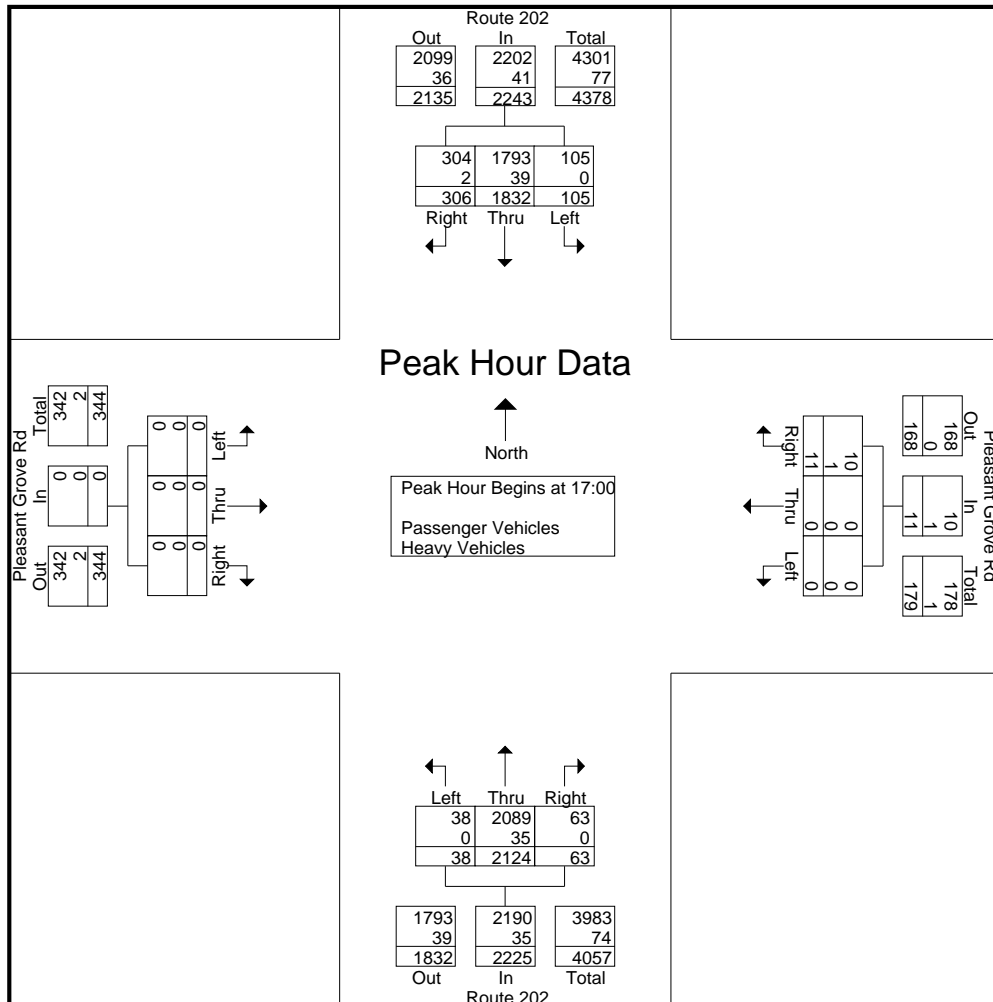
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Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	32	412	67	511	0	0	2	2	5	523	13	541	0	0	0	0	1054
17:15	25	461	72	558	0	0	2	2	13	545	8	566	0	0	0	0	1126
17:30	29	531	90	650	0	0	0	0	8	534	14	556	0	0	0	0	1206
17:45	19	428	77	524	0	0	7	7	12	522	28	562	0	0	0	0	1093
Total Volume	105	1832	306	2243	0	0	11	11	38	2124	63	2225	0	0	0	0	4479
% App. Total	4.7	81.7	13.6		0	0	100		1.7	95.5	2.8		0	0	0		
PHF	.820	.863	.850	.863	.000	.000	.393	.393	.731	.974	.563	.983	.000	.000	.000	.000	.928
Passenger Vehicles	105	1793	304	2202	0	0	10	10	38	2089	63	2190	0	0	0	0	4402
% Passenger Vehicles	100	97.9	99.3	98.2	0	0	90.9	90.9	100	98.4	100	98.4	0	0	0	0	98.3
Heavy Vehicles	0	39	2	41	0	0	1	1	0	35	0	35	0	0	0	0	77
% Heavy Vehicles	0	2.1	0.7	1.8	0	0	9.1	9.1	0	1.6	0	1.6	0	0	0	0	1.7



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 20 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 81645104  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	31	2	0	0	0	0	27	3	0	0	0	63
07:15	0	53	2	0	0	0	1	20	0	0	0	0	76
07:30	0	42	1	0	0	0	0	31	0	0	0	0	74
07:45	2	60	1	0	0	1	0	61	1	0	0	0	126
<b>Total</b>	<b>2</b>	<b>186</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>139</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>339</b>
08:00	2	43	2	0	0	0	0	42	0	0	0	0	89
08:15	0	21	1	0	0	0	1	41	0	0	0	0	64
08:30	1	33	2	0	0	0	0	23	0	0	0	0	59
08:45	0	28	1	0	0	0	1	21	0	0	0	0	51
<b>Total</b>	<b>3</b>	<b>125</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>263</b>
16:00	1	10	1	0	0	1	1	12	0	0	0	0	26
16:15	0	2	1	0	0	0	1	9	0	0	0	0	13
16:30	0	12	2	0	0	0	0	10	0	0	0	0	24
16:45	0	11	1	0	0	0	0	14	0	0	0	0	26
<b>Total</b>	<b>1</b>	<b>35</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89</b>
17:00	0	13	1	0	0	0	0	13	0	0	0	0	27
17:15	0	8	0	0	0	1	0	9	0	0	0	0	18
17:30	0	9	0	0	0	0	0	10	0	0	0	0	19
17:45	0	9	1	0	0	0	0	3	0	0	0	0	13
<b>Total</b>	<b>0</b>	<b>39</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>77</b>
<b>Grand Total</b>	<b>6</b>	<b>385</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>346</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>768</b>
Apprch %	1.5	93.9	4.6	0	0	100	1.4	97.5	1.1	0	0	0	
Total %	0.8	50.1	2.5	0	0	0.4	0.7	45.1	0.5	0	0	0	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
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Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 81645104  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	339	12	0	0	2	2	428	2	0	0	14	818
07:15	9	380	29	0	0	2	1	525	6	0	0	13	965
07:30	5	355	36	0	0	0	2	491	4	0	0	10	903
07:45	11	263	49	0	0	1	6	296	16	0	0	10	652
<b>Total</b>	<b>44</b>	<b>1337</b>	<b>126</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>1740</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>3338</b>
08:00	11	324	48	0	0	2	4	365	4	0	1	4	763
08:15	9	231	36	0	0	0	2	249	5	1	0	6	539
08:30	18	242	35	0	0	0	1	208	0	0	0	10	514
08:45	13	304	56	0	0	2	16	283	5	0	0	8	687
<b>Total</b>	<b>51</b>	<b>1101</b>	<b>175</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>1105</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>2503</b>
16:00	21	420	78	0	0	3	14	457	8	0	0	0	1001
16:15	18	422	70	0	0	2	7	509	7	0	0	0	1035
16:30	23	389	89	0	0	0	9	480	4	0	0	0	994
16:45	19	441	66	0	0	2	7	489	6	0	0	0	1030
<b>Total</b>	<b>81</b>	<b>1672</b>	<b>303</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>37</b>	<b>1935</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4060</b>
17:00	32	399	66	0	0	2	5	510	13	0	0	0	1027
17:15	25	453	72	0	0	1	13	536	8	0	0	0	1108
17:30	29	522	90	0	0	0	8	524	14	0	0	0	1187
17:45	19	419	76	0	0	7	12	519	28	0	0	0	1080
<b>Total</b>	<b>105</b>	<b>1793</b>	<b>304</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>38</b>	<b>2089</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4402</b>
<b>Grand Total</b>	<b>281</b>	<b>5903</b>	<b>908</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>109</b>	<b>6869</b>	<b>130</b>	<b>1</b>	<b>1</b>	<b>75</b>	<b>14303</b>
Apprch %	4	83.2	12.8	0	0	100	1.5	96.6	1.8	1.3	1.3	97.4	
Total %	2	41.3	6.3	0	0	0.2	0.8	48	0.9	0	0	0.5	

## Appendix B

# Traffic Signal Permit Plans, Intersection Sketches, and Existing Crash Data





EMERGENCY PRE-EMPTION PHASING MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	1+5	1+6	2+5	2+6	4	8
1	R	R	R	R	R	R
2,3	R	R	R	R	R	R
4	R	R	R	R	R	R
5,6	R	R	R	R	R	R
7	R	R	R	R	R	R
8	R	R	R	R	R	R
9	R	R	R	R	R	R
10	R	R	R	R	R	R
11, 12	H	H	H	H	H	H
13, 14	H	H	H	H	H	H

EMERGENCY PRE-EMPTION NOTES CONTINUED...

IF SIGNALS HAS BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNALS IS PRE-EMPTED DURING THE MAIN INTERVAL, THE "MAIN" INTERVAL SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "FLASHING HAND" INDICATION IN ITS ENTIRETY, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE PROCEEDING INTO THE PRE-EMPTION PHASE.

IF SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ALL SIGNALS SHALL REMAIN FLASHING.

IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.

UPON COMPLETION OF PRE-EMPTION, PHASE 2, 4, 6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2 & 8 INTERVAL TO SHALL FOLLOW.

IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVED" OPERATION.

THE SIGNALS SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, WHEN ACTIVATED BY EMERGENCY VEHICLE, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.

LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.

CONTROLLED TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR BOTH APPROACHES OF STREET ROAD AND BOTH APPROACHES OF WILMINGTON PIKE WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF TRAFFIC. THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.

THE SIGNALS SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY, THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.

WHEN RETURNING TO NORMAL OPERATION

EMERGENCY PRE-EMPTION NOTES

CONTROLLED TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR BOTH APPROACHES OF STREET ROAD AND BOTH APPROACHES OF WILMINGTON PIKE WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF TRAFFIC. THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.

THE SIGNALS SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY, THEN THE GREEN INTERVAL FOR THE PRE-EMPTED PHASE SHALL FOLLOW.

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	1+5	1+6	2+5	2+6	4	8
1	R	R	R	R	R	R
2,3	R	R	R	R	R	R
4	R	R	R	R	R	R
5,6	R	R	R	R	R	R
7	R	R	R	R	R	R
8	R	R	R	R	R	R
9	R	R	R	R	R	R
10	R	R	R	R	R	R
11, 12	H	H	H	H	H	H
13, 14	H	H	H	H	H	H

FIXED	4	2	4	2	4	2	4	3	4	3
MINIMUM	3	3	3	3	20	3	3	3	3	3
ADD. INIT.					2.0					
MAX. INIT.					37					
PASSAGE	3	3	3	3	5.5	3	3	3	3	3
T.T.R.					15					
T.B.R.					37					
MIN. GAP					3.5					
MAXIMUM I	12	12	7	7	5.3	26				
MAXIMUM II	7	7	12	12	7.0	31				
PEDESTRIAN					9	15	23			
MEMORY	NL	NL	NL	NL	MR	NL	NL			

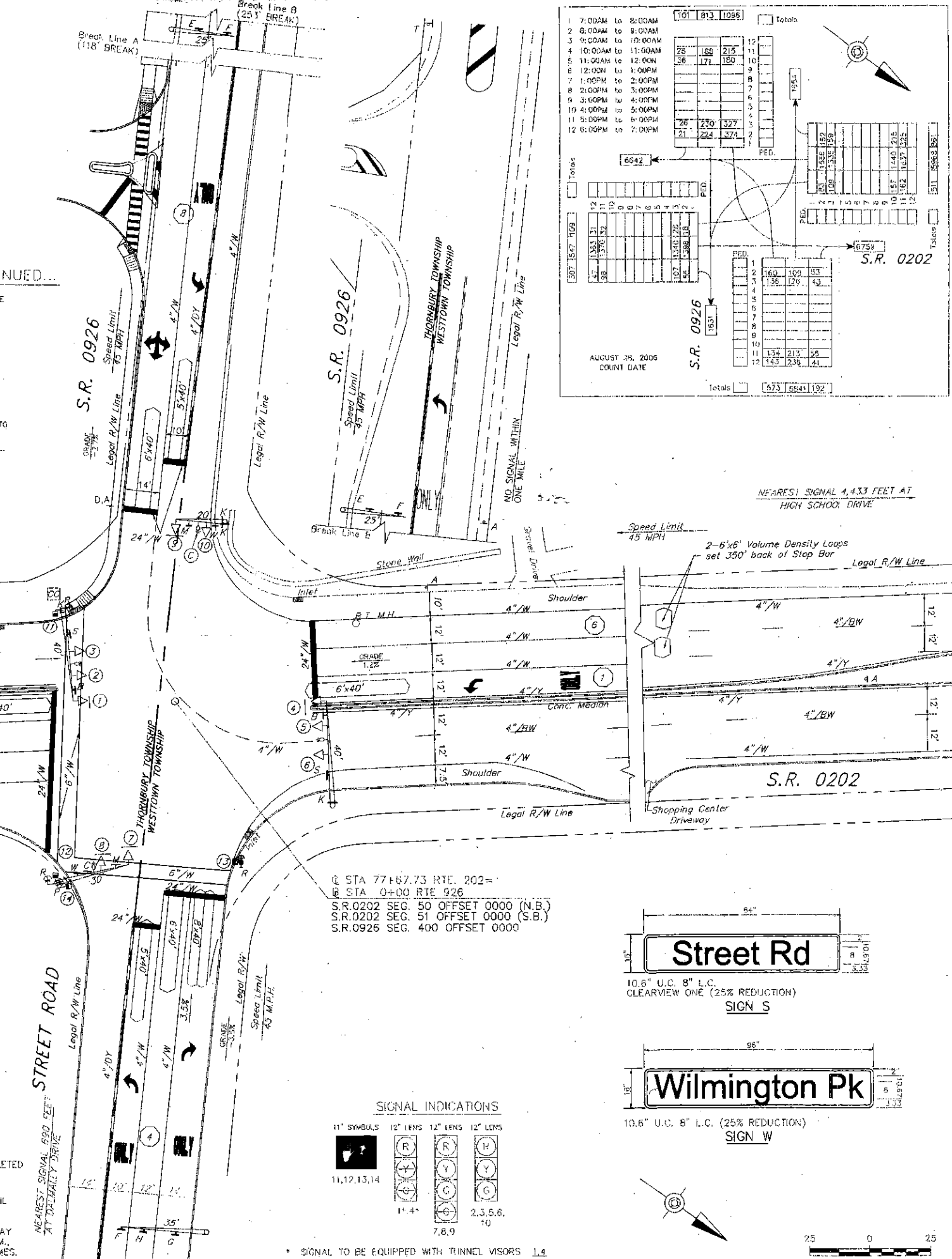
UPON PEDESTRIAN ACTUATION, OTHERWISE DON'T WALK AT ALL TIMES

SIGN TABULATION

PLAT SYMBOL	SERIES NUMBER	SIZE (INCHES)	REMARKS
A	R3-7L	30X30	LEFT LANE MUST TURN LEFT
B	R10-10L	30X36	LEFT TURN SIGNAL
C	R10-11	30X36	NO TURN ON RED
D	R10-6AL	24X30	STOP HERE ON RED
E	R3-RLTR	30X36	OPTIONAL LEFT STRAIGHT AND RIGHT TURN SIGN
F	R3-5L	30X48	LEFT TURN SIGN
G	R3-5R	30X36	RIGHT TURN SIGN
H	R3-5S	30X36	STRAIGHT-THROUGH SIGN
I	R1-1	30X30	STOP SIGN
J	R3-2	24X24	NO LEFT TURN SIGN
K	R9-3A	18X18	NO PEDESTRIAN CROSSING
L	R5-1	30X30	DO NOT ENTER SIGN
M	R3-7 TR	30X30	ALL TRAFFIC MUST TURN RIGHT
N	R3-7R	30X30	RIGHT LANE MUST TURN RIGHT
P	R10-4(B)	9X18	PUSH BUTTON FOR WALK SIGNAL
R	R10-4(L)	9X18	PUSH BUTTON FOR WALK SIGNAL
S	D3-4	18X84	STREET RD
T	R10-7	24X30	DO NOT BLOCK INTERSECTION
W	D3-4	16X96	WILMINGTON PK

EMERGENCY PRE-EMPTION NOTES CONTINUED...

- IF SIGNALS HAS BEEN ACTUATED BY PEDESTRIAN PUSH BUTTON AND THE SIGNALS IS PRE-EMPTED DURING THE MAIN INTERVAL, THE "MAIN" INTERVAL SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "FLASHING HAND" INDICATION IN ITS ENTIRETY, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE PROCEEDING INTO THE PRE-EMPTION PHASE.
- IF SIGNALS ARE FLASHING WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PRE-EMPTION PHASES ARE ACTIVATED WHILE IN PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PRE-EMPTION PHASE.
- UPON COMPLETION OF PRE-EMPTION, PHASE 2, 4, 6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2 & 8 INTERVAL TO SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHED, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVED" OPERATION.
- THE SIGNALS SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, WHEN ACTIVATED BY EMERGENCY VEHICLE, FOLLOWED BY THE GREEN INTERVAL OF THE PRE-EMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.



Traffic Signal Timing Table

Time	101	103	105	Totals
1 7:00AM to 8:00AM	28	168	215	12
2 8:00AM to 9:00AM	56	171	180	11
3 9:00AM to 10:00AM				9
4 10:00AM to 11:00AM				8
5 11:00AM to 12:00PM				7
6 12:00PM to 1:00PM				6
7 1:00PM to 2:00PM				5
8 2:00PM to 3:00PM				4
9 3:00PM to 4:00PM				3
10 4:00PM to 5:00PM				2
11 5:00PM to 6:00PM	28	250	327	11
12 6:00PM to 7:00PM	21	224	374	12
<b>Totals</b>	<b>573</b>	<b>5841</b>	<b>192</b>	

GENERAL NOTES

- NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.
- ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITEE.
- ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.
- POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 7 FEET.
- SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.
- ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.
- THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.
- EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.
- CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.
- PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.
- THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITEE COMPLIES WITH THE PROVISIONS OF ACT 38, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 12, 1991.
- WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIDDING.
- PERMITEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.
- CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY. INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

LEGEND

EXISTING MAINT. ARM/IRRETRIEVABLE SIGN	LOOP SIGN/ARROW
VEHICULAR SIGNAL HEAD/VEISOR/DIRECTIONAL ARROW/IDENTIFYING NUMBER	EMERGENCY PRE-EMPTION FLASHING BEACON
PEDESTRIAN SIGNAL HEAD/IDENTIFYING NUMBER	EMERGENCY PRE-EMPTION DETECTOR
PEDESTRIAN PUSHBUTTON/SIGN	LUMINAIRE
SIGN/ADJUSTING LETTER	CURB CUT RAMP
PAD MOUNTED CONTROL CABINET	UTILITY POLE
	PHASE NUMBER

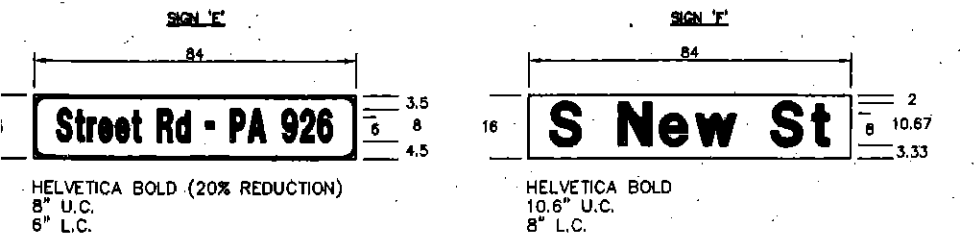
PENNSYLVANIA DEPARTMENT OF TRANSPORTATION ENGINEERING DISTRICT 6-D

COUNTY: CHESTER  
 MUNICIPALITY: WESTTOWN TWP./THORNBURY TWP.  
 INTERSECTION: WILMINGTON PIKE (S.R. 0202)  
 STREET ROAD (S.R. 0926)

REVISIONS

NO.	REVISION	DATE	BY	CHKD.	DATE	RECOM.	DATE
1	MODERNIZATION & WIDENING OF DUAL LEFT TURN LANE	11/3/97	MY	ML	3/27/97	DM	3/10/97
2	TRIM ADJUSTMENT - MAX II	10/2/98	MR	ML	10/2/98	DM	10/2/98
3	TIMING CHANGE	4/2/03	SK	ML	9/10/03	LRB	8/11/03
4	TIMING CHANGE	10/21/02	MLK	ML	11/08/02	LRB	11/6/02
5	TIMING CHANGE	8/18/04	MLK	ML	8/20/04	LRB	8/20/04
6	WEST LEG STREET ROAD IMPROVEMENT	11/15/07	MLK	ML	3/28/07	LRB	6/20/07
7	CVS G.W. CORRESP.	9/27/08	MLK	ML	6/11/07	LRB	6/20/07

SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R9-3	18"x18"	NO PEDESTRIAN CROSSING
B	W3-3	36"x36"	SIGNAL AHEAD
C	R10-11	24"x30"	NO TURN ON RED
D	R10-11	30"x36"	NO TURN ON RED
E	D3-4	72"x16"	SINGLE LINE OVERHEAD STREET NAME
F	D3-4	96"x16"	SINGLE LINE OVERHEAD STREET NAME
G	R10-6L	24"x30"	STOP HERE ON RED



Time	Count	Total
7:00 AM TO 8:00 AM	1	1
8:00 AM TO 9:00 AM	2	2
9:00 AM TO 10:00 AM	3	3
10:00 AM TO 11:00 AM	4	4
11:00 AM TO 12:00 PM	5	5
12:00 PM TO 1:00 PM	6	6
1:00 PM TO 2:00 PM	7	7
2:00 PM TO 3:00 PM	8	8
3:00 PM TO 4:00 PM	9	9
4:00 PM TO 5:00 PM	10	10
5:00 PM TO 6:00 PM	11	11
6:00 PM TO 7:00 PM	12	12
7:00 PM TO 8:00 PM	13	13
8:00 PM TO 9:00 PM	14	14
9:00 PM TO 10:00 PM	15	15
10:00 PM TO 11:00 PM	16	16
11:00 PM TO 12:00 AM	17	17
12:00 AM TO 1:00 AM	18	18
1:00 AM TO 2:00 AM	19	19
2:00 AM TO 3:00 AM	20	20
3:00 AM TO 4:00 AM	21	21
4:00 AM TO 5:00 AM	22	22
5:00 AM TO 6:00 AM	23	23
6:00 AM TO 7:00 AM	24	24
7:00 AM TO 8:00 AM	25	25
8:00 AM TO 9:00 AM	26	26
9:00 AM TO 10:00 AM	27	27
10:00 AM TO 11:00 AM	28	28
11:00 AM TO 12:00 PM	29	29
12:00 PM TO 1:00 PM	30	30
1:00 PM TO 2:00 PM	31	31
2:00 PM TO 3:00 PM	32	32
3:00 PM TO 4:00 PM	33	33
4:00 PM TO 5:00 PM	34	34
5:00 PM TO 6:00 PM	35	35
6:00 PM TO 7:00 PM	36	36
7:00 PM TO 8:00 PM	37	37
8:00 PM TO 9:00 PM	38	38
9:00 PM TO 10:00 PM	39	39
10:00 PM TO 11:00 PM	40	40
11:00 PM TO 12:00 AM	41	41
12:00 AM TO 1:00 AM	42	42
1:00 AM TO 2:00 AM	43	43
2:00 AM TO 3:00 AM	44	44
3:00 AM TO 4:00 AM	45	45
4:00 AM TO 5:00 AM	46	46
5:00 AM TO 6:00 AM	47	47
6:00 AM TO 7:00 AM	48	48
7:00 AM TO 8:00 AM	49	49
8:00 AM TO 9:00 AM	50	50
9:00 AM TO 10:00 AM	51	51
10:00 AM TO 11:00 AM	52	52
11:00 AM TO 12:00 PM	53	53
12:00 PM TO 1:00 PM	54	54
1:00 PM TO 2:00 PM	55	55
2:00 PM TO 3:00 PM	56	56
3:00 PM TO 4:00 PM	57	57
4:00 PM TO 5:00 PM	58	58
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1:00 AM TO 2:00 AM	67	67
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4:00 AM TO 5:00 AM	70	70
5:00 AM TO 6:00 AM	71	71
6:00 AM TO 7:00 AM	72	72
7:00 AM TO 8:00 AM	73	73
8:00 AM TO 9:00 AM	74	74
9:00 AM TO 10:00 AM	75	75
10:00 AM TO 11:00 AM	76	76
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12:00 AM TO 1:00 AM	306	306
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2:00 AM TO 3:00 AM	308	308
3:00 AM TO 4:00 AM	309	309
4:00 AM TO 5:00 AM		

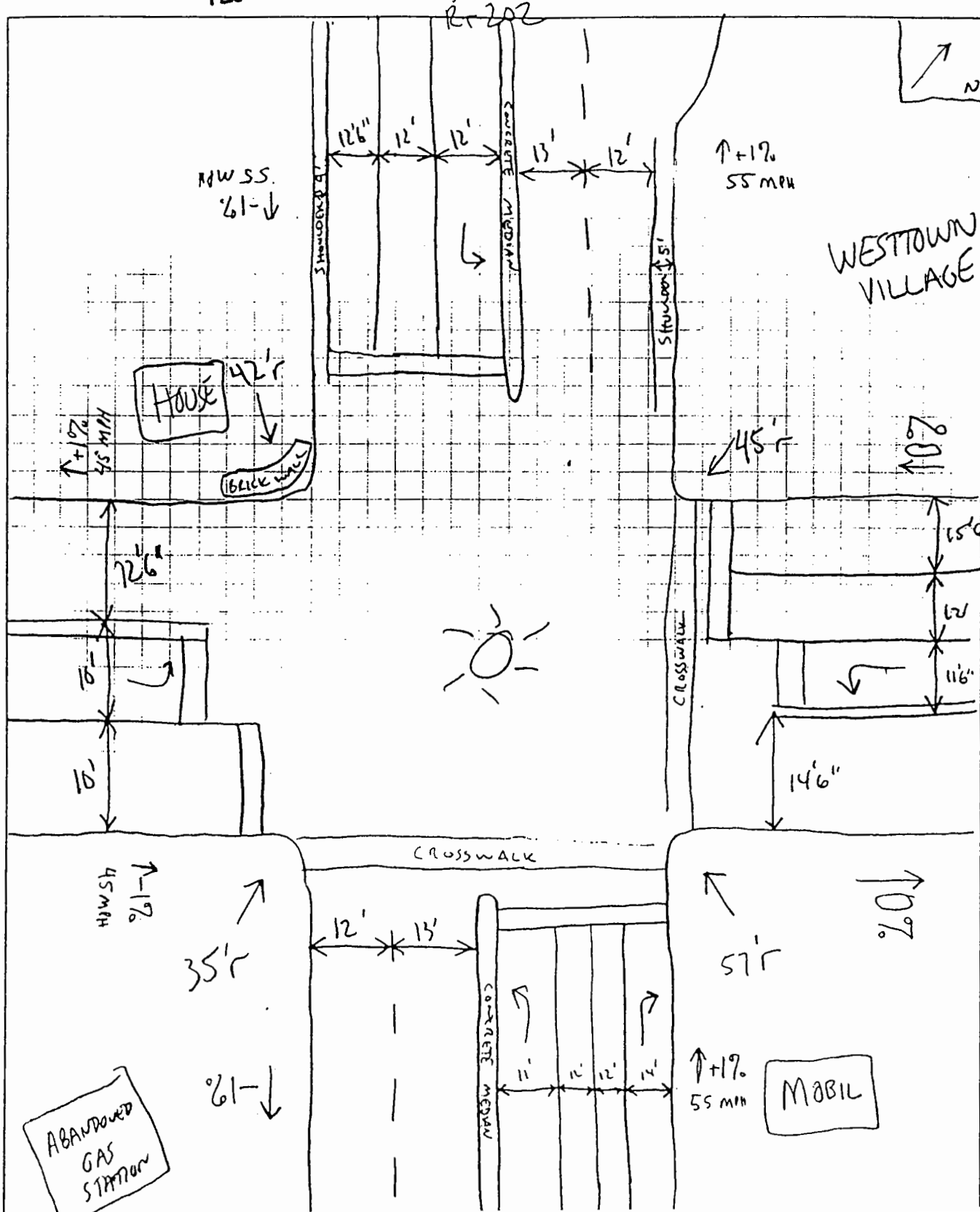


RESPONSIVE  
TRANSPORTATION  
SOLUTIONS

Job WESTOWN TWP  
Description RT 202 +  
RT 892 926

McM Project No. 803002.00  
Designed By NDS  
Checked By CSM

Sheet 01 of 05  
Date 1/10/03  
Date



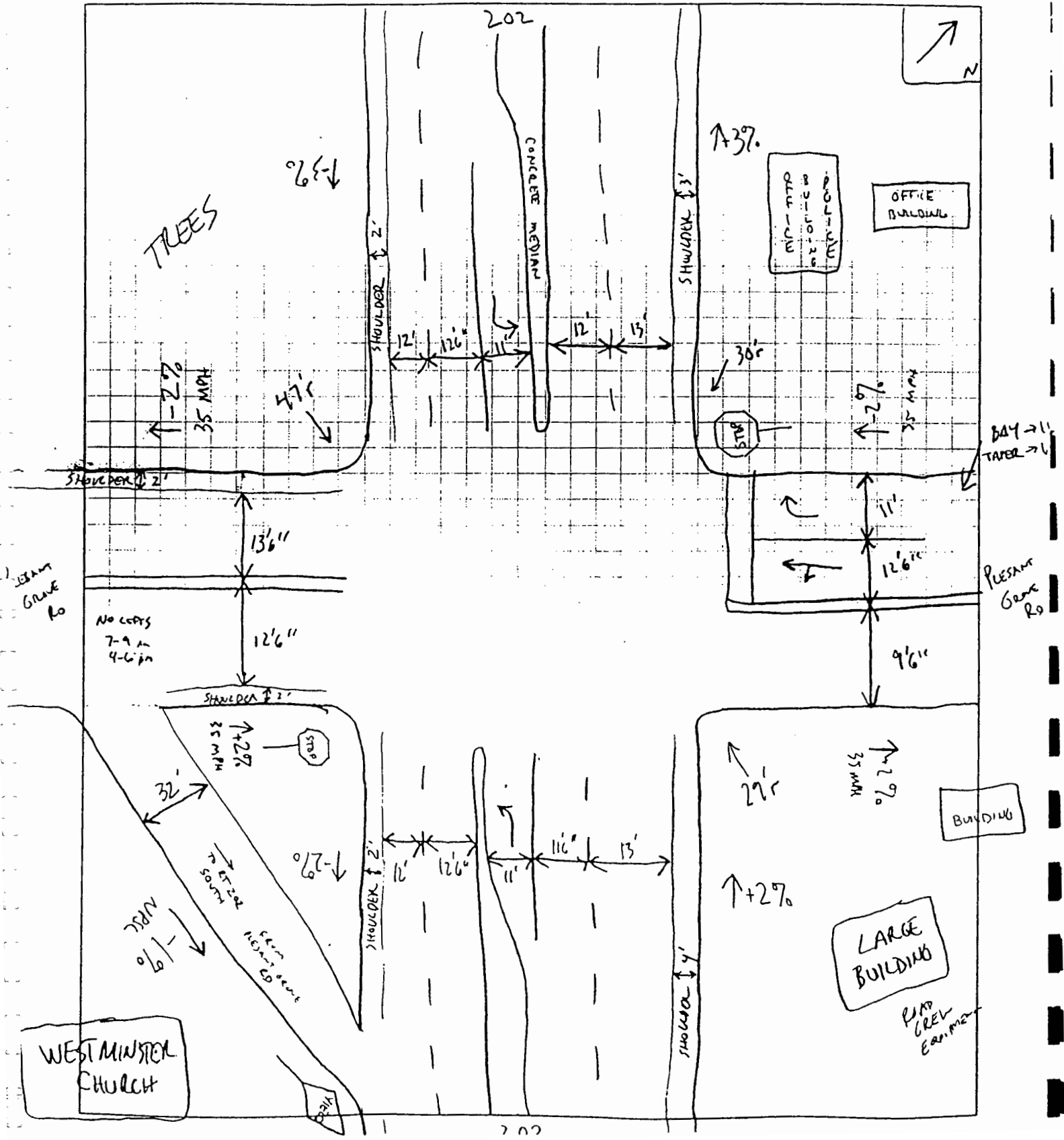
RT 926  
SHEET  
R5

RESPONSIVE  
TRANSPORTATION  
SOLUTIONS

Job WESTTOWN TWP  
Description PLEASANT GROVE RD +  
NEW STREET 202

McM Project No. 803002.00  
Designed By NDB  
Checked By CSN

Sheet 02 of 05  
Date 1/10/03  
Date



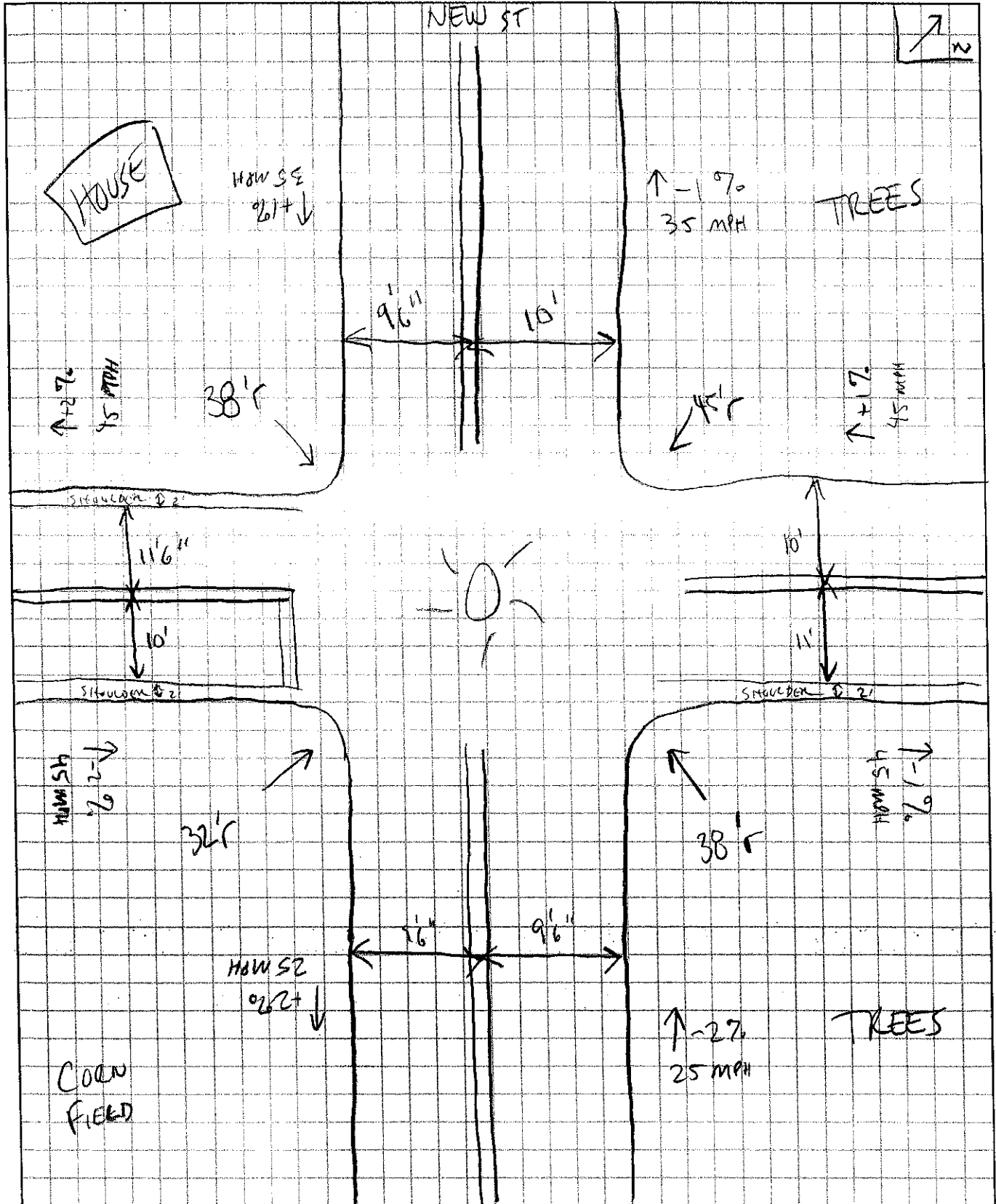


RESPONSIVE  
TRANSPORTATION  
SOLUTIONS

Job WESTTOWN FWP  
Description RT 926 +  
NEW ST

McM Project No. 803002.00  
Designed By NDB  
Checked By CSM

Sheet 03 of 05  
Date 1/10/08  
Date



NEW ST

## **Crash Summary Tables**



**Table 1. Reportable Crash Frequency  
Study Area Intersections**

Location	Traffic Control	Frequency of Crashes (Number per Year)					Total	Average Per Year
		2013	2014	2015	2016	2017		
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	Signal	6	4	8	6	2	26	5.2
U.S. Route 202 (Wilmington Pike) and Stetson School Drive / Skiles Boulevard	Signal	2	3	4	4	2	15	3.0
Street Road (S.R. 0926) and New Street	Signal	0	1	3	0	1	5	1.0
U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road	TWSC	3	3	4	4	2	16	3.2
Street Road (S.R. 0926) and Bridlewood Boulevard	TWSC	0	0	1	0	0	1	0.2
New Street and West Pleasant Grove Road	TWSC	0	0	1	0	1	2	0.4
West Pleasant Grove Road and Dunvegan Road	TWSC	0	0	0	0	0	0	0.0
West Pleasant Grove Road and Westminster Presbyterian Church Accesses	TWSC	0	0	0	0	0	0	0.0
<b>Total</b>		<b>11</b>	<b>11</b>	<b>21</b>	<b>14</b>	<b>8</b>	<b>65</b>	<b>13.0</b>

**Table 2. Reportable Crash Types  
Study Area Intersections**

<b>Intersection/ Type of Crash</b>	<b>Traffic Control</b>	<b>Rear-End</b>	<b>Head-On</b>	<b>Angle</b>	<b>Same Direction Sideswipe</b>	<b>Hit Fixed Object</b>	<b>Total</b>
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	Signal	18	1	3	1	3	26
U.S. Route 202 (Wilmington Pike) and Stetson School Drive / Skiles Boulevard	Signal	14	0	1	0	0	15
Street Road (S.R. 0926) and New Street	Signal	2	0	3	0	0	5
U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road	TWSC	10	0	4	1	1	16
Street Road (S.R. 0926) and Bridlewood Boulevard	TWSC	1	0	0	0	0	1
New Street and West Pleasant Grove Road	TWSC	0	0	1	0	1	2
West Pleasant Grove Road and Dunvegan Road	TWSC	0	0	0	0	0	0
West Pleasant Grove Road and Westminster Presbyterian Church Accesses	TWSC	0	0	0	0	0	0
<b>Total</b>		<b>45</b>	<b>1</b>	<b>12</b>	<b>2</b>	<b>5</b>	<b>65</b>

**Table 3. Reportable Crash Severities  
Study Area Intersections**

<b>Intersection/ Type of Crash</b>	<b>Traffic Control</b>	<b>Suspected Serious Injury</b>	<b>Suspected Minor Injury</b>	<b>Possible Injury</b>	<b>Property Damage Only</b>	<b>Unknown Severity</b>	<b>Unknown if Injured</b>	<b>Total</b>
U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)	Signal	2	1	3	14	5	1	26
U.S. Route 202 (Wilmington Pike) and Stetson School Drive / Skiles Boulevard	Signal	0	2	2	10	1	0	15
Street Road (S.R. 0926) and New Street	Signal	0	0	1	3	1	0	5
U.S. Route 202 (Wilmington Pike) and West Pleasant Grove Road	TWSC	0	1	3	10	2	0	16
Street Road (S.R. 0926) and Bridlewood Boulevard	TWSC	0	0	0	1	0	0	1
New Street and West Pleasant Grove Road	TWSC	0	0	1	1	0	0	2
West Pleasant Grove Road and Dunvegan Road	TWSC	0	0	0	0	0	0	0
West Pleasant Grove Road and Westminster Presbyterian Church Accesses	TWSC	0	0	0	0	0	0	0
<b>Total</b>		<b>2</b>	<b>4</b>	<b>10</b>	<b>39</b>	<b>9</b>	<b>1</b>	<b>65</b>

**Table 4. Reportable Crash Frequency  
Midblock Locations**

Midblock Location	Frequency of Crashes (Number per Year)						Average Per Year
	2013	2014	2015	2016	2017	Total	
U.S. Route 202 (Wilmington Pike) between Street Road (S.R. 0926) and West Pleasant Grove Road	6	5	3	10	5	29	5.8
U.S. Route 202 (Wilmington Pike) between West Pleasant Grove Road Stetson School Drive / Skiles Boulevard	2	2	1	3	6	14	2.8
Street Road (S.R. 0926) between U.S. Route 202 (Wilmington Pike) and Bridlewood Boulevard	0	0	1	2	1	4	0.8
Street Road (S.R. 0926) between Bridlewood Boulevard and New Street	0	2	1	1	0	4	0.8
New Street between Street Road (S.R. 0926) and West Pleasant Grove Road	0	0	1	1	2	4	0.8
West Pleasant Grove Road between New Street and Dunvegan Road	0	1	0	0	0	1	0.2
West Pleasant Grove Road between Dunvegan Road and Westminster Presbyterian Accesses	0	0	0	0	0	0	0.0
West Pleasant Grove Road between Westminster Presbyterian Accesses and U.S .Route 202 (Wilmington Pike)	0	0	0	0	0	0	0.0
<b>Total</b>	<b>8</b>	<b>10</b>	<b>7</b>	<b>17</b>	<b>14</b>	<b>56</b>	<b>11.2</b>

**Table 5. Reportable Crash Types  
Midblock Locations**

<b>Midblock Location/ Type of Crash</b>	<b>Head On</b>	<b>Angle</b>	<b>Rear End</b>	<b>Same Direction Sideswipe</b>	<b>Opposite Direction Sideswipe</b>	<b>Hit Fixed Object</b>	<b>Hit Deer</b>	<b>Non- Collision</b>	<b>Total</b>
U.S. Route 202 (Wilmington Pike) between Street Road (S.R. 0926) and West Pleasant Grove Road	0	0	14	2	1	7	4	1	29
U.S. Route 202 (Wilmington Pike) between West Pleasant Grove Road Stetson School Drive / Skiles Boulevard	0	1	9	0	0	2	2	0	14
Street Road (S.R. 0926) between U.S. Route 202 (Wilmington Pike) and Bridlewood Boulevard	0	2	2	0	0	0	0	0	4
Street Road (S.R. 0926) between Bridlewood Boulevard and New Street	1	0	1	0	0	1	1	0	4
New Street between Street Road (S.R. 0926) and West Pleasant Grove Road	1	0	0	0	1	2	0	0	4
West Pleasant Grove Road between New Street and Dunvegan Road	0	0	0	0	0	1	0	0	1
West Pleasant Grove Road between Dunvegan Road and Westminster Presbyterian Accesses	0	0	0	0	0	0	0	0	0
West Pleasant Grove Road between Westminster Presbyterian Accesses and U.S. Route 202 (Wilmington Pike)	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>3</b>	<b>26</b>	<b>2</b>	<b>2</b>	<b>13</b>	<b>7</b>	<b>2</b>	<b>56</b>

**Table 6. Reportable Crash Severities  
Midblock Locations**

<b>Midblock Location/ Type of Crash</b>	<b>Fatal</b>	<b>Suspected Minor Injury</b>	<b>Possible Injury</b>	<b>Property Damage Only</b>	<b>Unknown Severity</b>	<b>Total</b>
U.S. Route 202 (Wilmington Pike) between Street Road (S.R. 0926) and West Pleasant Grove Road	1	0	4	21	3	29
U.S. Route 202 (Wilmington Pike) between West Pleasant Grove Road Stetson School Drive / Skiles Boulevard	0	0	0	9	5	14
Street Road (S.R. 0926) between U.S. Route 202 (Wilmington Pike) and Bridlewood Boulevard	0	1	1	2	0	4
Street Road (S.R. 0926) between Bridlewood Boulevard and New Street	0	1	1	1	1	4
New Street between Street Road (S.R. 0926) and West Pleasant Grove Road	0	0	1	2	1	4
West Pleasant Grove Road between New Street and Dunvegan Road	0	0	0	1	0	1
West Pleasant Grove Road between Dunvegan Road and Westminster Presbyterian Accesses	0	0	0	0	0	0
West Pleasant Grove Road between Westminster Presbyterian Accesses and U.S. Route 202 (Wilmington Pike)	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>36</b>	<b>10</b>	<b>56</b>

# Appendix C

## PennDOT TIRe Data





**US Route 202 Northbound**

---

**Avg. Daily Truck Traffic:** 1905

---

**County:** 15 - CHESTER

---

**Avg. Daily Traffic:** 23814

---

**Direction:** N - NORTH

---

**District:** 06

---

**Daily Truck Vehicle Miles Traveled:** 1600

---

**Daily Vehicle Miles Traveled:** 20004

---

**Count Duration:** 24

---

**D Factor:** 55

---

**Jurisdiction:** 1 - STATE

---

**K Factor:** 9

---

**Offset Begin:** 0

---

**Offset End:** 1279

---

**Segment Begin:** 0050

---

**Segment End:** 0060

---

**Side Ind:** 1 - RIGHT / PRIMARY / EVEN SIDE

---

**Route:** 0202

---

**Traffic Pattern Group:** 03 - URBAN - OTHER  
PRINCIPAL ARTERIALS

---

**Truck Percent:** 8

---

**Type of Count:** 3 - VOLUME TRAFFIC COUNT

---

**T Factor:** 3

---

**Count Date:** 20120829

---

**Traffic Count Key:** 15020200600958**US Route 202 Southbound**

---

**Avg. Daily Truck Traffic:** 940

---

**County:** 15 - CHESTER

---

**Avg. Daily Traffic:** 23487

---

**Direction:** S - SOUTH

---

**District:** 06

---

**Daily Truck Vehicle Miles Traveled:** 790

---

**Daily Vehicle Miles Traveled:** 19729

---

**Count Duration:** 24

---

**D Factor:** 55

---

**Jurisdiction:** 1 - STATE

---

**K Factor:** 9

---

**Offset Begin:** 0

---

**Offset End:** 1260

---

**Segment Begin:** 0051

---

**Segment End:** 0061

---

**Side Ind:** 2 - LEFT / SECONDARY / ODD SIDE

---

**Route:** 0202

---

**Traffic Pattern Group:** 03 - URBAN - OTHER  
PRINCIPAL ARTERIALS

---

**Truck Percent:** 4

---

**Type of Count:** 3 - VOLUME TRAFFIC COUNT

---

**T Factor:** 3

---

**Count Date:** 20120829

---

**Traffic Count Key:** 15020200610608**Street Road SR 0926**

---

**Avg. Daily Truck Traffic:** 648

---

**County:** 15 - CHESTER

---

**Avg. Daily Traffic:** 12952

---

**Direction:** B - BOTH

---

**District:** 06

---

**Daily Truck Vehicle Miles Traveled:** 865

---

**Daily Vehicle Miles Traveled:** 17291

---

**Count Duration:** 24

---

**D Factor:** 55

---

**Jurisdiction:** 1 - STATE

---

**K Factor:** 11

---

**Offset Begin:** 0

---

**Offset End:** 0

---

**Segment Begin:** 0370

---

**Segment End:** 0400

---

**Side Ind:** 1 - RIGHT / PRIMARY / EVEN SIDE

---

**Route:** 0926

---

**Traffic Pattern Group:** 05 - URBAN - MINOR  
ARTERIALS, COLLECTORS, LOCAL ROADS

---

**Truck Percent:** 5

---

**Type of Count:** 3 - VOLUME TRAFFIC COUNT

---

**T Factor:** 3

---

**Count Date:** 20140716

---

**Traffic Count Key:** 15092603900000

New Street

Avg. Daily Truck Traffic: 48

County: 15 - CHESTER

Avg. Daily Traffic: 5058

Direction: B - BOTH

District: 08

Daily Truck Vehicle Miles Traveled: 185

Daily Vehicle Miles Traveled: 19511

Count Duration: 24

D Factor: 53

Jurisdiction: 5 - NON-STATE FEDERAL AID  
ROADS

K Factor: 10

Offset Begin: 0

Offset End: 688

Segment Begin: 0020

Segment End: 0080

Side Ind: 1 - RIGHT / PRIMARY / EVEN SIDE

Route: G391

Traffic Pattern Group: 05 - URBAN - MINOR  
ARTERIALS, COLLECTORS, LOCAL ROADS

Truck Percent: 1

Type of Count: 2 - MACHINE TRAFFIC  
CLASSIFICATION COUNT

T Factor: 1

Count Date: 20170920

Traffic Count Key: 15G39100500001

## Appendix D

# Manual Turning Movement Counts



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	14	44	0	12	3	79	2	3	6	7	1	9	9	206	0	0	395
07:15	10	50	0	20	4	85	3	4	3	21	0	5	26	173	0	0	404
07:30	6	46	0	29	2	82	2	14	2	27	0	4	16	167	0	6	403
07:45	15	61	0	28	4	86	1	19	0	23	0	7	25	173	0	1	443
<b>Total</b>	<b>45</b>	<b>201</b>	<b>0</b>	<b>89</b>	<b>13</b>	<b>332</b>	<b>8</b>	<b>40</b>	<b>11</b>	<b>78</b>	<b>1</b>	<b>25</b>	<b>76</b>	<b>719</b>	<b>0</b>	<b>7</b>	<b>1645</b>
08:00	4	66	0	41	0	82	0	11	0	22	0	5	22	172	1	1	427
08:15	14	63	0	37	7	83	0	8	1	17	0	3	16	154	0	0	403
08:30	20	53	0	32	0	73	2	9	2	18	0	7	12	190	0	1	419
08:45	10	40	0	41	1	66	0	12	0	18	0	9	11	155	0	0	363
<b>Total</b>	<b>48</b>	<b>222</b>	<b>0</b>	<b>151</b>	<b>8</b>	<b>304</b>	<b>2</b>	<b>40</b>	<b>3</b>	<b>75</b>	<b>0</b>	<b>24</b>	<b>61</b>	<b>671</b>	<b>1</b>	<b>2</b>	<b>1612</b>
16:00	21	39	0	67	2	107	0	19	5	23	0	3	6	130	0	2	424
16:15	22	46	0	77	2	117	1	14	5	32	0	3	7	120	0	4	450
16:30	14	37	0	86	1	102	1	19	2	23	0	5	5	149	0	1	445
16:45	16	57	0	72	1	104	1	18	2	32	0	4	5	139	0	1	452
<b>Total</b>	<b>73</b>	<b>179</b>	<b>0</b>	<b>302</b>	<b>6</b>	<b>430</b>	<b>3</b>	<b>70</b>	<b>14</b>	<b>110</b>	<b>0</b>	<b>15</b>	<b>23</b>	<b>538</b>	<b>0</b>	<b>8</b>	<b>1771</b>
17:00	15	52	0	75	2	96	2	16	4	62	1	8	6	138	1	3	481
17:15	20	52	0	64	4	86	2	13	2	43	0	10	7	160	0	3	466
17:30	17	34	0	80	5	124	2	11	3	28	0	11	8	160	0	3	486
17:45	9	56	0	70	13	87	1	15	1	37	0	7	11	164	0	4	475
<b>Total</b>	<b>61</b>	<b>194</b>	<b>0</b>	<b>289</b>	<b>24</b>	<b>393</b>	<b>7</b>	<b>55</b>	<b>10</b>	<b>170</b>	<b>1</b>	<b>36</b>	<b>32</b>	<b>622</b>	<b>1</b>	<b>13</b>	<b>1908</b>
<b>Grand Total</b>	<b>227</b>	<b>796</b>	<b>0</b>	<b>831</b>	<b>51</b>	<b>1459</b>	<b>20</b>	<b>205</b>	<b>38</b>	<b>433</b>	<b>2</b>	<b>100</b>	<b>192</b>	<b>2550</b>	<b>2</b>	<b>30</b>	<b>6936</b>
<b>Apprch %</b>	<b>12.2</b>	<b>42.9</b>	<b>0</b>	<b>44.8</b>	<b>2.9</b>	<b>84.1</b>	<b>1.2</b>	<b>11.8</b>	<b>6.6</b>	<b>75.6</b>	<b>0.3</b>	<b>17.5</b>	<b>6.9</b>	<b>91.9</b>	<b>0.1</b>	<b>1.1</b>	
<b>Total %</b>	<b>3.3</b>	<b>11.5</b>	<b>0</b>	<b>12</b>	<b>0.7</b>	<b>21</b>	<b>0.3</b>	<b>3</b>	<b>0.5</b>	<b>6.2</b>	<b>0</b>	<b>1.4</b>	<b>2.8</b>	<b>36.8</b>	<b>0</b>	<b>0.4</b>	
<b>Passenger Vehicles</b>	<b>221</b>	<b>792</b>	<b>0</b>	<b>814</b>	<b>46</b>	<b>1398</b>	<b>20</b>	<b>201</b>	<b>34</b>	<b>425</b>	<b>2</b>	<b>96</b>	<b>189</b>	<b>2473</b>	<b>2</b>	<b>30</b>	<b>6743</b>
<b>% Passenger Vehicles</b>	<b>97.4</b>	<b>99.5</b>	<b>0</b>	<b>98</b>	<b>90.2</b>	<b>95.8</b>	<b>100</b>	<b>98</b>	<b>89.5</b>	<b>98.2</b>	<b>100</b>	<b>96</b>	<b>98.4</b>	<b>97</b>	<b>100</b>	<b>100</b>	<b>97.2</b>
<b>Heavy Vehicles</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>61</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>193</b>
<b>% Heavy Vehicles</b>	<b>2.6</b>	<b>0.5</b>	<b>0</b>	<b>2</b>	<b>9.8</b>	<b>4.2</b>	<b>0</b>	<b>2</b>	<b>10.5</b>	<b>1.8</b>	<b>0</b>	<b>4</b>	<b>1.6</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2.8</b>

Zero Pedestrians were observed during this study.

# McMahon Associates, Inc.

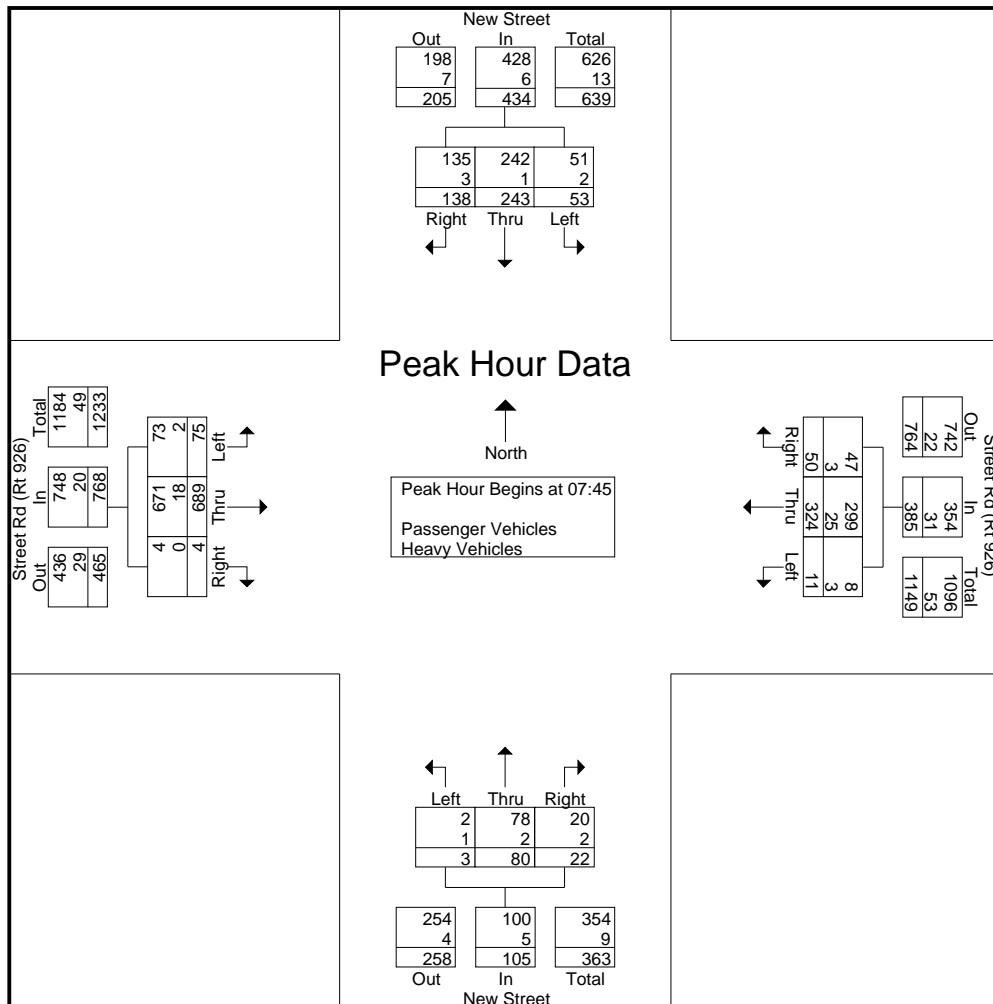
425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 2

Start Time	New Street Southbound					Street Rd (Rt 926) Westbound					New Street Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	RO	Rig	App. Total	Left	Thru	RO	Rig	App. Total	Left	Thru	RO	Rig	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	15	61	0	28	104	4	86	1	19	110	0	23	0	7	30	25	173	0	1	199	443
08:00	4	66	0	41	111	0	82	0	11	93	0	22	0	5	27	22	172	1	1	196	427
08:15	14	63	0	37	114	7	83	0	8	98	1	17	0	3	21	16	154	0	0	170	403
08:30	20	53	0	32	105	0	73	2	9	84	2	18	0	7	27	12	190	0	1	203	419
Total Volume	53	243	0	138	434	11	324	3	47	385	3	80	0	22	105	75	689	1	3	768	1692
% App. Total	12.2	56	0	31.8		2.9	84.2	0.8	12.2		2.9	76.2	0	21		9.8	89.7	0.1	0.4		
PHF	.663	.920	.000	.841	.952	.393	.942	.375	.618	.875	.375	.870	.000	.786	.875	.750	.907	.250	.750	.946	.955
Passenger Vehicles																					
% Passenger Vehicles	96.2	99.6	0	97.8	98.6	72.7	92.3	100	93.6	91.9	66.7	97.5	0	90.9	95.2	97.3	97.4	100	100	97.4	96.3
Heavy Vehicles																					
% Heavy Vehicles	3.8	0.4	0	2.2	1.4	27.3	7.7	0	6.4	8.1	33.3	2.5	0	9.1	4.8	2.7	2.6	0	0	2.6	3.7

Right-Turn HV%: 3/50 = 6.0%



# McMahon Associates, Inc.

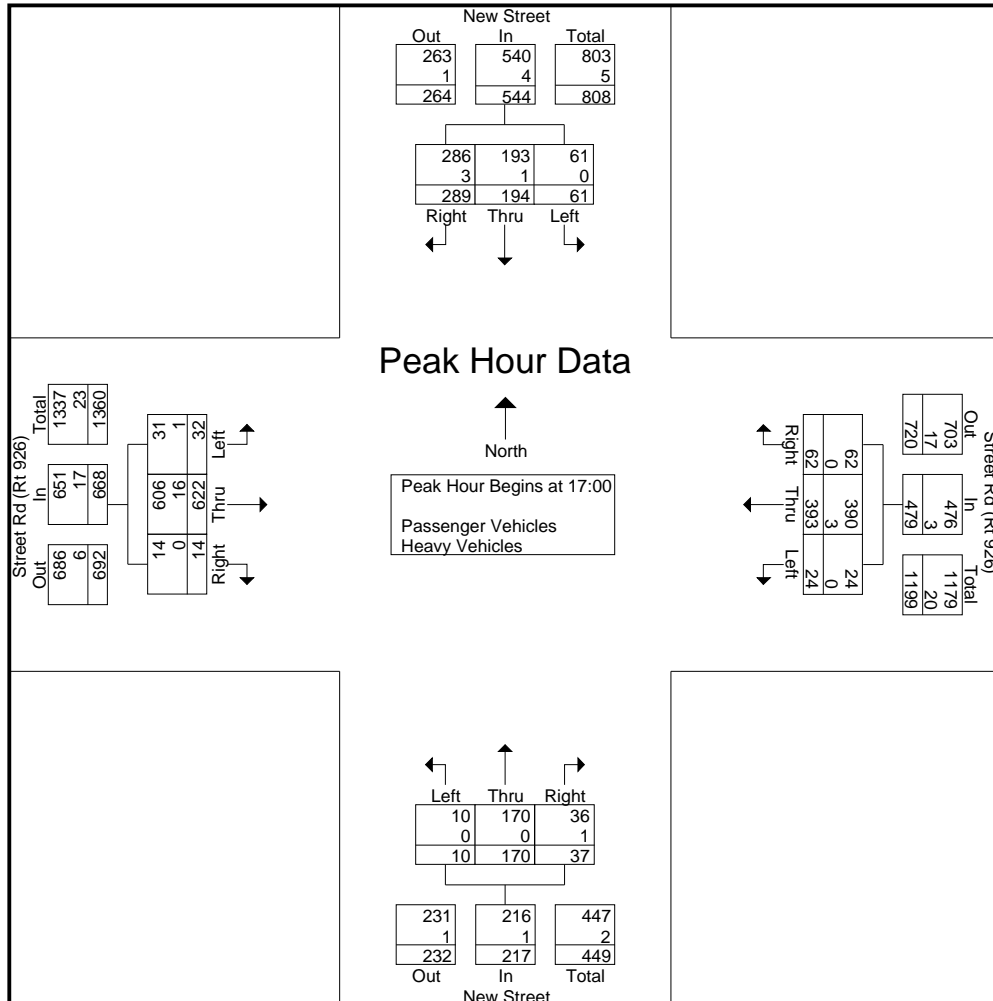
425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 3

Start Time	New Street Southbound					Street Rd (Rt 926) Westbound					New Street Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	15	52	0	75	142	2	96	2	16	116	4	62	1	8	75	6	138	1	3	148	481
17:15	20	52	0	64	136	4	86	2	13	105	2	43	0	10	55	7	160	0	3	170	466
17:30	17	34	0	80	131	5	124	2	11	142	3	28	0	11	42	8	160	0	3	171	486
17:45	9	56	0	70	135	13	87	1	15	116	1	37	0	7	45	11	164	0	4	179	475
Total Volume	61	194	0	289	544	24	393	7	55	479	10	170	1	36	217	32	622	1	13	668	1908
% App. Total	11.2	35.7	0	53.1		5	82	1.5	11.5		4.6	78.3	0.5	16.6		4.8	93.1	0.1	1.9		
PHF	.763	.866	.000	.903	.958	.462	.792	.875	.859	.843	.625	.685	.250	.818	.723	.727	.948	.250	.813	.933	.981
Passenger Vehicles																					
% Passenger Vehicles	100	99.5	0	99.0	99.3	100	99.2	100	100	99.4	100	100	100	97.2	99.5	96.9	97.4	100	100	97.5	98.7
Heavy Vehicles																					
% Heavy Vehicles	0	0.5	0	1.0	0.7	0	0.8	0	0	0.6	0	0	0	2.8	0.5	3.1	2.6	0	0	2.5	1.3

Right-Turn HV%: 1/37 = 2.7%



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	1	0	0	0	1	6	0	0	0	0	0	0	0	3	0	0	11
07:15	0	0	0	0	1	5	0	1	1	0	0	1	0	2	0	0	11
07:30	2	0	0	1	0	6	0	0	0	1	0	0	0	10	0	0	20
07:45	0	0	0	0	0	5	0	2	0	1	0	0	0	4	0	0	12
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>22</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>54</b>
08:00	0	0	0	1	0	9	0	0	0	0	0	0	0	10	0	0	20
08:15	0	0	0	1	3	4	0	1	0	0	0	0	2	1	0	0	12
08:30	2	1	0	1	0	7	0	0	1	1	0	2	0	3	0	0	18
08:45	0	0	0	3	0	4	0	0	0	1	0	0	0	6	0	0	14
<b>Total</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>3</b>	<b>24</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>64</b>
16:00	1	1	0	1	0	4	0	0	1	2	0	0	0	7	0	0	17
16:15	0	0	0	2	0	4	0	0	1	1	0	0	0	7	0	0	15
16:30	0	1	0	3	0	1	0	0	0	1	0	0	0	4	0	0	10
16:45	0	0	0	1	0	3	0	0	0	0	0	0	0	4	0	0	8
<b>Total</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>50</b>
17:00	0	0	0	2	0	2	0	0	0	0	0	1	0	5	0	0	10
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4
17:30	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3
17:45	0	0	0	1	0	1	0	0	0	0	0	0	1	5	0	0	8
<b>Total</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>25</b>
<b>Grand Total</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>17</b>	<b>5</b>	<b>61</b>	<b>0</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>193</b>
Approch %	22.2	14.8	0	63	7.1	87.1	0	5.7	25	50	0	25	3.8	96.2	0	0	
Total %	3.1	2.1	0	8.8	2.6	31.6	0	2.1	2.1	4.1	0	2.1	1.6	39.9	0	0	



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: New Street &  
Street Road (Route 926)  
Counter/Board #: HR

File Name : westtown01w  
Site Code : 81645101  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	New Street Southbound				Street Rd (Rt 926) Westbound				New Street Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	13	44	0	12	2	73	2	3	6	7	1	9	9	203	0	0	384
07:15	10	50	0	20	3	80	3	3	2	21	0	4	26	171	0	0	393
07:30	4	46	0	28	2	76	2	14	2	26	0	4	16	157	0	6	383
07:45	15	61	0	28	4	81	1	17	0	22	0	7	25	169	0	1	431
Total	42	201	0	88	11	310	8	37	10	76	1	24	76	700	0	7	1591
08:00	4	66	0	40	0	73	0	11	0	22	0	5	22	162	1	1	407
08:15	14	63	0	36	4	79	0	7	1	17	0	3	14	153	0	0	391
08:30	18	52	0	31	0	66	2	9	1	17	0	5	12	187	0	1	401
08:45	10	40	0	38	1	62	0	12	0	17	0	9	11	149	0	0	349
Total	46	221	0	145	5	280	2	39	2	73	0	22	59	651	1	2	1548
16:00	20	38	0	66	2	103	0	19	4	21	0	3	6	123	0	2	407
16:15	22	46	0	75	2	113	1	14	4	31	0	3	7	113	0	4	435
16:30	14	36	0	83	1	101	1	19	2	22	0	5	5	145	0	1	435
16:45	16	57	0	71	1	101	1	18	2	32	0	4	5	135	0	1	444
Total	72	177	0	295	6	418	3	70	12	106	0	15	23	516	0	8	1721
17:00	15	52	0	73	2	94	2	16	4	62	1	7	6	133	1	3	471
17:15	20	52	0	64	4	86	2	13	2	43	0	10	7	156	0	3	462
17:30	17	33	0	80	5	124	2	11	3	28	0	11	8	158	0	3	483
17:45	9	56	0	69	13	86	1	15	1	37	0	7	10	159	0	4	467
Total	61	193	0	286	24	390	7	55	10	170	1	35	31	606	1	13	1883
Grand Total	221	792	0	814	46	1398	20	201	34	425	2	96	189	2473	2	30	6743
Apprch %	12.1	43.3	0	44.6	2.8	84	1.2	12.1	6.1	76.3	0.4	17.2	7	91.8	0.1	1.1	
Total %	3.3	11.7	0	12.1	0.7	20.7	0.3	3	0.5	6.3	0	1.4	2.8	36.7	0	0.4	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	5	82	5	10	192	4	298
07:15	2	94	6	11	191	12	316
07:30	5	92	6	6	165	7	281
07:45	4	94	11	5	189	10	313
Total	16	362	28	32	737	33	1208
08:00	0	90	9	6	184	2	291
08:15	3	86	13	3	178	7	290
08:30	0	77	12	13	203	17	322
08:45	0	75	10	8	183	11	287
Total	3	328	44	30	748	37	1190
16:00	3	128	4	3	140	14	292
16:15	2	112	4	4	143	3	268
16:30	5	129	5	5	163	8	315
16:45	6	110	6	7	142	6	277
Total	16	479	19	19	588	31	1152
17:00	5	115	10	9	158	11	308
17:15	6	110	14	11	186	7	334
17:30	8	134	7	12	164	9	334
17:45	12	113	7	9	181	9	331
Total	31	472	38	41	689	36	1307
Grand Total	66	1641	129	122	2762	137	4857
Apprch %	3.9	96.1	51.4	48.6	95.3	4.7	
Total %	1.4	33.8	2.7	2.5	56.9	2.8	
Passenger Vehicles	66	1558	129	122	2649	136	4660
% Passenger Vehicles	100	94.9	100	100	95.9	99.3	95.9
Heavy Vehicles	0	83	0	0	113	1	197
% Heavy Vehicles	0	5.1	0	0	4.1	0.7	4.1

Zero Pedestrians were observed during this study.

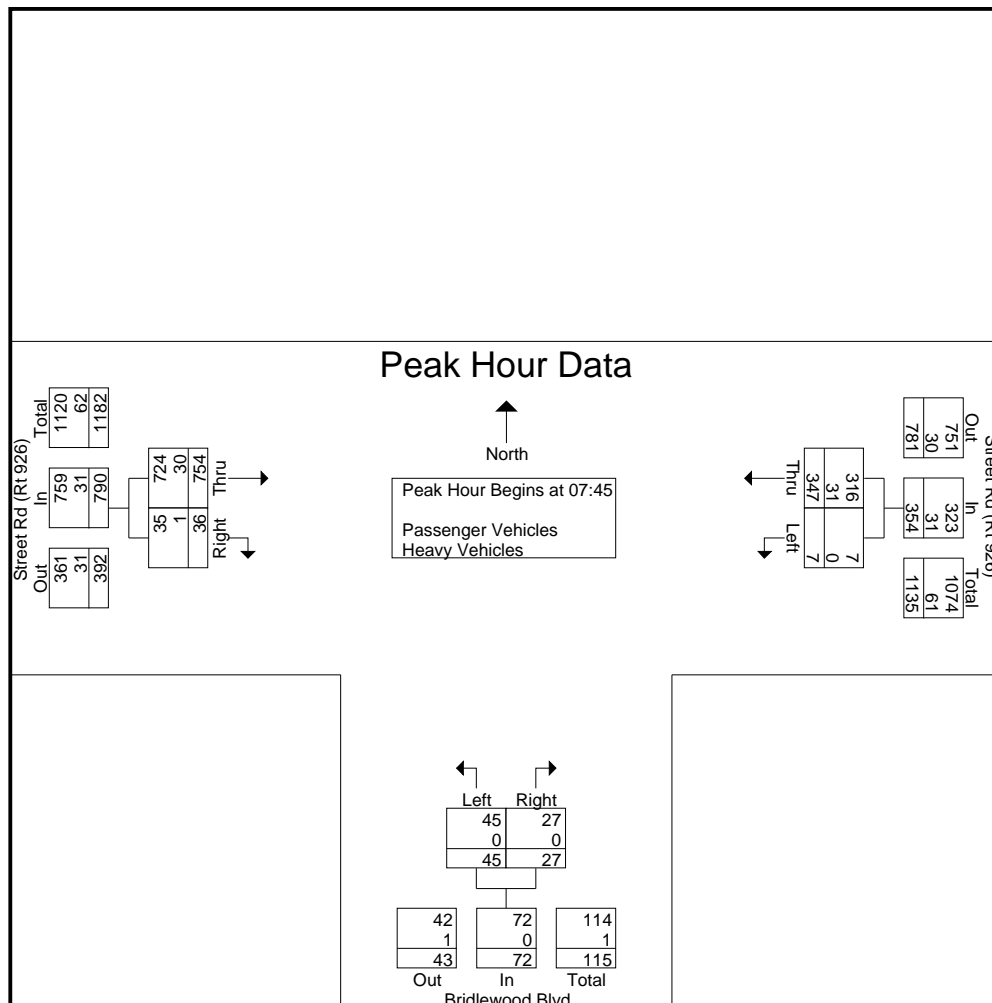
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Street Road (Route 926) &  
Bridlewood Boulevard  
Counter/Board #: RR

File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 2

Start Time	Street Rd (Rt 926) Westbound			Bridlewood Blvd Northbound			Street Rd (Rt 926) Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45										
07:45	4	94	98	11	5	16	189	10	199	313
08:00	0	90	90	9	6	15	184	2	186	291
08:15	3	86	89	13	3	16	178	7	185	290
08:30	0	77	77	12	13	25	203	17	220	322
Total Volume	7	347	354	45	27	72	754	36	790	1216
% App. Total	2	98		62.5	37.5		95.4	4.6		
PHF	.438	.923	.903	.865	.519	.720	.929	.529	.898	.944
Passenger Vehicles	7	316	323	45	27	72	724	35	759	1154
% Passenger Vehicles	100	91.1	91.2	100	100	100	96.0	97.2	96.1	94.9
Heavy Vehicles	0	31	31	0	0	0	30	1	31	62
% Heavy Vehicles	0	8.9	8.8	0	0	0	4.0	2.8	3.9	5.1



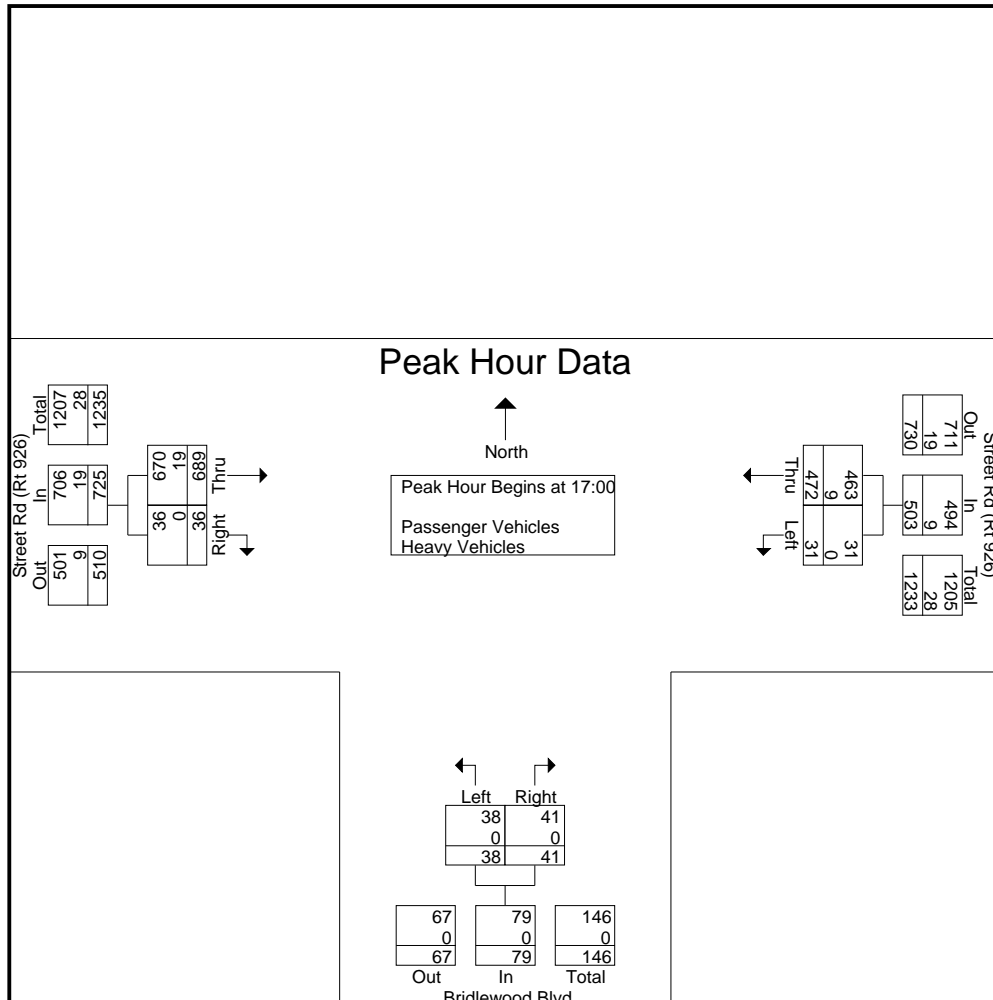
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Start Time	Street Rd (Rt 926) Westbound			Bridlewood Blvd Northbound			Street Rd (Rt 926) Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 17:00										
17:00	5	115	120	10	9	19	158	11	169	308
17:15	6	110	116	14	11	25	186	7	193	334
17:30	8	134	142	7	12	19	164	9	173	334
17:45	12	113	125	7	9	16	181	9	190	331
Total Volume	31	472	503	38	41	79	689	36	725	1307
% App. Total	6.2	93.8		48.1	51.9		95	5		
PHF	.646	.881	.886	.679	.854	.790	.926	.818	.939	.978
Passenger Vehicles	31	463	494	38	41	79	670	36	706	1279
% Passenger Vehicles	100	98.1	98.2	100	100	100	97.2	100	97.4	97.9
Heavy Vehicles	0	9	9	0	0	0	19	0	19	28
% Heavy Vehicles	0	1.9	1.8	0	0	0	2.8	0	2.6	2.1



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File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	0	6	0	0	6	0	12
07:15	0	9	0	0	6	0	15
07:30	0	6	0	0	12	0	18
07:45	0	6	0	0	6	0	12
Total	0	27	0	0	30	0	57
08:00	0	10	0	0	14	0	24
08:15	0	7	0	0	3	0	10
08:30	0	8	0	0	7	1	16
08:45	0	6	0	0	10	0	16
Total	0	31	0	0	34	1	66
16:00	0	4	0	0	11	0	15
16:15	0	5	0	0	9	0	14
16:30	0	4	0	0	6	0	10
16:45	0	3	0	0	4	0	7
Total	0	16	0	0	30	0	46
17:00	0	3	0	0	6	0	9
17:15	0	1	0	0	6	0	7
17:30	0	2	0	0	2	0	4
17:45	0	3	0	0	5	0	8
Total	0	9	0	0	19	0	28
Grand Total	0	83	0	0	113	1	197
Apprch %	0	100	0	0	99.1	0.9	
Total %	0	42.1	0	0	57.4	0.5	

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File Name : westtown02w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Street Rd (Rt 926) Westbound		Bridlewood Blvd Northbound		Street Rd (Rt 926) Eastbound		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00	5	76	5	10	186	4	286
07:15	2	85	6	11	185	12	301
07:30	5	86	6	6	153	7	263
07:45	4	88	11	5	183	10	301
Total	16	335	28	32	707	33	1151
08:00	0	80	9	6	170	2	267
08:15	3	79	13	3	175	7	280
08:30	0	69	12	13	196	16	306
08:45	0	69	10	8	173	11	271
Total	3	297	44	30	714	36	1124
16:00	3	124	4	3	129	14	277
16:15	2	107	4	4	134	3	254
16:30	5	125	5	5	157	8	305
16:45	6	107	6	7	138	6	270
Total	16	463	19	19	558	31	1106
17:00	5	112	10	9	152	11	299
17:15	6	109	14	11	180	7	327
17:30	8	132	7	12	162	9	330
17:45	12	110	7	9	176	9	323
Total	31	463	38	41	670	36	1279
Grand Total	66	1558	129	122	2649	136	4660
Apprch %	4.1	95.9	51.4	48.6	95.1	4.9	
Total %	1.4	33.4	2.8	2.6	56.8	2.9	

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Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound				Street Rd (Rt 926) Westbound				Route 202 Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	25	278	2	41	32	26	1	1	2	261	5	33	131	68	0	4	910
07:15	10	321	5	45	49	37	0	11	1	319	6	32	114	54	0	2	1006
07:30	9	283	6	37	28	37	0	6	5	309	2	21	128	63	0	1	935
07:45	13	267	5	43	47	42	2	7	6	264	5	26	125	57	0	3	912
<b>Total</b>	<b>57</b>	<b>1149</b>	<b>18</b>	<b>166</b>	<b>156</b>	<b>142</b>	<b>3</b>	<b>25</b>	<b>14</b>	<b>1153</b>	<b>18</b>	<b>112</b>	<b>498</b>	<b>242</b>	<b>0</b>	<b>10</b>	<b>3763</b>
08:00	14	306	1	25	24	40	1	9	4	274	4	27	92	56	0	0	877
08:15	13	267	5	30	41	43	0	6	6	230	5	30	131	57	0	2	866
08:30	10	279	1	34	40	31	0	8	3	238	1	30	118	55	0	3	851
08:45	13	275	4	48	42	17	1	9	3	247	4	28	111	50	0	5	857
<b>Total</b>	<b>50</b>	<b>1127</b>	<b>11</b>	<b>137</b>	<b>147</b>	<b>131</b>	<b>2</b>	<b>32</b>	<b>16</b>	<b>989</b>	<b>14</b>	<b>115</b>	<b>452</b>	<b>218</b>	<b>0</b>	<b>10</b>	<b>3451</b>
16:00	28	312	15	31	29	58	0	9	16	355	1	26	105	49	0	6	1040
16:15	13	343	7	40	44	62	3	11	5	384	9	22	87	41	0	4	1075
16:30	22	287	13	30	43	67	5	3	12	338	10	14	130	62	0	8	1044
16:45	35	358	11	29	48	62	6	4	6	357	14	20	101	44	0	8	1103
<b>Total</b>	<b>98</b>	<b>1300</b>	<b>46</b>	<b>130</b>	<b>164</b>	<b>249</b>	<b>14</b>	<b>27</b>	<b>39</b>	<b>1434</b>	<b>34</b>	<b>82</b>	<b>423</b>	<b>196</b>	<b>0</b>	<b>26</b>	<b>4262</b>
17:00	21	303	10	25	38	57	1	5	7	312	13	17	77	35	0	7	928
17:15	33	318	13	35	37	47	1	6	7	335	10	18	113	69	0	4	1046
17:30	22	336	9	37	41	63	3	0	9	356	7	18	102	33	0	7	1043
17:45	12	319	13	33	62	73	1	2	11	364	7	19	113	41	0	3	1073
<b>Total</b>	<b>88</b>	<b>1276</b>	<b>45</b>	<b>130</b>	<b>178</b>	<b>240</b>	<b>6</b>	<b>13</b>	<b>34</b>	<b>1367</b>	<b>37</b>	<b>72</b>	<b>405</b>	<b>178</b>	<b>0</b>	<b>21</b>	<b>4090</b>
<b>Grand Total</b>	<b>293</b>	<b>4852</b>	<b>120</b>	<b>563</b>	<b>645</b>	<b>762</b>	<b>25</b>	<b>97</b>	<b>103</b>	<b>4943</b>	<b>103</b>	<b>381</b>	<b>1778</b>	<b>834</b>	<b>0</b>	<b>67</b>	<b>15566</b>
<b>Apprch %</b>	5	83.3	2.1	9.7	42.2	49.8	1.6	6.3	1.9	89.4	1.9	6.9	66.4	31.1	0	2.5	
<b>Total %</b>	1.9	31.2	0.8	3.6	4.1	4.9	0.2	0.6	0.7	31.8	0.7	2.4	11.4	5.4	0	0.4	
<b>Passenger Vehicles</b>	<b>280</b>	<b>4505</b>	<b>120</b>	<b>520</b>	<b>622</b>	<b>747</b>	<b>25</b>	<b>82</b>	<b>98</b>	<b>4640</b>	<b>103</b>	<b>351</b>	<b>1743</b>	<b>797</b>	<b>0</b>	<b>64</b>	<b>14697</b>
<b>% Passenger Vehicles</b>	<b>95.6</b>	<b>92.8</b>	<b>100</b>	<b>92.4</b>	<b>96.4</b>	<b>98</b>	<b>100</b>	<b>84.5</b>	<b>95.1</b>	<b>93.9</b>	<b>100</b>	<b>92.1</b>	<b>98</b>	<b>95.6</b>	<b>0</b>	<b>95.5</b>	<b>94.4</b>
<b>Heavy Vehicles</b>	<b>13</b>	<b>347</b>	<b>0</b>	<b>43</b>	<b>23</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>5</b>	<b>303</b>	<b>0</b>	<b>30</b>	<b>35</b>	<b>37</b>	<b>0</b>	<b>3</b>	<b>869</b>
<b>% Heavy Vehicles</b>	<b>4.4</b>	<b>7.2</b>	<b>0</b>	<b>7.6</b>	<b>3.6</b>	<b>2</b>	<b>0</b>	<b>15.5</b>	<b>4.9</b>	<b>6.1</b>	<b>0</b>	<b>7.9</b>	<b>2</b>	<b>4.4</b>	<b>0</b>	<b>4.5</b>	<b>5.6</b>

Zero Pedestrians were observed during this study.

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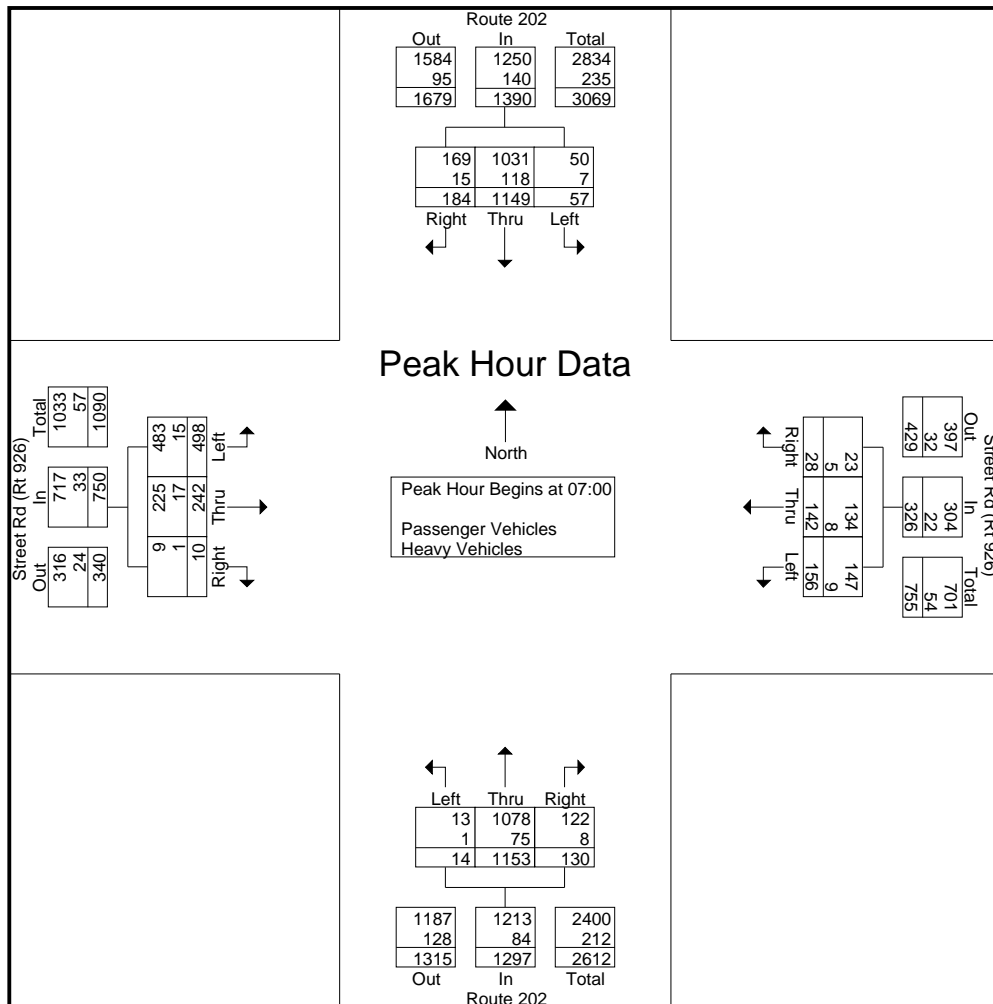
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Municipality: Westtown Township  
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Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 2

Start Time	Route 202 Southbound					Street Rd (Rt 926) Westbound					Route 202 Northbound					Street Rd (Rt 926) Eastbound					Int. Total
	Left	Thru	ROR	Right	App. Total	Left	Thru	RO R	Rig ht	App. Total	Left	Thru	RO R	Rig ht	App. Total	Left	Thru	RO R	Rig ht	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	25	278	2	41	346	32	26	1	1	60	2	261	5	33	301	131	68	0	4	203	910
07:15	10	321	5	45	381	49	37	0	11	97	1	319	6	32	358	114	54	0	2	170	1006
07:30	9	283	6	37	335	28	37	0	6	71	5	309	2	21	337	128	63	0	1	192	935
07:45	13	267	5	43	328	47	42	2	7	98	6	264	5	26	301	125	57	0	3	185	912
Total Volume	57	1149	18	166	1390	156	142	3	25	326	14	1153	18	112	1297	498	242	0	10	750	3763
% App. Total	4.1	82.7	1.3	11.9		47.9	43.6	0.9	7.7		1.1	88.9	1.4	8.6		66.4	32.3	0	1.3		
PHF	.570	.895	.750	.922	.912	.796	.845	.375	.568	.832	.583	.904	.750	.848	.906	.950	.890	.000	.625	.924	.935
Passenger Vehicles	1031					1078															
% Passenger Vehicles	87.7	89.7	100	91.0	89.9	94.2	94.4	100	80.0	93.3	92.9	93.5	100	92.9	93.5	97.0	93.0	0	90.0	95.6	92.6
Heavy Vehicles																					
% Heavy Vehicles	12.3	10.3	0	9.0	10.1	5.8	5.6	0	20.0	6.7	7.1	6.5	0	7.1	6.5	3.0	7.0	0	10.0	4.4	7.4

Right-Turn HV%: 15/184 = 8.2%    Right-Turn HV%: 5/28 = 17.9%    Right-Turn HV%: 8/130 = 6.2%





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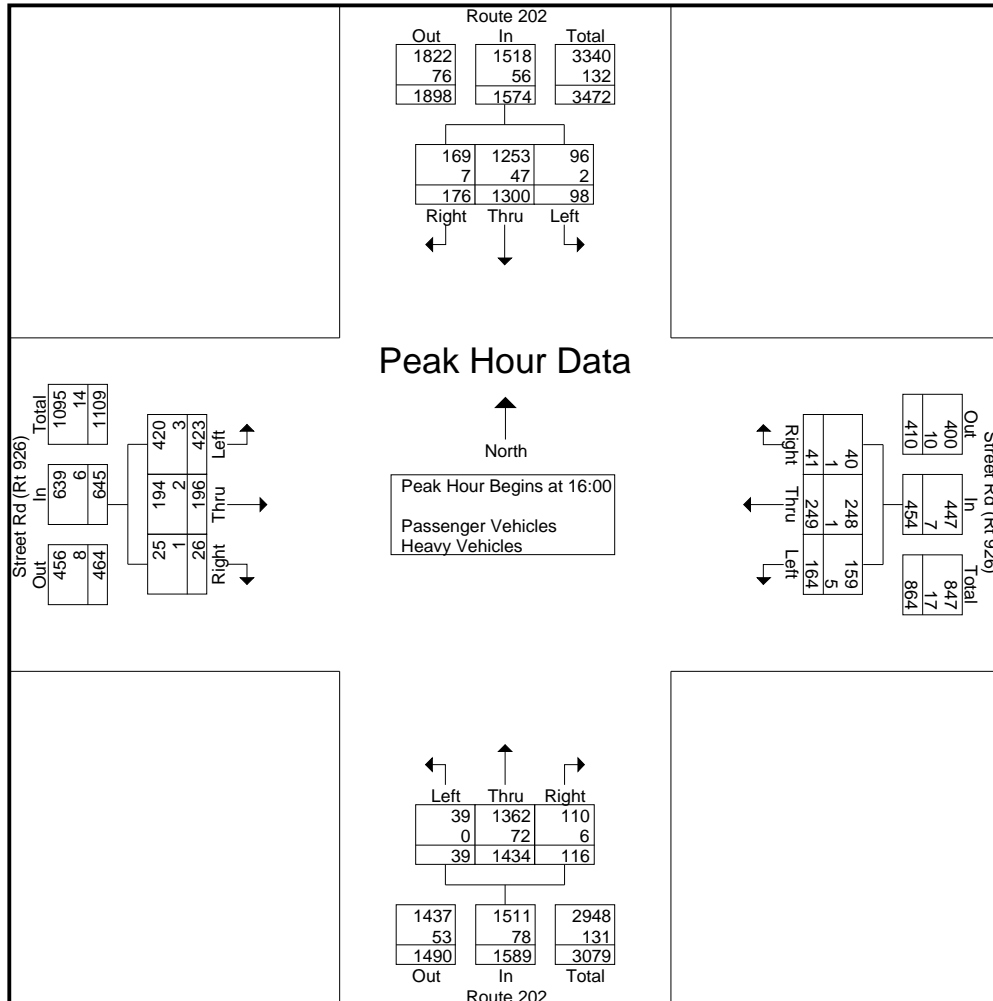
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Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	28	312	15	31	386	29	58	0	9	96	16	355	1	26	398	105	49	0	6	160	1040
16:15	13	343	7	40	403	44	62	3	11	120	5	384	9	22	420	87	41	0	4	132	1075
16:30	22	287	13	30	352	43	67	5	3	118	12	338	10	14	374	130	62	0	8	200	1044
16:45	35	358	11	29	433	48	62	6	4	120	6	357	14	20	397	101	44	0	8	153	1103
Total Volume	98	1300	46	130	1574	164	249	14	27	454	39	1434	34	82	1589	423	196	0	26	645	4262
% App. Total	6.2	82.6	2.9	8.3		36.1	54.8	3.1	5.9		2.5	90.2	2.1	5.2		65.6	30.4	0	4		
PHF	.700	.908	.767	.813	.909	.854	.929	.583	.614	.946	.609	.934	.607	.788	.946	.813	.790	.000	.813	.806	.966
Passenger Vehicles	1253					1362															
% Passenger Vehicles	98.0	96.4	100	94.6	96.4	97.0	99.6	100	96.3	98.5	100	95.0	100	92.7	95.1	99.3	99.0	0	96.2	99.1	96.6
Heavy Vehicles	2.0					3.0					0					0.7					
% Heavy Vehicles	2.0	3.6	0	5.4	3.6	3.0	0.4	0	3.7	1.5	0	5.0	0	7.3	4.9	0.7	1.0	0	3.8	0.9	3.4

Right-Turn HV%: 7/176 = 4.0%    Right-Turn HV%: 1/41 = 2.4%    Right-Turn HV%: 6/116 = 5.2%



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	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	3	31	0	4	2	1	0	1	1	17	0	3	1	5	0	0	69
07:15	0	36	0	6	3	4	0	3	0	12	0	2	1	4	0	0	71
07:30	2	26	0	2	2	1	0	1	0	21	0	0	5	2	0	0	62
07:45	2	25	0	3	2	2	0	0	0	25	0	3	8	6	0	1	77
<b>Total</b>	<b>7</b>	<b>118</b>	<b>0</b>	<b>15</b>	<b>9</b>	<b>8</b>	<b>0</b>	<b>5</b>	<b>1</b>	<b>75</b>	<b>0</b>	<b>8</b>	<b>15</b>	<b>17</b>	<b>0</b>	<b>1</b>	<b>279</b>
08:00	2	38	0	4	1	3	0	1	2	28	0	3	4	3	0	0	89
08:15	0	25	0	6	1	2	0	0	1	25	0	4	3	7	0	0	74
08:30	0	32	0	6	2	1	0	0	1	26	0	3	3	2	0	0	76
08:45	1	34	0	4	2	0	0	1	0	21	0	2	2	6	0	1	74
<b>Total</b>	<b>3</b>	<b>129</b>	<b>0</b>	<b>20</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>100</b>	<b>0</b>	<b>12</b>	<b>12</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>313</b>
16:00	1	12	0	2	1	1	0	1	0	23	0	3	0	0	0	1	45
16:15	0	14	0	4	1	0	0	0	0	22	0	2	2	2	0	0	47
16:30	1	11	0	1	3	0	0	0	0	13	0	1	1	0	0	0	31
16:45	0	10	0	0	0	0	0	0	0	14	0	0	0	0	0	0	24
<b>Total</b>	<b>2</b>	<b>47</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>72</b>	<b>0</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>147</b>
17:00	0	17	0	1	0	0	0	2	0	11	0	0	2	0	0	0	33
17:15	1	12	0	0	2	0	0	5	0	16	0	3	1	0	0	0	40
17:30	0	11	0	0	1	0	0	0	0	15	0	0	1	0	0	0	28
17:45	0	13	0	0	0	0	0	0	0	14	0	1	1	0	0	0	29
<b>Total</b>	<b>1</b>	<b>53</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>56</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>130</b>
<b>Grand Total</b>	<b>13</b>	<b>347</b>	<b>0</b>	<b>43</b>	<b>23</b>	<b>15</b>	<b>0</b>	<b>15</b>	<b>5</b>	<b>303</b>	<b>0</b>	<b>30</b>	<b>35</b>	<b>37</b>	<b>0</b>	<b>3</b>	<b>869</b>
Apprch %	3.2	86.1	0	10.7	43.4	28.3	0	28.3	1.5	89.6	0	8.9	46.7	49.3	0	4	
Total %	1.5	39.9	0	4.9	2.6	1.7	0	1.7	0.6	34.9	0	3.5	4	4.3	0	0.3	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Street Road (Route 926)  
Counter/Board #: HP+KB

File Name : westtown03w  
Site Code : 81645103  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Route 202 Southbound				Street Rd (Rt 926) Westbound				Route 202 Northbound				Street Rd (Rt 926) Eastbound				Int. Total
	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right	
07:00	22	247	2	37	30	25	1	0	1	244	5	30	130	63	0	4	841
07:15	10	285	5	39	46	33	0	8	1	307	6	30	113	50	0	2	935
07:30	7	257	6	35	26	36	0	5	5	288	2	21	123	61	0	1	873
07:45	11	242	5	40	45	40	2	7	6	239	5	23	117	51	0	2	835
Total	50	1031	18	151	147	134	3	20	13	1078	18	104	483	225	0	9	3484
08:00	12	268	1	21	23	37	1	8	2	246	4	24	88	53	0	0	788
08:15	13	242	5	24	40	41	0	6	5	205	5	26	128	50	0	2	792
08:30	10	247	1	28	38	30	0	8	2	212	1	27	115	53	0	3	775
08:45	12	241	4	44	40	17	1	8	3	226	4	26	109	44	0	4	783
Total	47	998	11	117	141	125	2	30	12	889	14	103	440	200	0	9	3138
16:00	27	300	15	29	28	57	0	8	16	332	1	23	105	49	0	5	995
16:15	13	329	7	36	43	62	3	11	5	362	9	20	85	39	0	4	1028
16:30	21	276	13	29	40	67	5	3	12	325	10	13	129	62	0	8	1013
16:45	35	348	11	29	48	62	6	4	6	343	14	20	101	44	0	8	1079
Total	96	1253	46	123	159	248	14	26	39	1362	34	76	420	194	0	25	4115
17:00	21	286	10	24	38	57	1	3	7	301	13	17	75	35	0	7	895
17:15	32	306	13	35	35	47	1	1	7	319	10	15	112	69	0	4	1006
17:30	22	325	9	37	40	63	3	0	9	341	7	18	101	33	0	7	1015
17:45	12	306	13	33	62	73	1	2	11	350	7	18	112	41	0	3	1044
Total	87	1223	45	129	175	240	6	6	34	1311	37	68	400	178	0	21	3960
Grand Total	280	4505	120	520	622	747	25	82	98	4640	103	351	1743	797	0	64	14697
Apprch %	5.2	83	2.2	9.6	42.1	50.6	1.7	5.6	1.9	89.4	2	6.8	66.9	30.6	0	2.5	
Total %	1.9	30.7	0.8	3.5	4.2	5.1	0.2	0.6	0.7	31.6	0.7	2.4	11.9	5.4	0	0.4	

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	370	14	0	0	2	2	455	5	0	0	14	881
07:15	9	433	31	0	0	2	2	545	6	0	0	13	1041
07:30	5	397	37	0	0	0	2	522	4	0	0	10	977
07:45	13	323	50	0	0	2	6	357	17	0	0	10	778
Total	46	1523	132	0	0	6	12	1879	32	0	0	47	3677
08:00	13	367	50	0	0	2	4	407	4	0	1	4	852
08:15	9	252	37	0	0	0	3	290	5	1	0	6	603
08:30	19	275	37	0	0	0	1	231	0	0	0	10	573
08:45	13	332	57	0	0	2	17	304	5	0	0	8	738
Total	54	1226	181	0	0	4	25	1232	14	1	1	28	2766
16:00	22	430	79	0	0	4	15	469	8	0	0	2	1029
16:15	18	424	71	0	0	2	8	518	7	0	0	6	1054
16:30	23	401	91	0	0	0	9	490	4	0	0	1	1019
16:45	19	452	67	0	0	2	7	503	6	0	0	1	1057
Total	82	1707	308	0	0	8	39	1980	25	0	0	10	4159
17:00	32	412	67	0	0	2	5	523	13	0	0	0	1054
17:15	25	461	72	0	0	2	13	545	8	0	0	2	1128
17:30	29	531	90	0	0	0	8	534	14	0	0	2	1208
17:45	19	428	77	0	0	7	12	522	28	0	0	3	1096
Total	105	1832	306	0	0	11	38	2124	63	0	0	7	4486
Grand Total	287	6288	927	0	0	29	114	7215	134	1	1	92	15088
Apprch %	3.8	83.8	12.4	0	0	100	1.5	96.7	1.8	1.1	1.1	97.9	
Total %	1.9	41.7	6.1	0	0	0.2	0.8	47.8	0.9	0	0	0.6	
Passenger Vehicles	281	5903	908	0	0	26	109	6869	130	1	1	92	14320
% Passenger Vehicles	97.9	93.9	98	0	0	89.7	95.6	95.2	97	100	100	100	94.9
Heavy Vehicles	6	385	19	0	0	3	5	346	4	0	0	0	768
% Heavy Vehicles	2.1	6.1	2	0	0	10.3	4.4	4.8	3	0	0	0	5.1

Zero Pedestrians were observed during this study.

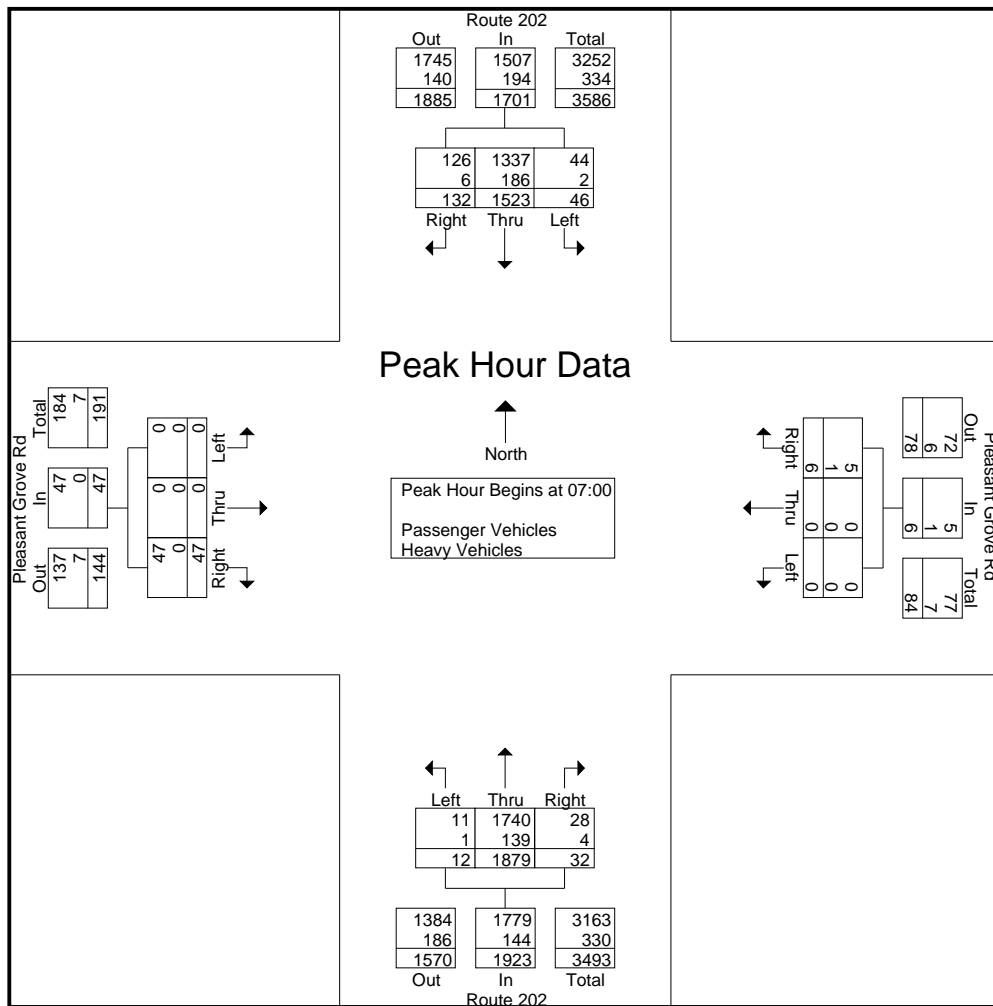
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 2

Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 12:30 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	19	370	14	403	0	0	2	2	2	455	5	462	0	0	14	14	881
07:15	9	433	31	473	0	0	2	2	2	545	6	553	0	0	13	13	1041
07:30	5	397	37	439	0	0	0	0	2	522	4	528	0	0	10	10	977
07:45	13	323	50	386	0	0	2	2	6	357	17	380	0	0	10	10	778
Total Volume	46	1523	132	1701	0	0	6	6	12	1879	32	1923	0	0	47	47	3677
% App. Total	2.7	89.5	7.8		0	0	100		0.6	97.7	1.7		0	0	100		
PHF	.605	.879	.660	.899	.000	.000	.750	.750	.500	.862	.471	.869	.000	.000	.839	.839	.883
Passenger Vehicles	44	1337	126	1507	0	0	5	5	11	1740	28	1779	0	0	47	47	3338
% Passenger Vehicles	95.7	87.8	95.5	88.6	0	0	83.3	83.3	91.7	92.6	87.5	92.5	0	0	100	100	90.8
Heavy Vehicles	2	186	6	194	0	0	1	1	1	139	4	144	0	0	0	0	339
% Heavy Vehicles	4.3	12.2	4.5	11.4	0	0	16.7	16.7	8.3	7.4	12.5	7.5	0	0	0	0	9.2



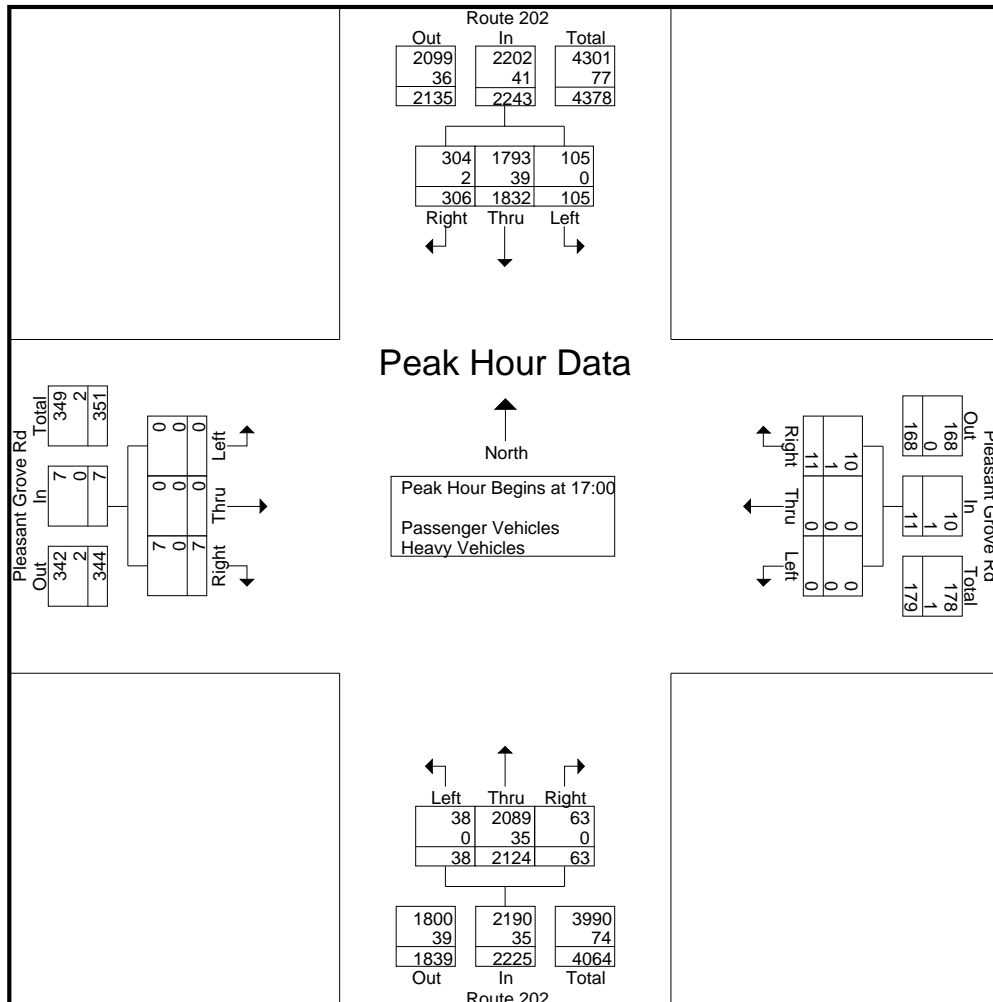
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 3

Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:45 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	32	412	67	511	0	0	2	2	5	523	13	541	0	0	0	0	1054
17:15	25	461	72	558	0	0	2	2	13	545	8	566	0	0	2	2	1128
17:30	29	531	90	650	0	0	0	0	8	534	14	556	0	0	2	2	1208
17:45	19	428	77	524	0	0	7	7	12	522	28	562	0	0	3	3	1096
Total Volume	105	1832	306	2243	0	0	11	11	38	2124	63	2225	0	0	7	7	4486
% App. Total	4.7	81.7	13.6		0	0	100		1.7	95.5	2.8		0	0	100		
PHF	.820	.863	.850	.863	.000	.000	.393	.393	.731	.974	.563	.983	.000	.000	.583	.583	.928
Passenger Vehicles	105	1793	304	2202	0	0	10	10	38	2089	63	2190	0	0	7	7	4409
% Passenger Vehicles	100	97.9	99.3	98.2	0	0	90.9	90.9	100	98.4	100	98.4	0	0	100	100	98.3
Heavy Vehicles	0	39	2	41	0	0	1	1	0	35	0	35	0	0	0	0	77
% Heavy Vehicles	0	2.1	0.7	1.8	0	0	9.1	9.1	0	1.6	0	1.6	0	0	0	0	1.7



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	31	2	0	0	0	0	27	3	0	0	0	63
07:15	0	53	2	0	0	0	1	20	0	0	0	0	76
07:30	0	42	1	0	0	0	0	31	0	0	0	0	74
07:45	2	60	1	0	0	1	0	61	1	0	0	0	126
<b>Total</b>	<b>2</b>	<b>186</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>139</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>339</b>
08:00	2	43	2	0	0	0	0	42	0	0	0	0	89
08:15	0	21	1	0	0	0	1	41	0	0	0	0	64
08:30	1	33	2	0	0	0	0	23	0	0	0	0	59
08:45	0	28	1	0	0	0	1	21	0	0	0	0	51
<b>Total</b>	<b>3</b>	<b>125</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>263</b>
16:00	1	10	1	0	0	1	1	12	0	0	0	0	26
16:15	0	2	1	0	0	0	1	9	0	0	0	0	13
16:30	0	12	2	0	0	0	0	10	0	0	0	0	24
16:45	0	11	1	0	0	0	0	14	0	0	0	0	26
<b>Total</b>	<b>1</b>	<b>35</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>89</b>
17:00	0	13	1	0	0	0	0	13	0	0	0	0	27
17:15	0	8	0	0	0	1	0	9	0	0	0	0	18
17:30	0	9	0	0	0	0	0	10	0	0	0	0	19
17:45	0	9	1	0	0	0	0	3	0	0	0	0	13
<b>Total</b>	<b>0</b>	<b>39</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>77</b>
<b>Grand Total</b>	<b>6</b>	<b>385</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>346</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>768</b>
Apprch %	1.5	93.9	4.6	0	0	100	1.4	97.5	1.1	0	0	0	
Total %	0.8	50.1	2.5	0	0	0.4	0.7	45.1	0.5	0	0	0	

Zero Pedestrians were observed during this study.

# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	339	12	0	0	2	2	428	2	0	0	14	818
07:15	9	380	29	0	0	2	1	525	6	0	0	13	965
07:30	5	355	36	0	0	0	2	491	4	0	0	10	903
07:45	11	263	49	0	0	1	6	296	16	0	0	10	652
<b>Total</b>	<b>44</b>	<b>1337</b>	<b>126</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>1740</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>3338</b>
08:00	11	324	48	0	0	2	4	365	4	0	1	4	763
08:15	9	231	36	0	0	0	2	249	5	1	0	6	539
08:30	18	242	35	0	0	0	1	208	0	0	0	10	514
08:45	13	304	56	0	0	2	16	283	5	0	0	8	687
<b>Total</b>	<b>51</b>	<b>1101</b>	<b>175</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>1105</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>2503</b>
16:00	21	420	78	0	0	3	14	457	8	0	0	2	1003
16:15	18	422	70	0	0	2	7	509	7	0	0	6	1041
16:30	23	389	89	0	0	0	9	480	4	0	0	1	995
16:45	19	441	66	0	0	2	7	489	6	0	0	1	1031
<b>Total</b>	<b>81</b>	<b>1672</b>	<b>303</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>37</b>	<b>1935</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>4070</b>
17:00	32	399	66	0	0	2	5	510	13	0	0	0	1027
17:15	25	453	72	0	0	1	13	536	8	0	0	2	1110
17:30	29	522	90	0	0	0	8	524	14	0	0	2	1189
17:45	19	419	76	0	0	7	12	519	28	0	0	3	1083
<b>Total</b>	<b>105</b>	<b>1793</b>	<b>304</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>38</b>	<b>2089</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>4409</b>
<b>Grand Total</b>	<b>281</b>	<b>5903</b>	<b>908</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>109</b>	<b>6869</b>	<b>130</b>	<b>1</b>	<b>1</b>	<b>92</b>	<b>14320</b>
Apprch %	4	83.2	12.8	0	0	100	1.5	96.6	1.8	1.1	1.1	97.9	
Total %	2	41.2	6.3	0	0	0.2	0.8	48	0.9	0	0	0.6	

Zero Pedestrians were observed during this study.



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Skiles Boulevard  
Counter/Board #: BW+LB

File Name : skiles01w  
Site Code : 81568701  
Start Date : 11/17/2015  
Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound					Skiles Blvd Westbound				Route 202 Northbound				Jug handle Northbound	Skiles Blvd Eastbound					Int. Total
	Left	Thru	Bear Right	ROR	Right	Left	Thru	ROR	Right	Left	Thru	ROR	Right		Peds	Left	Thru	ROR	Right	
07:00	0	389	39	0	22	8	5	0	18	0	383	0	3	0	14	10	0	3	0	894
07:15	0	451	21	0	50	6	21	0	14	0	491	0	2	0	11	12	0	2	0	1081
07:30	0	395	93	0	44	8	55	0	19	0	408	0	1	0	35	41	0	15	0	1114
07:45	0	312	71	0	52	13	75	0	22	0	328	0	2	0	31	78	0	18	0	1002
<b>Total</b>	0	1547	224	0	168	35	156	0	73	0	1610	0	8	0	91	141	0	38	0	4091
08:00	0	369	17	0	17	10	19	0	20	0	363	0	2	0	34	37	0	12	0	900
08:15	0	349	8	0	22	11	17	0	13	0	356	0	1	0	11	10	0	3	0	801
08:30	0	332	17	0	33	10	25	0	13	0	312	0	2	0	33	39	0	20	0	836
08:45	0	341	40	0	54	8	43	0	18	0	393	0	3	0	36	38	0	13	0	987
<b>Total</b>	0	1391	82	0	126	39	104	0	64	0	1424	0	8	0	114	124	0	48	0	3524
16:00	0	441	30	0	8	12	5	0	13	0	463	0	3	0	26	29	0	4	0	1034
16:15	0	478	20	0	21	7	38	0	17	0	437	0	1	0	16	24	0	2	0	1061
16:30	0	505	28	0	13	15	17	0	14	0	415	0	2	0	47	57	0	12	0	1125
16:45	0	372	68	0	16	17	26	0	20	0	382	0	5	0	15	32	0	8	0	961
<b>Total</b>	0	1796	146	0	58	51	86	0	64	0	1697	0	11	0	104	142	0	26	0	4181
17:00	0	414	15	0	7	12	10	0	6	0	408	0	11	0	23	49	0	16	0	971
17:15	0	488	13	0	6	4	4	0	12	0	435	0	6	0	13	17	0	0	0	998
17:30	0	424	12	0	4	3	8	0	10	0	404	0	10	0	9	19	0	2	0	905
17:45	0	428	24	0	5	2	5	0	10	0	446	0	4	0	9	31	0	4	0	968
<b>Total</b>	0	1754	64	0	22	21	27	0	38	0	1693	0	31	0	54	116	0	22	0	3842
<b>Grand Total</b>	0	6488	516	0	374	146	373	0	239	0	6424	0	58	0	363	523	0	134	0	15638
<b>Apprch %</b>	0	87.9	7	0	5.1	19.3	49.2	0	31.5	0	99.1	0	0.9	0	35.6	51.3	0	13.1	0	
<b>Total %</b>	0	41.5	3.3	0	2.4	0.9	2.4	0	1.5	0	41.1	0	0.4	0	2.3	3.3	0	0.9	0	
Passenger Vehicles																				
% Passenger Vehicles	0	93.4	94.4	0	95.2	97.9	94.9	0	98.3	0	92.9	0	96.6	0	95	97.1	0	94.8	0	93.6
Heavy Vehicles	0	431	29	0	18	3	19	0	4	0	458	0	2	0	18	15	0	7	0	1004
% Heavy Vehicles	0	6.6	5.6	0	4.8	2.1	5.1	0	1.7	0	7.1	0	3.4	0	5	2.9	0	5.2	0	6.4

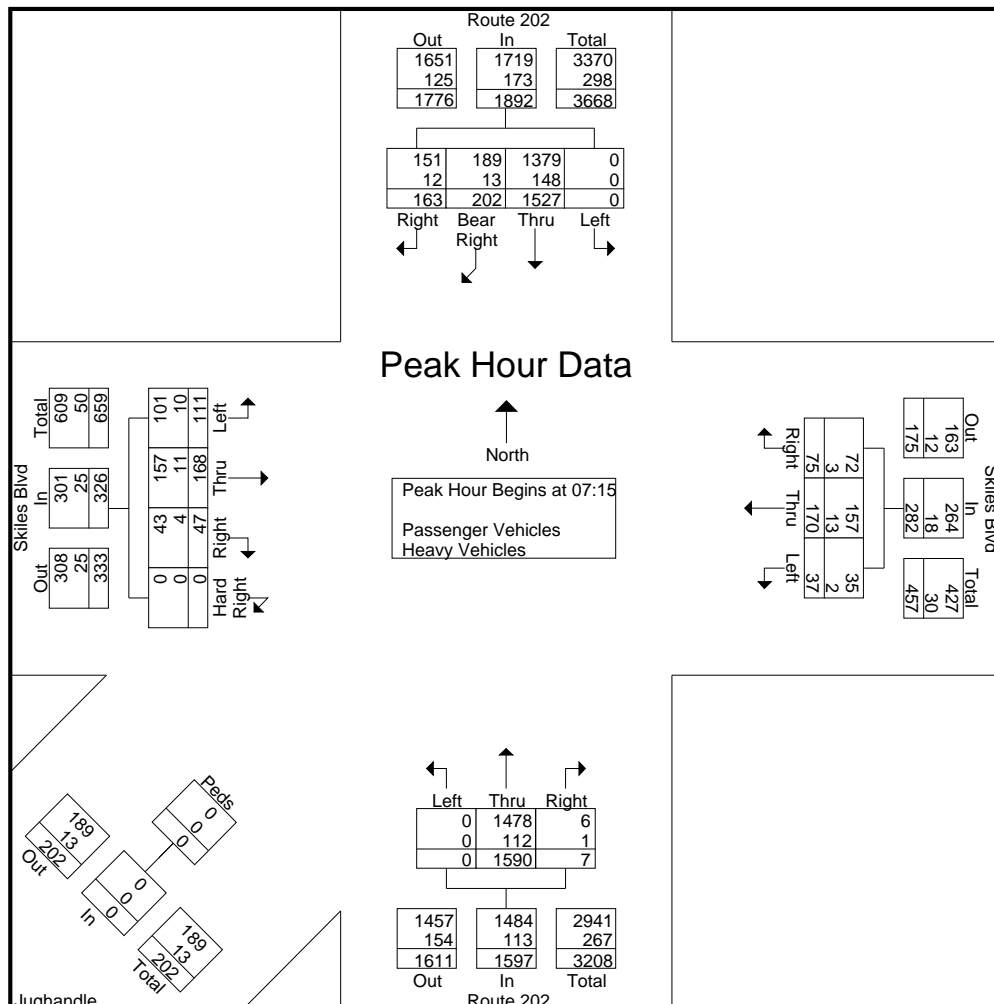
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Skiles Boulevard  
Counter/Board #: BW+LB

File Name : skiles01w  
Site Code : 81568701  
Start Date : 11/17/2015  
Page No : 2

Start Time	Route 202 Southbound						Skiles Blvd Westbound					Route 202 Northbound					Jughandle Northeastbound		Skiles Blvd Eastbound						
	Left	Thru	Bear Right	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Peds	App. Total	Left	Thru	ROR	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:15																									
07:15	0	451	21	0	50	522	6	21	0	14	41	0	491	0	2	493	0	0	11	12	0	2	0	25	1081
07:30	0	395	93	0	44	532	8	55	0	19	82	0	408	0	1	409	0	0	35	41	0	15	0	91	1114
07:45	0	312	71	0	52	435	13	75	0	22	110	0	328	0	2	330	0	0	31	78	0	18	0	127	1002
08:00	0	369	17	0	17	403	10	19	0	20	49	0	363	0	2	365	0	0	34	37	0	12	0	83	900
Total Volume		1527	202	0	163	1892		170	0	75	282		1590		0.4	1597			111	168	0	47	0	326	4097
% App. Total	0	80.7	10.7	0	8.6		13.1	60.3	0	26.6		0	99.6	0	0.4		0		34	51.5	0	14.4	0		
PHF	.000	.846	.543	.000	.784	.889	.712	.567	.000	.852	.641	.000	.810	.000	.875	.810	.000	.000	.793	.538	.000	.653	.000	.642	.919
Passenger Vehicles	0	1379	189	0	151	1719	35	157	0	72	264	0	1478	0	6	1484	0	0	101	157	0	43	0	301	3768
% Passenger Vehicles	0	90.3	93.6	0	92.6	90.9	94.6	92.4	0	96.0	93.6	0	93.0	0	85.7	92.9	0	0	91.0	93.5	0	91.5	0	92.3	92.0
Heavy Vehicles	0	148	13	0	12	173	2	13	0	3	18	0	112	0	1	113	0	0	10	11	0	4	0	25	329
% Heavy Vehicles															14.3										



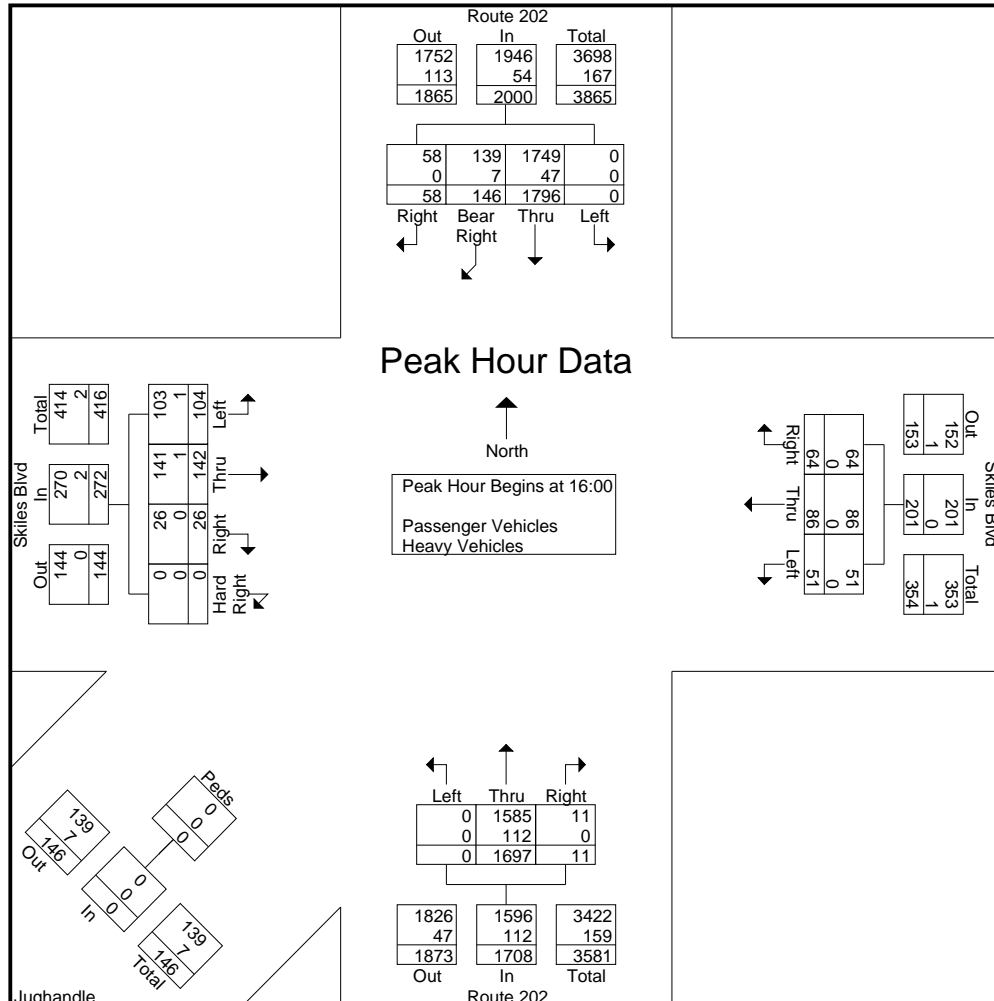
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Skiles Boulevard  
Counter/Board #: BW+LB

File Name : skiles01w  
Site Code : 81568701  
Start Date : 11/17/2015  
Page No : 3

Start Time	Route 202 Southbound						Skiles Blvd Westbound					Route 202 Northbound					Jughandle Northeastbound		Skiles Blvd Eastbound						
	Left	Thru	Bear Right	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Left	Thru	ROR	Right	App. Total	Peds	App. Total	Left	Thru	ROR	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 16:00																									
16:00	0	441	30	0	8	479	12	5	0	13	30	0	463	0	3	466	0	0	26	29	0	4	0	59	1034
16:15	0	478	20	0	21	519	7	38	0	17	62	0	437	0	1	438	0	0	16	24	0	2	0	42	1061
16:30	0	505	28	0	13	546	15	17	0	14	46	0	415	0	2	417	0	0	47	57	0	12	0	116	1125
16:45	0	372	68	0	16	456	17	26	0	20	63	0	382	0	5	387	0	0	15	32	0	8	0	55	961
Total Volume	0	1796	146	0	58	2000	51	86	0	64	201	0	1697	0	11	1708	0	0	104	142	0	26	0	272	4181
% App. Total	0	89.8	7.3	0	2.9		25.4	42.8	0	31.8		0	99.4	0	0.6		0		38.2	52.2	0	9.6	0		
PHF	.000	.889	.537	.000	.690	.916	.750	.566	.000	.800	.798	.000	.916	.000	.550	.916	.000	.000	.553	.623	.000	.542	.000	.586	.929
Passenger Vehicles	0	1749	139	0	58	1946	51	86	0	64	201	0	1585	0	11	1596	0	0	103	141	0	26	0	270	4013
% Passenger Vehicles	0	97.4	95.2	0	100	97.3	100	100	0	100	100	0	93.4	0	100	93.4	0	0	99.0	99.3	0	100	0	99.3	96.0
Heavy Vehicles													112	0	0	112	0	0	1	1	0	0	0	2	168
% Heavy Vehicles																									



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Skiles Boulevard &  
Jughandle / S.C. Access  
Counter/Board #: RS

File Name : skiles02w  
Site Code : 81568702  
Start Date : 11/17/2015  
Page No : 1

## Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Jughandle Southbound			Skiles Blvd Westbound			Access Northbound			Skiles Blvd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	0	2	0	25	0	0	0	0	0	11	2	40
07:15	0	0	8	0	35	0	0	0	0	0	9	2	54
07:30	0	0	12	0	71	0	0	0	0	0	39	2	124
07:45	0	0	10	0	91	0	0	0	0	0	66	1	168
Total	0	0	32	0	222	0	0	0	0	0	125	7	386
08:00	0	0	6	0	41	0	0	0	0	0	28	4	79
08:15	0	0	10	0	32	0	0	0	1	0	14	4	61
08:30	0	0	5	0	54	0	0	0	0	0	26	4	89
08:45	0	0	16	0	47	0	0	0	0	0	29	10	102
Total	0	0	37	0	174	0	0	0	1	0	97	22	331
16:00	0	0	1	0	29	0	0	0	0	0	27	3	60
16:15	0	0	8	0	44	0	0	0	0	0	21	3	76
16:30	0	0	7	0	39	0	0	0	0	0	53	3	102
16:45	0	0	9	0	51	0	0	0	1	0	26	7	94
Total	0	0	25	0	163	0	0	0	1	0	127	16	332
17:00	0	0	2	0	26	0	0	0	0	0	43	7	78
17:15	0	0	3	0	11	0	0	0	2	0	15	6	37
17:30	0	0	4	0	13	0	0	0	0	0	23	3	43
17:45	0	0	2	0	15	0	0	0	0	0	33	2	52
Total	0	0	11	0	65	0	0	0	2	0	114	18	210
Grand Total	0	0	105	0	624	0	0	0	4	0	463	63	1259
Apprch %	0	0	100	0	100	0	0	0	100	0	88	12	
Total %	0	0	8.3	0	49.6	0	0	0	0.3	0	36.8	5	
Passenger Vehicles	0	0	96	0	604	0	0	0	4	0	449	63	1216
% Passenger Vehicles	0	0	91.4	0	96.8	0	0	0	100	0	97	100	96.6
Heavy Vehicles	0	0	9	0	20	0	0	0	0	0	14	0	43
% Heavy Vehicles	0	0	8.6	0	3.2	0	0	0	0	0	3	0	3.4

Jughandle  
Southbound Right  
added to U.S.  
Route 202 &  
Skiles  
Blvd/Stetson  
School Drive NBR

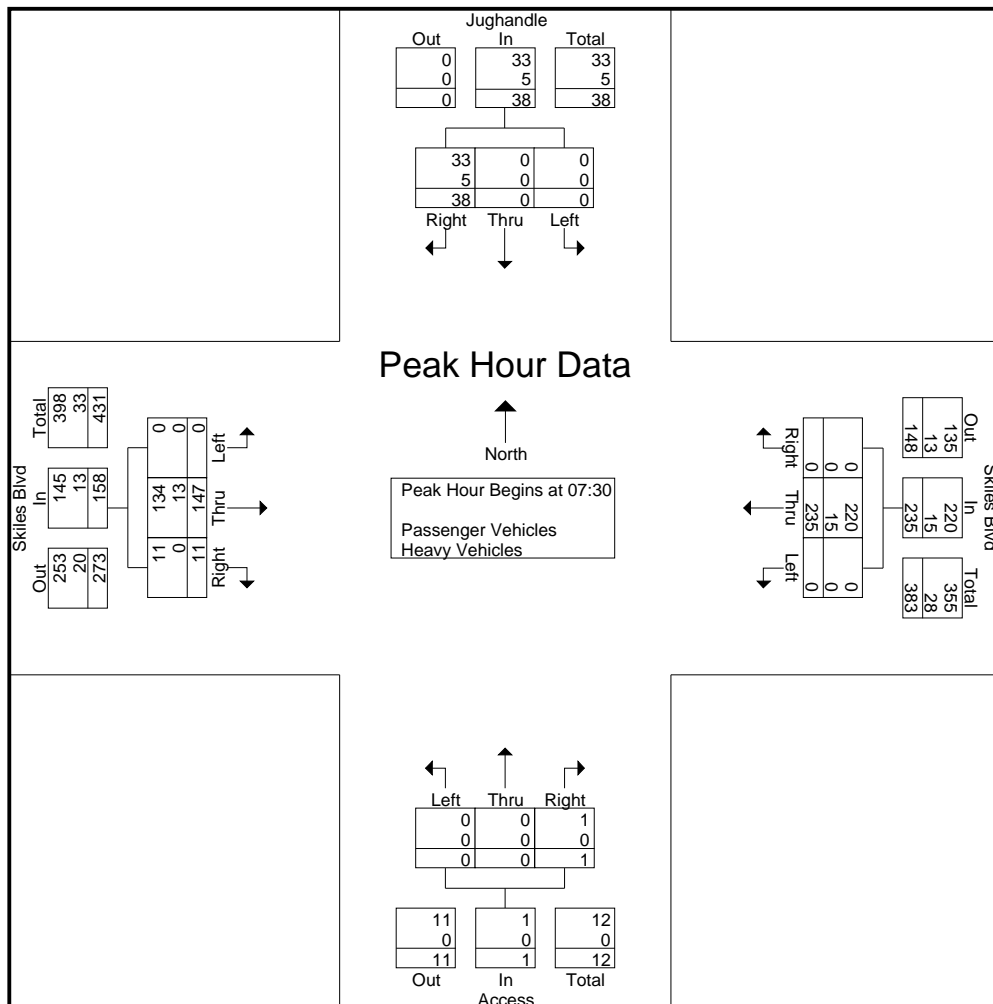
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Skiles Boulevard &  
Jughandle / S.C. Access  
Counter/Board #: RS

File Name : skiles02w  
Site Code : 81568702  
Start Date : 11/17/2015  
Page No : 2

Start Time	Jughandle Southbound				Skiles Blvd Westbound				Access Northbound				Skiles Blvd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	0	12	12	0	71	0	71	0	0	0	0	0	39	2	41	124
07:45	0	0	10	10	0	91	0	91	0	0	0	0	0	66	1	67	168
08:00	0	0	6	6	0	41	0	41	0	0	0	0	0	28	4	32	79
08:15	0	0	10	10	0	32	0	32	0	0	1	1	0	14	4	18	61
Total Volume	0	0	38	38	0	235	0	235	0	0	1	1	0	147	11	158	432
% App. Total	0	0	100		0	100	0		0	0	100		0	93	7		
PHF	.000	.000	.792	.792	.000	.646	.000	.646	.000	.000	.250	.250	.000	.557	.688	.590	.643
Passenger Vehicles	0	0	33	33	0	220	0	220	0	0	1	1	0	134	11	145	399
% Passenger Vehicles	0	0	86.8	86.8	0	93.6	0	93.6	0	0	100	100	0	91.2	100	91.8	92.4
Heavy Vehicles	0	0	5	5	0	15	0	15	0	0	0	0	0	13	0	13	33
% Heavy Vehicles	0	0	13.2	13.2	0	6.4	0	6.4	0	0	0	0	0	8.8	0	8.2	7.6



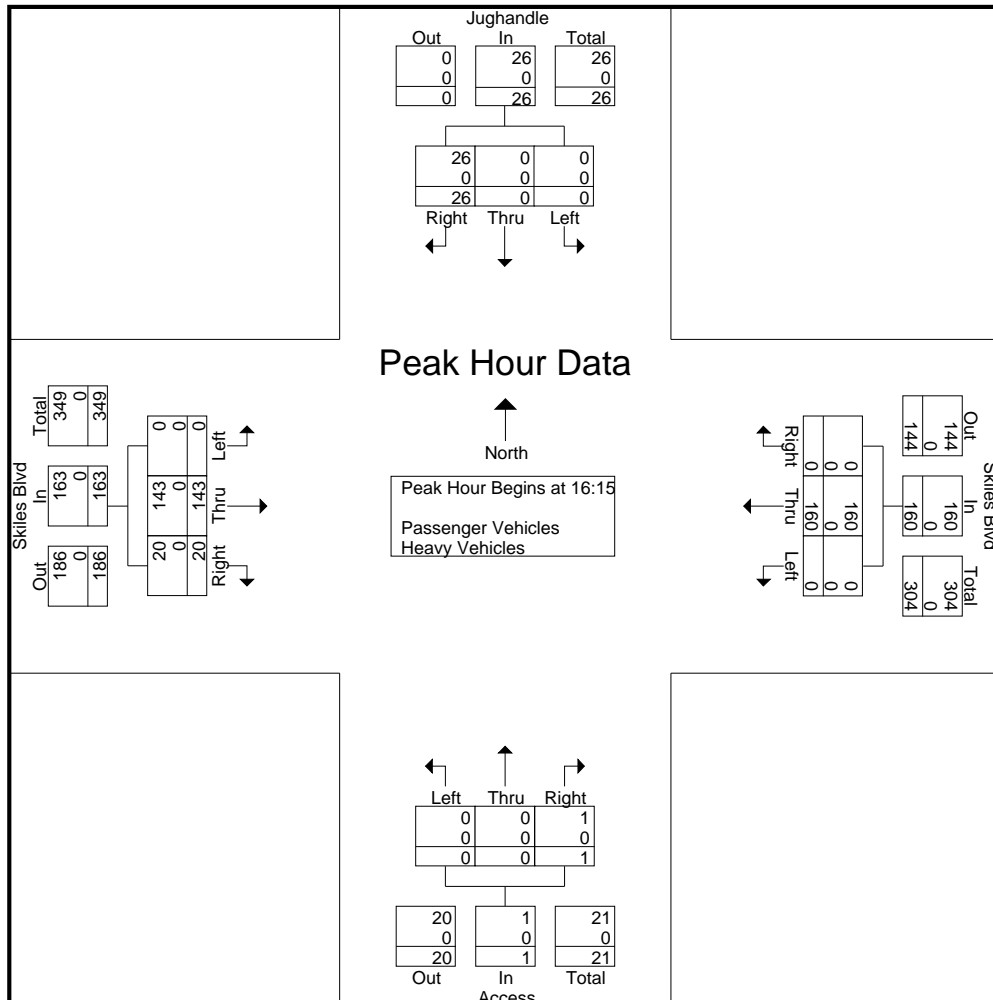
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Skiles Boulevard &  
Jughandle / S.C. Access  
Counter/Board #: RS

File Name : skiles02w  
Site Code : 81568702  
Start Date : 11/17/2015  
Page No : 3

Start Time	Jughandle Southbound				Skiles Blvd Westbound				Access Northbound				Skiles Blvd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	0	8	8	0	44	0	44	0	0	0	0	0	21	3	24	76
16:30	0	0	7	7	0	39	0	39	0	0	0	0	0	53	3	56	102
16:45	0	0	9	9	0	51	0	51	0	0	1	1	0	26	7	33	94
17:00	0	0	2	2	0	26	0	26	0	0	0	0	0	43	7	50	78
Total Volume	0	0	26	26	0	160	0	160	0	0	1	1	0	143	20	163	350
% App. Total	0	0	100		0	100	0		0	0	100		0	87.7	12.3		
PHF	.000	.000	.722	.722	.000	.784	.000	.784	.000	.000	.250	.250	.000	.675	.714	.728	.858
Passenger Vehicles	0	0	26	26	0	160	0	160	0	0	1	1	0	143	20	163	350
% Passenger Vehicles	0	0	100	100	0	100	0	100	0	0	100	100	0	100	100	100	100
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	370	14	0	0	2	2	455	5	0	0	14	881
07:15	9	433	31	0	0	2	2	545	6	0	0	13	1041
07:30	5	397	37	0	0	0	2	522	4	0	0	10	977
07:45	13	323	50	0	0	2	6	357	17	0	0	10	778
<b>Total</b>	<b>46</b>	<b>1523</b>	<b>132</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>12</b>	<b>1879</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>3677</b>
08:00	13	367	50	0	0	2	4	407	4	0	1	4	852
08:15	9	252	37	0	0	0	3	290	5	1	0	6	603
08:30	19	275	37	0	0	0	1	231	0	0	0	10	573
08:45	13	332	57	0	0	2	17	304	5	0	0	8	738
<b>Total</b>	<b>54</b>	<b>1226</b>	<b>181</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>25</b>	<b>1232</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>2766</b>
16:00	22	430	79	0	0	4	15	469	8	0	0	2	1029
16:15	18	424	71	0	0	2	8	518	7	0	0	6	1054
16:30	23	401	91	0	0	0	9	490	4	0	0	1	1019
16:45	19	452	67	0	0	2	7	503	6	0	0	1	1057
<b>Total</b>	<b>82</b>	<b>1707</b>	<b>308</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>39</b>	<b>1980</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>4159</b>
17:00	32	412	67	0	0	2	5	523	13	0	0	0	1054
17:15	25	461	72	0	0	2	13	545	8	0	0	2	1128
17:30	29	531	90	0	0	0	8	534	14	0	0	2	1208
17:45	19	428	77	0	0	7	12	522	28	0	0	3	1096
<b>Total</b>	<b>105</b>	<b>1832</b>	<b>306</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>38</b>	<b>2124</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>4486</b>
<b>Grand Total</b>	<b>287</b>	<b>6288</b>	<b>927</b>	<b>0</b>	<b>0</b>	<b>29</b>	<b>114</b>	<b>7215</b>	<b>134</b>	<b>1</b>	<b>1</b>	<b>92</b>	<b>15088</b>
Apprch %	3.8	83.8	12.4	0	0	100	1.5	96.7	1.8	1.1	1.1	97.9	
Total %	1.9	41.7	6.1	0	0	0.2	0.8	47.8	0.9	0	0	0.6	
Passenger Vehicles	281	5903	908	0	0	26	109	6869	130	1	1	92	14320
% Passenger Vehicles	97.9	93.9	98	0	0	89.7	95.6	95.2	97	100	100	100	94.9
Heavy Vehicles	6	385	19	0	0	3	5	346	4	0	0	0	768
% Heavy Vehicles	2.1	6.1	2	0	0	10.3	4.4	4.8	3	0	0	0	5.1

Zero Pedestrians were observed during this study.

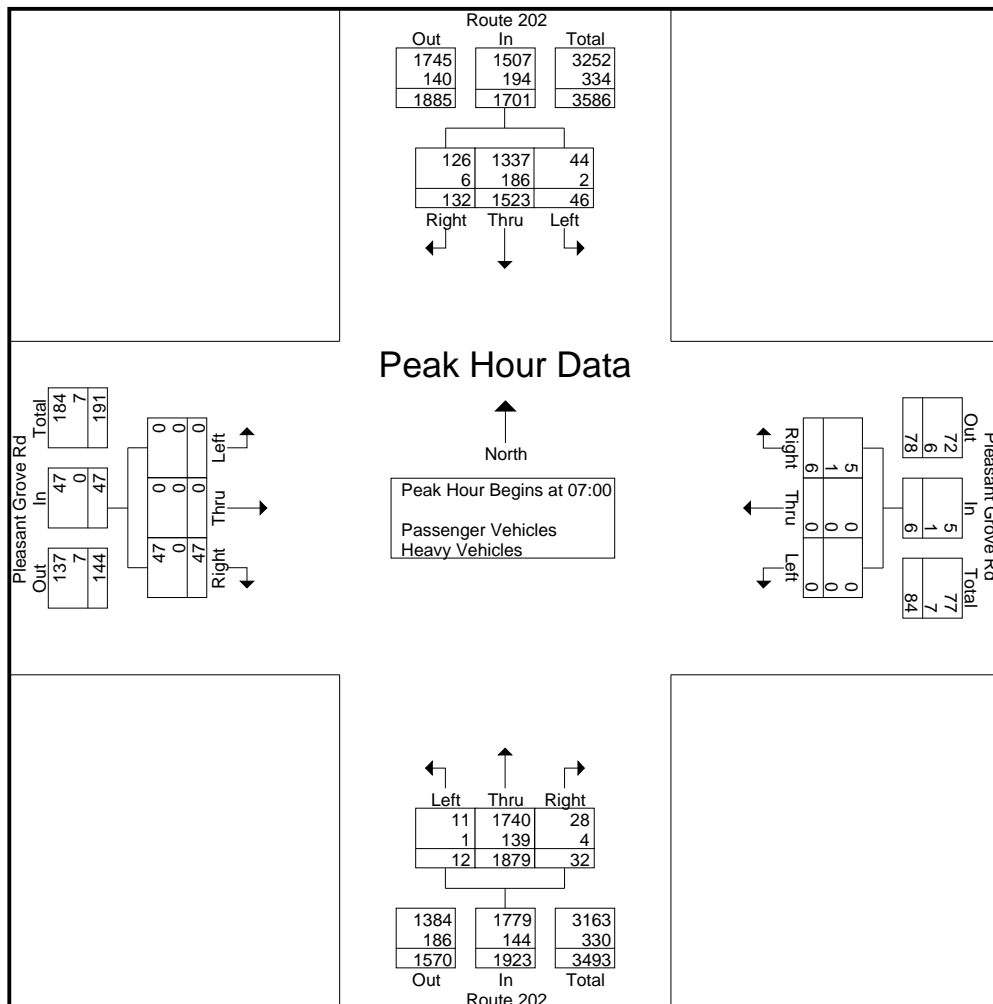
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 2

Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 to 12:30 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	19	370	14	403	0	0	2	2	2	455	5	462	0	0	14	14	881
07:15	9	433	31	473	0	0	2	2	2	545	6	553	0	0	13	13	1041
07:30	5	397	37	439	0	0	0	0	2	522	4	528	0	0	10	10	977
07:45	13	323	50	386	0	0	2	2	6	357	17	380	0	0	10	10	778
Total Volume	46	1523	132	1701	0	0	6	6	12	1879	32	1923	0	0	47	47	3677
% App. Total	2.7	89.5	7.8		0	0	100		0.6	97.7	1.7		0	0	100		
PHF	.605	.879	.660	.899	.000	.000	.750	.750	.500	.862	.471	.869	.000	.000	.839	.839	.883
Passenger Vehicles	44	1337	126	1507	0	0	5	5	11	1740	28	1779	0	0	47	47	3338
% Passenger Vehicles	95.7	87.8	95.5	88.6	0	0	83.3	83.3	91.7	92.6	87.5	92.5	0	0	100	100	90.8
Heavy Vehicles	2	186	6	194	0	0	1	1	1	139	4	144	0	0	0	0	339
% Heavy Vehicles	4.3	12.2	4.5	11.4	0	0	16.7	16.7	8.3	7.4	12.5	7.5	0	0	0	0	9.2





# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Heavy Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	0	31	2	0	0	0	0	27	3	0	0	0	63
07:15	0	53	2	0	0	0	1	20	0	0	0	0	76
07:30	0	42	1	0	0	0	0	31	0	0	0	0	74
07:45	2	60	1	0	0	1	0	61	1	0	0	0	126
Total	2	186	6	0	0	1	1	139	4	0	0	0	339
08:00	2	43	2	0	0	0	0	42	0	0	0	0	89
08:15	0	21	1	0	0	0	1	41	0	0	0	0	64
08:30	1	33	2	0	0	0	0	23	0	0	0	0	59
08:45	0	28	1	0	0	0	1	21	0	0	0	0	51
Total	3	125	6	0	0	0	2	127	0	0	0	0	263
16:00	1	10	1	0	0	1	1	12	0	0	0	0	26
16:15	0	2	1	0	0	0	1	9	0	0	0	0	13
16:30	0	12	2	0	0	0	0	10	0	0	0	0	24
16:45	0	11	1	0	0	0	0	14	0	0	0	0	26
Total	1	35	5	0	0	1	2	45	0	0	0	0	89
17:00	0	13	1	0	0	0	0	13	0	0	0	0	27
17:15	0	8	0	0	0	1	0	9	0	0	0	0	18
17:30	0	9	0	0	0	0	0	10	0	0	0	0	19
17:45	0	9	1	0	0	0	0	3	0	0	0	0	13
Total	0	39	2	0	0	1	0	35	0	0	0	0	77
Grand Total	6	385	19	0	0	3	5	346	4	0	0	0	768
Apprch %	1.5	93.9	4.6	0	0	100	1.4	97.5	1.1	0	0	0	
Total %	0.8	50.1	2.5	0	0	0.4	0.7	45.1	0.5	0	0	0	

Zero Pedestrians were observed during this study.

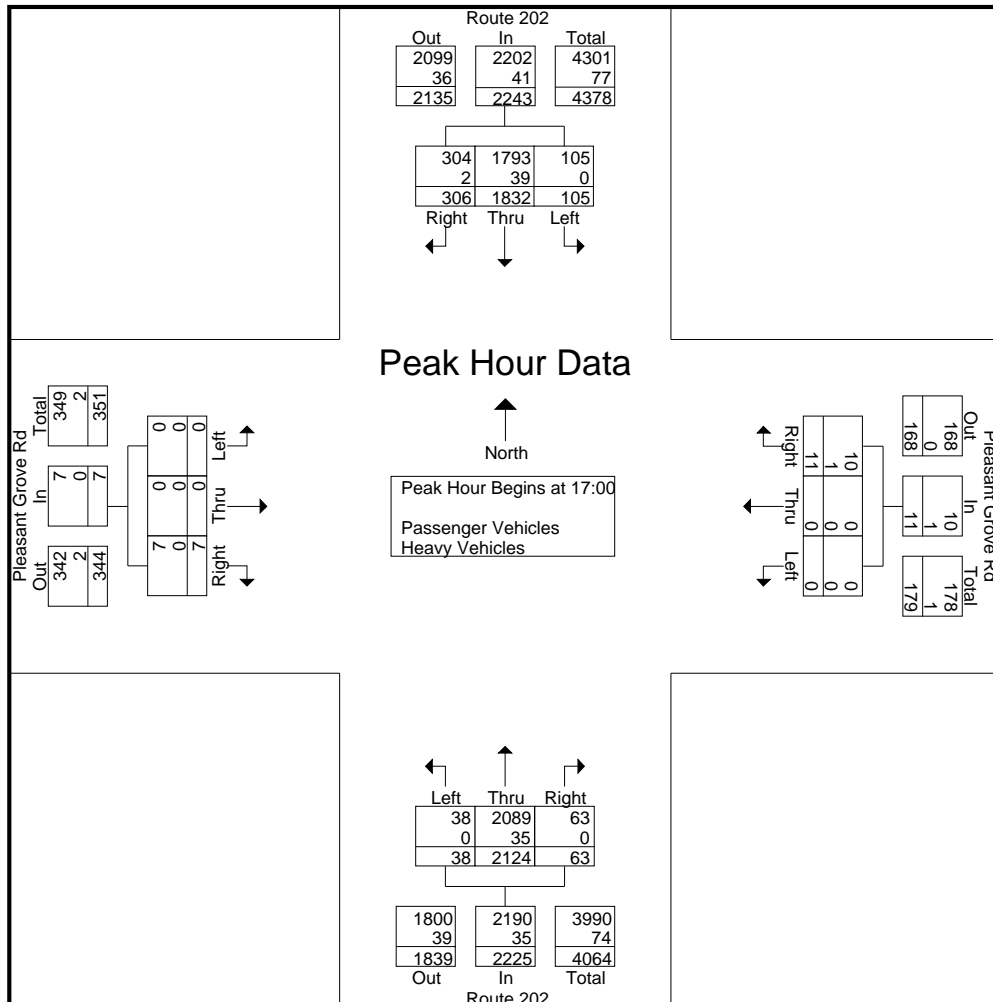
# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 3

Start Time	Route 202 Southbound				Pleasant Grove Rd Westbound				Route 202 Northbound				Pleasant Grove Rd Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 12:45 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	32	412	67	511	0	0	2	2	5	523	13	541	0	0	0	0	1054
17:15	25	461	72	558	0	0	2	2	13	545	8	566	0	0	2	2	1128
17:30	29	531	90	650	0	0	0	0	8	534	14	556	0	0	2	2	1208
17:45	19	428	77	524	0	0	7	7	12	522	28	562	0	0	3	3	1096
Total Volume	105	1832	306	2243	0	0	11	11	38	2124	63	2225	0	0	7	7	4486
% App. Total	4.7	81.7	13.6		0	0	100		1.7	95.5	2.8		0	0	100		
PHF	.820	.863	.850	.863	.000	.000	.393	.393	.731	.974	.563	.983	.000	.000	.583	.583	.928
Passenger Vehicles	105	1793	304	2202	0	0	10	10	38	2089	63	2190	0	0	7	7	4409
% Passenger Vehicles	100	97.9	99.3	98.2	0	0	90.9	90.9	100	98.4	100	98.4	0	0	100	100	98.3
Heavy Vehicles	0	39	2	41	0	0	1	1	0	35	0	35	0	0	0	0	77
% Heavy Vehicles	0	2.1	0.7	1.8	0	0	9.1	9.1	0	1.6	0	1.6	0	0	0	0	1.7



# McMahon Associates, Inc.

425 Commerce Drive, Suite 200  
Fort Washington, P A 19034

Municipality: Westtown Township  
Location: Route 202 &  
Pleasant Grove Road  
Counter/Board #: LB+JB

File Name : westtown04w  
Site Code : 00000000  
Start Date : 9/8/2016  
Page No : 1

### Groups Printed- Passenger Vehicles

Start Time	Route 202 Southbound			Pleasant Grove Rd Westbound			Route 202 Northbound			Pleasant Grove Rd Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00	19	339	12	0	0	2	2	428	2	0	0	14	818
07:15	9	380	29	0	0	2	1	525	6	0	0	13	965
07:30	5	355	36	0	0	0	2	491	4	0	0	10	903
07:45	11	263	49	0	0	1	6	296	16	0	0	10	652
<b>Total</b>	<b>44</b>	<b>1337</b>	<b>126</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>1740</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>3338</b>
08:00	11	324	48	0	0	2	4	365	4	0	1	4	763
08:15	9	231	36	0	0	0	2	249	5	1	0	6	539
08:30	18	242	35	0	0	0	1	208	0	0	0	10	514
08:45	13	304	56	0	0	2	16	283	5	0	0	8	687
<b>Total</b>	<b>51</b>	<b>1101</b>	<b>175</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>23</b>	<b>1105</b>	<b>14</b>	<b>1</b>	<b>1</b>	<b>28</b>	<b>2503</b>
16:00	21	420	78	0	0	3	14	457	8	0	0	2	1003
16:15	18	422	70	0	0	2	7	509	7	0	0	6	1041
16:30	23	389	89	0	0	0	9	480	4	0	0	1	995
16:45	19	441	66	0	0	2	7	489	6	0	0	1	1031
<b>Total</b>	<b>81</b>	<b>1672</b>	<b>303</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>37</b>	<b>1935</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>4070</b>
17:00	32	399	66	0	0	2	5	510	13	0	0	0	1027
17:15	25	453	72	0	0	1	13	536	8	0	0	2	1110
17:30	29	522	90	0	0	0	8	524	14	0	0	2	1189
17:45	19	419	76	0	0	7	12	519	28	0	0	3	1083
<b>Total</b>	<b>105</b>	<b>1793</b>	<b>304</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>38</b>	<b>2089</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>4409</b>
<b>Grand Total</b>	<b>281</b>	<b>5903</b>	<b>908</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>109</b>	<b>6869</b>	<b>130</b>	<b>1</b>	<b>1</b>	<b>92</b>	<b>14320</b>
Apprch %	4	83.2	12.8	0	0	100	1.5	96.6	1.8	1.1	1.1	97.9	
Total %	2	41.2	6.3	0	0	0.2	0.8	48	0.9	0	0	0.6	

Zero Pedestrians were observed during this study.

West Pleasant Grove Road & Westminster Presbyterian Church Accesses									
Tuesday, August 6, 2019 7-9am and 4-6pm									
Counter: LB									
<u>Eastern Driveway</u>					<u>Western Driveway</u>				
	<u>Left In</u>	<u>Left Out</u>	<u>Right In</u>	<u>Right Out</u>		<u>Left In</u>	<u>Left Out</u>	<u>Right In</u>	<u>Right Out</u>
7:00	1	0	0	0	7:00	0	0	0	0
7:15	1	0	0	0	7:15	0	0	0	0
7:30	2	0	1	0	7:30	1	0	0	0
7:45	3	1	0	0	7:45	0	0	0	0
8:00	1	0	1	1	8:00	0	0	0	0
8:15	1	0	2	2	8:15	0	0	0	0
8:30	1	0	2	1	8:30	0	0	0	0
8:45	2	2	2	1	8:45	0	0	1	0
4:00	1	0	0	0	4:00	0	0	0	0
4:15	0	1	0	0	4:15	0	0	0	0
4:30	2	0	0	1	4:30	0	0	0	0
4:45	2	0	0	3	4:45	0	0	0	0
5:00	2	0	1	2	5:00	0	0	0	0
5:15	0	2	0	0	5:15	0	0	0	0
5:30	1	2	0	2	5:30	0	0	0	0
5:45	0	0	0	0	5:45	0	0	0	0

# McMahon Associates, Inc.

Transportation Engineers and Planners

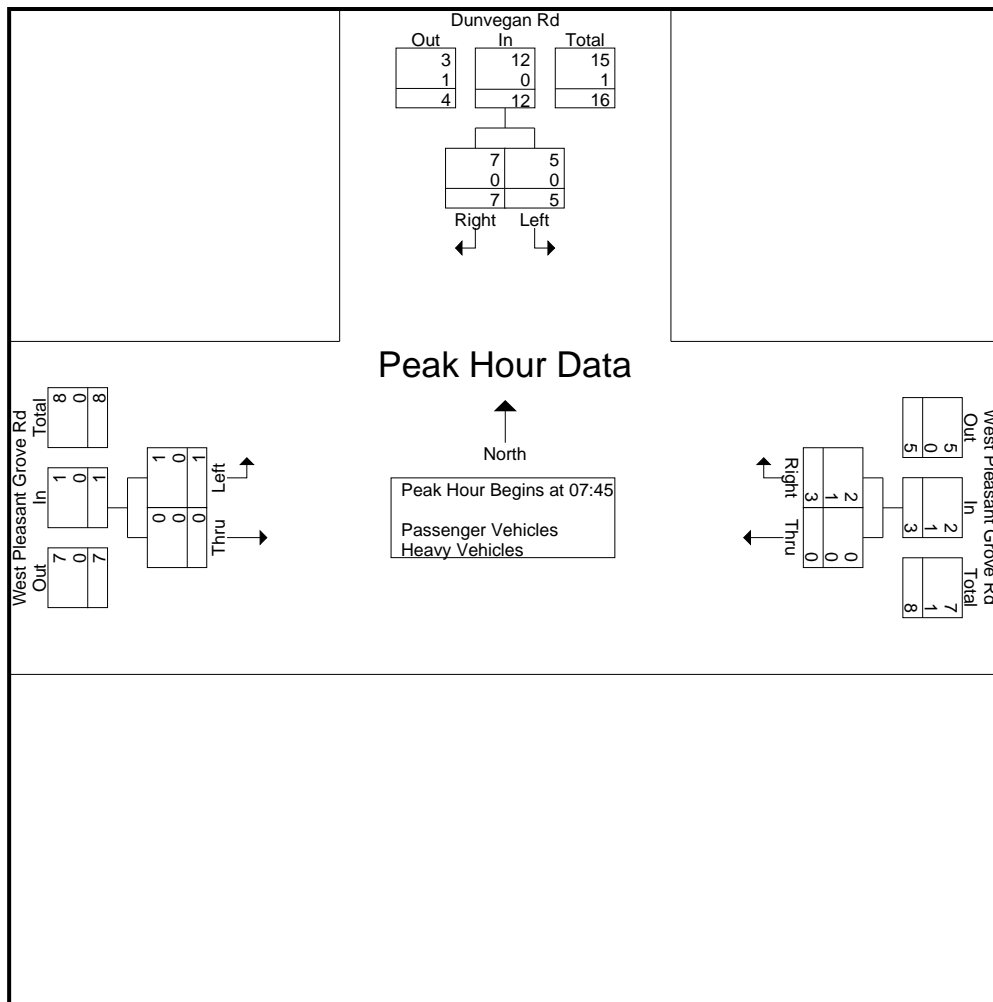
425 Commerce Drive, Suite 200

Fort Washington, PA 19034

Municipality: Westtown Township  
 Location: West Pleasant Grove Road &  
 Dunvegan Road  
 Counter RR

File Name : dunvegan01w  
 Site Code : 81645101  
 Start Date : 8/6/2019  
 Page No : 2

Start Time	Dunvegan Rd Southbound			West Pleasant Grove Rd Westbound			West Pleasant Grove Rd Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45										
07:45	1	1	2	0	1	1	0	0	0	3
08:00	2	2	4	0	0	0	0	0	0	4
08:15	2	0	2	0	0	0	1	0	1	3
08:30	0	4	4	0	2	2	0	0	0	6
Total Volume	5	7	12	0	3	3	1	0	1	16
% App. Total	41.7	58.3		0	100		100	0		
PHF	.625	.438	.750	.000	.375	.375	.250	.000	.250	.667
Passenger Vehicles	5	7	12	0	2	2	1	0	1	15
% Passenger Vehicles	100	100	100	0	66.7	66.7	100	0	100	93.8
Heavy Vehicles	0	0	0	0	1	1	0	0	0	1
% Heavy Vehicles	0	0	0	0	33.3	33.3	0	0	0	6.3



# McMahon Associates, Inc.

Transportation Engineers and Planners

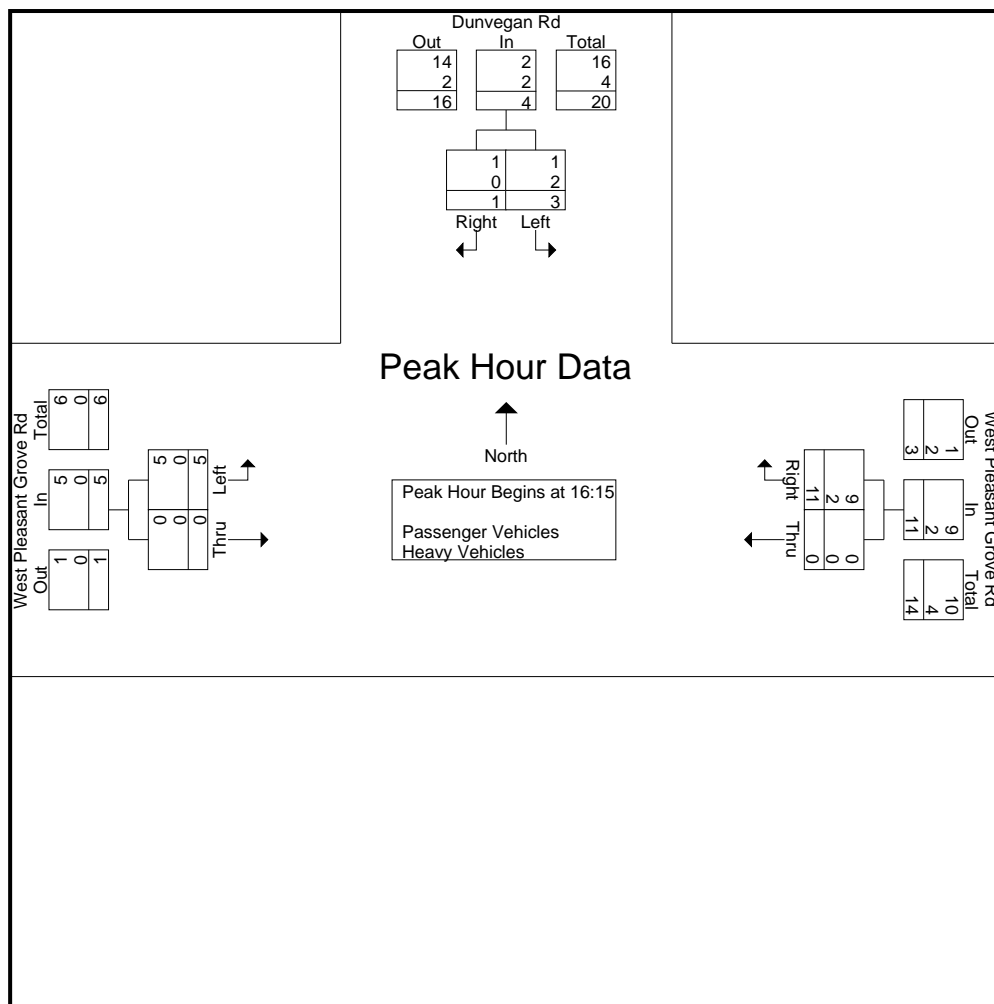
425 Commerce Drive, Suite 200

Fort Washington, PA 19034

Municipality: Westtown Township  
 Location: West Pleasant Grove Road &  
 Dunvegan Road  
 Counter RR

File Name : dunvegan01w  
 Site Code : 81645101  
 Start Date : 8/6/2019  
 Page No : 3

Start Time	Dunvegan Rd Southbound			West Pleasant Grove Rd Westbound			West Pleasant Grove Rd Eastbound			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 16:15										
16:15	0	1	1	0	2	2	2	0	2	5
16:30	1	0	1	0	2	2	0	0	0	3
16:45	0	0	0	0	3	3	1	0	1	4
17:00	2	0	2	0	4	4	2	0	2	8
Total Volume	3	1	4	0	11	11	5	0	5	20
% App. Total	75	25	50.0	0	100	100	100	0	100	80.0
PHF	.375	.250	.500	.000	.688	.688	.625	.000	.625	.625
Passenger Vehicles	1	1	2	0	9	9	5	0	5	16
% Passenger Vehicles	33.3	100	50.0	0	81.8	81.8	100	0	100	80.0
Heavy Vehicles	2	0	2	0	2	2	0	0	0	4
% Heavy Vehicles	66.7	0	50.0	0	18.2	18.2	0	0	0	20.0



# McMahon Associates, Inc.

Transportation Engineers and Planners

425 Commerce Drive, Suite 200

Fort Washington, PA 19034

Municipality: Westtown Township  
 Location: West Pleasant Grove Road &  
 Dunvegan Road  
 Counter RR

File Name : dunvegan01w  
 Site Code : 81645101  
 Start Date : 8/6/2019  
 Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles

Start Time	Dunvegan Rd Southbound		West Pleasant Grove Rd Westbound		West Pleasant Grove Rd Eastbound		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:00	2	0	0	0	0	0	2
07:15	1	0	0	1	0	0	2
07:30	1	1	0	1	0	0	3
07:45	1	1	0	1	0	0	3
Total	5	2	0	3	0	0	10
08:00	2	2	0	0	0	0	4
08:15	2	0	0	0	1	0	3
08:30	0	4	0	2	0	0	6
08:45	0	1	0	0	0	0	1
Total	4	7	0	2	1	0	14
*** BREAK ***							
16:00	0	1	0	4	0	0	5
16:15	0	1	0	2	2	0	5
16:30	1	0	0	2	0	0	3
16:45	0	0	0	3	1	0	4
Total	1	2	0	11	3	0	17
17:00	2	0	0	4	2	0	8
17:15	1	0	0	1	2	0	4
17:30	1	0	0	3	0	0	4
17:45	0	2	0	0	0	0	2
Total	4	2	0	8	4	0	18
Grand Total	14	13	0	24	8	0	59
Apprch %	51.9	48.1	0	100	100	0	
Total %	23.7	22	0	40.7	13.6	0	
Passenger Vehicles	12	13	0	18	8	0	51
% Passenger Vehicles	85.7	100	0	75	100	0	86.4
Heavy Vehicles	2	0	0	6	0	0	8
% Heavy Vehicles	14.3	0	0	25	0	0	13.6

# McMahon Associates, Inc.

Transportation Engineers and Planners

425 Commerce Drive, Suite 200

Fort Washington, PA 19034

Municipality: Westtown Township  
 Location: West Pleasant Grove Road &  
 Dunvegan Road  
 Counter RR

File Name : dunvegan01w  
 Site Code : 81645101  
 Start Date : 8/6/2019  
 Page No : 1

Groups Printed- Heavy Vehicles

Start Time	Dunvegan Rd Southbound		West Pleasant Grove Rd Westbound		West Pleasant Grove Rd Eastbound		Int. Total
	Left	Right	Thru	Right	Left	Thru	
*** BREAK ***							
07:15	0	0	0	1	0	0	1
*** BREAK ***							
Total	0	0	0	1	0	0	1
*** BREAK ***							
08:30	0	0	0	1	0	0	1
*** BREAK ***							
Total	0	0	0	1	0	0	1
*** BREAK ***							
16:00	0	0	0	1	0	0	1
*** BREAK ***							
16:45	0	0	0	2	0	0	2
Total	0	0	0	3	0	0	3
17:00	2	0	0	0	0	0	2
17:15	0	0	0	1	0	0	1
*** BREAK ***							
Total	2	0	0	1	0	0	3
Grand Total	2	0	0	6	0	0	8
Apprch %	100	0	0	100	0	0	
Total %	25	0	0	75	0	0	



# McMahon Associates, Inc.

Transportation Engineers and Planners

425 Commerce Drive, Suite 200

Fort Washington, PA 19034

Municipality: Westtown Township  
 Location: West Pleasant Grove Road &  
 Dunvegan Road  
 Counter RR

File Name : dunvegan01w  
 Site Code : 81645101  
 Start Date : 8/6/2019  
 Page No : 1

Groups Printed- Passenger Vehicles

Start Time	Dunvegan Rd Southbound		West Pleasant Grove Rd Westbound		West Pleasant Grove Rd Eastbound		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:00	2	0	0	0	0	0	2
07:15	1	0	0	0	0	0	1
07:30	1	1	0	1	0	0	3
07:45	1	1	0	1	0	0	3
Total	5	2	0	2	0	0	9
08:00	2	2	0	0	0	0	4
08:15	2	0	0	0	1	0	3
08:30	0	4	0	1	0	0	5
08:45	0	1	0	0	0	0	1
Total	4	7	0	1	1	0	13
*** BREAK ***							
16:00	0	1	0	3	0	0	4
16:15	0	1	0	2	2	0	5
16:30	1	0	0	2	0	0	3
16:45	0	0	0	1	1	0	2
Total	1	2	0	8	3	0	14
17:00	0	0	0	4	2	0	6
17:15	1	0	0	0	2	0	3
17:30	1	0	0	3	0	0	4
17:45	0	2	0	0	0	0	2
Total	2	2	0	7	4	0	15
Grand Total	12	13	0	18	8	0	51
Apprch %	48	52	0	100	100	0	
Total %	23.5	25.5	0	35.3	15.7	0	



## Appendix E

# Initial Queue Observations





### Queuing Observation Worksheet

Intersection Name: Rt. 202 (Wilmington Pike) & Rt. 926 (Street Road)  
 Date: 11/13/2013  
 Counter Name: TML

Time AM	Rt. 926 Eastbound			Rt. 926 Westbound			Rt. 202 (Northbound)				Rt. 202 (Southbound)		
	←	↔		←	↑	↗	←	↑	↑	↗	←	↑	↗
7:15	6	5		-	-	-	0	7	11	0	-	-	-
	11	6		-	-	-	0	11	12	0	-	-	-
	8	7		-	-	-	0	13	15	0	-	-	-
AVG	8	6						23					
7:30	9	10		-	-	-	0	7	5	0	-	-	-
	9	12		-	-	-	0	12	12	0	-	2	1
				-	-	-	-	-	-	-			
7:45	12	13		-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-
8:00	16	20		-	-	-	-	-	-	-	-	3	4
	18	12		-	-	-	-	-	-	-	-	3	2
	17	19		-	-	-	-	-	-	-	-	1	-

\*Sample 1/Sample 2/Sample 3 - Each number represents the number of vehicles sitting in the queue at the time of each observation.



### Queuing Observation Worksheet

Intersection Name: Rt. 202 (Wilmington Pike) &  
 Rt. 926 (Street Road)  
 Date: 11/13/2013  
 Counter Name: TML

Time PM	Rt. 926 Eastbound		Rt. 926 Westbound			Rt. 202 (Northbound)				Rt. 202 (Southbound)		
	←	↔	←	↑	↗	←	↑	↑	↗	←	↑	↗
4:40	-	-	0	2	0	-	-	-	-			
			0	3	0	-	-	-	-			
										SEE RT. 202		
4:55	-	-	-	-	-	-	-	-	-	SOUTHBOUND		
	-	-	-	-	-	-	-	-	-	INITIAL QUEUE		
	-	-	-	-	-	-	-	-	-	ESTIMATION		
5:10	-	-	-	-	-	0	12	10	0	WORKSHEET		
	-	-	-	6	-	0	5	4	0			
	-	-	-	-	-	0	6	5	0			
							14					
AVG												
5:25	-	-	-	-	-	0	3	3	0			

\*Sample 1/Sample 2/Sample 3 - Each number represents the number of vehicles sitting in the queue at the time of each observation.

Job BOZZUTO Apt- Westtown McMahon Project No. 812248.11 Sheet \_\_\_\_\_ of \_\_\_\_\_  
Description WEEKDAY PM Designed By TML Date 11-13-2013  
INITIAL Queue Estimation Checked By \_\_\_\_\_ Date \_\_\_\_\_

## Rt. 202 Southbound

Approximately 1300' of the southbound queue was observed to clear during each cycle at the Rt. 202 and Rt. 926 intersection.

$$L_H = (25 \times 0.96) + (45 \times 0.04) = 25.8'$$

$$1300' = 25.8' \times (\# \text{ of vehicles})$$

$$\# \text{ of vehicles} = 51 \text{ vehicles (per lane)}$$

Back of queue was estimated to approximately 3100' north of intersection.

$$3100' = 25.8' \times (\# \text{ of vehicles})$$

$$\# \text{ of vehicles} = 120 \text{ vehicles (per lane)}$$

Therefore, it is estimated that there is approximately 1800' of initial unmet demand.

$$120 \text{ vehicles} - 51 \text{ vehicles} = 69 \text{ vehicles (per lane)}$$

# Appendix F

## Site Trip Generation





Project Information	
Project Name:	Robinson Tract
McMahon Project No:	816451
Date:	8/5/2019
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 10th Edition

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
<b>220 - Multifamily Housing (Low-Rise)</b>	135 dwelling units	980	14	49	63	48	29	77
<b>210 - Single Family Detached Housing</b>	184 dwelling units	1,822	33	102	135	115	67	182
<b>Total Trips</b>		<b>2,802</b>	<b>47</b>	<b>151</b>	<b>198</b>	<b>163</b>	<b>96</b>	<b>259</b>

## Appendix G

# Connector Road and Site Access Traffic Signal and Turning Lane Warrant Analysis Worksheets



*Street Road (S.R. 0926) and  
Connector Road / Bridlewood Boulevard*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and Connector Road Eastbound Street Road (S.R. 0926) Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Signalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	45		
Type of Terrain:	Rolling		
		Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	82	2.0%	85
	Through	-	710	4.0%	753
	Right	Yes	39	3.0%	41
Opposing	Left	Yes	8	0.0%	8
	Through	-	267	9.0%	304
	Right	Yes	14	2.0%	15

Advancing Volume:	879
Opposing Volume:	327
Left Turn Volume:	85

% Left Turns in Advancing Volume: 9.67%

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

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

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <b>Figure 3</b>	Applicable Warrant Figure: <b>N/A</b>
Warrant Met?: <b>Yes</b>	Warrant Met?: <b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized	
Design Hour Volume of Turning Lane:	85	
Cycles Per Hour (Assumed):	Known	
Cycles Per Hour (If Known):	40	Average # of Vehicles/Cycle: 2.0

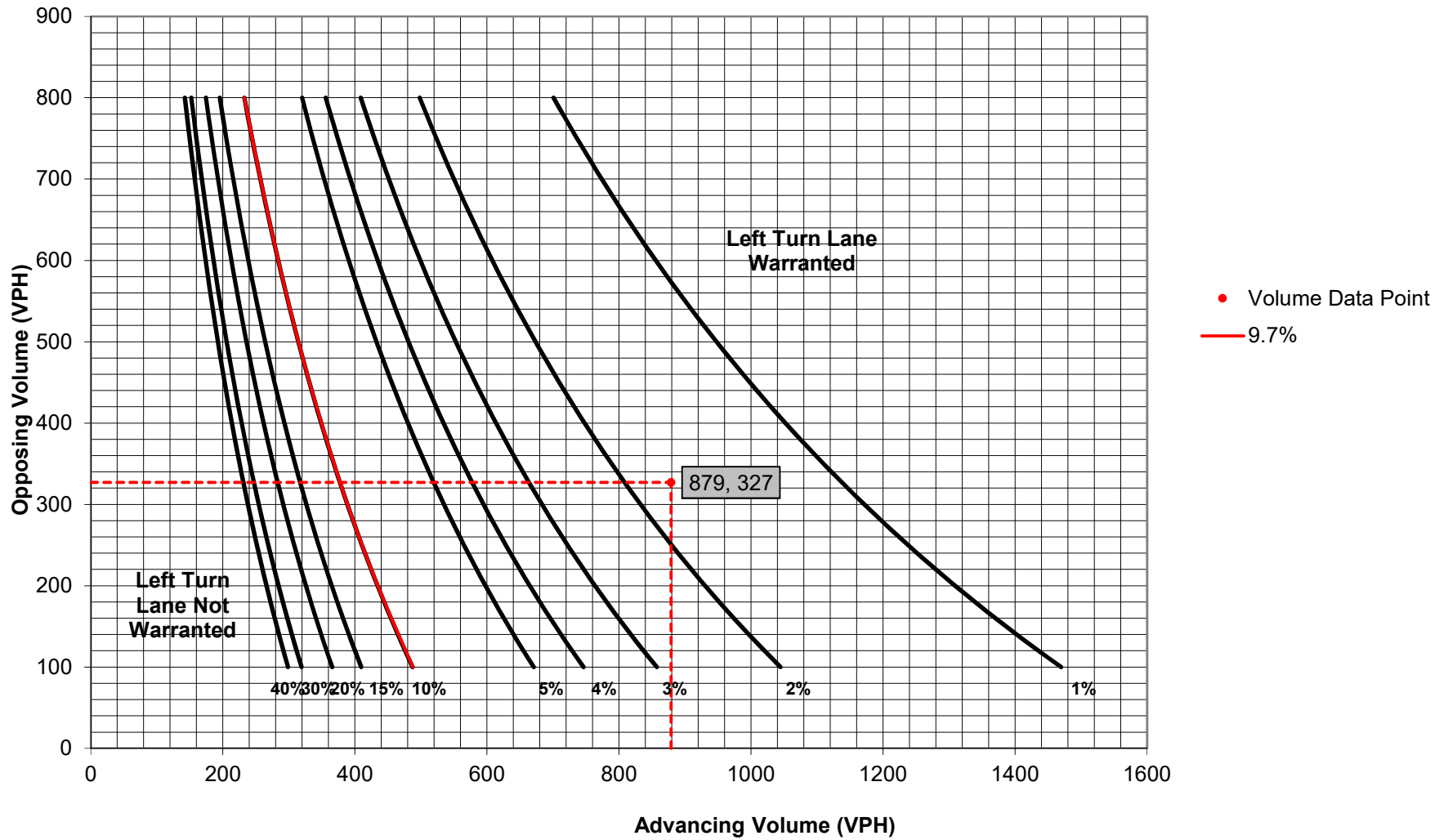
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>175</b>	Feet
Required Left Turn Lane Storage Length:	<b>175</b>	Feet

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and Connector Road Eastbound Street Road (S.R. 0926) Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Signalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	45		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	122	2.0%	126
	Through	-	614	3.0%	642
	Right	Yes	39	0.0%	39
Opposing	Left	Yes	33	0.0%	33
	Through	-	409	2.0%	422
	Right	Yes	49	2.0%	51

Advancing Volume:	807
Opposing Volume:	506
Left Turn Volume:	126

% Left Turns in Advancing Volume: 15.61%

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

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

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <b>Figure 3</b>  Warrant Met?: <b>Yes</b>	Applicable Warrant Figure: <b>N/A</b>  Warrant Met?: <b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized		
Design Hour Volume of Turning Lane:	126		
Cycles Per Hour (Assumed):	Known		
Cycles Per Hour (If Known):	40	Average # of Vehicles/Cycle:	3.0

Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	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

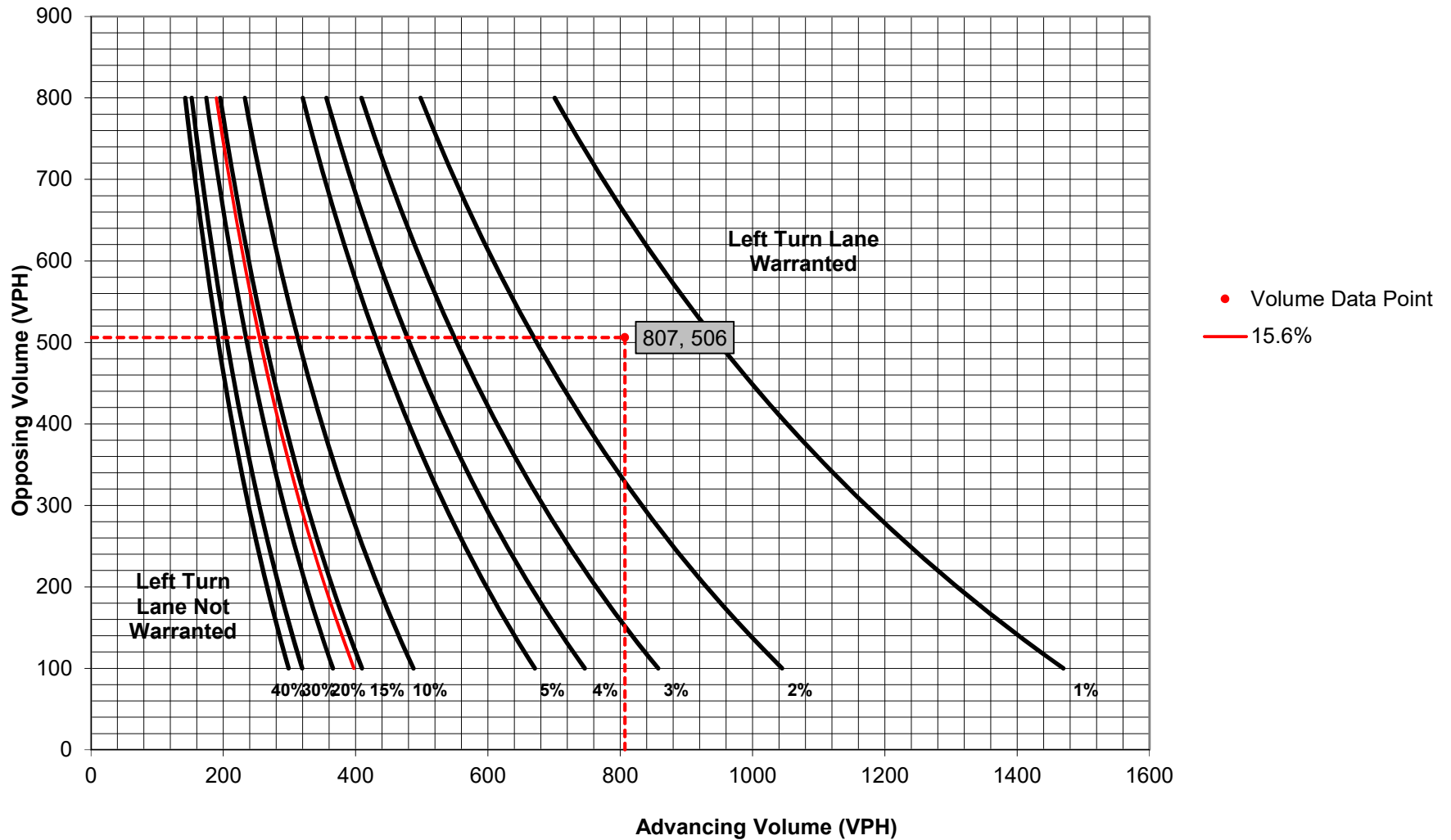
Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>225</b>	Feet
Required Left Turn Lane Storage Length:	<b>225</b>	Feet

Additional Findings:  
N/A

Additional Comments / Justifications:



**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and Connector Road Westbound Street Road (S.R. 0926) Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Signalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	45		
Type of Terrain:	Rolling		
		Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	No	8	0.0%	N/A
	Through	-	267	9.0%	304
	Right	-	14	2.0%	15

Advancing Volume:	319
Right Turn Volume:	15

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>	Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">Figure 10</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">No</span>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized		
Design Hour Volume of Turning Lane:	15		
Cycles Per Hour (Assumed):	Known		
Cycles Per Hour (If Known):	40	Average # of Vehicles/Cycle:	N/A

PennDOT Publication 46, Exhibit 11-6

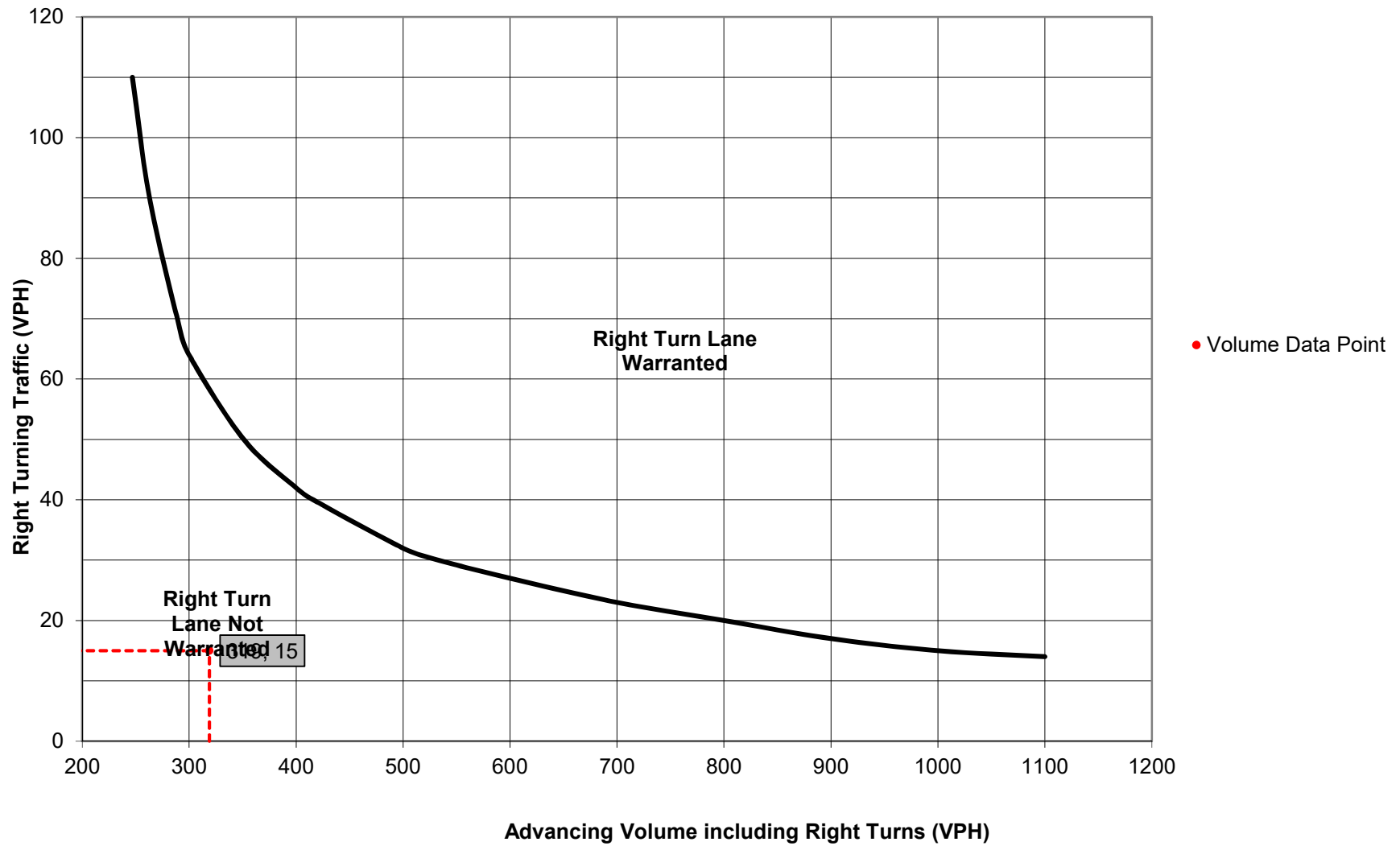
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and Connector Road Westbound Street Road (S.R. 0926) Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	PM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Signalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	45		
Type of Terrain:	Rolling		
		Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes			N/A	Advancing Volume: N/A
	Through	-			N/A	Opposing Volume: N/A
	Right	Yes			N/A	Left Turn Volume: N/A
Opposing	Left	Yes			N/A	
	Through	-			N/A	
	Right	Yes			N/A	% Left Turns in Advancing Volume: N/A

#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV	
Advancing	Left	No	33	0.0%	N/A	Advancing Volume: 473
	Through	-	409	2.0%	422	Right Turn Volume: 51
	Right	-	49	2.0%	51	

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 10**

Warrant Met?: **Yes**

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized	Average # of Vehicles/Cycle:	1.0
Design Hour Volume of Turning Lane:	51		
Cycles Per Hour (Assumed):	Known		
Cycles Per Hour (If Known):	40		

#### PennDOT Publication 46, Exhibit 11-6

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

Right Turn Lane Storage Length, Condition A: **N/A** Feet

Condition B: **125** Feet

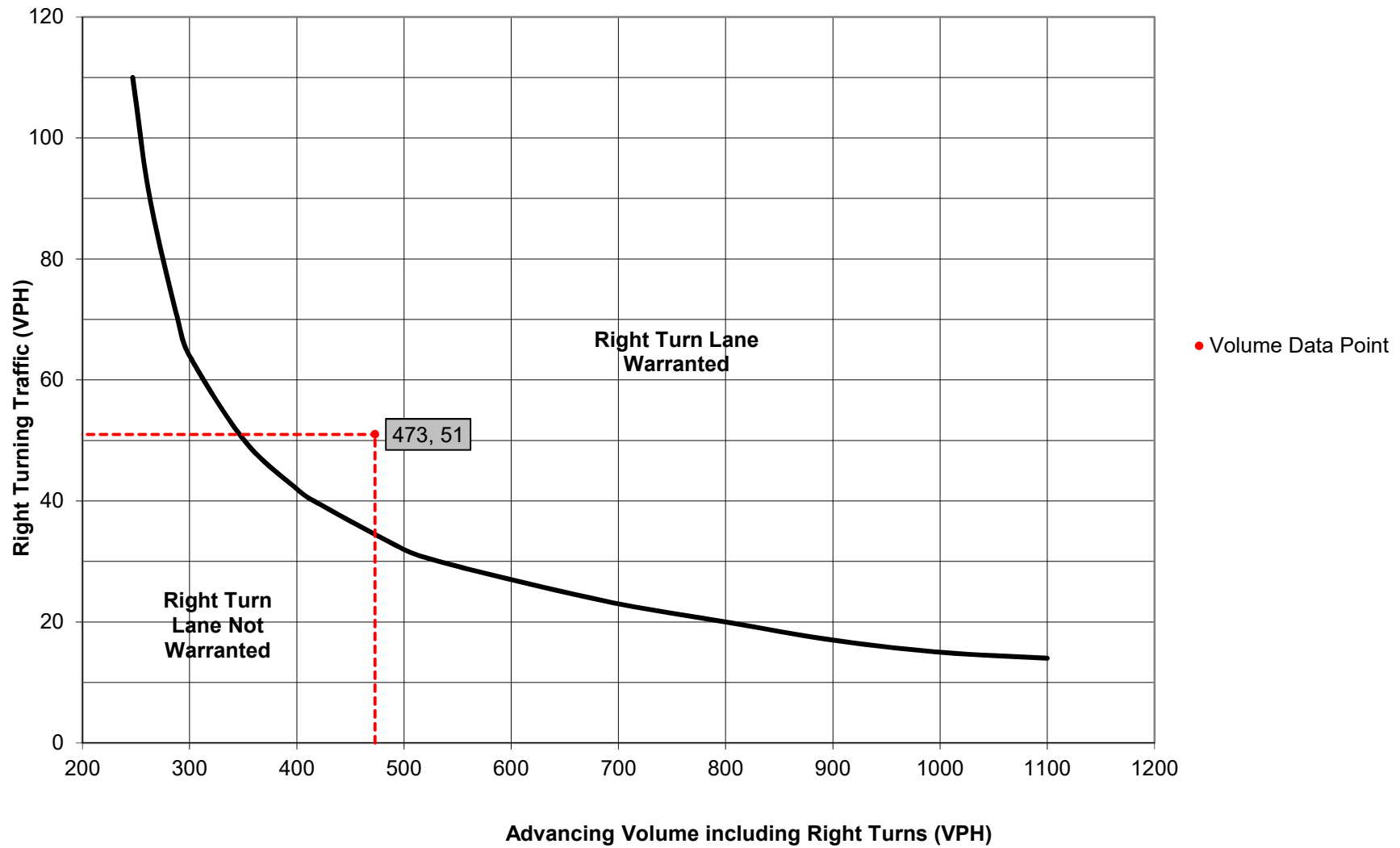
Condition C: **150** Feet

Required Right Turn Lane Storage Length: **150** Feet

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH						
Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (S-Bound)	Minor Street Approach #2 (N-Bound)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM			0		
12:15 AM	12:29 AM			0		
12:30 AM	12:44 AM			0		
12:45 AM	12:59 AM			0		
1:00 AM	1:14 AM			0		
1:15 AM	1:29 AM			0		
1:30 AM	1:44 AM			0		
1:45 AM	1:59 AM			0		
2:00 AM	2:14 AM			0		
2:15 AM	2:29 AM			0		
2:30 AM	2:44 AM			0		
2:45 AM	2:59 AM			0		
3:00 AM	3:14 AM			0		
3:15 AM	3:29 AM			0		
3:30 AM	3:44 AM			0		
3:45 AM	3:59 AM			0		
4:00 AM	4:14 AM			0		
4:15 AM	4:29 AM			0		
4:30 AM	4:44 AM			0		
4:45 AM	4:59 AM			0		
5:00 AM	5:14 AM			0		
5:15 AM	5:29 AM			0		
5:30 AM	5:44 AM			0		
5:45 AM	5:59 AM			0		
6:00 AM	6:14 AM			0		
6:15 AM	6:29 AM			0		
6:30 AM	6:44 AM			0		
6:45 AM	6:59 AM			0		
7:00 AM	7:14 AM	808	278	1086	222	
7:15 AM	7:29 AM			0		
7:30 AM	7:44 AM			0		
7:45 AM	7:59 AM			0		
8:00 AM	8:14 AM	809	281	1090	237	
8:15 AM	8:29 AM			0		
8:30 AM	8:44 AM			0		
8:45 AM	8:59 AM			0		
9:00 AM	9:14 AM			0		
9:15 AM	9:29 AM			0		
9:30 AM	9:44 AM			0		
9:45 AM	9:59 AM			0		
10:00 AM	10:14 AM			0		
10:15 AM	10:29 AM			0		
10:30 AM	10:44 AM			0		
10:45 AM	10:59 AM			0		
11:00 AM	11:14 AM			0		
11:15 AM	11:29 AM			0		
11:30 AM	11:44 AM			0		
11:45 AM	11:59 AM			0		

**ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH**

Time Interval		Major Street Approach #1 (E-Bound)	Major Street Approach #2 (W-Bound)	Major Street Combined	Minor Street Approach #1 (S-Bound)	Minor Street Approach #2 (N-Bound)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 PM	12:14 PM			0		
12:15 PM	12:29 PM			0		
12:30 PM	12:44 PM			0		
12:45 PM	12:59 PM			0		
1:00 PM	1:14 PM			0		
1:15 PM	1:29 PM			0		
1:30 PM	1:44 PM			0		
1:45 PM	1:59 PM			0		
2:00 PM	2:14 PM			0		
2:15 PM	2:29 PM			0		
2:30 PM	2:44 PM			0		
2:45 PM	2:59 PM			0		
3:00 PM	3:14 PM			0		
3:15 PM	3:29 PM			0		
3:30 PM	3:44 PM			0		
3:45 PM	3:59 PM			0		
4:00 PM	4:14 PM	665	425	1090	241	
4:15 PM	4:29 PM			0		
4:30 PM	4:44 PM			0		
4:45 PM	4:59 PM			0		
5:00 PM	5:14 PM	755	479	1234	271	
5:15 PM	5:29 PM			0		
5:30 PM	5:44 PM			0		
5:45 PM	5:59 PM			0		
6:00 PM	6:14 PM			0		
6:15 PM	6:29 PM			0		
6:30 PM	6:44 PM			0		
6:45 PM	6:59 PM			0		
7:00 PM	7:14 PM			0		
7:15 PM	7:29 PM			0		
7:30 PM	7:44 PM			0		
7:45 PM	7:59 PM			0		
8:00 PM	8:14 PM			0		
8:15 PM	8:29 PM			0		
8:30 PM	8:44 PM			0		
8:45 PM	8:59 PM			0		
9:00 PM	9:14 PM			0		
9:15 PM	9:29 PM			0		
9:30 PM	9:44 PM			0		
9:45 PM	9:59 PM			0		
10:00 PM	10:14 PM			0		
10:15 PM	10:29 PM			0		
10:30 PM	10:44 PM			0		
10:45 PM	10:59 PM			0		
11:00 PM	11:14 PM			0		
11:15 PM	11:29 PM			0		
11:30 PM	11:44 PM			0		
11:45 PM	11:59 PM			0		
<b>Approach Totals:</b>		3037	1463	4500	971	0

**MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME**

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	2 or More Lanes

Total Number of Unique Hours Met On Figure 4C-2
<b>4</b>

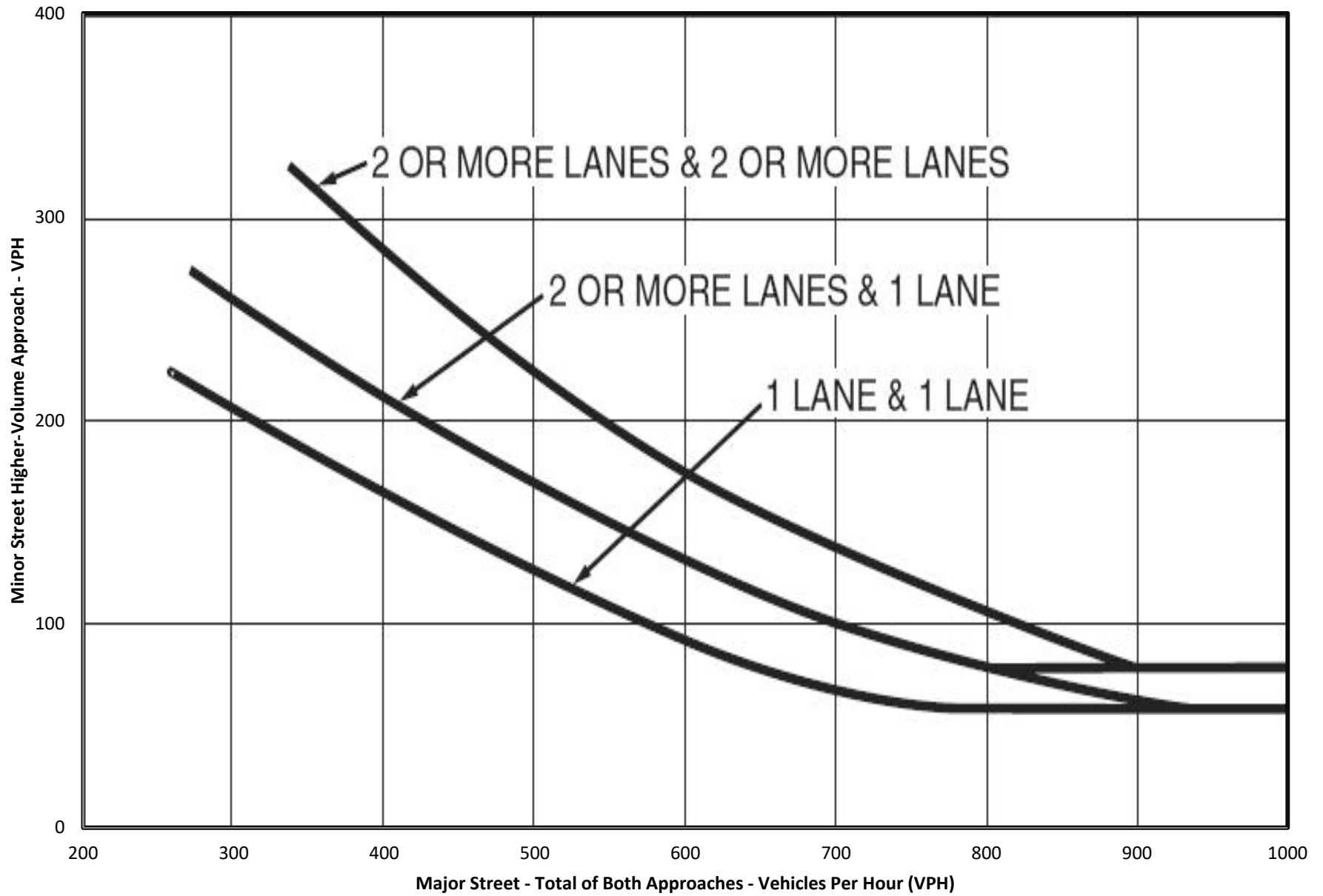
Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
---	-----

Hourly Vehicular Volume			
Hour Interval	Major Street Combined	Highest Minor Street Approach	Hour Met?
Beginning At	Vehicles Per Hour (VPH)	Vehicles Per Hour (VPH)	
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	0	0	
5:30 AM	0	0	
5:45 AM	0	0	
6:00 AM	0	0	
6:15 AM	1086	222	Met
6:30 AM	1086	222	Met
6:45 AM	1086	222	Met
7:00 AM	1086	222	Met
7:15 AM	1090	237	Met
7:30 AM	1090	237	Met
7:45 AM	1090	237	Met
8:00 AM	1090	237	Met
8:15 AM	0	0	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
9:30 AM	0	0	
9:45 AM	0	0	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	



Hourly Vehicular Volume			
Hour Interval	Major Street Combined	Highest Minor Street Approach	Hour Met?
Beginning At	Vehicles Per Hour (VPH)	Vehicles Per Hour (VPH)	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	1090	241	Met
3:30 PM	1090	241	Met
3:45 PM	1090	241	Met
4:00 PM	1090	241	Met
4:15 PM	1234	271	Met
4:30 PM	1234	271	Met
4:45 PM	1234	271	Met
5:00 PM	1234	271	Met
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)



**MUTCD WARRANT 3, PEAK HOUR**

Number of Lanes for Moving Traffic on Each Approach	
Major Street:	1 Lane
Minor Street:	2 or More Lanes

Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
---	-----

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	N/A
---	-----

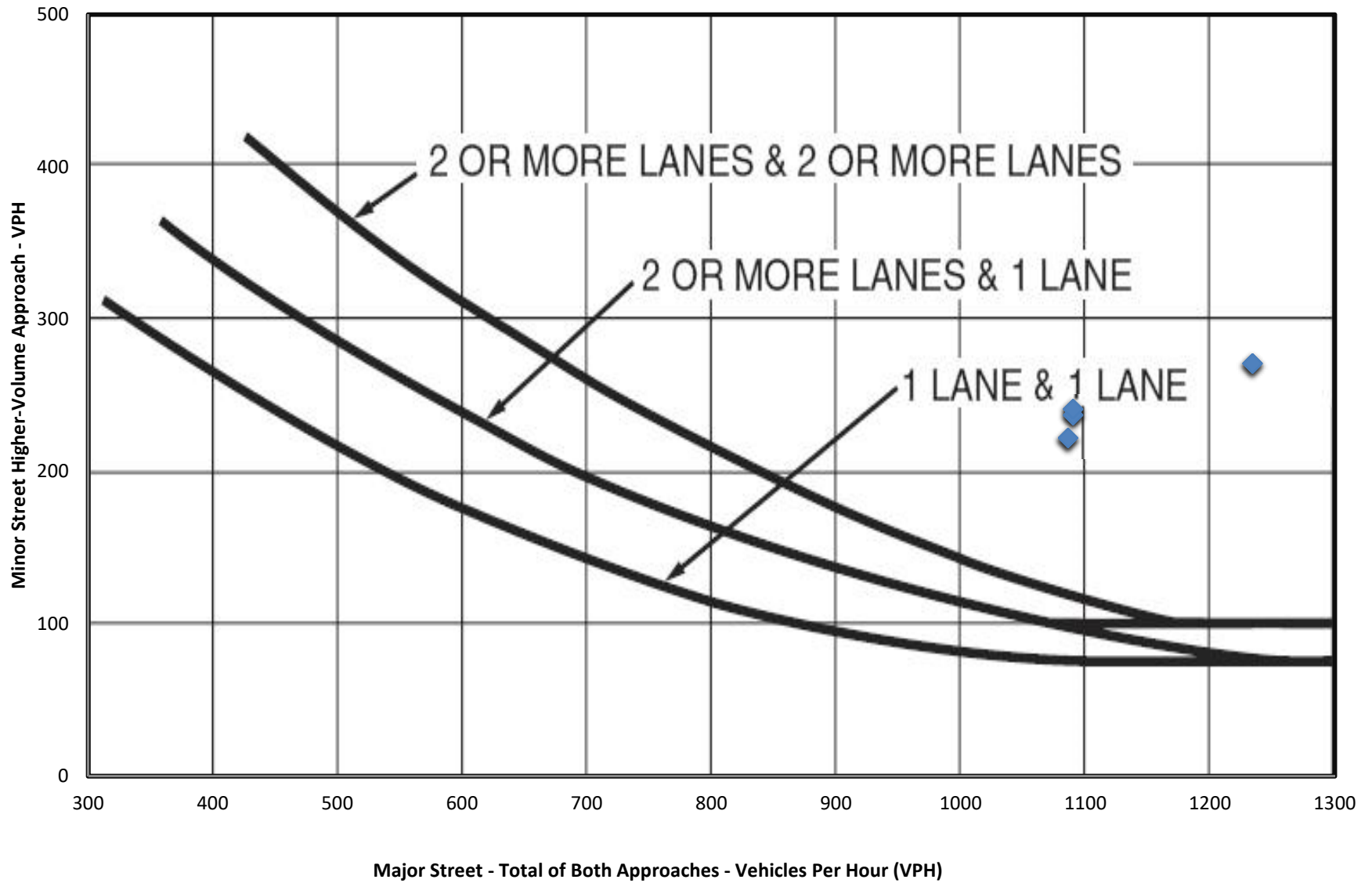
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*	
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	N/A
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	N/A
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	N/A
<i>*If applicable, attach all supporting calculations and documentation.</i>	

<b>Total Number of Unique Hours Met On Figure 4C-4</b>
<b>4</b>

Hourly Vehicular Volume			
Hour Interval	Major Street Combined	Highest Minor Street Approach	Hour Met?
Beginning At	Vehicles Per Hour (VPH)	Vehicles Per Hour (VPH)	
12:00 AM	0	0	
12:15 AM	0	0	
12:30 AM	0	0	
12:45 AM	0	0	
1:00 AM	0	0	
1:15 AM	0	0	
1:30 AM	0	0	
1:45 AM	0	0	
2:00 AM	0	0	
2:15 AM	0	0	
2:30 AM	0	0	
2:45 AM	0	0	
3:00 AM	0	0	
3:15 AM	0	0	
3:30 AM	0	0	
3:45 AM	0	0	
4:00 AM	0	0	
4:15 AM	0	0	
4:30 AM	0	0	
4:45 AM	0	0	
5:00 AM	0	0	
5:15 AM	0	0	
5:30 AM	0	0	
5:45 AM	0	0	
6:00 AM	0	0	
6:15 AM	1086	222	Met
6:30 AM	1086	222	Met
6:45 AM	1086	222	Met
7:00 AM	1086	222	Met
7:15 AM	1090	237	Met
7:30 AM	1090	237	Met
7:45 AM	1090	237	Met
8:00 AM	1090	237	Met
8:15 AM	0	0	

Hourly Vehicular Volume			
Hour Interval	Major Street Combined	Highest Minor Street Approach	Hour Met?
Beginning At	Vehicles Per Hour (VPH)	Vehicles Per Hour (VPH)	
8:30 AM	0	0	
8:45 AM	0	0	
9:00 AM	0	0	
9:15 AM	0	0	
9:30 AM	0	0	
9:45 AM	0	0	
10:00 AM	0	0	
10:15 AM	0	0	
10:30 AM	0	0	
10:45 AM	0	0	
11:00 AM	0	0	
11:15 AM	0	0	
11:30 AM	0	0	
11:45 AM	0	0	
12:00 PM	0	0	
12:15 PM	0	0	
12:30 PM	0	0	
12:45 PM	0	0	
1:00 PM	0	0	
1:15 PM	0	0	
1:30 PM	0	0	
1:45 PM	0	0	
2:00 PM	0	0	
2:15 PM	0	0	
2:30 PM	0	0	
2:45 PM	0	0	
3:00 PM	0	0	
3:15 PM	1090	241	Met
3:30 PM	1090	241	Met
3:45 PM	1090	241	Met
4:00 PM	1090	241	Met
4:15 PM	1234	271	Met
4:30 PM	1234	271	Met
4:45 PM	1234	271	Met
5:00 PM	1234	271	Met
5:15 PM	0	0	
5:30 PM	0	0	
5:45 PM	0	0	
6:00 PM	0	0	
6:15 PM	0	0	
6:30 PM	0	0	
6:45 PM	0	0	
7:00 PM	0	0	
7:15 PM	0	0	
7:30 PM	0	0	
7:45 PM	0	0	
8:00 PM	0	0	
8:15 PM	0	0	
8:30 PM	0	0	
8:45 PM	0	0	
9:00 PM	0	0	
9:15 PM	0	0	
9:30 PM	0	0	
9:45 PM	0	0	
10:00 PM	0	0	
10:15 PM	0	0	
10:30 PM	0	0	
10:45 PM	0	0	
11:00 PM	0	0	

MUTCD Figure 4C-4. Warrant 3, Peak Hour (70% Factor)





Traffic Count Entry

**Traffic Count Insert**

Street name	Bridlewood Blvd			Connector Road			Street Road (S.R. 0926)			Street Road (S.R. 0926)			Cycle Length
Hour	North Bound Approach			South Bound Approach			East Bound Approach			West Bound Approach			All Approaches
	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right	Left	Straight	Right	
AM Peak	48	23	10	46	15	179	82	710	39	8	267	14	90
PM Peak	41	46	15	29	10	238	122	614	39	33	409	49	90

*W. Pleasant Grove Road and  
Connector Road*



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Connector Road Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	No			N/A
	Through	-	106	0.0%	106
	Right	-	1	2.0%	2

Advancing Volume:	108
Right Turn Volume:	2

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	Average # of Vehicles/Cycle:	N/A
Design Hour Volume of Turning Lane:	2		
Cycles Per Hour (Assumed):	60		
Cycles Per Hour (If Known):			

#### PennDOT Publication 46, Exhibit 11-6

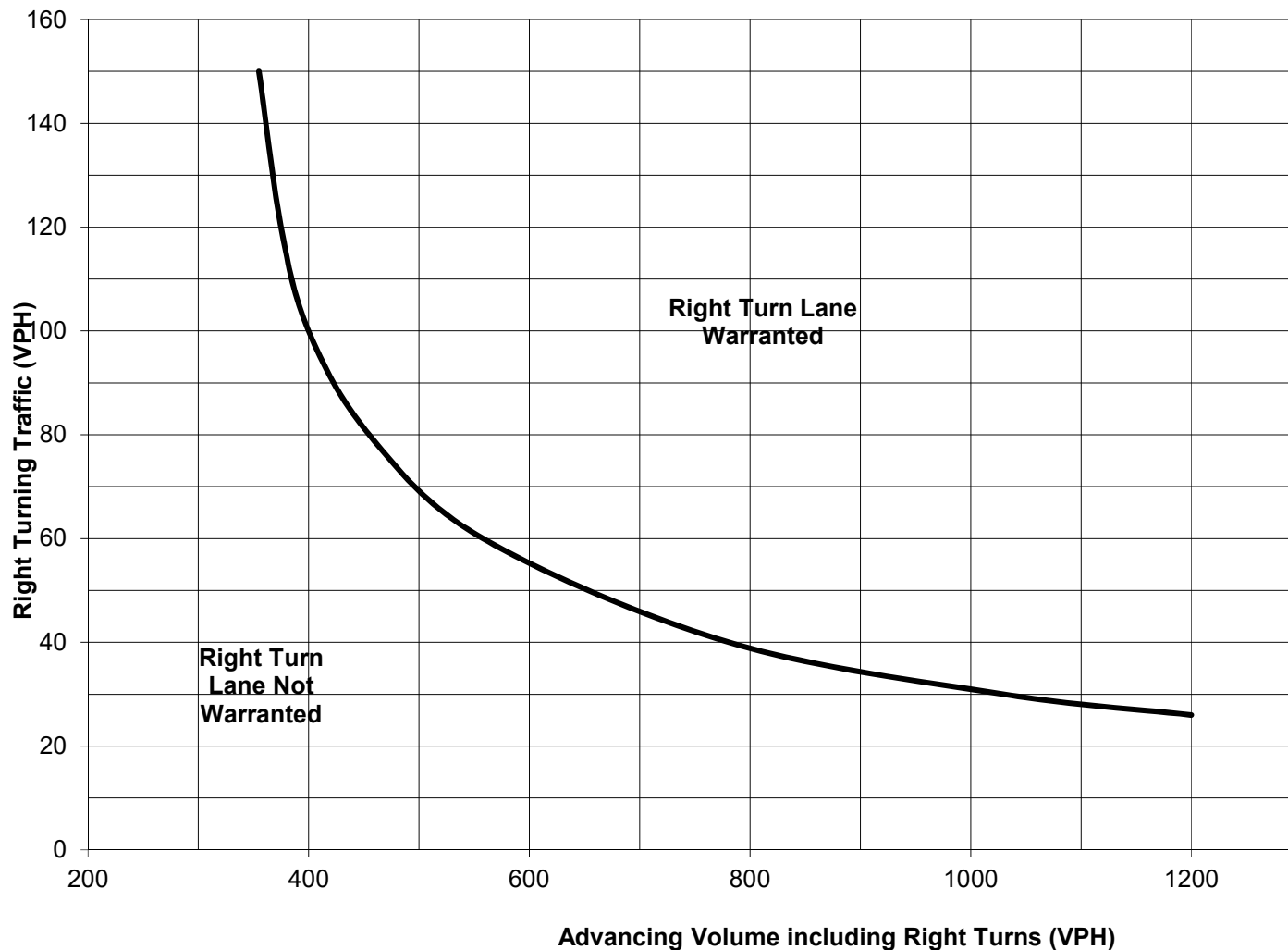
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	N/A
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Additional Comments / Justifications:

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



• Volume Data Point

The point (108,2) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Connector Road Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	No			N/A
	Through	-	44	0.0%	44
	Right	-	4	2.0%	5

Advancing Volume:	49
Right Turn Volume:	5

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>	Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">Figure 9</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">No</span>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized		
Design Hour Volume of Turning Lane:	5		
Cycles Per Hour (Assumed):	60		
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle:	N/A

PennDOT Publication 46, Exhibit 11-6

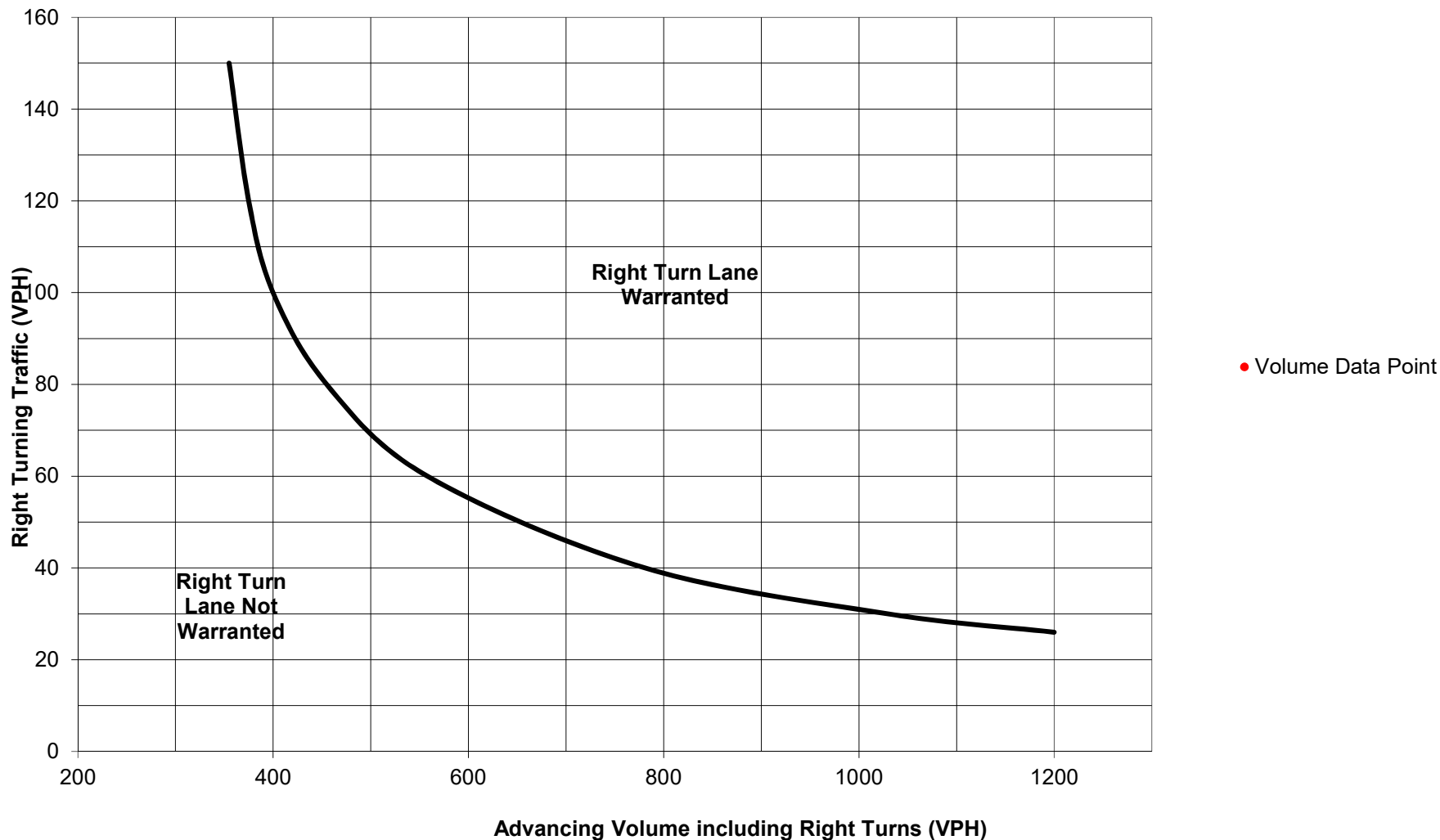
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



The point (49,5) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Connector Road Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	180	2.0%	186
	Through	-	100	2.0%	103
	Right	Yes			0
Opposing	Left	Yes			0
	Through	-	106	0.0%	106
	Right	Yes	1	2.0%	2

Advancing Volume:	289
Opposing Volume:	108
Left Turn Volume:	186

% Left Turns in Advancing Volume: 64.36%

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	
Design Hour Volume of Turning Lane:	186	
Cycles Per Hour (Assumed):	60	
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle: N/A

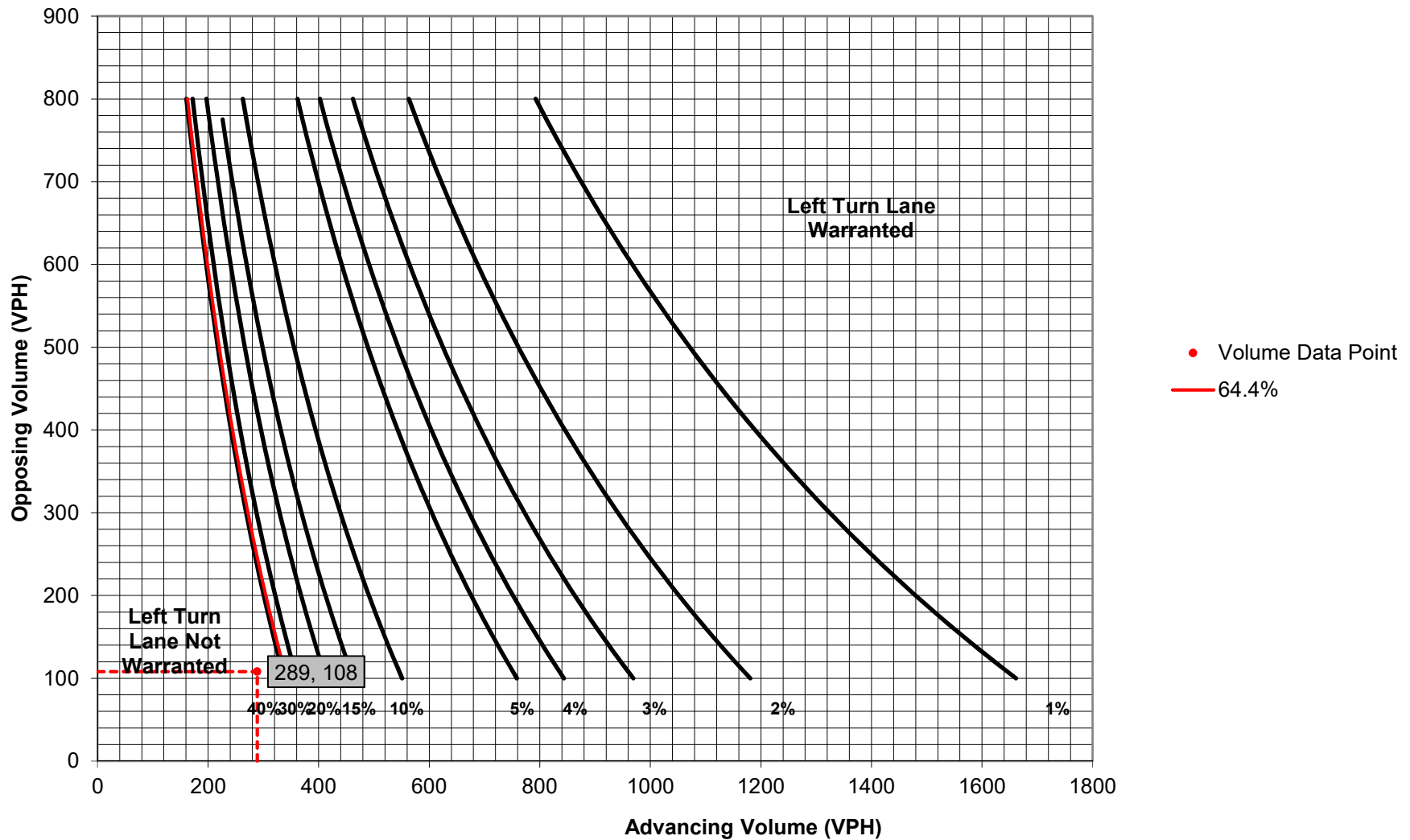
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Connector Road Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	PM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	272	2.0%	281
	Through	-	266	2.0%	274
	Right	Yes			0
Opposing	Left	Yes			0
	Through	-	44	0.0%	44
	Right	Yes	4	2.0%	5

Advancing Volume:	555
Opposing Volume:	49
Left Turn Volume:	281
% Left Turns in Advancing Volume: 50.63%	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	
Design Hour Volume of Turning Lane:	281	
Cycles Per Hour (Assumed):	60	
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle: N/A

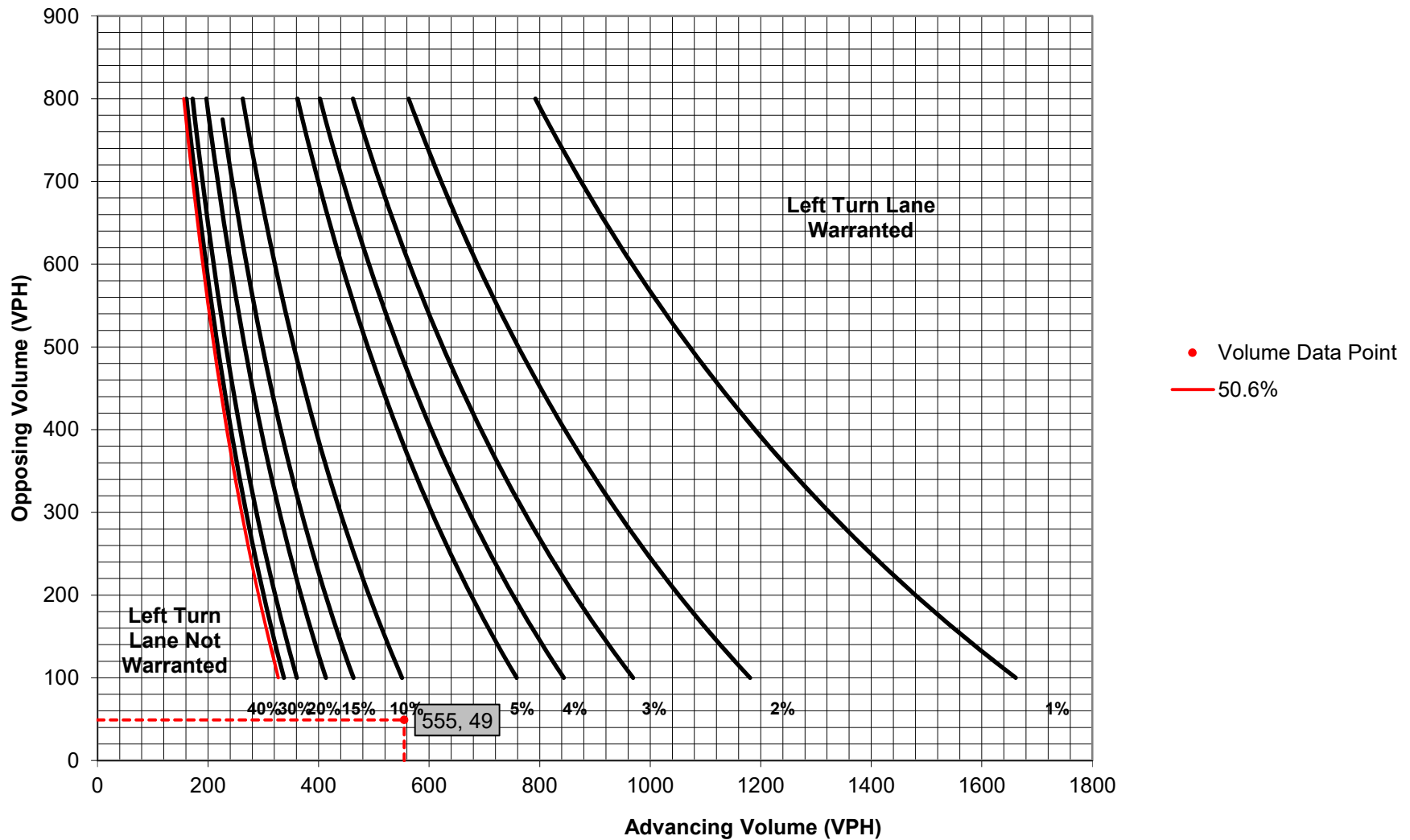
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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)





*W. Pleasant Grove Road and  
Road K / Dunvegan Road*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road K / Dunvegan Road Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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		0
	Through	-	51	0.0%	51
	Right	-	4	2.0%	5

Advancing Volume:	56
Right Turn Volume:	5

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>	Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 9</span>  Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">No</span>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized		
Design Hour Volume of Turning Lane:	5		
Cycles Per Hour (Assumed):	60		
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle:	N/A

PennDOT Publication 46, Exhibit 11-6

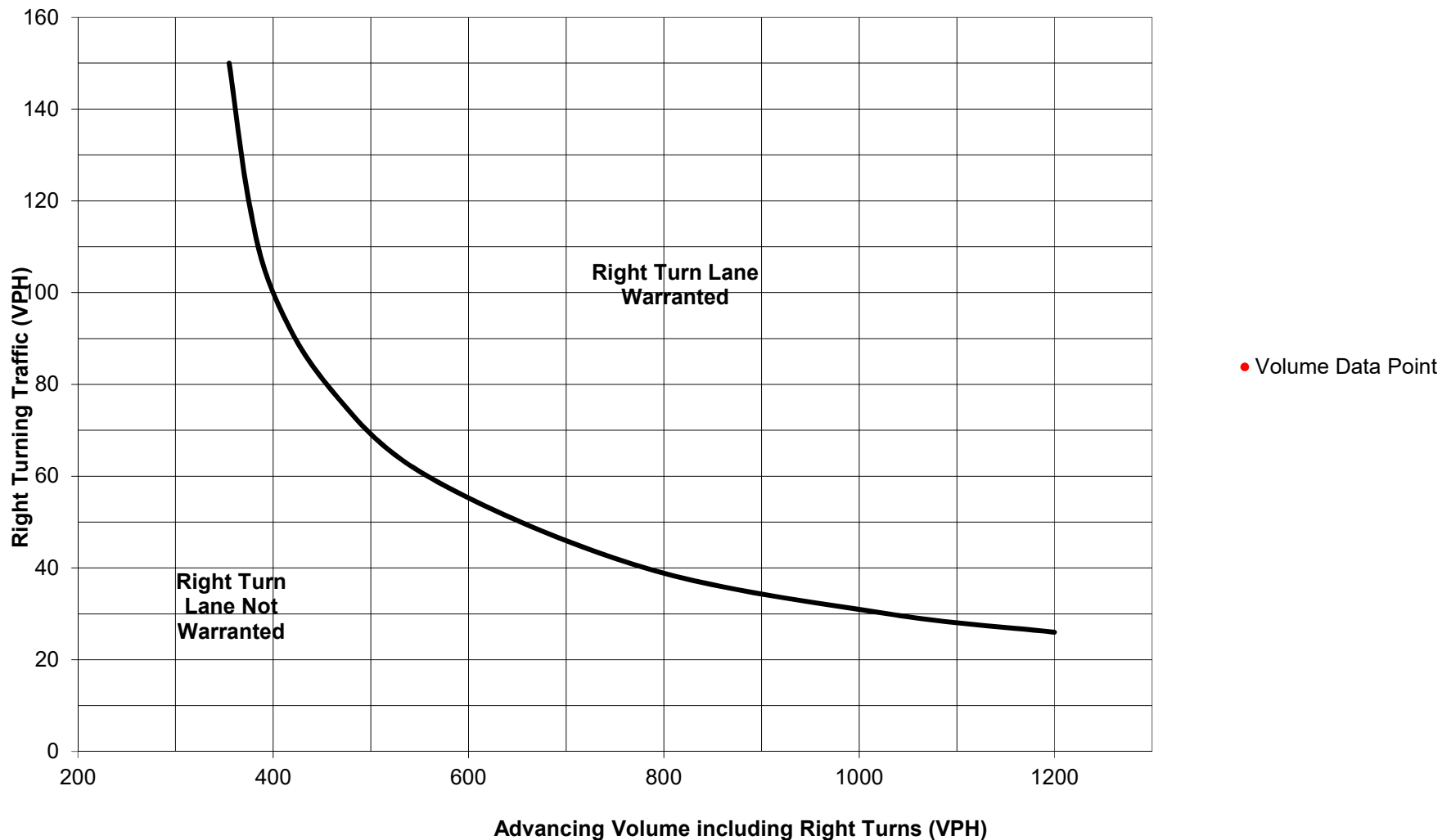
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



The point (56,5) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road K / Dunvegan Road Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

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

Advancing Volume:   
 Opposing Volume:   
 Left Turn Volume:   
 % Left Turns in Advancing Volume:

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	0.0%	3
	Through	-	52	0.0%	52
	Right	-	13	2.0%	14

Advancing Volume:   
 Right Turn Volume:

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 9"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	14
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

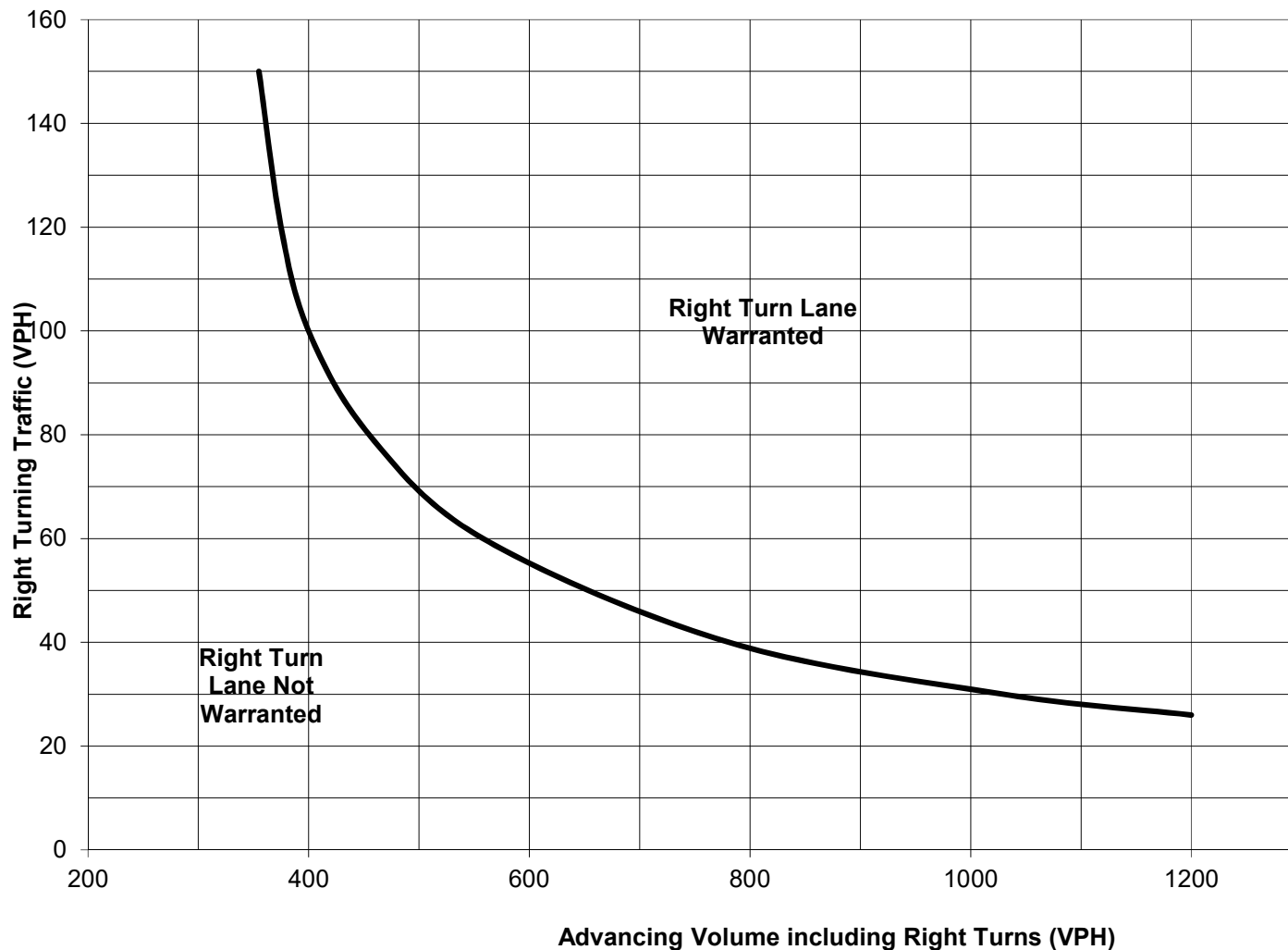
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:

Additional Comments / Justifications:

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



The point (69,14) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road K / Dunvegan Road Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	2.0%	4
	Through	-	69	2.0%	72
	Right	Yes	3	50.0%	6
Opposing	Left	Yes	0	0.0%	0
	Through	-	51	0.0%	51
	Right	Yes	4	2.0%	5

Advancing Volume:	82
Opposing Volume:	56
Left Turn Volume:	4

% Left Turns in Advancing Volume: 4.88%

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### 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

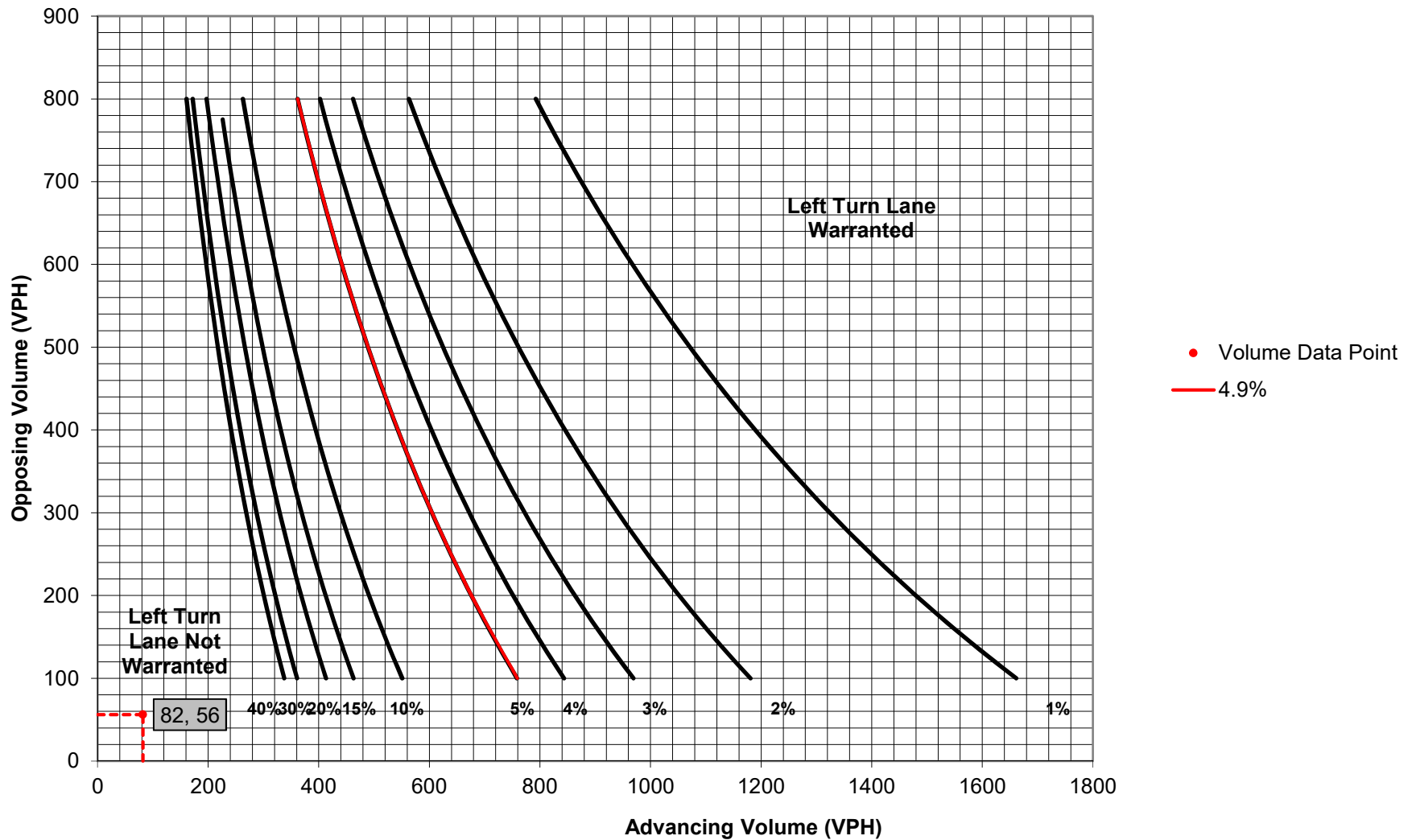
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road K / Dunvegan Road Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	PM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	10	2.0%	11
	Through	-	202	1.0%	206
	Right	Yes	12	0.0%	12
Opposing	Left	Yes	3	0.0%	3
	Through	-	52	0.0%	52
	Right	Yes	13	2.0%	14

Advancing Volume:	229
Opposing Volume:	69
Left Turn Volume:	11
% Left Turns in Advancing Volume: 4.80%	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	
Design Hour Volume of Turning Lane:	11	
Cycles Per Hour (Assumed):	60	
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle: N/A

Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	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

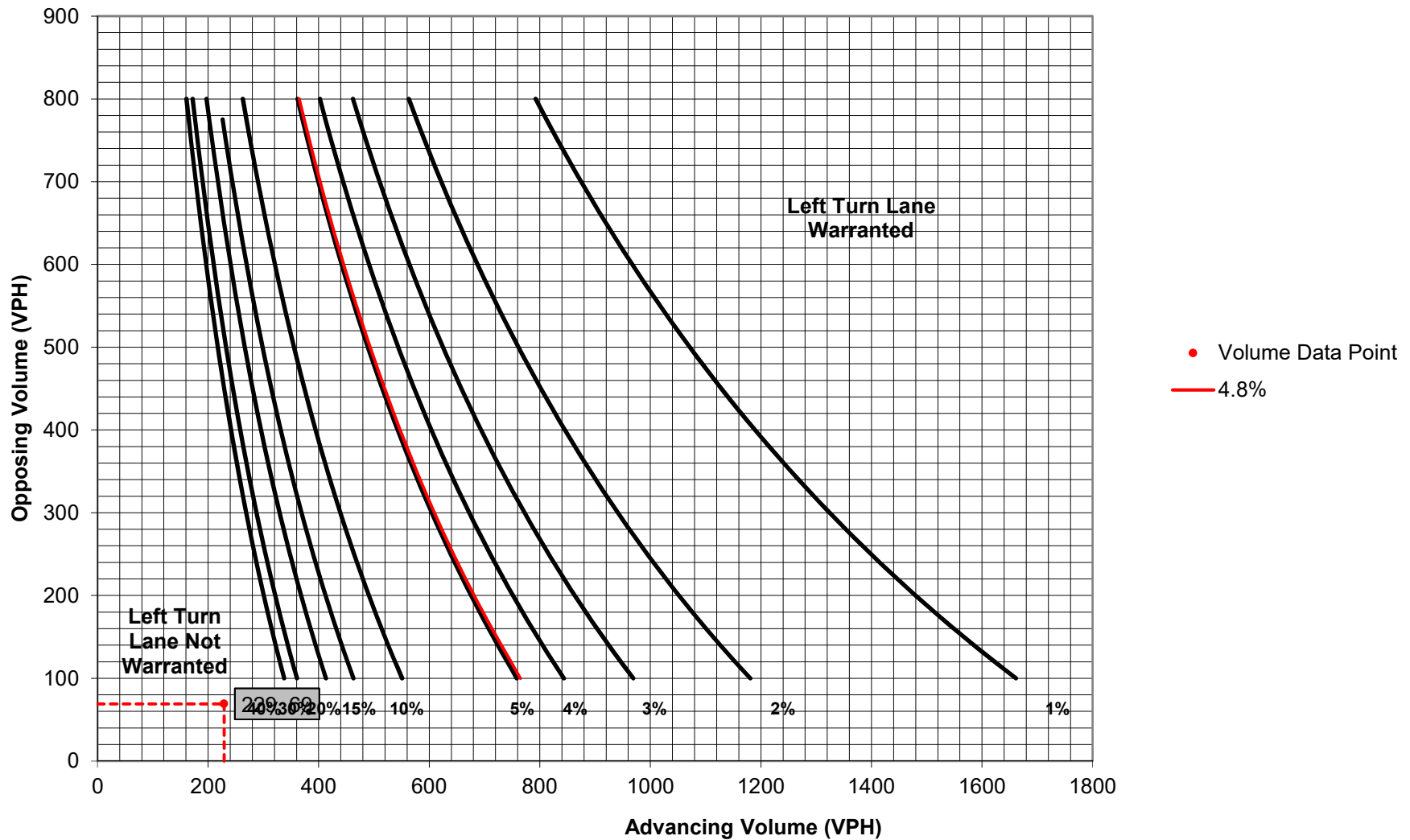
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

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)



*W. Pleasant Grove Road and  
Road M*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road M Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling		
		Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	No			N/A
	Through	-	59	0.0%	59
	Right	-	0	2.0%	0

Advancing Volume:	59
Right Turn Volume:	0

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>	Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">Figure 9</span>
Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">N/A</span>	Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px; font-weight: bold;">No</span>

### 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:	N/A

PennDOT Publication 46, Exhibit 11-6

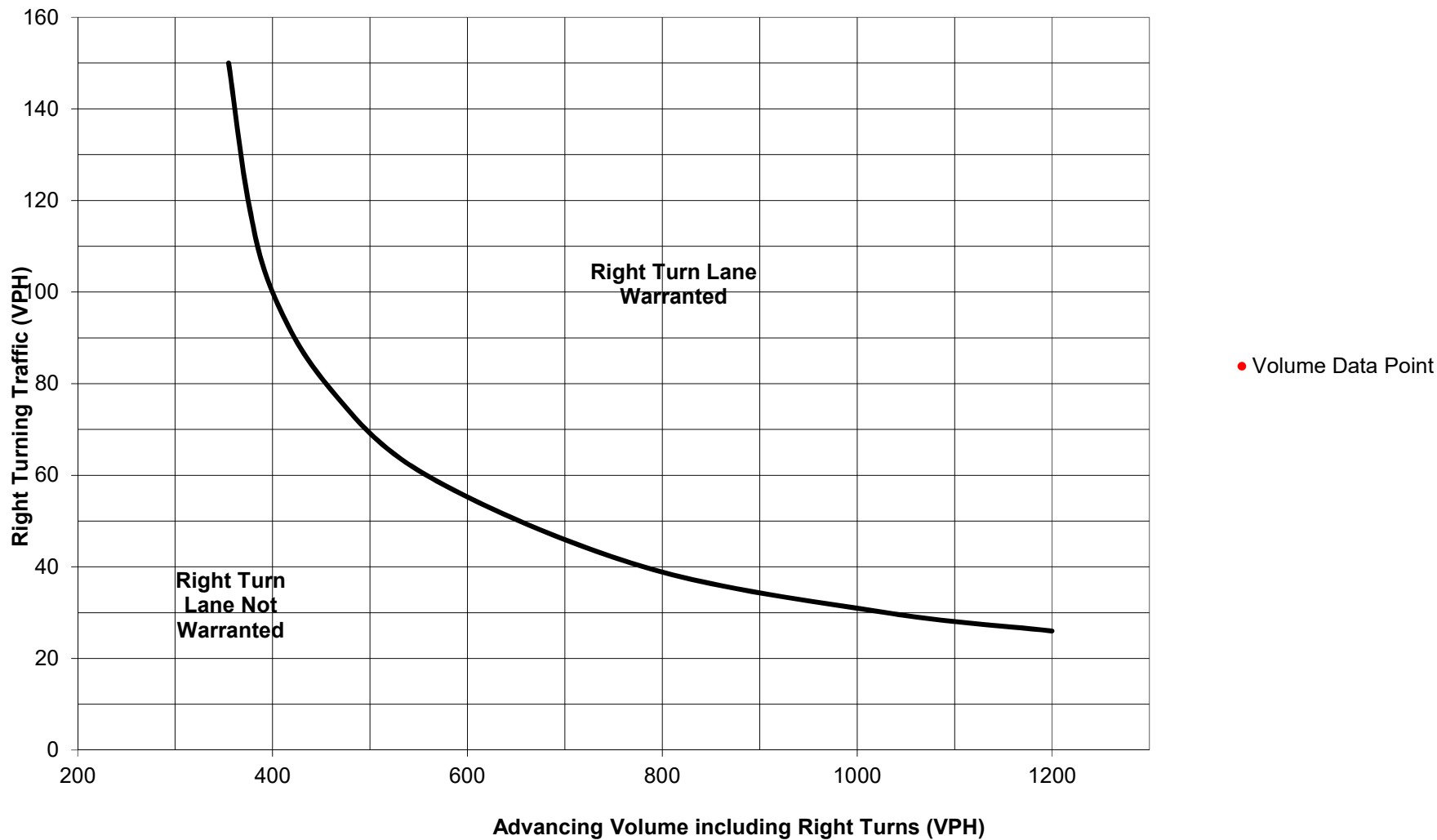
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



The point (59,0) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road M Eastbound W. Pleasant Grove Road Right-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	No			N/A
	Through	-	58	0.0%	58
	Right	-	2	2.0%	3

Advancing Volume:	61
Right Turn Volume:	3

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>	Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 9</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">No</span>

### 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

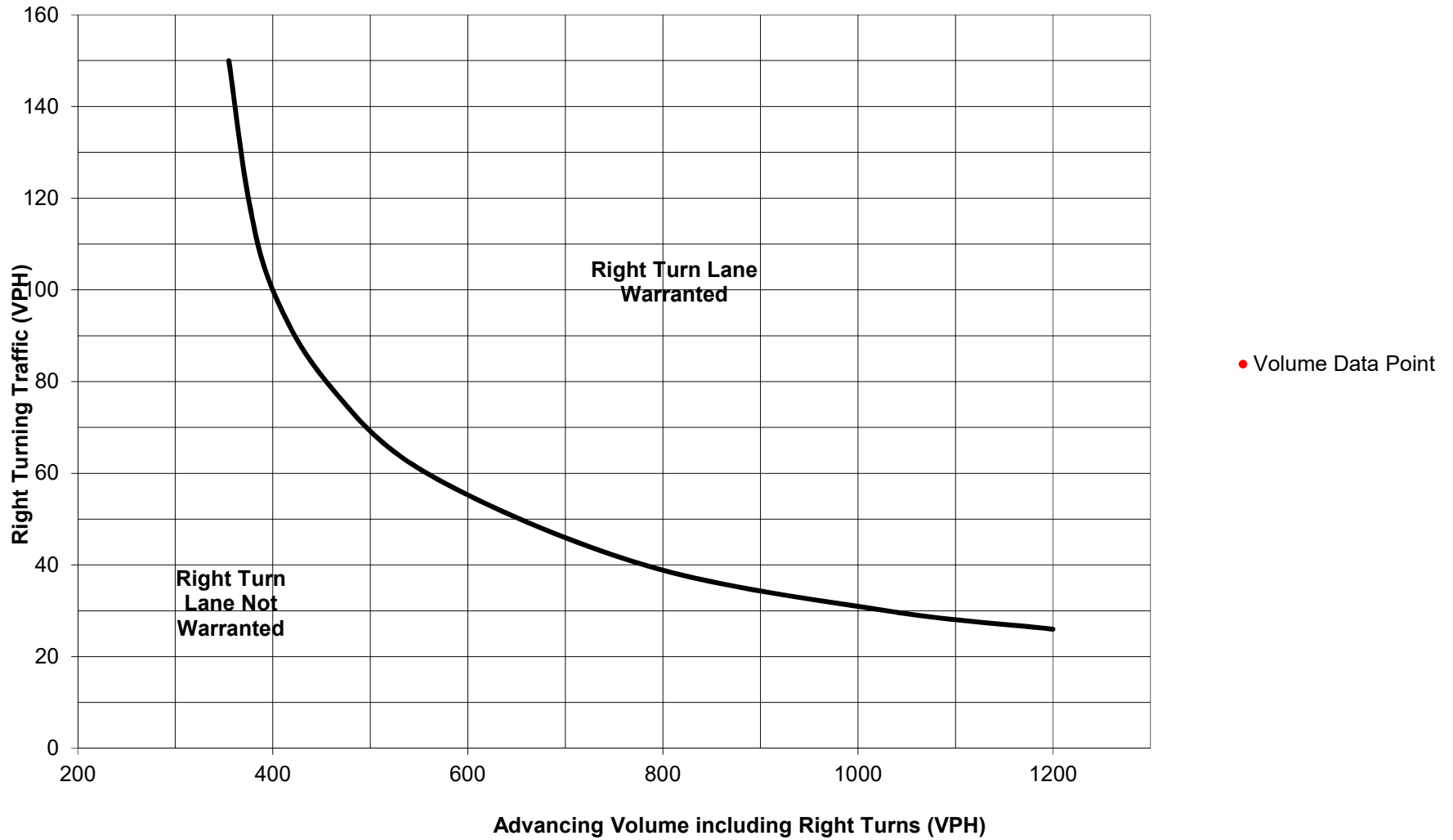
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



The point (61,3) is outside the viewport of the graph.

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road M Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	5
	Through	-	75	2.0%	78
	Right	Yes			0
Opposing	Left	Yes			0
	Through	-	59	0.0%	59
	Right	Yes	0	2.0%	0

Advancing Volume:	83
Opposing Volume:	59
Left Turn Volume:	5

% Left Turns in Advancing Volume: 6.02%

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	
Design Hour Volume of Turning Lane:	5	
Cycles Per Hour (Assumed):	60	
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle: N/A

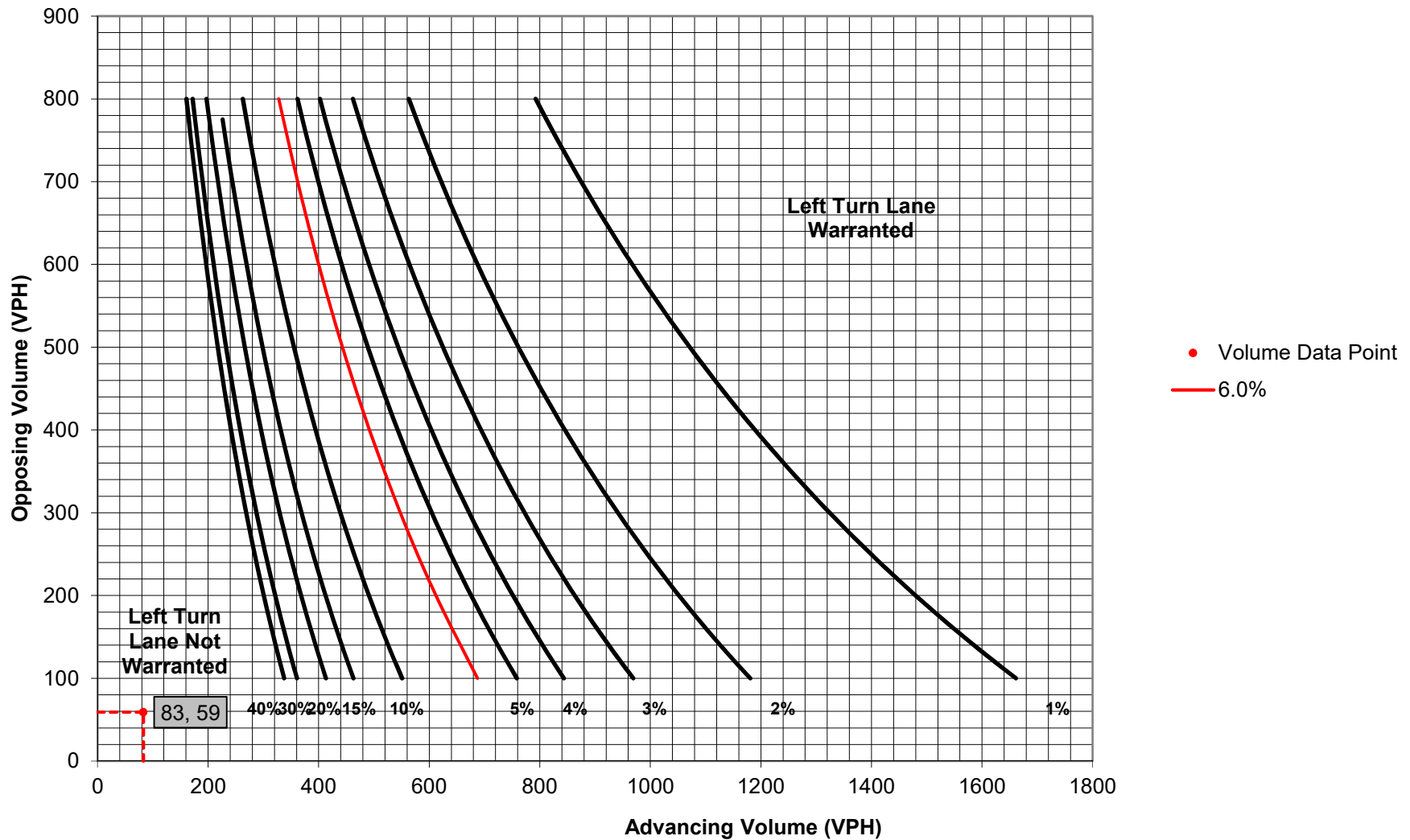
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: W. Pleasant Grove Road and Road M Westbound W. Pleasant Grove Road Left-Turn Lane			
Analysis Period:	2030 Design Year	Number of Approach Lanes:	1
Design Hour:	PM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	14	2.0%	15
	Through	-	222	1.0%	226
	Right	Yes			0
Opposing	Left	Yes			0
	Through	-	58	0.0%	58
	Right	Yes	2	2.0%	3

Advancing Volume:	241
Opposing Volume:	61
Left Turn Volume:	15

% Left Turns in Advancing Volume: 6.22%

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

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

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	
Design Hour Volume of Turning Lane:	15	
Cycles Per Hour (Assumed):	60	
Cycles Per Hour (If Known):		Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

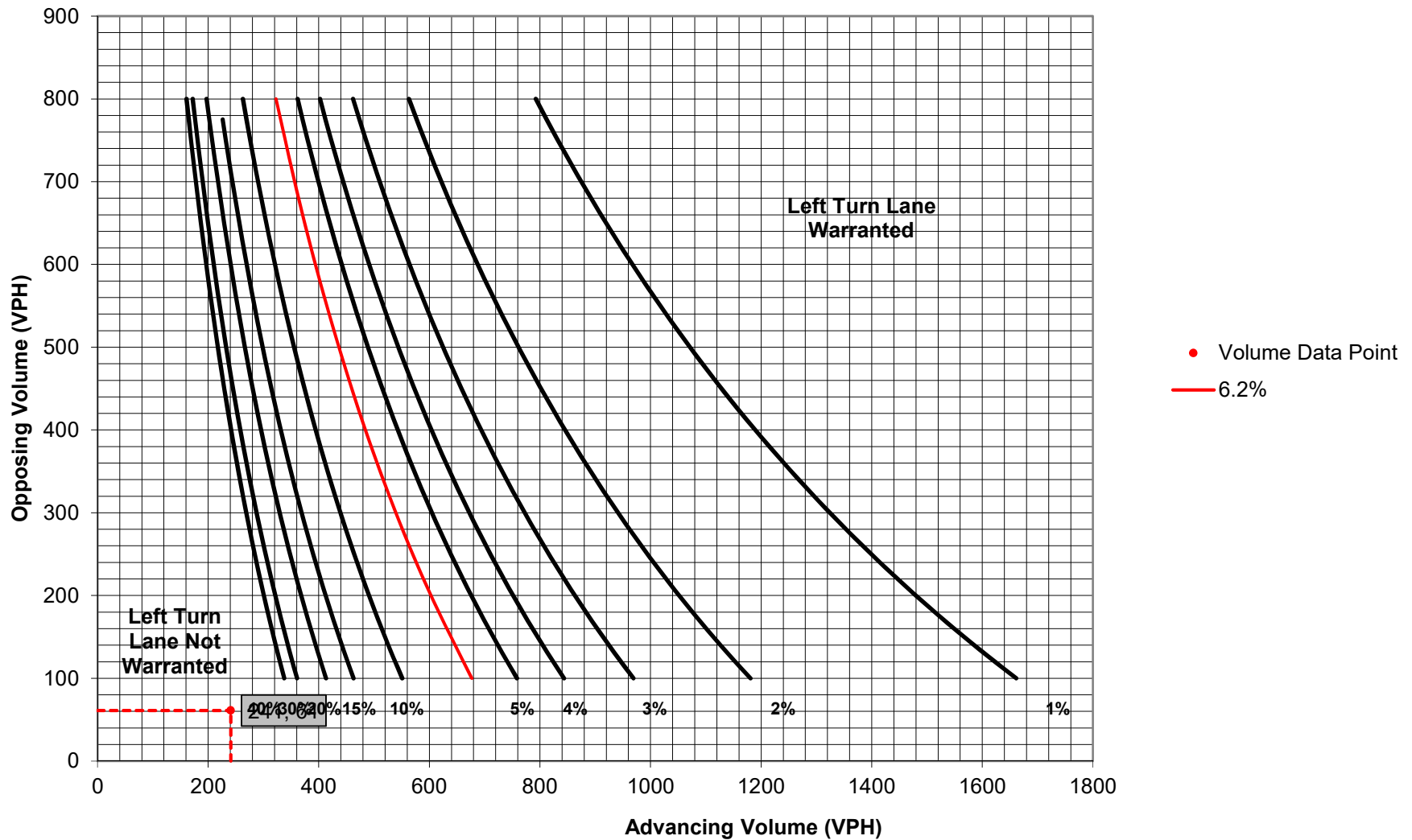
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



# Appendix H

## PennDOT M-950S

# DRIVEWAY SIGHT DISTANCE MEASUREMENTS

(FOR LOCAL ROADS, USE PENNDOT PUB 70)

APPLICANT Toll Brothers, Inc. APPLICATION NO. \_\_\_\_\_

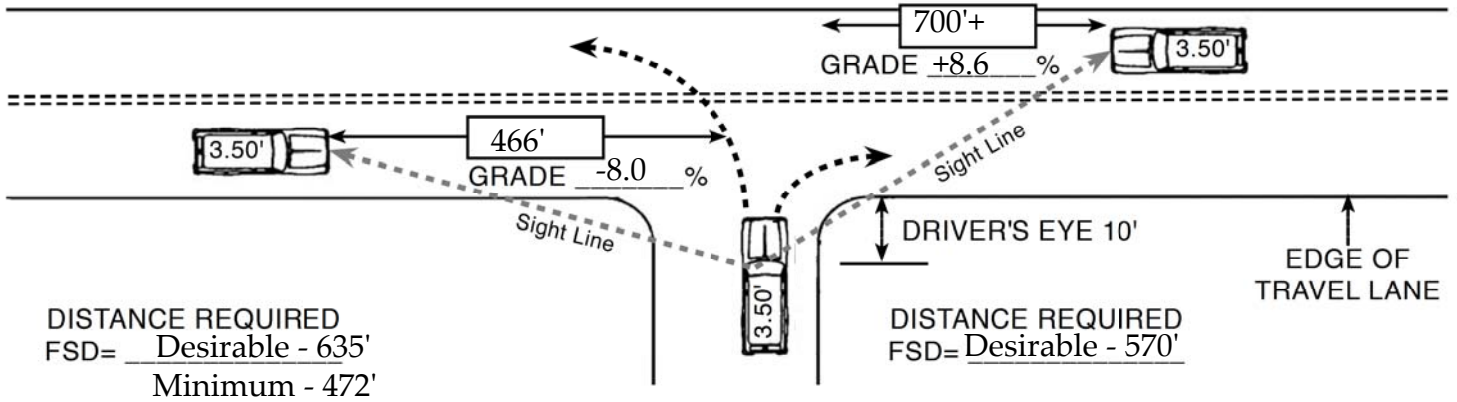
S.R. 0926 SEG. 0390 OFFSET 0757 LEGAL SPEED LIMIT 45 MPH

MEASURED BY BGG DATE 8/8/2019

FOR DEPARTMENT USE ONLY: Safe-Running Speed \_\_\_\_\_ 85th Percentile Speed \_\_\_\_\_

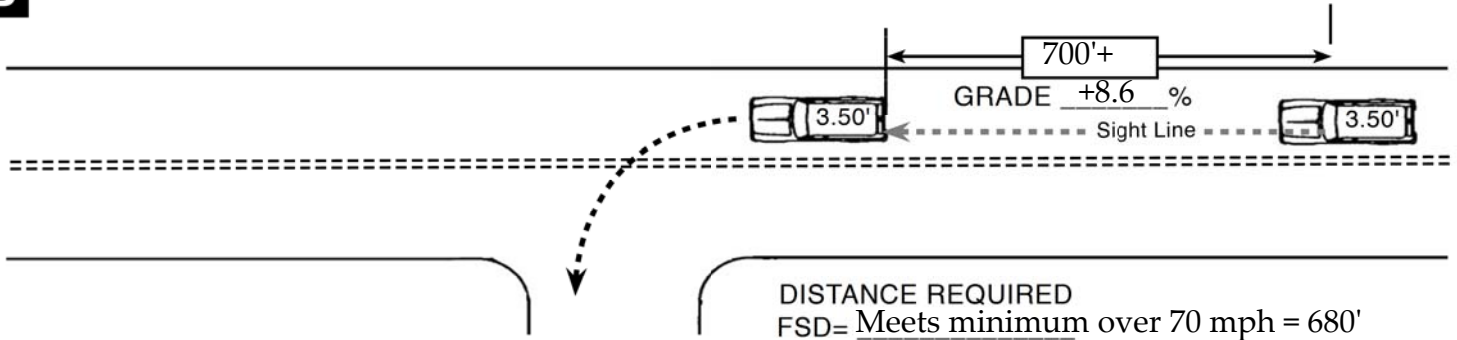
S.R. 0926 & Connector Road (opposite Bridlewood Boulevard) - Signal proposed

**A**



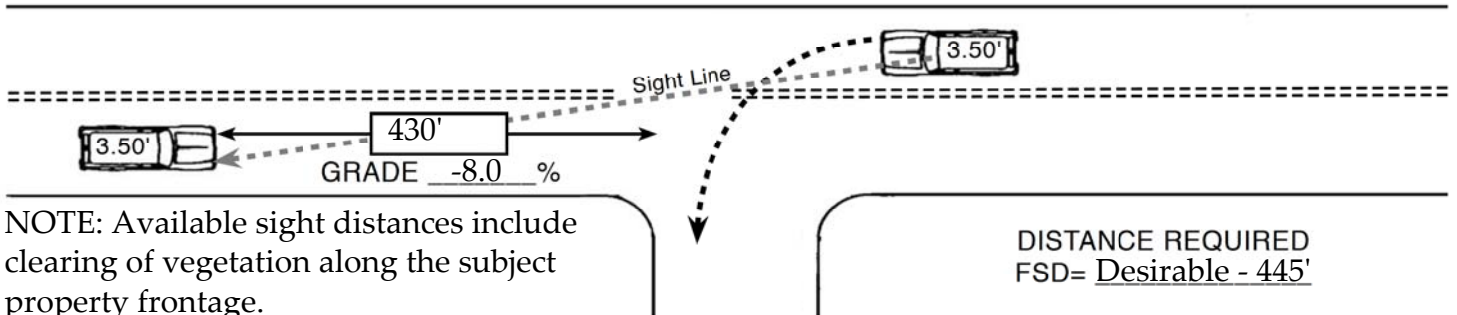
**THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.**

**B**



**THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER ON THE ROADWAY CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.**

**C**



**THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.**

# Appendix I

## Off-Site Intersection Turn Lane Warrants



*Existing*

*Street Road (S.R. 0926) and  
New Street*



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	75	3.0%	79	Advancing Volume: <input type="text" value="804"/>	
	Through	-	689	3.0%	721		Opposing Volume: <input type="text" value="434"/>
	Right	Yes	4	0.0%	4		Left Turn Volume: <input type="text" value="79"/>
Opposing	Left	Yes	11	27.0%	16	% Left Turns in Advancing Volume: <input type="text" value="9.83%"/>	
	Through	-	324	8.0%	363		
	Right	Yes	50	6.0%	55		

Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	3.0%	N/A		Right Turn Volume: <input type="text" value="N/A"/>
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 3"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="Yes"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="79"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="2.0"/>

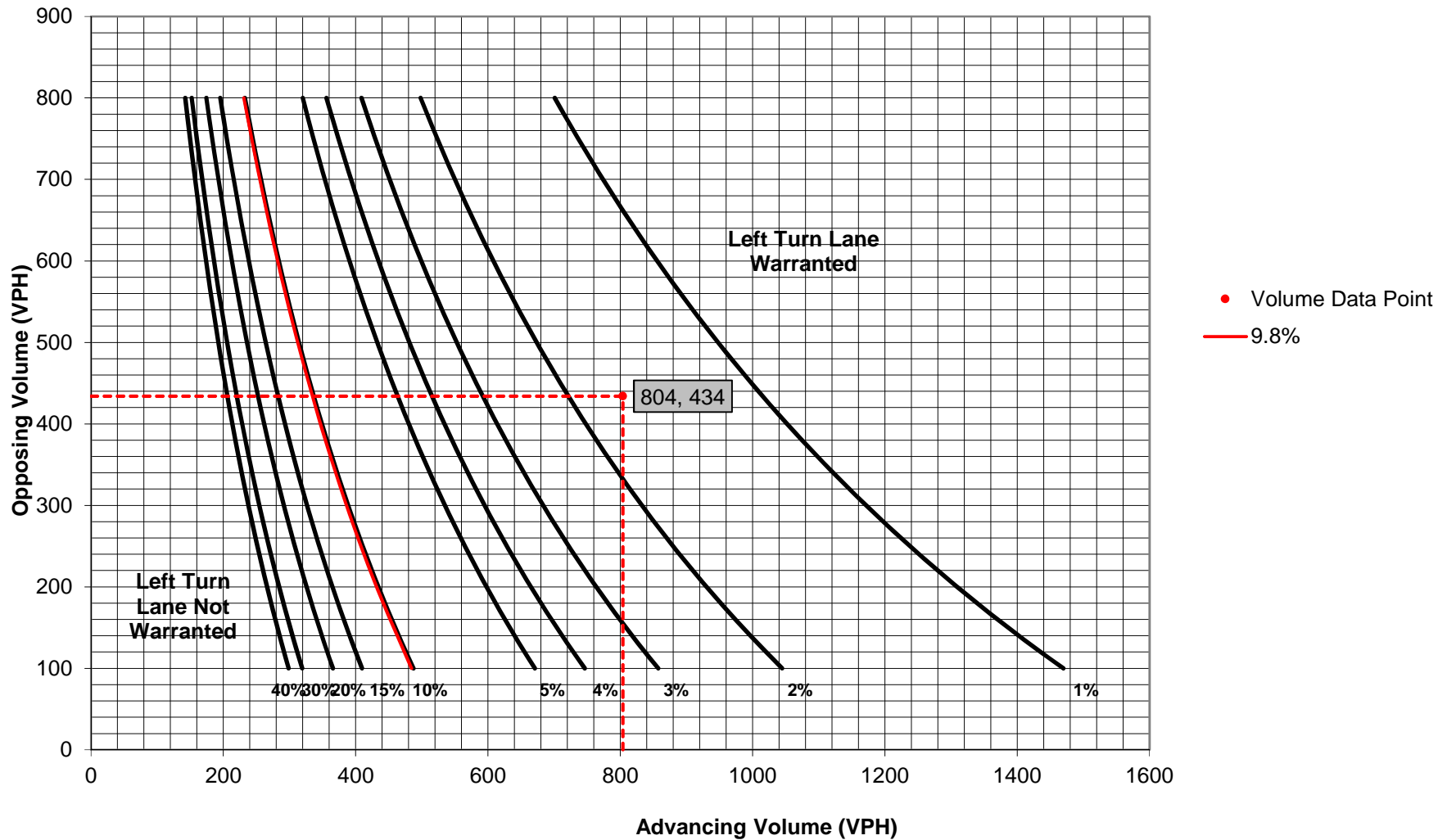
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="125"/>	Feet
Condition C:	<input type="text" value="175"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="175"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Westtown Township	Analysis Date: 1/4/2017
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: TML
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and New Street Eastbound Street Road (S.R. 0926) Left-Turn Lane	
Analysis Period: 2016 Existing	Number of Approach Lanes: 1
Design Hour: PM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Signalized	
Posted Speed Limit (MPH): 45	Type of Analysis
Type of Terrain: Rolling	Left or Right-Turn Lane Analysis?: Left Turn Lane

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	32	3.0%	34	Advancing Volume: 698	
	Through	-	622	3.0%	650		Opposing Volume: 485
	Right	Yes	14	0.0%	14		Left Turn Volume: 34
Opposing	Left	Yes	24	0.0%	24	% Left Turns in Advancing Volume: 4.87%	
	Through	-	393	1.0%	399		
	Right	Yes	62	0.0%	62		

Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: N/A	
	Through	-	0	3.0%	N/A		Right Turn Volume: N/A
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings		Right Turn Lane Warrant Findings	
Applicable Warrant Figure:	Figure 3	Applicable Warrant Figure:	N/A
Warrant Met?:	Yes	Warrant Met?:	N/A

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	34
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	34
Average # of Vehicles/Cycle:	1.0

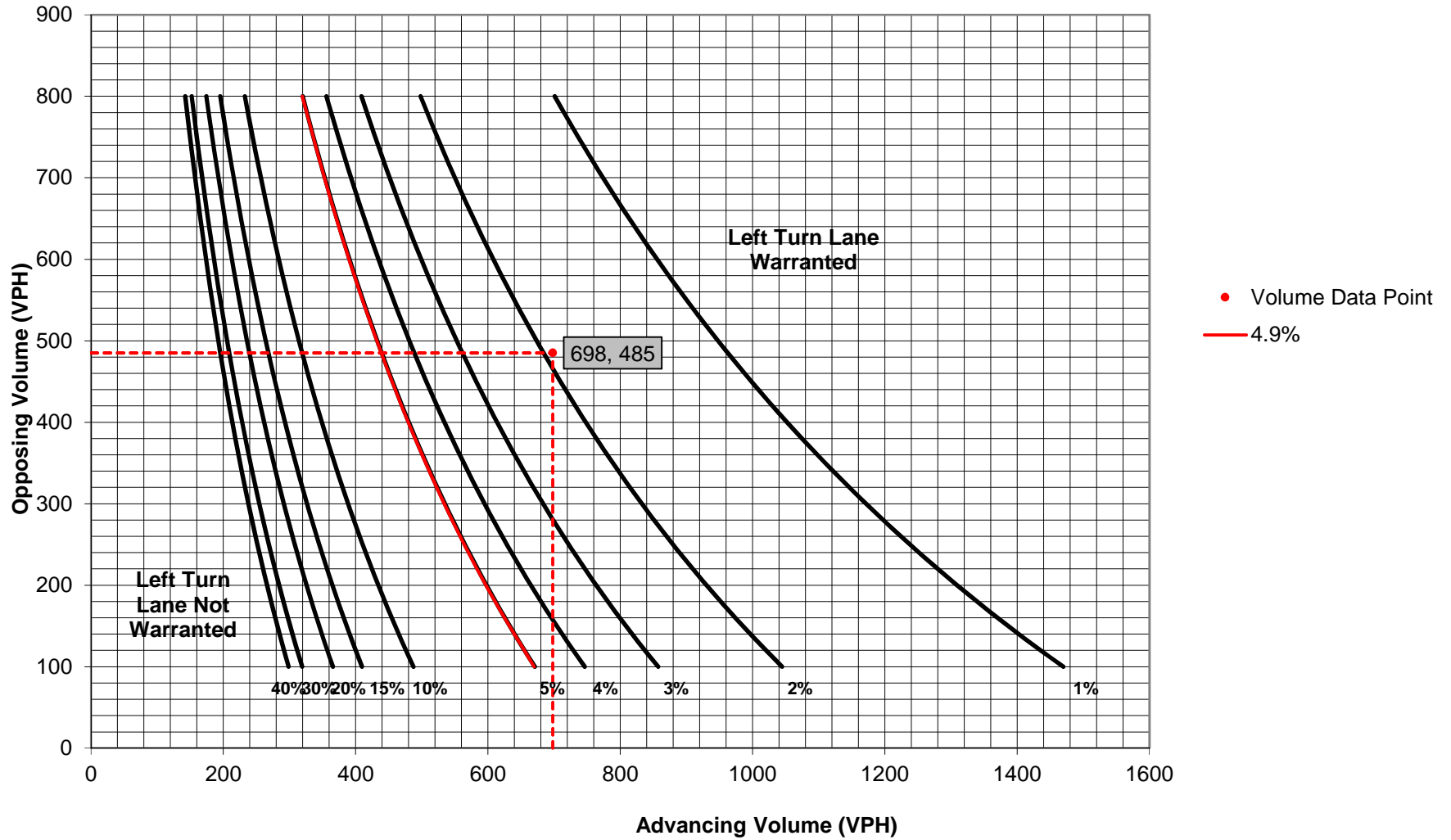
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	125	Feet
Condition C:	150	Feet
Required Left Turn Lane Storage Length:	150	Feet

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>

% Left Turns in Advancing Volume:	<input type="text" value="N/A"/>
-----------------------------------	----------------------------------

#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	75	3.0%	79
	Through	-	689	3.0%	721
	Right	-	4	0.0%	4

Advancing Volume:	<input type="text" value="804"/>
Right Turn Volume:	<input type="text" value="4"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 10"/>
Warrant Met?:	<input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Signalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="4"/>
Cycles Per Hour (Assumed):	<input type="text" value="Known"/>
Cycles Per Hour (If Known):	<input type="text" value="40"/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

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

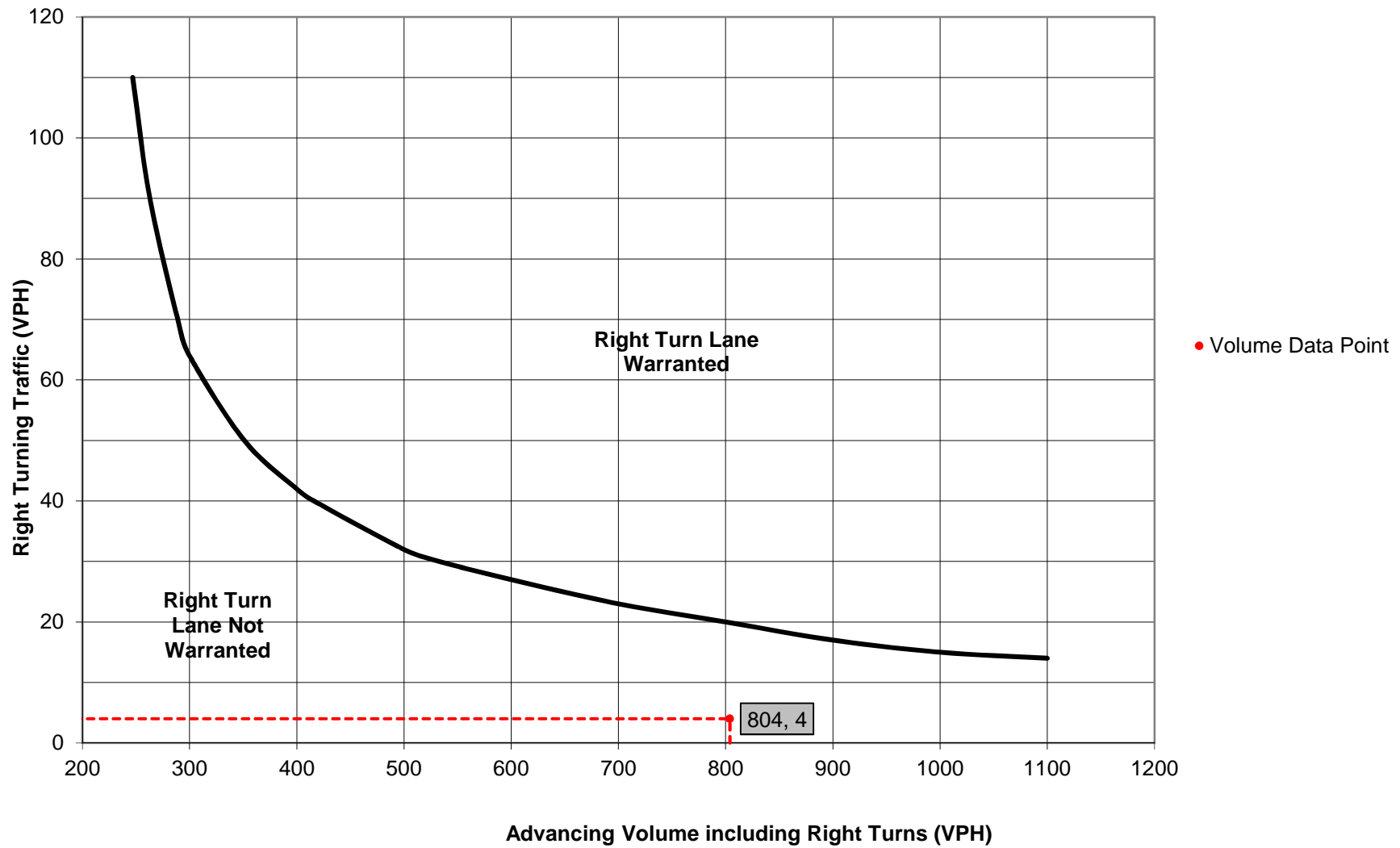
Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

<input type="text" value="N/A"/>
----------------------------------

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>

% Left Turns in Advancing Volume:	<input type="text" value="N/A"/>
-----------------------------------	----------------------------------

#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	32	3.0%	34
	Through	-	622	3.0%	650
	Right	-	14	0.0%	14

Advancing Volume:	<input type="text" value="698"/>
Right Turn Volume:	<input type="text" value="14"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 10"/>
Warrant Met?:	<input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Signalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="14"/>
Cycles Per Hour (Assumed):	<input type="text" value="Known"/>
Cycles Per Hour (If Known):	<input type="text" value="34"/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

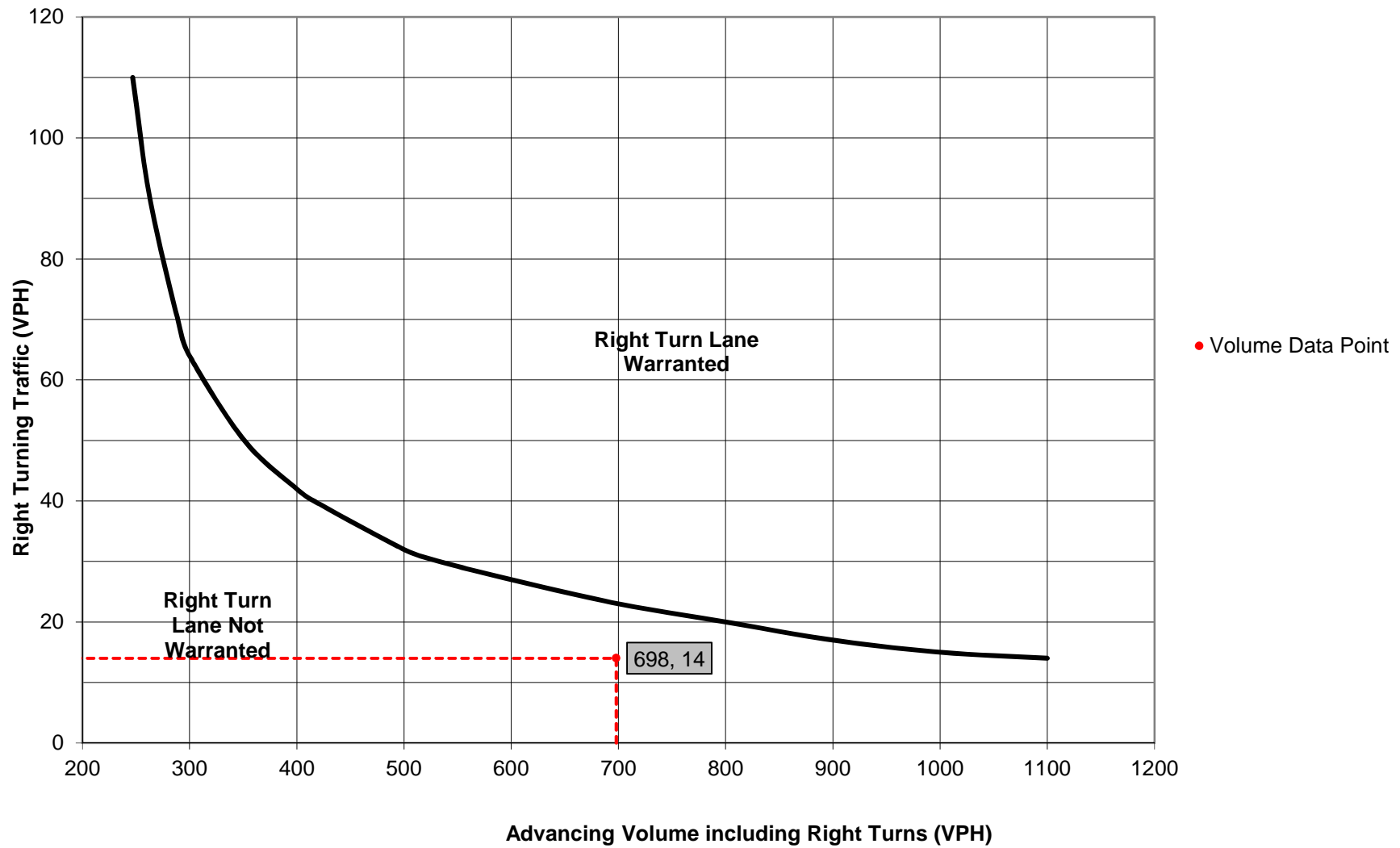
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:	<input type="text" value="N/A"/>
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Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**





## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="25"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	3	33.0%	5	Advancing Volume: <input type="text" value="114"/>	
	Through	-	80	3.0%	84		Opposing Volume: <input type="text" value="443"/>
	Right	Yes	22	9.0%	25		Left Turn Volume: <input type="text" value="5"/>
Opposing	Left	Yes	53	4.0%	57	% Left Turns in Advancing Volume: <input type="text" value="4.39%"/>	
	Through	-	243	0.0%	243		
	Right	Yes	138	2.0%	143		

Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	3.0%	N/A		Right Turn Volume: <input type="text" value="N/A"/>
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 1"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="No"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="5"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

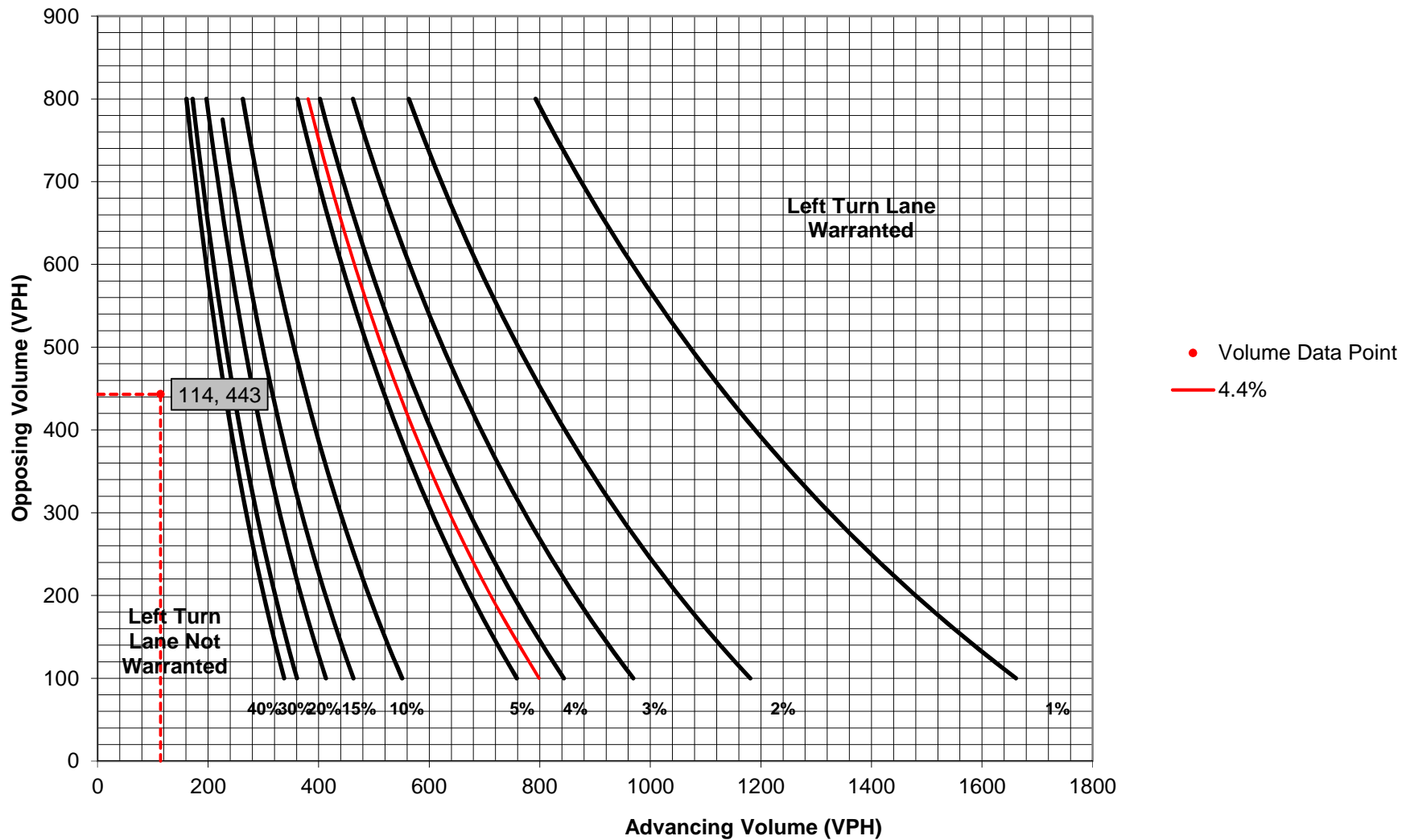
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="25"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	10	0.0%	10	Advancing Volume: <input type="text" value="219"/>	
	Through	-	170	0.0%	170		Opposing Volume: <input type="text" value="552"/>
	Right	Yes	37	3.0%	39		Left Turn Volume: <input type="text" value="10"/>
Opposing	Left	Yes	61	0.0%	61	% Left Turns in Advancing Volume: <input type="text" value="4.57%"/>	
	Through	-	194	1.0%	197		
	Right	Yes	289	1.0%	294		

Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	3.0%	N/A		Right Turn Volume: <input type="text" value="N/A"/>
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 1"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="No"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="10"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

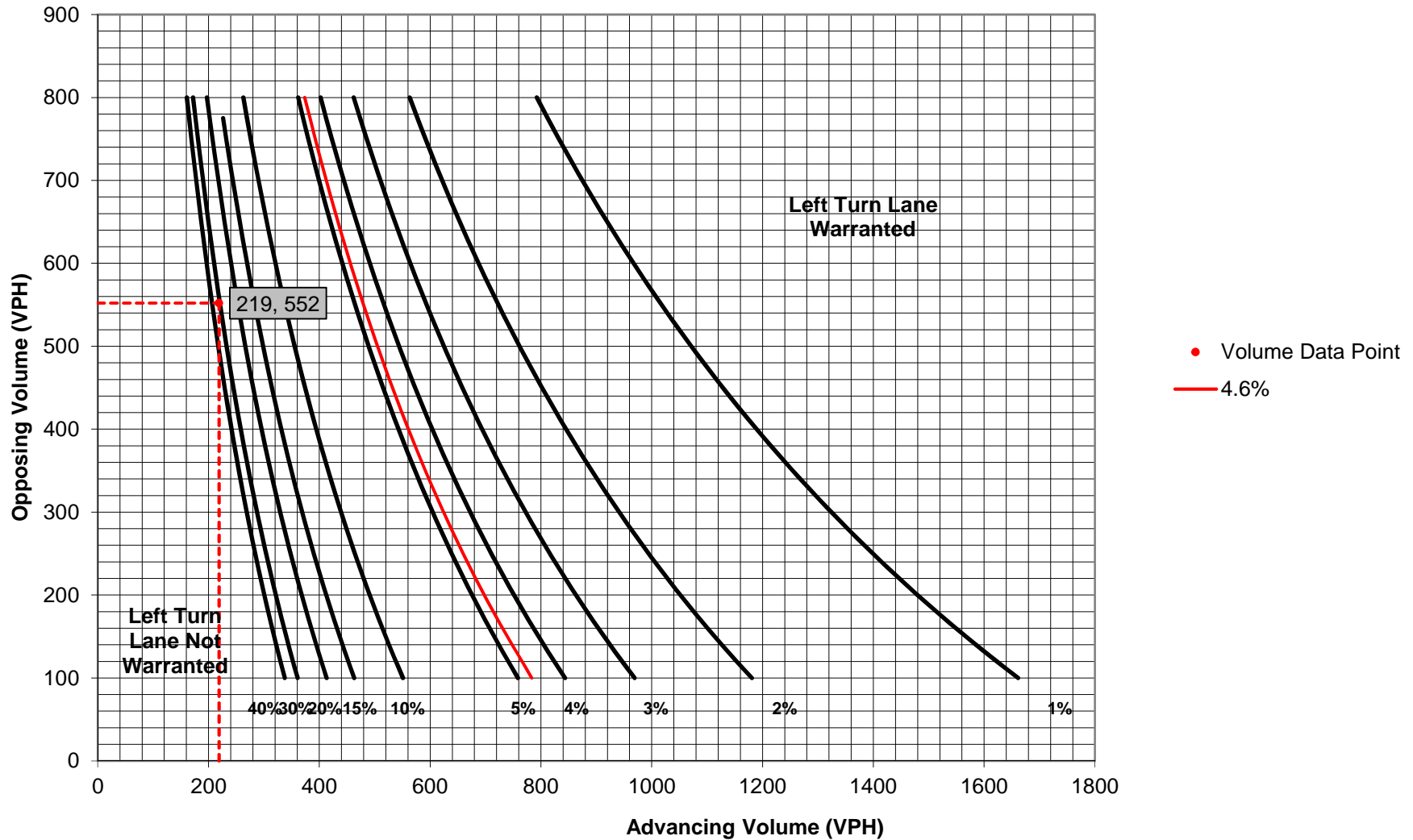
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="25"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>
% Left Turns in Advancing Volume:	
	<input type="text" value="N/A"/>

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	33.0%	5
	Through	-	80	3.0%	84
	Right	-	22	9.0%	25

Advancing Volume:	<input type="text" value="114"/>
Right Turn Volume:	<input type="text" value="25"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 9"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="25"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

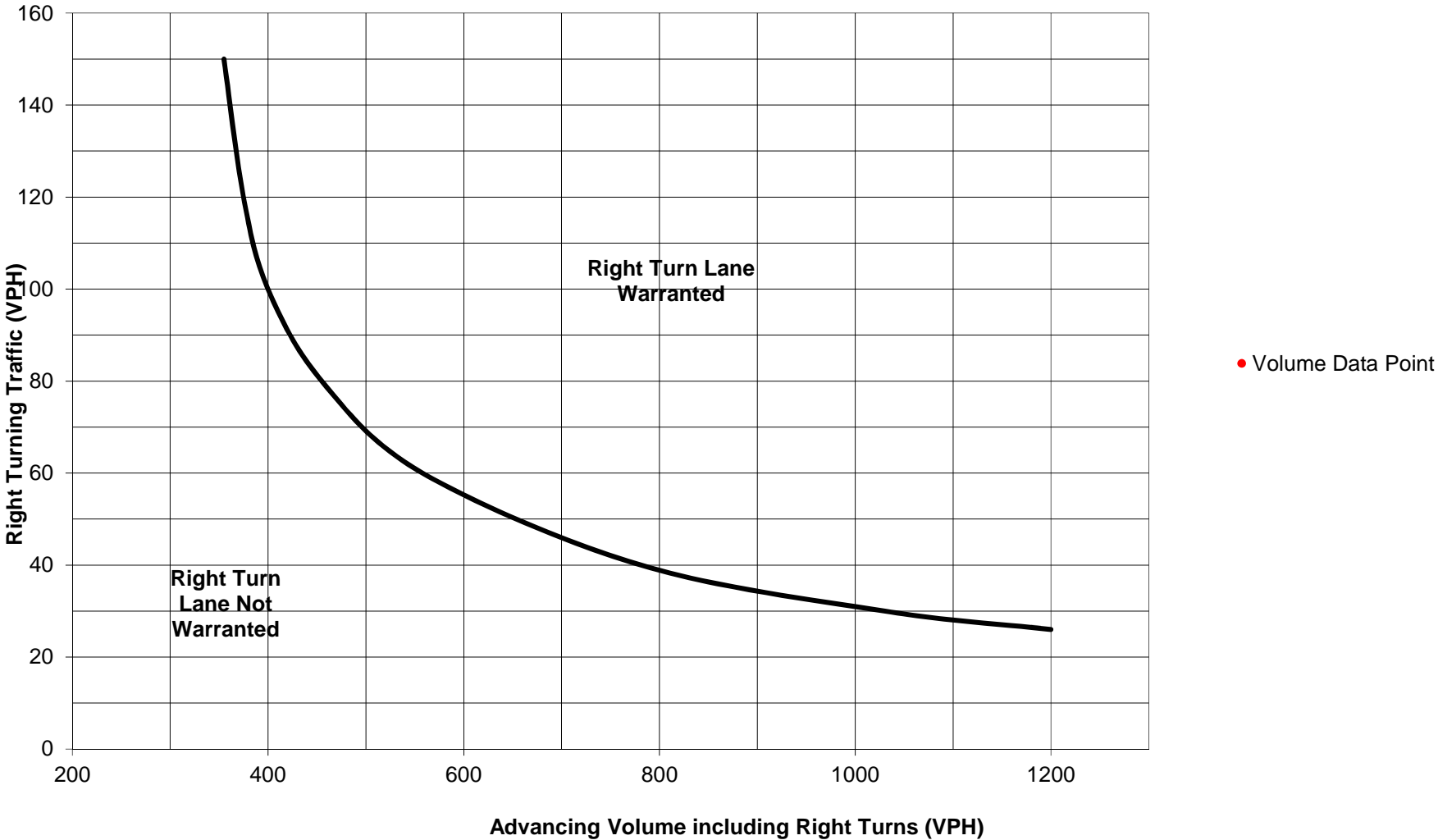
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/13/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="TML"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="BGG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="25"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	0	0.0%	N/A	Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	0.0%	N/A		Opposing Volume: <input type="text" value="N/A"/>
	Right	Yes	0	0.0%	N/A		Left Turn Volume: <input type="text" value="N/A"/>
Opposing	Left	Yes	0	0.0%	N/A	% Left Turns in Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	0.0%	N/A		
	Right	Yes	0	0.0%	N/A		
Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	10	0.0%	10	Advancing Volume: <input type="text" value="219"/>	
	Through	-	170	0.0%	170		Right Turn Volume: <input type="text" value="39"/>
	Right	-	37	3.0%	39		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 9"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="39"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

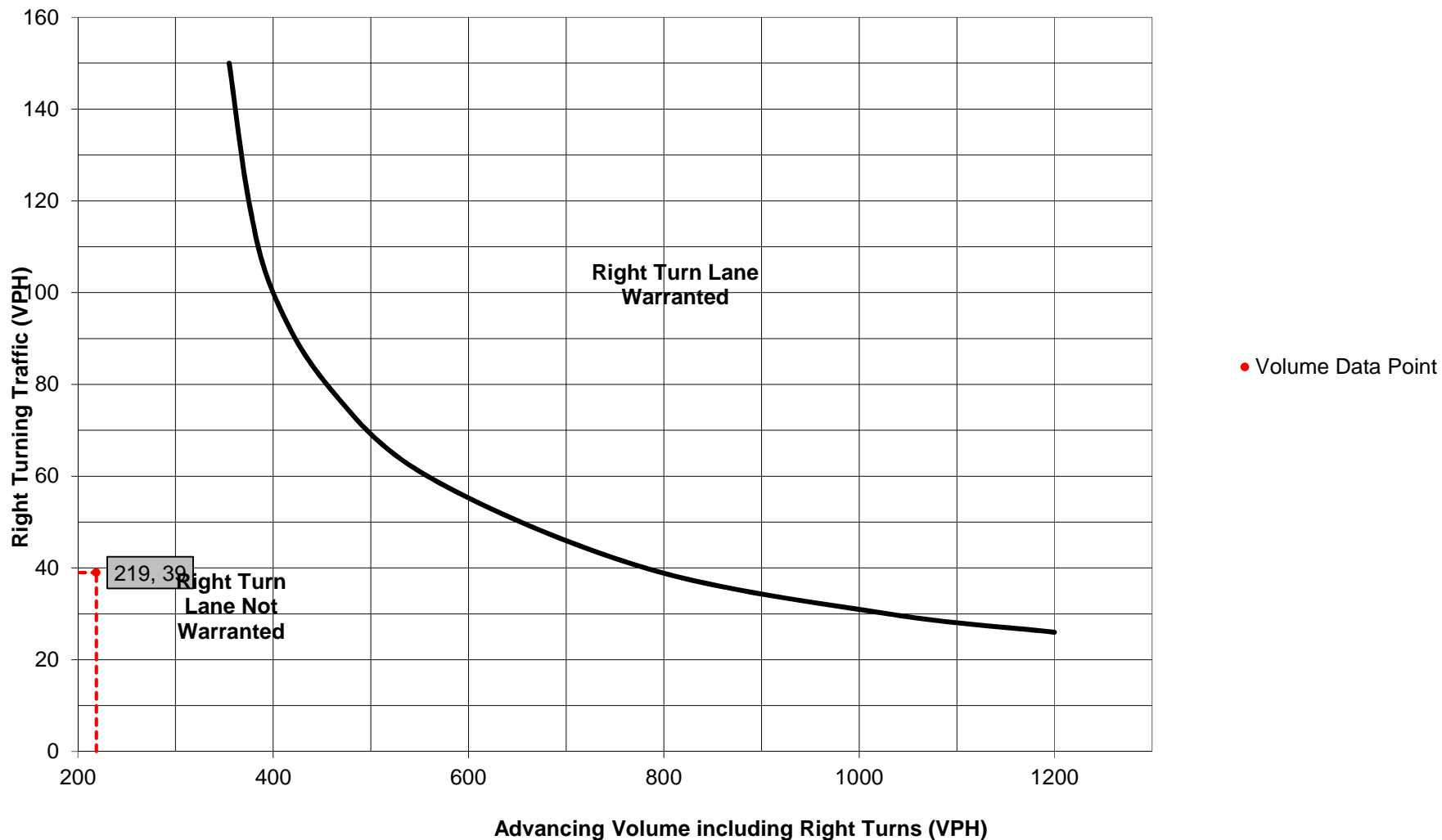
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="35"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	Yes	53	4.0%	57	Advancing Volume: <input type="text" value="443"/> Opposing Volume: <input type="text" value="114"/> Left Turn Volume: <input type="text" value="57"/>
	Through	-	243	0.0%	243	
	Right	Yes	138	2.0%	143	
Opposing	Left	Yes	3	33.0%	5	% Left Turns in Advancing Volume: <input type="text" value="12.87%"/>
	Through	-	80	3.0%	84	
	Right	Yes	22	9.0%	25	

Right Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/> Right Turn Volume: <input type="text" value="N/A"/>
	Through	-	0	3.0%	N/A	
	Right	-	0	0.0%	N/A	

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 1"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="No"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="57"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

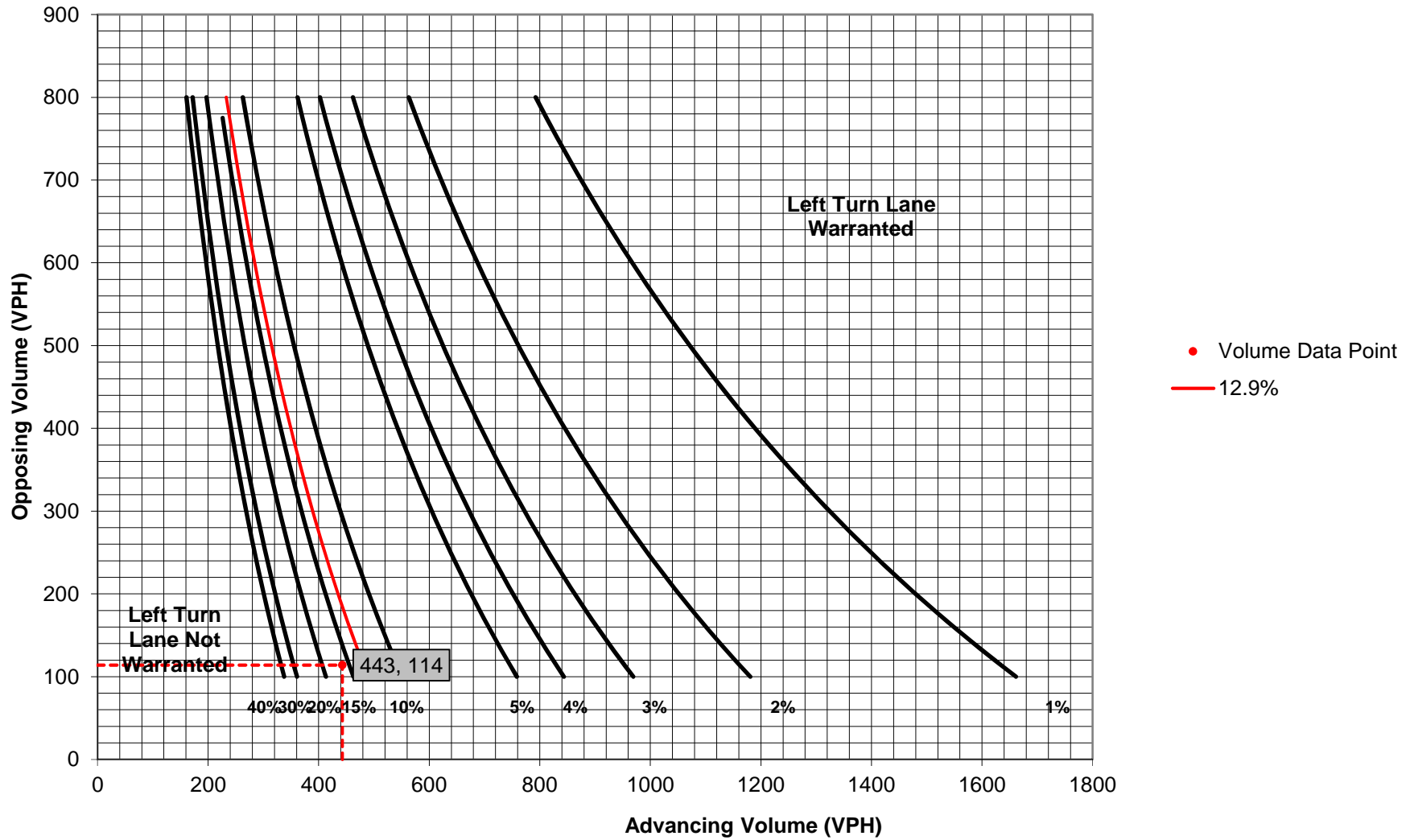
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="35"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	61	0.0%	61
	Through	-	194	1.0%	197
	Right	Yes	289	1.0%	294
Opposing	Left	Yes	10	0.0%	10
	Through	-	170	0.0%	170
	Right	Yes	37	3.0%	39

Advancing Volume:	552
Opposing Volume:	219
Left Turn Volume:	61

% Left Turns in Advancing Volume:	11.05%
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#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

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

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>Figure 1</b>
Warrant Met?:	<b>Yes</b>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>N/A</b>
Warrant Met?:	<b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	61
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	34
Average # of Vehicles/Cycle:	2.0

#### PennDOT Publication 46, Exhibit 11-6

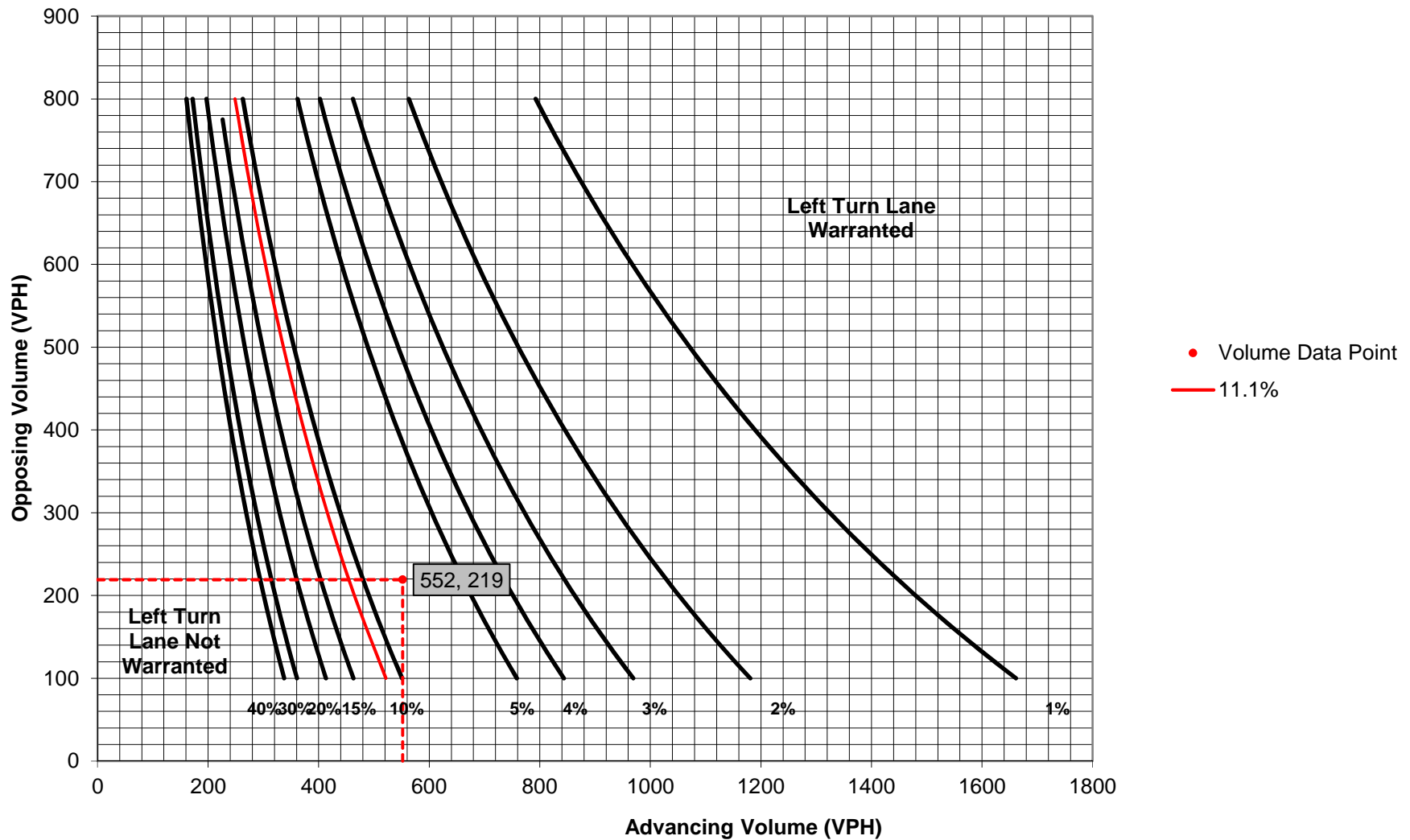
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<b>100</b>	Feet
Condition B:	<b>N/A</b>	Feet
Condition C:	<b>N/A</b>	Feet
Required Left Turn Lane Storage Length:	<b>100</b>	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: Westtown Township	Analysis Date: 1/4/2017
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: TML
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and New Street Southbound New Street Right-Turn Lane	
Analysis Period: 2016 Existing	Number of Approach Lanes: 1
Design Hour: AM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Signalized	Type of Analysis
Posted Speed Limit (MPH): 35	
Type of Terrain: Rolling	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	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	53	4.0%	57
	Through	-	243	0.0%	243
	Right	-	138	2.0%	143

Advancing Volume:	443
Right Turn Volume:	143

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	Yes

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	143
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	4.0

#### PennDOT Publication 46, Exhibit 11-6

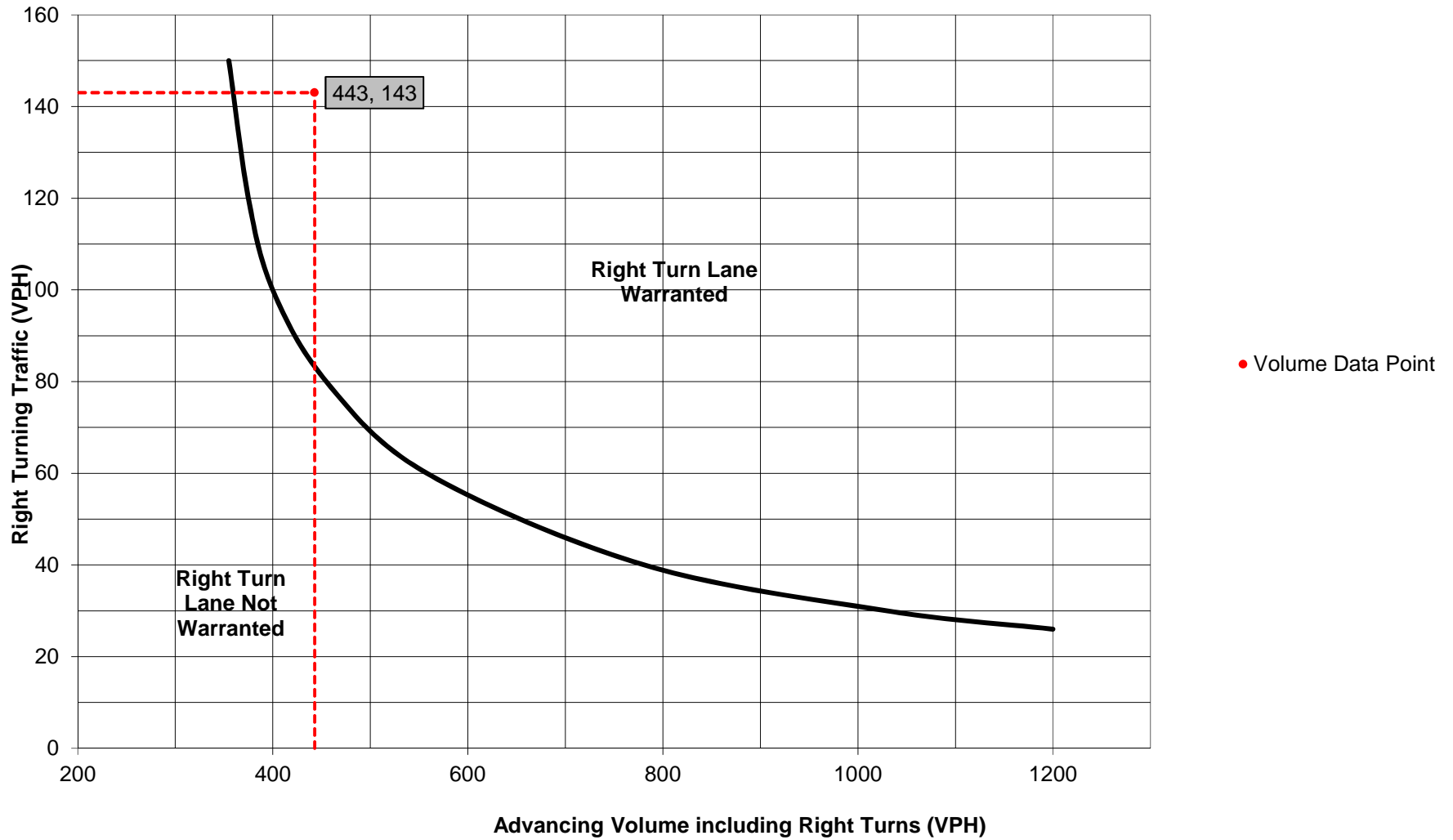
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	175	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	175	Feet

Additional Findings:	N/A
----------------------	-----

Additional Comments / Justifications:

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



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Southbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="35"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	61	0.0%	61
	Through	-	194	1.0%	197
	Right	-	289	1.0%	294

Advancing Volume:	552
Right Turn Volume:	294

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/>	Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 9"/>
Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>	Warrant Met?: <input style="width: 100px;" type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	294
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	34
Average # of Vehicles/Cycle:	9.0

PennDOT Publication 46, Exhibit 11-6

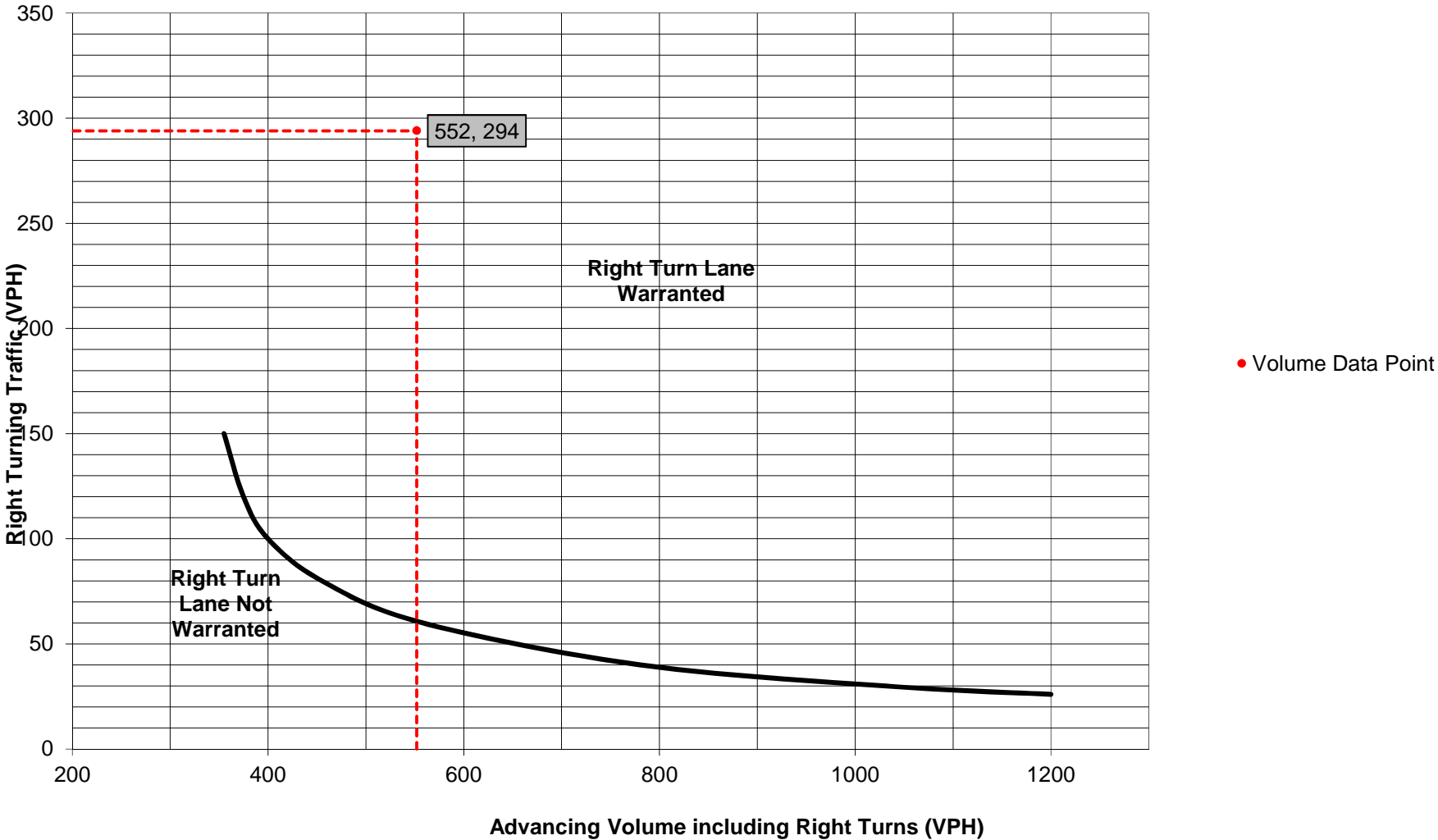
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	350	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	350	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Westbound Street Road (S.R. 0926) Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	11	27.0%	16	Advancing Volume: <input type="text" value="434"/>	
	Through	-	324	8.0%	363		Opposing Volume: <input type="text" value="804"/>
	Right	Yes	50	6.0%	55		Left Turn Volume: <input type="text" value="16"/>
Opposing	Left	Yes	75	3.0%	79	% Left Turns in Advancing Volume: <input type="text" value="3.69%"/>	
	Through	-	689	3.0%	721		
	Right	Yes	4	0.0%	4		

Right Turn Lane Volume Calculations							
Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/>	
	Through	-	0	3.0%	N/A		Right Turn Volume: <input type="text" value="N/A"/>
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings		Right Turn Lane Warrant Findings	
Applicable Warrant Figure: <input type="text" value="Figure 3"/>		Applicable Warrant Figure: <input type="text" value="N/A"/>	
Warrant Met?: <input type="text" value="Yes"/>		Warrant Met?: <input type="text" value="N/A"/>	

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="16"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="1.0"/>

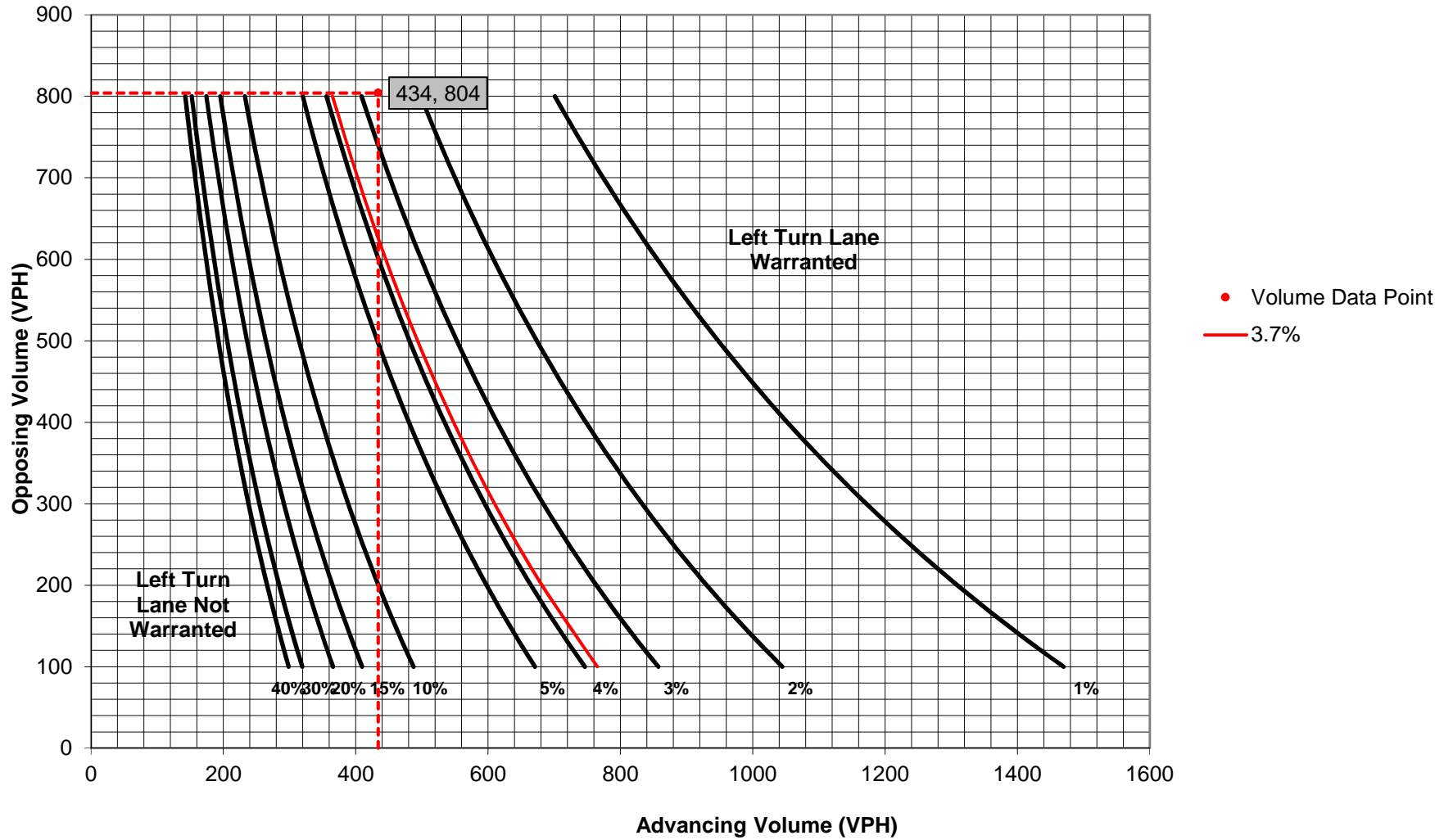
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="125"/>	Feet
Condition C:	<input type="text" value="150"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="150"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Westbound Street Road (S.R. 0926) Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	Yes	24	0.0%	24	Advancing Volume: <input type="text" value="485"/> Opposing Volume: <input type="text" value="698"/> Left Turn Volume: <input type="text" value="24"/>
	Through	-	393	1.0%	399	
	Right	Yes	62	0.0%	62	
Opposing	Left	Yes	32	3.0%	34	% Left Turns in Advancing Volume: <input type="text" value="4.95%"/>
	Through	-	622	3.0%	650	
	Right	Yes	14	0.0%	14	

Right Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: <input type="text" value="N/A"/> Right Turn Volume: <input type="text" value="N/A"/>
	Through	-	0	3.0%	N/A	
	Right	-	0	0.0%	N/A	

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 3"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="Yes"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="24"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="1.0"/>

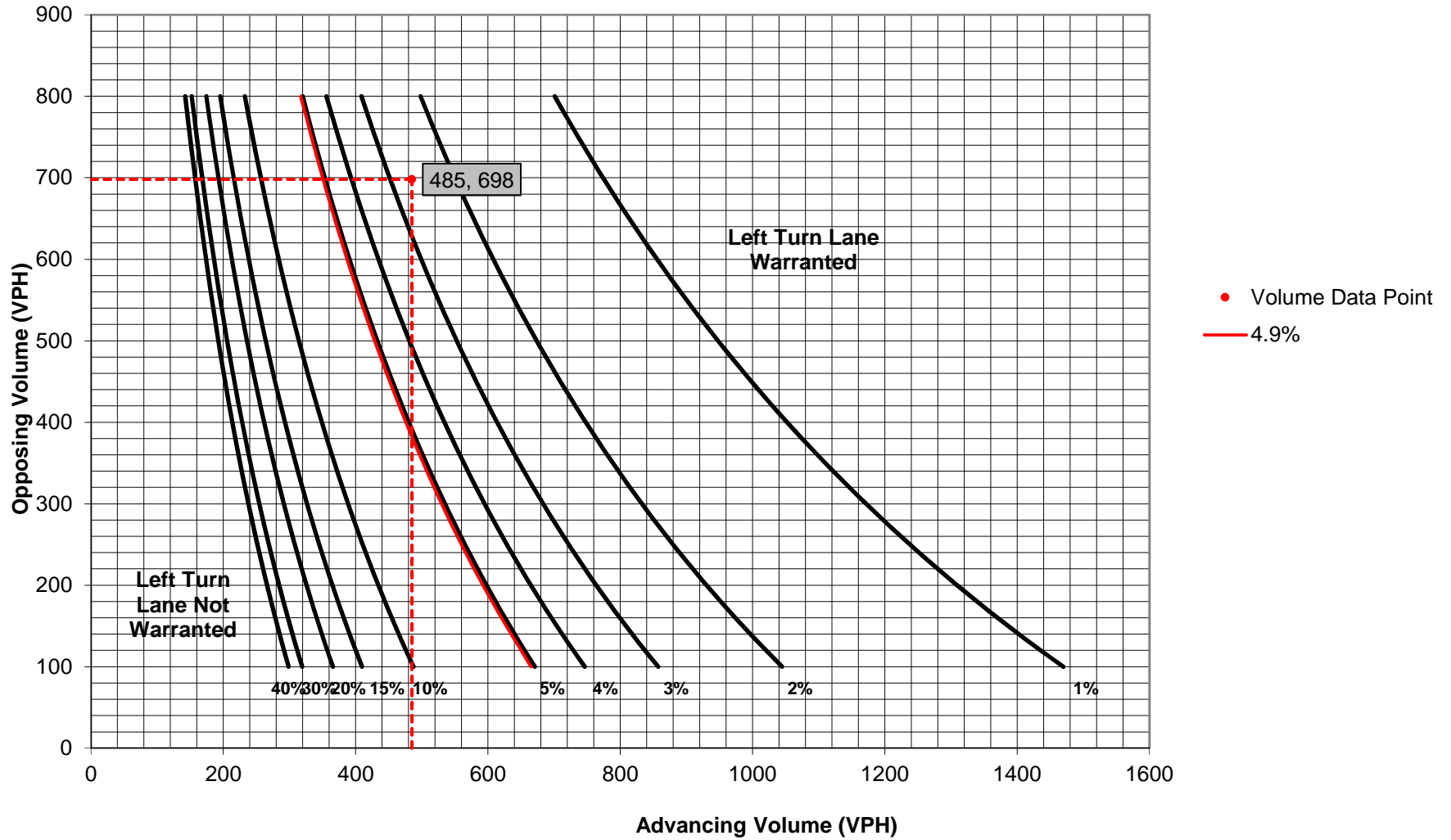
Type of Traffic Control	PennDOT Publication 46, Exhibit 11-6					
	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="125"/>	Feet
Condition C:	<input type="text" value="150"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="150"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>
% Left Turns in Advancing Volume:	<input type="text" value="N/A"/>

Right Turn Lane Volume Calculations					
Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	11	27.0%	16
	Through	-	324	8.0%	363
	Right	-	50	6.0%	55

Advancing Volume:	<input type="text" value="434"/>
Right Turn Volume:	<input type="text" value="55"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 10"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="55"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="1.0"/>

PennDOT Publication 46, Exhibit 11-6

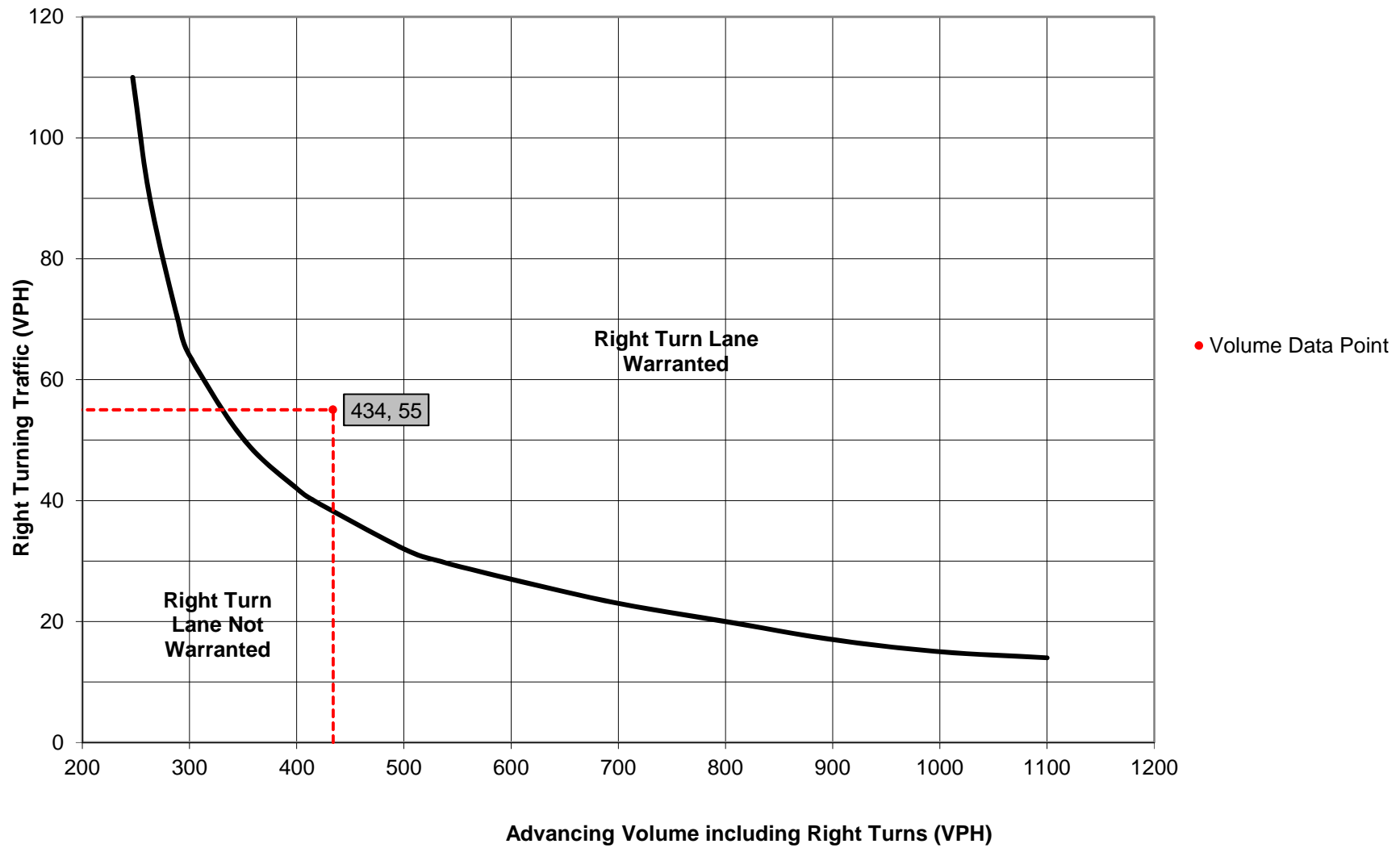
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="125"/>	Feet
Condition C:	<input type="text" value="150"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="150"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
					Advancing Volume: <input type="text" value="N/A"/>
					Opposing Volume: <input type="text" value="N/A"/>
					Left Turn Volume: <input type="text" value="N/A"/>
					% Left Turns in Advancing Volume: <input type="text" value="N/A"/>
Right Turn Lane Volume Calculations					
Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	Yes	24	0.0%	24
	Through	-	393	1.0%	399
	Right	-	62	0.0%	62
					Advancing Volume: <input type="text" value="485"/>
					Right Turn Volume: <input type="text" value="62"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 10"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="62"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="2.0"/>

PennDOT Publication 46, Exhibit 11-6

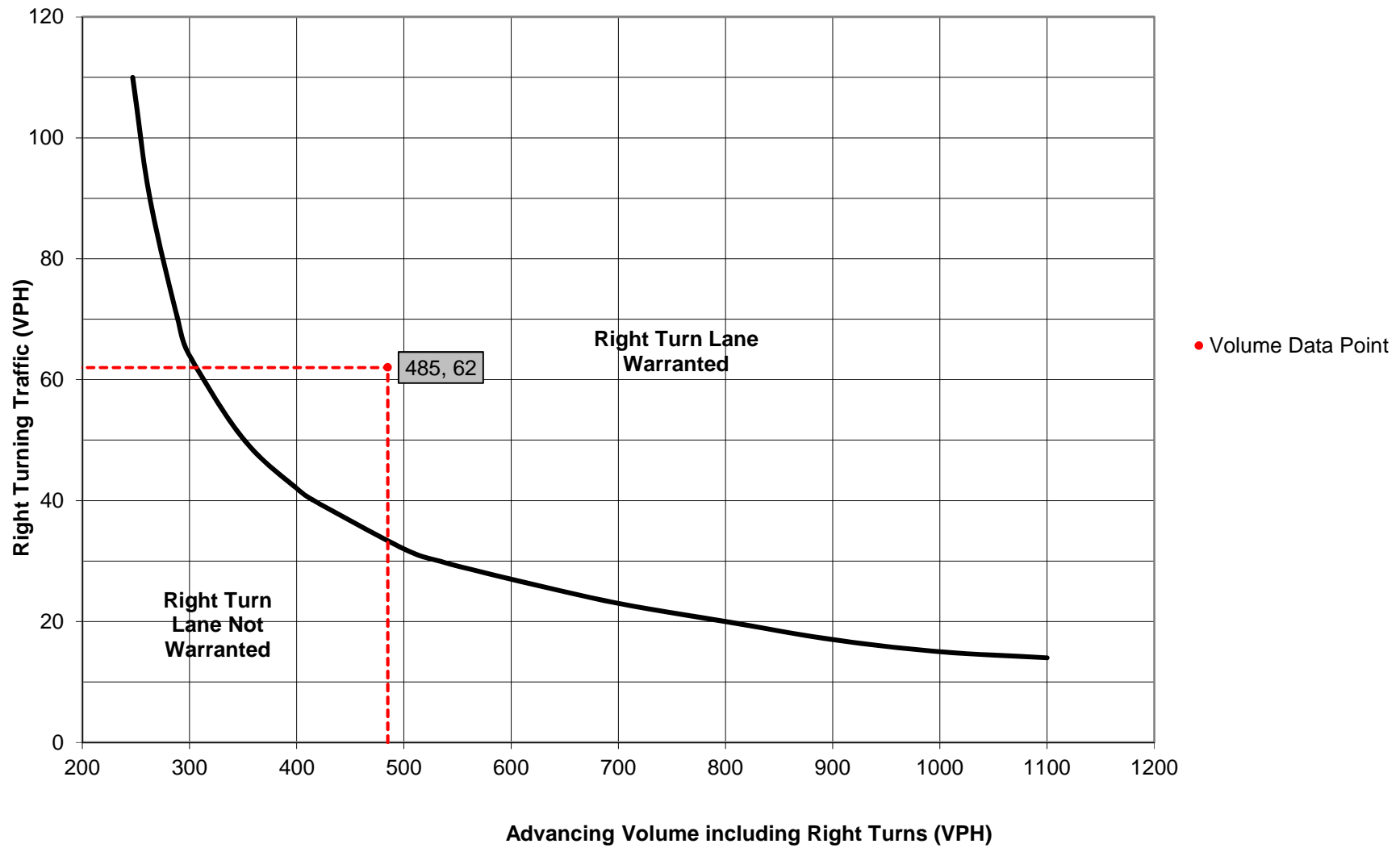
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="125"/>	Feet
Condition C:	<input type="text" value="175"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="175"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**





*New Street and  
W. Pleasant Grove Road*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="Existing"/> Design Hour: <input type="text" value="AM Peak Hour"/> Intersection Control: <input type="text" value="Unsignalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			N/A
Opposing	Left	Yes			N/A
	Through	-			N/A
	Right	Yes			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	0.0%	0
	Through	-	202	2.0%	209
	Right	-	3	0.0%	3

Advancing Volume:	212
Right Turn Volume:	3

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 9</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">No</span>
---	--

### 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

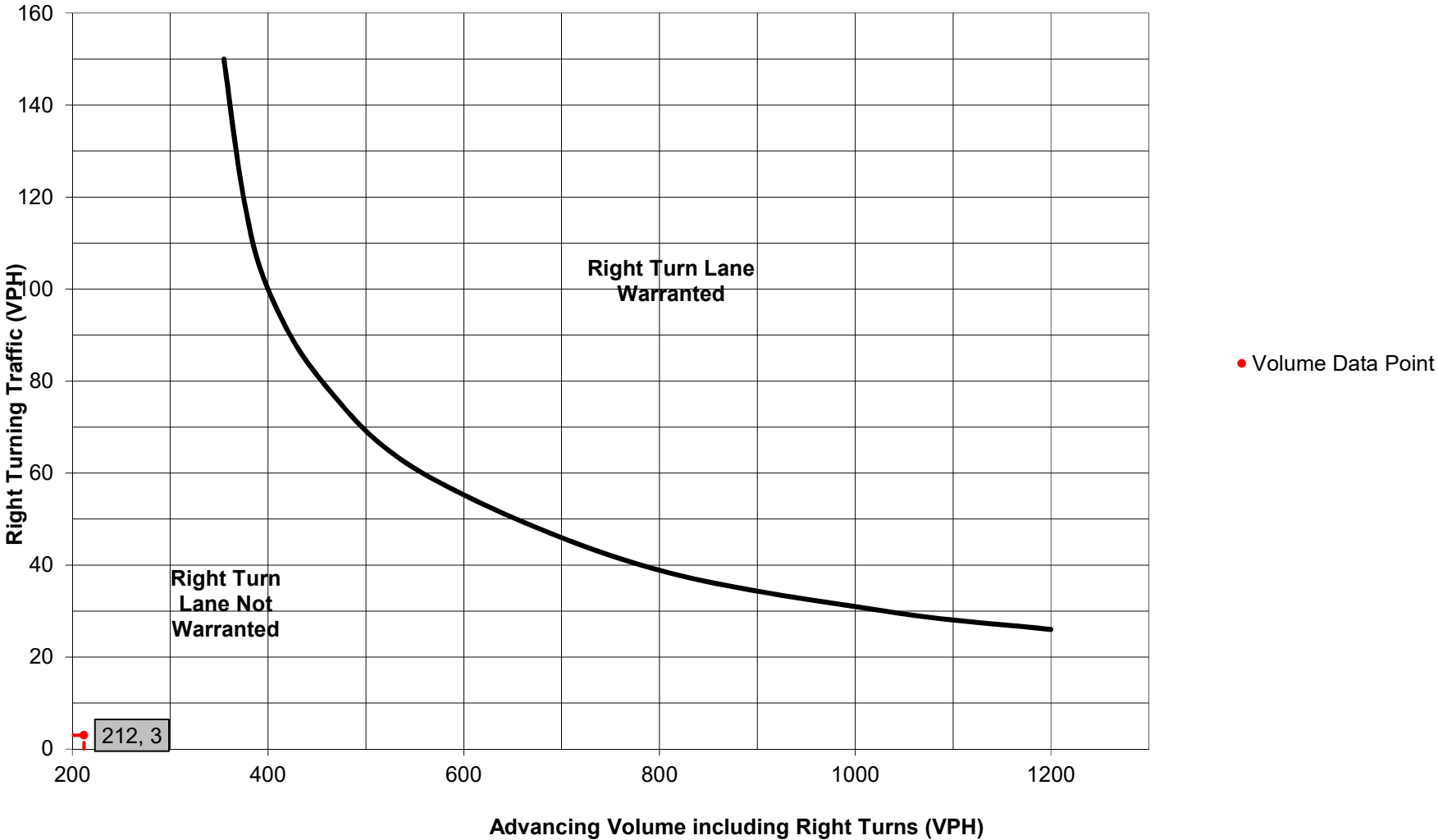
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Westtown Township	Analysis Date: 8/7/2019
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: JDG
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: New Street and West Pleasant Grove Road Northbound New Street Right-Turn Lane	
Analysis Period: Existing	Number of Approach Lanes: 1
Design Hour: PM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Unsignalized	<b>Type of Analysis</b>
Posted Speed Limit (MPH): 35	
Type of Terrain: Rolling	

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	0.0%	0
	Through	-	254	1.0%	258
	Right	-	10	0.0%	10

Advancing Volume:	268
Right Turn Volume:	10

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	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

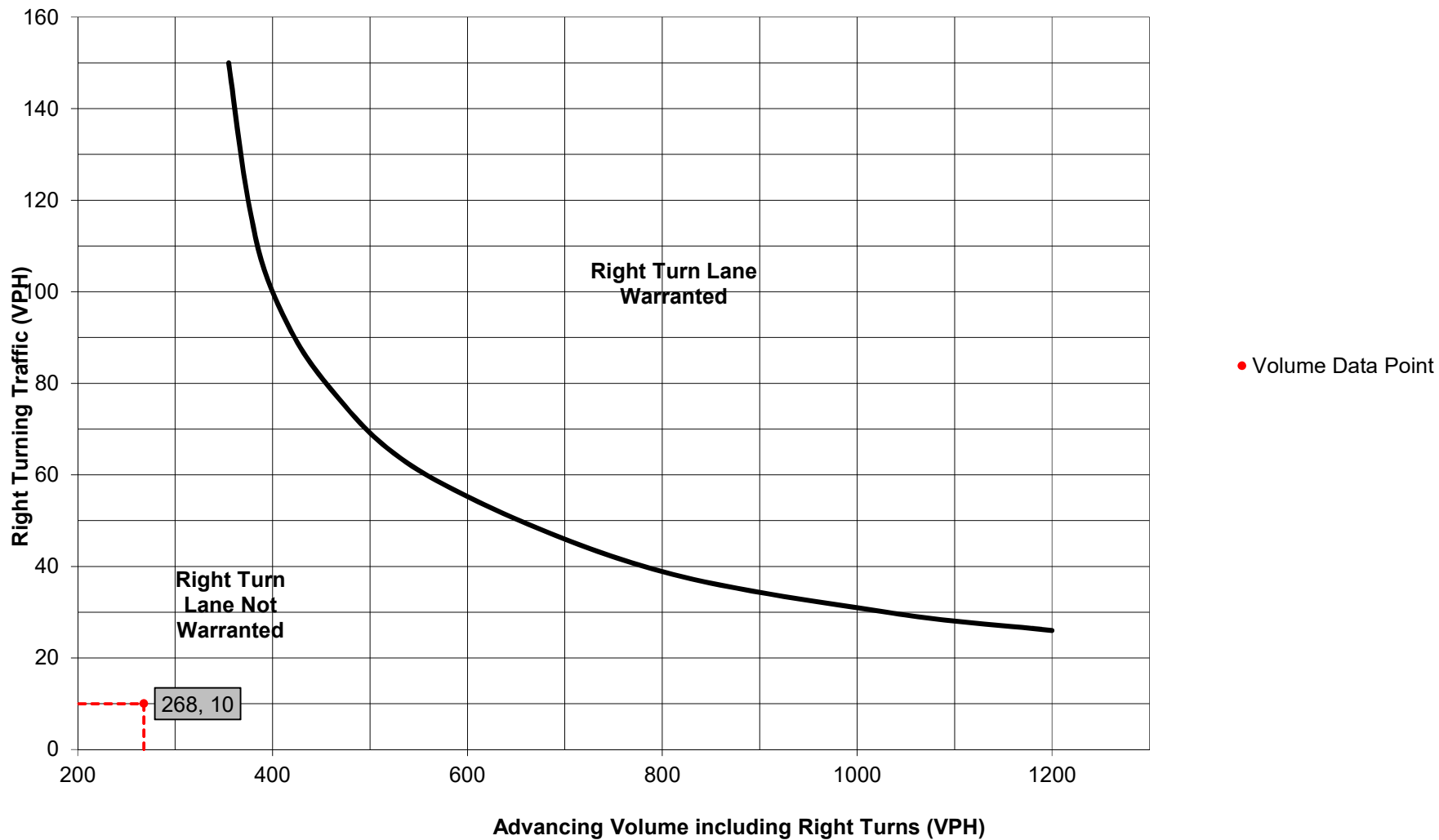
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	N/A
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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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="Existing"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	14	7.0%	16
	Through	-	347	1.0%	353
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	202	2.0%	209
	Right	Yes	3	0.0%	3

Advancing Volume:	<input type="text" value="369"/>
Opposing Volume:	<input type="text" value="212"/>
Left Turn Volume:	<input type="text" value="16"/>

% Left Turns in Advancing Volume:	<input type="text" value="4.34%"/>
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	<input type="text" value="N/A"/>
Right Turn Volume:	<input type="text" value="N/A"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 1"/>
Warrant Met?:	<input type="text" value="No"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Unsignalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="16"/>
Cycles Per Hour (Assumed):	<input type="text" value="60"/>
Cycles Per Hour (If Known):	<input type="text" value=""/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

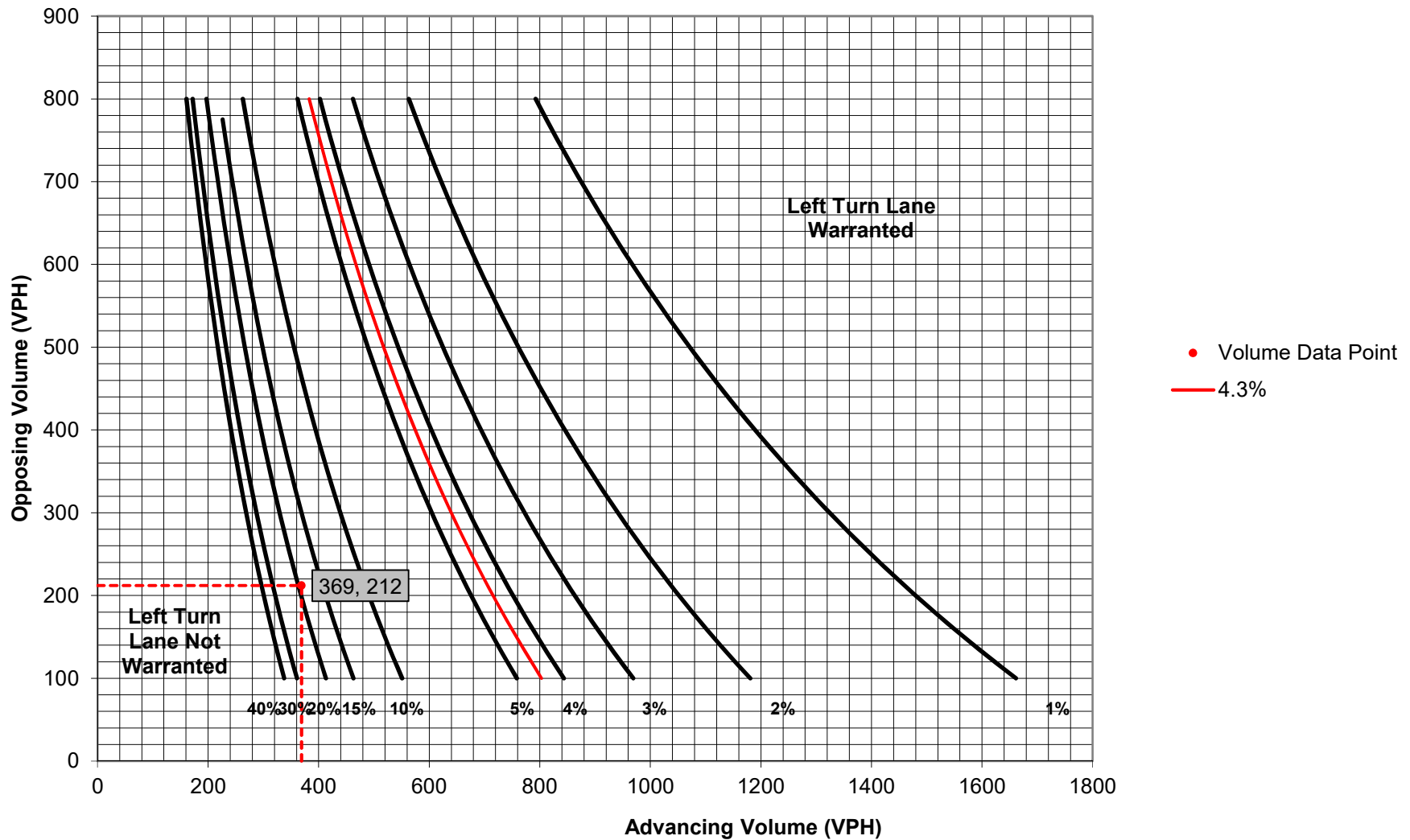
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:	<input type="text" value="N/A"/>
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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: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="Existing"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Unsignalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	12	0.0%	12
	Through	-	285	0.0%	285
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	254	1.0%	258
	Right	Yes	10	0.0%	10

Advancing Volume:	297
Opposing Volume:	268
Left Turn Volume:	12
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="4.04%"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

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

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 1"/> Warrant Met?: <input style="width: 100px;" type="text" value="No"/>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/> Design Hour Volume of Turning Lane: <input type="text" value="12"/> Cycles Per Hour (Assumed): <input type="text" value="60"/> Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input style="width: 100px;" type="text" value="N/A"/>
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PennDOT Publication 46, Exhibit 11-6

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

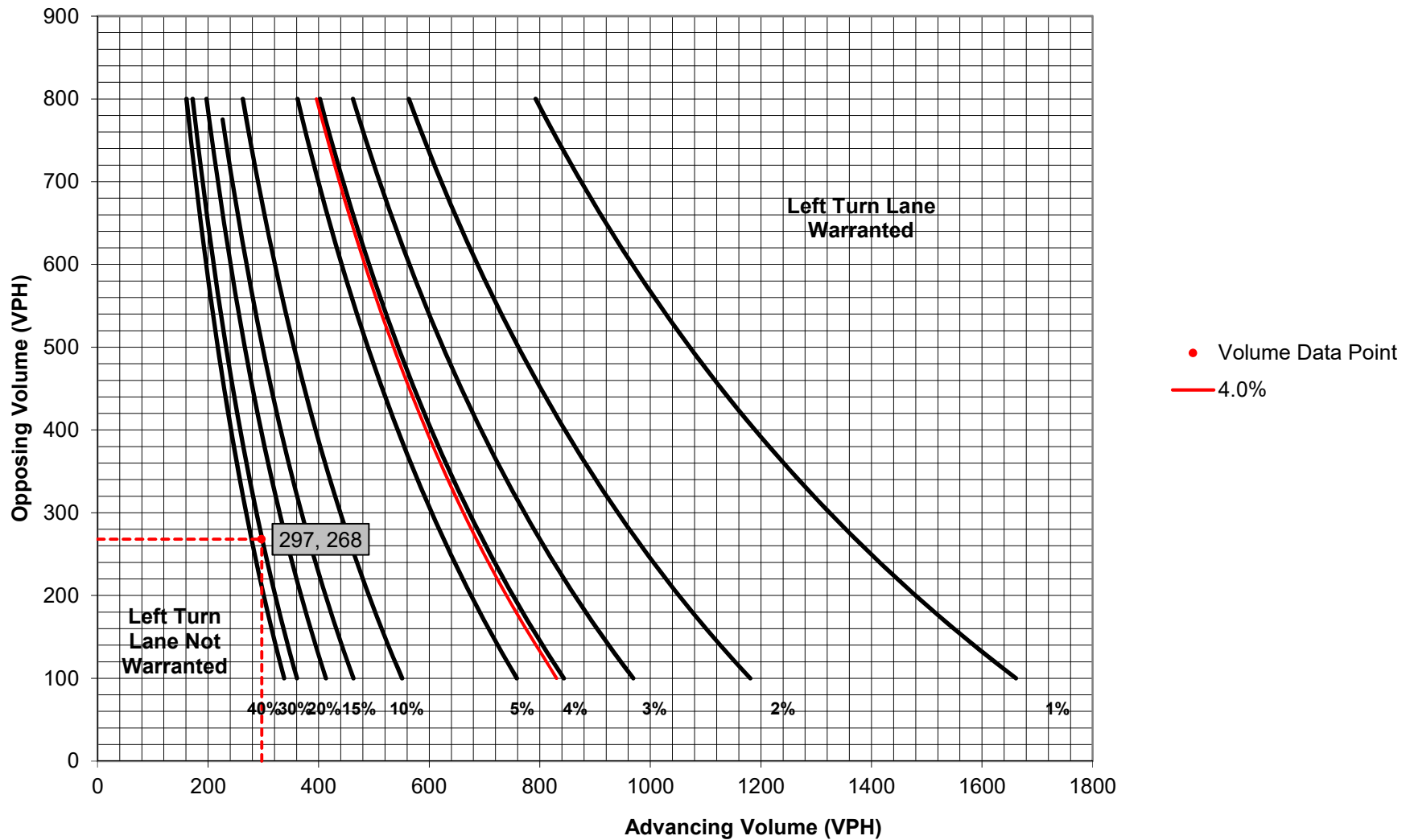
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings:

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:	Westtown Township	Analysis Date:	8/7/2019
County:	Chester County	Conducted By:	BGG
PennDOT Engineering District:	6	Checked By:	JDG
		Agency/Company Name:	McMahon Associates, Inc.
Intersection & Approach Description: New Street and West Pleasant Grove Road Westbound Street Road (S.R. 0926) Right-Turn Lane			
Analysis Period:	Existing	Number of Approach Lanes:	1
Design Hour:	AM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized	<b>Type of Analysis</b>	
Posted Speed Limit (MPH):	35		
Type of Terrain:	Rolling	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	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A

% Left Turns in Advancing Volume:	N/A
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	87	2.0%	90
	Through	-	0	0.0%	0
	Right	-	25	12.0%	30

Advancing Volume:	120
Right Turn Volume:	30

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized	Average # of Vehicles/Cycle:	N/A
Design Hour Volume of Turning Lane:	30		
Cycles Per Hour (Assumed):	60		
Cycles Per Hour (If Known):			

#### PennDOT Publication 46, Exhibit 11-6

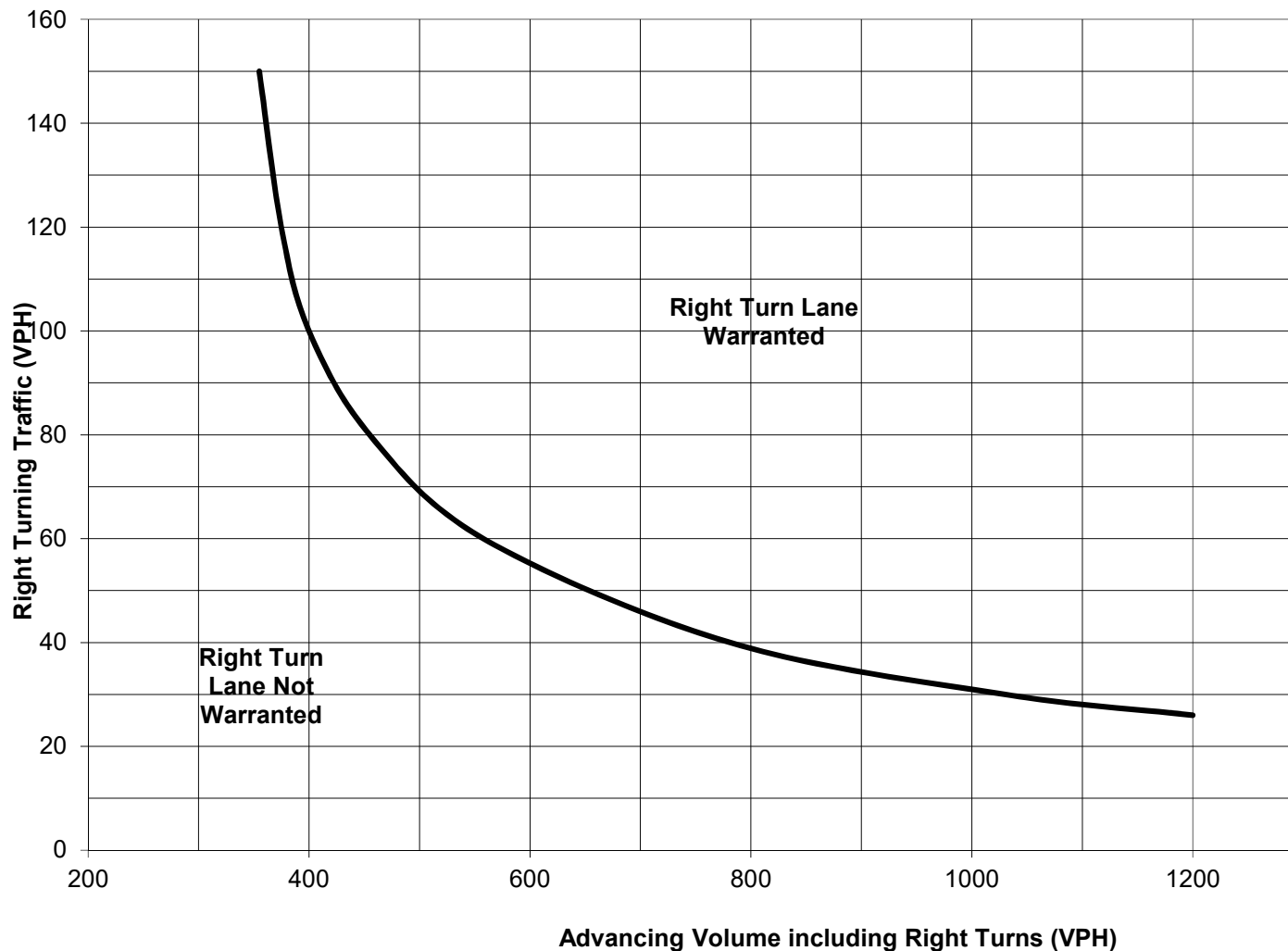
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	N/A
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Additional Comments / Justifications:

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



The point (120,30) is outside the viewport of the graph

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Westtown Township	Analysis Date: 8/7/2019
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: JDG
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: New Street and West Pleasant Grove Road Westbound Street Road (S.R. 0926) Right-Turn Lane	
Analysis Period: Existing	Number of Approach Lanes: 1
Design Hour: PM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Unsignalized	<b>Type of Analysis</b>
Posted Speed Limit (MPH): 35	
Type of Terrain: Rolling	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	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A

% Left Turns in Advancing Volume:	N/A
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	259	0.0%	259
	Through	-	0	0.0%	0
	Right	-	42	0.0%	42

Advancing Volume:	301
Right Turn Volume:	42

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	42
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	
Average # of Vehicles/Cycle:	N/A

#### PennDOT Publication 46, Exhibit 11-6

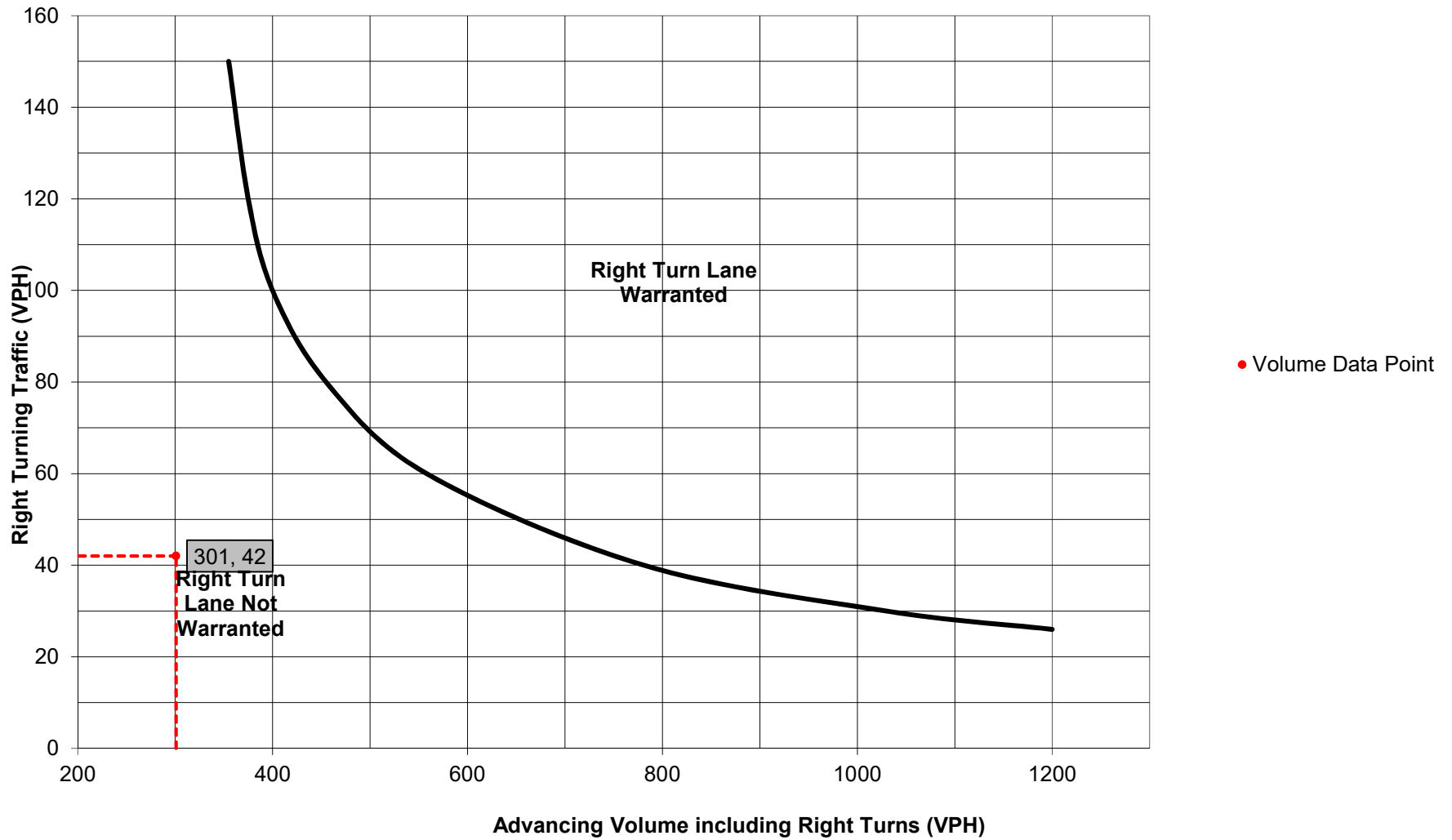
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	N/A
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Additional Comments / Justifications:

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



*U.S. Route 202 (Wilmington Pike) and  
W. Pleasant Grove Road*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="1/4/2017"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="TML"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="U.S. Route 202 and West Pleasant Grove Road&lt;br/&gt;Southbound U.S. Route 202 Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/>	Number of Approach Lanes: <input type="text" value="2"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Divided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="45"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>
% Left Turns in Advancing Volume: <input type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	46	4.0%	N/A
	Through	-	1523	12.0%	1798
	Right	-	132	5.0%	142

Advancing Volume:	<input type="text" value="1940"/>
Right Turn Volume:	<input type="text" value="142"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="N/A"/>	Applicable Warrant Figure: <input type="text" value="Figure 12"/>
Warrant Met?: <input type="text" value="N/A"/>	Warrant Met?: <input type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="142"/>	
Cycles Per Hour (Assumed): <input type="text" value="60"/>	
Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input type="text" value="2.0"/>

PennDOT Publication 46, Exhibit 11-6

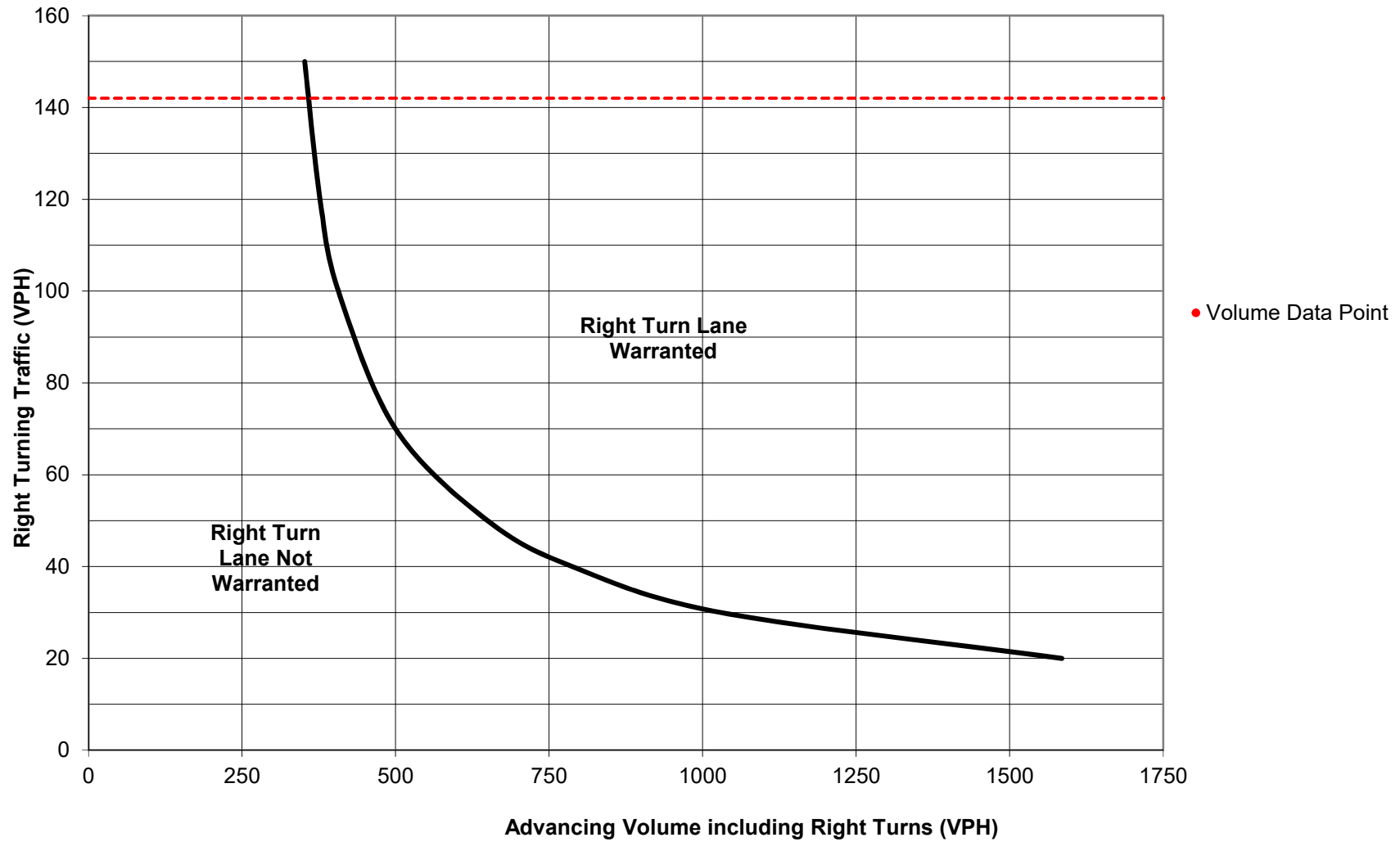
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="175"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="175"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 12. Warrant for right turn lanes on four-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**





## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="1/4/2017"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="TML"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="U.S. Route 202 and West Pleasant Grove Road&lt;br/&gt;Southbound U.S. Route 202 Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2016 Existing"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Unsignalized"/> Posted Speed Limit (MPH): <input type="text" value="45"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="2"/> Undivided or Divided Highway: <input type="text" value="Divided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	No	105	0.0%	N/A
	Through	-	1718	2.0%	1770
	Right	-	306	1.0%	311

Advancing Volume:	2081
Right Turn Volume:	311

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 12</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">Yes</span>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/> Design Hour Volume of Turning Lane: <input type="text" value="311"/> Cycles Per Hour (Assumed): <input type="text" value="60"/> Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input type="text" value="5.0"/>
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PennDOT Publication 46, Exhibit 11-6

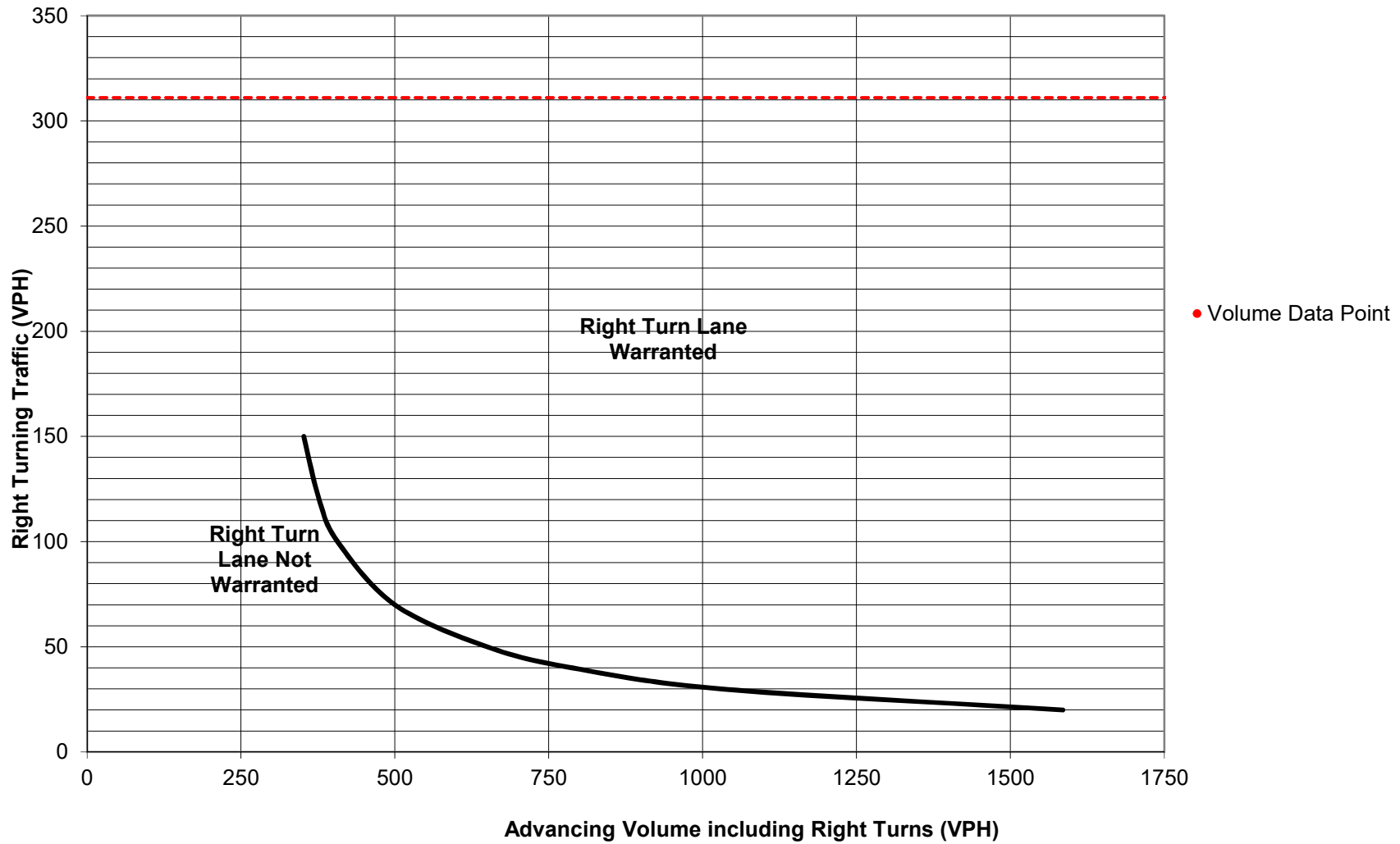
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	275	Feet
Required Right Turn Lane Storage Length:	275	Feet

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 12. Warrant for right turn lanes on four-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



*2030 with Development*

*Street Road (S.R. 0926) and  
New Street*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="45"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	111	3.0%	116
	Through	-	721	3.0%	754
	Right	Yes	4	0.0%	4
Opposing	Left	Yes	16	27.0%	23
	Through	-	417	8.0%	468
	Right	Yes	54	6.0%	59

Advancing Volume:	874
Opposing Volume:	550
Left Turn Volume:	116

% Left Turns in Advancing Volume:	13.27%
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-			N/A
	Right	-			N/A

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

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>Figure 3</b>
Warrant Met?:	<b>Yes</b>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>N/A</b>
Warrant Met?:	<b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	116
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	3.0

#### PennDOT Publication 46, Exhibit 11-6

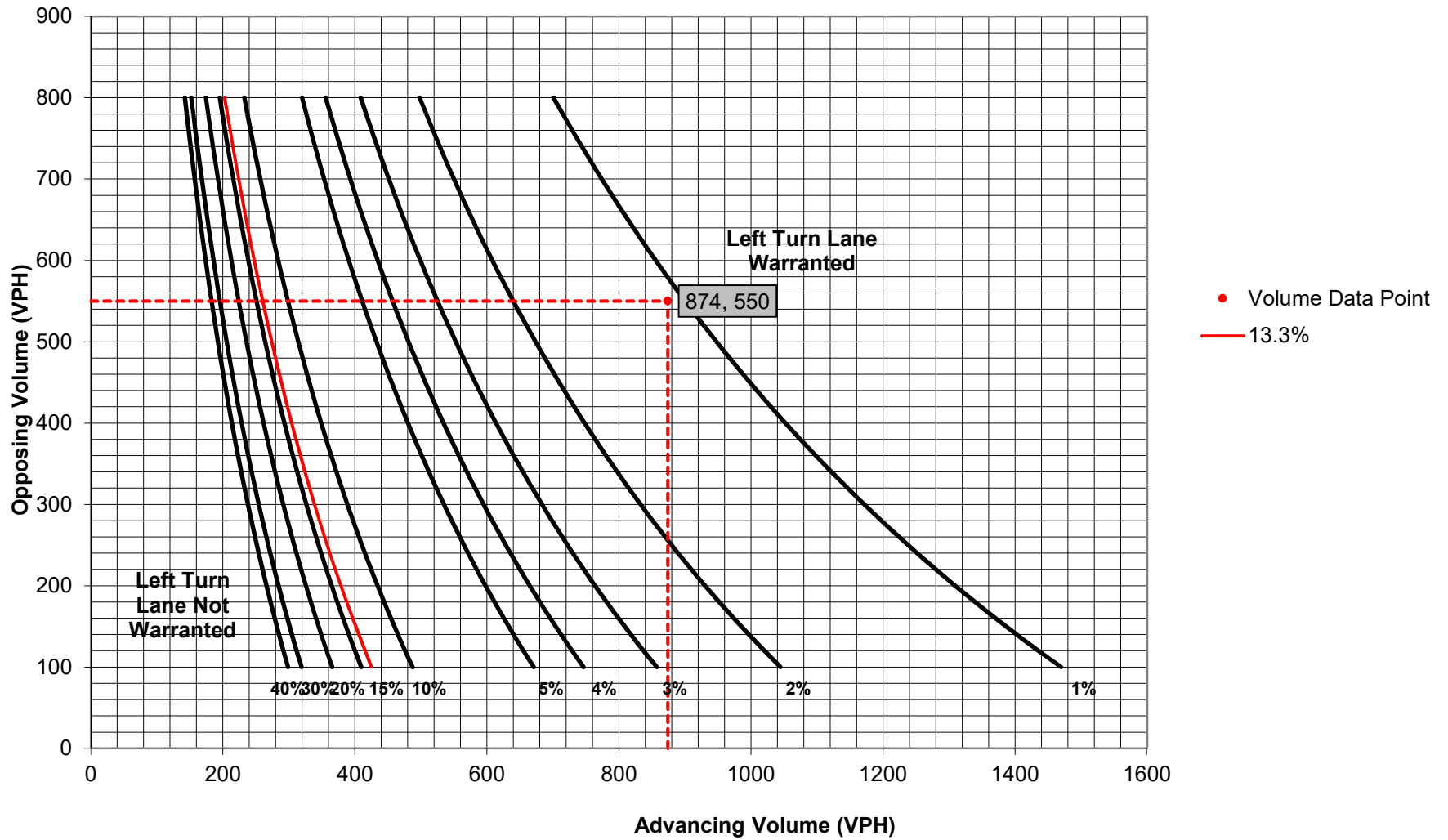
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>225</b>	Feet
Required Left Turn Lane Storage Length:	<b>225</b>	Feet

Additional Findings:	N/A
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Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Westtown Township	Analysis Date: 8/7/2019
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: JDG
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and New Street Eastbound Street Road (S.R. 0926) Left-Turn Lane	
Analysis Period: 2030 Design	Number of Approach Lanes: 1
Design Hour: PM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Signalized	<b>Type of Analysis</b>
Posted Speed Limit (MPH): 45	
Type of Terrain: Rolling	Left or Right-Turn Lane Analysis?: Left Turn Lane

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	Yes	65	3.0%	68	Advancing Volume: 773	
	Through	-	660	3.0%	690		Opposing Volume: 664
	Right	Yes	15	0.0%	15		Left Turn Volume: 68
Opposing	Left	Yes	29	0.0%	29	% Left Turns in Advancing Volume: 8.80%	
	Through	-	559	1.0%	568		
	Right	Yes	67	0.0%	67		

#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV			
Advancing	Left	No	0	3.0%	N/A	Advancing Volume: N/A	
	Through	-	0	3.0%	N/A		Right Turn Volume: N/A
	Right	-	0	0.0%	N/A		

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <b>Figure 3</b>	Applicable Warrant Figure: <b>N/A</b>
Warrant Met?: <b>Yes</b>	Warrant Met?: <b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: Signalized	
Design Hour Volume of Turning Lane: 68	
Cycles Per Hour (Assumed): Known	
Cycles Per Hour (If Known): 34	Average # of Vehicles/Cycle: 2.0

#### PennDOT Publication 46, Exhibit 11-6

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

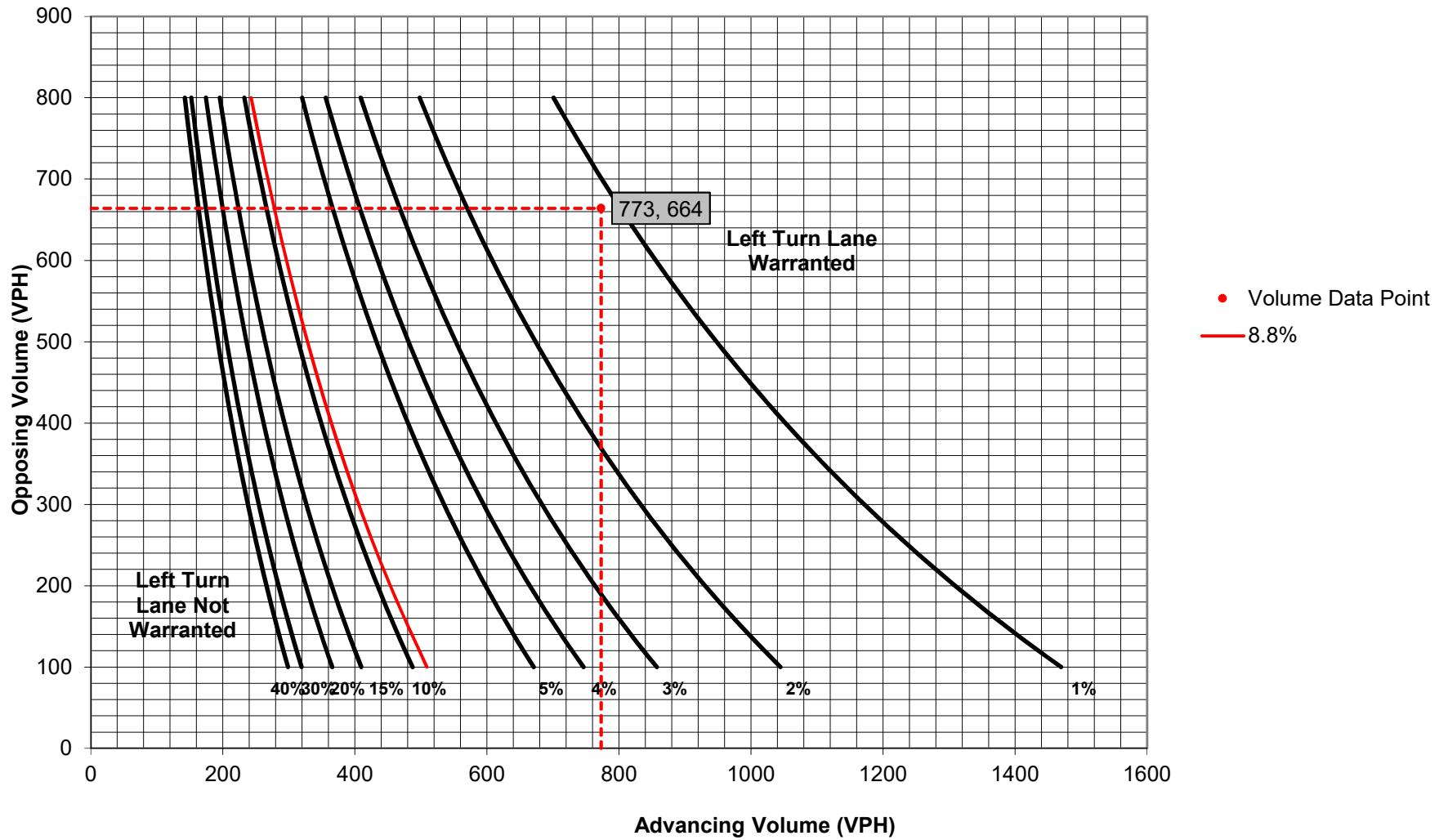
Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>175</b>	Feet
Required Left Turn Lane Storage Length:	<b>175</b>	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)





## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="AM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="45"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">                     Type of Analysis                 </div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	111	3.0%	116
	Through	-	721	3.0%	754
	Right	-	4	0.0%	4

Advancing Volume:	874
Right Turn Volume:	4

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>		<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 10"/> Warrant Met?: <input style="width: 100px;" type="text" value="No"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/> Design Hour Volume of Turning Lane: <input type="text" value="4"/> Cycles Per Hour (Assumed): <input type="text" value="Known"/> Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input style="width: 100px;" type="text" value="N/A"/>
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PennDOT Publication 46, Exhibit 11-6

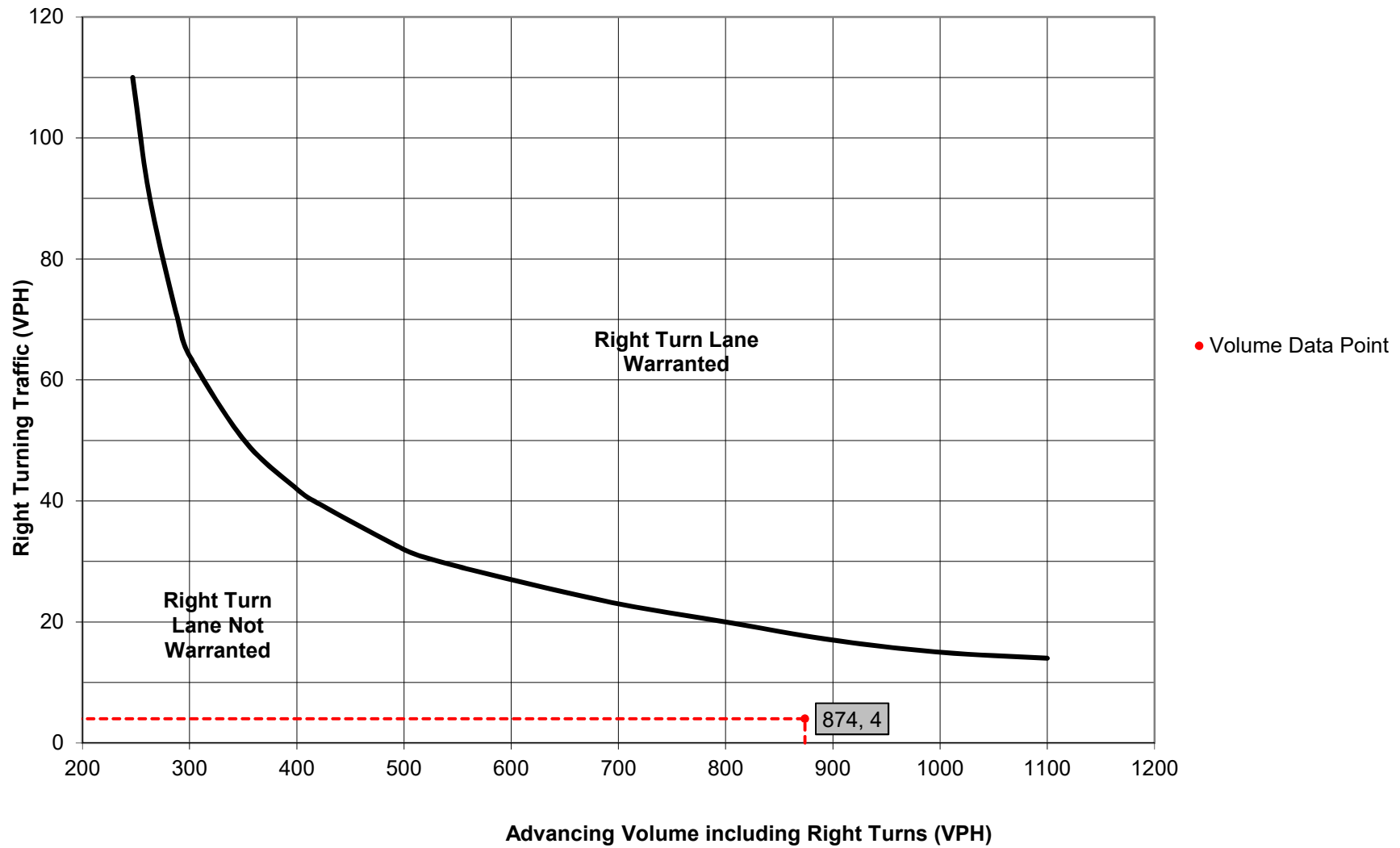
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Eastbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="45"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">                     Type of Analysis                      Right Turn Lane                 </div>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	65	3.0%	68
	Through	-	660	3.0%	690
	Right	-	15	0.0%	15

Advancing Volume:	773
Right Turn Volume:	15

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 10</span> Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">No</span>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/> Design Hour Volume of Turning Lane: <input type="text" value="15"/> Cycles Per Hour (Assumed): <input type="text" value="Known"/> Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>
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PennDOT Publication 46, Exhibit 11-6

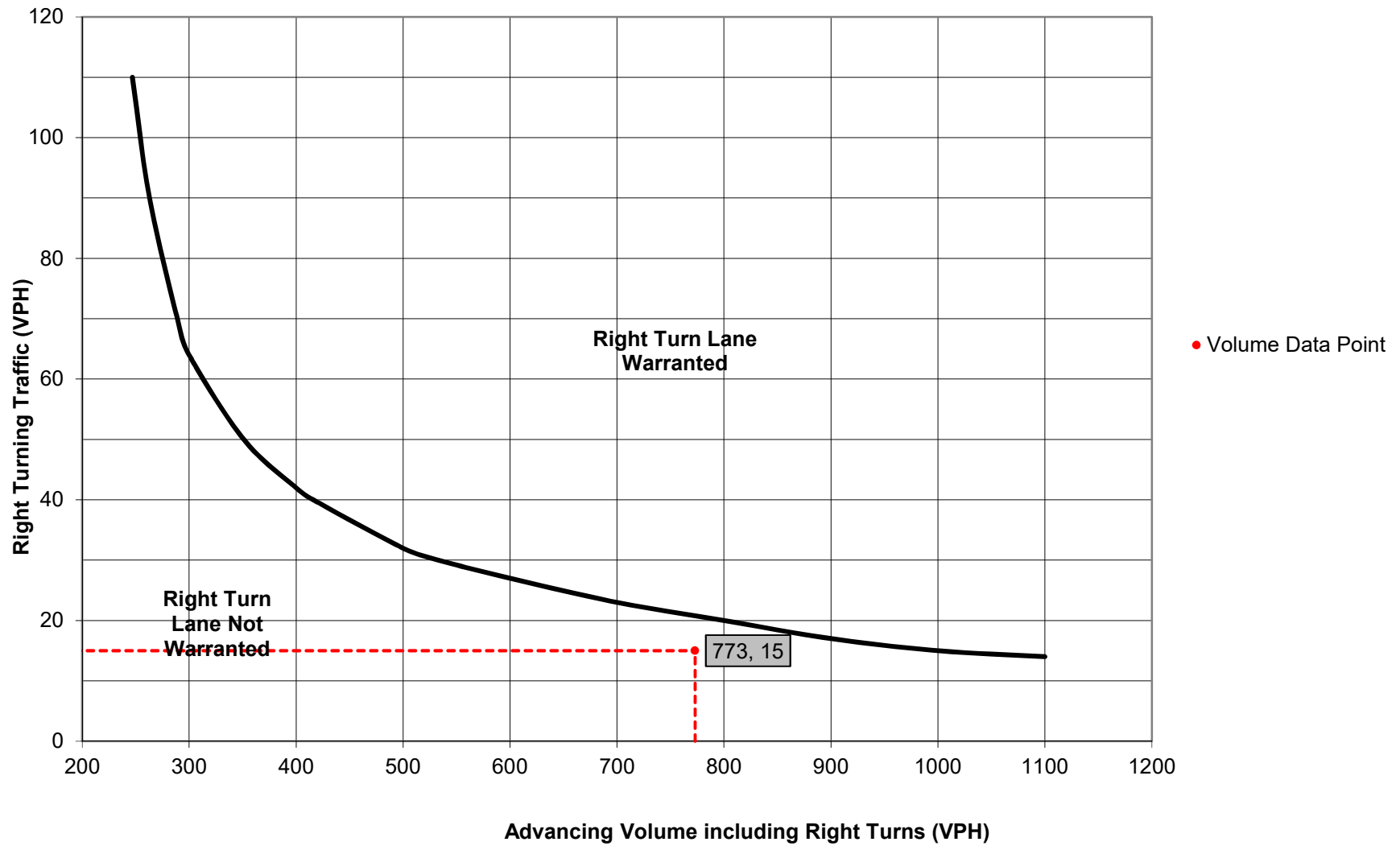
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="25"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	33.0%	5
	Through	-	89	3.0%	94
	Right	Yes	25	9.0%	29
Opposing	Left	Yes	57	4.0%	61
	Through	-	265	0.0%	265
	Right	Yes	99	2.0%	102

Advancing Volume:	<input type="text" value="128"/>
Opposing Volume:	<input type="text" value="428"/>
Left Turn Volume:	<input type="text" value="5"/>

% Left Turns in Advancing Volume:	<input type="text" value="3.91%"/>
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	<input type="text" value="N/A"/>
Right Turn Volume:	<input type="text" value="N/A"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 1"/>
Warrant Met?:	<input type="text" value="No"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Signalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="5"/>
Cycles Per Hour (Assumed):	<input type="text" value="Known"/>
Cycles Per Hour (If Known):	<input type="text" value="40"/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

#### PennDOT Publication 46, Exhibit 11-6

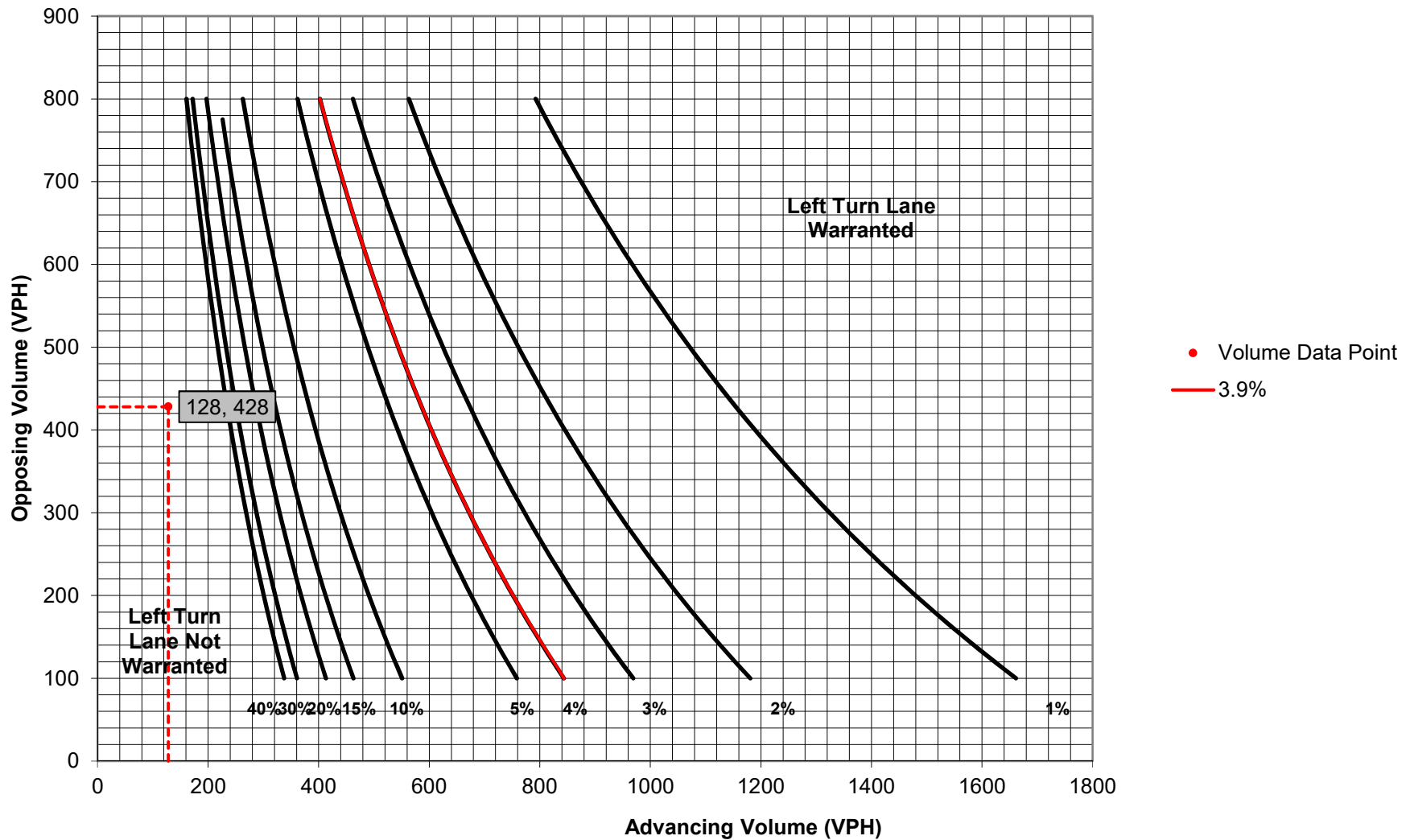
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:	<input type="text" value="N/A"/>
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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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Northbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="25"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	11	0.0%	11
	Through	-	187	0.0%	187
	Right	Yes	44	3.0%	46
Opposing	Left	Yes	66	0.0%	66
	Through	-	213	1.0%	217
	Right	Yes	188	1.0%	191

Advancing Volume:	<input type="text" value="244"/>
Opposing Volume:	<input type="text" value="474"/>
Left Turn Volume:	<input type="text" value="11"/>

% Left Turns in Advancing Volume:	<input type="text" value="4.51%"/>
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	<input type="text" value="N/A"/>
Right Turn Volume:	<input type="text" value="N/A"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 1"/>
Warrant Met?:	<input type="text" value="No"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Signalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="11"/>
Cycles Per Hour (Assumed):	<input type="text" value="Known"/>
Cycles Per Hour (If Known):	<input type="text" value="34"/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

#### PennDOT Publication 46, Exhibit 11-6

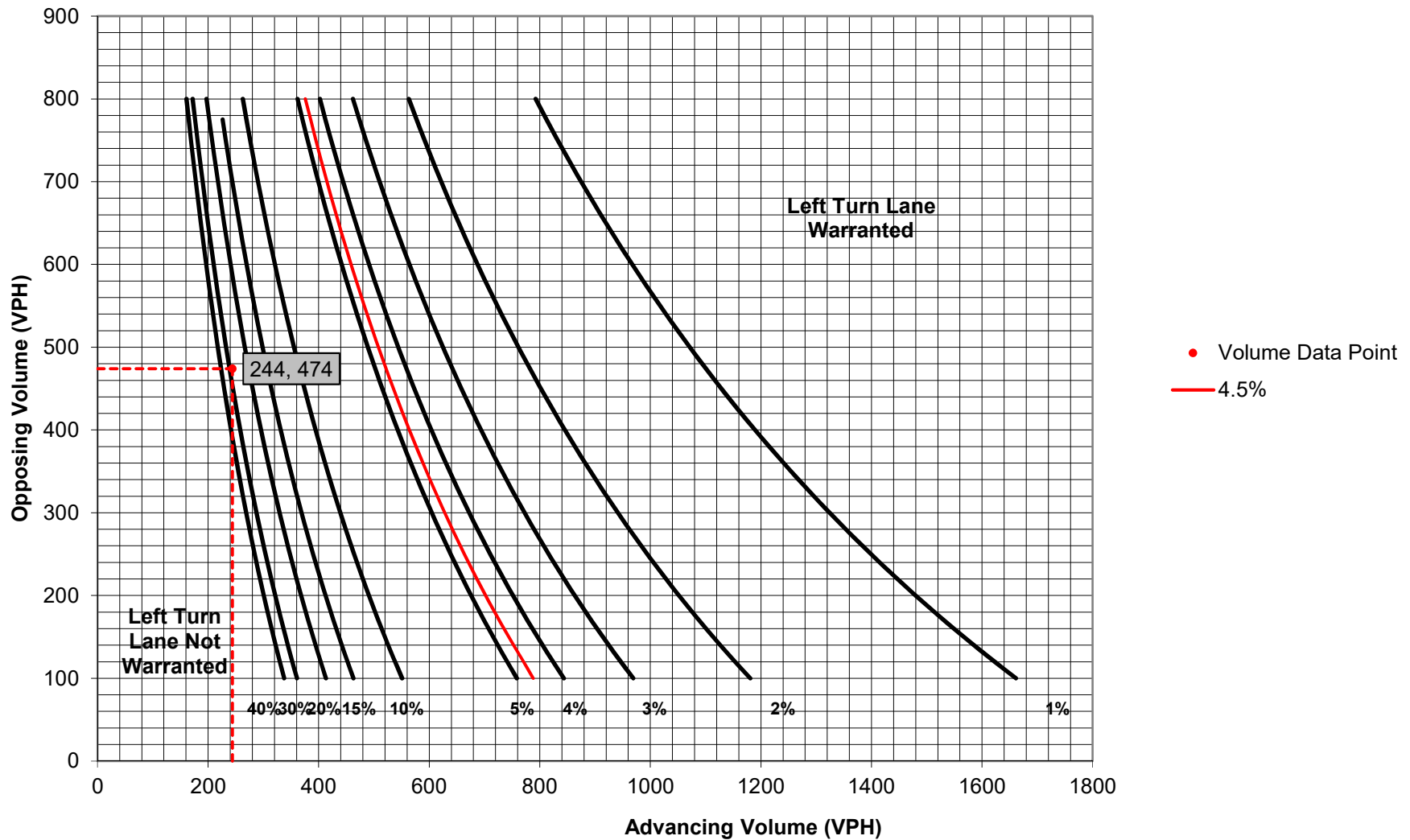
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:	<input type="text" value="N/A"/>
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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: Westtown Township	Analysis Date: 8/7/2019
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: JDG
	Agency/Company Name: S
Intersection & Approach Description: Street Road (S.R. 0926) and New Street Northbound New Street Right-Turn Lane	
Analysis Period: 2030 Design	Number of Approach Lanes: 1
Design Hour: AM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Signalized	<b>Type of Analysis</b>
Posted Speed Limit (MPH): 25	
Type of Terrain: Rolling	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	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	3	33.0%	5
	Through	-	89	3.0%	94
	Right	-	25	9.0%	29

Advancing Volume:	128
Right Turn Volume:	29

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	29
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	N/A

#### PennDOT Publication 46, Exhibit 11-6

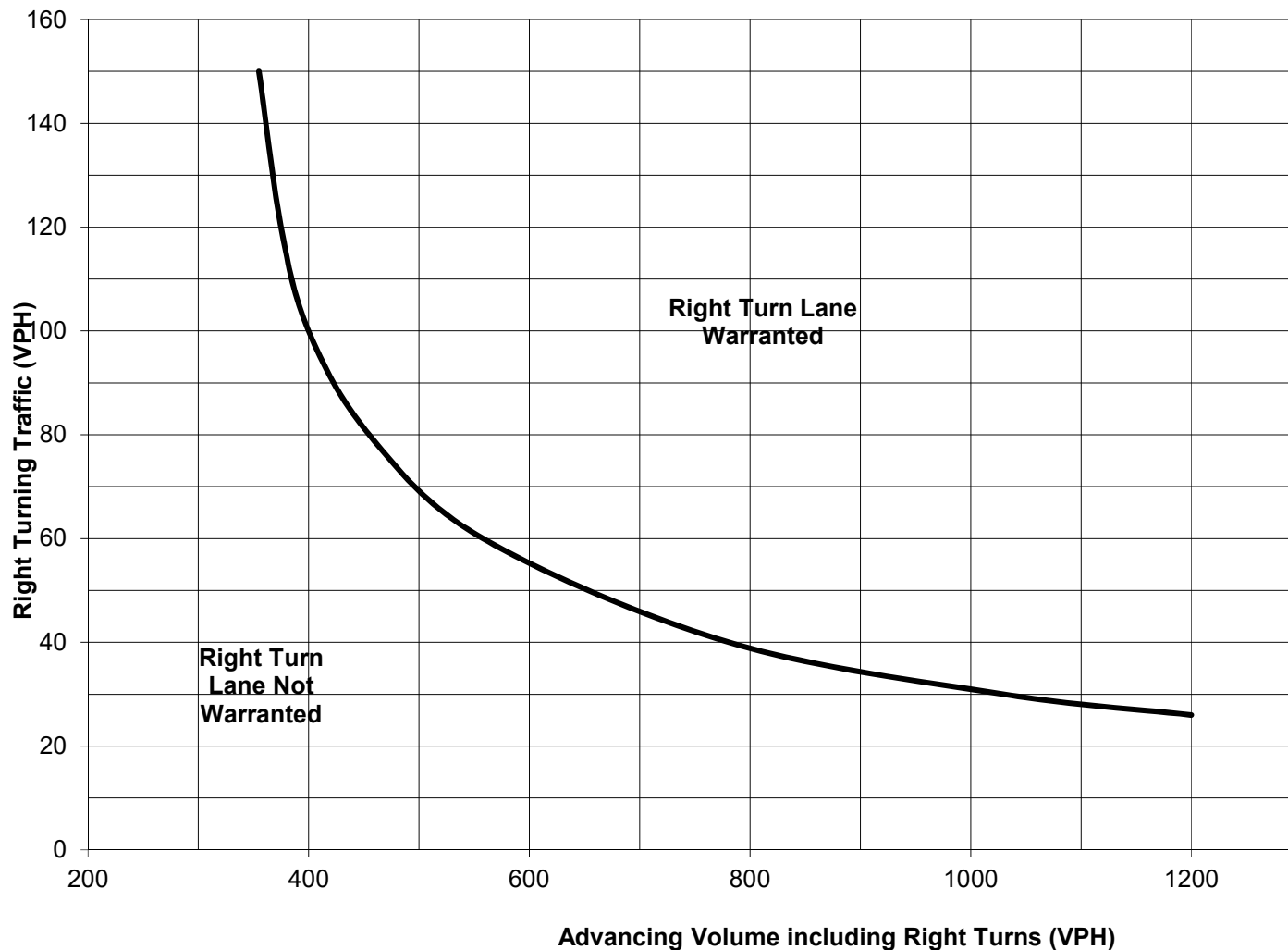
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	N/A
----------------------	-----

Additional Comments / Justifications:

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



The point (128,29) is outside the viewport of the graph

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="25"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	11	0.0%	11
	Through	-	187	0.0%	187
	Right	-	44	3.0%	46

Advancing Volume:	244
Right Turn Volume:	46

### TURN LANE WARRANT FINDINGS

<h4 style="text-align: center; margin: 0;">Left Turn Lane Warrant Findings</h4> <p>Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span></p> <p>Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">N/A</span></p>	<h4 style="text-align: center; margin: 0;">Right Turn Lane Warrant Findings</h4> <p>Applicable Warrant Figure: <span style="border: 1px solid black; padding: 2px 10px;">Figure 9</span></p> <p>Warrant Met?: <span style="border: 1px solid black; padding: 2px 10px;">No</span></p>
--	---

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/> Design Hour Volume of Turning Lane: <input type="text" value="46"/> Cycles Per Hour (Assumed): <input type="text" value="Known"/> Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>
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PennDOT Publication 46, Exhibit 11-6

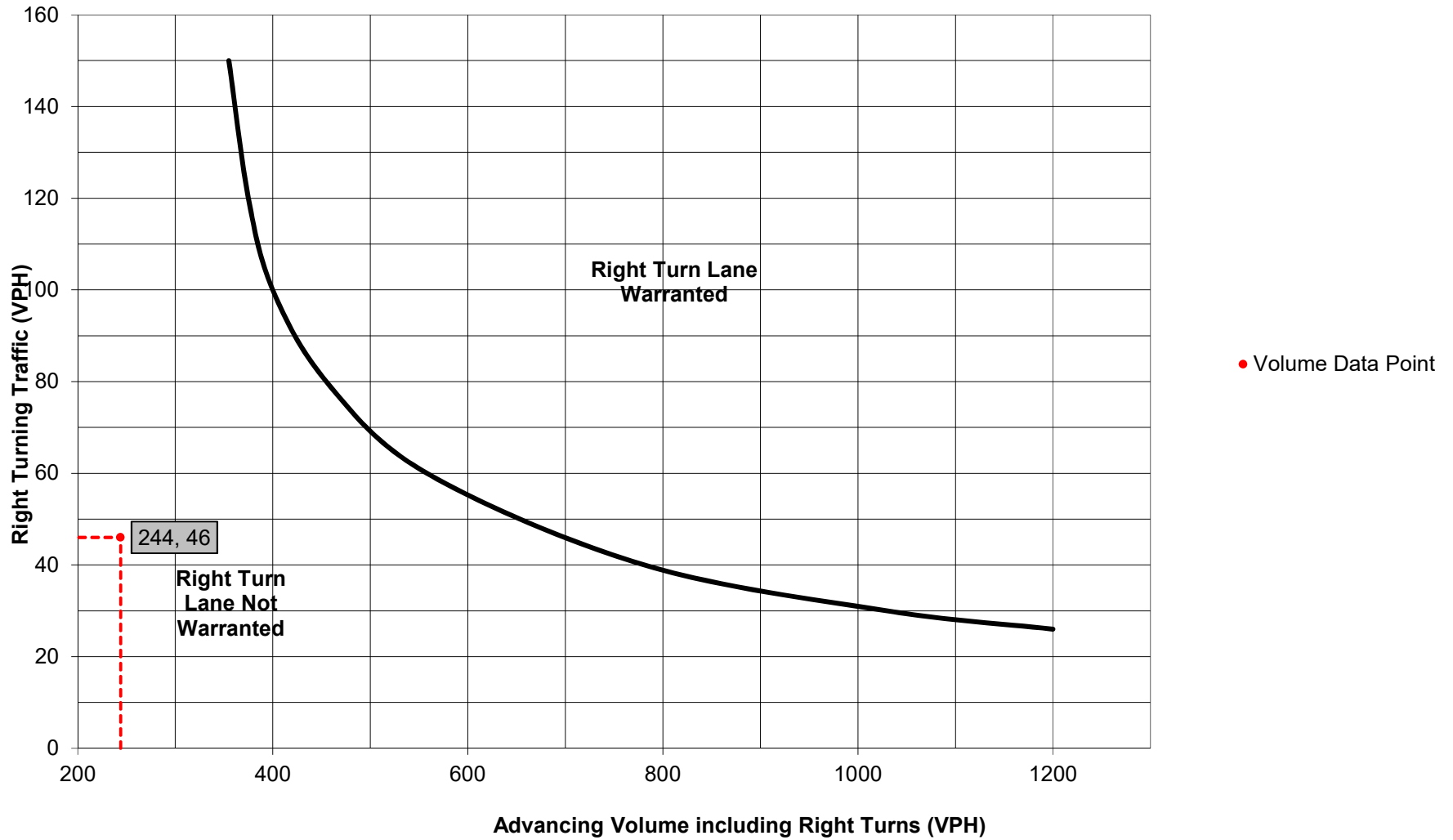
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:  
N/A

Additional Comments / Justifications:

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



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	57	4.0%	61
	Through	-	265	0.0%	265
	Right	Yes	99	2.0%	102
Opposing	Left	Yes	3	33.0%	5
	Through	-	89	3.0%	94
	Right	Yes	25	9.0%	29

Advancing Volume:	<input type="text" value="428"/>
Opposing Volume:	<input type="text" value="128"/>
Left Turn Volume:	<input type="text" value="61"/>
% Left Turns in Advancing Volume: <input type="text" value="14.25%"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	<input type="text" value="N/A"/>
Right Turn Volume:	<input type="text" value="N/A"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 1"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="No"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="61"/>	
Cycles Per Hour (Assumed): <input type="text" value="Known"/>	
Cycles Per Hour (If Known): <input type="text" value="40"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

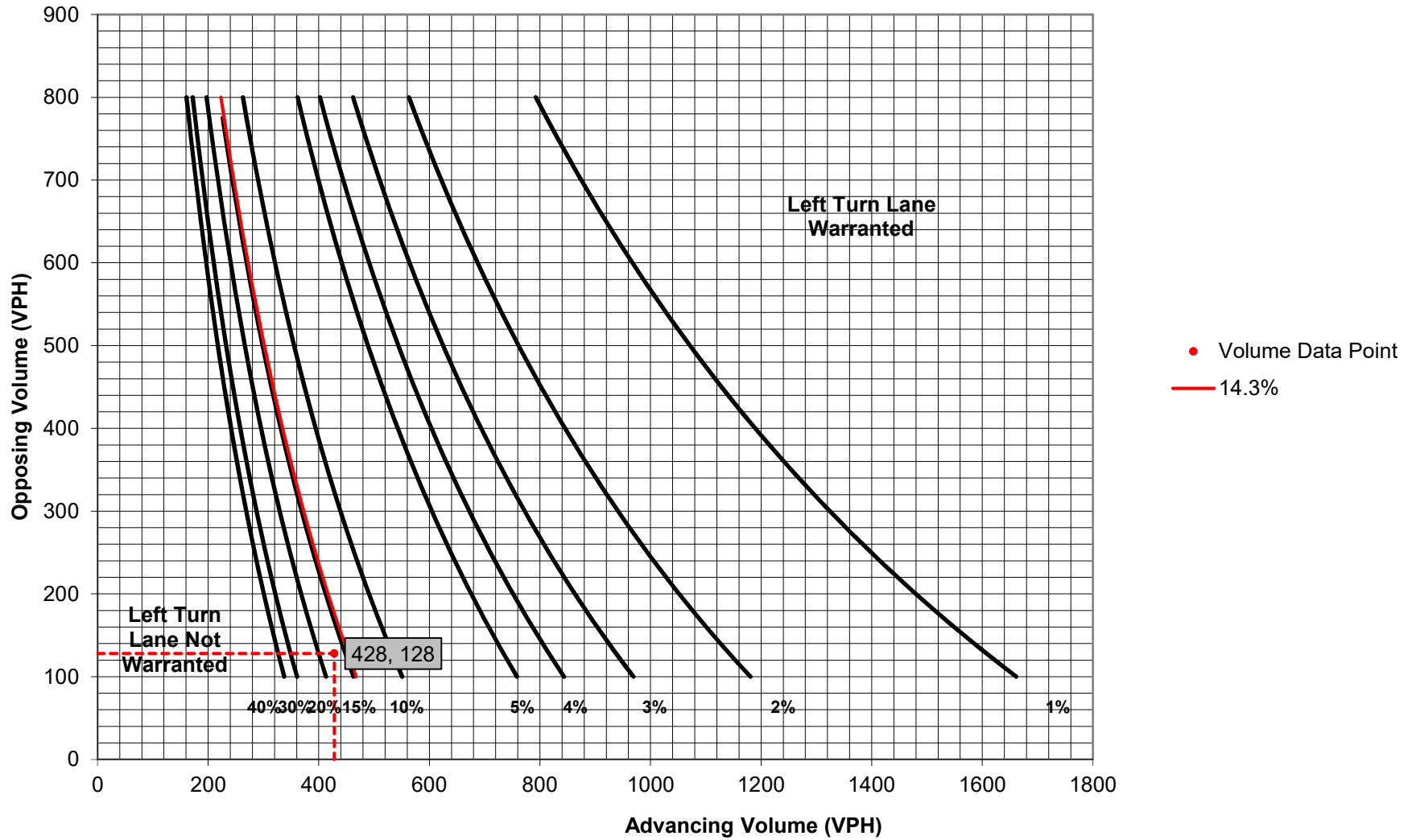
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	66	0.0%	66
	Through	-	213	1.0%	217
	Right	Yes	188	1.0%	191
Opposing	Left	Yes	11	0.0%	11
	Through	-	187	0.0%	187
	Right	Yes	44	3.0%	46

Advancing Volume:	474
Opposing Volume:	244
Left Turn Volume:	66

% Left Turns in Advancing Volume:

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

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

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 1"/> Warrant Met?: <input style="width: 100px;" type="text" value="Yes"/>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Signalized"/> Design Hour Volume of Turning Lane: <input type="text" value="66"/> Cycles Per Hour (Assumed): <input type="text" value="Known"/> Cycles Per Hour (If Known): <input type="text" value="34"/>	Average # of Vehicles/Cycle: <input style="width: 100px;" type="text" value="2.0"/>
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PennDOT Publication 46, Exhibit 11-6

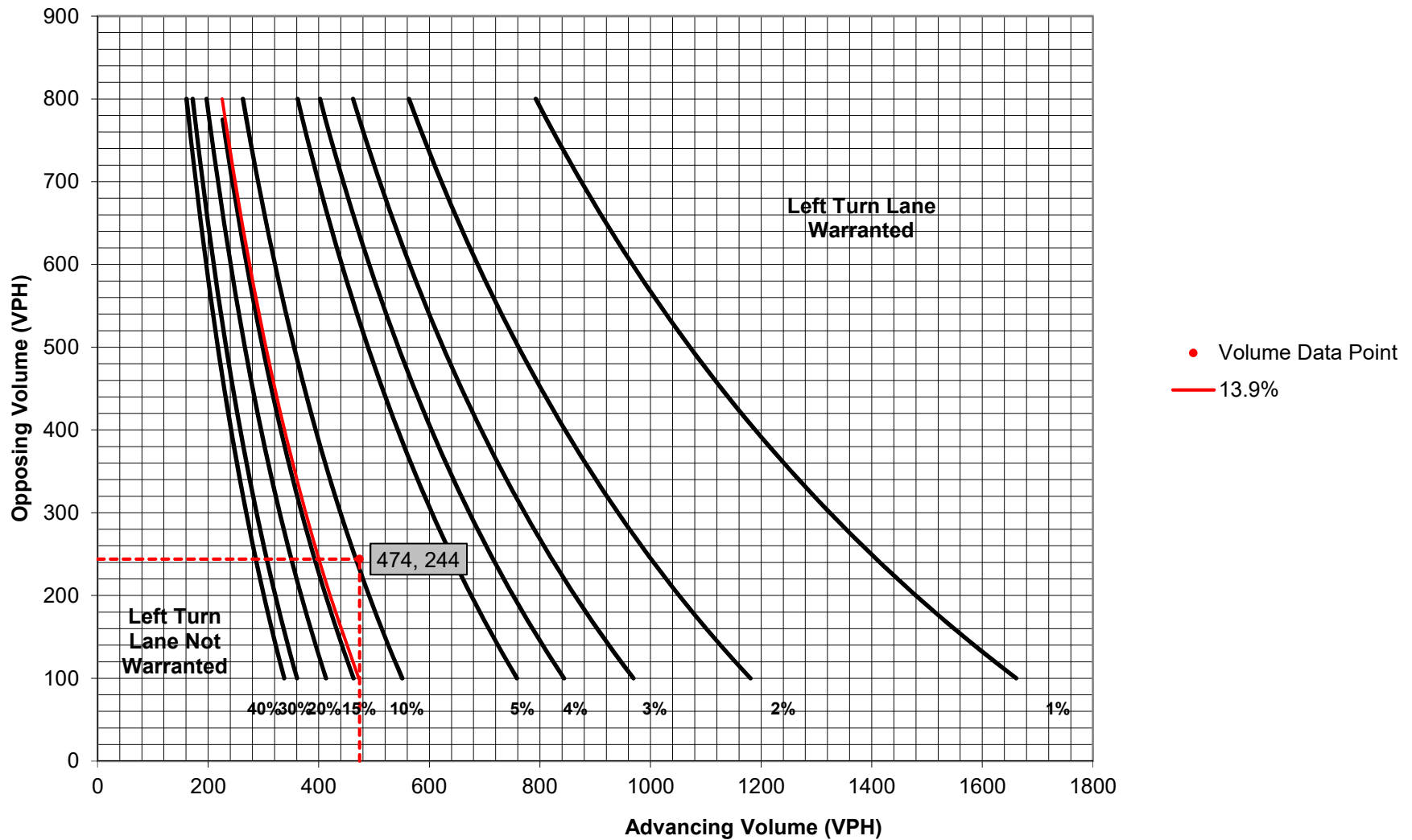
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	100	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	100	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Southbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="AM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	57	4.0%	61
	Through	-	265	0.0%	265
	Right	-	99	2.0%	102

Advancing Volume:	428
Right Turn Volume:	102

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	Yes

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	102
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	3.0

PennDOT Publication 46, Exhibit 11-6

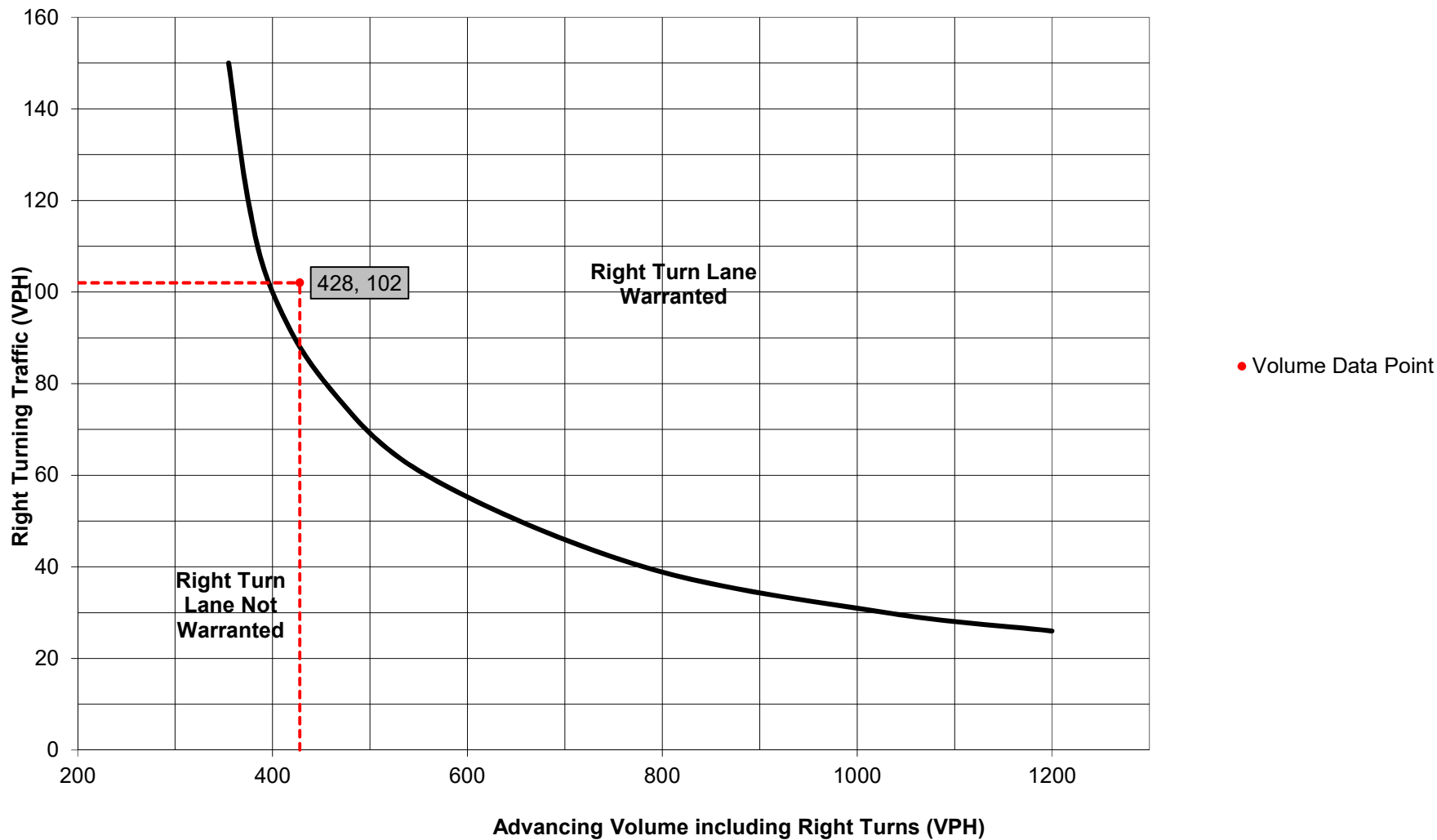
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	150	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	150	Feet

Additional Findings:	N/A
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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: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Southbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	66	0.0%	66
	Through	-	213	1.0%	217
	Right	-	188	1.0%	191

Advancing Volume:	474
Right Turn Volume:	191

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 80%;" type="text" value="N/A"/> Warrant Met?: <input style="width: 80%;" type="text" value="N/A"/>	<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 80%;" type="text" value="Figure 9"/> Warrant Met?: <input style="width: 80%;" type="text" value="Yes"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	191
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	34
Average # of Vehicles/Cycle:	6.0

PennDOT Publication 46, Exhibit 11-6

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

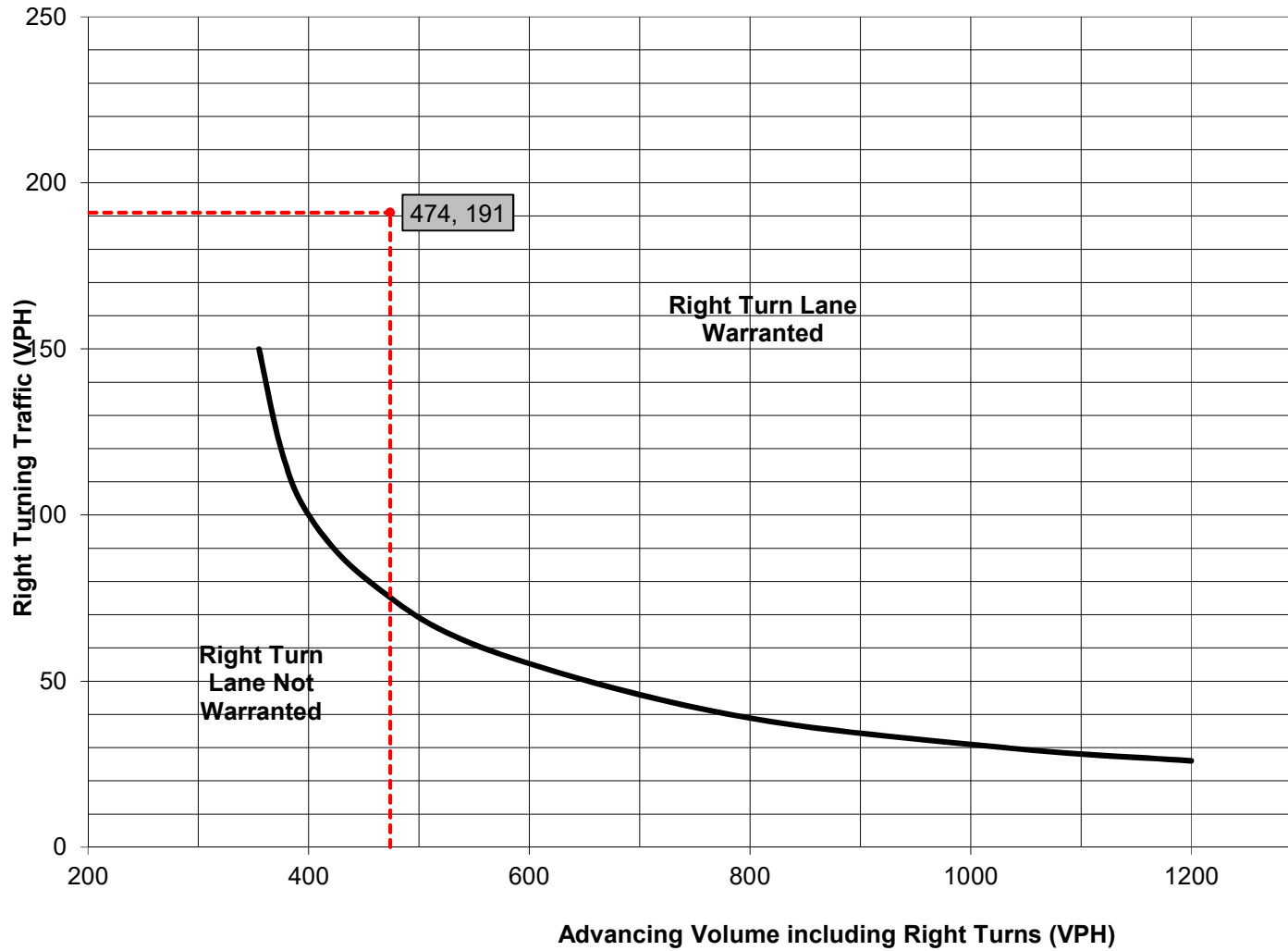
Right Turn Lane Storage Length, Condition A:	250	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	250	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street&lt;br/&gt;Westbound Street Road (S.R. 0926) Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Signalized"/>	Type of Analysis: <input type="text" value="Left Turn Lane"/>
Posted Speed Limit (MPH): <input type="text" value="45"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV
Advancing	Left	16	27.0%	23
	Through	-	8.0%	468
	Right	54	6.0%	59
Opposing	Left	111	3.0%	116
	Through	-	3.0%	754
	Right	4	0.0%	4

Advancing Volume:	550
Opposing Volume:	874
Left Turn Volume:	23

% Left Turns in Advancing Volume:	4.18%
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#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV
Advancing	Left	0	3.0%	N/A
	Through	-	3.0%	N/A
	Right	-	0	0.0%

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

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>Figure 3</b>
Warrant Met?:	<b>Yes</b>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>N/A</b>
Warrant Met?:	<b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	23
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	1.0

#### PennDOT Publication 46, Exhibit 11-6

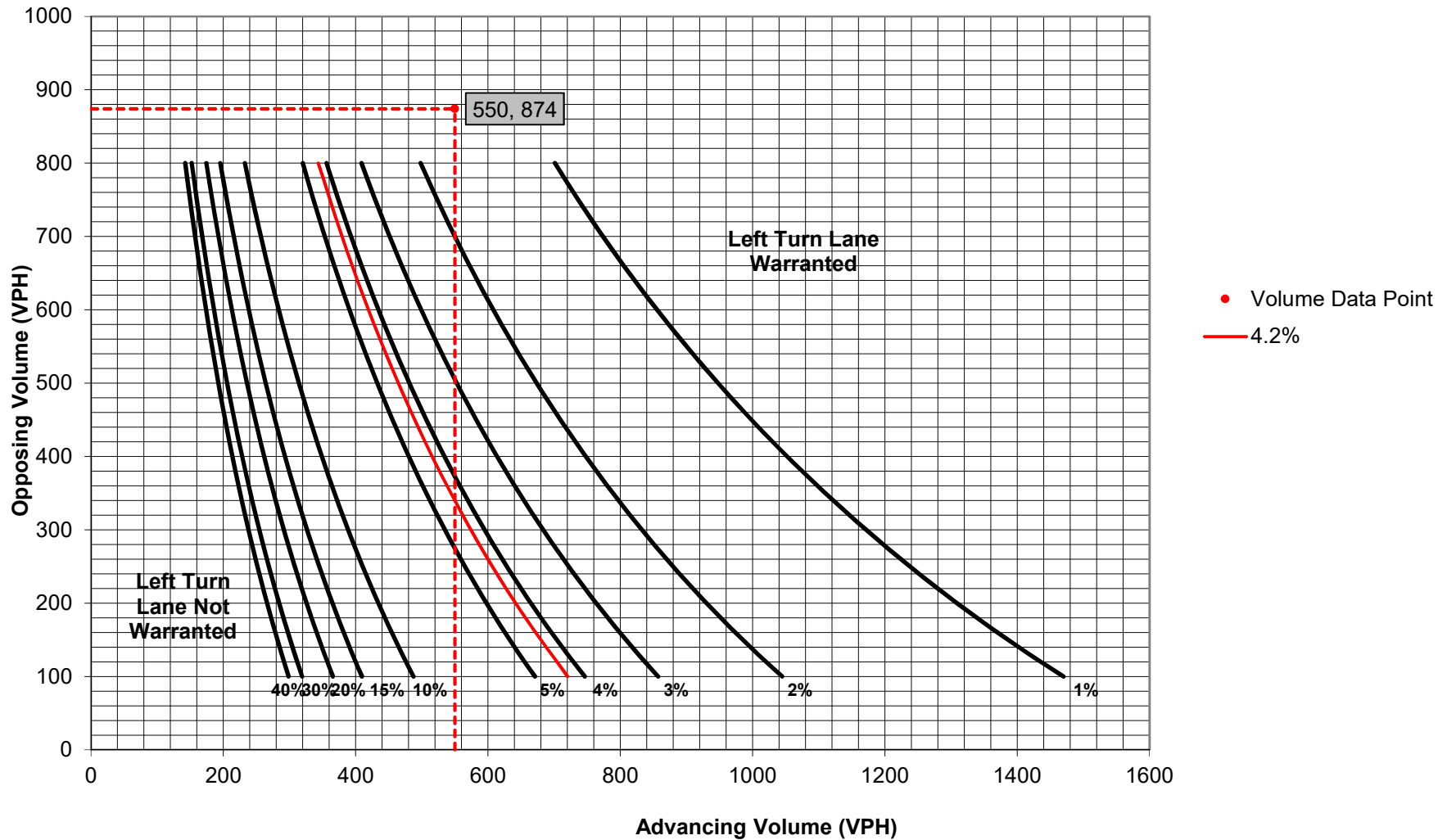
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>150</b>	Feet
Required Left Turn Lane Storage Length:	<b>150</b>	Feet

Additional Findings:	N/A
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Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: Westtown Township	Analysis Date: 8/7/2019
County: Chester County	Conducted By: BGG
PennDOT Engineering District: 6	Checked By: JDG
	Agency/Company Name: McMahan Associates, Inc.
Intersection & Approach Description: Street Road (S.R. 0926) and New Street Westbound Street Road (S.R. 0926) Left-Turn Lane	
Analysis Period: 2030 Design	Number of Approach Lanes: 1
Design Hour: PM Peak Hour	Undivided or Divided Highway: Undivided
Intersection Control: Signalized	<b>Type of Analysis</b>
Posted Speed Limit (MPH): 45	
Type of Terrain: Rolling	Left or Right-Turn Lane Analysis?: Left Turn Lane

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	29	0.0%	29	Advancing Volume: 664	
	Through	-	1.0%	568		Opposing Volume: 773
	Right	Yes	67	0.0%		67
Opposing	Left	65	3.0%	68	% Left Turns in Advancing Volume: 4.37%	
	Through	-	3.0%	690		
	Right	Yes	15	0.0%		15

#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A
					Advancing Volume: N/A
					Right Turn Volume: N/A

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <b>Figure 3</b>	Applicable Warrant Figure: <b>N/A</b>
Warrant Met?: <b>Yes</b>	Warrant Met?: <b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: Signalized	
Design Hour Volume of Turning Lane: 29	
Cycles Per Hour (Assumed): Known	
Cycles Per Hour (If Known): 34	Average # of Vehicles/Cycle: 1.0

#### PennDOT Publication 46, Exhibit 11-6

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

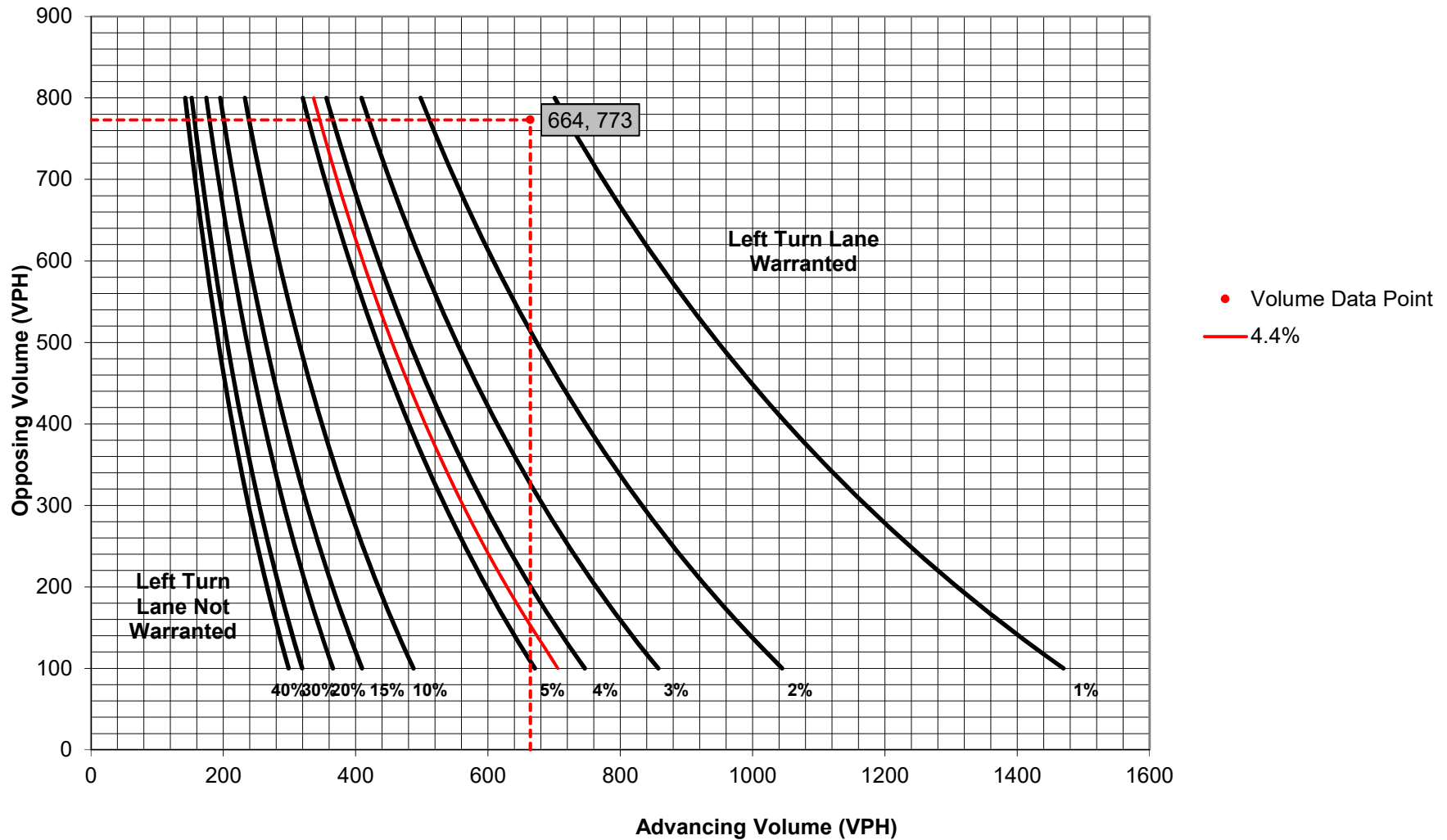
Left Turn Lane Storage Length, Condition A:	<b>N/A</b>	Feet
Condition B:	<b>125</b>	Feet
Condition C:	<b>150</b>	Feet
Required Left Turn Lane Storage Length:	<b>150</b>	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

**Figure 3. Warrant for left turn lanes on two-lane highways  
(45 mph speed, unsignalized and signalized intersections)**  
(L = % Left Turns in Advancing Volume)





## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="AM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="45"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">                     Type of Analysis                      Right Turn Lane                 </div>
Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>	

### VOLUME CALCULATIONS

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	16	27.0%	23
	Through	-	417	8.0%	468
	Right	-	54	6.0%	59

Advancing Volume:	550
Right Turn Volume:	59

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>		<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 10"/> Warrant Met?: <input style="width: 100px;" type="text" value="Yes"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	59
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	40
Average # of Vehicles/Cycle:	1.0

PennDOT Publication 46, Exhibit 11-6

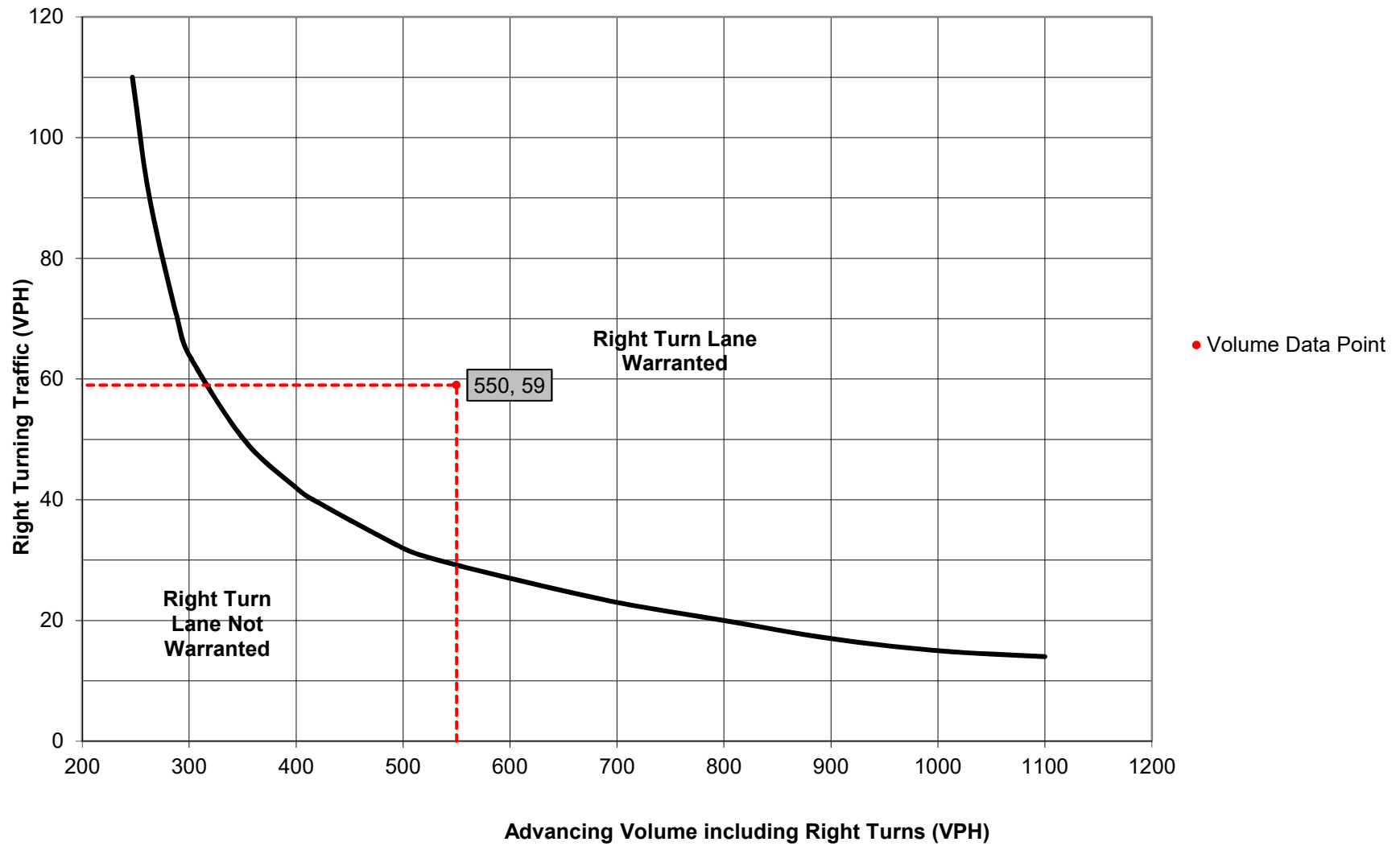
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	125	Feet
Condition C:	150	Feet
Required Right Turn Lane Storage Length:	150	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="Street Road (S.R. 0926) and New Street Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="PM Peak Hour"/> Intersection Control: <input type="text" value="Signalized"/> Posted Speed Limit (MPH): <input type="text" value="45"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	29	0.0%	29
	Through	-	559	1.0%	568
	Right	-	67	0.0%	67

Advancing Volume:	664
Right Turn Volume:	67

### TURN LANE WARRANT FINDINGS

<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Left Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>		<div style="border: 1px solid black; text-align: center; margin-bottom: 5px;">Right Turn Lane Warrant Findings</div> Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 10"/> Warrant Met?: <input style="width: 100px;" type="text" value="Yes"/>
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### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Signalized
Design Hour Volume of Turning Lane:	67
Cycles Per Hour (Assumed):	Known
Cycles Per Hour (If Known):	34
Average # of Vehicles/Cycle:	2.0

PennDOT Publication 46, Exhibit 11-6

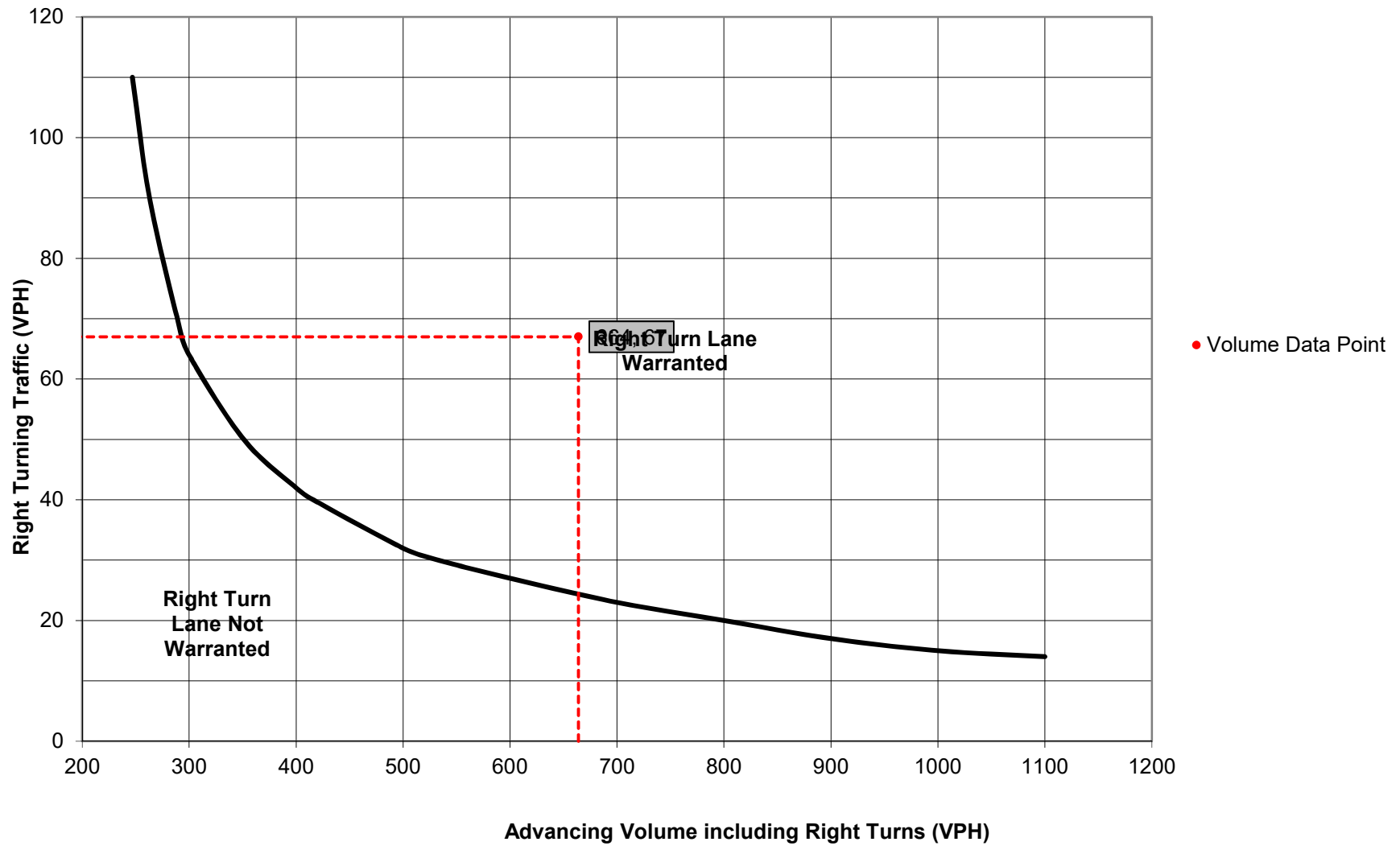
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	125	Feet
Condition C:	175	Feet
Required Right Turn Lane Storage Length:	175	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 10. Warrant for right turn lanes on two-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



*New Street and  
W. Pleasant Grove Road*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/> County: <input type="text" value="Chester County"/> PennDOT Engineering District: <input type="text" value="6"/>	Analysis Date: <input type="text" value="8/7/2019"/> Conducted By: <input type="text" value="BGG"/> Checked By: <input type="text" value="JDG"/> Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/> Design Hour: <input type="text" value="AM Peak Hour"/> Intersection Control: <input type="text" value="Unsignalized"/> Posted Speed Limit (MPH): <input type="text" value="35"/> Type of Terrain: <input type="text" value="Rolling"/>	Number of Approach Lanes: <input type="text" value="1"/> Undivided or Divided Highway: <input type="text" value="Undivided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>

% Left Turns in Advancing Volume:	<input type="text" value="N/A"/>
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	217	2.0%	224
	Right	-	35	0.0%	35

Advancing Volume:	<input type="text" value="259"/>
Right Turn Volume:	<input type="text" value="35"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 9"/>
Warrant Met?:	<input type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Unsignalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="35"/>
Cycles Per Hour (Assumed):	<input type="text" value="60"/>
Cycles Per Hour (If Known):	<input type="text" value=""/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

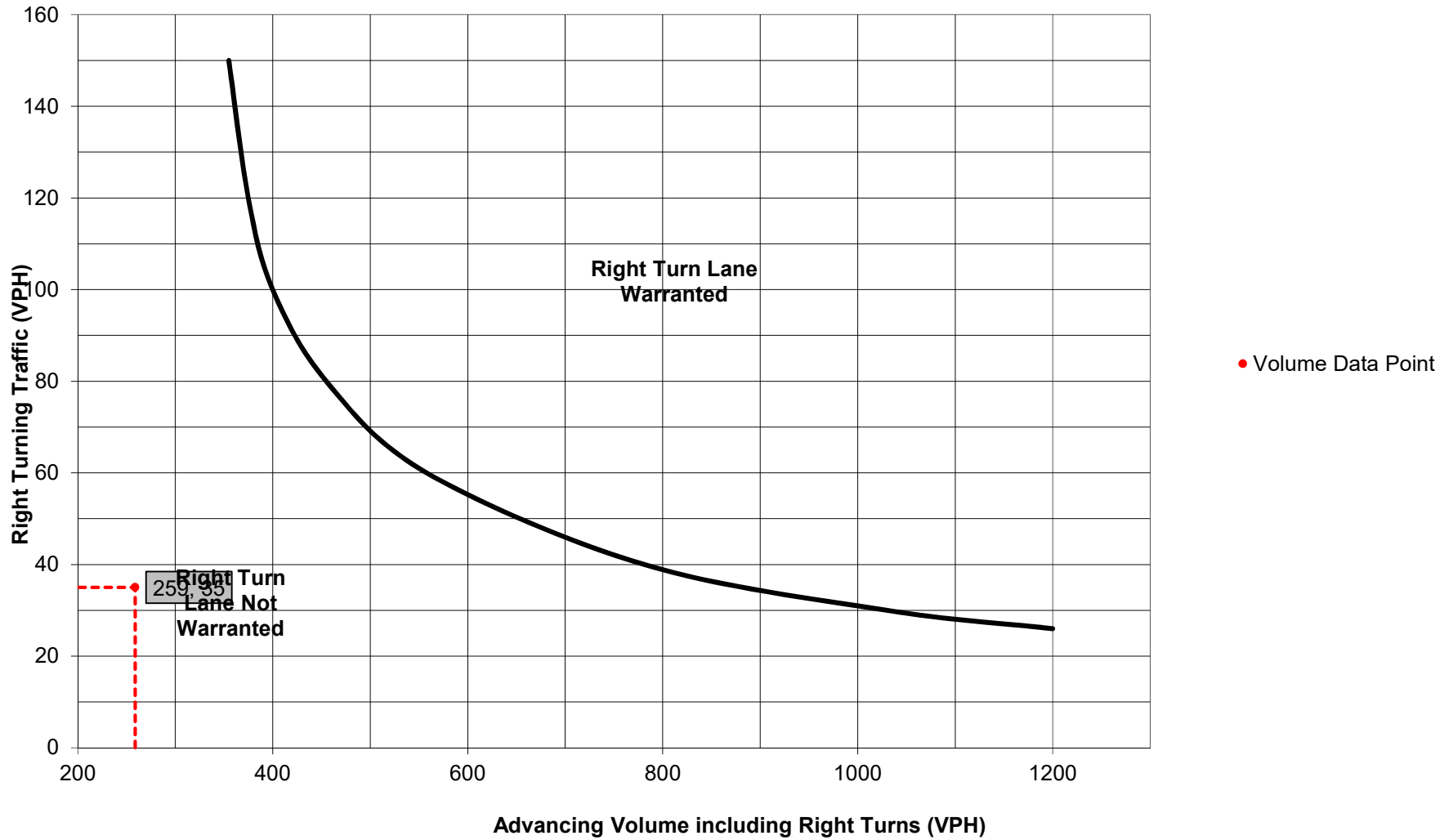
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:	<input type="text" value="N/A"/>
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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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Northbound New Street Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A

% Left Turns in Advancing Volume:	N/A
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	273	1.0%	278
	Right	-	46	0.0%	46

Advancing Volume:	324
Right Turn Volume:	46

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	N/A
Warrant Met?:	N/A

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	Figure 9
Warrant Met?:	No

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	46
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	
Average # of Vehicles/Cycle:	N/A

PennDOT Publication 46, Exhibit 11-6

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

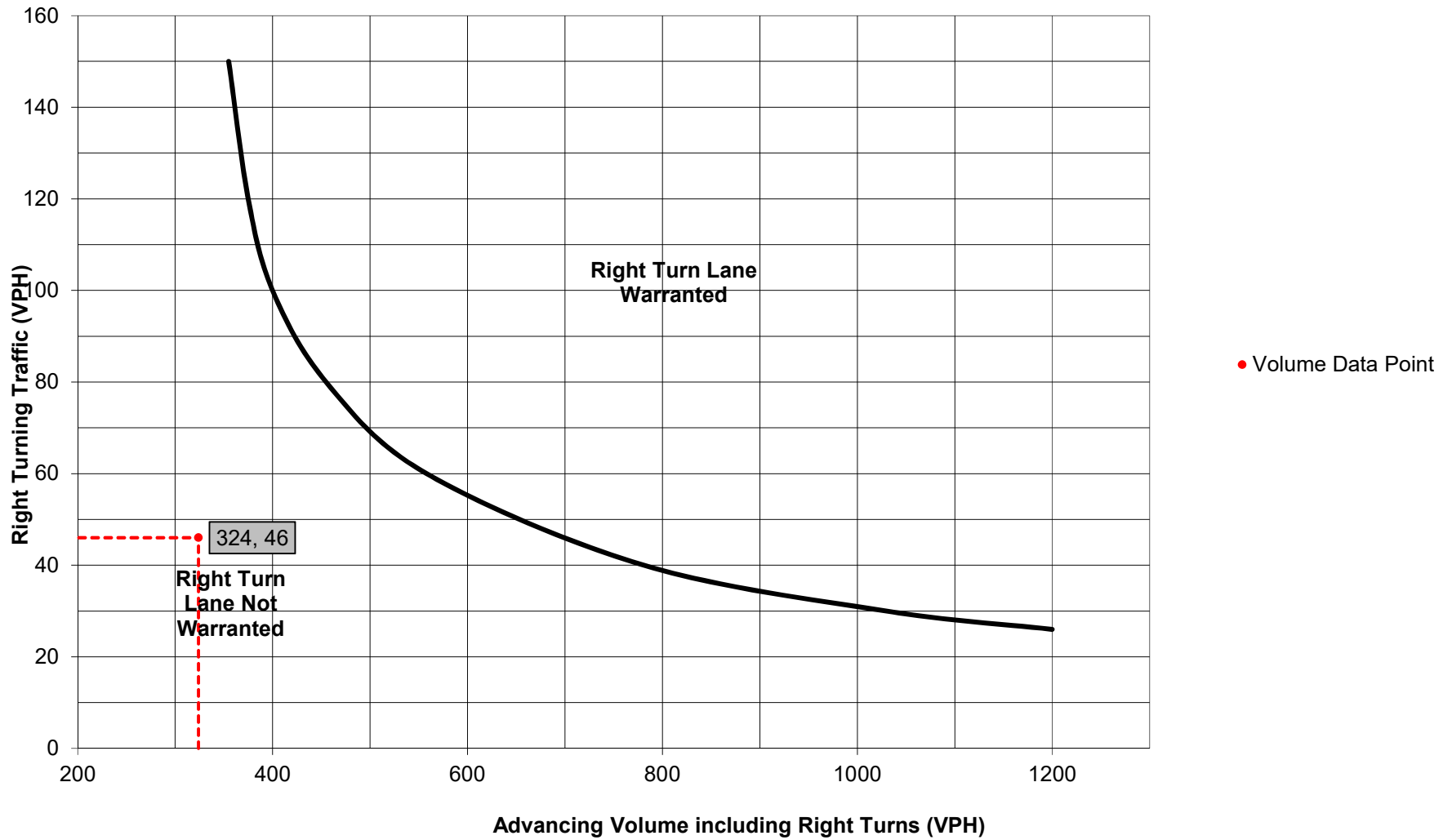
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:	N/A
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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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	20	7.0%	23
	Through	-	373	1.0%	379
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	217	2.0%	224
	Right	Yes	35	0.0%	35

Advancing Volume:	402
Opposing Volume:	259
Left Turn Volume:	23

% Left Turns in Advancing Volume:	5.72%
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#### Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	3.0%	N/A
	Through	-	0	3.0%	N/A
	Right	-	0	0.0%	N/A

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

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>Figure 1</b>
Warrant Met?:	<b>No</b>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<b>N/A</b>
Warrant Met?:	<b>N/A</b>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Unsignalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="23"/>
Cycles Per Hour (Assumed):	<input type="text" value="60"/>
Cycles Per Hour (If Known):	<input type="text" value=""/>
Average # of Vehicles/Cycle:	<input type="text" value="N/A"/>

#### PennDOT Publication 46, Exhibit 11-6

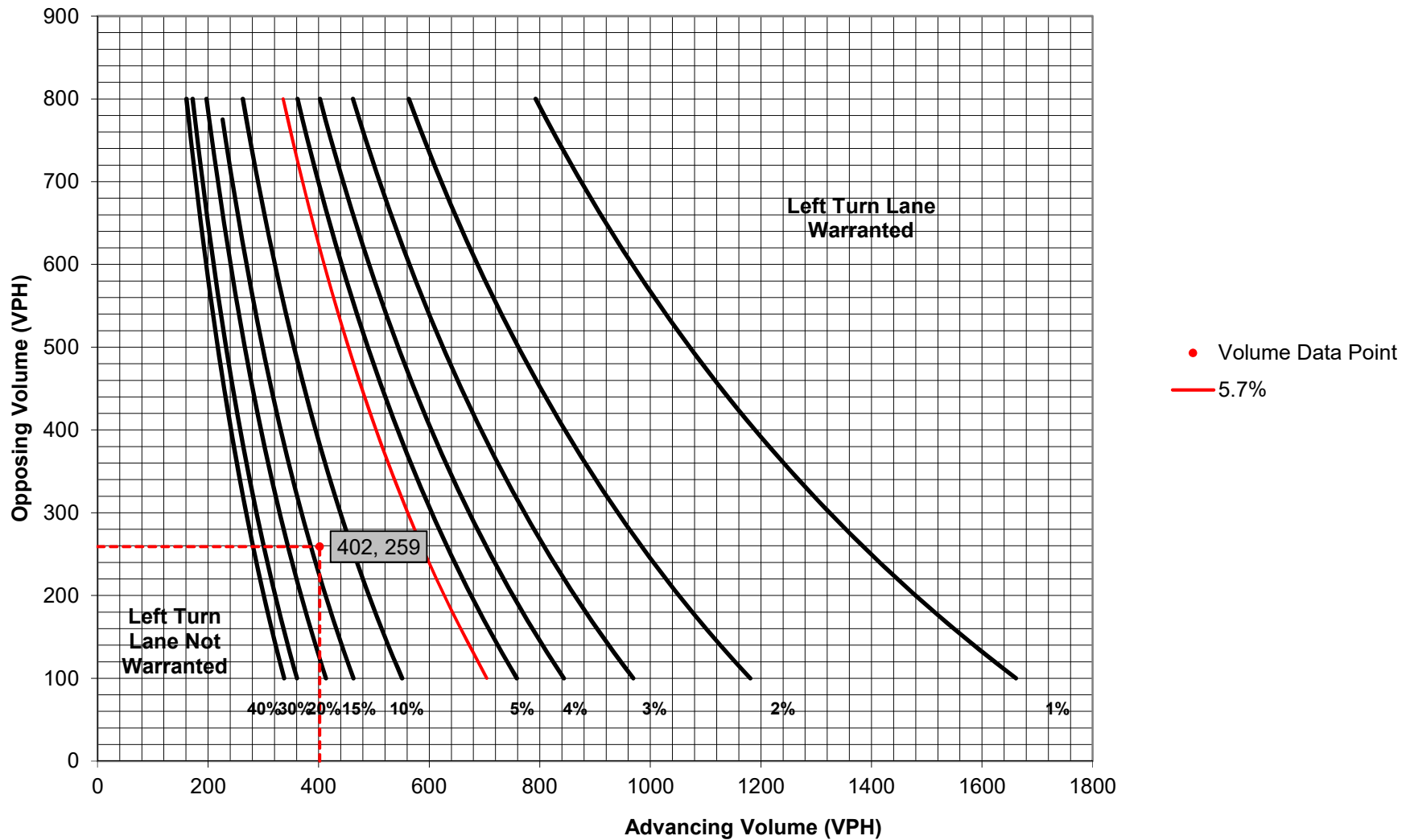
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:	<input type="text" value="N/A"/>
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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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Southbound New Street Left-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Left Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	23	0.0%	23
	Through	-	306	0.0%	306
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	273	1.0%	278
	Right	Yes	46	0.0%	46

Advancing Volume:	<input type="text" value="329"/>
Opposing Volume:	<input type="text" value="324"/>
Left Turn Volume:	<input type="text" value="23"/>
% Left Turns in Advancing Volume: <input type="text" value="6.99%"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	0.0%	N/A

Advancing Volume:	<input type="text" value="N/A"/>
Right Turn Volume:	<input type="text" value="N/A"/>

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input type="text" value="Figure 1"/>	Applicable Warrant Figure: <input type="text" value="N/A"/>
Warrant Met?: <input type="text" value="No"/>	Warrant Met?: <input type="text" value="N/A"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="23"/>	
Cycles Per Hour (Assumed): <input type="text" value="60"/>	
Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

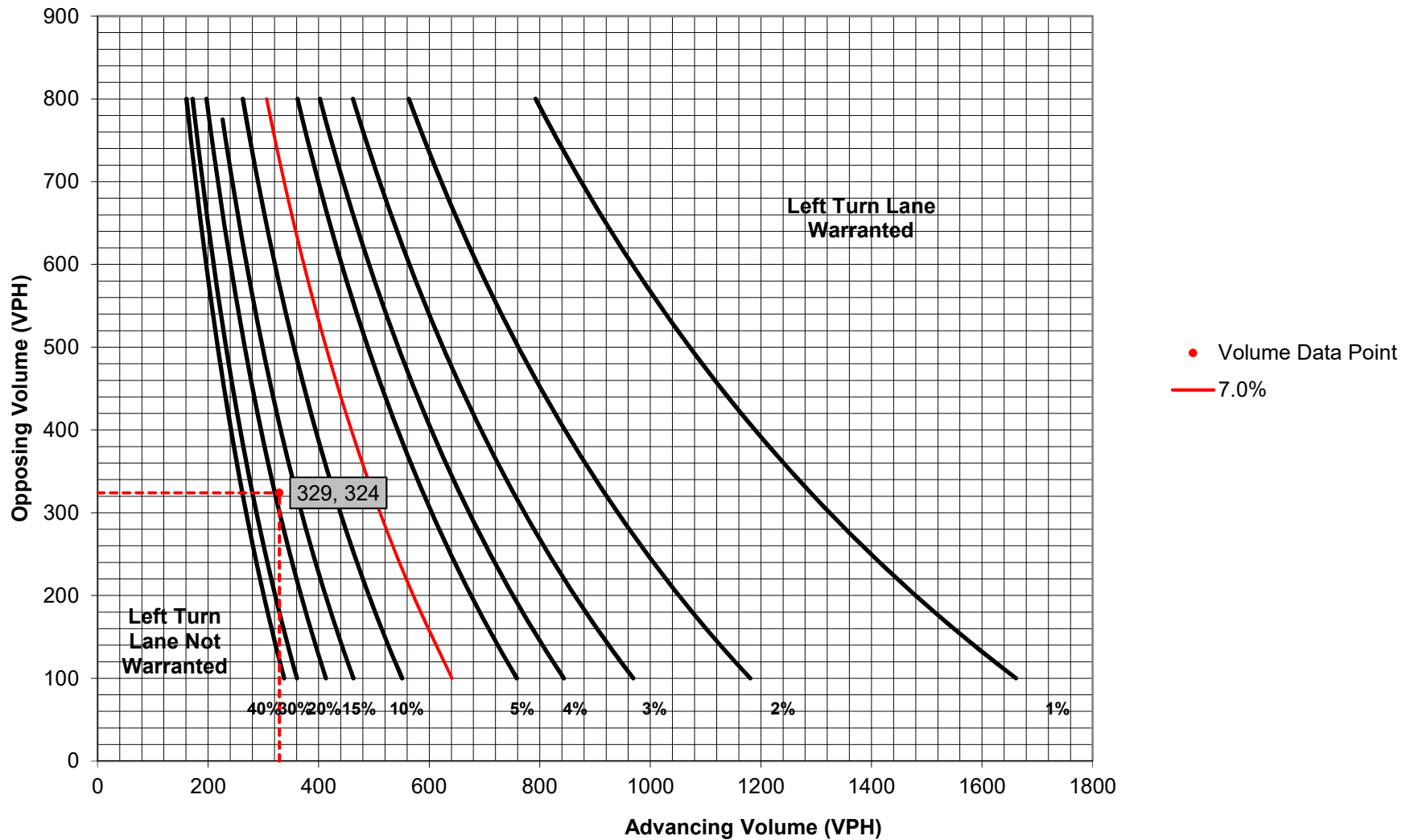
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="N/A"/>	Feet
Required Left Turn Lane Storage Length:	<input type="text" value="N/A"/>	Feet

Additional Findings:

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: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="AM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

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

Advancing Volume:	N/A
Opposing Volume:	N/A
Left Turn Volume:	N/A
% Left Turns in Advancing Volume: <input style="width: 100px;" type="text" value="N/A"/>	

Right Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	49	2.0%	51
	Through	-	0	0.0%	0
	Right	-	35	12.0%	42

Advancing Volume:	93
Right Turn Volume:	42

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input style="width: 100px;" type="text" value="N/A"/>	Applicable Warrant Figure: <input style="width: 100px;" type="text" value="Figure 9"/>
Warrant Met?: <input style="width: 100px;" type="text" value="N/A"/>	Warrant Met?: <input style="width: 100px;" type="text" value="No"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="42"/>	
Cycles Per Hour (Assumed): <input type="text" value="60"/>	
Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input style="width: 100px;" type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

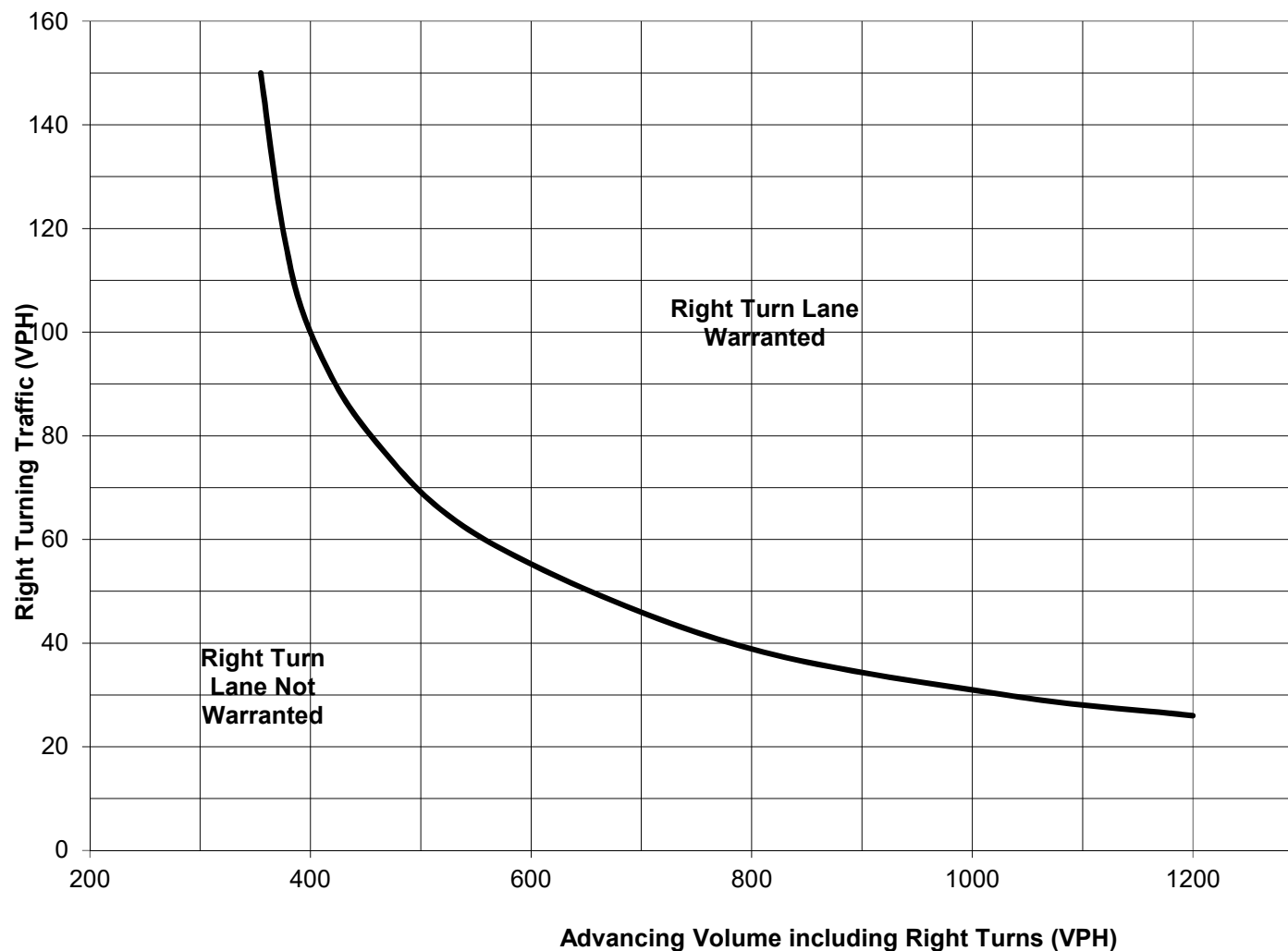
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings:

Additional Comments / Justifications:

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



• Volume Data Point

The point (93,42) is outside the viewport of the graph

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="New Street and West Pleasant Grove Road&lt;br/&gt;Westbound Street Road (S.R. 0926) Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/>	Number of Approach Lanes: <input type="text" value="1"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Undivided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	<b>Type of Analysis</b>
Posted Speed Limit (MPH): <input type="text" value="35"/>	
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations					
Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	0.0%	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	160	0.0%	160
	Through	-	0	0.0%	0
	Right	-	51	0.0%	51

Advancing Volume:	211
Right Turn Volume:	51

### TURN LANE WARRANT FINDINGS

<p style="text-align: center;"><b>Left Turn Lane Warrant Findings</b></p> <p>Applicable Warrant Figure: <input style="width: 80%;" type="text" value="N/A"/></p> <p>Warrant Met?: <input style="width: 80%;" type="text" value="N/A"/></p>		<p style="text-align: center;"><b>Right Turn Lane Warrant Findings</b></p> <p>Applicable Warrant Figure: <input style="width: 80%;" type="text" value="Figure 9"/></p> <p>Warrant Met?: <input style="width: 80%;" type="text" value="No"/></p>
--	--	---

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input type="text" value="Unsignalized"/>	
Design Hour Volume of Turning Lane: <input type="text" value="51"/>	
Cycles Per Hour (Assumed): <input type="text" value="60"/>	
Cycles Per Hour (If Known): <input type="text"/>	Average # of Vehicles/Cycle: <input style="width: 80%;" type="text" value="N/A"/>

PennDOT Publication 46, Exhibit 11-6

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

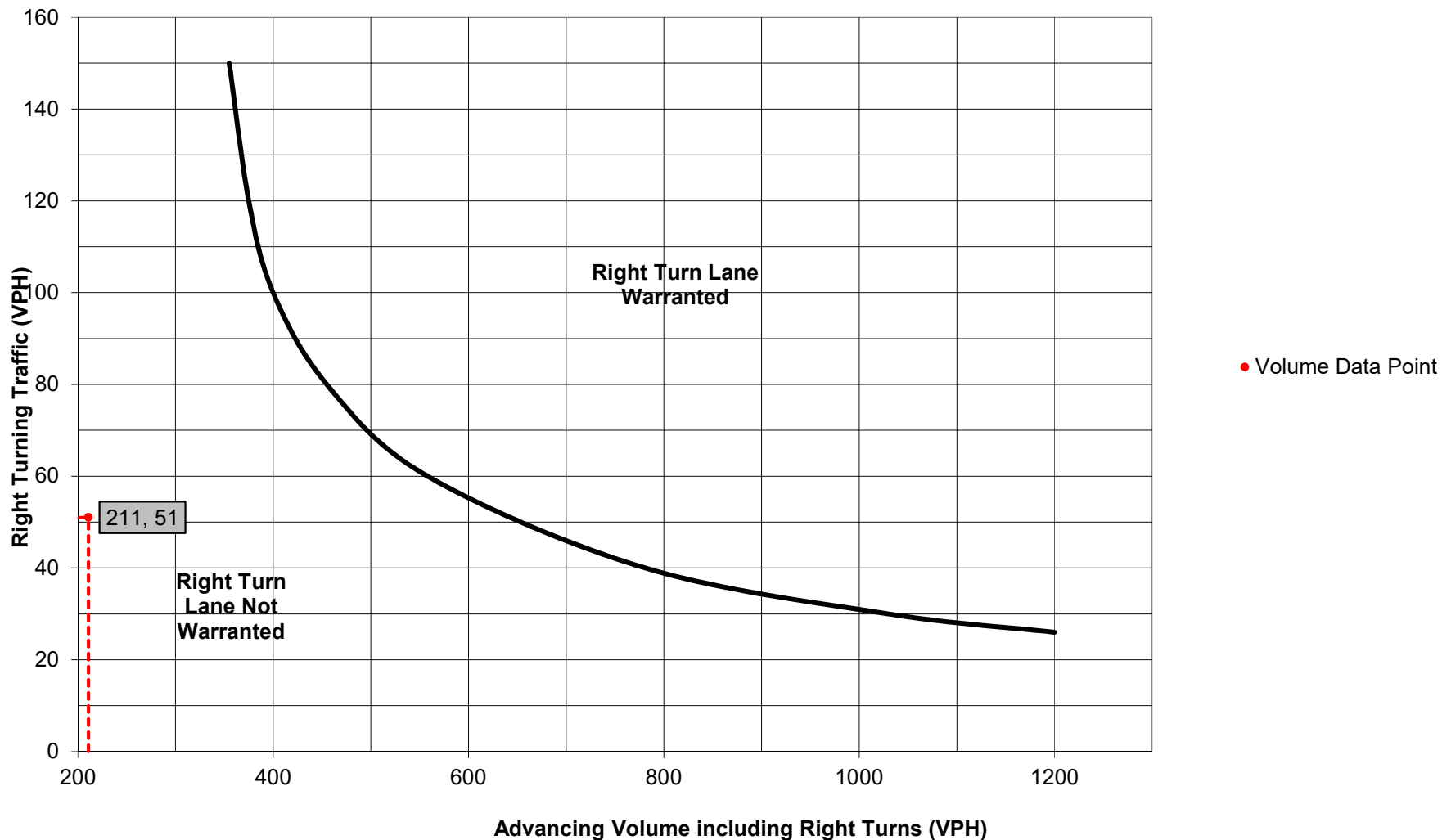
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

Additional Comments / Justifications:



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



*U.S. Route 202 (Wilmington Pike) and  
W. Pleasant Grove Road*

## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input style="width: 100%;" type="text" value="Westtown Township"/> County: <input style="width: 100%;" type="text" value="Chester County"/> PennDOT Engineering District: <input style="width: 100%;" type="text" value="6"/>	Analysis Date: <input style="width: 100%;" type="text" value="8/7/2019"/> Conducted By: <input style="width: 100%;" type="text" value="BGG"/> Checked By: <input style="width: 100%;" type="text" value="JDG"/> Agency/Company Name: <input style="width: 100%;" type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input style="width: 100%;" type="text" value="U.S. Route 202 and West Pleasant Grove Road&lt;br/&gt;Southbound U.S. Route 202 Right-Turn Lane"/>	
Analysis Period: <input style="width: 100%;" type="text" value="2030 Design Year"/> Design Hour: <input style="width: 100%;" type="text" value="AM Peak Hour"/> Intersection Control: <input style="width: 100%;" type="text" value="Unsignalized"/> Posted Speed Limit (MPH): <input style="width: 100%;" type="text" value="45"/> Type of Terrain: <input style="width: 100%;" type="text" value="Rolling"/>	Number of Approach Lanes: <input style="width: 100%;" type="text" value="2"/> Undivided or Divided Highway: <input style="width: 100%;" type="text" value="Divided"/> <div style="border: 1px solid black; padding: 2px; display: inline-block;">Type of Analysis</div> Left or Right-Turn Lane Analysis?: <input style="width: 100%;" type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

Left Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	Yes	0	0.0%	N/A	Advancing Volume: <input style="width: 100%;" type="text" value="N/A"/> Opposing Volume: <input style="width: 100%;" type="text" value="N/A"/> Left Turn Volume: <input style="width: 100%;" type="text" value="N/A"/>
	Through	-	0	0.0%	N/A	
	Right	Yes	0	0.0%	N/A	
Opposing	Left	Yes	0	0.0%	N/A	% Left Turns in Advancing Volume: <input style="width: 100%;" type="text" value="N/A"/>
	Through	-	0	0.0%	N/A	
	Right	Yes	0	0.0%	N/A	
Right Turn Lane Volume Calculations						
Movement	Include?	Volume	% Trucks	PCEV		
Advancing	Left	No	64	4.0%	N/A	Advancing Volume: <input style="width: 100%;" type="text" value="1985"/> Right Turn Volume: <input style="width: 100%;" type="text" value="157"/>
	Through	-	1549	12.0%	1828	
	Right	-	146	5.0%	157	

### TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings	Right Turn Lane Warrant Findings
Applicable Warrant Figure: <input style="width: 100%;" type="text" value="N/A"/> Warrant Met?: <input style="width: 100%;" type="text" value="N/A"/>	Applicable Warrant Figure: <input style="width: 100%;" type="text" value="Figure 12"/> Warrant Met?: <input style="width: 100%;" type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control: <input style="width: 100%;" type="text" value="Unsignalized"/> Design Hour Volume of Turning Lane: <input style="width: 100%;" type="text" value="157"/> Cycles Per Hour (Assumed): <input style="width: 100%;" type="text" value="60"/> Cycles Per Hour (If Known): <input style="width: 100%;" type="text"/>	Average # of Vehicles/Cycle: <input style="width: 100%;" type="text" value="3.0"/>
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PennDOT Publication 46, Exhibit 11-6

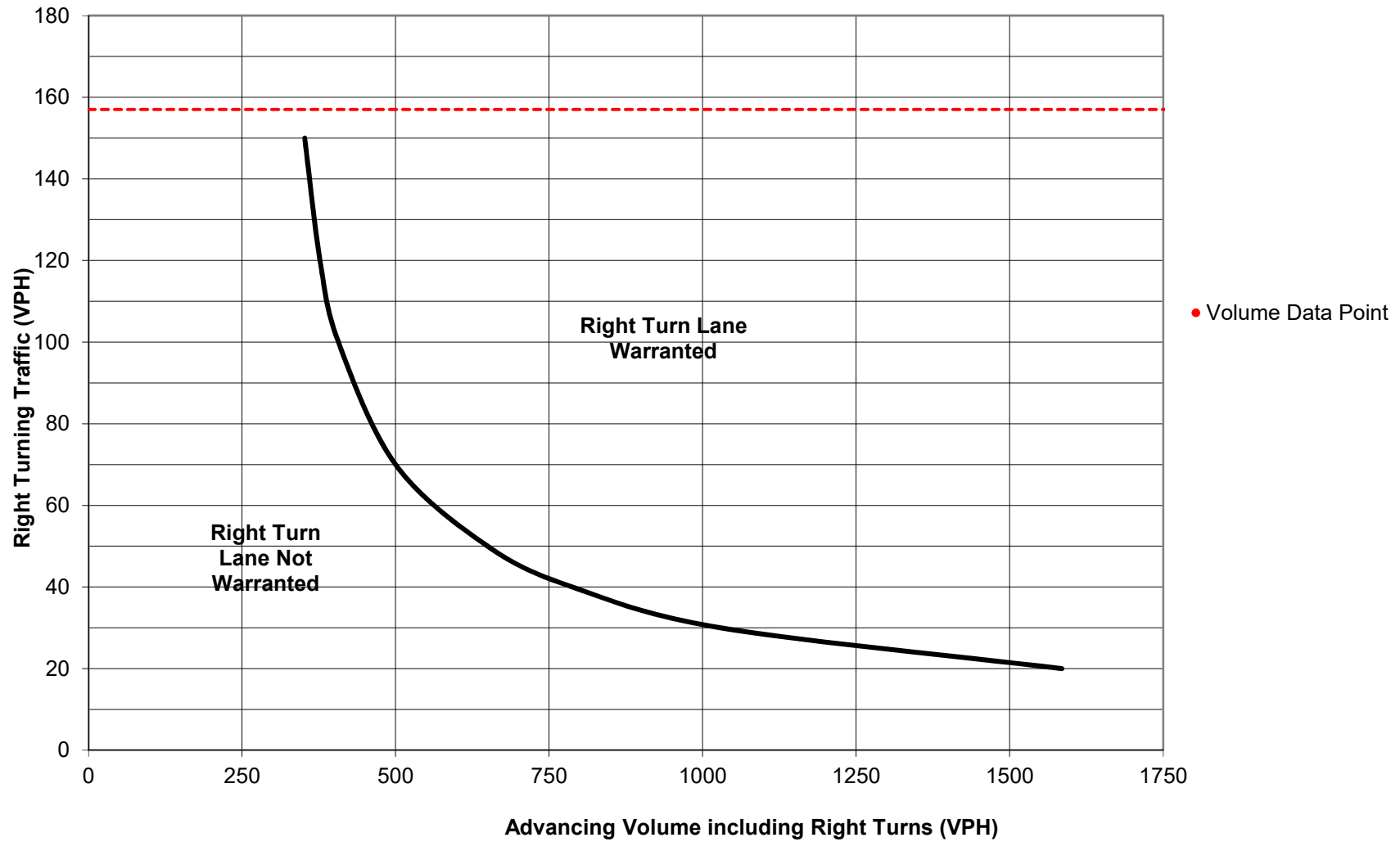
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input style="width: 100%;" type="text" value="N/A"/>	Feet
Condition B:	<input style="width: 100%;" type="text" value="N/A"/>	Feet
Condition C:	<input style="width: 100%;" type="text" value="225"/>	Feet
Required Right Turn Lane Storage Length:	<input style="width: 100%;" type="text" value="225"/>	Feet

Additional Findings:

Additional Comments / Justifications:

**Figure 12. Warrant for right turn lanes on four-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



## Turn Lane Warrant and Length Analysis Workbook

### STUDY LOCATION AND ANALYSIS INFORMATION

Municipality: <input type="text" value="Westtown Township"/>	Analysis Date: <input type="text" value="8/7/2019"/>
County: <input type="text" value="Chester County"/>	Conducted By: <input type="text" value="BGG"/>
PennDOT Engineering District: <input type="text" value="6"/>	Checked By: <input type="text" value="JDG"/>
	Agency/Company Name: <input type="text" value="McMahon Associates, Inc."/>
Intersection & Approach Description: <input type="text" value="U.S. Route 202 and West Pleasant Grove Road&lt;br/&gt;Southbound U.S. Route 202 Right-Turn Lane"/>	
Analysis Period: <input type="text" value="2030 Design Year"/>	Number of Approach Lanes: <input type="text" value="2"/>
Design Hour: <input type="text" value="PM Peak Hour"/>	Undivided or Divided Highway: <input type="text" value="Divided"/>
Intersection Control: <input type="text" value="Unsignalized"/>	
Posted Speed Limit (MPH): <input type="text" value="45"/>	<b>Type of Analysis</b>
Type of Terrain: <input type="text" value="Rolling"/>	Left or Right-Turn Lane Analysis?: <input type="text" value="Right Turn Lane"/>

### VOLUME CALCULATIONS

#### Left Turn Lane Volume Calculations

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

Advancing Volume:	<input type="text" value="N/A"/>
Opposing Volume:	<input type="text" value="N/A"/>
Left Turn Volume:	<input type="text" value="N/A"/>

% Left Turns in Advancing Volume:	<input type="text" value="N/A"/>
-----------------------------------	----------------------------------

#### Right Turn Lane Volume Calculations

Movement	Include?	Volume	% Trucks	PCEV	
Advancing	Left	No	129	0.0%	N/A
	Through	-	1770	2.0%	1824
	Right	-	354	1.0%	360

Advancing Volume:	<input type="text" value="2184"/>
Right Turn Volume:	<input type="text" value="360"/>

### TURN LANE WARRANT FINDINGS

#### Left Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="N/A"/>
Warrant Met?:	<input type="text" value="N/A"/>

#### Right Turn Lane Warrant Findings

Applicable Warrant Figure:	<input type="text" value="Figure 12"/>
Warrant Met?:	<input type="text" value="Yes"/>

### TURN LANE LENGTH CALCULATIONS

Intersection Control:	<input type="text" value="Unsignalized"/>
Design Hour Volume of Turning Lane:	<input type="text" value="360"/>
Cycles Per Hour (Assumed):	<input type="text" value="60"/>
Cycles Per Hour (If Known):	<input type="text" value=""/>
Average # of Vehicles/Cycle:	<input type="text" value="6.0"/>

PennDOT Publication 46, Exhibit 11-6

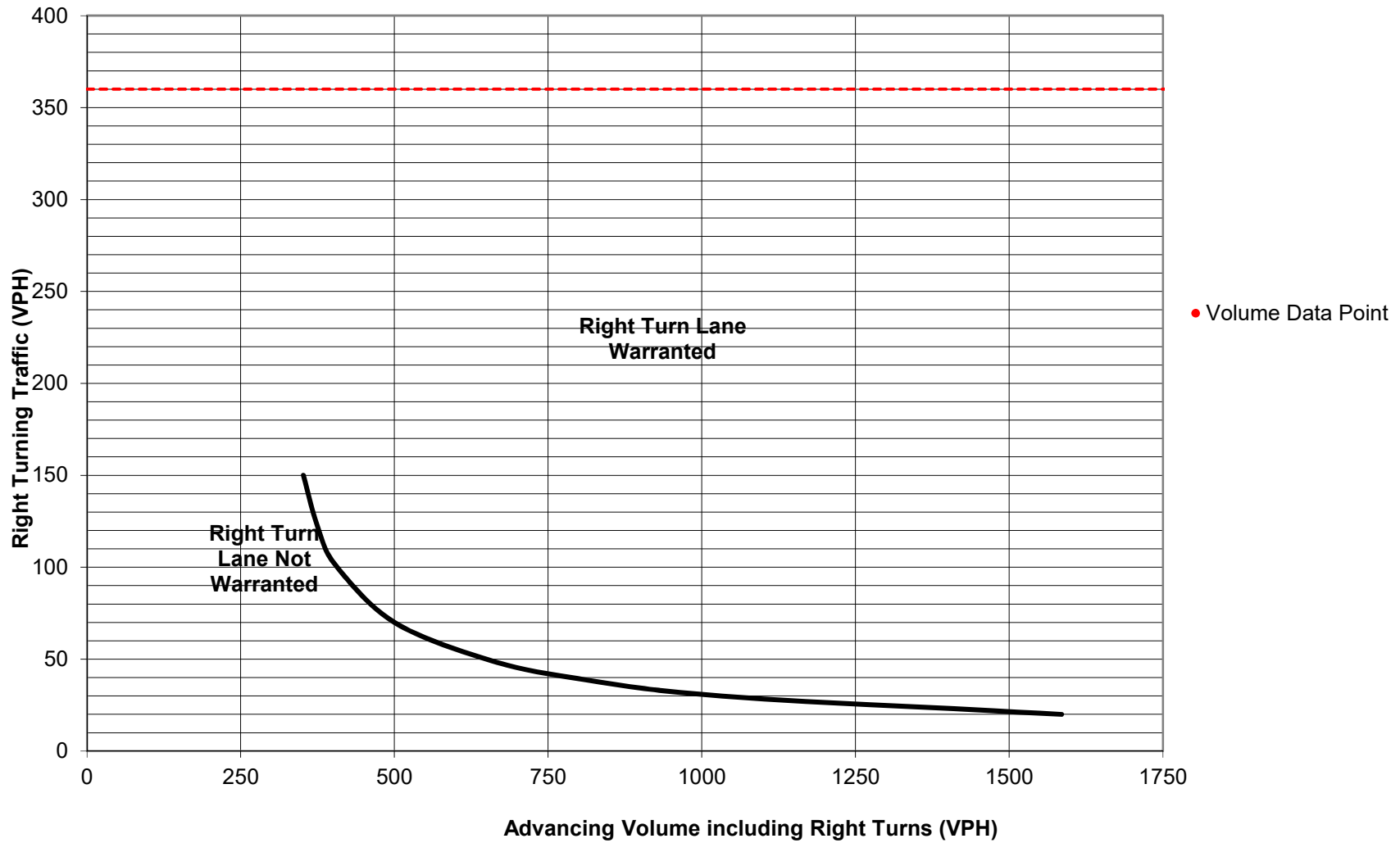
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Right Turn Lane Storage Length, Condition A:	<input type="text" value="N/A"/>	Feet
Condition B:	<input type="text" value="N/A"/>	Feet
Condition C:	<input type="text" value="325"/>	Feet
Required Right Turn Lane Storage Length:	<input type="text" value="325"/>	Feet

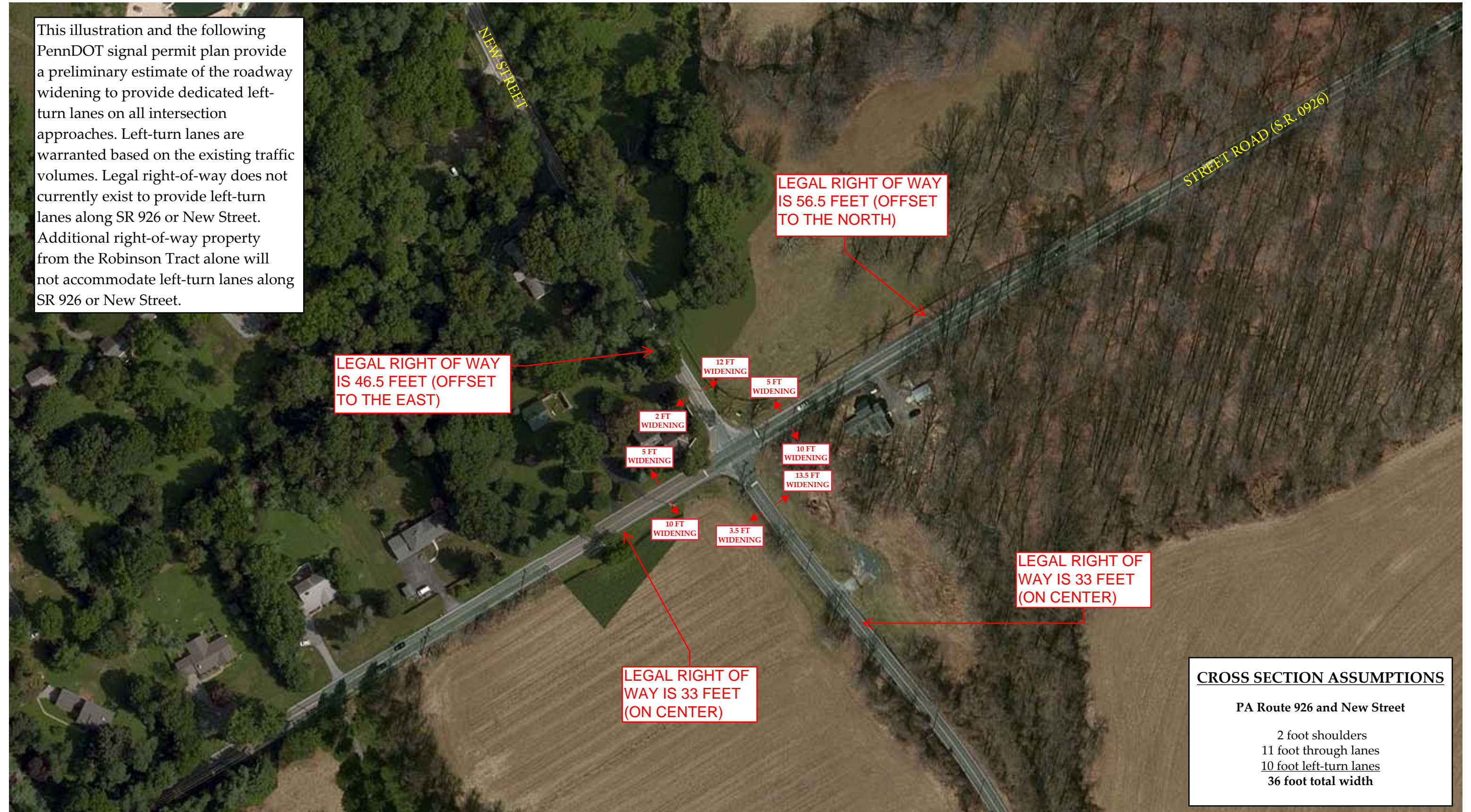
Additional Findings:	<input type="text" value="N/A"/>
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Additional Comments / Justifications:

**Figure 12. Warrant for right turn lanes on four-lane roadways  
(45 mph or greater speeds, unsignalized and signalized intersections)**



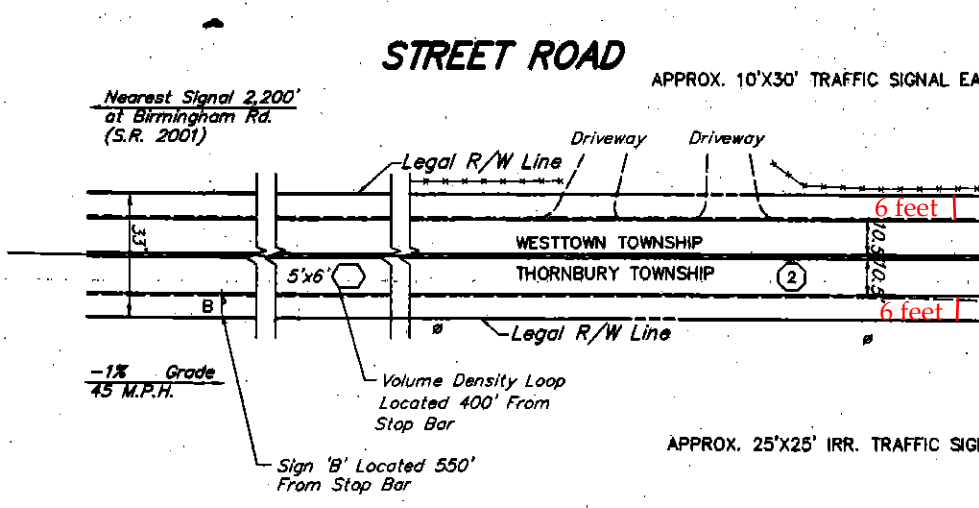
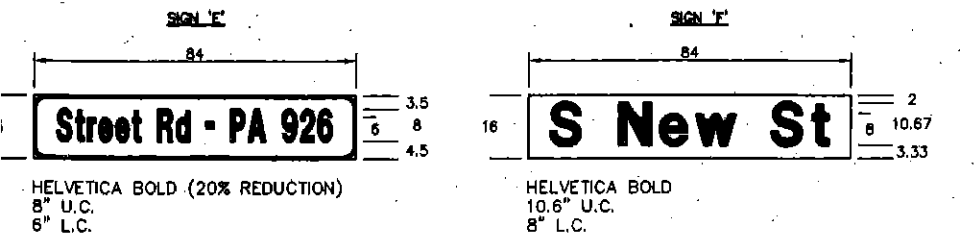
This illustration and the following PennDOT signal permit plan provide a preliminary estimate of the roadway widening to provide dedicated left-turn lanes on all intersection approaches. Left-turn lanes are warranted based on the existing traffic volumes. Legal right-of-way does not currently exist to provide left-turn lanes along SR 926 or New Street. Additional right-of-way property from the Robinson Tract alone will not accommodate left-turn lanes along SR 926 or New Street.



CROSS SECTION ASSUMPTIONS
PA Route 926 and New Street
2 foot shoulders
11 foot through lanes
10 foot left-turn lanes
36 foot total width

Preliminary Roadway Widening Impacts for Left-Turn Lanes at PA Route 926 and New Street

SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R9-3	18"x18"	NO PEDESTRIAN CROSSING
B	W3-3	36"x36"	SIGNAL AHEAD
C	R10-11	24"x30"	NO TURN ON RED
D	R10-11	30"x36"	NO TURN ON RED
E	D3-4	72"x16"	SINGLE LINE OVERHEAD STREET NAME
F	D3-4	96"x16"	SINGLE LINE OVERHEAD STREET NAME
G	R10-6L	24"x30"	STOP HERE ON RED



LEGAL RIGHT-OF-WAY BEYOND EXISTING ROADWAY WIDTHS

MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	2+6			4+8			EMERGENCY FLASHING
	1	2	3	4	5	6	
1,2	G	Y	R	R	R	R	Y
3,4,5	G	Y	R	R	R	R	Y
6,7,8	R	R	R	G	Y	R	R
9,10	R	R	R	G	Y	R	R

FIXED	4	2	4	2
MINIMUM	22		3	
SEC./ACT.	2			
MAX. INIT.	42			
PASSAGE	5		3	
TBR	42			
TTR	21			
MIN. GAP	2			
MAXIMUM 1	63		15	
MAXIMUM 2	68		25	
PEDESTRIAN				
MEMORY	MR		L	

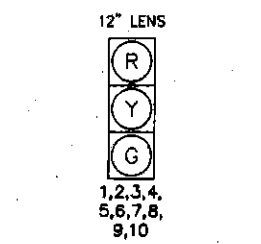
- OPERATION NOTES:
- SIGNAL TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 4+8.
  - MAXIMUM 2 TO OPERATE FROM 1500 TO 1900 MONDAY THROUGH FRIDAY. MAXIMUM 1 TO OPERATE ALL OTHER TIMES.
  - VOLUME DENSITY DETECTOR AMPLIFIER TO BE SET ON PRESENCE MODE.

EMERGENCY PRE-EMPTION PHASING MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1,2	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R
3,4,5	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R
6,7,8	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R
9,10	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R

FOR DURATION OF PRE-EMPTION

SIGNAL INDICATIONS



- SIGNALS TO BE EQUIPPED WITH RED LED LENSES 1-10
- SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS
- SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS & LOUVERS

STREET ROAD COUNT DATE 12/1/98

Time	Count	Total
7:00 AM TO 8:00 AM	12	12
8:00 AM TO 9:00 AM	15	27
9:00 AM TO 10:00 AM	18	45
10:00 AM TO 11:00 AM	20	65
11:00 AM TO 12:00 PM	18	83
12:00 PM TO 1:00 PM	15	98
1:00 PM TO 2:00 PM	12	110
2:00 PM TO 3:00 PM	10	120
3:00 PM TO 4:00 PM	8	128
4:00 PM TO 5:00 PM	6	134
5:00 PM TO 6:00 PM	5	139
6:00 PM TO 7:00 PM	4	143
7:00 PM TO 8:00 PM	3	146
8:00 PM TO 9:00 PM	2	148
9:00 PM TO 10:00 PM	1	149
10:00 PM TO 11:00 PM	1	150
11:00 PM TO 12:00 AM	0	150
TOTAL	150	150

- GENERAL NOTES
- NO MODIFICATIONS OF THIS INSTALLATION ARE PERMITTED UNLESS PRIOR APPROVAL IS GRANTED IN WRITING BY A REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION.
  - ALL MAINTENANCE WORK INCLUDING TRIMMING OF TREES, NECESSARY FOR PROPER VISIBILITY OF THE SIGNALS IS THE RESPONSIBILITY OF THE PERMITTEE.
  - ALL SIGNS AND PAVEMENT MARKINGS INDICATED ON THIS DRAWING ARE CONSIDERED PART OF THE PERMIT AND SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH PUBLICATION NO. 68.
  - POST MOUNTED SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEADS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULDER. SUPPORT POLES FOR OVERHEAD SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.
  - SIGNALS ERECTED OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROADWAY. POST MOUNTED SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIDEWALK OR PAVEMENT.
  - ALL OVERHEAD SIGNALS MUST BE RIGIDLY MOUNTED, TOP AND BOTTOM, AND EQUIPPED WITH BACKPLATES.
  - THE MINIMUM HORIZONTAL DISTANCE BETWEEN SIGNALS MEASURED AT RIGHT ANGLES TO THE APPROACH SHALL BE 8 FEET.
  - EXACT LOCATION OF DETECTORS SHALL BE DETERMINED PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNDOT.
  - CURBING TO BE INSTALLED BY MUNICIPALITY AND WHERE NOTED, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLED IN ACCORDANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.
  - PRIOR TO INSTALLATION THE CONTRACTOR SHALL CONSULT WITH THE LOCAL OFFICIALS AND UTILITY COMPANIES TO RESOLVE ANY PROBLEMS WHICH MAY BE CREATED DUE TO THE LOCATION OF UTILITIES.
  - THIS DRAWING CANNOT BE USED AS A CONSTRUCTION DRAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF ACT 187, PREVENTION OF DAMAGE TO UNDERGROUND UTILITIES, EFFECTIVE DATE DECEMBER 19, 1996.
  - WHEN LIQUID FUELS MONEY IS USED, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSED SPECIFICATIONS MUST BE SUBMITTED TO THE DISTRICT TRAFFIC UNIT, FOR REVIEW, PRIOR TO BIDDING.
  - PERMITTEE SHALL OBTAIN A HIGHWAY OCCUPANCY PERMIT FOR ANY CHANGES IN INTERSECTION GEOMETRY REGARDING EXCAVATION.
  - CONDUIT INSTALLED IN BITUMINOUS ROADWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROADWAY REGARDLESS OF AGE, MUST BE BORED OR JACKED UNDER THE ROADWAY, INSTALL IN ACCORDANCE WITH TRAFFIC SIGNAL STANDARDS TC-7800 SERIES.

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION ENGINEERING DISTRICT 6-0

COUNTY: CHESTER COUNTY  
 MUNICIPALITY: WESTTOWN & THORNBURY TOWNSHIP  
 INTERSECTION: STREET ROAD (S.R. 0926) AND SOUTH NEW STREET

REVIEWED: \_\_\_\_\_ DATE \_\_\_\_\_  
 MUNICIPAL OFFICIAL \_\_\_\_\_ DATE \_\_\_\_\_  
 RECOMMENDED: MARK L. KRAY 5/6/99  
 DOUGLAS MAY 5/7/99  
 DISTRICT TRAFFIC ENGINEER

NO.	REVISION	DATE	BY	DATE	REASON
1	Revise CSN Signs	5/4/99	PAI	5/6/99	PAI
2	Shorten MA	5/11/99	HJK	5/11/99	PAI
3	MINIMUM TIME REVISED	7/10/99	SM	7/10/99	SM



## Appendix J

# Other Development Trip Generation, Distribution, & Assignment



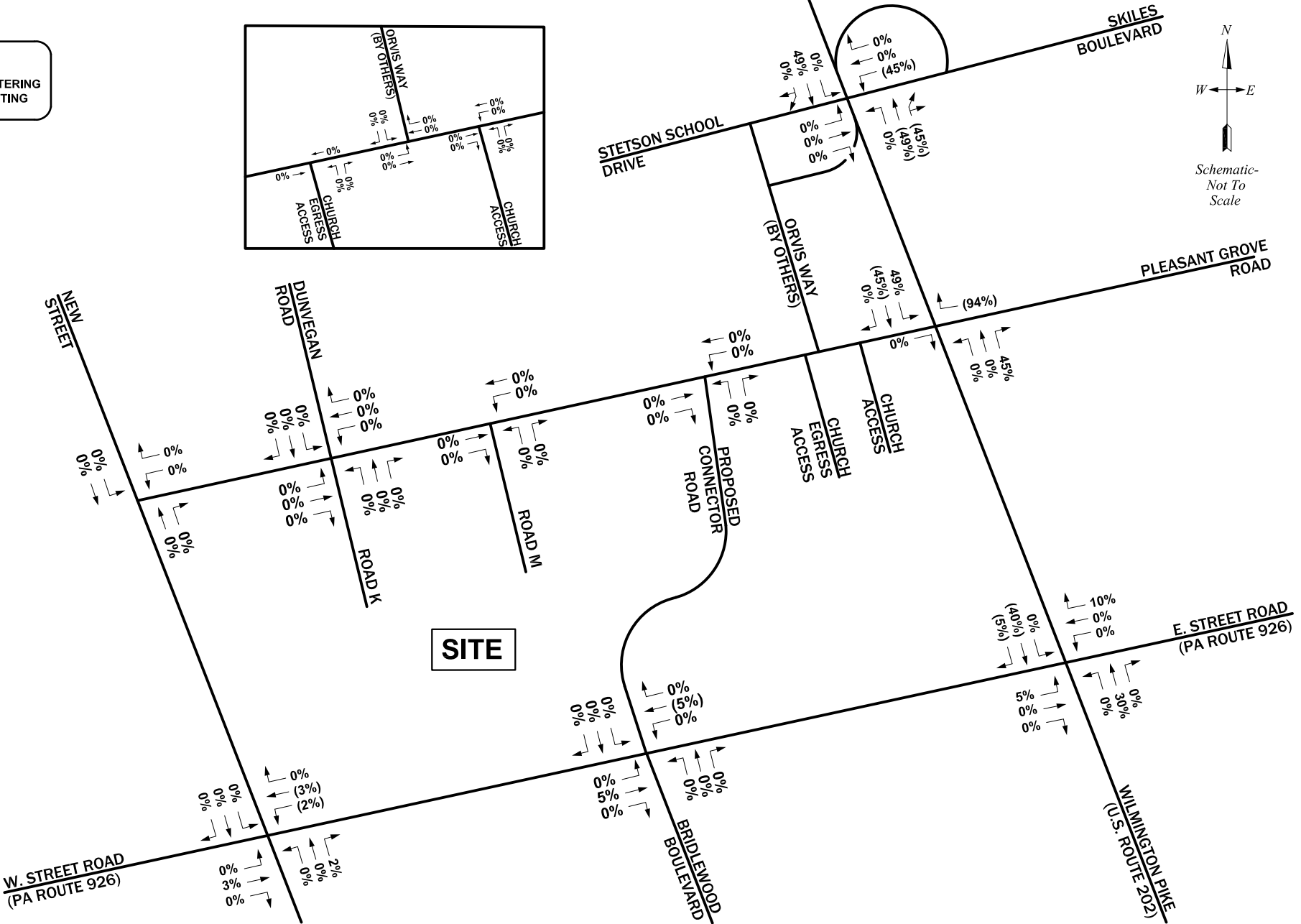
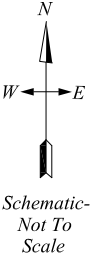
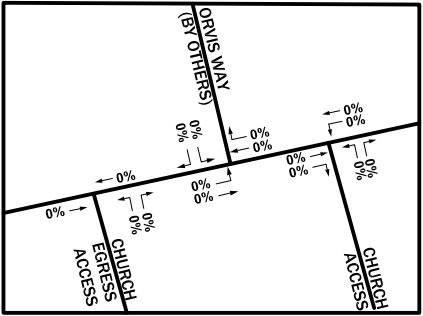
*The Malvern School*

Project Information	
Project Name:	Robinson Tract Other Development - Malvern School
McMahon Project No:	816451
Date:	8/6/2019
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 10th Edition

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
565 - Day Care Center		256	31	28	59	28	32	60
Pass-By Trips <sup>(1)</sup>	5,375 square feet	-87	-14	-12	-26	-12	-14	-26
"New" Trips		169	17	16	33	16	18	34

(1) Pass-by estimated to be 44 percent during the weekday morning and weekday afternoon peak hours and 34 percent (or 10 percent less than the weekday afternoon peak hour) on a daily basis. This pass-by rate is consistent with the data presented in *Trip Generation for Day Care Centers*, provided in the ITE 1990 Compendium of Technical Papers.

**LEGEND:**  
 10% ENTERING  
 (10%) EXITING



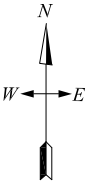
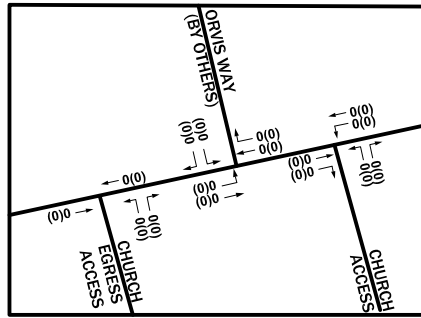
Other Development New Trip Distribution  
 The Malvern School  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



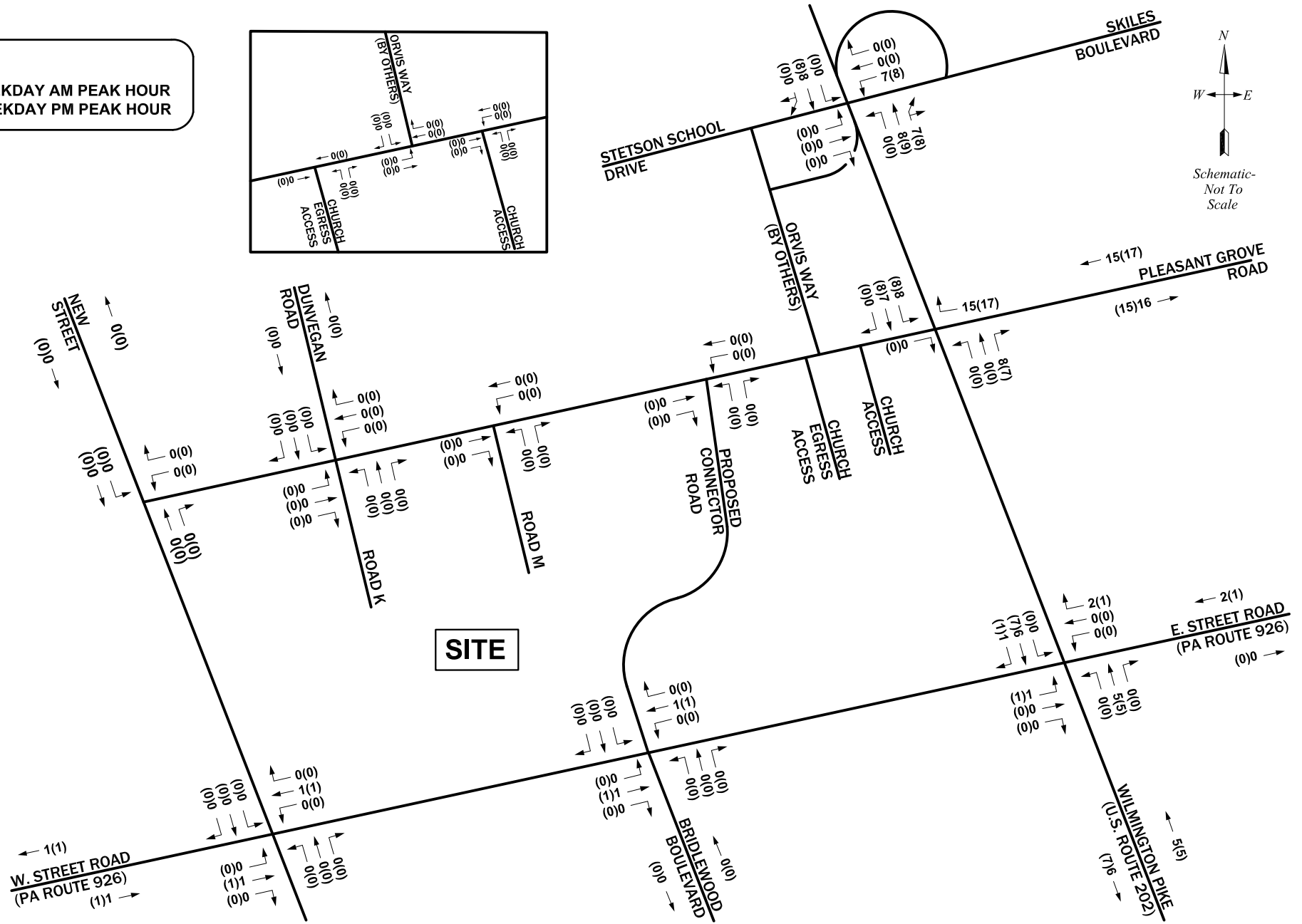
(2019-08-08) I:\eng\816451 - Crebilly Farm\dwg\2019-08 Robinson Tract TIS\Figure J1.dwg

**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



Schematic-  
Not To  
Scale



Other Development New Trip Assignment  
The Malvern School

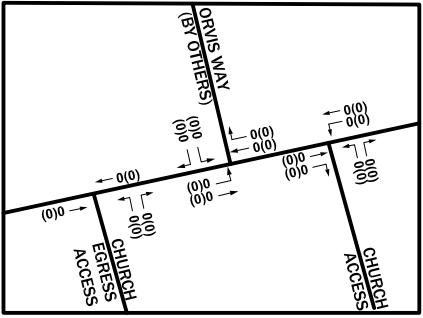
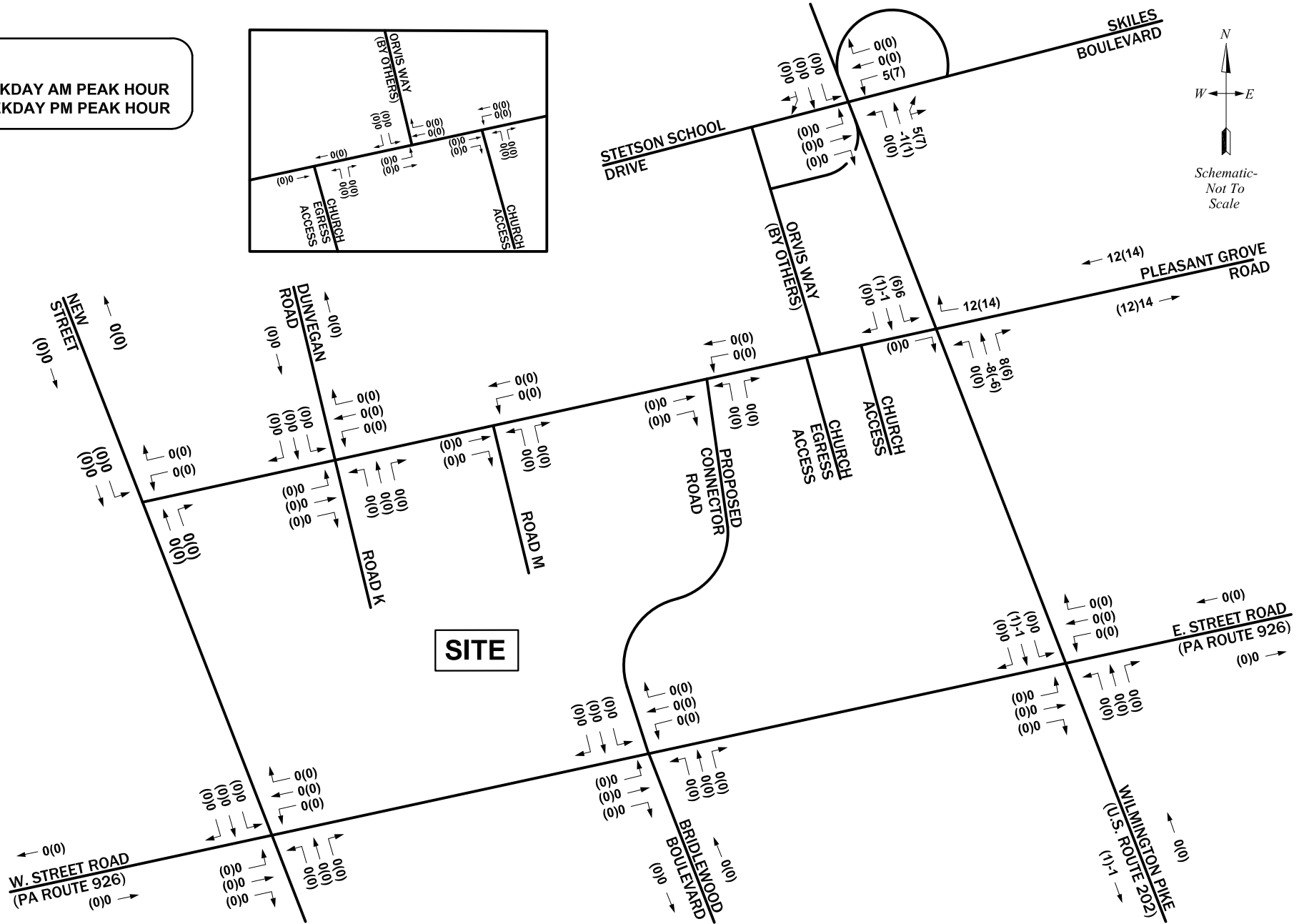
# ROBINSON TRACT

WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



Other Development Passby Trip Assignment  
 The Malvern School  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



*Arborview (Fair Share Properties)*



# **ARBORVIEW**

## **TRANSPORTATION IMPACT ASSESSMENT**

*January 26, 2015*  
*TPD # TAG.A.00003*

*Westtown Township*  
*Chester County, PA*



For Submission To:

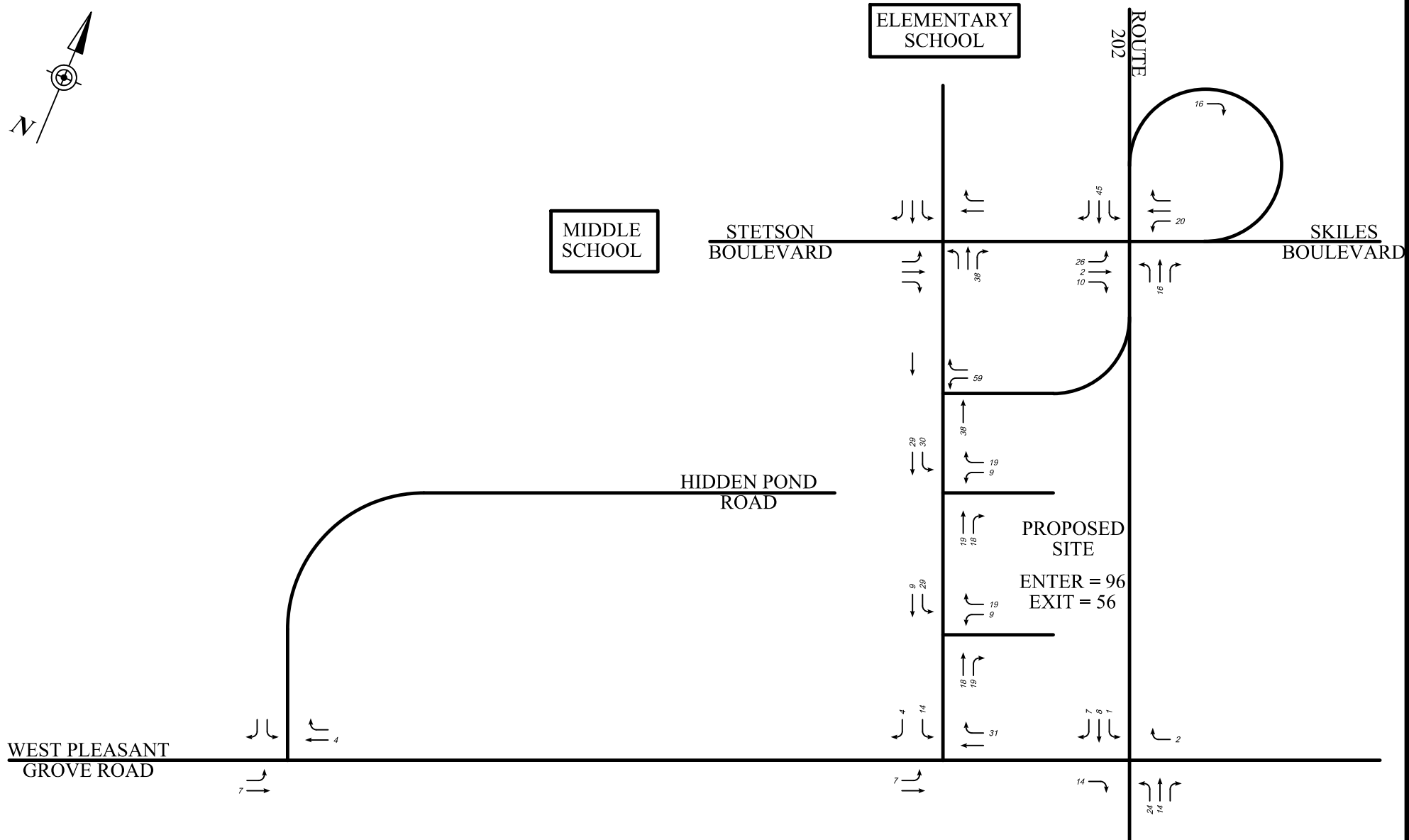
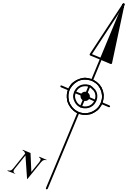
*PennDOT District 6-0*  
&  
*Westtown Township*

Prepared By:



**TPD Services:**  
**Roadway Design**  
**Bridge Design & Inspection**  
**Transportation Planning**

**Traffic Signal System Design**  
**Municipal Services**  
**Environmental Services**  
**Construction Management & Inspection**



**KEY:**  
 SCHEMATIC DRAWING: NOT TO SCALE

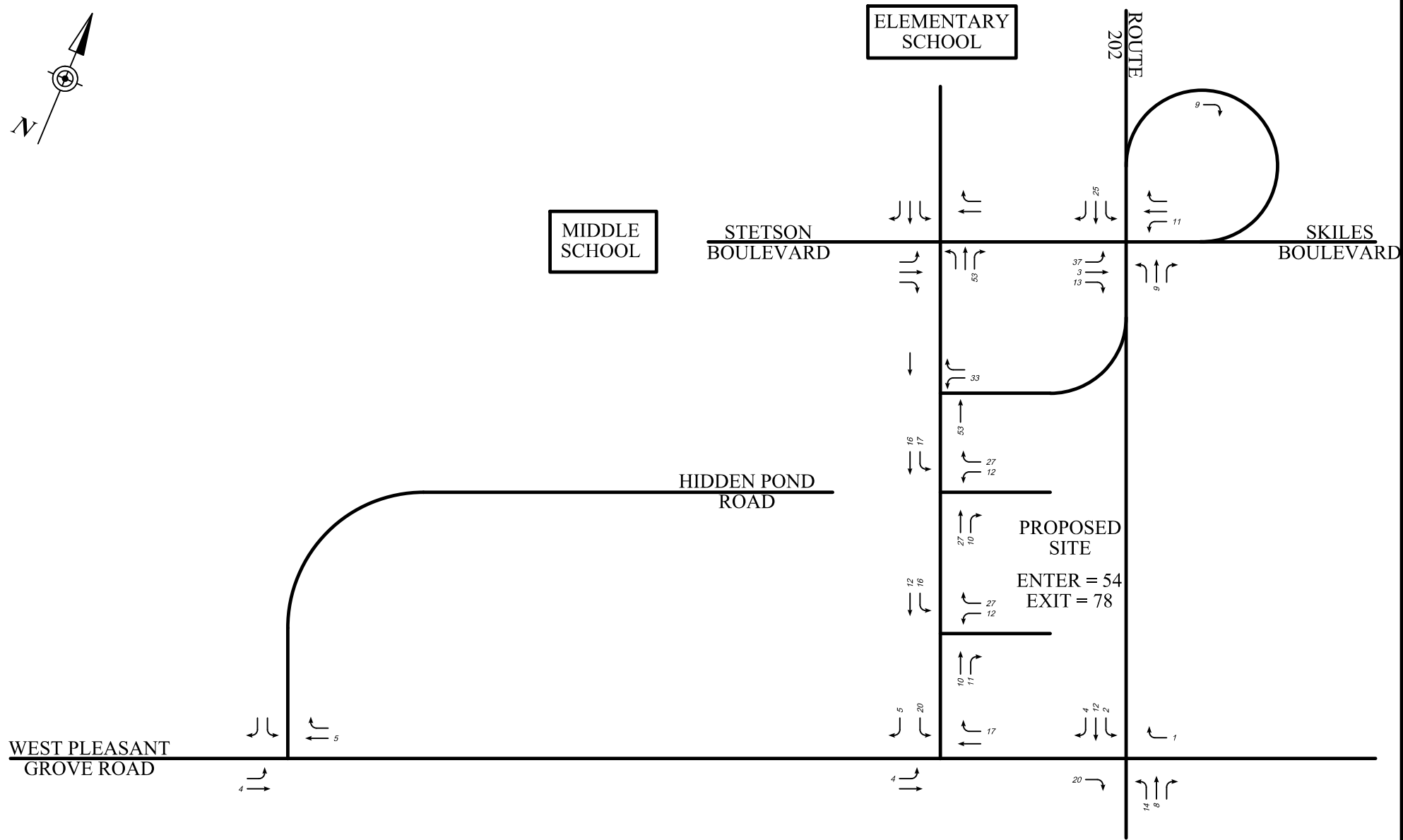
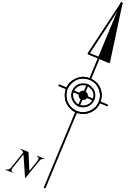
**TRAFFIC PLANNING AND DESIGN, INC.**

PITTSBURGH (412)765-3717	POTTSTOWN (610)326-3100	HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242	SOUTH JERSEY (856)966-4242	

WWW.TRAFFICPD.COM

**FIGURE 7**

WEEKDAY AM PEAK HOUR  
 TRIP DISTRIBUTIONS



**TRAFFIC PLANNING AND DESIGN, INC.**

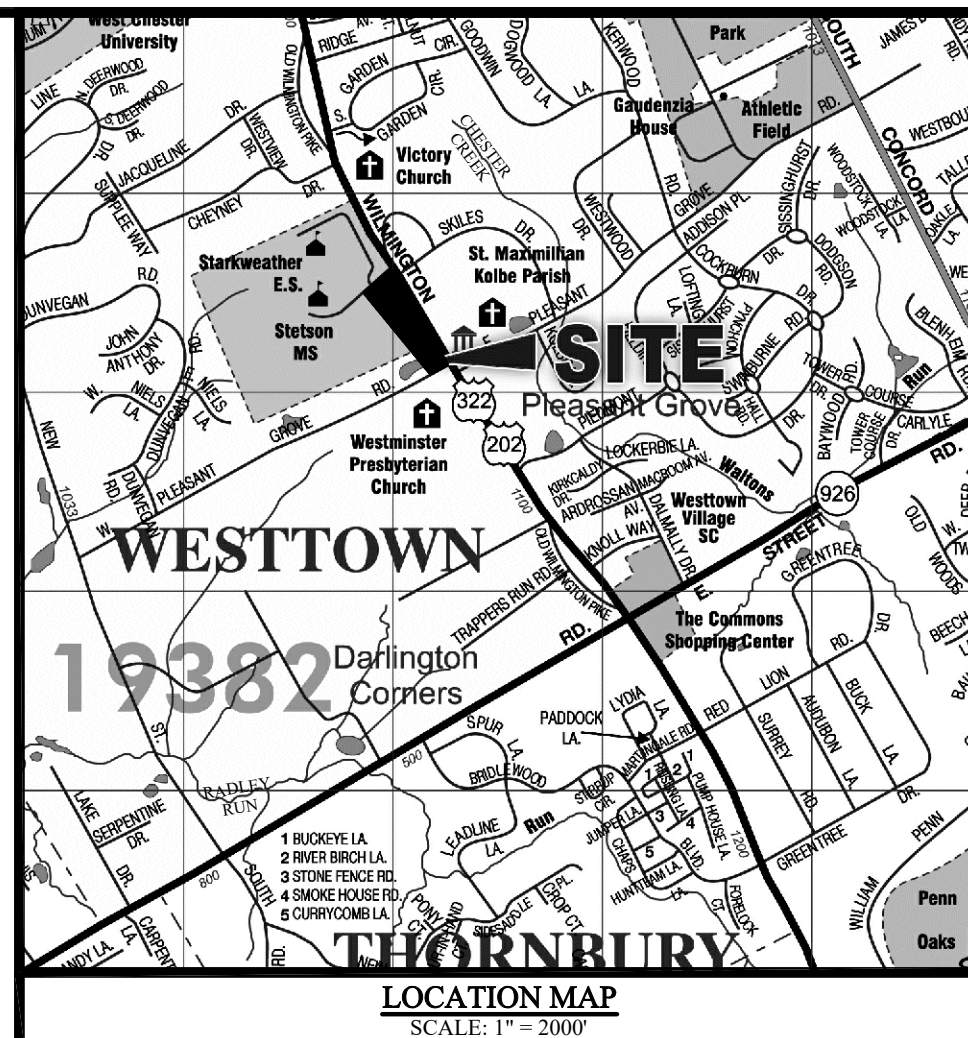
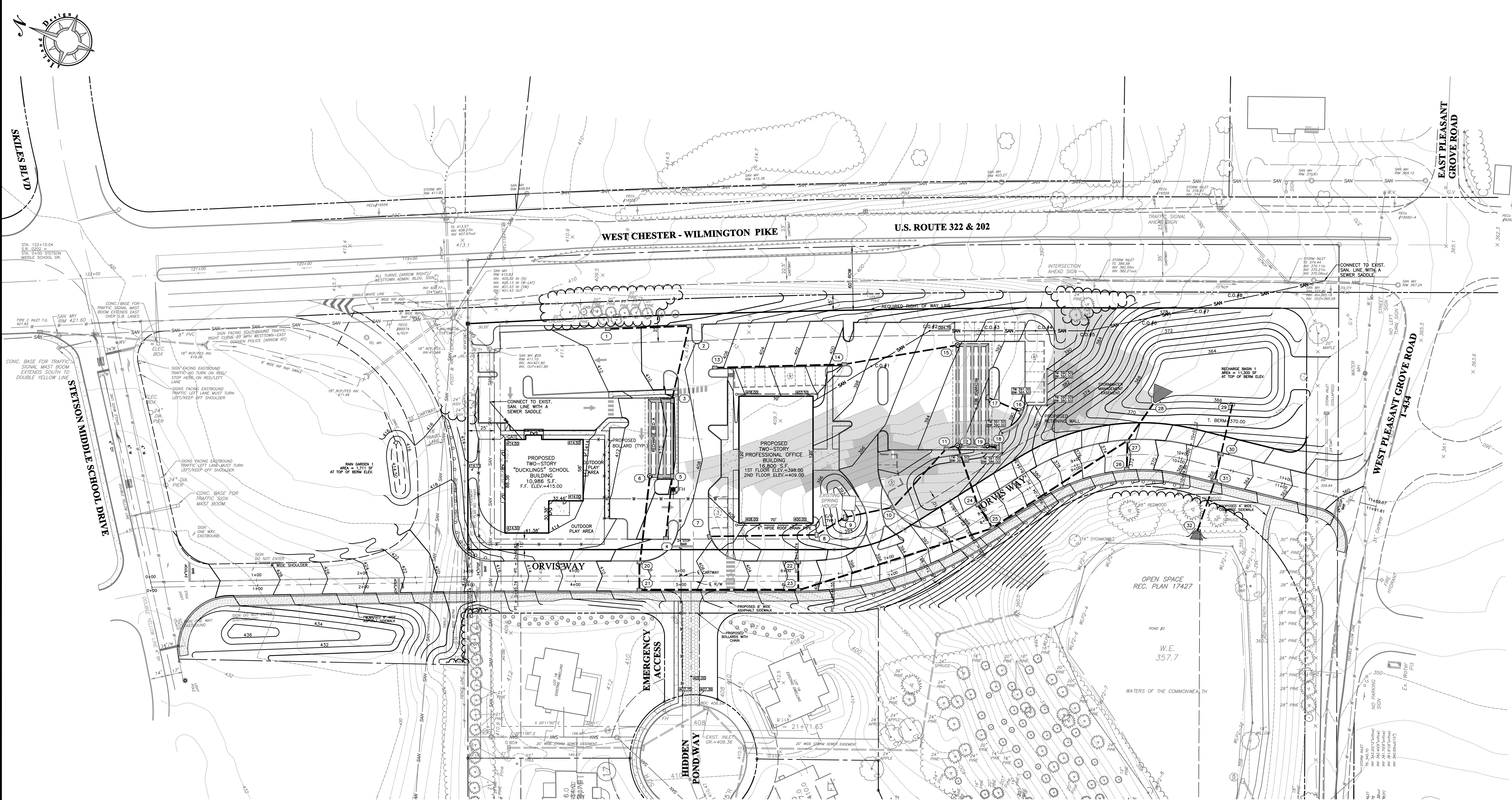
PITTSBURGH (412)765-3717	POTTSTOWN (610)326-3100	HARRISBURG (717)234-1430
LEHIGH VALLEY (610)625-4242	SOUTH JERSEY (856)966-4242	

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FIGURE 8

**KEY:**  
 SCHEMATIC DRAWING:NOT TO SCALE

WEEKDAY PM PEAK HOUR  
 TRIP DISTRIBUTIONS



**LEGEND**

	PROPERTY BOUNDARY
	ADJOINING PROPERTY LINE
	EXISTING RIGHT OF WAY LINE
	EXISTING EASEMENT LINE
	FLOOD PLAIN LINE
	EXISTING 2' CONTOUR
	EXISTING 10' CONTOUR
	EXISTING SPOT ELEVATION
	EXISTING TREE
	EXISTING LIGHT
	EXISTING UTILITY POLE
	EXISTING WELL
	EXISTING WATER VALVE
	EXISTING SIGN
	TEST PIT LOCATION
	EXISTING FENCE LINE
	EXISTING LINE AND DESCRIPTION
	STEEP SLOPE 15% - 25%
	STEEP SLOPE 25% - UP
	EXISTING STORM STRUCTURES & PIPE
	EXISTING SANITARY STRUCTURES & PIPE
	EXISTING ROAD CENTERLINE
	EXISTING CURB LINE
	EXISTING ROAD/PAVING
	EXISTING DRIVEWAY
	EXISTING STONE DRIVE
	EXISTING CONCRETE SIDEWALK
	EXISTING WALL
	EXISTING WATER LINE
	PROPOSED RIGHT OF WAY LINE
	PROPOSED EASEMENT LINE
	PROPOSED 2' CONTOUR
	PROPOSED 10' CONTOUR
	PROPOSED SPOT ELEVATION
	PROPOSED TREE
	PROPOSED UTILITY POLE
	PROPOSED WELL
	PROPOSED WATER VALVE
	PROPOSED SIGN
	PROPOSED FENCE LINE
	PROPOSED STORM STRUCTURES & PIPE
	PROPOSED SANITARY CLEANOUT & PIPE
	PROPOSED ROAD CENTERLINE
	PROPOSED CURB LINE
	PROPOSED ROAD/PAVING
	PROPOSED DRIVEWAY
	PROPOSED STONE DRIVE
	PROPOSED CONCRETE SIDEWALK
	PROPOSED ASPHALT SIDEWALK
	PROPOSED WALL
	PROPOSED WATER LINE

- GENERAL NOTES:**
- CONTRACTOR SHALL VERIFY ALL LOCATIONS AND ELEVATIONS OF UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO THE START OF CONSTRUCTION.
  - THIS DEVELOPMENT WILL BE SERVICED WITH PUBLIC SANITARY SEWER AND PUBLIC WATER SUPPLY.
  - ALL MATERIALS, METHODS AND DETAILS OF CONSTRUCTION SHALL CONFORM TO THE REGULATIONS OF WESTTOWN TOWNSHIP AND/OR THE APPROPRIATE UTILITY COMPANY, WHICHEVER REGULATION TAKES PRECEDENCE.
  - ALL ELECTRIC, TELEPHONE AND OTHER UTILITY LINES SHALL BE INSTALLED UNDERGROUND THROUGHOUT THE DEVELOPMENT IN ACCORDANCE WITH THE REGULATIONS OF THE LOCAL UTILITY COMPANY AND WESTTOWN TOWNSHIP.
  - ALL HDPE STORM SEWER PIPE SHALL BE SMOOTH-BORE INTERIOR, CORRUGATED EXTERIOR POLYETHYLENE PIPE W/ WATERIGHT JOINTS CONFORMING TO AASHTO M294 (ABS N-12 OR APPROVED EQUAL).
  - ALL RCP STORM SEWER PIPE SHALL BE REINFORCED CEMENT CONCRETE PIPE, CLASS V IN ACCORDANCE WITH SECTION 601.2 (A) 3.A OF PENNDOT PUB. WORK SPECIFICATIONS CONFORMING TO THE REQUIREMENTS OF AASHTO M179 OR AASHTO M214. PIPE JOINTS SHALL BE "O" RING RUBBER COMPRESSION GASKET JOINTS CONFORMING TO ASTM C443.
  - ALL SANITARY SEWER PIPE AND FITTINGS SHALL BE TYPE PSM PVC CONFORMING TO ASTM D3034 SDR 35 WITH PUSH-ON JOINTS.
  - ALL SANITARY SEWER CLEANOUTS IN PAVED AREAS SHALL USE A CLEANOUT PROTECTION SLEEVE.

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Pennsylvania One Call System  
PA, Act 172 of 1986 requires  
three working days notice  
Serial Number:  
**2015101118**

**PENNSYLVANIA ACT 187 REQUIREMENTS:**  
Inland Design, LLC does not guarantee the accuracy of the location for existing subsurface utility structures shown on the plans, nor does Inland Design, LLC guarantee that all subsurface structures are shown. The contractor shall verify the location and elevation of all underground utilities and structures before the start of work.

**INLAND DESIGN**  
Civil Engineers, Surveyors & Land Development Consultants  
16 Hagerty Blvd.  
West Chester, PA 19382  
www.InLandDesign.net

Phone: (484) 947-2928  
Fax: (484) 947-2946  
Info@InLandDesign.net

**PROFESSIONAL ENGINEER**  
CHARLES A. DOBSON  
ENGINEER  
WESTCHESTER  
PENNSYLVANIA

No.	Date:	Description:
1	7-15-2015	PER TWP ENGINEER REVIEW LETTER DATED 6-11-2015.
2	9-3-2015	PER TWP ENGINEER REVIEW LETTER DATED 7-30-2015.
4	9-18-2015	PER TWP SEWER ENGINEER REVIEW LETTER DATED 6-12-2015.
5	12-4-2015	NPDES SUBMITTAL.
6	03-11-2016	REVISED PER CCED LETTER DATED 2-10-2016.
7	07-01-2016	REVISED BASIN MAINTENANCE RESPONSIBILITIES
8	10-11-2016	REVISED BASIN MAINTENANCE RESPONSIBILITIES
9	5-18-2018	REVISED SCHOOL BUILDING FOOTPRINT

**PRELIMINARY/FINAL  
LAND DEVELOPMENT PLAN**

GRAPHIC SCALE  
0 20 40 60 80 100 120 140 160  
(IN FEET)  
1 inch = 40'

Date: 5/13/2018  
Scale: 1" = 40'  
Drawn by: TAH  
Checked by: CAD  
Project No. **10365**

**GRADING & UTILITY PLAN  
FOR  
FAIR SHARE PROPERTIES, L.P.  
ARBORVIEW COMMERCIAL LOT**

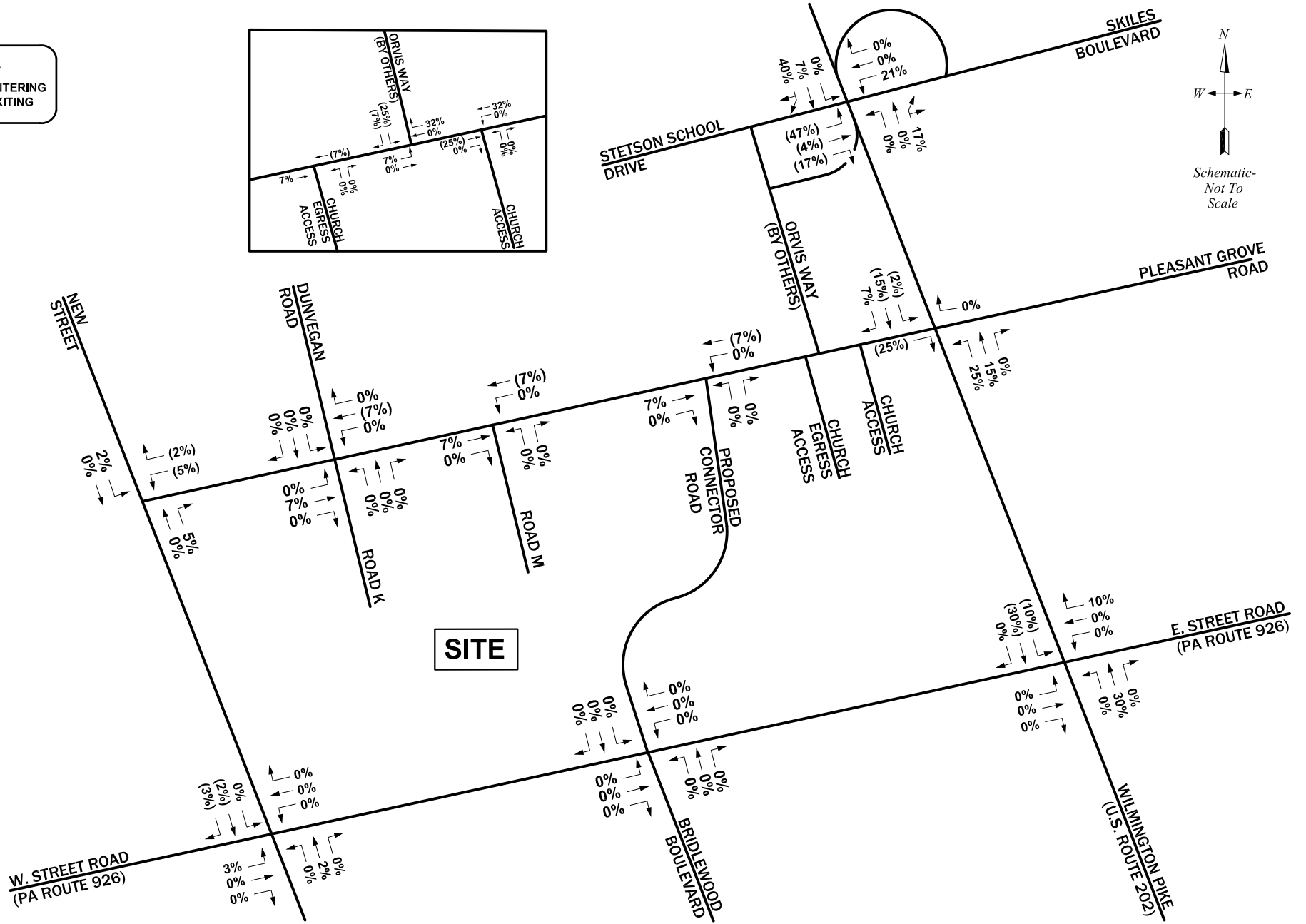
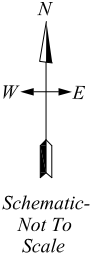
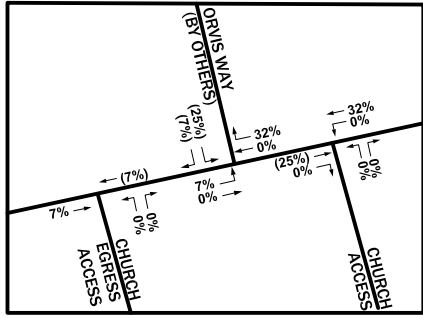
WESTTOWN TOWNSHIP • CHESTER COUNTY • PENNSYLVANIA

**SHEET**  
**4**  
**OF 20**

Project Information	
Project Name:	Robinson Tract Other Development - Arborview
McMahon Project No:	816451.11
Date:	8/6/2019
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 10th Edition

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
<b>710 - General Office Building</b>	16,800 SF	164	16	3	19	3	16	19
<b>565 - Day Care Center</b>	10,986 SF	522	64	57	121	57	65	122
<b>Total Trips</b>		<b>686</b>	<b>80</b>	<b>60</b>	<b>140</b>	<b>60</b>	<b>81</b>	<b>141</b>

**LEGEND:**  
 10% ENTERING  
 (10%) EXITING

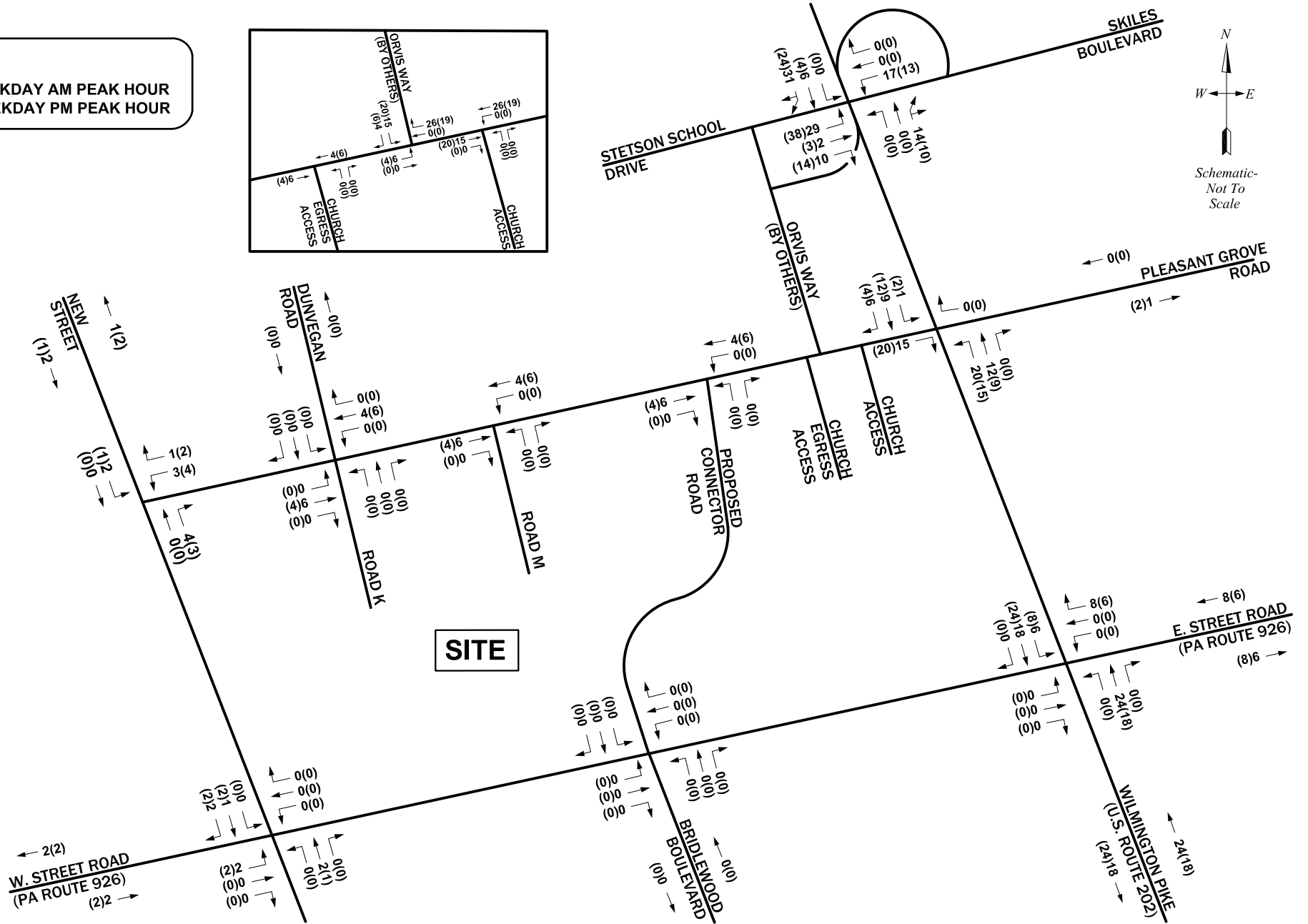


Other Development New Trip Distribution  
 Arborview  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



Other Development New Trip Assignment  
Arborview

# ROBINSON TRACT

WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



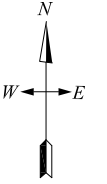
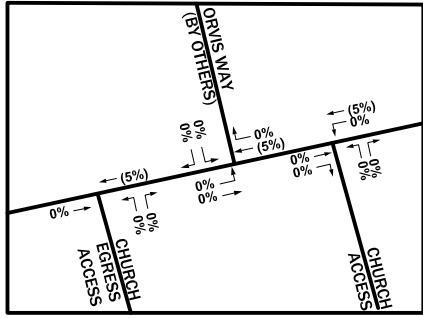
*Condominium Development*



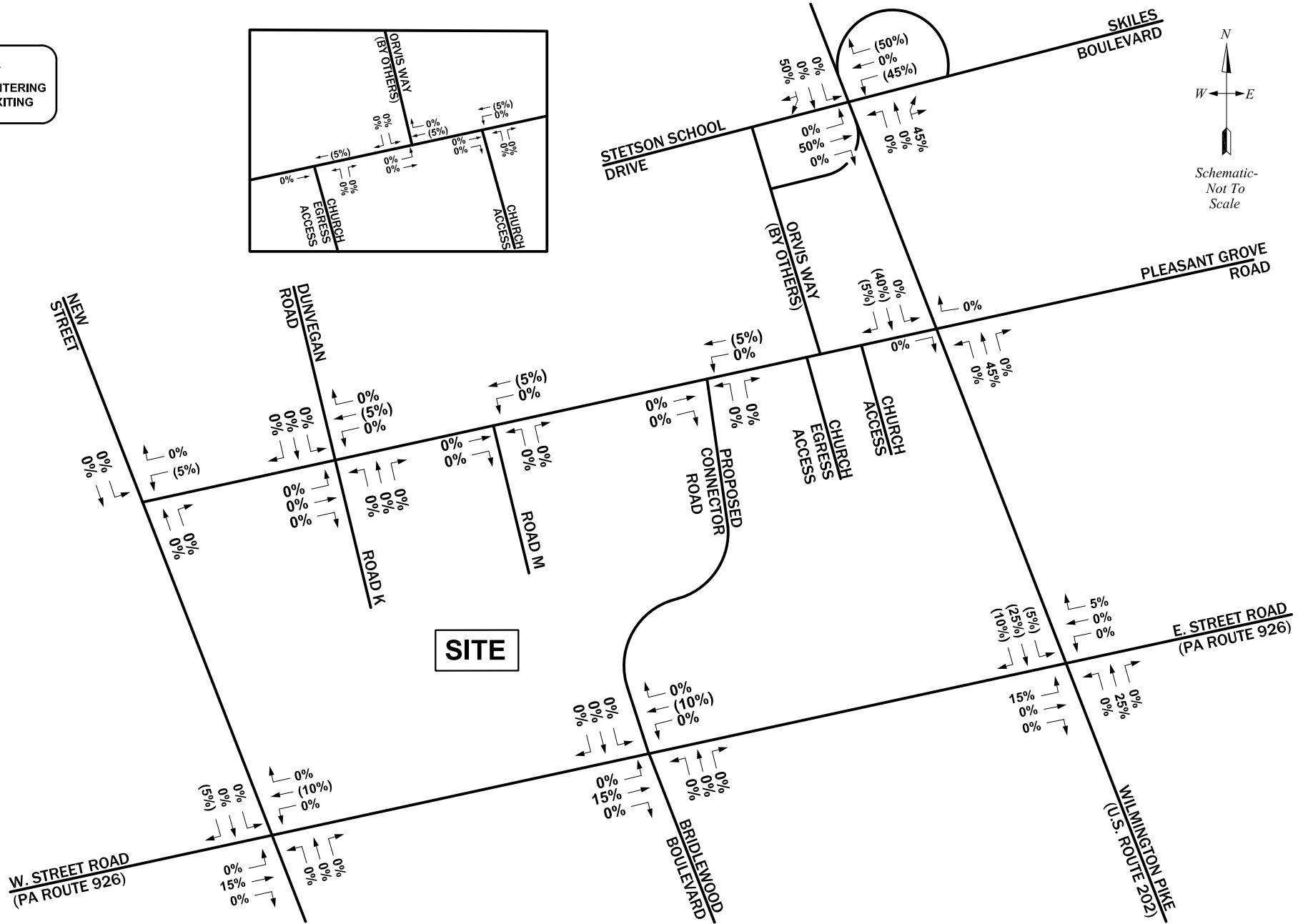
Project Information	
Project Name:	Robinson Tract Other Development - Condominium Development
McMahon Project No:	816451
Date:	8/6/2019
City/Municipality:	Westtown Township
State:	Pennsylvania
Client Name:	Toll Brothers, Inc.
Analyst's Name:	BGG
ITE Edition:	ITE-TGM 10th Edition

Land Use	Size	Daily	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total	In	Out	Total	In	Out	Total
221 - Multifamily Housing (Mid Rise)	39 units	211	4	10	14	11	7	18

**LEGEND:**  
 10% ENTERING  
 (10%) EXITING



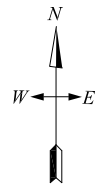
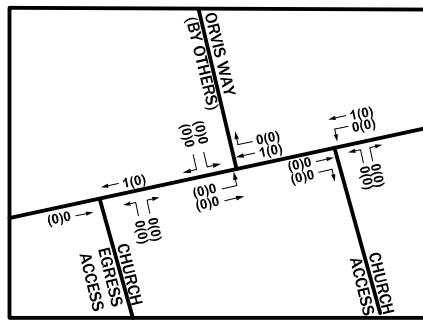
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Scale



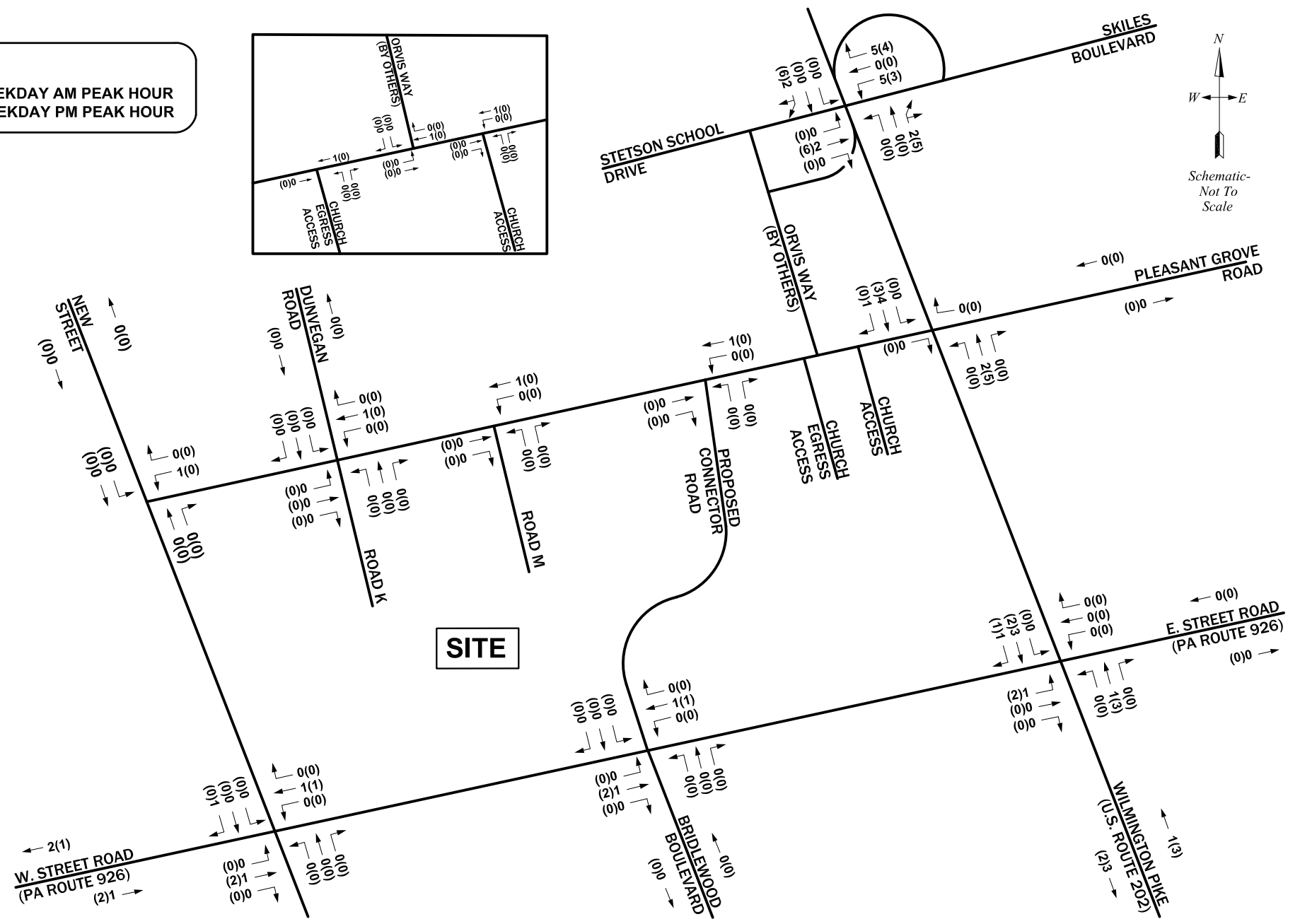
Other Development New Trip Distribution  
 Condominium Development  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



Schematic-  
Not To  
Scale



Other Development New Trip Assignment  
 Condominium Development  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA





# Appendix K

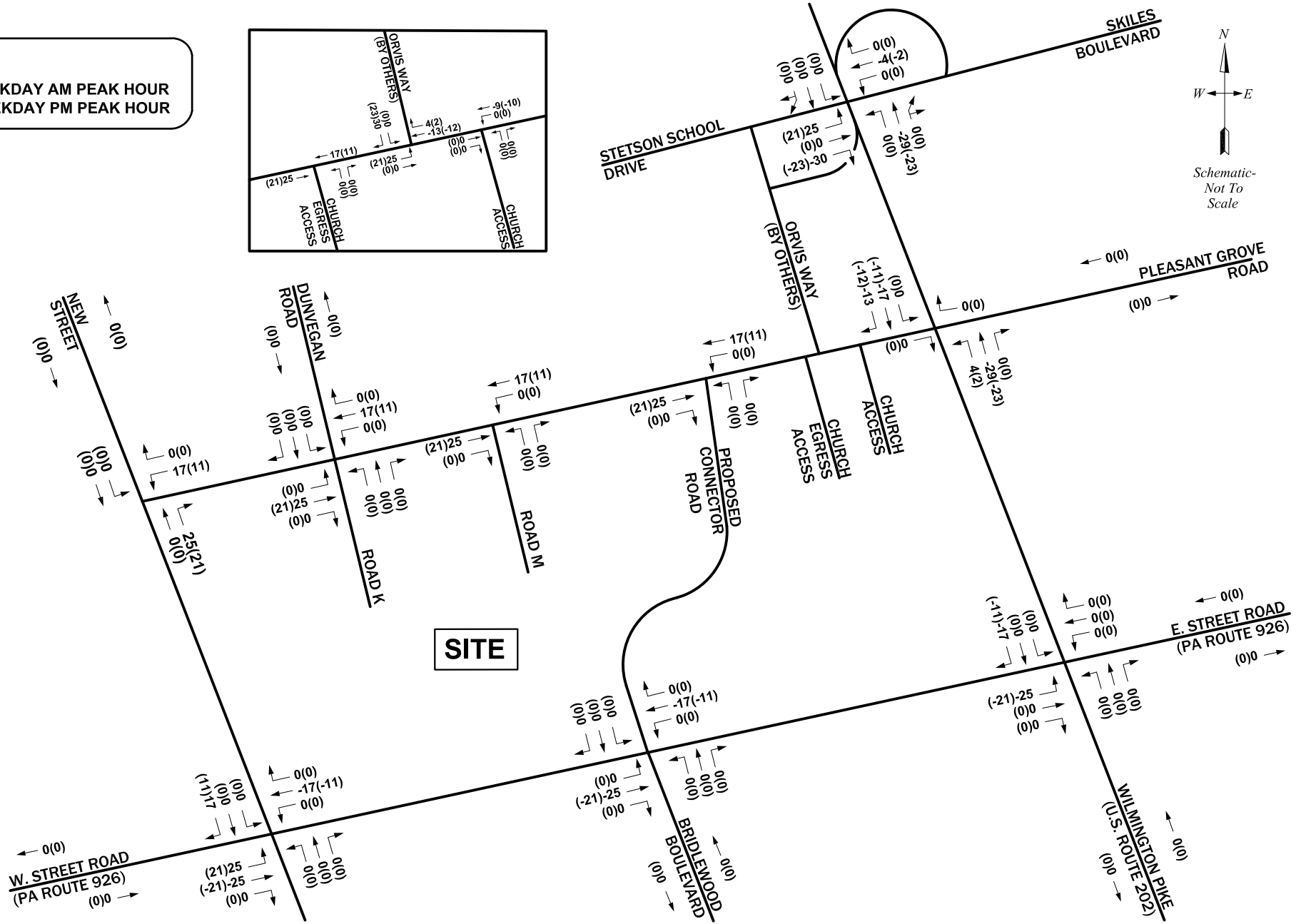
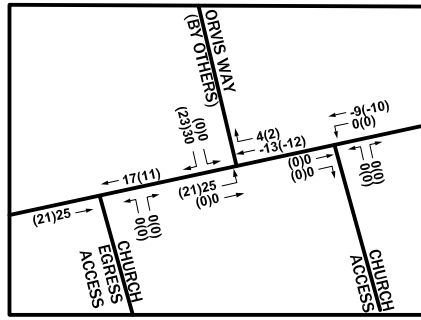
## Traffic Diversions



*Without Development Diversions*

**LEGEND:**

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- (10) WEEKDAY PM PEAK HOUR



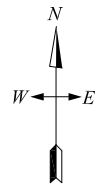
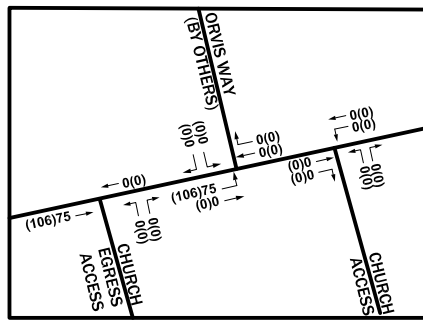
Orvis Way Redistributions  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



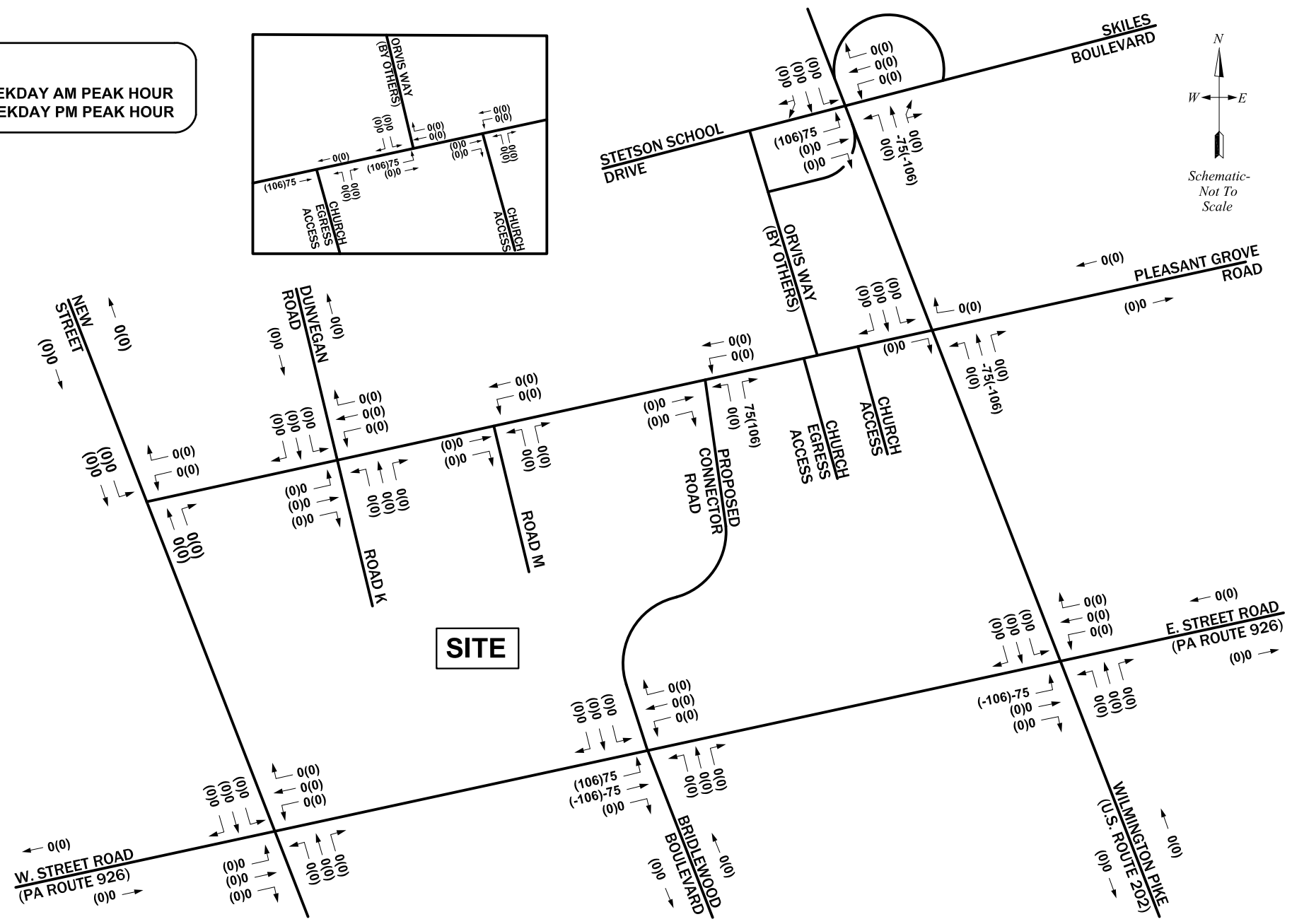


*With Development Diversions*

**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



Schematic-  
Not To  
Scale

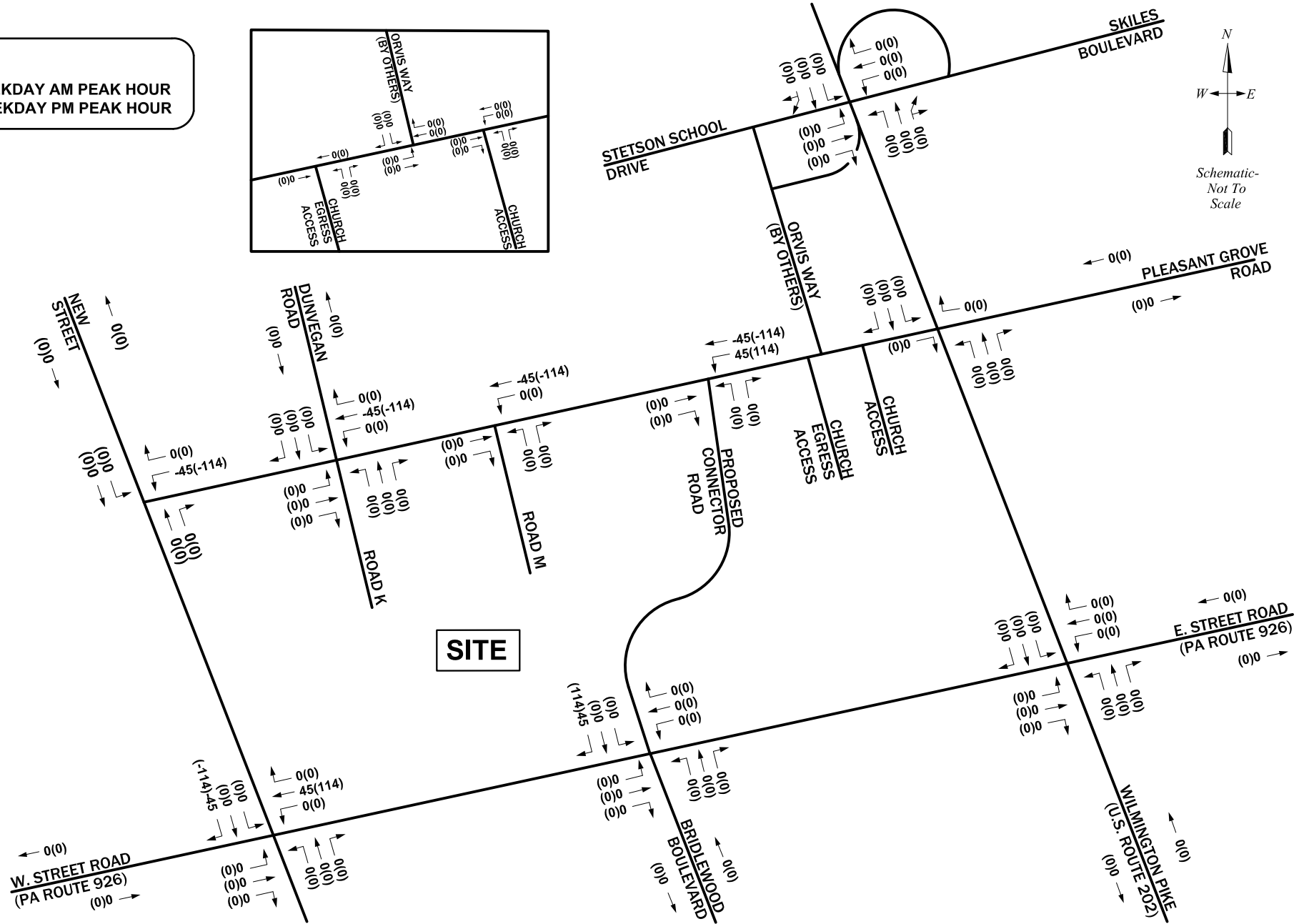
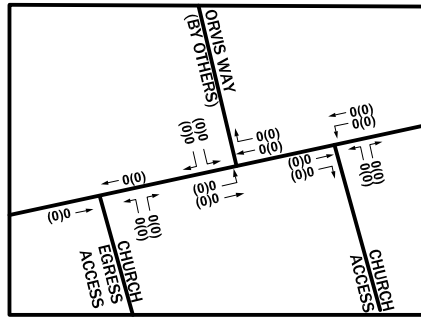


2025 with Development Diversions  
 A - SR 926 EBL to NB US 202  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**

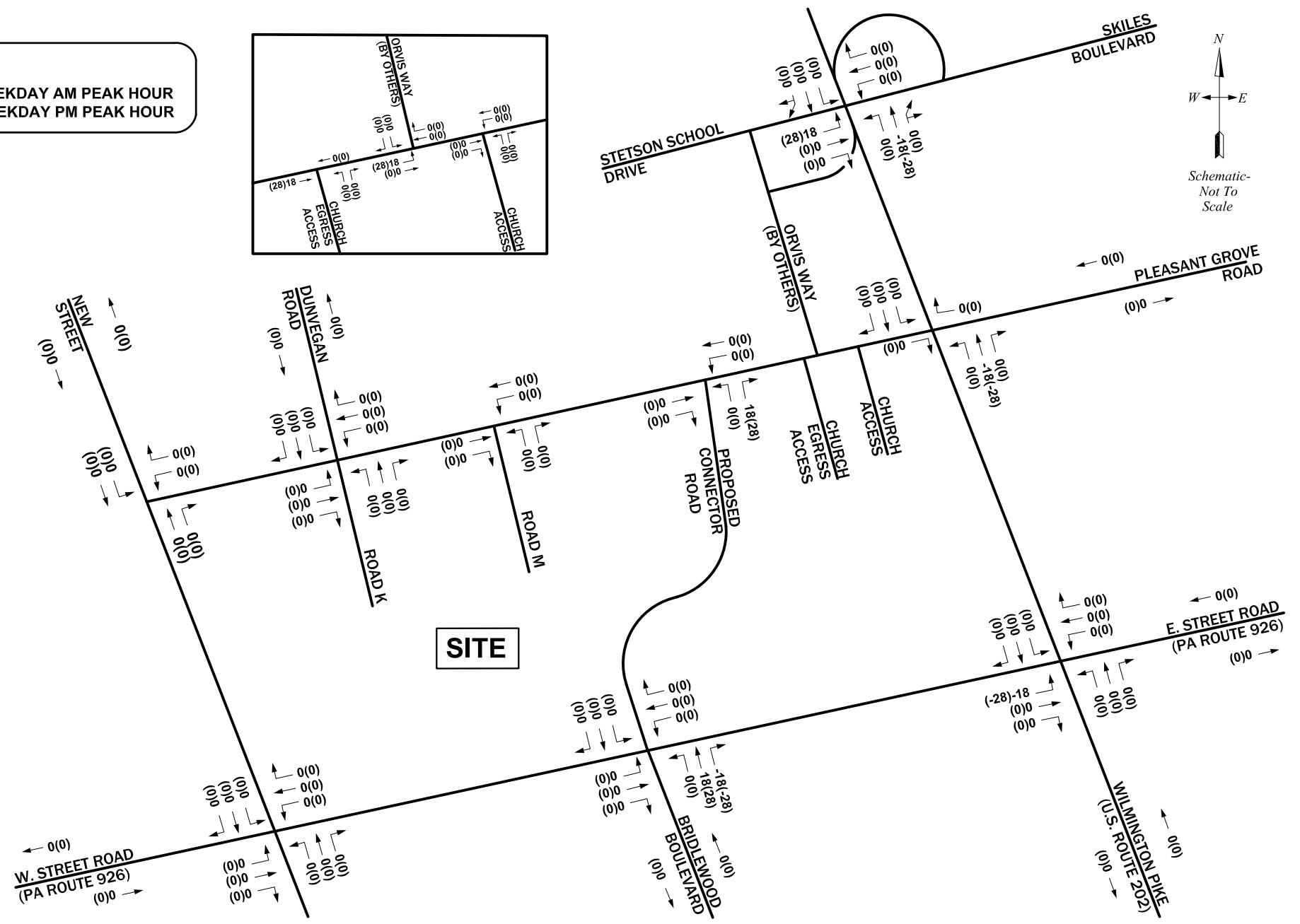
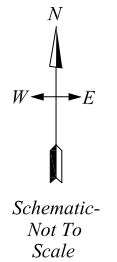
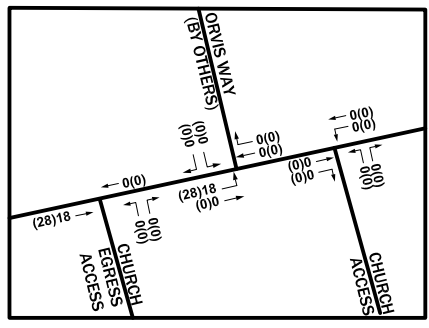
- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



2025 with Development Diversions  
 B - SBR US 202 to W. Pleasant Grove Road / New Street  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR

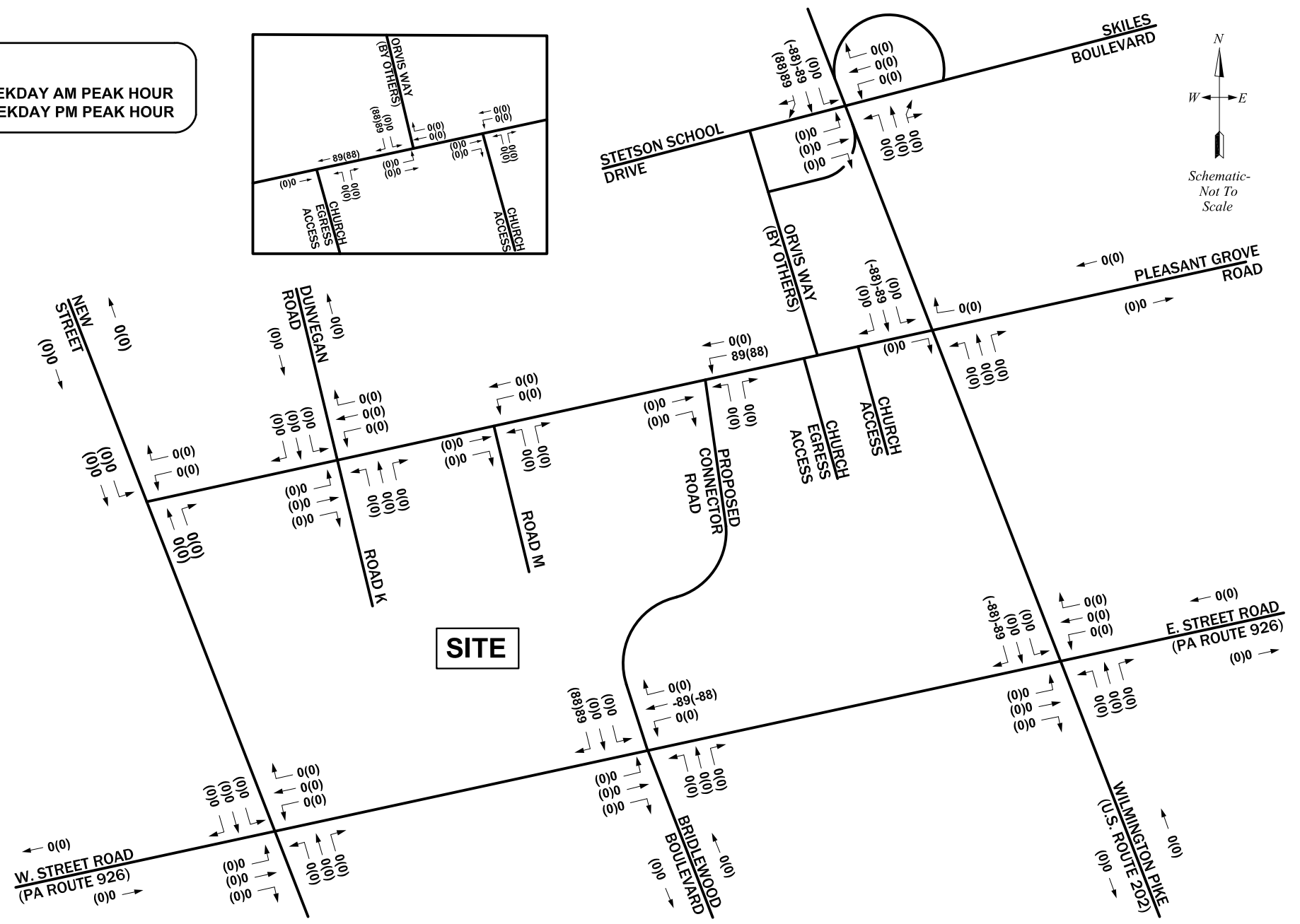
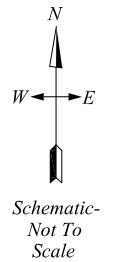
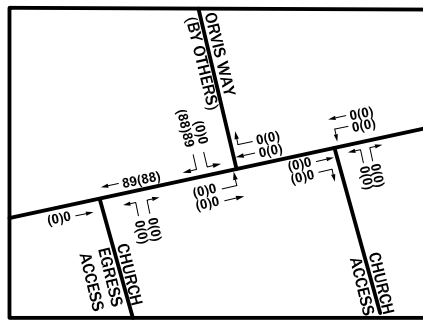


2025 with Development Diversions  
 D - NBR Bridlewood Blvd to US 202 NB  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



(2019-08-08) I:\eng\816451 - Crebilly Farm\dwg\2019-08 Robinson Tract TIS\Figure K4.dwg

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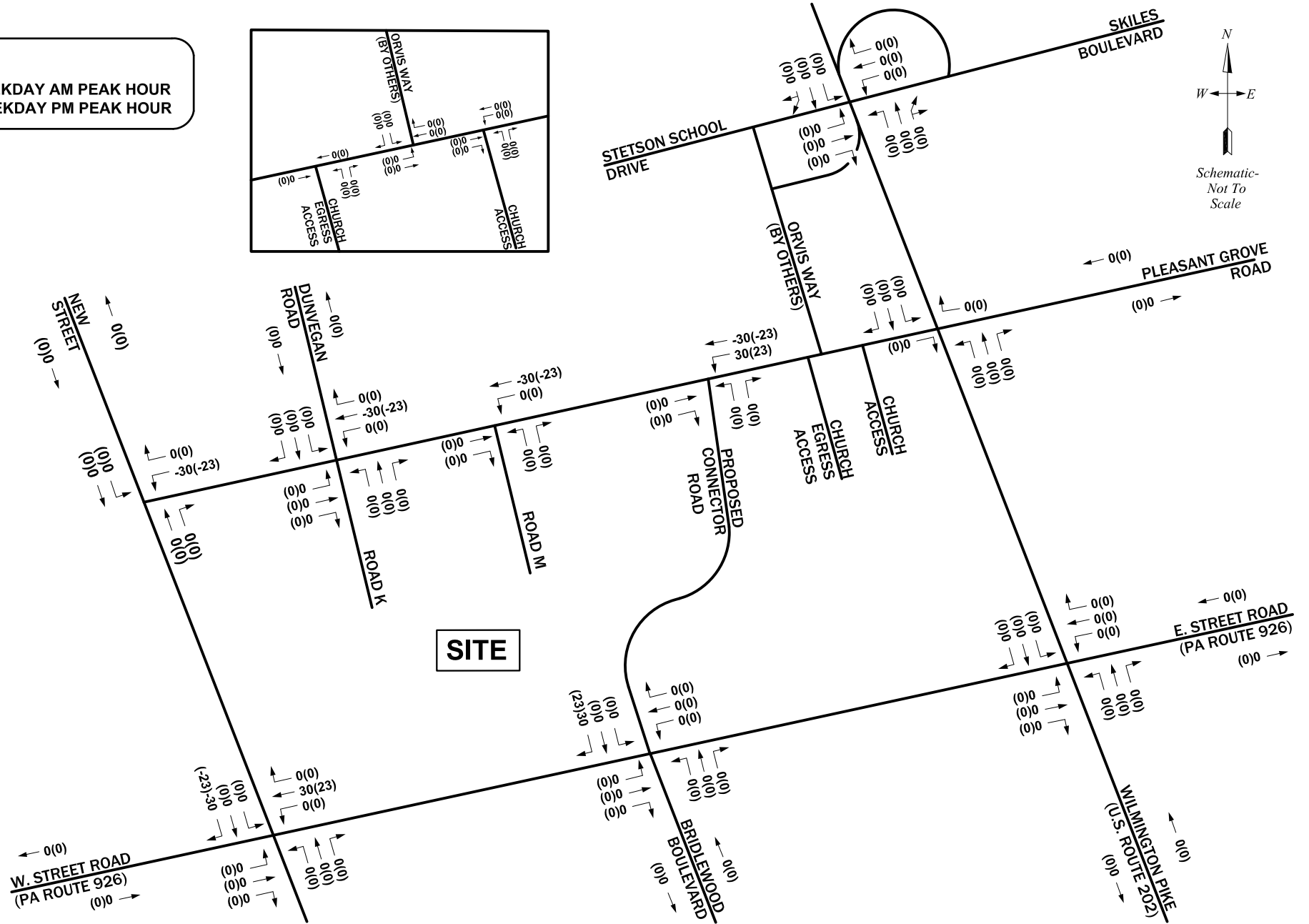
2025 with Development Diversions  
 E - SBR US 202 to WB SR 926  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



(2019-08-08) I:\eng\816451 - Crebilly Farm\dwg\2019-08 Robinson Tract TIS\Figure K5.dwg

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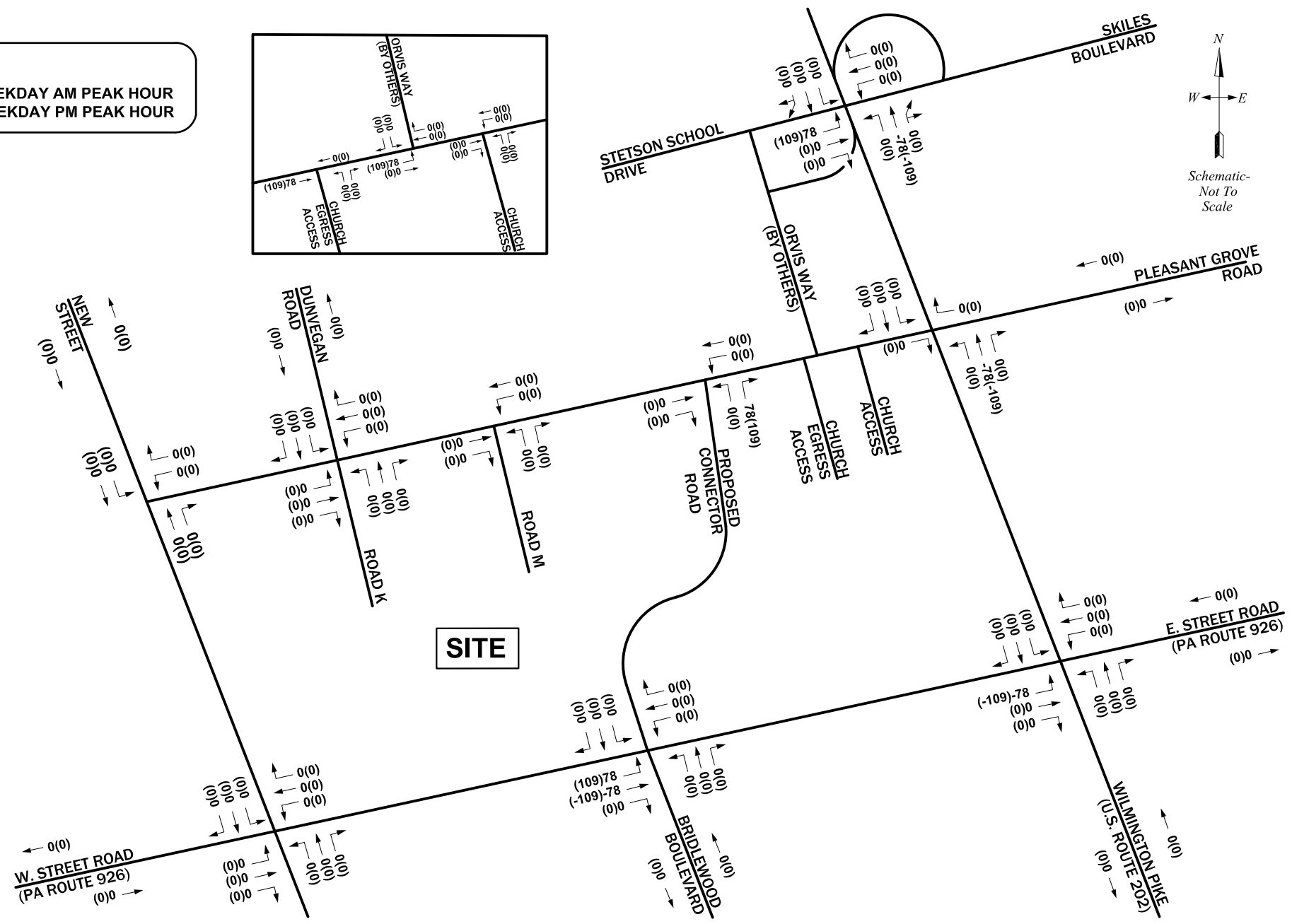
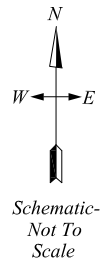
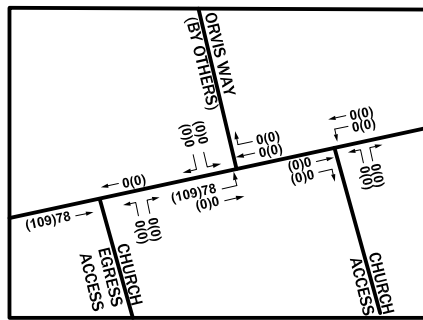
- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



2025 with Development Diversions  
 F - EBR Stetson School Drive to US 202 SB (adapted from Arborview TIS)  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR

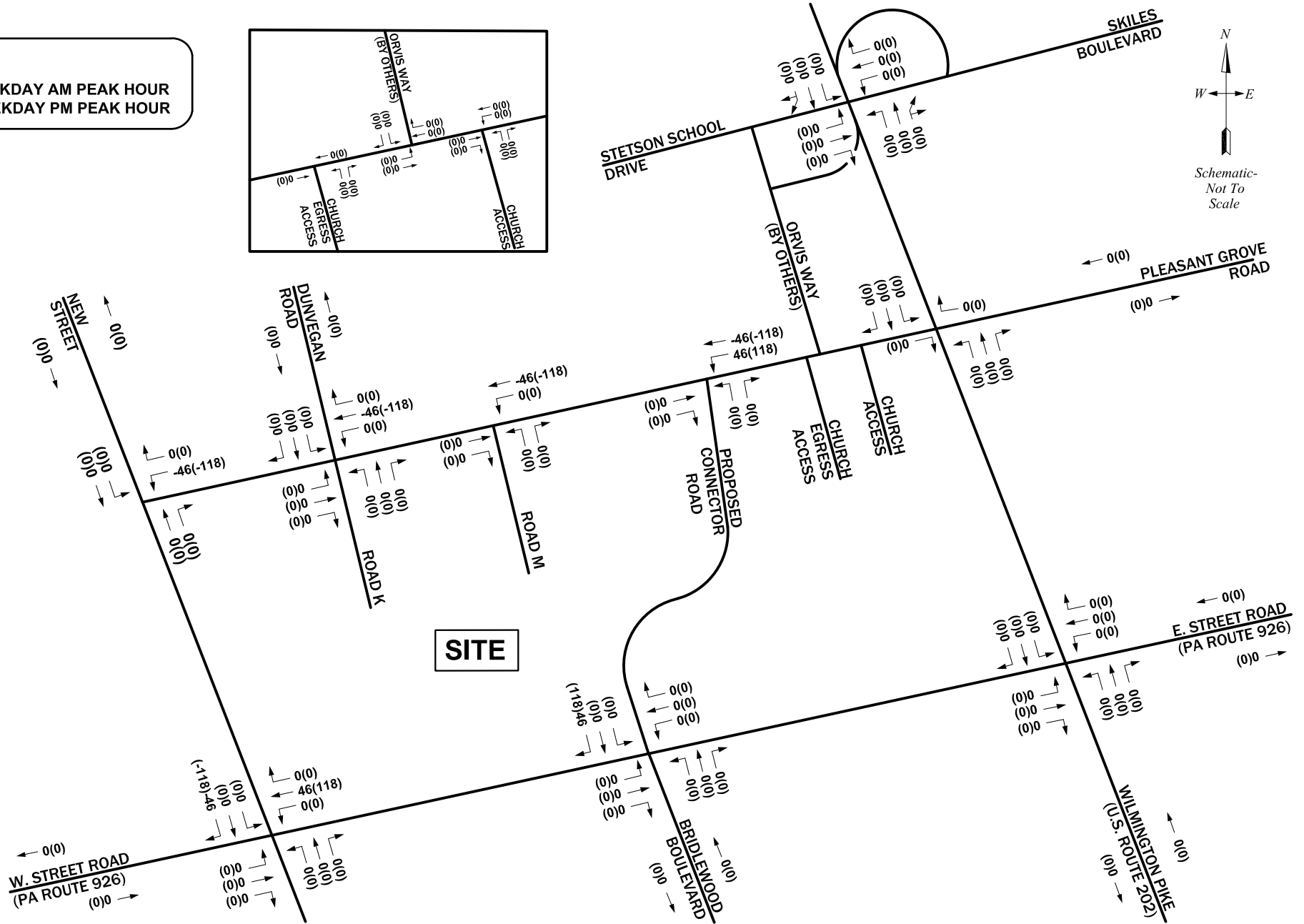
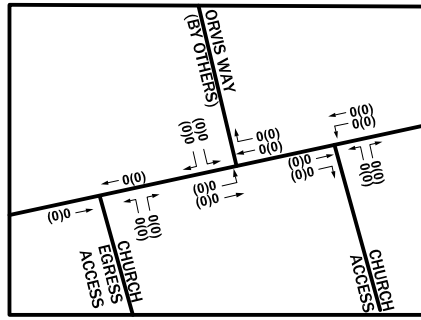


2030 with Development Diversions  
 A - SR 926 EBL to NB US 202  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



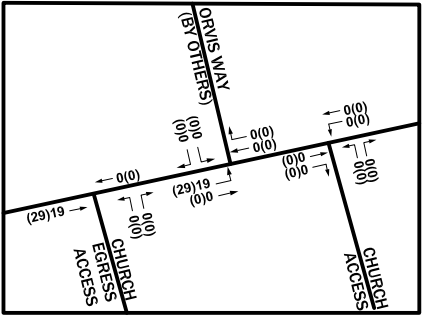
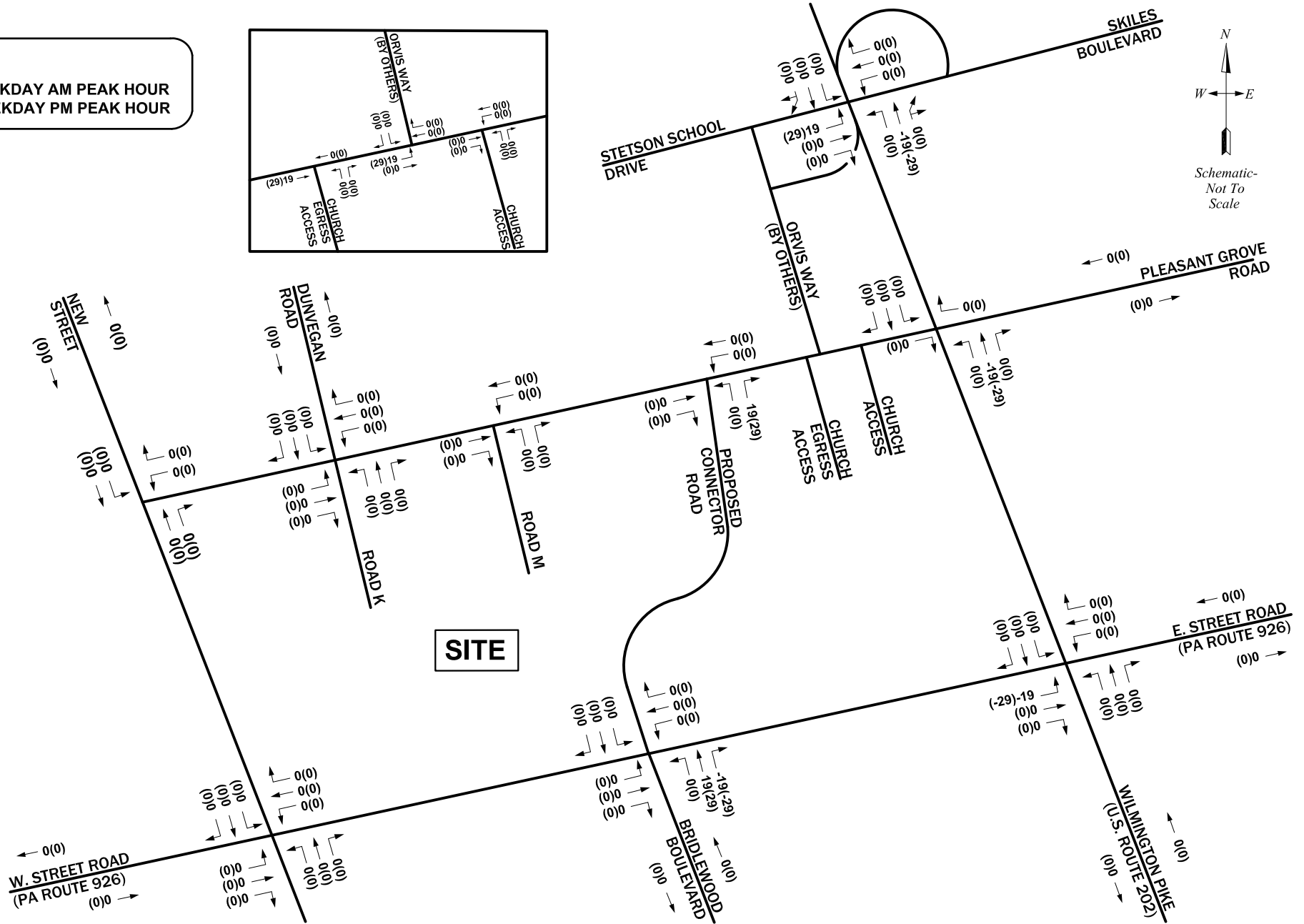
2030 with Development Diversions  
 B - SBR US 202 to W. Pleasant Grove Road / New Street  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA





**LEGEND:**

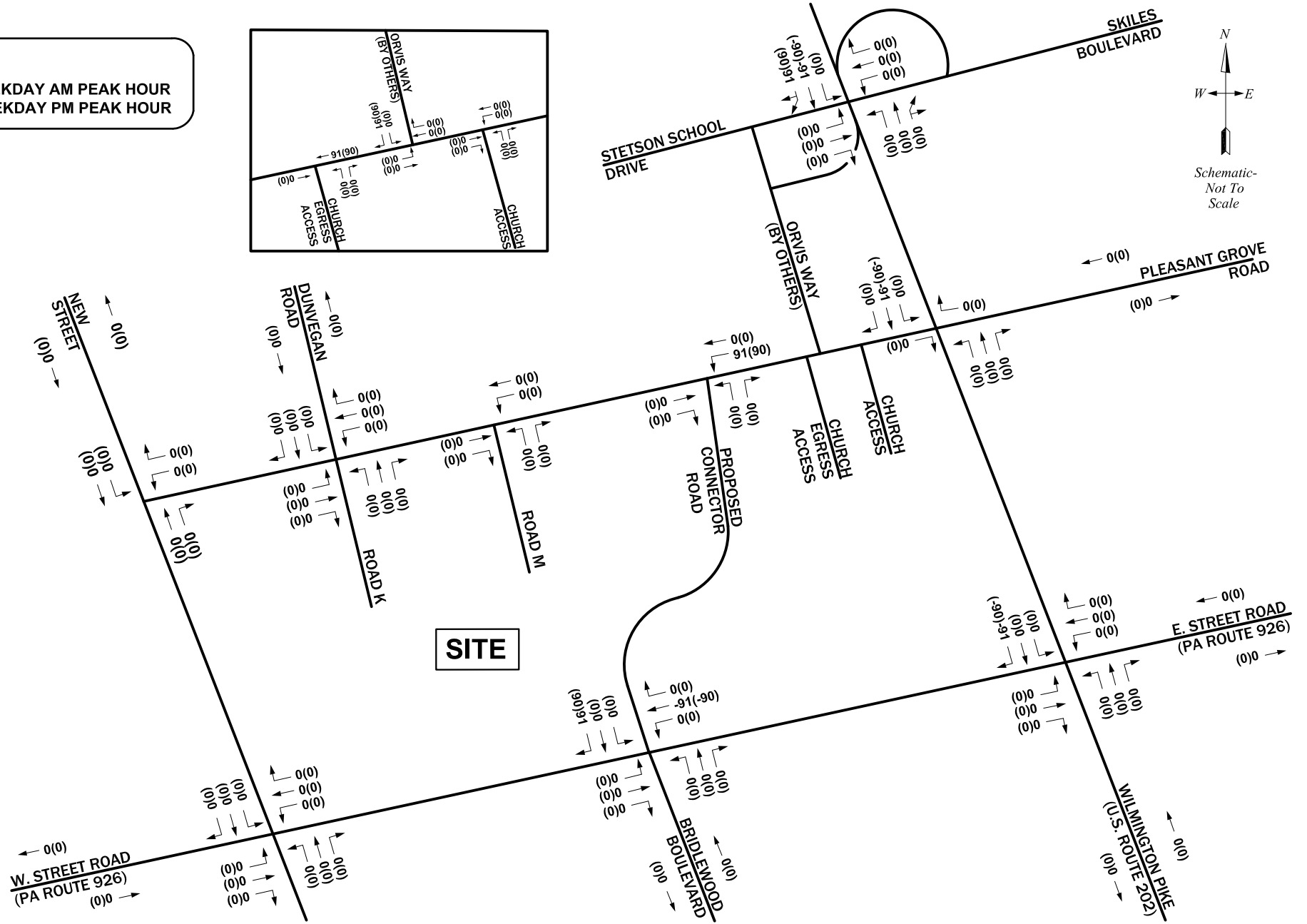
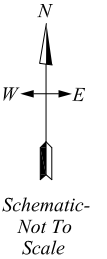
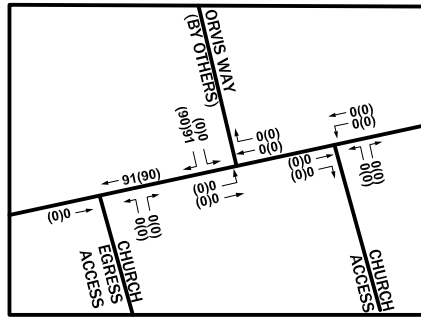
- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



2030 with Development Diversions  
 D - NBR Bridlewood Blvd to US 202 NB  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



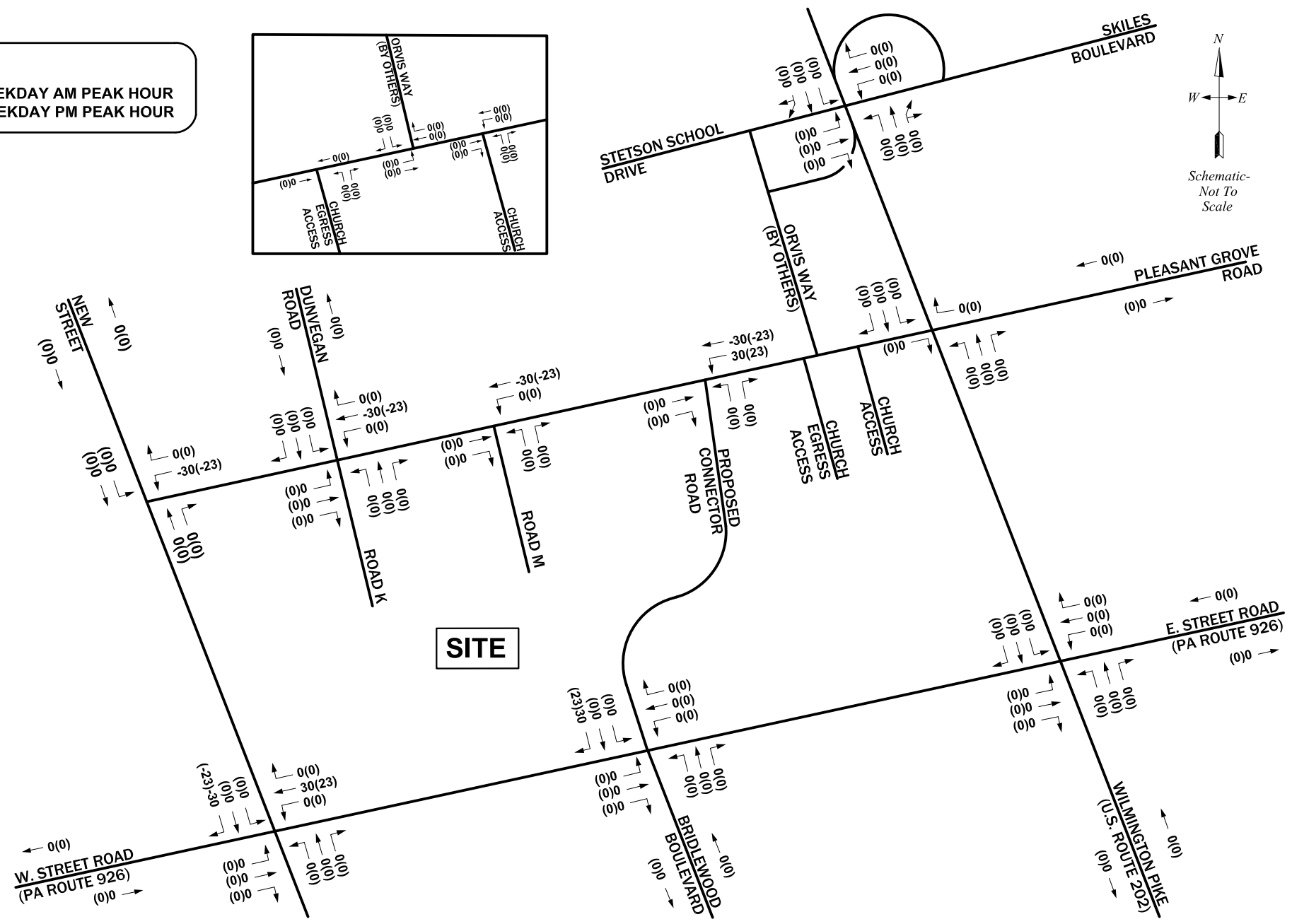
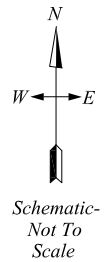
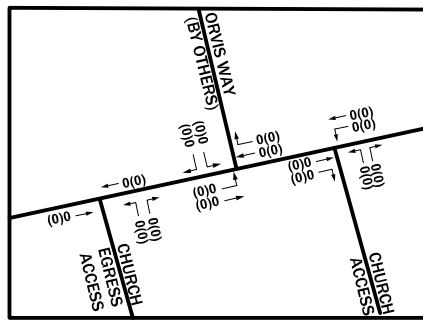
**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR



2030 with Development Diversions  
 E - SBR US 202 to WB SR 926  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



**LEGEND:**  
 10 WEEKDAY AM PEAK HOUR  
 (10) WEEKDAY PM PEAK HOUR

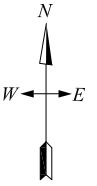
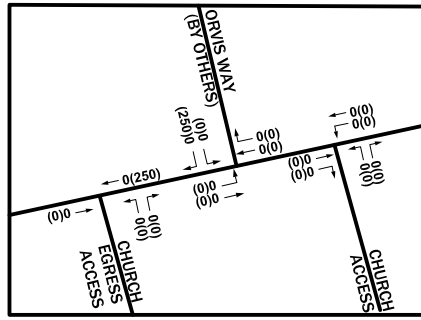


2030 with Development Diversions  
 F - EBR Stetson School Drive to US 202 SB (adapted from Arborview TIS)  
**ROBINSON TRACT**  
**WESTTOWN TOWNSHIP, CHESTER COUNTY, PA**

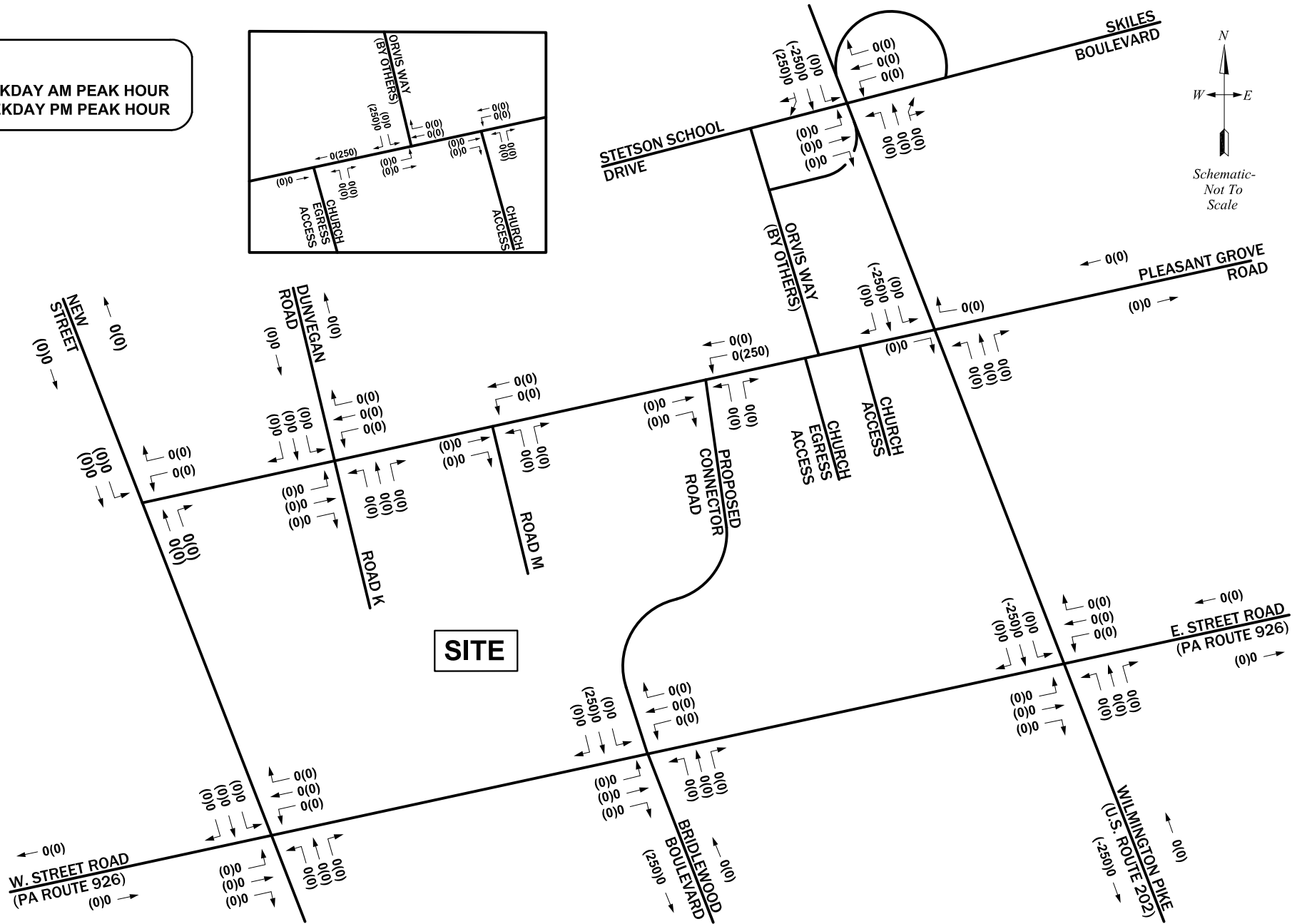


**LEGEND:**

- 10 WEEKDAY AM PEAK HOUR
- (10) WEEKDAY PM PEAK HOUR



Schematic-  
Not To  
Scale



2025 & 2030 with Development Diversions  
 G - US 202 Southbound Through Traffic  
**ROBINSON TRACT**  
 WESTTOWN TOWNSHIP, CHESTER COUNTY, PA



# Appendix L

## Future 2025

# Detailed Traffic Volume Worksheets



## INTERSECTION VOLUME SUMMARY New Street/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND New Street			WESTBOUND Street Road (PA 926)			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	75	689	4	3	80	22	11	324	50	53	243	138
Seasonal Adjustment Factor      1.000	75	689	4	3	80	22	11	324	50	53	243	138
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>75</b>	<b>689</b>	<b>4</b>	<b>3</b>	<b>80</b>	<b>22</b>	<b>11</b>	<b>324</b>	<b>50</b>	<b>53</b>	<b>243</b>	<b>138</b>
Background Growth                      4.78 %	4	33	0	0	4	1	1	15	2	3	12	7
<b>EXISTING W/ BACKGROUND</b>	<b>79</b>	<b>722</b>	<b>4</b>	<b>3</b>	<b>84</b>	<b>23</b>	<b>12</b>	<b>339</b>	<b>52</b>	<b>56</b>	<b>255</b>	<b>145</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>27</b>	<b>-23</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>-15</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>20</b>
Condominium Development	0	1	0	0	0	0	0	1	0	0	0	1
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	2	0	0	0	2	0	0	0	0	0	1	2
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	-25	0	0	0	0	0	-17	0	0	0	17
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>106</b>	<b>699</b>	<b>4</b>	<b>3</b>	<b>86</b>	<b>23</b>	<b>12</b>	<b>324</b>	<b>52</b>	<b>56</b>	<b>256</b>	<b>165</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>-68</b>
Single Family Homes	2	2	0	0	1	1	3	5	0	0	2	5
Carriage Homes	1	1	0	0	0	0	1	2	0	0	1	2
Site Balancing	0	0	0	0	0	0	0	1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	45	0	0	0	-45
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	30	0	0	0	-30
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>109</b>	<b>702</b>	<b>4</b>	<b>3</b>	<b>87</b>	<b>24</b>	<b>16</b>	<b>407</b>	<b>52</b>	<b>56</b>	<b>259</b>	<b>97</b>
"New" Site Traffic % of Total      0.0%	2.8	0.4	0.0	0.0	1.1	4.2	25.0	20.4	0.0	0.0	1.2	-70.1

## INTERSECTION VOLUME SUMMARY New Street/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND New Street			WESTBOUND Street Road (PA 926)			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	32	622	14	10	170	37	24	393	62	61	194	289
Seasonal Adjustment Factor      1.000	32	622	14	10	170	37	24	393	62	61	194	289
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>32</b>	<b>622</b>	<b>14</b>	<b>10</b>	<b>170</b>	<b>37</b>	<b>24</b>	<b>393</b>	<b>62</b>	<b>61</b>	<b>194</b>	<b>289</b>
Background Growth                      4.78 %	2	30	1	0	8	2	1	19	3	3	9	14
<b>EXISTING W/ BACKGROUND</b>	<b>34</b>	<b>652</b>	<b>15</b>	<b>10</b>	<b>178</b>	<b>39</b>	<b>25</b>	<b>412</b>	<b>65</b>	<b>64</b>	<b>203</b>	<b>303</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>23</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>-9</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>13</b>
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	2	0	0	0	1	0	0	0	0	0	2	2
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	-21	0	0	0	0	0	-11	0	0	0	11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>57</b>	<b>634</b>	<b>15</b>	<b>10</b>	<b>179</b>	<b>39</b>	<b>25</b>	<b>403</b>	<b>65</b>	<b>64</b>	<b>205</b>	<b>316</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>141</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>-132</b>
Single Family Homes	6	6	0	0	2	3	2	3	0	0	1	3
Carriage Homes	2	2	0	0	1	1	1	1	0	0	1	1
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	1
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	114	0	0	0	-114
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	23	0	0	0	-23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>65</b>	<b>643</b>	<b>15</b>	<b>10</b>	<b>182</b>	<b>43</b>	<b>28</b>	<b>544</b>	<b>65</b>	<b>64</b>	<b>207</b>	<b>184</b>
"New" Site Traffic % of Total      0.0%	12.3	1.4	0.0	0.0	1.6	9.3	10.7	25.9	0.0	0.0	1.0	-71.7



### INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	754	36	45	0	27	7	347	0	0	0	0
Seasonal Adjustment Factor 1.000	0	754	36	45	0	27	7	347	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>754</b>	<b>36</b>	<b>45</b>	<b>0</b>	<b>27</b>	<b>7</b>	<b>347</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	36	2	2	0	1	0	17	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	<b>0</b>	<b>790</b>	<b>38</b>	<b>47</b>	<b>0</b>	<b>28</b>	<b>7</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>0</b>	<b>-23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Condominium Development	0	1	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-25	0	0	0	0	0	-17	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>767</b>	<b>38</b>	<b>47</b>	<b>0</b>	<b>28</b>	<b>7</b>	<b>349</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>79</b>	<b>-75</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>-18</b>	<b>0</b>	<b>-89</b>	<b>14</b>	<b>46</b>	<b>15</b>	<b>176</b>
Single Family Homes	3	0	0	0	3	0	0	0	10	31	10	8
Carriage Homes	1	0	0	0	1	0	0	0	4	15	5	4
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	75	-75	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	45
Diversion D - NBR Bridlewood to 202	0	0	0	0	18	-18	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	30
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-89	0	0	0	89
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>79</b>	<b>692</b>	<b>38</b>	<b>47</b>	<b>22</b>	<b>10</b>	<b>7</b>	<b>260</b>	<b>14</b>	<b>46</b>	<b>15</b>	<b>176</b>
"New" Site Traffic % of Total ####	100.0	-10.8	0.0	0.0	100.0	-180.0	0.0	-34.2	100.0	100.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	689	36	38	0	41	31	472	0	0	0	0
Seasonal Adjustment Factor      1.000	0	689	36	38	0	41	31	472	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>689</b>	<b>36</b>	<b>38</b>	<b>0</b>	<b>41</b>	<b>31</b>	<b>472</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	33	2	2	0	2	1	23	0	0	0	0
EXISTING W/ BACKGROUND	0	722	38	40	0	43	32	495	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	-18	0	0	0	0	0	-9	0	0	0	0
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-21	0	0	0	0	0	-11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>704</b>	<b>38</b>	<b>40</b>	<b>0</b>	<b>43</b>	<b>32</b>	<b>486</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>119</b>	<b>-106</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>-28</b>	<b>0</b>	<b>-88</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>232</b>
Single Family Homes	9	0	0	0	12	0	0	0	35	20	7	5
Carriage Homes	4	0	0	0	5	0	0	0	14	9	3	2
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	106	-106	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	114
Diversion D - NBR Bridlewood to 202	0	0	0	0	28	-28	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-88	0	0	0	88
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>119</b>	<b>598</b>	<b>38</b>	<b>40</b>	<b>45</b>	<b>15</b>	<b>32</b>	<b>398</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>232</b>
"New" Site Traffic % of Total      #####	100.0	-17.7	0.0	0.0	100.0	-186.7	0.0	-22.1	100.0	100.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	498	242	10	14	1153	130	156	142	28	57	1149	184
Seasonal Adjustment Factor      1.000	498	242	10	14	1153	130	156	142	28	57	1149	184
Balancing Adjustments	0	0	0	0	244	0	0	0	0	0	180	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>498</b>	<b>242</b>	<b>10</b>	<b>14</b>	<b>1397</b>	<b>130</b>	<b>156</b>	<b>142</b>	<b>28</b>	<b>57</b>	<b>1329</b>	<b>184</b>
Background Growth                      4.78 %	24	12	0	1	67	6	7	7	1	3	64	9
<b>EXISTING W/ BACKGROUND</b>	<b>522</b>	<b>254</b>	<b>10</b>	<b>15</b>	<b>1464</b>	<b>136</b>	<b>163</b>	<b>149</b>	<b>29</b>	<b>60</b>	<b>1393</b>	<b>193</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>-23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>6</b>	<b>26</b>	<b>-15</b>
Condominium Development	1	0	0	0	1	0	0	0	0	0	3	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	2	0	6	1
Arborview Development	0	0	0	0	24	0	0	0	8	6	18	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	-1	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-25	0	0	0	0	0	0	0	0	0	0	-17
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>499</b>	<b>254</b>	<b>10</b>	<b>15</b>	<b>1494</b>	<b>136</b>	<b>163</b>	<b>149</b>	<b>39</b>	<b>66</b>	<b>1419</b>	<b>178</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-78</b>	<b>8</b>	<b>23</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>-89</b>
Single Family Homes	10	5	15	7	0	0	0	3	0	5	5	0
Carriage Homes	5	2	7	3	0	0	0	1	0	2	2	0
Site Balancing	0	1	1	0	0	0	0	0	0	1	1	0
Diversion A - EBL 926 to NB 202	-75	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-18	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-89
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>421</b>	<b>262</b>	<b>33</b>	<b>25</b>	<b>1494</b>	<b>136</b>	<b>163</b>	<b>153</b>	<b>39</b>	<b>74</b>	<b>1427</b>	<b>89</b>
"New" Site Traffic % of Total      0.0%	-18.5	3.1	69.7	40.0	0.0	0.0	0.0	2.6	0.0	10.8	0.6	-100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	423	196	26	39	1434	116	164	249	41	98	1300
Seasonal Adjustment Factor      1.000	423	196	26	39	1434	116	164	249	41	98	1300	176
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	151	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>423</b>	<b>196</b>	<b>26</b>	<b>39</b>	<b>1434</b>	<b>116</b>	<b>164</b>	<b>249</b>	<b>41</b>	<b>98</b>	<b>1451</b>	<b>176</b>
Background Growth                      4.78 %	20	9	1	2	69	6	8	12	2	5	69	8
<b>EXISTING W/ BACKGROUND</b>	<b>443</b>	<b>205</b>	<b>27</b>	<b>41</b>	<b>1503</b>	<b>122</b>	<b>172</b>	<b>261</b>	<b>43</b>	<b>103</b>	<b>1520</b>	<b>184</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>34</b>	<b>-9</b>
Condominium Development	2	0	0	0	3	0	0	0	0	0	2	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	1	0	7	1
Arborview Development	0	0	0	0	18	0	0	0	6	8	24	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-21	0	0	0	0	0	0	0	0	0	0	-11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>425</b>	<b>205</b>	<b>27</b>	<b>41</b>	<b>1529</b>	<b>122</b>	<b>172</b>	<b>261</b>	<b>50</b>	<b>111</b>	<b>1554</b>	<b>175</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-124</b>	<b>4</b>	<b>15</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>-88</b>
Single Family Homes	7	3	10	23	0	0	0	12	0	3	3	0
Carriage Homes	3	1	4	10	0	0	0	5	0	1	1	0
Site Balancing	0	0	1	-1	0	0	0	0	0	2	1	0
Diversion A - EBL 926 to NB 202	-106	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-28	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-88
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>301</b>	<b>209</b>	<b>42</b>	<b>73</b>	<b>1529</b>	<b>122</b>	<b>172</b>	<b>278</b>	<b>50</b>	<b>117</b>	<b>1559</b>	<b>87</b>
"New" Site Traffic % of Total      0.0%	-41.2	1.9	35.7	43.8	0.0	0.0	0.0	6.1	0.0	5.1	0.3	-101.1

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	47	12	1879	32	0	0	6	46	1523
Seasonal Adjustment Factor      1.000	0	0	47	12	1879	32	0	0	6	46	1523	132
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>12</b>	<b>1879</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>46</b>	<b>1523</b>	<b>132</b>
Background Growth                      4.78 %	0	0	2	1	90	2	0	0	0	2	73	6
<b>EXISTING W/ BACKGROUND</b>	0	0	49	13	1969	34	0	0	6	48	1596	138
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	15	24	-23	16	0	0	27	15	2	-6
Condominium Development	0	0	0	0	2	0	0	0	0	0	4	1
Malvern School (NEW)	0	0	0	0	0	8	0	0	15	8	7	0
Arborview Development	0	0	15	20	12	0	0	0	0	1	9	6
Malvern School (PB AM)	0	0	0	0	-8	8	0	0	12	6	-1	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	4	-29	0	0	0	0	0	-17	-13
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>64</b>	<b>37</b>	<b>1946</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>63</b>	<b>1598</b>	<b>132</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>-78</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-89</b>	<b>10</b>
Single Family Homes	0	0	10	0	10	0	0	0	0	0	0	7
Carriage Homes	0	0	5	0	5	0	0	0	0	0	0	3
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-75	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-18	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-89	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>80</b>	<b>37</b>	<b>1868</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>63</b>	<b>1509</b>	<b>142</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	20.0	0.0	-4.2	0.0	0.0	0.0	0.0	0.0	-5.9	7.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	7	38	2124	63	0	0	11	105	1832
Seasonal Adjustment Factor      1.000	0	0	7	38	2124	63	0	0	11	105	1832	306
Balancing Adjustments	0	0	0	0	-327	0	0	0	0	0	-114	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>38</b>	<b>1797</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>105</b>	<b>1718</b>	<b>306</b>
Background Growth                      4.78 %	0	0	0	2	86	3	0	0	1	5	82	15
<b>EXISTING W/ BACKGROUND</b>	0	0	7	40	1883	66	0	0	12	110	1800	321
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	20	17	-15	13	0	0	31	16	13	-8
Condominium Development	0	0	0	0	5	0	0	0	0	0	3	0
Malvern School (NEW)	0	0	0	0	0	7	0	0	17	8	8	0
Arborview Development	0	0	20	15	9	0	0	0	0	2	12	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	-6	6	0	0	14	6	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	2	-23	0	0	0	0	0	-11	-12
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>57</b>	<b>1868</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>126</b>	<b>1813</b>	<b>313</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>-124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-88</b>	<b>33</b>
Single Family Homes	0	0	7	0	7	0	0	0	0	0	0	23
Carriage Homes	0	0	3	0	3	0	0	0	0	0	0	10
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-106	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-28	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-88	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>57</b>	<b>1744</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>126</b>	<b>1725</b>	<b>346</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	28.9	0.0	-7.1	0.0	0.0	0.0	0.0	0.0	-5.1	9.5

## INTERSECTION VOLUME SUMMARY Church Full-Movement/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Full-Movement			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Full-Movement		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	47	1	1	0	0	8	136	0	0	0	0
Seasonal Adjustment Factor 1.000	0	47	1	1	0	0	8	136	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>47</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>136</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	2	0	0	0	0	0	6	0	0	0	0
EXISTING W/ BACKGROUND	0	49	1	1	0	0	8	142	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	18	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	15	0	0	0	0	0	26	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	0	0	-9	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>64</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	0	0	0	0	0	7	0	0	0	0
Carriage Homes	0	5	0	0	0	0	0	3	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>80</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>170</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	20.0	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Church Full-Movement/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Full-Movement			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Full-Movement		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	1	0	4	5	339	0	0	0	0
Seasonal Adjustment Factor      1.000	0	3	0	1	0	4	5	339	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>339</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	1	0	4	5	355	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	20	0	0	0	0	0	9	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	20	0	0	0	0	0	19	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	-10	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>364</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	0	0	0	0	0	23	0	0	0	0
Carriage Homes	0	3	0	0	0	0	0	10	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>397</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	32.4	0.0	0.0	0.0	0.0	0.0	8.3	0.0	0.0	0.0	0.0



## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	2	0	0	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	50	0	0	0	0	0	144	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	31	0	0	0	0	0	0	-12	30	15	0	34
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	6	0	0	0	0	0	0	0	26	15	0	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	0	0	0	0	0	0	-13	4	0	0	30
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>31</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>132</b>	<b>30</b>	<b>15</b>	<b>0</b>	<b>34</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>139</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>99</b>
Single Family Homes	31	10	0	0	0	0	0	7	0	0	0	7
Carriage Homes	15	5	0	0	0	0	0	3	0	0	0	3
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	75	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	18	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	89
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>170</b>	<b>66</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>142</b>	<b>30</b>	<b>15</b>	<b>0</b>	<b>133</b>
"New" Site Traffic % of Total      #####	81.8	24.2	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	0.0	74.4

## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	25	0	0	0	0	0	0	-12	21	20	0	29
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	4	0	0	0	0	0	0	0	19	20	0	6
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	0	0	0	0	0	-12	2	0	0	23
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>344</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>29</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>163</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>
Single Family Homes	20	7	0	0	0	0	0	23	0	0	0	23
Carriage Homes	9	3	0	0	0	0	0	10	0	0	0	10
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	106	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	28	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	88
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>188</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>377</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>149</b>
"New" Site Traffic % of Total ####	86.7	78.6	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	80.5

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	2	0	0	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	50	0	0	0	0	0	144	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>166</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>109</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	41	0	0	0	0	0	13	0	0	0	0
Carriage Homes	0	20	0	0	0	0	0	6	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	75	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	18	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	89	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>236</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>275</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	65.7	0.0	0.0	0.0	0.0	0.0	39.6	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>373</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	27	0	0	0	0	0	46	0	0	0	0
Carriage Homes	0	12	0	0	0	0	0	19	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	106	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	28	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	88	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>202</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>526</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	86.1	0.0	0.0	0.0	0.0	0.0	29.1	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	2	0	0	0	0	0	7	0	0	0	0
EXISTING W/ BACKGROUND	0	50	0	0	0	0	0	144	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>166</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>23</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>132</b>	<b>177</b>	<b>-68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	15	1	3	0	26	8	5	0	0	0	0
Carriage Homes	0	7	0	1	0	12	4	2	0	0	0	0
Site Balancing	0	1	0	0	0	1	1	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	75	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	45	-45	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	18	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	30	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	89	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>104</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>132</b>	<b>177</b>	<b>98</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	22.1	100.0	100.0	0.0	100.0	100.0	-69.4	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor      1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>373</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>158</b>	<b>266</b>	<b>-113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	3	2	0	17	29	17	0	0	0	0
Carriage Homes	0	4	1	1	0	7	12	7	0	0	0	0
Site Balancing	0	2	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	106	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	114	-114	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	28	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	23	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	88	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>44</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>158</b>	<b>266</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	36.4	100.0	100.0	0.0	100.0	100.0	-43.5	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road M (Site Access)/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road M (Site Access)			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road M (Site Access)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	17	0	0	0	0	0	113	0	0	0	0
Seasonal Adjustment Factor 1.000	0	17	0	0	0	0	0	113	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	1	0	0	0	0	0	5	0	0	0	0
EXISTING W/ BACKGROUND	0	18	0	0	0	0	0	118	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>4</b>	<b>-68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	0	1	0	9	3	5	0	0	0	0
Carriage Homes	0	3	0	0	0	4	1	2	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-45	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>59</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>4</b>	<b>72</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	16.9	0.0	100.0	0.0	100.0	100.0	-94.4	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road M (Site Access)/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road M (Site Access)			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road M (Site Access)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	20	0	0	0	0	0	310	0	0	0	0
Seasonal Adjustment Factor      1.000	0	20	0	0	0	0	0	310	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>310</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      4.78 %	0	1	0	0	0	0	0	15	0	0	0	0
EXISTING W/ BACKGROUND	0	21	0	0	0	0	0	325	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>46</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>342</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>14</b>	<b>-124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	1	1	0	6	10	9	0	0	0	0
Carriage Homes	0	3	0	0	0	3	4	4	0	0	0	0
Site Balancing	0	1	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-114	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>57</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>14</b>	<b>218</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	19.3	100.0	100.0	0.0	100.0	100.0	-56.9	0.0	0.0	0.0	0.0



## INTERSECTION VOLUME SUMMARY Road K (Site Access) / Dunvegan/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road K (Site Access) / Dunvegan			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road K (Site Access) / Dunvegan		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	17	0	0	0	0	0	110	3	5	0	2
Seasonal Adjustment Factor      1.000	0	17	0	0	0	0	0	110	3	5	0	2
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>110</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
Background Growth                      4.78 %	0	1	0	0	0	0	0	5	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	<b>0</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>115</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>0</b>	<b>31</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>-70</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	1	3	8	0	6	2	4	0	0	0	0
Carriage Homes	0	1	1	4	0	3	1	2	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	-1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-45	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>51</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>67</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
"New" Site Traffic % of Total      #####	0.0	3.9	100.0	100.0	0.0	100.0	100.0	-104.5	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road K (Site Access) / Dunvegan/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road K (Site Access) / Dunvegan			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road K (Site Access) / Dunvegan		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	3	19	0	0	0	0	0	299	11	1	0	2
Seasonal Adjustment Factor 1.000	3	19	0	0	0	0	0	299	11	1	0	2
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>3</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>299</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>2</b>
Background Growth 4.78 %	0	1	0	0	0	0	0	14	1	0	0	0
<b>EXISTING W/ BACKGROUND</b>	<b>3</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>313</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/OUT PROJECT</b>	<b>3</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>330</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>7</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>10</b>	<b>-133</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	5	9	5	0	4	7	3	0	0	0	0
Carriage Homes	0	2	4	2	0	2	3	1	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-114	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>3</b>	<b>52</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>10</b>	<b>197</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
"New" Site Traffic % of Total ####	0.0	13.5	100.0	100.0	0.0	100.0	100.0	-67.5	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY New Street/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND New Street			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	124	3	87	0	25	14	119	0
Seasonal Adjustment Factor      1.000	0	0	0	0	124	3	87	0	25	14	119	0
Balancing Adjustments	0	0	0	0	78	0	0	0	0	0	228	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>202</b>	<b>3</b>	<b>87</b>	<b>0</b>	<b>25</b>	<b>14</b>	<b>347</b>	<b>0</b>
Background Growth                      4.78 %	0	0	0	0	10	0	4	0	1	1	17	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	212	3	91	0	26	15	364	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	29	21	0	1	2	0	0
Condominium Development	0	0	0	0	0	0	1	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	0	0	0	0	4	3	0	1	2	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	25	17	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/OUT PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>212</b>	<b>32</b>	<b>112</b>	<b>0</b>	<b>27</b>	<b>17</b>	<b>364</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>-65</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	0	0	0	0	2	7	0	5	2	0	0
Carriage Homes	0	0	0	0	0	1	3	0	2	1	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	-45	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	-30	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>212</b>	<b>35</b>	<b>47</b>	<b>0</b>	<b>34</b>	<b>20</b>	<b>364</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	0.0	8.6	-138.3	0.0	20.6	15.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY New Street/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND New Street			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	92	10	109	0	42	12	165	0
Seasonal Adjustment Factor      1.000	0	0	0	0	92	10	109	0	42	12	165	0
Balancing Adjustments	0	0	0	0	162	0	150	0	0	0	120	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>10</b>	<b>259</b>	<b>0</b>	<b>42</b>	<b>12</b>	<b>285</b>	<b>0</b>
Background Growth                      4.78 %	0	0	0	0	12	0	12	0	2	1	14	0
EXISTING W/ BACKGROUND	0	0	0	0	266	10	271	0	44	13	299	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	24	15	0	2	1	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	0	0	0	0	3	4	0	2	1	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	21	11	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>266</b>	<b>34</b>	<b>286</b>	<b>0</b>	<b>46</b>	<b>14</b>	<b>299</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>-130</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	0	0	0	0	8	5	0	3	6	0	0
Carriage Homes	0	0	0	0	0	3	2	0	1	2	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	1	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	-114	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	-23	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>266</b>	<b>45</b>	<b>156</b>	<b>0</b>	<b>50</b>	<b>23</b>	<b>299</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	0.0	24.4	-83.3	0.0	8.0	39.1	0.0	0.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	111	168	47	0	1552	45	37	170	75	0	1527
Seasonal Adjustment Factor 1.000	111	168	47	0	1552	45	37	170	75	0	1527	365
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>111</b>	<b>168</b>	<b>47</b>	<b>0</b>	<b>1552</b>	<b>45</b>	<b>37</b>	<b>170</b>	<b>75</b>	<b>0</b>	<b>1527</b>	<b>365</b>
Background Growth 4.78 %	5	8	2	0	74	2	2	8	4	0	73	17
<b>EXISTING W/ BACKGROUND</b>	<b>116</b>	<b>176</b>	<b>49</b>	<b>0</b>	<b>1626</b>	<b>47</b>	<b>39</b>	<b>178</b>	<b>79</b>	<b>0</b>	<b>1600</b>	<b>382</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>54</b>	<b>4</b>	<b>-20</b>	<b>0</b>	<b>-22</b>	<b>28</b>	<b>34</b>	<b>-4</b>	<b>5</b>	<b>0</b>	<b>14</b>	<b>33</b>
Condominium Development	0	2	0	0	0	2	5	0	5	0	0	2
Malvern School (NEW)	0	0	0	0	8	7	7	0	0	0	8	0
Arborview Development	29	2	10	0	0	14	17	0	0	0	6	31
Malvern School (PB AM)	0	0	0	0	-1	5	5	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	0	-30	0	-29	0	0	-4	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>170</b>	<b>180</b>	<b>29</b>	<b>0</b>	<b>1604</b>	<b>75</b>	<b>73</b>	<b>174</b>	<b>84</b>	<b>0</b>	<b>1614</b>	<b>415</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>139</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-78</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-79</b>	<b>99</b>
Single Family Homes	31	0	0	0	10	0	0	0	0	0	7	7
Carriage Homes	15	0	0	0	5	0	0	0	0	0	3	3
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	75	0	0	0	-75	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	18	0	0	0	-18	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-89	89
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>309</b>	<b>180</b>	<b>29</b>	<b>0</b>	<b>1526</b>	<b>75</b>	<b>73</b>	<b>174</b>	<b>84</b>	<b>0</b>	<b>1535</b>	<b>514</b>
"New" Site Traffic % of Total 0.0%	45.0	0.0	0.0	0.0	-5.1	0.0	0.0	0.0	0.0	0.0	-5.1	19.3

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2025 S Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	104	142	26	0	1671	37	51	86	64	0	1796	204
Seasonal Adjustment Factor 1.000	104	142	26	0	1671	37	51	86	64	0	1796	204
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>104</b>	<b>142</b>	<b>26</b>	<b>0</b>	<b>1671</b>	<b>37</b>	<b>51</b>	<b>86</b>	<b>64</b>	<b>0</b>	<b>1796</b>	<b>204</b>
Background Growth 4.78 %	5	7	1	0	80	2	2	4	3	0	86	10
<b>EXISTING W/ BACKGROUND</b>	<b>109</b>	<b>149</b>	<b>27</b>	<b>0</b>	<b>1751</b>	<b>39</b>	<b>53</b>	<b>90</b>	<b>67</b>	<b>0</b>	<b>1882</b>	<b>214</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>59</b>	<b>9</b>	<b>-9</b>	<b>0</b>	<b>-13</b>	<b>30</b>	<b>31</b>	<b>-2</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>30</b>
Condominium Development	0	6	0	0	0	5	3	0	4	0	0	6
Malvern School (NEW)	0	0	0	0	9	8	8	0	0	0	8	0
Arborview Development	38	3	14	0	0	10	13	0	0	0	4	24
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	1	7	7	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	-23	0	-23	0	0	-2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>168</b>	<b>158</b>	<b>18</b>	<b>0</b>	<b>1738</b>	<b>69</b>	<b>84</b>	<b>88</b>	<b>71</b>	<b>0</b>	<b>1894</b>	<b>244</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>163</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-55</b>	<b>120</b>
Single Family Homes	20	0	0	0	7	0	0	0	0	0	23	23
Carriage Homes	9	0	0	0	3	0	0	0	0	0	10	10
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	106	0	0	0	-106	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	28	0	0	0	-28	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-88	88
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>331</b>	<b>158</b>	<b>18</b>	<b>0</b>	<b>1614</b>	<b>69</b>	<b>84</b>	<b>88</b>	<b>71</b>	<b>0</b>	<b>1839</b>	<b>364</b>
"New" Site Traffic % of Total 0.0%	49.2	0.0	0.0	0.0	-7.7	0.0	0.0	0.0	0.0	0.0	-3.0	33.0

*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*

## INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	689	36	38	0	41	31	472	0	0	0	0
Seasonal Adjustment Factor 1.000	0	689	36	38	0	41	31	472	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>689</b>	<b>36</b>	<b>38</b>	<b>0</b>	<b>41</b>	<b>31</b>	<b>472</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	33	2	2	0	2	1	23	0	0	0	0
EXISTING W/ BACKGROUND	0	722	38	40	0	43	32	495	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	-18	0	0	0	0	0	-9	0	0	0	0
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-21	0	0	0	0	0	-11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>704</b>	<b>38</b>	<b>40</b>	<b>0</b>	<b>43</b>	<b>32</b>	<b>486</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>119</b>	<b>-106</b>	<b>0</b>	<b>0</b>	<b>45</b>	<b>-28</b>	<b>0</b>	<b>-88</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>232</b>
Single Family Homes	9	0	0	0	12	0	0	0	35	20	7	5
Carriage Homes	4	0	0	0	5	0	0	0	14	9	3	2
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	106	-106	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	114
Diversion D - NBR Bridlewood to 202	0	0	0	0	28	-28	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-88	0	0	0	88
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>119</b>	<b>598</b>	<b>38</b>	<b>40</b>	<b>45</b>	<b>15</b>	<b>32</b>	<b>398</b>	<b>49</b>	<b>29</b>	<b>260</b>	<b>232</b>
"New" Site Traffic % of Total ####	100.0	-17.7	0.0	0.0	100.0	-186.7	0.0	-22.1	100.0	100.0	3.8	100.0



## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	423	196	26	39	1434	116	164	249	41	98	1300
Seasonal Adjustment Factor      1.000	423	196	26	39	1434	116	164	249	41	98	1300	176
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	151	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>423</b>	<b>196</b>	<b>26</b>	<b>39</b>	<b>1434</b>	<b>116</b>	<b>164</b>	<b>249</b>	<b>41</b>	<b>98</b>	<b>1451</b>	<b>176</b>
Background Growth                      4.78 %	20	9	1	2	69	6	8	12	2	5	69	8
<b>EXISTING W/ BACKGROUND</b>	<b>443</b>	<b>205</b>	<b>27</b>	<b>41</b>	<b>1503</b>	<b>122</b>	<b>172</b>	<b>261</b>	<b>43</b>	<b>103</b>	<b>1520</b>	<b>184</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>34</b>	<b>-9</b>
Condominium Development	2	0	0	0	3	0	0	0	0	0	2	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	1	0	7	1
Arborview Development	0	0	0	0	18	0	0	0	6	8	24	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-21	0	0	0	0	0	0	0	0	0	0	-11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>425</b>	<b>205</b>	<b>27</b>	<b>41</b>	<b>1529</b>	<b>122</b>	<b>172</b>	<b>261</b>	<b>50</b>	<b>111</b>	<b>1554</b>	<b>175</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-124</b>	<b>4</b>	<b>15</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>-88</b>
Single Family Homes	7	3	10	23	0	0	0	12	0	3	3	0
Carriage Homes	3	1	4	10	0	0	0	5	0	1	1	0
Site Balancing	0	0	1	-1	0	0	0	0	0	2	1	0
Diversion A - EBL 926 to NB 202	-106	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-28	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-88
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>301</b>	<b>209</b>	<b>42</b>	<b>73</b>	<b>1529</b>	<b>122</b>	<b>172</b>	<b>278</b>	<b>50</b>	<b>117</b>	<b>1309</b>	<b>87</b>
"New" Site Traffic % of Total      0.0%	-41.2	1.9	35.7	43.8	0.0	0.0	0.0	6.1	0.0	5.1	0.4	-101.1

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	7	38	2124	63	0	0	11	105	1832
Seasonal Adjustment Factor      1.000	0	0	7	38	2124	63	0	0	11	105	1832	306
Balancing Adjustments	0	0	0	0	-327	0	0	0	0	0	-114	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>38</b>	<b>1797</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>105</b>	<b>1718</b>	<b>306</b>
Background Growth                      4.78 %	0	0	0	2	86	3	0	0	1	5	82	15
<b>EXISTING W/ BACKGROUND</b>	0	0	7	40	1883	66	0	0	12	110	1800	321
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	20	17	-15	13	0	0	31	16	13	-8
Condominium Development	0	0	0	0	5	0	0	0	0	0	3	0
Malvern School (NEW)	0	0	0	0	0	7	0	0	17	8	8	0
Arborview Development	0	0	20	15	9	0	0	0	0	2	12	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	-6	6	0	0	14	6	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	2	-23	0	0	0	0	0	-11	-12
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>57</b>	<b>1868</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>126</b>	<b>1813</b>	<b>313</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>-124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-88</b>	<b>33</b>
Single Family Homes	0	0	7	0	7	0	0	0	0	0	0	23
Carriage Homes	0	0	3	0	3	0	0	0	0	0	0	10
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-106	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-28	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-88	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>57</b>	<b>1744</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>126</b>	<b>1475</b>	<b>346</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	28.9	0.0	-7.1	0.0	0.0	0.0	0.0	0.0	-6.0	9.5

## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	25	0	0	0	0	0	0	-12	21	20	0	29
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	4	0	0	0	0	0	0	0	19	20	0	6
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	0	0	0	0	0	-12	2	0	0	23
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>344</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>29</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>163</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>120</b>
Single Family Homes	20	7	0	0	0	0	0	23	0	0	0	23
Carriage Homes	9	3	0	0	0	0	0	10	0	0	0	10
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	106	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	28	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	88
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	0	250
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>188</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>377</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>399</b>
"New" Site Traffic % of Total ####	86.7	78.6	0.0	0.0	0.0	0.0	0.0	8.8	0.0	0.0	0.0	30.1

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>373</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>153</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	27	0	0	0	0	0	46	0	0	0	0
Carriage Homes	0	12	0	0	0	0	0	19	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	106	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	28	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	88	0	0	0	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	250	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>202</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>776</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	86.1	0.0	0.0	0.0	0.0	0.0	19.7	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 4.78 %	0	0	0	0	0	0	0	16	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	356	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>373</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>158</b>	<b>266</b>	<b>-113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	3	2	0	17	29	17	0	0	0	0
Carriage Homes	0	4	1	1	0	7	12	7	0	0	0	0
Site Balancing	0	2	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	106	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	114	-114	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	28	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	23	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	88	0	0	0	0	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	250	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>44</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>158</b>	<b>516</b>	<b>260</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	36.4	100.0	100.0	0.0	100.0	51.6	-43.5	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2025 SE Weekday 4-6 PM  
Build-Out Year (2025)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	104	142	26	0	1671	37	51	86	64	0	1796	204
Seasonal Adjustment Factor 1.000	104	142	26	0	1671	37	51	86	64	0	1796	204
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>104</b>	<b>142</b>	<b>26</b>	<b>0</b>	<b>1671</b>	<b>37</b>	<b>51</b>	<b>86</b>	<b>64</b>	<b>0</b>	<b>1796</b>	<b>204</b>
Background Growth 4.78 %	5	7	1	0	80	2	2	4	3	0	86	10
EXISTING W/ BACKGROUND	109	149	27	0	1751	39	53	90	67	0	1882	214
TOTAL "OTHER" DEVELOPMENTS	59	9	-9	0	-13	30	31	-2	4	0	12	30
Condominium Development	0	6	0	0	0	5	3	0	4	0	0	6
Malvern School (NEW)	0	0	0	0	9	8	8	0	0	0	8	0
Arborview Development	38	3	14	0	0	10	13	0	0	0	4	24
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	1	7	7	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	-23	0	-23	0	0	-2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>168</b>	<b>158</b>	<b>18</b>	<b>0</b>	<b>1738</b>	<b>69</b>	<b>84</b>	<b>88</b>	<b>71</b>	<b>0</b>	<b>1894</b>	<b>244</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>163</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-124</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-55</b>	<b>120</b>
Single Family Homes	20	0	0	0	7	0	0	0	0	0	23	23
Carriage Homes	9	0	0	0	3	0	0	0	0	0	10	10
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	106	0	0	0	-106	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	28	0	0	0	-28	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-88	88
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	250
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>331</b>	<b>158</b>	<b>18</b>	<b>0</b>	<b>1614</b>	<b>69</b>	<b>84</b>	<b>88</b>	<b>71</b>	<b>0</b>	<b>1589</b>	<b>614</b>
"New" Site Traffic % of Total 0.0%	49.2	0.0	0.0	0.0	-7.7	0.0	0.0	0.0	0.0	0.0	-3.5	19.5

# Appendix M

## Future 2030

# Detailed Traffic Volume Worksheets





## INTERSECTION VOLUME SUMMARY New Street/Street Road (PA 926)

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND New Street			WESTBOUND Street Road (PA 926)			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	75	689	4	3	80	22	11	324	50	53	243	138
Seasonal Adjustment Factor      1.000	75	689	4	3	80	22	11	324	50	53	243	138
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>75</b>	<b>689</b>	<b>4</b>	<b>3</b>	<b>80</b>	<b>22</b>	<b>11</b>	<b>324</b>	<b>50</b>	<b>53</b>	<b>243</b>	<b>138</b>
Background Growth                      7.53 %	6	52	0	0	6	2	1	24	4	4	18	10
EXISTING W/ BACKGROUND	81	741	4	3	86	24	12	348	54	57	261	148
TOTAL "OTHER" DEVELOPMENTS	27	-23	0	0	2	0	0	-15	0	0	1	20
Condominium Development	0	1	0	0	0	0	0	1	0	0	0	1
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	2	0	0	0	2	0	0	0	0	0	1	2
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	-25	0	0	0	0	0	-17	0	0	0	17
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>108</b>	<b>718</b>	<b>4</b>	<b>3</b>	<b>88</b>	<b>24</b>	<b>12</b>	<b>333</b>	<b>54</b>	<b>57</b>	<b>262</b>	<b>168</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>3</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>84</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>-69</b>
Single Family Homes	2	2	0	0	1	1	3	5	0	0	2	5
Carriage Homes	1	1	0	0	0	0	1	2	0	0	1	2
Site Balancing	0	0	0	0	0	0	0	1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	46	0	0	0	-46
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	30	0	0	0	-30
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>111</b>	<b>721</b>	<b>4</b>	<b>3</b>	<b>89</b>	<b>25</b>	<b>16</b>	<b>417</b>	<b>54</b>	<b>57</b>	<b>265</b>	<b>99</b>
"New" Site Traffic % of Total      0.0%	2.7	0.4	0.0	0.0	1.1	4.0	25.0	20.1	0.0	0.0	1.1	-69.7

## INTERSECTION VOLUME SUMMARY New Street/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND New Street			WESTBOUND Street Road (PA 926)			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	32	622	14	10	170	37	24	393	62	61	194	289
Seasonal Adjustment Factor      1.000	32	622	14	10	170	37	24	393	62	61	194	289
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>32</b>	<b>622</b>	<b>14</b>	<b>10</b>	<b>170</b>	<b>37</b>	<b>24</b>	<b>393</b>	<b>62</b>	<b>61</b>	<b>194</b>	<b>289</b>
Background Growth                      7.53 %	2	47	1	1	13	3	2	30	5	5	15	22
<b>EXISTING W/ BACKGROUND</b>	<b>34</b>	<b>669</b>	<b>15</b>	<b>11</b>	<b>183</b>	<b>40</b>	<b>26</b>	<b>423</b>	<b>67</b>	<b>66</b>	<b>209</b>	<b>311</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>23</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>-9</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>13</b>
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	2	0	0	0	1	0	0	0	0	0	2	2
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	-21	0	0	0	0	0	-11	0	0	0	11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>57</b>	<b>651</b>	<b>15</b>	<b>11</b>	<b>184</b>	<b>40</b>	<b>26</b>	<b>414</b>	<b>67</b>	<b>66</b>	<b>211</b>	<b>324</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>8</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>145</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>-136</b>
Single Family Homes	6	6	0	0	2	3	2	3	0	0	1	3
Carriage Homes	2	2	0	0	1	1	1	1	0	0	1	1
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	1
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	118	0	0	0	-118
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	23	0	0	0	-23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>65</b>	<b>660</b>	<b>15</b>	<b>11</b>	<b>187</b>	<b>44</b>	<b>29</b>	<b>559</b>	<b>67</b>	<b>66</b>	<b>213</b>	<b>188</b>
"New" Site Traffic % of Total      0.0%	12.3	1.4	0.0	0.0	1.6	9.1	10.3	25.9	0.0	0.0	0.9	-72.3

## INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	754	36	45	0	27	7	347	0	0	0	0
Seasonal Adjustment Factor 1.000	0	754	36	45	0	27	7	347	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>754</b>	<b>36</b>	<b>45</b>	<b>0</b>	<b>27</b>	<b>7</b>	<b>347</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	57	3	3	0	2	1	26	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	<b>0</b>	<b>811</b>	<b>39</b>	<b>48</b>	<b>0</b>	<b>29</b>	<b>8</b>	<b>373</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>0</b>	<b>-23</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-15</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Condominium Development	0	1	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-25	0	0	0	0	0	-17	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>788</b>	<b>39</b>	<b>48</b>	<b>0</b>	<b>29</b>	<b>8</b>	<b>358</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>82</b>	<b>-78</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>-19</b>	<b>0</b>	<b>-91</b>	<b>14</b>	<b>46</b>	<b>15</b>	<b>179</b>
Single Family Homes	3	0	0	0	3	0	0	0	10	31	10	8
Carriage Homes	1	0	0	0	1	0	0	0	4	15	5	4
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	78	-78	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	46
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	-19	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	30
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-91	0	0	0	91
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>82</b>	<b>710</b>	<b>39</b>	<b>48</b>	<b>23</b>	<b>10</b>	<b>8</b>	<b>267</b>	<b>14</b>	<b>46</b>	<b>15</b>	<b>179</b>
"New" Site Traffic % of Total ####	100.0	-11.0	0.0	0.0	100.0	-190.0	0.0	-34.1	100.0	100.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	689	36	38	0	41	31	472	0	0	0	0
Seasonal Adjustment Factor 1.000	0	689	36	38	0	41	31	472	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>689</b>	<b>36</b>	<b>38</b>	<b>0</b>	<b>41</b>	<b>31</b>	<b>472</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	52	3	3	0	3	2	36	0	0	0	0
EXISTING W/ BACKGROUND	0	741	39	41	0	44	33	508	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	-18	0	0	0	0	0	-9	0	0	0	0
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-21	0	0	0	0	0	-11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>723</b>	<b>39</b>	<b>41</b>	<b>0</b>	<b>44</b>	<b>33</b>	<b>499</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>122</b>	<b>-109</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>-29</b>	<b>0</b>	<b>-90</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>238</b>
Single Family Homes	9	0	0	0	12	0	0	0	35	20	7	5
Carriage Homes	4	0	0	0	5	0	0	0	14	9	3	2
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	109	-109	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	118
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	-29	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-90	0	0	0	90
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>122</b>	<b>614</b>	<b>39</b>	<b>41</b>	<b>46</b>	<b>15</b>	<b>33</b>	<b>409</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>238</b>
"New" Site Traffic % of Total ####	100.0	-17.8	0.0	0.0	100.0	-193.3	0.0	-22.0	100.0	100.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	498	242	10	14	1153	130	156	142	28	57	1149	184
Seasonal Adjustment Factor      1.000	498	242	10	14	1153	130	156	142	28	57	1149	184
Balancing Adjustments	0	0	0	0	244	0	0	0	0	0	180	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>498</b>	<b>242</b>	<b>10</b>	<b>14</b>	<b>1397</b>	<b>130</b>	<b>156</b>	<b>142</b>	<b>28</b>	<b>57</b>	<b>1329</b>	<b>184</b>
Background Growth                      7.53 %	38	18	1	1	105	10	12	11	2	4	100	14
EXISTING W/ BACKGROUND	536	260	11	15	1502	140	168	153	30	61	1429	198
TOTAL "OTHER" DEVELOPMENTS	-23	0	0	0	30	0	0	0	10	6	26	-15
Condominium Development	1	0	0	0	1	0	0	0	0	0	3	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	2	0	6	1
Arborview Development	0	0	0	0	24	0	0	0	8	6	18	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	-1	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-25	0	0	0	0	0	0	0	0	0	0	-17
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>513</b>	<b>260</b>	<b>11</b>	<b>15</b>	<b>1532</b>	<b>140</b>	<b>168</b>	<b>153</b>	<b>40</b>	<b>67</b>	<b>1455</b>	<b>183</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-82</b>	<b>8</b>	<b>23</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>-91</b>
Single Family Homes	10	5	15	7	0	0	0	3	0	5	5	0
Carriage Homes	5	2	7	3	0	0	0	1	0	2	2	0
Site Balancing	0	1	1	0	0	0	0	0	0	1	1	0
Diversion A - EBL 926 to NB 202	-78	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-19	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-91
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>431</b>	<b>268</b>	<b>34</b>	<b>25</b>	<b>1532</b>	<b>140</b>	<b>168</b>	<b>157</b>	<b>40</b>	<b>75</b>	<b>1463</b>	<b>92</b>
"New" Site Traffic % of Total      0.0%	-19.0	3.0	67.6	40.0	0.0	0.0	0.0	2.5	0.0	10.7	0.5	-98.9

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	423	196	26	39	1434	116	164	249	41	98	1300
Seasonal Adjustment Factor      1.000	423	196	26	39	1434	116	164	249	41	98	1300	176
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	151	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>423</b>	<b>196</b>	<b>26</b>	<b>39</b>	<b>1434</b>	<b>116</b>	<b>164</b>	<b>249</b>	<b>41</b>	<b>98</b>	<b>1451</b>	<b>176</b>
Background Growth                      7.53 %	32	15	2	3	108	9	12	19	3	7	109	13
<b>EXISTING W/ BACKGROUND</b>	<b>455</b>	<b>211</b>	<b>28</b>	<b>42</b>	<b>1542</b>	<b>125</b>	<b>176</b>	<b>268</b>	<b>44</b>	<b>105</b>	<b>1560</b>	<b>189</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>34</b>	<b>-9</b>
Condominium Development	2	0	0	0	3	0	0	0	0	0	2	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	1	0	7	1
Arborview Development	0	0	0	0	18	0	0	0	6	8	24	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-21	0	0	0	0	0	0	0	0	0	0	-11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>437</b>	<b>211</b>	<b>28</b>	<b>42</b>	<b>1568</b>	<b>125</b>	<b>176</b>	<b>268</b>	<b>51</b>	<b>113</b>	<b>1594</b>	<b>180</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-128</b>	<b>4</b>	<b>15</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>-90</b>
Single Family Homes	7	3	10	23	0	0	0	12	0	3	3	0
Carriage Homes	3	1	4	10	0	0	0	5	0	1	1	0
Site Balancing	0	0	1	-1	0	0	0	0	0	2	1	0
Diversion A - EBL 926 to NB 202	-109	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-29	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-90
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>309</b>	<b>215</b>	<b>43</b>	<b>74</b>	<b>1568</b>	<b>125</b>	<b>176</b>	<b>285</b>	<b>51</b>	<b>119</b>	<b>1599</b>	<b>90</b>
"New" Site Traffic % of Total      0.0%	-41.4	1.9	34.9	43.2	0.0	0.0	0.0	6.0	0.0	5.0	0.3	-100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM)  
 Design Year (2030)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	47	12	1879	32	0	0	6	46	1523
Seasonal Adjustment Factor      1.000	0	0	47	12	1879	32	0	0	6	46	1523	132
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>47</b>	<b>12</b>	<b>1879</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>46</b>	<b>1523</b>	<b>132</b>
Background Growth                      7.53 %	0	0	4	1	142	2	0	0	0	3	115	10
<b>EXISTING W/ BACKGROUND</b>	0	0	51	13	2021	34	0	0	6	49	1638	142
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	15	24	-23	16	0	0	27	15	2	-6
Condominium Development	0	0	0	0	2	0	0	0	0	0	4	1
Malvern School (NEW)	0	0	0	0	0	8	0	0	15	8	7	0
Arborview Development	0	0	15	20	12	0	0	0	0	1	9	6
Malvern School (PB AM)	0	0	0	0	-8	8	0	0	12	6	-1	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	4	-29	0	0	0	0	0	-17	-13
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>66</b>	<b>37</b>	<b>1998</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>64</b>	<b>1640</b>	<b>136</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>-82</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-91</b>	<b>10</b>
Single Family Homes	0	0	10	0	10	0	0	0	0	0	0	7
Carriage Homes	0	0	5	0	5	0	0	0	0	0	0	3
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>82</b>	<b>37</b>	<b>1916</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>64</b>	<b>1549</b>	<b>146</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	19.5	0.0	-4.3	0.0	0.0	0.0	0.0	0.0	-5.9	6.8

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	7	38	2124	63	0	0	11	105	1832
Seasonal Adjustment Factor      1.000	0	0	7	38	2124	63	0	0	11	105	1832	306
Balancing Adjustments	0	0	0	0	-327	0	0	0	0	0	-114	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>38</b>	<b>1797</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>105</b>	<b>1718</b>	<b>306</b>
Background Growth                      7.53 %	0	0	1	3	135	5	0	0	1	8	129	23
<b>EXISTING W/ BACKGROUND</b>	0	0	8	41	1932	68	0	0	12	113	1847	329
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	20	17	-15	13	0	0	31	16	13	-8
Condominium Development	0	0	0	0	5	0	0	0	0	0	3	0
Malvern School (NEW)	0	0	0	0	0	7	0	0	17	8	8	0
Arborview Development	0	0	20	15	9	0	0	0	0	2	12	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	-6	6	0	0	14	6	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	2	-23	0	0	0	0	0	-11	-12
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>58</b>	<b>1917</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>129</b>	<b>1860</b>	<b>321</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>-128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-90</b>	<b>33</b>
Single Family Homes	0	0	7	0	7	0	0	0	0	0	0	23
Carriage Homes	0	0	3	0	3	0	0	0	0	0	0	10
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>58</b>	<b>1789</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>129</b>	<b>1770</b>	<b>354</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	28.2	0.0	-7.2	0.0	0.0	0.0	0.0	0.0	-5.1	9.3



## INTERSECTION VOLUME SUMMARY Church Full-Movement/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Full-Movement			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Full-Movement		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	47	1	1	0	0	8	136	0	0	0	0
Seasonal Adjustment Factor 1.000	0	47	1	1	0	0	8	136	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>47</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>136</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	4	0	0	0	0	1	10	0	0	0	0
EXISTING W/ BACKGROUND	0	51	1	1	0	0	9	146	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	15	0	0	0	0	0	18	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	15	0	0	0	0	0	26	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	0	0	-9	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>66</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>164</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	0	0	0	0	0	7	0	0	0	0
Carriage Homes	0	5	0	0	0	0	0	3	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>82</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>174</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	19.5	0.0	0.0	0.0	0.0	0.0	5.7	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Church Full-Movement/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Full-Movement			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Full-Movement		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	1	0	4	5	339	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	1	0	4	5	339	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>339</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	1	0	4	5	365	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	20	0	0	0	0	0	9	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	20	0	0	0	0	0	19	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	0	0	-10	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>23</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>374</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	0	0	0	0	0	23	0	0	0	0
Carriage Homes	0	3	0	0	0	0	0	10	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>34</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>407</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	32.4	0.0	0.0	0.0	0.0	0.0	8.1	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      7.53 %	0	4	0	0	0	0	0	10	0	0	0	0
EXISTING W/ BACKGROUND	0	52	0	0	0	0	0	147	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	31	0	0	0	0	0	0	-12	30	15	0	34
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	6	0	0	0	0	0	0	0	26	15	0	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	0	0	0	0	0	0	-13	4	0	0	30
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>31</b>	<b>52</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>135</b>	<b>30</b>	<b>15</b>	<b>0</b>	<b>34</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>143</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>101</b>
Single Family Homes	31	10	0	0	0	0	0	7	0	0	0	7
Carriage Homes	15	5	0	0	0	0	0	3	0	0	0	3
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	78	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	19	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	91
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>174</b>	<b>68</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>145</b>	<b>30</b>	<b>15</b>	<b>0</b>	<b>135</b>
"New" Site Traffic % of Total      #####	82.2	23.5	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	74.8

## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	25	0	0	0	0	0	0	-12	21	20	0	29
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	4	0	0	0	0	0	0	0	19	20	0	6
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	0	0	0	0	0	-12	2	0	0	23
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>354</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>29</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>167</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>122</b>
Single Family Homes	20	7	0	0	0	0	0	23	0	0	0	23
Carriage Homes	9	3	0	0	0	0	0	10	0	0	0	10
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	109	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	29	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	90
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>192</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>387</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>151</b>
"New" Site Traffic % of Total ####	87.0	78.6	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	80.8

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      7.53 %	0	4	0	0	0	0	0	10	0	0	0	0
EXISTING W/ BACKGROUND	0	52	0	0	0	0	0	147	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>169</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>159</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>111</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	41	0	0	0	0	0	13	0	0	0	0
Carriage Homes	0	20	0	0	0	0	0	6	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	78	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	19	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	91	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>242</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>280</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	65.7	0.0	0.0	0.0	0.0	0.0	39.6	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>178</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	27	0	0	0	0	0	46	0	0	0	0
Carriage Homes	0	12	0	0	0	0	0	19	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	109	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	29	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	90	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>206</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>538</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	86.4	0.0	0.0	0.0	0.0	0.0	28.8	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	48	0	0	0	0	0	137	0	0	0	0
Seasonal Adjustment Factor      1.000	0	48	0	0	0	0	0	137	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      7.53 %	0	4	0	0	0	0	0	10	0	0	0	0
EXISTING W/ BACKGROUND	0	52	0	0	0	0	0	147	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>83</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>169</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>23</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>136</b>	<b>180</b>	<b>-69</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	15	1	3	0	26	8	5	0	0	0	0
Carriage Homes	0	7	0	1	0	12	4	2	0	0	0	0
Site Balancing	0	1	0	0	0	1	1	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	78	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	46	-46	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	19	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	30	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	91	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>106</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>136</b>	<b>180</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	21.7	100.0	100.0	0.0	100.0	100.0	-69.0	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>162</b>	<b>272</b>	<b>-117</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	3	2	0	17	29	17	0	0	0	0
Carriage Homes	0	4	1	1	0	7	12	7	0	0	0	0
Site Balancing	0	2	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	109	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	118	-118	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	29	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	23	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	90	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>44</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>162</b>	<b>272</b>	<b>266</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	36.4	100.0	100.0	0.0	100.0	100.0	-44.0	0.0	0.0	0.0	0.0



## INTERSECTION VOLUME SUMMARY Road M (Site Access)/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road M (Site Access)			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road M (Site Access)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	17	0	0	0	0	0	113	0	0	0	0
Seasonal Adjustment Factor      1.000	0	17	0	0	0	0	0	113	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      7.53 %	0	1	0	0	0	0	0	9	0	0	0	0
EXISTING W/ BACKGROUND	0	18	0	0	0	0	0	122	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>144</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>4</b>	<b>-69</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	0	1	0	9	3	5	0	0	0	0
Carriage Homes	0	3	0	0	0	4	1	2	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-46	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>59</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>13</b>	<b>4</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	16.9	0.0	100.0	0.0	100.0	100.0	-92.0	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road M (Site Access)/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road M (Site Access)			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road M (Site Access)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	20	0	0	0	0	0	310	0	0	0	0
Seasonal Adjustment Factor      1.000	0	20	0	0	0	0	0	310	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>310</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      7.53 %	0	2	0	0	0	0	0	23	0	0	0	0
EXISTING W/ BACKGROUND	0	22	0	0	0	0	0	333	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>350</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>11</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>14</b>	<b>-128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	7	1	1	0	6	10	9	0	0	0	0
Carriage Homes	0	3	0	0	0	3	4	4	0	0	0	0
Site Balancing	0	1	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-118	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>58</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>14</b>	<b>222</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	19.0	100.0	100.0	0.0	100.0	100.0	-57.7	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road K (Site Access) / Dunvegan/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road K (Site Access) / Dunvegan			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road K (Site Access) / Dunvegan		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	17	0	0	0	0	0	110	3	5	0	2
Seasonal Adjustment Factor 1.000	0	17	0	0	0	0	0	110	3	5	0	2
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>110</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
Background Growth 7.53 %	0	1	0	0	0	0	0	8	0	0	0	0
EXISTING W/ BACKGROUND	0	18	0	0	0	0	0	118	3	5	0	2
TOTAL "OTHER" DEVELOPMENTS	0	31	0	0	0	0	0	22	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	6	0	0	0	0	0	4	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	25	0	0	0	0	0	17	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>140</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>-71</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	1	3	8	0	6	2	4	0	0	0	0
Carriage Homes	0	1	1	4	0	3	1	2	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	-1	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-46	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-30	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>51</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>9</b>	<b>3</b>	<b>69</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>2</b>
"New" Site Traffic % of Total ####	0.0	3.9	100.0	100.0	0.0	100.0	100.0	-102.9	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Road K (Site Access) / Dunvegan/W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Road K (Site Access) / Dunvegan			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Road K (Site Access) / Dunvegan		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	3	19	0	0	0	0	0	299	11	1	0	2
Seasonal Adjustment Factor 1.000	3	19	0	0	0	0	0	299	11	1	0	2
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>3</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>299</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>2</b>
Background Growth 7.53 %	0	1	0	0	0	0	0	23	1	0	0	0
<b>EXISTING W/ BACKGROUND</b>	<b>3</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>322</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>0</b>	<b>25</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/OUT PROJECT</b>	<b>3</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>339</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>7</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>10</b>	<b>-137</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	5	9	5	0	4	7	3	0	0	0	0
Carriage Homes	0	2	4	2	0	2	3	1	0	0	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	-118	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>3</b>	<b>52</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>6</b>	<b>10</b>	<b>202</b>	<b>12</b>	<b>1</b>	<b>0</b>	<b>2</b>
"New" Site Traffic % of Total ####	0.0	13.5	100.0	100.0	0.0	100.0	100.0	-67.8	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY New Street/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND New Street			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	124	3	87	0	25	14	119	0
Seasonal Adjustment Factor      1.000	0	0	0	0	124	3	87	0	25	14	119	0
Balancing Adjustments	0	0	0	0	78	0	0	0	0	0	228	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>202</b>	<b>3</b>	<b>87</b>	<b>0</b>	<b>25</b>	<b>14</b>	<b>347</b>	<b>0</b>
Background Growth                      7.53 %	0	0	0	0	15	0	7	0	2	1	26	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	217	3	94	0	27	15	373	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	29	21	0	1	2	0	0
Condominium Development	0	0	0	0	0	0	1	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	0	0	0	0	4	3	0	1	2	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	25	17	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/OUT PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>32</b>	<b>115</b>	<b>0</b>	<b>28</b>	<b>17</b>	<b>373</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>-66</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	0	0	0	0	2	7	0	5	2	0	0
Carriage Homes	0	0	0	0	0	1	3	0	2	1	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	-46	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	-30	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>217</b>	<b>35</b>	<b>49</b>	<b>0</b>	<b>35</b>	<b>20</b>	<b>373</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	0.0	8.6	-134.7	0.0	20.0	15.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY New Street/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND New Street			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND New Street		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	92	10	109	0	42	12	165	0
Seasonal Adjustment Factor 1.000	0	0	0	0	92	10	109	0	42	12	165	0
Balancing Adjustments	0	0	0	0	162	0	150	0	0	0	120	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>254</b>	<b>10</b>	<b>259</b>	<b>0</b>	<b>42</b>	<b>12</b>	<b>285</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	19	1	20	0	3	1	21	0
EXISTING W/ BACKGROUND	0	0	0	0	273	11	279	0	45	13	306	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	24	15	0	2	1	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	0	0	0	0	3	4	0	2	1	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	0	0	21	11	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>273</b>	<b>35</b>	<b>294</b>	<b>0</b>	<b>47</b>	<b>14</b>	<b>306</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>-134</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	0	0	0	0	8	5	0	3	6	0	0
Carriage Homes	0	0	0	0	0	3	2	0	1	2	0	0
Site Balancing	0	0	0	0	0	0	0	0	0	1	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	-118	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	-23	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>273</b>	<b>46</b>	<b>160</b>	<b>0</b>	<b>51</b>	<b>23</b>	<b>306</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	0.0	0.0	0.0	0.0	23.9	-83.8	0.0	7.8	39.1	0.0	0.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	111	168	47	0	1552	45	37	170	75	0	1527	365
Seasonal Adjustment Factor 1.000	111	168	47	0	1552	45	37	170	75	0	1527	365
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>111</b>	<b>168</b>	<b>47</b>	<b>0</b>	<b>1552</b>	<b>45</b>	<b>37</b>	<b>170</b>	<b>75</b>	<b>0</b>	<b>1527</b>	<b>365</b>
Background Growth 7.53 %	8	13	4	0	117	3	3	13	6	0	115	27
<b>EXISTING W/ BACKGROUND</b>	<b>119</b>	<b>181</b>	<b>51</b>	<b>0</b>	<b>1669</b>	<b>48</b>	<b>40</b>	<b>183</b>	<b>81</b>	<b>0</b>	<b>1642</b>	<b>392</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>54</b>	<b>4</b>	<b>-20</b>	<b>0</b>	<b>-22</b>	<b>28</b>	<b>34</b>	<b>-4</b>	<b>5</b>	<b>0</b>	<b>14</b>	<b>33</b>
Condominium Development	0	2	0	0	0	2	5	0	5	0	0	2
Malvern School (NEW)	0	0	0	0	8	7	7	0	0	0	8	0
Arborview Development	29	2	10	0	0	14	17	0	0	0	6	31
Malvern School (PB AM)	0	0	0	0	-1	5	5	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	25	0	-30	0	-29	0	0	-4	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>173</b>	<b>185</b>	<b>31</b>	<b>0</b>	<b>1647</b>	<b>76</b>	<b>74</b>	<b>179</b>	<b>86</b>	<b>0</b>	<b>1656</b>	<b>425</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>143</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-82</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-81</b>	<b>101</b>
Single Family Homes	31	0	0	0	10	0	0	0	0	0	7	7
Carriage Homes	15	0	0	0	5	0	0	0	0	0	3	3
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	78	0	0	0	-78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	19	0	0	0	-19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-91	91
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>316</b>	<b>185</b>	<b>31</b>	<b>0</b>	<b>1565</b>	<b>76</b>	<b>74</b>	<b>179</b>	<b>86</b>	<b>0</b>	<b>1575</b>	<b>526</b>
"New" Site Traffic % of Total 0.0%	45.3	0.0	0.0	0.0	-5.2	0.0	0.0	0.0	0.0	0.0	-5.1	19.2

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2030 S Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	104	142	26	0	1671	37	51	86	64	0	1796	204
Seasonal Adjustment Factor 1.000	104	142	26	0	1671	37	51	86	64	0	1796	204
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>104</b>	<b>142</b>	<b>26</b>	<b>0</b>	<b>1671</b>	<b>37</b>	<b>51</b>	<b>86</b>	<b>64</b>	<b>0</b>	<b>1796</b>	<b>204</b>
Background Growth 7.53 %	8	11	2	0	126	3	4	6	5	0	135	15
<b>EXISTING W/ BACKGROUND</b>	<b>112</b>	<b>153</b>	<b>28</b>	<b>0</b>	<b>1797</b>	<b>40</b>	<b>55</b>	<b>92</b>	<b>69</b>	<b>0</b>	<b>1931</b>	<b>219</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>59</b>	<b>9</b>	<b>-9</b>	<b>0</b>	<b>-13</b>	<b>30</b>	<b>31</b>	<b>-2</b>	<b>4</b>	<b>0</b>	<b>12</b>	<b>30</b>
Condominium Development	0	6	0	0	0	5	3	0	4	0	0	6
Malvern School (NEW)	0	0	0	0	9	8	8	0	0	0	8	0
Arborview Development	38	3	14	0	0	10	13	0	0	0	4	24
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	1	7	7	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	-23	0	-23	0	0	-2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>171</b>	<b>162</b>	<b>19</b>	<b>0</b>	<b>1784</b>	<b>70</b>	<b>86</b>	<b>90</b>	<b>73</b>	<b>0</b>	<b>1943</b>	<b>249</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>167</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-57</b>	<b>122</b>
Single Family Homes	20	0	0	0	7	0	0	0	0	0	23	23
Carriage Homes	9	0	0	0	3	0	0	0	0	0	10	10
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	109	0	0	0	-109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	29	0	0	0	-29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-90	90
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>338</b>	<b>162</b>	<b>19</b>	<b>0</b>	<b>1656</b>	<b>70</b>	<b>86</b>	<b>90</b>	<b>73</b>	<b>0</b>	<b>1886</b>	<b>371</b>
"New" Site Traffic % of Total 0.0%	49.4	0.0	0.0	0.0	-7.7	0.0	0.0	0.0	0.0	0.0	-3.0	32.9



*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*

## INTERSECTION VOLUME SUMMARY Bridlewood Blvd/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Bridlewood Blvd			WESTBOUND Street Road (PA 926)			SOUTHBOUND Bridlewood Blvd		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	689	36	38	0	41	31	472	0	0	0	0
Seasonal Adjustment Factor 1.000	0	689	36	38	0	41	31	472	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>689</b>	<b>36</b>	<b>38</b>	<b>0</b>	<b>41</b>	<b>31</b>	<b>472</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	52	3	3	0	3	2	36	0	0	0	0
EXISTING W/ BACKGROUND	0	741	39	41	0	44	33	508	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	-18	0	0	0	0	0	-9	0	0	0	0
Condominium Development	0	2	0	0	0	0	0	1	0	0	0	0
Malvern School (NEW)	0	1	0	0	0	0	0	1	0	0	0	0
Arborview Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	-21	0	0	0	0	0	-11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>723</b>	<b>39</b>	<b>41</b>	<b>0</b>	<b>44</b>	<b>33</b>	<b>499</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>122</b>	<b>-109</b>	<b>0</b>	<b>0</b>	<b>46</b>	<b>-29</b>	<b>0</b>	<b>-90</b>	<b>49</b>	<b>29</b>	<b>10</b>	<b>238</b>
Single Family Homes	9	0	0	0	12	0	0	0	35	20	7	5
Carriage Homes	4	0	0	0	5	0	0	0	14	9	3	2
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	109	-109	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	118
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	-29	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	23
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	-90	0	0	0	90
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>122</b>	<b>614</b>	<b>39</b>	<b>41</b>	<b>46</b>	<b>15</b>	<b>33</b>	<b>409</b>	<b>49</b>	<b>29</b>	<b>260</b>	<b>238</b>
"New" Site Traffic % of Total ####	100.0	-17.8	0.0	0.0	100.0	-193.3	0.0	-22.0	100.0	100.0	3.8	100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Street Road (PA 926)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Street Road (PA 926)			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Street Road (PA 926)			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	423	196	26	39	1434	116	164	249	41	98	1300
Seasonal Adjustment Factor 1.000	423	196	26	39	1434	116	164	249	41	98	1300	176
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	151	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>423</b>	<b>196</b>	<b>26</b>	<b>39</b>	<b>1434</b>	<b>116</b>	<b>164</b>	<b>249</b>	<b>41</b>	<b>98</b>	<b>1451</b>	<b>176</b>
Background Growth 7.53 %	32	15	2	3	108	9	12	19	3	7	109	13
<b>EXISTING W/ BACKGROUND</b>	<b>455</b>	<b>211</b>	<b>28</b>	<b>42</b>	<b>1542</b>	<b>125</b>	<b>176</b>	<b>268</b>	<b>44</b>	<b>105</b>	<b>1560</b>	<b>189</b>
<b>TOTAL "OTHER" DEVELOPMENTS</b>	<b>-18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>34</b>	<b>-9</b>
Condominium Development	2	0	0	0	3	0	0	0	0	0	2	1
Malvern School (NEW)	1	0	0	0	5	0	0	0	1	0	7	1
Arborview Development	0	0	0	0	18	0	0	0	6	8	24	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	-21	0	0	0	0	0	0	0	0	0	0	-11
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>437</b>	<b>211</b>	<b>28</b>	<b>42</b>	<b>1568</b>	<b>125</b>	<b>176</b>	<b>268</b>	<b>51</b>	<b>113</b>	<b>1594</b>	<b>180</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>-128</b>	<b>4</b>	<b>15</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>17</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>-90</b>
Single Family Homes	7	3	10	23	0	0	0	12	0	3	3	0
Carriage Homes	3	1	4	10	0	0	0	5	0	1	1	0
Site Balancing	0	0	1	-1	0	0	0	0	0	2	1	0
Diversion A - EBL 926 to NB 202	-109	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	-29	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	-90
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>309</b>	<b>215</b>	<b>43</b>	<b>74</b>	<b>1568</b>	<b>125</b>	<b>176</b>	<b>285</b>	<b>51</b>	<b>119</b>	<b>1349</b>	<b>90</b>
"New" Site Traffic % of Total 0.0%	-41.4	1.9	34.9	43.2	0.0	0.0	0.0	6.0	0.0	5.0	0.4	-100.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Pleasant Grove Road			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Pleasant Grove Road			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
	<b>EXISTING TRAFFIC</b>	0	0	7	38	2124	63	0	0	11	105	1832
Seasonal Adjustment Factor      1.000	0	0	7	38	2124	63	0	0	11	105	1832	306
Balancing Adjustments	0	0	0	0	-327	0	0	0	0	0	-114	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>38</b>	<b>1797</b>	<b>63</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>105</b>	<b>1718</b>	<b>306</b>
Background Growth                      7.53 %	0	0	1	3	135	5	0	0	1	8	129	23
<b>EXISTING W/ BACKGROUND</b>	0	0	8	41	1932	68	0	0	12	113	1847	329
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	20	17	-15	13	0	0	31	16	13	-8
Condominium Development	0	0	0	0	5	0	0	0	0	0	3	0
Malvern School (NEW)	0	0	0	0	0	7	0	0	17	8	8	0
Arborview Development	0	0	20	15	9	0	0	0	0	2	12	4
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	-6	6	0	0	14	6	1	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	0	0	2	-23	0	0	0	0	0	-11	-12
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>58</b>	<b>1917</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>129</b>	<b>1860</b>	<b>321</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>11</b>	<b>0</b>	<b>-128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-90</b>	<b>33</b>
Single Family Homes	0	0	7	0	7	0	0	0	0	0	0	23
Carriage Homes	0	0	3	0	3	0	0	0	0	0	0	10
Site Balancing	0	0	1	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	-109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	-29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>39</b>	<b>58</b>	<b>1789</b>	<b>81</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>129</b>	<b>1520</b>	<b>354</b>
"New" Site Traffic % of Total      0.0%	0.0	0.0	28.2	0.0	-7.2	0.0	0.0	0.0	0.0	0.0	-5.9	9.3

## INTERSECTION VOLUME SUMMARY Orvis Way/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Orvis Way			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Orvis Way		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	25	0	0	0	0	0	0	-12	21	20	0	29
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	4	0	0	0	0	0	0	0	19	20	0	6
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	0	0	0	0	0	-12	2	0	0	23
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>25</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>354</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>29</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>167</b>	<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>122</b>
Single Family Homes	20	7	0	0	0	0	0	23	0	0	0	23
Carriage Homes	9	3	0	0	0	0	0	10	0	0	0	10
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	109	0	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	29	0	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	0	90
Diversion F - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	0	250
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>192</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>387</b>	<b>21</b>	<b>20</b>	<b>0</b>	<b>401</b>
"New" Site Traffic % of Total ####	87.0	78.6	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	30.4

## INTERSECTION VOLUME SUMMARY Church Egress Only /W. Pleasant Grove Road

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Church Egress Only			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Church Egress Only		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>178</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	27	0	0	0	0	0	46	0	0	0	0
Carriage Homes	0	12	0	0	0	0	0	19	0	0	0	0
Site Balancing	0	1	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	109	0	0	0	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	29	0	0	0	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	90	0	0	0	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	250	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>206</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>788</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	86.4	0.0	0.0	0.0	0.0	0.0	19.7	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/W. Pleasant Grove Road

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND W. Pleasant Grove Road			NORTHBOUND Connector Road			WESTBOUND W. Pleasant Grove Road			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	3	0	0	0	0	0	340	0	0	0	0
Seasonal Adjustment Factor 1.000	0	3	0	0	0	0	0	340	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>340</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 7.53 %	0	0	0	0	0	0	0	26	0	0	0	0
EXISTING W/ BACKGROUND	0	3	0	0	0	0	0	366	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	25	0	0	0	0	0	17	0	0	0	0
Condominium Development	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (NEW)	0	0	0	0	0	0	0	0	0	0	0	0
Arborview Development	0	4	0	0	0	0	0	6	0	0	0	0
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	0	21	0	0	0	0	0	11	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>383</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>16</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>162</b>	<b>272</b>	<b>-117</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Single Family Homes	0	10	3	2	0	17	29	17	0	0	0	0
Carriage Homes	0	4	1	1	0	7	12	7	0	0	0	0
Site Balancing	0	2	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	0	109	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	118	-118	0	0	0	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	0	29	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	23	-23	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	90	0	0	0	0	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	250	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>44</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>162</b>	<b>522</b>	<b>266</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
"New" Site Traffic % of Total ####	0.0	36.4	100.0	100.0	0.0	100.0	52.1	-44.0	0.0	0.0	0.0	0.0

## INTERSECTION VOLUME SUMMARY Wilmington Pike (US 202)/Stetson Blvd / Skiles Blvd

Robinson Tract  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2030 SE Weekday 4-6 PM  
Design Year (2030)

Traffic Component	EASTBOUND Stetson Blvd / Skiles Blvd			NORTHBOUND Wilmington Pike (US 202)			WESTBOUND Stetson Blvd / Skiles Blvd			SOUTHBOUND Wilmington Pike (US 202)		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	104	142	26	0	1671	37	51	86	64	0	1796	204
Seasonal Adjustment Factor 1.000	104	142	26	0	1671	37	51	86	64	0	1796	204
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>104</b>	<b>142</b>	<b>26</b>	<b>0</b>	<b>1671</b>	<b>37</b>	<b>51</b>	<b>86</b>	<b>64</b>	<b>0</b>	<b>1796</b>	<b>204</b>
Background Growth 7.53 %	8	11	2	0	126	3	4	6	5	0	135	15
EXISTING W/ BACKGROUND	112	153	28	0	1797	40	55	92	69	0	1931	219
TOTAL "OTHER" DEVELOPMENTS	59	9	-9	0	-13	30	31	-2	4	0	12	30
Condominium Development	0	6	0	0	0	5	3	0	4	0	0	6
Malvern School (NEW)	0	0	0	0	9	8	8	0	0	0	8	0
Arborview Development	38	3	14	0	0	10	13	0	0	0	4	24
Malvern School (PB AM)	0	0	0	0	0	0	0	0	0	0	0	0
Malvern School (PB PM)	0	0	0	0	1	7	7	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Orvis Way Redist	21	0	-23	0	-23	0	0	-2	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>171</b>	<b>162</b>	<b>19</b>	<b>0</b>	<b>1784</b>	<b>70</b>	<b>86</b>	<b>90</b>	<b>73</b>	<b>0</b>	<b>1943</b>	<b>249</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>167</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-128</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-57</b>	<b>122</b>
Single Family Homes	20	0	0	0	7	0	0	0	0	0	23	23
Carriage Homes	9	0	0	0	3	0	0	0	0	0	10	10
Site Balancing	0	0	0	0	0	0	0	0	0	0	0	-1
Diversion A - EBL 926 to NB 202	109	0	0	0	-109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	0	0
Diversion D - NBR Bridlewood to 202	29	0	0	0	-29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	0	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	-90	90
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	-250	250
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>338</b>	<b>162</b>	<b>19</b>	<b>0</b>	<b>1656</b>	<b>70</b>	<b>86</b>	<b>90</b>	<b>73</b>	<b>0</b>	<b>1636</b>	<b>621</b>
"New" Site Traffic % of Total 0.0%	49.4	0.0	0.0	0.0	-7.7	0.0	0.0	0.0	0.0	0.0	-3.5	19.6



## Appendix N

# Capacity/Level-of-Service Methodology



## CAPACITY/LEVEL-OF-SERVICE ANALYSIS METHODOLOGY

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

### *Stop-Controlled Intersections*

At unsignalized stop-controlled intersections, such as two-way stop-controlled (TWSC) or all-way stop-controlled (AWSC), a methodology for evaluating the relative functioning of these intersections is based upon the control delay. For these types of unsignalized intersections, the analysis of the control delay is based upon the following data:

- Number and configuration of lanes on each approach;
- Percentage of heavy vehicles on each approach;
- Demand flow rate for each entering vehicular movement and pedestrian crossing movement;
- Unique geometric factors such as, channelization aspects; two-way left-turn lanes, raised or striped median storage; approach grades, flared approaches on the minor street; and upstream signals within 0.25 miles.

At TWSC intersections, only drivers on the minor street approaches are required to stop before proceeding into the intersection and left-turning drivers from the major street may have to yield to on-coming major street through or right-turning traffic, but are not required to stop in the absence of on-coming traffic. The capacity at stop-controlled legs is based primarily on three factors: the distribution of gaps in the major stream, driver judgment in selecting the gaps, and the follow-up headways required by each driver in a queue.

At AWSC intersections, every vehicle is required to stop at the intersection before proceeding, and as a result, the decision to proceed is a function of the traffic conditions on the other approaches. Each driver proceeds only after determining that no vehicles are currently in the intersection and that it is the driver’s turn to proceed. Capacity at an AWSC intersection is described by the saturation headway or time between departures of successive vehicles on a given approach for a particular case assuming a continuous queue; departure headway or the average time between departures of successive vehicles on a given approach accounting for the probability of each possible case; and service time or the average time sent by a vehicle in first position waiting to depart.

At both TWSC and AWSC intersections, the level of service is based upon the control delay, as well as the corresponding volume-to-capacity ratio for each movement/lane group. For TWSC intersections, the level of service is not calculated for major-street approaches or for the intersection as a whole; however, the intersection-wide level of service is calculated for AWSC intersections. The following table provides a summary of the relationship between the level of service, control delay, and volume-to-capacity ratio for TWSC and AWSC intersections.

Control Delay (Sec/Veh)	<u>LOS by Volume-to-Capacity Ratio</u>	
	$v/c \leq 1.0$	$v/c > 1.0$
$\leq 10$	A	F
> 10 – 15	B	F
> 15 – 25	C	F
> 25 – 35	D	F
> 35 – 50	E	F
> 50	F	F

### *Signalized Intersections*

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

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

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

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

## Appendix O

# Existing Capacity/Level-of-Service Analysis Worksheets



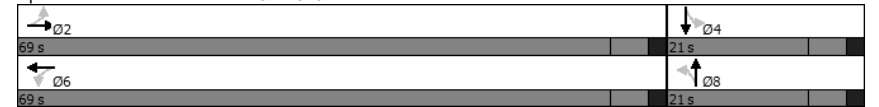
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	75	689	4	11	324	50	3	80	22	53	243	138
Future Volume (vph)	75	689	4	11	324	50	3	80	22	53	243	138
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.982		0.972				0.957	
Frt Protected	0.995				0.999		0.999				0.994	
Satd. Flow (prot)	0	1638	0	0	1515	0	0	1568	0	0	1572	0
Frt Permitted	0.922				0.978		0.967				0.936	
Satd. Flow (perm)	0	1518	0	0	1483	0	0	1518	0	0	1481	0
Right Turn on Red	Yes				Yes		Yes				Yes	
Satd. Flow (RTOR)	1				21		13				23	
Link Speed (mph)	45				45		25				35	
Link Distance (ft)	819				2436		714				826	
Travel Time (s)	12.4				36.9		19.5				16.1	
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%
Adj. Flow (vph)	78	718	4	11	338	52	3	83	23	55	253	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	800	0	0	401	0	0	109	0	0	452	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left		Left		Left Thru		Left Thru		Left Thru		Left Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6		8				4	
Permitted Phases	2				6		8				4	
Detector Phase	2				6		8				4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0	
Total Lost Time (s)	5.0				5.0		5.0				5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Natural Cycle:	90
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



McMahon Associates, Inc.  
1: New St & Rt 926

Robinson Tract  
Existing Weekday Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	75	689	4	11	324	50	3	80	22	53	243	138
Future Volume (veh/h)	75	689	4	11	324	50	3	80	22	53	243	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	78	718	4	11	338	52	3	83	23	55	253	144
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	134	1135	6	52	993	150	44	247	67	73	173	94
Arrive On Green	0.70	0.71	0.70	0.70	0.71	0.70	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	126	1596	9	15	1397	210	14	1391	376	157	973	529
Grp Volume(v), veh/h	800	0	0	401	0	0	109	0	0	452	0	0
Grp Sat Flow(s),veh/h/ln	1731	0	0	1623	0	0	1781	0	0	1659	0	0
Q Serve(g_s), s	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.1	0.0	0.0
Cycle Q Clear(g_c), s	21.3	0.0	0.0	8.5	0.0	0.0	4.9	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.10		0.00	0.03		0.13	0.03		0.21	0.12		0.32
Lane Grp Cap(c), veh/h	1256	0	0	1177	0	0	338	0	0	321	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.34	0.00	0.00	0.32	0.00	0.00	1.41	0.00	0.00
Avail Cap(c_a), veh/h	1256	0	0	1177	0	0	338	0	0	321	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.8	0.0	0.0	5.0	0.0	0.0	32.5	0.0	0.0	37.8	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.8	0.0	0.0	0.5	0.0	0.0	200.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/rl/0.7	0.0	0.0	0.0	4.2	0.0	0.0	3.9	0.0	0.0	38.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.3	0.0	0.0	5.8	0.0	0.0	33.1	0.0	0.0	238.3	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	800			401			109			452		
Approach Delay, s/veh	9.3			5.8			33.1			238.3		
Approach LOS	A			A			C			F		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		21.0		69.0		21.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		15.0		63.0		15.0					
Max Q Clear Time (g_c+I1), s	23.3		17.0		10.5		6.9					
Green Ext Time (p_c), s	8.1		0.0		3.1		0.2					

HCM 6th Signalized Intersection Summary Existing Weekday Morning Peak Hour  
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3: Rt 202 & Rt 926

Robinson Tract  
Existing Weekday Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	498	242	10	156	142	28	14	1397	130	57	1329	184
Future Volume (vph)	498	242	10	156	142	28	14	1397	130	57	1329	184
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%			-4%			-4%			0%		
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	0.95
Frt	0.996			0.850			0.850			0.982		
Flt Protected	0.950	0.983		0.950		0.950		0.950		0.950		
Satd. Flow (prot)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3060	0
Flt Permitted	0.950	0.983		0.950		0.950		0.950		0.950		
Satd. Flow (perm)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3060	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			12
Link Speed (mph)	45			45			45			45		
Link Distance (ft)	2349			982			1123			3154		
Travel Time (s)	35.6			14.9			17.0			47.8		
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	530	257	11	166	151	30	15	1486	138	61	1414	196
Shared Lane Traffic (%)	26%											
Lane Group Flow (vph)	392	406	0	166	151	30	15	1486	138	61	1610	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lanes, Volumes, Timings Existing Weekday Morning Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic Analysis\2019-08 Robinson Tract TIS\1 - Existing\Weekday Summary 8 Report



	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 156.3  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

↙ Ø1	↘ Ø2	↙ Ø4	↘ Ø8
13 s	76 s	38 s	38 s
↙ Ø5	↘ Ø6		
13 s	76 s		

	↖	→	↘	↙	←	↖	↙	↘	↙	↘	↙	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↔	↘	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (veh/h)	498	242	10	156	142	28	14	1397	130	57	1329	184
Future Volume (veh/h)	498	242	10	156	142	28	14	1397	130	57	1329	184
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No					No
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	399	440	11	166	151	30	15	1486	138	61	1414	196
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	377	395	2	213	224	179	32	1650	771	82	1405	193
Arrive On Green	0.21	0.21	0.21	0.12	0.12	0.12	0.02	0.47	0.47	0.05	0.50	0.50
Sat Flow, veh/h	1780	1831	46	1775	1864	1492	1761	3514	1643	1554	2785	382
Grp Volume(v), veh/h	399	0	451	166	151	30	15	1486	138	61	794	816
Grp Sat Flow(s),veh/h/ln	1780	0	1876	1775	1864	1492	1761	1757	1643	1554	1577	1591
Q Serve(g_s), s	32.0	0.0	32.0	13.7	11.7	2.7	1.3	58.7	7.4	5.9	76.1	76.2
Cycle Q Clear(g_c), s	32.0	0.0	32.0	13.7	11.7	2.7	1.3	58.7	7.4	5.9	76.1	76.2
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	377	0	399	213	224	179	32	1650	771	82	795	802
V/C Ratio(X)	1.06	0.00	1.13	0.78	0.67	0.17	0.47	0.90	0.18	0.74	1.00	1.02
Avail Cap(c_a), veh/h	377	0	397	376	395	316	93	1650	771	82	795	802
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.6	0.0	59.6	64.5	63.7	59.7	73.5	38.7	23.2	70.6	37.4	37.6
Incr Delay (d2), s/veh	62.8	0.0	86.0	6.0	3.5	0.4	10.1	8.3	0.5	29.8	31.6	36.1
Initial Q Delay(d3),s/veh	76.4	0.0	54.2	0.0	0.0	0.0	0.0	14.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	87.1	0.0	40.8	10.6	9.6	1.9	1.2	40.8	5.3	5.4	44.3	46.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	198.8	0.0	199.8	70.6	67.2	60.1	83.6	61.0	23.7	100.4	69.1	73.7
LnGrp LOS	F	A	F	E	E	E	F	E	C	F	E	F
Approach Vol, veh/h	850			347			1639				1671	
Approach Delay, s/veh	199.3			68.2			58.1				72.5	
Approach LOS	F			E			E				E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	76.0		24.2	7.8	81.2		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	70.0	70.0		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+11), s	61.2			16.2	3.8	78.6		34.5				
Green Ext Time (p_c), s	0.0	7.4		0.9	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 90.8  
HCM 6th LOS F

Notes

User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd Existing Weekday Morning Peak Hour

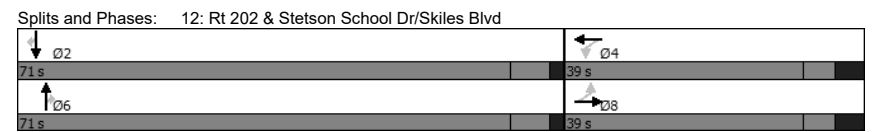
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	111	168	47	37	170	75	0	1552	45	0	1527	365
Future Volume (vph)	111	168	47	37	170	75	0	1552	45	0	1527	365
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		0	350		0	0		220	0		200
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.967			0.954				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1554	1716	0	1612	1698	0	0	3164	1417	0	3156	1660
Flt Permitted	0.418			0.484								
Satd. Flow (perm)	684	1716	0	821	1698	0	0	3164	1417	0	3156	1660
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									50			327
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	121	183	51	40	185	82	0	1687	49	0	1660	397
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	234	0	40	267	0	0	1687	49	0	1660	397
Number of Detectors	1	4		1	4			2	1		2	1
Detector Template								Right			Right	
Leading Detector (ft)	35	68		35	68			490	30		490	30
Trailing Detector (ft)	-5	-1		-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1		-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6		40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

Lanes, Volumes, Timings Existing Weekday Morning Peak Hour  
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McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd Existing Weekday Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8			4				6			2	
Detector Phase	8	8		4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0		15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	39.0	39.0		39.0	39.0			71.0	71.0		71.0	71.0
Total Split (%)	35.5%	35.5%		35.5%	35.5%			64.5%	64.5%		64.5%	64.5%
Maximum Green (s)	31.0	31.0		31.0	31.0			64.0	64.0		64.0	64.0
Yellow Time (s)	4.0	4.0		4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0		4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0		7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0		0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0		0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None		None	None			Max	Max		Max	Max

Intersection Summary  
 Area Type: Other  
 Cycle Length: 110  
 Actuated Cycle Length: 100.6  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated



Lanes, Volumes, Timings Existing Weekday Morning Peak Hour  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↑↑	↑		↑↑	↑
Traffic Volume (veh/h)	111	168	47	37	170	75	0	1552	45	0	1527	365
Future Volume (veh/h)	111	168	47	37	170	75	0	1552	45	0	1527	365
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1858	1962	1962	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	121	183	51	40	185	82	0	1687	49	0	1660	397
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	7	7	5	8	8	0	7	14	0	10	6
Cap, veh/h	227	404	113	261	311	138	0	1931	843	0	2034	974
Arrive On Green	0.27	0.27	0.26	0.27	0.27	0.26	0.00	0.61	0.61	0.00	0.61	0.61
Sat Flow, veh/h	1167	1477	412	1105	1137	504	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	121	0	234	40	0	267	0	1687	49	0	1660	397
Grp Sat Flow(s),veh/h/ln	1167	0	1888	1105	0	1641	0	1595	1394	0	1681	1610
Q Serve(g_s), s	10.7	0.0	11.1	3.3	0.0	15.2	0.0	47.6	1.5	0.0	41.4	13.9
Cycle Q Clear(g_c), s	25.4	0.0	11.1	13.9	0.0	15.2	0.0	47.6	1.5	0.0	41.4	13.9
Prop In Lane	1.00		0.22	1.00		0.31	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	227	0	517	261	0	450	0	1931	843	0	2034	974
V/C Ratio(X)	0.53	0.00	0.45	0.15	0.00	0.59	0.00	0.87	0.06	0.00	0.82	0.41
Avail Cap(c_a), veh/h	255	0	562	288	0	489	0	1931	843	0	2034	974
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	0.0	32.4	37.9	0.0	34.0	0.0	17.8	8.7	0.0	16.5	11.1
Incr Delay (d2), s/veh	1.9	0.0	0.6	0.3	0.0	1.7	0.0	5.8	0.1	0.0	3.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	8.9	1.7	0.0	10.4	0.0	22.9	0.8	0.0	20.8	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.5	0.0	33.0	38.1	0.0	35.6	0.0	23.6	8.8	0.0	20.3	12.4
LnGrp LOS	D	A	C	D	A	D	A	C	A	A	C	B
Approach Vol, veh/h		355			307			1736			2057	
Approach Delay, s/veh		37.6			36.0			23.2			18.8	
Approach LOS		D			D			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.0		36.4		71.0		36.4				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		64.0		31.0		64.0		31.0				
Max Q Clear Time (g_c+11), s		43.9		17.2		50.1		27.9				
Green Ext Time (p_c), s		20.1		1.3		13.9		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		23.2
HCM 6th LOS		C

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	754	36	7	347	45	27
Future Volume (vph)	754	36	7	347	45	27
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1662	1521	1719	1717	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1662	1521	1719	1717	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	3%	0%	9%	0%	0%
Adj. Flow (vph)	802	38	7	369	48	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	802	38	7	369	48	29
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	754	36	7	347	45	27
Future Vol, veh/h	754	36	7	347	45	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	350	120	-	0	0
Veh in Median Storage	#	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	3	0	9	0	0
Mvmt Flow	802	38	7	369	48	29

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	840
Stage 1	-	-	802
Stage 2	-	-	383
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	612	245
Stage 1	-	-	517
Stage 2	-	-	806
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	612	242
Mov Cap-2 Maneuver	-	-	242
Stage 1	-	-	517
Stage 2	-	-	797

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.1
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	242	413	-	-	612	-
HCM Lane V/C Ratio	0.198	0.07	-	-	0.012	-
HCM Control Delay (s)	23.5	14.4	-	-	11	-
HCM Lane LOS	C	B	-	-	B	-
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0	-

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	47	0	0	6	12	1879	32	46	1523	132
Future Volume (vph)	0	0	47	0	0	6	12	1879	32	46	1523	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.998			0.988		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1344	1515	3155	0	1613	3078	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1344	1515	3155	0	1613	3078	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			499			858		3154		1356		
Travel Time (s)			9.7			16.7		47.8		20.5		
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%	0%	0%	0%	0%	17%	8%	7%	13%	4%	12%	5%
Adj. Flow (vph)	0	0	53	0	0	7	14	2135	36	52	1731	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	53	0	0	7	14	2171	0	52	1881	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	47	0	0	6	12	1879	32	46	1523	132
Future Vol, veh/h	0	0	47	0	0	6	12	1879	32	46	1523	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	0	-	-	0	350	-	-	380	-	-	-
Veh in Median Storage, #	0	-	0	-	0	-	0	-	0	-	0	-
Grade, %	-	-1	-	-	-2	-	-	2	-	-	-3	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	17	8	7	13	4	12	5
Mvmt Flow	0	0	53	0	0	7	14	2135	36	52	1731	150

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	941	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.2	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	270	0
Stage 1	0	0	-	0
Stage 2	0	0	-	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	270	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	24.6	23.8	0.1	0.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	303	-	-	270	198	254	-
HCM Lane V/C Ratio	0.045	-	-	0.034	0.206	-	-
HCM Control Delay (s)	17.4	-	-	21.6	23.8	22.8	-
HCM Lane LOS	C	-	-	C	C	C	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.1	0.8	-

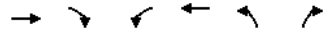
	→	↖	↙	←	↗	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↗	↖	↗
Traffic Volume (vph)	47	1	8	136	1	0
Future Volume (vph)	47	1	8	136	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998					
Flt Protected				0.997	0.950	
Satd. Flow (prot)	1702	0	0	1690	1636	1663
Flt Permitted				0.997	0.950	
Satd. Flow (perm)	1702	0	0	1690	1636	1663
Link Speed (mph)	35			35	35	
Link Distance (ft)	429			499	469	
Travel Time (s)	8.4			9.7	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	67	1	11	194	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	0	205	1	0
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					

<b>Intersection</b>						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↗	↖	↗
Traffic Vol, veh/h	47	1	8	136	1	0
Future Vol, veh/h	47	1	8	136	1	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	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	4	-	-	-4	2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	67	1	11	194	1	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	68
Stage 1	-	-	68
Stage 2	-	-	216
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1138	788
Stage 1	-	-	1106
Stage 2	-	-	926
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1138	779
Mov Cap-2 Maneuver	-	-	779
Stage 1	-	-	1106
Stage 2	-	-	916

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.6
HCM LOS			A

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	779	-	-	-	1138	-
HCM Lane V/C Ratio	0.002	-	-	-	0.01	-
HCM Control Delay (s)	9.6	0	-	-	8.2	0
HCM Lane LOS	A	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	48	0	0	137	0	0
Future Volume (vph)	48	0	0	137	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	13	13
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Fit Protected</b>						
Satd. Flow (prot)	1714	0	0	1682	1879	0
<b>Fit Permitted</b>						
Satd. Flow (perm)	1714	0	0	1682	1879	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2929			429	436	
Travel Time (s)	57.1			8.4	8.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	69	0	0	196	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	69	0	0	196	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

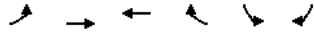
Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	48	0	0	137	0	0
Future Vol, veh/h	48	0	0	137	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	69	0	0	196	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 265 69
Stage 1	-	-	- 69 -
Stage 2	-	-	- 196 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	- 0 0	-	- 860 1066
Stage 1	- 0 0	-	- 1122 -
Stage 2	- 0 0	-	- 991 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 860 1066
Mov Cap-2 Maneuver	-	-	- 860 -
Stage 1	-	-	- 1122 -
Stage 2	-	-	- 991 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	0	17	110	3	5	2
Future Volume (vph)	0	17	110	3	5	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.997		0.959	
Flt Protected					0.966	
Satd. Flow (prot)	0	1655	1647	0	1441	0
Flt Permitted					0.966	
Satd. Flow (perm)	0	1655	1647	0	1441	0
Link Speed (mph)		35	35		25	
Link Distance (ft)		496	2929		306	
Travel Time (s)		9.7	57.1		8.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	2%	50%	0%	25%
Adj. Flow (vph)	0	24	157	4	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	24	161	0	10	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	0	17	110	3	5	2
Future Vol, veh/h	0	17	110	3	5	2
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, %	-	3	-3	-	1	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	2	50	0	25
Mvmt Flow	0	24	157	4	7	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	161	0	183
Stage 1	-	-	159
Stage 2	-	-	24
Critical Hdwy	4.3	-	6.6
Critical Hdwy Stg 1	-	-	5.6
Critical Hdwy Stg 2	-	-	5.6
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	1058	-	925
Stage 1	-	-	1001
Stage 2	-	-	1168
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1058	-	925
Mov Cap-2 Maneuver	-	-	925
Stage 1	-	-	1001
Stage 2	-	-	1168

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1058	-	-	-	911
HCM Lane V/C Ratio	-	-	-	-	-0.011
HCM Control Delay (s)	0	-	-	-	9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T	T	T	T	T	T
Traffic Volume (vph)	87	25	202	3	14	347
Future Volume (vph)	87	25	202	3	14	347
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.970		0.998			
Fit Protected	0.963					0.998
Satd. Flow (prot)	1613	0	1762	0	0	1775
Fit Permitted	0.963					0.998
Satd. Flow (perm)	1613	0	1762	0	0	1775
Link Speed (mph)	35		35			35
Link Distance (ft)	496		2543			619
Travel Time (s)	9.7		49.5			12.1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	12%	2%	0%	7%	1%
Adj. Flow (vph)	100	29	232	3	16	399
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	235	0	0	415
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T	T	T	T	T	T
Traffic Vol, veh/h	87	25	202	3	14	347
Future Vol, veh/h	87	25	202	3	14	347
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	12	2	0	7	1
Mvmt Flow	100	29	232	3	16	399

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	665	234	0
Stage 1	234	-	-
Stage 2	431	-	-
Critical Hdwy	6.42	6.32	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.2	-
Pot Cap-1 Maneuver	477	826	-
Stage 1	929	-	-
Stage 2	747	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	467	826	-
Mov Cap-2 Maneuver	467	-	-
Stage 1	929	-	-
Stage 2	731	-	-

Approach	WB	NB	SB
HCM Control Delay	14.3	0	0.3
HCM LOS	B		

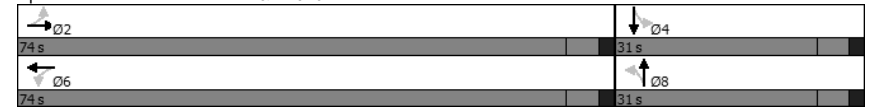
Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	517	963	-
HCM Lane V/C Ratio	-	-	0.249	0.017	-
HCM Control Delay (s)	-	-	14.3	8.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	32	622	14	24	393	62	10	170	37	61	194	289
Future Volume (vph)	32	622	14	24	393	62	10	170	37	61	194	289
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.983		0.977				0.928	
Flt Protected	0.998				0.998		0.998				0.994	
Satd. Flow (prot)	0	1640	0	0	1627	0	0	1646	0	0	1528	0
Flt Permitted	0.962				0.954		0.919				0.883	
Satd. Flow (perm)	0	1581	0	0	1555	0	0	1516	0	0	1358	0
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	2				15		9				52	
Link Speed (mph)	45				45		25				35	
Link Distance (ft)	819				2436		714				826	
Travel Time (s)	12.4				36.9		19.5				16.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	33	635	14	24	401	63	10	173	38	62	198	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	682	0	0	488	0	0	221	0	0	555	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left		Thru				Left Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6		8				4	
Detector Phase	2				6		8				4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	74.0	74.0		74.0	74.0		31.0	31.0		31.0	31.0	
Total Split (%)	70.5%	70.5%		70.5%	70.5%		29.5%	29.5%		29.5%	29.5%	
Maximum Green (s)	68.0	68.0		68.0	68.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0	
Total Lost Time (s)	5.0				5.0		5.0				5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Natural Cycle:	65
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



McMahon Associates, Inc.  
1: New St & Rt 926

Robinson Tract  
Existing Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	32	622	14	24	393	62	10	170	37	61	194	289
Future Volume (veh/h)	32	622	14	24	393	62	10	170	37	61	194	289
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	33	635	14	24	401	63	10	173	38	62	198	295
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	69	1112	24	64	937	143	44	359	76	73	150	209
Arrive On Green	0.65	0.66	0.65	0.65	0.66	0.65	0.24	0.25	0.24	0.24	0.25	0.24
Sat Flow, veh/h	51	1692	37	43	1426	218	32	1451	308	140	605	845
Grp Volume(v), veh/h	682	0	0	488	0	0	221	0	0	555	0	0
Grp Sat Flow(s), veh/h/ln	1779	0	0	1687	0	0	1791	0	0	1590	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.0	0.0
Cycle Q Clear(g_c), s	21.7	0.0	0.0	14.2	0.0	0.0	11.0	0.0	0.0	25.0	0.0	0.0
Prop In Lane	0.05		0.02	0.05		0.13	0.05		0.17	0.11		0.53
Lane Grp Cap(c), veh/h	1188	0	0	1128	0	0	462	0	0	417	0	0
V/C Ratio(X)	0.57	0.00	0.00	0.43	0.00	0.00	0.48	0.00	0.00	1.33	0.00	0.00
Avail Cap(c_a), veh/h	1188	0	0	1128	0	0	462	0	0	417	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.9	0.0	0.0	8.6	0.0	0.0	34.0	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	2.0	0.0	0.0	1.2	0.0	0.0	0.8	0.0	0.0	165.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	0.0	0.0	8.6	0.0	0.0	8.7	0.0	0.0	45.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.9	0.0	0.0	9.9	0.0	0.0	34.7	0.0	0.0	205.5	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	682			488			221			555		
Approach Delay, s/veh	11.9			9.9			34.7			205.5		
Approach LOS	B			A			C			F		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	74.0			31.0			74.0			31.0		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	68.0			25.0			68.0			25.0		
Max Q Clear Time (g_c+I1), s	23.7			27.0			16.2			13.0		
Green Ext Time (p_c), s	6.2			0.0			4.0			0.6		
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	69.2											
HCM 6th LOS	E											

HCM 6th Signalized Intersection Summary Existing Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\TrafficAnalysis\2019-08 Robinson Tract TIS\1 - Existing\Weekday PM.syr\Synchro 8

McMahon Associates, Inc.  
3: Rt 202 & Rt 926

Robinson Tract  
Existing Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	423	196	26	164	249	41	39	1434	116	98	1451	176
Future Volume (vph)	423	196	26	164	249	41	39	1434	116	98	1451	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%			-4%			-4%			0%		
Storage Length (ft)	450			200			215			305		
Storage Lanes	1			1			1			1		
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.95
Frt	0.988			0.850			0.850			0.984		
Flt Protected	0.950	0.985		0.950		0.950		0.950		0.950		
Satd. Flow (prot)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3236	0
Flt Permitted	0.950	0.985		0.950		0.950		0.950		0.950		
Satd. Flow (perm)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3236	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			10
Link Speed (mph)	45			45			45			45		
Link Distance (ft)	2349			982			1123			3154		
Travel Time (s)	35.6			14.9			17.0			47.8		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	436	202	27	169	257	42	40	1478	120	101	1496	181
Shared Lane Traffic (%)	24%											
Lane Group Flow (vph)	331	334	0	169	257	42	40	1478	120	101	1677	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
<b>Detector 1 Channel</b>												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2		1	6	
Permitted Phases	4											
Detector Phase	8	8		4	4	4	5			1		
<b>Switch Phase</b>												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lanes, Volumes, Timings Existing Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\TrafficAnalysis\2019-08 Robinson Tract TIS\1 - Existing\Weekday PM.syr\Synchro 8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 165  
 Actuated Cycle Length: 160.5  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated

**Splits and Phases: 3: Rt 202 & Rt 926**

13 s	76 s			38 s	38 s
13 s	76 s				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	423	196	26	164	249	41	39	1434	116	98	1451	176
Future Volume (veh/h)	423	196	26	164	249	41	39	1434	116	98	1451	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	332	347	27	169	257	42	40	1478	120	101	1496	181
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	367	367	29	285	306	265	69	1606	745	86	1490	74
Arrive On Green	0.20	0.20	0.20	0.16	0.16	0.16	0.04	0.45	0.45	0.05	0.46	0.46
Sat Flow, veh/h	1807	1808	141	1816	1949	1693	1856	3568	1655	1688	2980	357
Grp Volume(v), veh/h	332	0	374	169	257	42	40	1478	120	101	825	852
Grp Sat Flow(s),veh/h/ln	1807	0	1948	1816	1949	1693	1856	3568	1655	1688	2980	357
Q Serve(g_s), s	28.3	0.0	29.9	13.7	20.2	3.4	3.3	61.3	6.8	8.0	73.2	73.2
Cycle Q Clear(g_c), s	28.3	0.0	29.9	13.7	20.2	3.4	3.3	61.3	6.8	8.0	73.2	73.2
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.21
Lane Grp Cap(c), veh/h	367	0	395	285	306	265	69	1606	745	86	1490	74
V/C Ratio(X)	0.91	0.00	0.95	0.59	0.84	0.16	0.58	0.92	0.16	1.18	1.07	1.07
Avail Cap(c_a), veh/h	367	0	395	368	395	343	94	1606	745	86	1490	74
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.4	0.0	62.1	61.8	64.6	57.5	74.7	41.9	25.7	74.9	42.3	42.3
Incr Delay (d2), s/veh	25.2	0.0	31.8	2.0	12.0	0.3	7.6	10.1	0.5	153.7	53.9	52.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	161.6	156.1
%ile BackOfQ(95%),veh/ln	1.7	0.0	25.0	10.5	16.3	2.6	3.1	40.4	4.9	12.0	87.8	89.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.6	0.0	93.8	63.8	76.6	57.8	82.3	58.8	26.2	228.5	257.8	251.3
LnGrp LOS	F	A	F	E	E	E	F	E	C	F	F	F
Approach Vol, veh/h	706			468			1638			1778		
Approach Delay, s/veh	90.4			70.3			57.0			253.0		
Approach LOS	F			E			E			F		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	76.0		30.7	10.8	78.2		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	70	70		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+I1), s	63.8			22.7	5.8	75.7		31.9				
Green Ext Time (p_c), s	0.0	5.3		1.0	0.0	0.0		0.0				

**Intersection Summary**

HCM 6th Ctrl Delay 139.4  
 HCM 6th LOS F

**Notes**

User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd Existing Weekday Afternoon Peak Hour

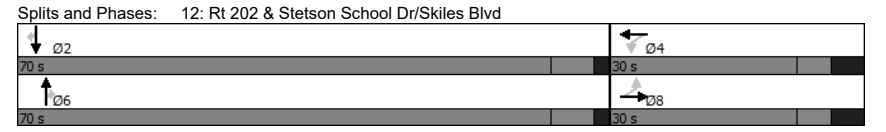
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	→	↘	↖	→	↘	←	↖	→	↘	↖	→
Traffic Volume (vph)	104	142	26	51	86	64	0	1671	37	0	1796	204
Future Volume (vph)	104	142	26	51	86	64	0	1671	37	0	1796	204
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200	0		350	0		0	220		0	200	
Storage Lanes	1	0		1	0		0	1		0	1	
Taper Length (ft)	75	100		75		75		75				
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.977		0.936		0.850		0.850		0.850		0.850	
Flt Protected	0.950		0.950									
Satd. Flow (prot)	1678	1847	0	1693	1779	0	0	3164	1616	0	3370	1760
Flt Permitted	0.631		0.577									
Satd. Flow (perm)	1114	1847	0	1028	1779	0	0	3164	1616	0	3370	1760
Right Turn on Red	No		No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							55		194			
Link Speed (mph)	25		25		45		45		45		45	
Link Distance (ft)	637		560		1356		940		940		940	
Travel Time (s)	17.4		15.3		20.5		14.2		14.2		14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	112	153	28	55	92	69	0	1797	40	0	1931	219
Shared Lane Traffic (%)												
Lane Group Flow (vph)	112	181	0	55	161	0	0	1797	40	0	1931	219
Number of Detectors	1	4	1		4	2		1	2		1	1
Detector Template							Right				Right	
Leading Detector (ft)	35	68	35		68	490		30	490		30	30
Trailing Detector (ft)	-5	-1	-5		-1	-10		-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-5		-1	-10		-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40		6	40		40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0
Detector 2 Position(ft)	15		15		450		450					
Detector 2 Size(ft)	6		6		40		40					
Detector 2 Type	CI+Ex		CI+Ex		CI+Ex		CI+Ex					
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0		0.0		0.0					
Detector 3 Position(ft)	36		36									
Detector 3 Size(ft)	6		6									
Detector 3 Type	CI+Ex		CI+Ex									
Detector 3 Channel												
Detector 3 Extend (s)	0.0		0.0									
Detector 4 Position(ft)	62		62									
Detector 4 Size(ft)	6		6									
Detector 4 Type	CI+Ex		CI+Ex									

Lanes, Volumes, Timings Existing Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\1 - Existing\Weekday PM.syr\Synchro 8

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd Existing Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)	0.0				0.0							
Turn Type	Perm	NA	Perm		NA	NA		Perm	NA		Perm	NA
Protected Phases	8				4		6				2	
Permitted Phases	8		4		4		6		6		2	
Detector Phase	8	8	4		4	6		6	2		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0		3.0	15.0		15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0		15.0	22.0		22.0	22.0		22.0	22.0
Total Split (s)	30.0	30.0	30.0		30.0	70.0		70.0	70.0		70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%		30.0%	70.0%		70.0%	70.0%		70.0%	70.0%
Maximum Green (s)	22.0	22.0	22.0		22.0	63.0		63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0		4.0	5.0		5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0		4.0	2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	7.0		7.0	6.0		6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	6.0		6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0		0.0	48.0		48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0		0.0	24.0		24.0	24.0		24.0	24.0
Recall Mode	None		None		None		None		None		None	

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	92.9
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Description:	Signal



Lanes, Volumes, Timings Existing Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\1 - Existing\Weekday PM.syr\Synchro 8

McMahon Associates, Inc.

Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

Existing Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↕	↕	↔	↔	↔
Traffic Volume (veh/h)	104	142	26	51	86	64	0	1671	37	0	1796	204
Future Volume (veh/h)	104	142	26	51	86	64	0	1671	37	0	1796	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2051	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	112	153	28	55	92	69	0	1797	40	0	1931	219
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	1	0	0	0	0	7	0	0	3	0
Cap, veh/h	239	335	61	224	195	146	0	2126	1044	0	2366	1123
Arrive On Green	0.20	0.20	0.19	0.20	0.20	0.19	0.00	0.67	0.67	0.00	0.67	0.67
Sat Flow, veh/h	1364	1687	309	1207	981	736	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	112	0	181	55	0	161	0	1797	40	0	1931	219
Grp Sat Flow(s),veh/h/ln	1364	0	1995	1207	0	1716	0	1595	1567	0	1776	1685
Q Serve(g_s), s	7.6	0.0	7.7	4.0	0.0	8.0	0.0	41.3	0.8	0.0	38.2	4.8
Cycle Q Clear(g_c), s	15.1	0.0	7.7	11.2	0.0	8.0	0.0	41.3	0.8	0.0	38.2	4.8
Prop In Lane	1.00		0.15	1.00		0.43	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	239	0	396	224	0	340	0	2126	1044	0	2366	1123
V/C Ratio(X)	0.47	0.00	0.46	0.25	0.00	0.47	0.00	0.85	0.04	0.00	0.82	0.20
Avail Cap(c_a), veh/h	295	0	478	274	0	411	0	2126	1044	0	2366	1123
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	40.5	0.0	34.0	38.7	0.0	34.3	0.0	12.2	5.5	0.0	11.7	6.1
Incr Delay (d2), s/veh	1.4	0.0	0.8	0.6	0.0	1.0	0.0	4.4	0.1	0.0	3.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.7	0.0	6.9	2.2	0.0	6.2	0.0	18.0	0.4	0.0	18.2	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	0.0	34.8	39.2	0.0	35.3	0.0	16.6	5.6	0.0	15.0	6.5
LnGrp LOS	D	A	C	D	A	D	A	B	A	A	B	A
Approach Vol, veh/h		293			216			1837			2150	
Approach Delay, s/veh		37.5			36.3			16.4			14.1	
Approach LOS		D			D			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		26.1		70.0		26.1				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		63.0		22.0		63.0		22.0				
Max Q Clear Time (g_c+11), s		40.7		13.7		43.8		17.6				
Green Ext Time (p_c), s		22.3		0.6		19.1		0.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	689	36	31	472	38	41
Future Volume (vph)	689	36	31	472	38	41
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1678	1567	1719	1835	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1678	1567	1719	1835	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	2%	0%	0%
Adj. Flow (vph)	703	37	32	482	39	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	703	37	32	482	39	42
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	689	36	31	472	38	41
Future Vol, veh/h	689	36	31	472	38	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	350	120	-	0	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	0	0	2	0	0
Mvmt Flow	703	37	32	482	39	42

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	740
Stage 1	-	-	703
Stage 2	-	-	546
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	664	225
Stage 1	-	-	574
Stage 2	-	-	679
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	664	214
Mov Cap-2 Maneuver	-	-	214
Stage 1	-	-	574
Stage 2	-	-	646

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	19.2
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	470	-	-	664	-
HCM Lane V/C Ratio	0.181	0.089	-	-	0.048	-
HCM Control Delay (s)	25.5	13.4	-	-	10.7	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	0.6	0.3	-	-	0.1	-

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	7	0	0	11	38	1797	63	105	1718	306
Future Volume (vph)	0	0	7	0	0	11	38	1797	63	105	1718	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.995			0.977		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3305	0	1678	3330	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3305	0	1678	3330	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			553			858		3154		1356		
Travel Time (s)			10.8			16.7		47.8		20.5		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	8	0	0	12	41	1932	68	113	1847	329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	8	0	0	12	41	2000	0	113	2176	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	7	0	0	11	38	1797	63	105	1718	306
Future Vol, veh/h	0	0	7	0	0	11	38	1797	63	105	1718	306
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	0	-	-	0	350	-	-	380	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-	0	-
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	8	0	0	12	41	1932	68	113	1847	329

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1088	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	218	0
Stage 1	0	0	-	0
Stage 2	0	0	-	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	218	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay <sub>2%</sub>	2.1	20.8	0.4	1.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	269	-	-	218	239	311	-
HCM Lane V/C Ratio	0.152	-	-	0.035	0.049	0.363	-
HCM Control Delay (s)	20.8	-	-	22.1	20.8	23	-
HCM Lane LOS	C	-	-	C	C	C	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	0.2	1.6	-





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	3	0	5	339	1	4
Future Volume (vph)	3	0	5	339	1	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected				0.999	0.950	
Satd. Flow (prot)	1705	0	0	1756	1636	1414
Fit Permitted				0.999	0.950	
Satd. Flow (perm)	1705	0	0	1756	1636	1414
Link Speed (mph)	35			35	35	
Link Distance (ft)	385			553	359	
Travel Time (s)	7.5			10.8	7.0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	4	0	7	452	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	459	1	5
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

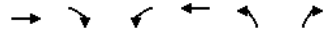
Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	3	0	5	339	1	4
Future Vol, veh/h	3	0	5	339	1	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	0
Veh in Median Storage#	-	-	-	-	0	0
Grade, %	4			-4	2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	4	0	7	452	1	5

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	4
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1196
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1196
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	8.7
HCM LOS			A

Minor Lane/Major Mvm	NBLn	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	592	1155	-	-	1196	-
HCM Lane V/C Ratio	0.002	0.005	-	-	0.006	-
HCM Control Delay (s)	11.1	8.1	-	-	8	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	3	0	0	340	0	0
Future Volume (vph)	3	0	0	340	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2826			385	323	
Travel Time (s)	55.1			7.5	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	4	0	0	453	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	4	0	0	453	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

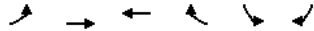
Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	3	0	0	340	0	0
Future Vol, veh/h	3	0	0	340	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	4	0	0	453	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 457 4
Stage 1	-	-	- 4 -
Stage 2	-	-	- 453 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	- 0	0	- 674 1156
Stage 1	- 0	0	- 1195 -
Stage 2	- 0	0	- 768 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 674 1156
Mov Cap-2 Maneuver	-	-	- 674 -
Stage 1	-	-	- 1195 -
Stage 2	-	-	- 768 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	3	19	299	11	1	2
Future Volume (vph)	3	19	299	11	1	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.995		0.899	
Flt Protected		0.993			0.988	
Satd. Flow (prot)	0	1643	1680	0	1485	0
Flt Permitted		0.993			0.988	
Satd. Flow (perm)	0	1643	1680	0	1485	0
Link Speed (mph)		35	35		25	
Link Distance (ft)		591	2826		385	
Travel Time (s)		11.5	55.1		10.5	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	4	25	399	15	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	29	414	0	4	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	3	19	299	11	1	2
Future Vol, veh/h	3	19	299	11	1	2
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	0	0	-
Grade, %	-	3	-3	-	1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	4	25	399	15	1	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	414	0	440
Stage 1	-	-	407
Stage 2	-	-	33
Critical Hdwy	4.3	-	6.6
Critical Hdwy Stg 1	-	-	5.6
Critical Hdwy Stg 2	-	-	5.6
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	665	-	640
Stage 1	-	-	751
Stage 2	-	-	1156
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	665	-	637
Mov Cap-2 Maneuver	-	-	637
Stage 1	-	-	747
Stage 2	-	-	1156

Approach	EB	WB	SB
HCM Control Delay, s	4.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	865	-	-	-	662	-
HCM Lane V/C Ratio	0.005	-	-	-	-0.006	-
HCM Control Delay (s)	9.2	0	-	-	10.5	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	0	-	-	-	0	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↔
Traffic Volume (vph)	259	42	254	10	12	285
Future Volume (vph)	259	42	254	10	12	285
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.995			
Fit Protected	0.959					0.998
Satd. Flow (prot)	1693	0	1774	0	0	1796
Fit Permitted	0.959					0.998
Satd. Flow (perm)	1693	0	1774	0	0	1796
Link Speed (mph)	35		35			35
Link Distance (ft)	591		636			619
Travel Time (s)	11.5		12.4			12.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	294	48	289	11	14	324
Shared Lane Traffic (%)						
Lane Group Flow (vph)	342	0	300	0	0	338
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↔
Traffic Vol, veh/h	259	42	254	10	12	285
Future Vol, veh/h	259	42	254	10	12	285
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	294	48	289	11	14	324

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	647	295	0
Stage 1	295	-	-
Stage 2	352	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuver	491	791	-
Stage 1	870	-	-
Stage 2	817	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	482	791	-
Mov Cap-2 Maneuver	482	-	-
Stage 1	870	-	-
Stage 2	802	-	-

Approach	WB	NB	SB
HCM Control Delay	25.3	0	0.4
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	510	948	-
HCM Lane V/C Ratio	-	-	0.671	0.014	-
HCM Control Delay (s)	-	-	25.3	8.9	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	4.9	0	-

## Appendix P

# Future (2025) Capacity/Level-of-Service Without Development Analysis Worksheets

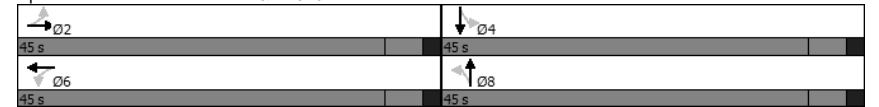


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	106	699	4	12	324	52	3	86	23	56	256	165
Future Volume (vph)	106	699	4	12	324	52	3	86	23	56	256	165
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.982		0.972				0.953	
Flt Protected	0.994				0.998		0.999				0.994	
Satd. Flow (prot)	0	1636	0	0	1512	0	0	1569	0	0	1565	0
Flt Permitted	0.888				0.969		0.989				0.950	
Satd. Flow (perm)	0	1462	0	0	1468	0	0	1553	0	0	1496	0
Right Turn on Red	Yes				Yes		Yes				Yes	
Satd. Flow (RTOR)			11		19		38					
Link Speed (mph)	45		45		25		35					
Link Distance (ft)	819		2436		714		826					
Travel Time (s)	12.4		36.9		19.5		16.1					
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%
Adj. Flow (vph)	110	728	4	13	338	54	3	90	24	58	267	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	842	0	0	405	0	0	117	0	0	497	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left		Left		Left Thru		Left Thru					
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2		6		8		4				4	
Detector Phase	2		6		8		8				4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0	
Total Lost Time (s)	5.0				5.0		5.0				5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	80.6
Natural Cycle:	90
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



	↗	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	106	699	4	12	324	52	3	86	23	56	256	165
Future Volume (veh/h)	106	699	4	12	324	52	3	86	23	56	256	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	110	728	4	12	338	54	3	90	24	58	267	172
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	147	788	4	57	725	113	52	486	126	99	328	198
Arrive On Green	0.51	0.52	0.51	0.51	0.52	0.51	0.34	0.35	0.34	0.34	0.35	0.34
Sat Flow, veh/h	179	1513	8	17	1391	217	10	1394	362	133	940	568
Grp Volume(v), veh/h	842	0	0	404	0	0	117	0	0	497	0	0
Grp Sat Flow(s),veh/h/ln	1700	0	0	1625	0	0	1766	0	0	1641	0	0
Q Serve(g_s), s	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4	0.0	0.0
Cycle Q Clear(g_c), s	36.9	0.0	0.0	12.1	0.0	0.0	3.6	0.0	0.0	22.1	0.0	0.0
Prop In Lane	0.13		0.00	0.03		0.13	0.03		0.21	0.12		0.35
Lane Grp Cap(c), veh/h	917	0	0	874	0	0	641	0	0	603	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.46	0.00	0.00	0.18	0.00	0.00	0.82	0.00	0.00
Avail Cap(c_a), veh/h	917	0	0	874	0	0	939	0	0	882	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.4	0.0	0.0	11.8	0.0	0.0	17.5	0.0	0.0	23.6	0.0	0.0
Incr Delay (d2), s/veh	15.5	0.0	0.0	1.8	0.0	0.0	0.1	0.0	0.0	4.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.0	0.0	0.0	7.5	0.0	0.0	2.6	0.0	0.0	13.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.9	0.0	0.0	13.5	0.0	0.0	17.7	0.0	0.0	27.8	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h	842			404			117			497		
Approach Delay, s/veh	32.9			13.5			17.7			27.8		
Approach LOS	C			B			B			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	45.0		31.8		45.0		31.8					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	39.0		39.0		39.0		39.0					
Max Q Clear Time (g_c+11), s	38.9		24.1		14.1		5.6					
Green Ext Time (p_c), s	0.1		1.7		2.9		0.4					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	26.4											
HCM 6th LOS	C											

	↗	→	↘	↙	←	↖	↗	↘	↙	↖	↗	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	499	254	10	163	149	39	15	1494	136	66	1419	178
Future Volume (vph)	499	254	10	163	149	39	15	1494	136	66	1419	178
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%			-4%			-4%			0%		
Storage Length (ft)	450		0	200		215		305		170		375
Storage Lanes	1		0	1		1		1		1		1
Taper Length (ft)	75			75		75		75		75		75
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt	0.996				0.850				0.850		0.983	
Flt Protected	0.950	0.984		0.950		0.950		0.950		0.950		
Satd. Flow (prot)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Flt Permitted	0.950	0.984		0.950		0.950		0.950		0.950		
Satd. Flow (perm)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Right Turn on Red	No			No			Yes			Yes		
Satd. Flow (RTOR)							112			11		
Link Speed (mph)	45			45			45			45		
Link Distance (ft)	2349			982			1123			3154		
Travel Time (s)	35.6			14.9			17.0			47.8		
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	531	270	11	173	159	41	16	1589	145	70	1510	189
Shared Lane Traffic (%)	25%											
Lane Group Flow (vph)	398	414	0	173	159	41	16	1589	145	70	1699	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
<b>Detector 1 Channel</b>												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases	4											
Detector Phase	8	8		4	4	4	5			1		
<b>Switch Phase</b>												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	43.0	43.0		24.0	24.0	24.0	13.0	85.0	85.0	13.0	85.0	
Total Split (%)	26.1%	26.1%		14.5%	14.5%	14.5%	7.9%	51.5%	51.5%	7.9%	51.5%	
Maximum Green (s)	36.0	36.0		17.0	17.0	17.0	7.0	79.0	79.0	7.0	79.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

Ø1	Ø2	Ø4	Ø8
13 s	35 s	24 s	43 s
Ø5	Ø6		
13 s	35 s		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	499	254	10	163	149	39	15	1494	136	66	1419	178
Future Volume (veh/h)	499	254	10	163	149	39	15	1494	136	66	1419	178
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No				No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	406	445	11	173	159	41	16	1589	145	70	1510	189
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	399	419	3	194	203	163	33	1704	796	75	1454	180
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.02	0.48	0.48	0.05	0.51	0.51
Sat Flow, veh/h	1780	1831	45	1775	1864	1492	1761	3514	1643	1554	2824	349
Grp Volume(v), veh/h	406	0	456	173	159	41	16	1589	145	70	835	864
Grp Sat Flow(s),veh/h/ln	1780	0	1877	1775	1864	1492	1761	1757	1643	1554	1577	1597
Q Serve(g_s), s	37.0	0.0	37.0	15.9	13.7	4.2	1.5	70.2	8.2	7.4	84.9	84.9
Cycle Q Clear(g_c), s	37.0	0.0	37.0	15.9	13.7	4.2	1.5	70.2	8.2	7.4	84.9	84.9
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	399	0	422	194	203	163	33	1704	796	75	812	822
V/C Ratio(X)	1.02	0.00	1.08	0.89	0.78	0.25	0.49	0.93	0.18	0.93	1.03	1.05
Avail Cap(c_a), veh/h	399	0	421	194	203	163	85	1704	796	75	812	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	0.0	64.0	72.6	71.6	67.3	80.2	42.0	24.0	78.2	40.0	40.1
Incr Delay (d2), s/veh	49.4	0.0	67.0	36.8	17.7	0.8	10.8	10.8	0.5	79.6	39.2	45.7
Initial Q Delay(d3),s/veh	72.1	0.0	51.2	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	87.9	0.0	41.0	14.1	12.0	2.9	1.4	49.2	5.9	8.1	51.7	54.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	185.6	0.0	182.2	109.3	89.3	68.1	91.0	72.3	24.5	157.9	79.3	85.9
LnGrp LOS	F	A	F	F	F	E	F	E	C	F	F	F
Approach Vol, veh/h	862			373			1750				1769	
Approach Delay, s/veh	183.8			96.3			68.5				85.6	
Approach LOS	F			F			E				F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	85.0		24.0	8.1	89.9		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	79.0	79.0		17.0	7.0	79.0		36.0				
Max Q Clear Time (g_c+11), s	72.7	72.7		18.4	4.0	87.4		39.5				
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay: 97.9  
HCM 6th LOS: F

Notes

User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.

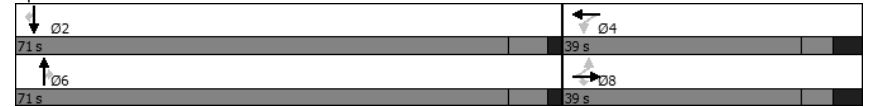
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘
Traffic Volume (vph)	170	180	29	73	174	84	0	1604	75	0	1614	415
Future Volume (vph)	170	180	29	73	174	84	0	1604	75	0	1614	415
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850		0.951				0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1554	1782	1487	1612	1694	0	0	3164	1417	0	3156	1660
Flt Permitted	0.441			0.580								
Satd. Flow (perm)	722	1782	1487	984	1694	0	0	3164	1417	0	3156	1660
Right Turn on Red			No			No		Yes			Yes	
Satd. Flow (RTOR)								70				352
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	185	196	32	79	189	91	0	1743	82	0	1754	451
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	196	32	79	280	0	0	1743	82	0	1754	451
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right					Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0			71.0	71.0		71.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	35.5%			64.5%	64.5%		64.5%	64.5%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0			64.0	64.0		64.0	64.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	107.7
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd



McMahon Associates, Inc.

Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2025 without Dev Weekday AM Opt



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗	↘	↑	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	170	180	29	73	174	84	0	1604	75	0	1614	415
Future Volume (veh/h)	170	180	29	73	174	84	0	1604	75	0	1614	415
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1858	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	185	196	32	79	189	91	0	1743	82	0	1754	451
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	237	571	462	301	321	155	0	1886	823	0	1987	951
Arrive On Green	0.29	0.29	0.28	0.29	0.29	0.28	0.00	0.59	0.59	0.00	0.59	0.59
Sat Flow, veh/h	1153	1962	1638	1111	1104	532	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	185	196	32	79	0	280	0	1743	82	0	1754	451
Grp Sat Flow(s),veh/h/ln	1153	1962	1638	1111	0	1636	0	1595	1394	0	1681	1610
Q Serve(g_s), s	16.4	8.7	1.6	6.6	0.0	16.1	0.0	54.2	2.8	0.0	49.1	17.5
Cycle Q Clear(g_c), s	32.0	8.7	1.6	15.3	0.0	16.1	0.0	54.2	2.8	0.0	49.1	17.5
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	237	571	462	301	0	476	0	1886	823	0	1987	951
V/C Ratio(X)	0.78	0.34	0.07	0.26	0.00	0.59	0.00	0.92	0.10	0.00	0.88	0.47
Avail Cap(c_a), veh/h	237	571	462	301	0	476	0	1886	823	0	1987	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	47.4	30.7	28.9	36.7	0.0	33.5	0.0	20.3	9.8	0.0	19.2	12.8
Incr Delay (d2), s/veh	15.4	0.4	0.1	0.5	0.0	1.9	0.0	9.2	0.2	0.0	6.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	7.5	1.1	3.3	0.0	10.9	0.0	26.8	1.5	0.0	25.0	10.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.8	31.1	29.0	37.2	0.0	35.4	0.0	29.5	10.0	0.0	25.4	14.5
LnGrp LOS	E	C	C	D	A	D	A	C	B	A	C	B
Approach Vol, veh/h		413			359			1825			2205	
Approach Delay, s/veh		45.1			35.8			28.6			23.1	
Approach LOS		D			D			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.0		39.0		71.0		39.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		64.0		31.0		64.0		31.0				
Max Q Clear Time (g_c+11), s		51.6		18.1		56.7		34.5				
Green Ext Time (p_c), s		12.4		1.5		7.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		28.1
HCM 6th LOS		C

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	767	38	7	349	47	28
Future Volume (vph)	767	38	7	349	47	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1662	1521	1719	1717	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1662	1521	1719	1717	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	3%	0%	9%	0%	0%
Adj. Flow (vph)	816	40	7	371	50	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	816	40	7	371	50	30
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	767	38	7	349	47	28
Future Vol, veh/h	767	38	7	349	47	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None			- None		- None
Storage Length	-	350	120	-	0	0
Veh in Median Storage	#	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	3	0	9	0	0
Mvmt Flow	816	40	7	371	50	30

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	856
Stage 1	-	-	816
Stage 2	-	-	385
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	604	240
Stage 1	-	-	509
Stage 2	-	-	804
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	604	237
Mov Cap-2 Maneuver	-	-	237
Stage 1	-	-	509
Stage 2	-	-	794

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.6
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	237	406	-	-	604	-
HCM Lane V/C Ratio	0.211	0.073	-	-	0.012	-
HCM Control Delay (s)	24.2	14.6	-	-	11	-
HCM Lane LOS	C	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	64	0	0	33	37	1946	50	63	1598	132
Future Volume (vph)	0	0	64	0	0	33	37	1946	50	63	1598	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%				-3%
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.996			0.989		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1344	1515	3147	0	1613	3080	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1344	1515	3147	0	1613	3080	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			499			858		3154		1356		
Travel Time (s)			9.7			16.7		47.8		20.5		
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%	0%	0%	0%	0%	17%	8%	7%	13%	4%	12%	5%
Adj. Flow (vph)	0	0	73	0	0	38	42	2211	57	72	1816	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	73	0	0	38	42	2268	0	72	1966	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	64	0	0	33	37	1946	50	63	1598	132
Future Vol, veh/h	0	0	64	0	0	33	37	1946	50	63	1598	132
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	0	0	0	0	0	0	0	0	0	0	0
Grade, %	-	-1	-	-	-2	-	-	2	-	-	-3	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	17	8	7	13	4	12	5
Mvmt Flow	0	0	73	0	0	38	42	2211	57	72	1816	150

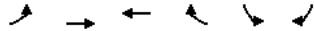
Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	983	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.2	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	252	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	252	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25	29.8	0.4	0.9
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	281	-	-	252	182	234	-
HCM Lane V/C Ratio	0.15	-	-	0.289	0.206	0.306	-
HCM Control Delay (s)	20.1	-	-	25	29.8	27	-
HCM Lane LOS	C	-	-	D	D	D	-
HCM 95th %tile Q(veh)	0.5	-	-	1.2	0.7	1.2	-

	→	↖	↙	←	↗	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↗	↖	↗
Traffic Volume (vph)	64	1	8	160	1	0
Future Volume (vph)	64	1	8	160	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	0.999					
Fit Protected				0.998	0.950	
Satd. Flow (prot)	1703	0	0	1691	1636	1663
Fit Permitted				0.998	0.950	
Satd. Flow (perm)	1703	0	0	1691	1636	1663
Link Speed (mph)	35			35	35	
Link Distance (ft)	224			499	469	
Travel Time (s)	4.4			9.7	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	91	1	11	229	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	92	0	0	240	1	0
Sign Control	Free			Free	Stop	
<b>Intersection Summary</b>						
Area Type:	Other					
Control Type:	Unsignalized					

<b>Intersection</b>						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↖			↗	↖	↗
Traffic Vol, veh/h	64	1	8	160	1	0
Future Vol, veh/h	64	1	8	160	1	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	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	4	-	-	-4	2	-
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	91	1	11	229	1	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	92	0	343	92
Stage 1	-	-	-	-	92	-
Stage 2	-	-	-	-	251	-
Critical Hdwy	-	-	4.3	-	6.8	6.4
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1117	-	722	1026
Stage 1	-	-	-	-	1075	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1117	-	714	1026
Mov Cap-2 Maneuver	-	-	-	-	714	-
Stage 1	-	-	-	-	1075	-
Stage 2	-	-	-	-	878	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.4	10.1			
HCM LOS			B			
Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	714	-	-	-	1117	-
HCM Lane V/C Ratio	0.002	-	-	-	0.01	-
HCM Control Delay (s)	10.1	0	-	-	8.3	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	31	50	132	30	15	34
Future Volume (vph)	31	50	132	30	15	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.975		0.905	
Flt Protected		0.981			0.985	
Satd. Flow (prot)	0	1673	1655	0	1605	0
Flt Permitted		0.981			0.985	
Satd. Flow (perm)	0	1673	1655	0	1605	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		206	224		486	
Travel Time (s)		4.0	4.4		9.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	44	71	189	43	21	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	115	232	0	70	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

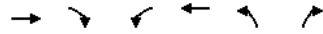
Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	31	50	132	30	15	34
Future Vol, veh/h	31	50	132	30	15	34
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	0	0	-
Grade, %	-	4	-3	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	5	0	0	0
Mvmt Flow	44	71	189	43	21	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	232	0	370
Stage 1	-	-	211
Stage 2	-	-	159
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	1000	-	722
Stage 1	-	-	954
Stage 2	-	-	1009
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1000	-	689
Mov Cap-2 Maneuver	-	-	689
Stage 1	-	-	910
Stage 2	-	-	1009

Approach	EB	WB	SB
HCM Control Delay, s	4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1000	-	-	-	813
HCM Lane V/C Ratio	0.044	-	-	-	-0.086
HCM Control Delay (s)	8.8	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Volume (vph)	81	0	0	166	0	0
Future Volume (vph)	81	0	0	166	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	13	13
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Fit Protected</b>						
Satd. Flow (prot)	1714	0	0	1682	1879	0
<b>Fit Permitted</b>						
Satd. Flow (perm)	1714	0	0	1682	1879	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2929			206	436	
Travel Time (s)	57.1			4.0	8.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	116	0	0	237	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	116	0	0	237	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Int Delay, s/veh	0					
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	81	0	0	166	0	0
Future Vol, veh/h	81	0	0	166	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	116	0	0	237	0	0

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	-	353
Stage 1	-	-	116
Stage 2	-	-	237
Critical Hdwy	-	-	6
Critical Hdwy Stg 1	-	-	5
Critical Hdwy Stg 2	-	-	5
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	0	0	769
Stage 1	-	0	1072
Stage 2	-	0	951
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	769
Mov Cap-2 Maneuver	-	-	769
Stage 1	-	-	1072
Stage 2	-	-	951

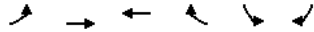
**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

**Minor Lane/Major Mvm**

	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	0	49	137	3	5	2
Future Volume (vph)	0	49	137	3	5	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction			0.997		0.959	
Fit Protected					0.966	
Satd. Flow (prot)	0	1655	1651	0	1441	0
Fit Permitted					0.966	
Satd. Flow (perm)	0	1655	1651	0	1441	0
Link Speed (mph)		35	35		25	
Link Distance (ft)		496	2929		306	
Travel Time (s)		9.7	57.1		8.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	2%	50%	0%	25%
Adj. Flow (vph)	0	70	196	4	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	70	200	0	10	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	0	49	137	3	5	2
Future Vol, veh/h	0	49	137	3	5	2
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	0	0	-
Grade, %	-	3	-3	-	1	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	2	50	0	25
Mvmt Flow	0	70	196	4	7	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	200	0	0
Stage 1	-	-	198
Stage 2	-	-	70
Critical Hdwy	4.3	-	6.6
Critical Hdwy Stg 1	-	-	5.6
Critical Hdwy Stg 2	-	-	5.6
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	826	-	819
Stage 1	-	-	957
Stage 2	-	-	1108
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	826	-	819
Mov Cap-2 Maneuver	-	-	819
Stage 1	-	-	957
Stage 2	-	-	1108

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1026	-	-	-	823
HCM Lane V/C Ratio	-	-	-	-	-0.012
HCM Control Delay (s)	0	-	-	-	9.4
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T			T
Traffic Volume (vph)	112	27	212	32	17	364
Future Volume (vph)	112	27	212	32	17	364
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974		0.982			
Fit Protected	0.961					0.998
Satd. Flow (prot)	1621	0	1737	0	0	1774
Fit Permitted	0.961					0.998
Satd. Flow (perm)	1621	0	1737	0	0	1774
Link Speed (mph)	35		35			35
Link Distance (ft)	496		2543			619
Travel Time (s)	9.7		49.5			12.1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	12%	2%	0%	7%	1%
Adj. Flow (vph)	129	31	244	37	20	418
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	0	281	0	0	438
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T			T
Traffic Vol, veh/h	112	27	212	32	17	364
Future Vol, veh/h	112	27	212	32	17	364
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	12	2	0	7	1
Mvmt Flow	129	31	244	37	20	418

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	721	263	0
Stage 1	263	-	-
Stage 2	458	-	-
Critical Hdwy	6.42	6.32	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.2	-
Pot Cap-1 Maneuver	441	795	-
Stage 1	899	-	-
Stage 2	724	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	429	795	-
Mov Cap-2 Maneuver	429	-	-
Stage 1	899	-	-
Stage 2	704	-	-

Approach	WB	NB	SB
HCM Control Delay	16.5	0	0.4
HCM LOS	C		

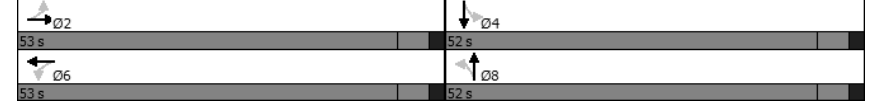
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	471	927	-
HCM Lane V/C Ratio	-	-	0.339	0.021	-
HCM Control Delay (s)	-	-	16.5	9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.5	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	57	634	15	25	403	65	10	179	39	64	205	316
Future Volume (vph)	57	634	15	25	403	65	10	179	39	64	205	316
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997			0.982			0.977			0.927		
Fit Protected	0.996			0.997			0.998			0.995		
Satd. Flow (prot)	0	1637	0	0	1623	0	0	1646	0	0	1528	0
Fit Permitted	0.927			0.948			0.972			0.936		
Satd. Flow (perm)	0	1523	0	0	1544	0	0	1603	0	0	1438	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	1			10			13			73		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	58	647	15	26	411	66	10	183	40	65	209	322
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	720	0	0	503	0	0	233	0	0	596	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	53.0	53.0		53.0	53.0		52.0	52.0		52.0	52.0	
Total Split (%)	50.5%	50.5%		50.5%	50.5%		49.5%	49.5%		49.5%	49.5%	
Maximum Green (s)	47.0	47.0		47.0	47.0		46.0	46.0		46.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	100.1
Natural Cycle:	80
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (veh/h)	57	634	15	25	403	65	10	179	39	64	205	316
Future Volume (veh/h)	57	634	15	25	403	65	10	179	39	64	205	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No						No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	58	647	15	26	411	66	10	183	40	65	209	322
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	87	772	17	60	677	105	49	603	127	93	244	349
Arrive On Green	0.47	0.48	0.47	0.47	0.48	0.47	0.40	0.41	0.40	0.40	0.41	0.40
Sat Flow, veh/h	99	1593	36	45	1396	218	28	1456	307	128	590	843
Grp Volume(v), veh/h	720	0	0	503	0	0	233	0	0	596	0	0
Grp Sat Flow(s),veh/h/ln	1728	0	0	1658	0	0	1791	0	0	1561	0	0
Q Serve(g_s), s	15.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.8	0.0	0.0
Cycle Q Clear(g_c), s	36.7	0.0	0.0	21.0	0.0	0.0	8.6	0.0	0.0	36.4	0.0	0.0
Prop In Lane	0.08		0.02	0.05		0.13	0.04		0.17	0.11		0.54
Lane Grp Cap(c), veh/h	860	0	0	825	0	0	762	0	0	671	0	0
V/C Ratio(X)	0.84	0.00	0.00	0.61	0.00	0.00	0.31	0.00	0.00	0.89	0.00	0.00
Avail Cap(c_a), veh/h	860	0	0	825	0	0	867	0	0	764	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.4	0.0	0.0	18.6	0.0	0.0	19.6	0.0	0.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	9.5	0.0	0.0	3.3	0.0	0.0	0.2	0.0	0.0	11.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.2	0.0	0.0	13.3	0.0	0.0	6.7	0.0	0.0	21.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.9	0.0	0.0	21.9	0.0	0.0	19.8	0.0	0.0	39.2	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	B	A	A	D	A	A
Approach Vol, veh/h	720			503			233			596		
Approach Delay, s/veh	31.9			21.9			19.8			39.2		
Approach LOS	C			C			B			D		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	53.0		46.0		53.0		46.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	47.0		46.0		47.0		46.0					
Max Q Clear Time (g_c+11), s	38.7		38.4		23.0		10.6					
Green Ext Time (p_c), s	3.4		1.6		3.8		0.9					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	30.2											
HCM 6th LOS	C											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (vph)	425	205	27	172	261	50	41	1529	122	111	1554	175
Future Volume (vph)	425	205	27	172	261	50	41	1529	122	111	1554	175
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%				-4%		0%	
Storage Length (ft)	450		0		200		215		305		170	
Storage Lanes	1		0		1		1		1		1	
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt	0.988				0.850				0.850		0.985	
Flt Protected	0.950		0.985		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	1524		1780		0		1581		1836		1632	
Flt Permitted	0.950		0.985		0.950		0.950		0.950		0.950	
Satd. Flow (perm)	1524		1780		0		1581		1836		1632	
Right Turn on Red	No		No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		10			
Link Speed (mph)	45		45		45		45		45		45	
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	438	211	28	177	269	52	42	1576	126	114	1602	180
Shared Lane Traffic (%)	23%											
Lane Group Flow (vph)	337	340	0	177	269	52	42	1576	126	114	1782	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases					4				2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		27.0	27.0	27.0	13.0	87.0	87.0	13.0	87.0	
Total Split (%)	23.0%	23.0%		16.4%	16.4%	16.4%	7.9%	52.7%	52.7%	7.9%	52.7%	
Maximum Green (s)	31.0	31.0		20.0	20.0	20.0	7.0	81.0	81.0	7.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other

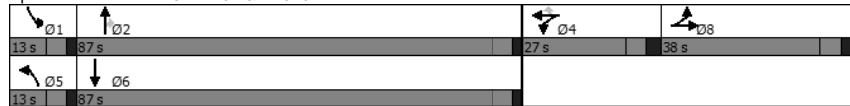
Cycle Length: 165

Actuated Cycle Length: 165

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	425	205	27	172	261	50	41	1529	122	111	1554	175
Future Volume (veh/h)	425	205	27	172	261	50	41	1529	122	111	1554	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	338	350	28	177	269	52	42	1576	126	114	1602	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	350	350	28	231	248	215	71	1773	823	82	1630	81
Arrive On Green	0.19	0.19	0.19	0.13	0.13	0.13	0.04	0.50	0.50	0.05	0.51	0.50
Sat Flow, veh/h	1807	1803	144	1816	1949	1693	1856	3568	1655	1688	3007	333
Grp Volume(v), veh/h	338	0	378	177	269	52	42	1576	126	114	873	909
Grp Sat Flow(s),veh/h/ln	1807	0	1947	1816	1949	1693	1856	1784	1655	1688	1657	1684
Q Serve(g_s), s	30.6	0.0	32.0	15.6	21.0	4.6	3.7	65.7	6.8	8.0	83.7	83.7
Cycle Q Clear(g_c), s	30.6	0.0	32.0	15.6	21.0	4.6	3.7	65.7	6.8	8.0	83.7	83.7
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	350	0	378	231	248	215	71	1773	823	82	841	870
V/C Ratio(X)	0.96	0.00	1.00	0.77	1.08	0.24	0.59	0.89	0.15	1.39	1.04	1.04
Avail Cap(c_a), veh/h	350	0	378	231	248	215	90	1773	823	82	841	854
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	0.0	66.5	69.6	72.0	64.8	78.1	38.6	22.6	78.5	40.6	40.7
Incr Delay (d2), s/veh	38.6	0.0	46.5	14.2	81.5	0.6	7.8	7.1	0.4	235.5	41.5	42.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	147.8	142.7
%ile BackOfQ(95%),veh/ln	24.5	0.0	28.0	12.7	23.4	3.6	3.4	41.3	4.9	14.9	89.0	91.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.5	0.0	113.0	83.8	153.5	65.4	85.9	49.7	23.0	314.0	229.9	226.1
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h		716			498			1744				1896
Approach Delay, s/veh		109.0			119.5			48.6				233.1
Approach LOS		F			F			D				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	87.0		27.0	11.3	88.7		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	79.0	81.0		20.0	7.0	81.0		31.0				
Max Q Clear Time (g_c+I1), s	110.5	68.2		23.5	6.2	86.2		34.0				
Green Ext Time (p_c), s	0.0	10.7		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 136.9

HCM 6th LOS F

Notes

User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2025 without Dev Weekday Afternoon Peak Hour

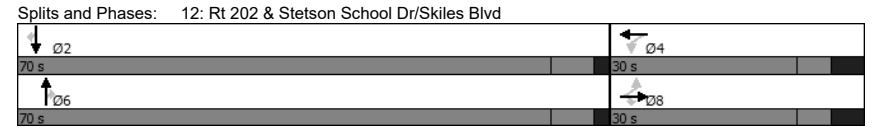
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↔	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	168	158	18	84	88	71	0	1738	69	0	1894	244
Future Volume (vph)	168	158	18	84	88	71	0	1738	69	0	1894	244
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.933				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.614			0.616								
Satd. Flow (perm)	1084	1888	1621	1098	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No			Yes		Yes	
Satd. Flow (RTOR)									74		220	
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		719			560			1356			940	
Travel Time (s)		19.6			15.3			20.5			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	181	170	19	90	95	76	0	1869	74	0	2037	262
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	170	19	90	171	0	0	1869	74	0	2037	262
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template		Right						Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

Lanes, Volumes, Timings 2025 without Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\2 - 2025 without Dev\Weekday PM\08.s

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2025 without Dev Weekday Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	↔	↕	↔	↔	↔	↔	↔	↕	↔	↔	↕	↔
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0			70.0	70.0		70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%			70.0%	70.0%		70.0%	70.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0			63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 97.3  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Description: Signal



Lanes, Volumes, Timings 2025 without Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\2 - 2025 without Dev\Weekday PM\08.s



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗	↘	↘	↗	↗	↘	↗	↗
Traffic Volume (veh/h)	168	158	18	84	88	71	0	1738	69	0	1894	244
Future Volume (veh/h)	168	158	18	84	88	71	0	1738	69	0	1894	244
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	181	170	19	90	95	76	0	1869	74	0	2037	262
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	274	472	385	264	219	175	0	2042	1003	0	2273	1078
Arrive On Green	0.23	0.23	0.22	0.23	0.23	0.22	0.00	0.64	0.64	0.00	0.64	0.64
Sat Flow, veh/h	1351	2051	1751	1198	951	761	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	181	170	19	90	0	171	0	1869	74	0	2037	262
Grp Sat Flow(s),veh/h/ln	1351	2051	1751	1198	0	1712	0	1595	1567	0	1776	1685
Q Serve(g_s), s	13.2	7.0	0.9	6.8	0.0	8.6	0.0	50.9	1.8	0.0	48.4	6.6
Cycle Q Clear(g_c), s	21.2	7.0	0.9	13.8	0.0	8.6	0.0	50.9	1.8	0.0	48.4	6.6
Prop In Lane	1.00		1.00	1.00		0.44	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	274	472	385	264	0	394	0	2042	1003	0	2273	1078
V/C Ratio(X)	0.66	0.36	0.05	0.34	0.00	0.43	0.00	0.92	0.07	0.00	0.90	0.24
Avail Cap(c_a), veh/h	274	472	385	264	0	394	0	2042	1003	0	2273	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	41.8	32.3	30.8	38.1	0.0	33.1	0.0	15.6	6.8	0.0	15.2	7.7
Incr Delay (d2), s/veh	5.8	0.5	0.1	0.8	0.0	0.8	0.0	7.9	0.1	0.0	6.1	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	6.3	0.7	3.7	0.0	6.6	0.0	23.5	1.0	0.0	24.1	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	32.8	30.8	38.9	0.0	33.9	0.0	23.5	6.9	0.0	21.3	8.2
LnGrp LOS	D	C	C	D	A	C	A	C	A	A	C	A
Approach Vol, veh/h		370			261			1943			2299	
Approach Delay, s/veh		39.9			35.6			22.9			19.8	
Approach LOS		D			D			C			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		63.0		22.0		63.0		22.0				
Max Q Clear Time (g_c+11), s		50.9		16.3		53.4		23.7				
Green Ext Time (p_c), s		12.1		0.6		9.6		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				23.4								
HCM 6th LOS				C								

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	704	38	32	486	40	43
Future Volume (vph)	704	38	32	486	40	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1678	1567	1719	1835	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1678	1567	1719	1835	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	2%	0%	0%
Adj. Flow (vph)	718	39	33	496	41	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	718	39	33	496	41	44
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	704	38	32	486	40	43
Future Vol, veh/h	704	38	32	486	40	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	-	350	120	-	0	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	0	0	2	0	0
Mvmt Flow	718	39	33	496	41	44

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	757
Stage 1	-	-	718
Stage 2	-	-	562
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	655	215
Stage 1	-	-	565
Stage 2	-	-	667
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	655	204
Mov Cap-2 Maneuver	-	-	204
Stage 1	-	-	565
Stage 2	-	-	634

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	20.1
HCM LOS			C

Minor Lane/Major	Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	204	461	-	-	655	-	-
HCM Lane V/C Ratio	0.2	0.095	-	-	0.05	-	-
HCM Control Delay (s)	27	13.6	-	-	10.8	-	-
HCM Lane LOS	D	B	-	-	B	-	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.2	-	-



	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	27	0	0	43	57	1868	79	126	1813	313
Future Volume (vph)	0	0	27	0	0	43	57	1868	79	126	1813	313
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.994			0.978		
Flt Protected						0.950			0.950			
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3302	0	1678	3333	0
Flt Permitted						0.950			0.950			
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3302	0	1678	3333	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			553			858		3154		1356		
Travel Time (s)			10.8			16.7		47.8		20.5		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	29	0	0	46	61	2009	85	135	1949	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	29	0	0	46	61	2094	0	135	2286	0
Sign Control		Stop			Stop			Free			Free	

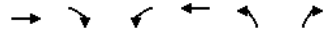
Intersection Summary  
Area Type: Other  
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	27	0	0	43	57	1868	79	126	1813	313
Future Vol, veh/h	0	0	27	0	0	43	57	1868	79	126	1813	313
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-	0	-
Grade, %	-	-1	-	-	-2	-	-	2	-	-	-3	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	29	0	0	46	61	2009	85	135	1949	337

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1143	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	199	0
Stage 1	0	0	-	0
Stage 2	0	0	-	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	199	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	26.2	25.4	0.7	1.6
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	246	-	-	199	222	288	-
HCM Lane V/C Ratio	0.249	-	-	0.146	0.208	0.47	-
HCM Control Delay (s)	24.4	-	-	26.2	25.4	28.1	-
HCM Lane LOS	C	-	-	D	D	D	-
HCM 95th %tile Q(veh)	1	-	-	0.5	0.8	2.4	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	23	0	5	364	1	4
Future Volume (vph)	23	0	5	364	1	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected				0.999	0.950	
Satd. Flow (prot)	1705	0	0	1756	1636	1414
Fit Permitted				0.999	0.950	
Satd. Flow (perm)	1705	0	0	1756	1636	1414
Link Speed (mph)	35			35	35	
Link Distance (ft)	215			553	359	
Travel Time (s)	4.2			10.8	7.0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	31	0	7	485	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	492	1	5
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	23	0	5	364	1	4
Future Vol, veh/h	23	0	5	364	1	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	0
Veh in Median Storage#	-	-	-	-	0	0
Grade, %	4			-4	2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	31	0	7	485	1	5

**Major/Minor**

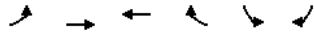
	Major1	Major2	Minor1
Conflicting Flow All	0	0	31
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1171
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1171
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.1	8.9
HCM LOS			A

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	541	1114	-	-	1171	-
HCM Lane V/C Ratio	0.002	0.005	-	-	0.006	-
HCM Control Delay (s)	11.7	8.2	-	-	8.1	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	25	3	344	21	20	29
Future Volume (vph)	25	3	344	21	20	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.920	
Flt Protected		0.957			0.980	
Satd. Flow (prot)	0	1632	1736	0	1623	0
Flt Permitted		0.957			0.980	
Satd. Flow (perm)	0	1632	1736	0	1623	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		170	215		401	
Travel Time (s)		3.3	4.2		7.8	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	33	4	459	28	27	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	37	487	0	66	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	25	3	344	21	20	29
Future Vol, veh/h	25	3	344	21	20	29
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, %	-	4	-3	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	33	4	459	28	27	39

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	487	0	543
Stage 1	-	-	473
Stage 2	-	-	70
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	16	-	568
Stage 1	-	-	714
Stage 2	-	-	1112
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	16	-	545
Mov Cap-2 Maneuver	-	-	545
Stage 1	-	-	685
Stage 2	-	-	1112

Approach	EB	WB	SB
HCM Control Delay, s	8.6	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	816	-	-	-	590
HCM Lane V/C Ratio	0.041	-	-	-	-0.111
HCM Control Delay (s)	9.6	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Volume (vph)	28	0	0	373	0	0
Future Volume (vph)	28	0	0	373	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2826			170	323	
Travel Time (s)	55.1			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	37	0	0	497	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	37	0	0	497	0	0
Sign Control	Free			Free	Stop	

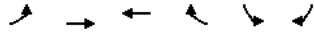
**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized

<b>Intersection</b>						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	28	0	0	373	0	0
Future Vol, veh/h	28	0	0	373	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	37	0	0	497	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	534
Stage 1	-	-	37
Stage 2	-	-	497
Critical Hdwy	-	-	6
Critical Hdwy Stg 1	-	-	5
Critical Hdwy Stg 2	-	-	5
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	0	0	611
Stage 1	0	0	1158
Stage 2	0	0	735
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	611
Mov Cap-2 Maneuver	-	-	611
Stage 1	-	-	1158
Stage 2	-	-	735

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	3	45	330	12	1	2
Future Volume (vph)	3	45	330	12	1	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr		0.995		0.899		
Flt Protected		0.997		0.988		
Satd. Flow (prot)	0	1650	1680	0	1485	0
Flt Permitted		0.997		0.988		
Satd. Flow (perm)	0	1650	1680	0	1485	0
Link Speed (mph)		35		25		
Link Distance (ft)		591		2826		
Travel Time (s)		11.5		55.1		
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	4	60	440	16	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	64	456	0	4	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	3	45	330	12	1	2
Future Vol, veh/h	3	45	330	12	1	2
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, %	-	3	-3	-	1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	4	60	440	16	1	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	456	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.3	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3	-	-
Pot Cap-1 Maneuver	637	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	637	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	6	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	837	-	-	-	-	614
HCM Lane V/C Ratio	0.005	-	-	-	-	-0.007
HCM Control Delay (s)	9.3	0	-	-	-	10.9
HCM Lane LOS	A	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T	T	T	T	T	T
Traffic Volume (vph)	286	46	266	34	14	299
Future Volume (vph)	286	46	266	34	14	299
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.985			
Fit Protected	0.959					0.998
Satd. Flow (prot)	1693	0	1757	0	0	1796
Fit Permitted	0.959					0.998
Satd. Flow (perm)	1693	0	1757	0	0	1796
Link Speed (mph)	35		35			35
Link Distance (ft)	591		636			619
Travel Time (s)	11.5		12.4			12.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	325	52	302	39	16	340
Shared Lane Traffic (%)						
Lane Group Flow (vph)	377	0	341	0	0	356
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 12.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T	T	T	T	T	T
Traffic Vol, veh/h	286	46	266	34	14	299
Future Vol, veh/h	286	46	266	34	14	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		0		-	
Grade, %	0		-		-	
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	325	52	302	39	16	340

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	694	322	0
Stage 1	322	-	-
Stage 2	372	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuver#	60	764	-
Stage 1	844	-	-
Stage 2	799	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver#	50	764	-
Mov Cap-2 Maneuver#	50	-	-
Stage 1	844	-	-
Stage 2	781	-	-

Approach	WB	NB	SB
HCM Control Delay	35.5	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	477	917	-
HCM Lane V/C Ratio	-	-	0.791	0.017	-
HCM Control Delay (s)	-	-	35.5	9	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	7.2	0.1	-

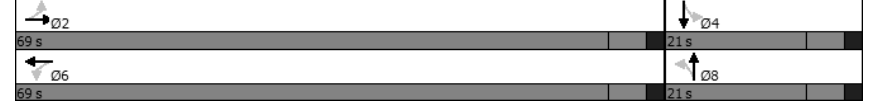
*Base*

	↖	→	↘	↙	←	↖	↙	↗	↘	↖	↙	↗	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕			↕			↕			↕			
Traffic Volume (vph)	106	699	4	12	324	52	3	86	23	56	256	165	
Future Volume (vph)	106	699	4	12	324	52	3	86	23	56	256	165	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Grade (%)	-2%			1%			-2%			1%			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.999			0.982			0.972			0.953			
Frt Protected	0.994			0.998			0.999			0.994			
Satd. Flow (prot)	0	1636	0	0	1512	0	0	1569	0	0	1565	0	
Frt Permitted	0.890			0.971			0.969			0.928			
Satd. Flow (perm)	0	1465	0	0	1471	0	0	1522	0	0	1461	0	
Right Turn on Red	Yes			Yes			Yes			Yes			
Satd. Flow (RTOR)	1			21			13			26			
Link Speed (mph)	45			45			25			35			
Link Distance (ft)	819			2436			714			826			
Travel Time (s)	12.4			36.9			19.5			16.1			
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%	
Adj. Flow (vph)	110	728	4	13	338	54	3	90	24	58	267	172	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	842	0	0	405	0	0	117	0	0	497	0	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left			Left			Left Thru			Left Thru			
Leading Detector (ft)	30	6		30	6		30	35		30	35		
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5		
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5		
Detector 1 Size(ft)	40	6		40	6		40	40		40	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases	2			6			8			4			
Permitted Phases	2			6			8			4			
Detector Phase	2			6			8			4			
Switch Phase													
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0		
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0		
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0		
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%		
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0			
Total Lost Time (s)	5.0			5.0			5.0			5.0			
Lead/Lag													
Lead-Lag Optimize?													

	↖	→	↘	↙	←	↖	↙	↗	↘	↖	↙	↗	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0		
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0		
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0		
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0		
Recall Mode	Max	Max		Max	Max		None	None		None	None		

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Natural Cycle:	90
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕			↕			↕	
Traffic Volume (veh/h)	106	699	4	12	324	52	3	86	23	56	256	165
Future Volume (veh/h)	106	699	4	12	324	52	3	86	23	56	256	165
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No			No			No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	110	728	4	12	338	54	3	90	24	58	267	172
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	174	1066	6	53	985	154	43	250	65	72	166	102
Arrive On Green	0.70	0.71	0.70	0.70	0.71	0.70	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	181	1499	8	17	1385	216	13	1404	366	153	931	574
Grp Volume(v), veh/h	842	0	0	404	0	0	117	0	0	497	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	0	1618	0	0	1783	0	0	1659	0	0
Q Serve(g_s), s	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	0.0
Cycle Q Clear(g_c), s	25.1	0.0	0.0	8.6	0.0	0.0	5.3	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.13		0.00	0.03		0.13	0.03		0.21	0.12		0.35
Lane Grp Cap(c), veh/h	1227	0	0	1174	0	0	338	0	0	321	0	0
V/C Ratio(X)	0.69	0.00	0.00	0.34	0.00	0.00	0.35	0.00	0.00	1.55	0.00	0.00
Avail Cap(c_a), veh/h	1227	0	0	1174	0	0	338	0	0	321	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	5.0	0.0	0.0	32.7	0.0	0.0	37.8	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.0	0.0	0.8	0.0	0.0	0.6	0.0	0.0	261.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	0.0	0.0	4.3	0.0	0.0	4.2	0.0	0.0	47.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.4	0.0	0.0	5.8	0.0	0.0	33.3	0.0	0.0	299.2	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	842		404		117		497					
Approach Delay, s/veh	10.4		5.8		33.3		299.2					
Approach LOS	B		A		C		F					
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		21.0		69.0		21.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		15.0		63.0		15.0					
Max Q Clear Time (g_c+I1), s	27.1		17.0		10.6		7.3					
Green Ext Time (p_c), s	8.7		0.0		3.2		0.2					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	88.0											
HCM 6th LOS	F											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	499	254	10	163	149	39	15	1494	136	66	1419	178
Future Volume (vph)	499	254	10	163	149	39	15	1494	136	66	1419	178
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%				-4%		0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.95
Frt	0.996				0.850				0.850		0.983	
Flt Protected	0.950	0.984	0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Flt Permitted	0.950	0.984	0.950		0.950		0.950		0.950			
Satd. Flow (perm)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Right Turn on Red			No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		10			
Link Speed (mph)	45		45		45		45		45		45	
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	531	270	11	173	159	41	16	1589	145	70	1510	189
Shared Lane Traffic (%)	25%											
Lane Group Flow (vph)	398	414	0	173	159	41	16	1589	145	70	1699	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2	2	1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 156.8  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

↔ 01	↑ 02	↔ 04	↔ 08
13 s	76 s	38 s	38 s
↔ 05	↓ 06		
13 s	76 s		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	499	254	10	163	149	39	15	1494	136	66	1419	178
Future Volume (veh/h)	499	254	10	163	149	39	15	1494	136	66	1419	178
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	406	445	11	173	159	41	16	1589	145	70	1510	189
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	375	394	2	221	232	185	34	1643	768	82	1415	175
Arrive On Green	0.21	0.21	0.20	0.12	0.12	0.12	0.02	0.47	0.47	0.05	0.50	0.49
Sat Flow, veh/h	1780	1831	45	1775	1864	1492	1761	3514	1643	1554	2824	349
Grp Volume(v), veh/h	406	0	456	173	159	41	16	1589	145	70	835	864
Grp Sat Flow(s),veh/h/ln	1780	0	1877	1775	1864	1492	1761	1757	1643	1554	1577	1597
Q Serve(g_s), s	32.0	0.0	32.0	14.4	12.4	3.8	1.4	66.8	7.8	6.8	76.1	76.1
Cycle Q Clear(g_c), s	32.0	0.0	32.0	14.4	12.4	3.8	1.4	66.8	7.8	6.8	76.1	76.1
Prop In Lane	1.00		0.02	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	375	0	397	221	232	185	34	1643	768	82	790	800
V/C Ratio(X)	1.08	0.00	1.15	0.78	0.69	0.22	0.48	0.97	0.19	0.86	1.06	1.08
Avail Cap(c_a), veh/h	375	0	395	374	393	314	93	1643	768	82	790	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.9	0.0	59.9	64.5	63.7	59.9	73.7	40.4	23.6	71.4	37.9	38.0
Incr Delay (d2), s/veh	70.4	0.0	92.6	6.0	3.6	0.6	10.1	15.7	0.5	54.6	48.2	55.6
Initial Q Delay(d3),s/veh	76.8	0.0	54.5	0.0	0.0	0.0	0.0	35.7	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	188.4	0.0	42.0	11.0	10.1	2.6	1.3	50.3	5.6	7.0	50.6	54.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	207.1	0.0	207.0	70.5	67.2	60.5	83.8	91.8	24.2	126.0	86.1	93.6
LnGrp LOS	F	A	F	E	E	E	F	F	C	F	F	F
Approach Vol, veh/h		862			373			1750				1769
Approach Delay, s/veh		207.1			68.0			86.1				91.3
Approach LOS		F			E			F				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	76.0		24.9	7.9	81.1		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	70.0	70.0		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+1)9s	69.3	69.3		16.9	3.9	78.6		34.5				
Green Ext Time (p_c), s	0.0	0.7		1.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	108.6
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

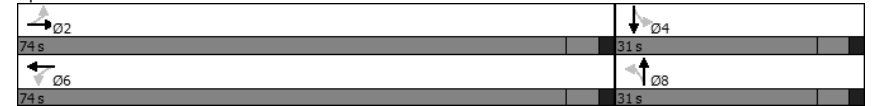
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	57	634	15	25	403	65	10	179	39	64	205	316
Future Volume (vph)	57	634	15	25	403	65	10	179	39	64	205	316
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.982				0.977			
Frt Protected	0.996				0.997				0.998			
Satd. Flow (prot)	0	1637	0	0	1623	0	0	1646	0	0	1528	0
Frt Permitted	0.926				0.948				0.918			
Satd. Flow (perm)	0	1522	0	0	1544	0	0	1514	0	0	1335	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	2			15			9			54		
Link Speed (mph)	45				45				25			
Link Distance (ft)	819				2436				714			
Travel Time (s)	12.4				36.9				19.5			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	58	647	15	26	411	66	10	183	40	65	209	322
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	720	0	0	503	0	0	233	0	0	596	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	74.0	74.0		74.0	74.0		31.0	31.0		31.0	31.0	
Total Split (%)	70.5%	70.5%		70.5%	70.5%		29.5%	29.5%		29.5%	29.5%	
Maximum Green (s)	68.0	68.0		68.0	68.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Natural Cycle:	80
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	57	634	15	25	403	65	10	179	39	64	205	316
Future Volume (veh/h)	57	634	15	25	403	65	10	179	39	64	205	316
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	58	647	15	26	411	66	10	183	40	65	209	322
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	102	1050	24	67	929	145	43	360	76	72	146	212
Arrive On Green	0.65	0.66	0.65	0.65	0.66	0.65	0.24	0.25	0.24	0.24	0.25	0.24
Sat Flow, veh/h	99	1597	36	46	1414	221	31	1455	308	138	589	854
Grp Volume(v), veh/h	720	0	0	503	0	0	233	0	0	596	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	0	1681	0	0	1793	0	0	1581	0	0
Q Serve(g_s), s	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.3	0.0	0.0
Cycle Q Clear(g_c), s	24.4	0.0	0.0	14.8	0.0	0.0	11.7	0.0	0.0	25.0	0.0	0.0
Prop In Lane	0.08		0.02	0.05		0.13	0.04		0.17	0.11		0.54
Lane Grp Cap(c), veh/h	1159	0	0	1125	0	0	463	0	0	415	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.45	0.00	0.00	0.50	0.00	0.00	1.44	0.00	0.00
Avail Cap(c_a), veh/h	1159	0	0	1125	0	0	463	0	0	415	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.3	0.0	0.0	8.8	0.0	0.0	34.2	0.0	0.0	40.4	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	1.3	0.0	0.0	0.9	0.0	0.0	210.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	0.0	0.0	8.9	0.0	0.0	9.1	0.0	0.0	53.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	0.0	10.0	0.0	0.0	35.1	0.0	0.0	250.8	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	D	A	A	F	A	A
Approach Vol, veh/h	720		503		233		596					
Approach Delay, s/veh	12.8		10.0		35.1		250.8					
Approach LOS	B		B		D		F					
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	74.0		31.0		74.0		31.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	68.0		25.0		68.0		25.0					
Max Q Clear Time (g_c+11), s	26.4		27.0		16.8		13.7					
Green Ext Time (p_c), s	6.9		0.0		4.2		0.6					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	83.8											
HCM 6th LOS	F											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	425	205	27	172	261	50	41	1529	122	111	1554	175
Future Volume (vph)	425	205	27	172	261	50	41	1529	122	111	1554	175
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt		0.988				0.850		0.850			0.985	
Flt Protected	0.950	0.985		0.950			0.950			0.950		
Satd. Flow (prot)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Flt Permitted	0.950	0.985		0.950			0.950			0.950		
Satd. Flow (perm)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			9
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	438	211	28	177	269	52	42	1576	126	114	1602	180
Shared Lane Traffic (%)	23%											
Lane Group Flow (vph)	337	340	0	177	269	52	42	1576	126	114	1782	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
 Cycle Length: 165  
 Actuated Cycle Length: 161.3  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

↔ 01	↑ 02	↔ 04	↔ 08
13 s	76 s	38 s	38 s
↔ 05	↓ 06		
13 s	76 s		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	425	205	27	172	261	50	41	1529	122	111	1554	175
Future Volume (veh/h)	425	205	27	172	261	50	41	1529	122	111	1554	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	338	350	28	177	269	52	42	1576	126	114	1602	180
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	364	363	29	295	317	275	71	1595	740	85	1475	73
Arrive On Green	0.20	0.20	0.20	0.16	0.16	0.16	0.04	0.45	0.45	0.05	0.46	0.45
Sat Flow, veh/h	1807	1803	144	1816	1949	1693	1856	3568	1655	1688	3007	333
Grp Volume(v), veh/h	338	0	378	177	269	52	42	1576	126	114	873	909
Grp Sat Flow(s),veh/h/ln	1807	0	1947	1816	1949	1693	1856	1784	1655	1688	1657	1684
Q Serve(g_s), s	29.2	0.0	30.5	14.4	21.3	4.2	3.5	69.5	7.2	8.0	72.9	72.9
Cycle Q Clear(g_c), s	29.2	0.0	30.5	14.4	21.3	4.2	3.5	69.5	7.2	8.0	72.9	72.9
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	364	0	392	295	317	275	71	1595	740	85	760	787
V/C Ratio(X)	0.93	0.00	0.96	0.60	0.85	0.19	0.59	0.99	0.17	1.34	1.15	1.15
Avail Cap(c_a), veh/h	364	0	392	366	393	341	94	1595	740	85	760	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	0.0	62.9	61.7	64.6	57.5	75.1	43.9	26.3	75.4	43.0	43.0
Incr Delay (d2), s/veh	29.6	0.0	35.8	2.0	13.5	0.3	7.5	19.9	0.5	213.4	81.6	83.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26.2	0.0	0.0	163.3	157.7
%ile BackOfQ(95%),veh/ln	22.8	0.0	25.9	10.9	17.2	3.3	3.3	49.9	5.3	14.3	97.5	100.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.9	0.0	98.7	63.7	78.1	57.8	82.7	90.0	26.8	288.8	287.9	284.4
LnGrp LOS	F	A	F	E	E	E	F	F	C	F	F	F
Approach Vol, veh/h		716			498			1744			1896	
Approach Delay, s/veh		95.5			70.8			85.2			286.3	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	76.0		31.8	11.1	77.9		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	70.0	70.0		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+1),s	72.0	72.0		23.8	6.0	75.4		32.5				
Green Ext Time (p_c), s	0.0	0.0		1.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	163.8
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.





## Appendix Q

# Future (2025) Capacity/Level-of-Service With Development Analysis Worksheets

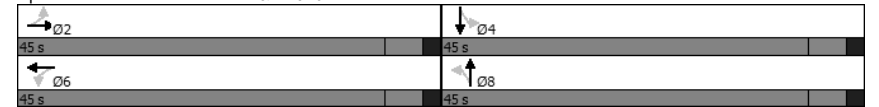


	↖	→	↘	↙	←	↖	↙	↗	↘	↖	↙	↗	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	↕		↕		↕		↕		↕		↕		
Traffic Volume (vph)	109	702	4	16	407	52	3	87	24	56	259	97	
Future Volume (vph)	109	702	4	16	407	52	3	87	24	56	259	97	
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10	
Grade (%)	-2%				1%		-2%				1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	0.999				0.985		0.972				0.968		
Fit Protected	0.993				0.998		0.999				0.993		
Satd. Flow (prot)	0	1634	0	0	1515	0	0	1569	0	0	1591	0	
Fit Permitted	0.865				0.964		0.990				0.942		
Satd. Flow (perm)	0	1424	0	0	1464	0	0	1555	0	0	1509	0	
Right Turn on Red			Yes				Yes				Yes		
Satd. Flow (RTOR)			9				19				22		
Link Speed (mph)	45				45		25				35		
Link Distance (ft)	819				2436		714				826		
Travel Time (s)	12.4				36.9		19.5				16.1		
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%	
Adj. Flow (vph)	114	731	4	17	424	54	3	91	25	58	270	101	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	849	0	0	495	0	0	119	0	0	429	0	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left		Left		Left Thru		Left Thru		Left Thru		Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35		
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5		
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5		
Detector 1 Size(ft)	40	6		40	6		40	40		40	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases	2				6		8				4		
Detector Phase	2				6		8				4		
Switch Phase													
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0		
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0		
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0		
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0		
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0		
Total Lost Time (s)	5.0				5.0		5.0				5.0		
Lead/Lag													
Lead-Lag Optimize?													

	↖	→	↘	↙	←	↖	↙	↗	↘	↖	↙	↗	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0		
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0		
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0		
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0		
Recall Mode	Max	Max		Max	Max		None	None		None	None		

Intersection Summary													
Area Type: Other													
Cycle Length: 90													
Actuated Cycle Length: 77.5													
Natural Cycle: 90													
Control Type: Semi Act-Uncoordinated													

Splits and Phases: 1: New St & Rt 926



McMahon Associates, Inc.  
1: New St & Rt 926

Robinson Tract  
2025 with Dev Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (veh/h)	109	702	4	16	407	52	3	87	24	56	259	97
Future Volume (veh/h)	109	702	4	16	407	52	3	87	24	56	259	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	114	731	4	17	424	54	3	91	25	58	270	101
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	156	821	4	64	790	98	54	424	114	105	342	120
Arrive On Green	0.54	0.55	0.54	0.54	0.55	0.54	0.29	0.31	0.29	0.29	0.31	0.29
Sat Flow, veh/h	179	1481	8	22	1425	177	10	1383	371	156	1115	392
Grp Volume(v), veh/h	849	0	0	495	0	0	119	0	0	429	0	0
Grp Sat Flow(s),veh/h/ln	1667	0	0	1624	0	0	1764	0	0	1663	0	0
Q Serve(g_s), s	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.4	0.0	0.0
Cycle Q Clear(g_c), s	34.0	0.0	0.0	14.0	0.0	0.0	3.6	0.0	0.0	17.6	0.0	0.0
Prop In Lane	0.13		0.00	0.03		0.11	0.03		0.21	0.14		0.24
Lane Grp Cap(c), veh/h	958	0	0	930	0	0	568	0	0	544	0	0
V/C Ratio(X)	0.89	0.00	0.00	0.53	0.00	0.00	0.21	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	958	0	0	930	0	0	997	0	0	950	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	0.0	0.0	10.3	0.0	0.0	18.7	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	11.9	0.0	0.0	2.2	0.0	0.0	0.2	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/rl	8.7	0.0	0.0	8.1	0.0	0.0	2.7	0.0	0.0	11.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.3	0.0	0.0	12.5	0.0	0.0	18.9	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h	849			495			119			429		
Approach Delay, s/veh	26.3			12.5			18.9			26.1		
Approach LOS	C			B			B			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	45.0		27.1		45.0		27.1					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	39.0		39.0		39.0		39.0					
Max Q Clear Time (g_c+I1), s	36.0		19.6		16.0		5.6					
Green Ext Time (p_c), s	1.8		1.5		3.6		0.4					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	22.2											
HCM 6th LOS	C											

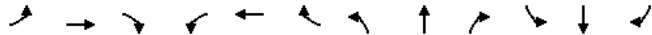
HCM 6th Signalized Intersection Summary  
I:\eng\816451 - Crebilly Farm\Traffic Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev Weekday AM

McMahon Associates, Inc.  
2: Bridlewood Blvd/Connector Road & Rt 926

Robinson Tract  
2025 with Dev Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (vph)	79	692	38	7	260	14	47	22	10	46	15	176
Future Volume (vph)	79	692	38	7	260	14	47	22	10	46	15	176
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%				-8%				-1%		0%	
Storage Length (ft)	150		350	120		150	0		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.951			0.862
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1609	1662	1521	1719	1717	1560	1719	1697	0	1676	1521	0
Flt Permitted	0.470			0.386			0.614			0.735		
Satd. Flow (perm)	796	1662	1521	699	1717	1560	1111	1697	0	1297	1521	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			40			109			11			187
Link Speed (mph)		45			45			25				35
Link Distance (ft)		2436			2349			414				1828
Travel Time (s)		36.9			35.6			11.3				35.6
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 (%)	2%	4%	3%	0%	9%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	84	736	40	7	277	15	50	23	11	49	16	187
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	736	40	7	277	15	50	34	0	49	203	0
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30	30	30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	40	40	40	40	40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8				4
Permitted Phases	2		2	6		6	8				4	
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	13.0	69.0	69.0	56.0	56.0	56.0	21.0	21.0		21.0	21.0	
Total Split (%)	14.4%	76.7%	76.7%	62.2%	62.2%	62.2%	23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	7.0	63.0	63.0	50.0	50.0	50.0	15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	

Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev Weekday AM

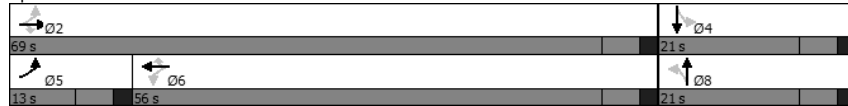


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag		Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	50
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated

Splits and Phases: 2: Bridlewood Blvd/Connector Road & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	79	692	38	7	260	14	47	22	10	46	15	176
Future Volume (veh/h)	79	692	38	7	260	14	47	22	10	46	15	176
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1415	1387	1457	2098	1970	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	84	736	40	7	277	15	50	23	11	49	16	187
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
Percent Heavy Veh, %	2	4	3	0	9	2	0	2	2	2	2	2
Cap, veh/h	520	817	727	240	823	699	269	253	121	430	26	306
Arrive On Green	0.08	0.59	0.59	0.42	0.42	0.40	0.22	0.22	0.20	0.22	0.22	0.20
Sat Flow, veh/h	1347	1387	1235	823	1970	1754	1223	1156	553	1375	120	1400
Grp Volume(v), veh/h	84	736	40	7	277	15	50	0	34	49	0	203
Grp Sat Flow(s),veh/h/ln	1347	1387	1235	823	1970	1754	1223	0	1709	1375	0	1520
Q Serve(g_s), s	1.6	24.2	0.7	0.4	5.0	0.3	2.0	0.0	0.8	1.5	0.0	6.3
Cycle Q Clear(g_c), s	1.6	24.2	0.7	15.7	5.0	0.3	7.8	0.0	0.8	1.8	0.0	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.32	1.00		0.92
Lane Grp Cap(c), veh/h	520	817	727	240	823	699	269	0	374	430	0	333
V/C Ratio(X)	0.16	0.90	0.06	0.03	0.34	0.02	0.19	0.00	0.09	0.11	0.00	0.61
Avail Cap(c_a), veh/h	626	1706	1519	703	1931	1686	377	0	526	552	0	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.4	9.4	4.5	20.1	10.3	9.5	21.6	0.0	16.3	16.7	0.0	18.8
Incr Delay (d2), s/veh	0.1	4.0	0.0	0.0	0.2	0.0	0.3	0.0	0.1	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	8.2	0.2	0.1	2.9	0.1	1.0	0.0	0.6	0.8	0.0	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	13.4	4.6	20.2	10.5	9.5	22.0	0.0	16.4	16.8	0.0	20.6
LnGrp LOS	A	B	A	C	B	A	C	A	B	B	A	C
Approach Vol, veh/h	860			299			84			252		
Approach Delay, s/veh	12.3			10.7			19.7			19.9		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	35.6		16.4		8.9		26.7		16.4			
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0		6.0			
Max Green Setting (Gmax), s	63.0		15.0		7.0		50.0		15.0			
Max Q Clear Time (g_c+I1), s	26.7		8.3		4.1		18.2		10.3			
Green Ext Time (p_c), s	3.0		0.5		0.0		0.9		0.1			

Intersection Summary

HCM 6th Ctrl Delay	13.7
HCM 6th LOS	B

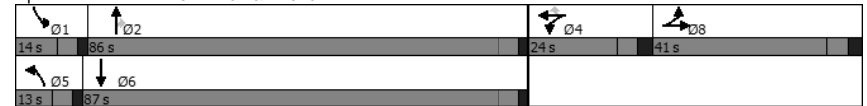
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	421	262	33	163	153	39	25	1494	136	74	1427	89
Future Volume (vph)	421	262	33	163	153	39	25	1494	136	74	1427	89
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt		0.986				0.850		0.850			0.991	
Flt Protected	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (prot)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Flt Permitted	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (perm)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			5
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	448	279	35	173	163	41	27	1589	145	79	1518	95
Shared Lane Traffic (%)	16%											
Lane Group Flow (vph)	376	386	0	173	163	41	27	1589	145	79	1613	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	41.0	41.0		24.0	24.0	24.0	13.0	86.0	86.0	14.0	87.0	
Total Split (%)	24.8%	24.8%		14.5%	14.5%	14.5%	7.9%	52.1%	52.1%	8.5%	52.7%	
Maximum Green (s)	34.0	34.0		17.0	17.0	17.0	7.0	80.0	80.0	8.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



McMahon Associates, Inc.  
3: Rt 202 & Rt 926

Robinson Tract  
2025 with Dev Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	421	262	33	163	153	39	25	1494	136	74	1427	89
Future Volume (veh/h)	421	262	33	163	153	39	25	1494	136	74	1427	89
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	381	373	35	173	163	41	27	1589	145	79	1518	95
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	378	387	8	194	203	163	49	1725	806	85	1561	97
Arrive On Green	0.21	0.21	0.21	0.11	0.11	0.11	0.03	0.49	0.49	0.05	0.52	0.51
Sat Flow, veh/h	1780	1697	159	1775	1864	1492	1761	3514	1643	1554	3015	188
Grp Volume(v), veh/h	381	0	408	173	163	41	27	1589	145	79	791	822
Grp Sat Flow(s),veh/h/ln	1780	0	1856	1775	1864	1492	1761	1757	1643	1554	1577	1626
Q Serve(g_s), s	35.0	0.0	35.0	15.9	14.1	4.2	2.5	69.3	8.1	8.4	80.0	81.4
Cycle Q Clear(g_c), s	35.0	0.0	35.0	15.9	14.1	4.2	2.5	69.3	8.1	8.4	80.0	81.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	378	0	398	194	203	163	49	1725	806	85	816	842
V/C Ratio(X)	1.01	0.00	1.02	0.89	0.80	0.25	0.56	0.92	0.18	0.93	0.97	0.98
Avail Cap(c_a), veh/h	378	0	394	194	203	163	85	1725	806	85	816	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	65.0	72.6	71.8	67.3	79.2	41.0	23.5	77.7	38.5	38.9
Incr Delay (d2), s/veh	48.6	0.0	51.4	36.8	20.1	0.8	9.6	9.6	0.5	75.2	24.7	25.9
Initial Q Delay(d3),s/veh	76.3	0.0	54.2	0.0	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	36.3	0.0	36.3	14.1	12.4	2.9	2.3	47.7	5.9	8.8	44.7	46.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	189.9	0.0	170.6	109.3	91.9	68.1	88.8	66.9	23.9	152.9	63.1	64.8
LnGrp LOS	F	A	F	F	F	E	F	E	C	F	E	E
Approach Vol, veh/h	789			377			1761			1692		
Approach Delay, s/veh	179.9			97.3			63.7			68.1		
Approach LOS	F			F			E			E		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	4.0	86.0	24.0	9.6	90.4	41.0						
Change Period (Y+Rc), s	6.0	6.0	7.0	6.0	6.0	7.0						
Max Green Setting (Gmax) s	80.0	80.0	17.0	7.0	81.0	34.0						
Max Q Clear Time (g_c+11) s	71.8	71.8	18.4	5.0	83.4	37.5						
Green Ext Time (p_c), s	0.0	7.2	0.0	0.0	0.0	0.0						

**Intersection Summary**

HCM 6th Ctrl Delay	87.9
HCM 6th LOS	F

**Notes**  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc.  
12: Rt 202 & Stetson School Dr/Skiles Blvd

Robinson Tract  
2025 with Dev Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	309	180	29	73	174	84	0	1526	75	0	1535	514
Future Volume (vph)	309	180	29	73	174	84	0	1526	75	0	1535	514
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%			2%			2%			-3%		
Storage Length (ft)	200		200		350		0		0		220	
Storage Lanes	1		1		1		0		0		1	
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Flt	0.850			0.951			0.850			0.850		
Flt Protected	0.950		0.950									
Satd. Flow (prot)	1645		1782		1487		1612		1694		0	
Flt Permitted	0.489		0.599									
Satd. Flow (perm)	847		1782		1487		1017		1694		0	
Right Turn on Red	No			No			Yes			Yes		
Satd. Flow (RTOR)							59			368		
Link Speed (mph)	25			25			45			45		
Link Distance (ft)	637			560			1356			940		
Travel Time (s)	17.4			15.3			20.5			14.2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	336	196	32	79	189	91	0	1659	82	0	1668	559
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	196	32	79	280	0	0	1659	82	0	1668	559
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right			Right			Right			Right		
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)	15			15			450			450		
Detector 2 Size(ft)	6			6			40			40		
Detector 2 Type	CI+Ex			CI+Ex			CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Detector 3 Position(ft)	36			36								
Detector 3 Size(ft)	6			6								
Detector 3 Type	CI+Ex			CI+Ex								
Detector 3 Channel												
Detector 3 Extend (s)	0.0			0.0								
Detector 4 Position(ft)	62			62								
Detector 4 Size(ft)	6			6								
Detector 4 Type	CI+Ex			CI+Ex								



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA		NA	Perm		NA	Perm	
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0		22.0	22.0		22.0	22.0	
Total Split (s)	50.0	50.0	50.0	50.0	50.0		70.0	70.0		70.0	70.0	
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0		63.0	63.0		63.0	63.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0		6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		6.0	6.0		6.0	6.0	
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0		48.0	48.0		48.0	48.0	
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0		24.0	24.0		24.0	24.0	
Recall Mode	None	None	None	None	None		Max	Max		Max	Max	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd

70 s	50 s
70 s	50 s



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	309	180	29	73	174	84	0	1526	75	0	1535	514
Future Volume (veh/h)	309	180	29	73	174	84	0	1526	75	0	1535	514
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No		No			No		
Adj Sat Flow, veh/h/ln	1944	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	336	196	32	79	189	91	0	1659	82	0	1668	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	337	703	573	379	396	191	0	1702	743	0	1793	859
Arrive On Green	0.36	0.36	0.35	0.36	0.36	0.35	0.00	0.53	0.53	0.00	0.53	0.53
Sat Flow, veh/h	1206	1962	1638	1111	1104	532	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	336	196	32	79	0	280	0	1659	82	0	1668	559
Grp Sat Flow(s),veh/h/ln	1206	1962	1638	1111	0	1636	0	1595	1394	0	1681	1610
Q Serve(g_s), s	27.6	8.5	1.6	6.6	0.0	15.9	0.0	60.6	3.5	0.0	55.1	29.8
Cycle Q Clear(g_c), s	43.0	8.5	1.6	15.1	0.0	15.9	0.0	60.6	3.5	0.0	55.1	29.8
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	337	703	573	379	0	586	0	1702	743	0	1793	859
V/C Ratio(X)	1.00	0.28	0.06	0.21	0.00	0.48	0.00	0.97	0.11	0.00	0.93	0.65
Avail Cap(c_a), veh/h	337	703	573	379	0	586	0	1702	743	0	1793	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.6	27.4	25.9	32.8	0.0	29.9	0.0	27.2	13.9	0.0	25.9	20.0
Incr Delay (d2), s/veh	48.2	0.2	0.0	0.3	0.0	0.6	0.0	16.6	0.3	0.0	10.1	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.1	7.4	1.1	3.3	0.0	10.6	0.0	32.8	2.0	0.0	30.1	16.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	96.9	27.7	25.9	33.1	0.0	30.5	0.0	43.8	14.2	0.0	36.0	23.8
LnGrp LOS	F	C	C	C	A	C	A	D	B	A	D	C
Approach Vol, veh/h	564				359			1741			2227	
Approach Delay, s/veh	68.8				31.1			42.4			33.0	
Approach LOS	E				C			D			C	
Timer - Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	70.0			50.0		70.0		50.0				
Change Period (Y+Rc), s	7.0			8.0		7.0		8.0				
Max Green Setting (Gmax), s	63.0			42.0		63.0		42.0				
Max Q Clear Time (g_c+I1), s	57.6			17.9		63.1		45.5				
Green Ext Time (p_c), s	5.4			1.8		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 40.3

HCM 6th LOS D





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	80	0	0	33	37	1868	50	63	1509	142
Future Volume (vph)	0	0	80	0	0	33	37	1868	50	63	1509	142
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.996			0.987		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1344	1515	3147	0	1613	3076	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1344	1515	3147	0	1613	3076	0
Link Speed (mph)			35			35		45			45	
Link Distance (ft)			499			858		3154			1356	
Travel Time (s)			9.7			16.7		47.8			20.5	
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%	0%	0%	0%	0%	17%	8%	7%	13%	4%	12%	5%
Adj. Flow (vph)	0	0	91	0	0	38	42	2123	57	72	1715	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	91	0	0	38	42	2180	0	72	1876	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

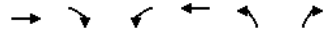
Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	80	0	0	33	37	1868	50	63	1509	142
Future Vol, veh/h	0	0	80	0	0	33	37	1868	50	63	1509	142
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-	0	-
Grade, %	-	-1	-	-	-2	-	-	2	-	-	-3	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	17	8	7	13	4	12	5
Mvmt Flow	0	0	91	0	0	38	42	2123	57	72	1715	161

Major/Minor	Minor2	Minor1	Major1	Major2								
Conflicting Flow All	-	-	938	-	-	1090	1876	0	0	2180	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.2	-	-	7.3	4.1	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.9	-	-	3.1	2.5	-	-	2.4	-	-
Pot Cap-1 Maneuver	0	0	271	0	0	196	304	-	-	252	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	271	-	-	196	304	-	-	252	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	24.8	27.7	0.4	0.9
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	304	-	-	271	196	252	-
HCM Lane V/C Ratio	0.138	-	-	0.335	0.191	0.284	-
HCM Control Delay (s)	18.7	-	-	24.8	27.7	24.9	-
HCM Lane LOS	C	-	-	C	D	C	-
HCM 95th %tile Q(veh)	0.5	-	-	1.4	0.7	1.1	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	80	1	8	170	1	0
Future Volume (vph)	80	1	8	170	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr	0.999					
Fit Protected				0.998	0.950	
Satd. Flow (prot)	1703	0	0	1690	1636	1663
Fit Permitted				0.998	0.950	
Satd. Flow (perm)	1703	0	0	1690	1636	1663
Link Speed (mph)	35			35	35	
Link Distance (ft)	224			499	469	
Travel Time (s)	4.4			9.7	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	114	1	11	243	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	115	0	0	254	1	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	80	1	8	170	1	0
Future Vol, veh/h	80	1	8	170	1	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	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	4	-	-	-4	2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	114	1	11	243	1	0

**Major/Minor**

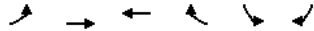
	Major1	Major2	Minor1
Conflicting Flow All	0	0	115
Stage 1	-	-	115
Stage 2	-	-	265
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1097	683
Stage 1	-	-	1046
Stage 2	-	-	873
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1097	675
Mov Cap-2 Maneuver	-	-	675
Stage 1	-	-	1046
Stage 2	-	-	863

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.4	10.3
HCM LOS			B

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	675	-	-	-	1097	-
HCM Lane V/C Ratio	0.002	-	-	-	0.01	-
HCM Control Delay (s)	10.3	0	-	-	8.3	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	170	66	142	30	15	133
Future Volume (vph)	170	66	142	30	15	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.976		0.878	
Flt Protected		0.965			0.995	
Satd. Flow (prot)	0	1646	1655	0	1572	0
Flt Permitted		0.965			0.995	
Satd. Flow (perm)	0	1646	1655	0	1572	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		206	224		486	
Travel Time (s)		4.0	4.4		9.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	243	94	203	43	21	190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	337	246	0	211	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	170	66	142	30	15	133
Future Vol, veh/h	170	66	142	30	15	133
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, %	-	4	-3	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	5	0	0	0
Mvmt Flow	243	94	203	43	21	190

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	246	0	805
Stage 1	-	-	225
Stage 2	-	-	580
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	889	-	394
Stage 1	-	-	939
Stage 2	-	-	634
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	889	-	292
Mov Cap-2 Maneuver	-	-	292
Stage 1	-	-	696
Stage 2	-	-	634

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	989	-	-	-	723
HCM Lane V/C Ratio	0.246	-	-	-	-0.292
HCM Control Delay (s)	9.8	0	-	-	12
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	1.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	236	0	0	275	0	0
Future Volume (vph)	236	0	0	275	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	13	13
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Fit Protected</b>						
Satd. Flow (prot)	1714	0	0	1682	1879	0
<b>Fit Permitted</b>						
Satd. Flow (perm)	1714	0	0	1682	1879	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	223			206	436	
Travel Time (s)	4.3			4.0	8.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	337	0	0	393	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	337	0	0	393	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

<b>Intersection</b>						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	236	0	0	275	0	0
Future Vol, veh/h	236	0	0	275	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	337	0	0	393	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 730 337
Stage 1	-	-	- 337 -
Stage 2	-	-	- 393 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	- 0 0	- 474 763	
Stage 1	- 0 0	- 862 -	
Stage 2	- 0 0	- 815 -	
Platoon blocked, %	-	-	
Mov Cap-1 Maneuver	-	-	- 474 763
Mov Cap-2 Maneuver	-	-	- 474 -
Stage 1	-	-	- 862 -
Stage 2	-	-	- 815 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	104	1	177	98	4	132
Future Volume (vph)	104	1	177	98	4	132
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	0.999			0.869		
Fit Protected				0.969	0.998	
Satd. Flow (prot)	1712	0	0	1678	1530	0
Fit Permitted				0.969	0.998	
Satd. Flow (perm)	1712	0	0	1678	1530	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1821			223	448	
Travel Time (s)	35.5			4.3	8.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	149	1	253	140	6	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	0	393	195	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	104	1	177	98	4	132
Future Vol, veh/h	104	1	177	98	4	132
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	-
Grade, %	3	-	-	-3	0	-
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	149	1	253	140	6	189

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	150
Stage 1	-	-	150
Stage 2	-	-	646
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1067	397
Stage 1	-	-	1019
Stage 2	-	-	587
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1067	295
Mov Cap-2 Maneuver	-	-	295
Stage 1	-	-	1019
Stage 2	-	-	436

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	6.1	10.1
HCM LOS			B

**Minor Lane/Major Mvmt**

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	896	-	-	1067	-
HCM Lane V/C Ratio	0.217	-	-	0.237	-
HCM Control Delay (s)	10.1	-	-	9.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.9	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	59	0	4	72	1	13
Future Volume (vph)	59	0	4	72	1	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	6%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr					0.872	
Fit Protected				0.997	0.998	
Satd. Flow (prot)	1688	0	0	1726	1536	0
Fit Permitted				0.997	0.998	
Satd. Flow (perm)	1688	0	0	1726	1536	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	885			1821	335	
Travel Time (s)	17.2			35.5	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	84	0	6	103	1	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	109	20	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	59	0	4	72	1	13
Future Vol, veh/h	59	0	4	72	1	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	-
Grade, %	6	-	-	-3	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	84	0	6	103	1	19

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	84
Stage 1	-	-	84
Stage 2	-	-	115
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1124	913
Stage 1	-	-	1095
Stage 2	-	-	1058
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1124	908
Mov Cap-2 Maneuver	-	-	908
Stage 1	-	-	1095
Stage 2	-	-	1052

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.4	8.6
HCM LOS			A

**Minor Lane/Major Mvm**

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1030	-	-	1124	-
HCM Lane V/C Ratio	0.019	-	-	0.005	-
HCM Control Delay (s)	8.6	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	0	51	4	3	67	3	12	0	9	5	0	2
Future Volume (vph)	0	51	4	3	67	3	12	0	9	5	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	10	10	12	12	12	10	12	10
Grade (%)	3%				-3%		0%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.995		0.941				0.959	
Fit Protected					0.998		0.972				0.966	
Satd. Flow (prot)	0	1636	0	0	1631	0	0	1614	0	0	1543	0
Fit Permitted					0.998		0.972				0.966	
Satd. Flow (perm)	0	1636	0	0	1631	0	0	1614	0	0	1543	0
Link Speed (mph)	35				35		25				25	
Link Distance (ft)	496				885		304				306	
Travel Time (s)	9.7				17.2		8.3				8.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	2%	2%	2%	50%	2%	2%	2%	0%	2%	25%
Adj. Flow (vph)	0	73	6	4	96	4	17	0	13	7	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	104	0	0	30	0	0	10	0
Sign Control	Free				Free		Stop				Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	51	4	3	67	3	12	0	9	5	0	2
Future Vol, veh/h	0	51	4	3	67	3	12	0	9	5	0	2
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	
Storage Length	-		-		-		-		-		-	
Veh in Median Storage, #	0		-		0		-		0		-	
Grade, %	-3		-		-3		-		0		-1	
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	0	2	2	2	50	2	2	2	0	2	25
Mvmt Flow	0	73	6	4	96	4	17	0	13	7	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	100	0	0	79
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.3	-	-	4.3
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3	-	-	3
Pot Cap-1 Maneuver	110	-	-	1128
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	110	-	-	1128
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	8.9	9.1
HCM LOS			A	A

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	956	1110	-	-	1128	-	-	893
HCM Lane V/C Ratio	0.031	-	-	-	0.004	-	-	0.011
HCM Control Delay (s)	8.9	0	-	-	8.2	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵		↑	↘	↵	↘
Traffic Volume (vph)	47	34	212	35	20	364
Future Volume (vph)	47	34	212	35	20	364
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.943		0.981			
Fit Protected	0.972					0.997
Satd. Flow (prot)	1554	0	1736	0	0	1771
Fit Permitted	0.972					0.997
Satd. Flow (perm)	1554	0	1736	0	0	1771
Link Speed (mph)	35		35			35
Link Distance (ft)	496		2543			619
Travel Time (s)	9.7		49.5			12.1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	12%	2%	0%	7%	1%
Adj. Flow (vph)	54	39	244	40	23	418
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	284	0	0	441
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵		↑	↘	↵	↘
Traffic Vol, veh/h	47	34	212	35	20	364
Future Vol, veh/h	47	34	212	35	20	364
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		0		-	
Grade, %	0		-		-	
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	12	2	0	7	1
Mvmt Flow	54	39	244	40	23	418

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	728	264	0
Stage 1	264	-	-
Stage 2	464	-	-
Critical Hdwy	6.42	6.32	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.2	-
Pot Cap-1 Maneuver#	437	794	-
Stage 1	898	-	-
Stage 2	720	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver#	423	794	-
Mov Cap-2 Maneuver#	423	-	-
Stage 1	898	-	-
Stage 2	697	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	526	925	-
HCM Lane V/C Ratio	-	-	0.177	0.025	-
HCM Control Delay (s)	-	-	13.3	9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

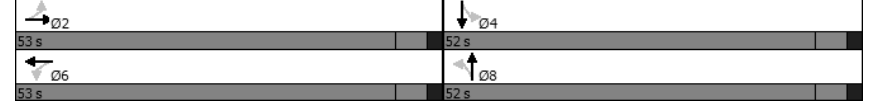


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	65	643	15	28	544	65	10	182	43	64	207	184
Future Volume (vph)	65	643	15	28	544	65	10	182	43	64	207	184
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997			0.986			0.975			0.945		
Fit Protected	0.996			0.998			0.998			0.993		
Satd. Flow (prot)	0	1637	0	0	1631	0	0	1642	0	0	1555	0
Fit Permitted	0.899			0.951			0.977			0.922		
Satd. Flow (perm)	0	1477	0	0	1554	0	0	1607	0	0	1444	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	1			7			14			42		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	66	656	15	29	555	66	10	186	44	65	211	188
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	737	0	0	650	0	0	240	0	0	464	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	53.0	53.0		53.0	53.0		52.0	52.0		52.0	52.0	
Total Split (%)	50.5%	50.5%		50.5%	50.5%		49.5%	49.5%		49.5%	49.5%	
Maximum Green (s)	47.0	47.0		47.0	47.0		46.0	46.0		46.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	91.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



McMahon Associates, Inc.  
1: New St & Rt 926

Robinson Tract  
2025 with Dev Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (veh/h)	65	643	15	28	544	65	10	182	43	64	207	184
Future Volume (veh/h)	65	643	15	28	544	65	10	182	43	64	207	184
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	66	656	15	29	555	66	10	186	44	65	211	188
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	104	851	19	65	824	96	52	481	110	102	260	214
Arrive On Green	0.54	0.55	0.54	0.54	0.55	0.54	0.32	0.33	0.32	0.32	0.33	0.32
Sat Flow, veh/h	106	1540	34	40	1490	173	28	1449	332	166	782	645
Grp Volume(v), veh/h	737	0	0	650	0	0	240	0	0	464	0	0
Grp Sat Flow(s),veh/h/ln	1680	0	0	1703	0	0	1809	0	0	1593	0	0
Q Serve(g_s), s	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.2	0.0	0.0
Cycle Q Clear(g_c), s	30.3	0.0	0.0	23.4	0.0	0.0	8.9	0.0	0.0	24.1	0.0	0.0
Prop In Lane	0.09		0.02	0.04		0.10	0.04		0.18	0.14		0.41
Lane Grp Cap(c), veh/h	954	0	0	965	0	0	623	0	0	558	0	0
V/C Ratio(X)	0.77	0.00	0.00	0.67	0.00	0.00	0.39	0.00	0.00	0.83	0.00	0.00
Avail Cap(c_a), veh/h	954	0	0	965	0	0	991	0	0	882	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	0.0	0.0	14.0	0.0	0.0	22.4	0.0	0.0	27.5	0.0	0.0
Incr Delay (d2), s/veh	6.0	0.0	0.0	3.8	0.0	0.0	0.4	0.0	0.0	3.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/rlf	6.9	0.0	0.0	13.7	0.0	0.0	7.0	0.0	0.0	14.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	0.0	0.0	17.7	0.0	0.0	22.8	0.0	0.0	31.3	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h	737			650			240			464		
Approach Delay, s/veh	21.2			17.7			22.8			31.3		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	53.0		33.9		53.0		33.9					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	47.0		46.0		47.0		46.0					
Max Q Clear Time (g_c+I1), s	32.3		26.1		25.4		10.9					
Green Ext Time (p_c), s	5.1		1.8		5.1		0.9					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	22.6											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 2025 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\TrafficAnalysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev\Weekday Afternoon Peak Hour

McMahon Associates, Inc.  
2: Bridlewood Blvd/Connector Road & Rt 926

Robinson Tract  
2025 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (vph)	119	598	38	32	398	49	40	45	15	29	10	232
Future Volume (vph)	119	598	38	32	398	49	40	45	15	29	10	232
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%				-8%				-1%		0%	
Storage Length (ft)	150		350		120		150		0		150	
Storage Lanes	1		1		1		1		1		1	
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850				0.850				0.963		0.856	
Flt Protected	0.950		0.950		0.950		0.950		0.950		0.950	
Satd. Flow (prot)	1609	1678	1567	1719	1835	1560	1719	1716	0	1676	1511	0
Flt Permitted	0.321		0.434		0.526		0.639		0.717		0.856	
Satd. Flow (perm)	544	1678	1567	785	1835	1560	952	1716	0	1265	1511	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	39		109		15		237		35		1473	
Link Speed (mph)	45		45		25		35		28.7		28.7	
Link Distance (ft)	2436		2349		414		1473		28.7		28.7	
Travel Time (s)	36.9		35.6		11.3		28.7		28.7		28.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	121	610	39	33	406	50	41	46	15	30	10	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	610	39	33	406	50	41	61	0	30	247	0
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Left	Thru	Left	Thru
Leading Detector (ft)	30	30	30	30	30	30	30	30	30	30	30	30
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5		2		6		6		8		4	
Permitted Phases	2		2		6		6		8		4	
Detector Phase	5		2		6		6		8		4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	13.0	60.0	60.0	47.0	47.0	47.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.4%	66.7%	66.7%	52.2%	52.2%	52.2%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	7.0	54.0	54.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0

Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\TrafficAnalysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev\Weekday Afternoon Peak Hour

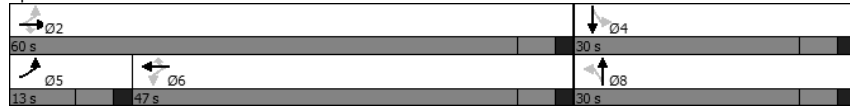


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead		Lag			Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	48.2
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated

Splits and Phases: 2: Bridlewood Blvd/Connector Road & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	119	598	38	32	398	49	40	45	15	29	10	232
Future Volume (veh/h)	119	598	38	32	398	49	40	45	15	29	10	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1415	1401	1501	2098	2070	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	121	610	39	33	406	50	41	46	15	30	10	237
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	0	0	2	2	0	2	2	2	2	2
Cap, veh/h	397	720	654	295	614	479	292	333	108	502	16	369
Arrive On Green	0.10	0.51	0.51	0.30	0.30	0.27	0.25	0.25	0.23	0.25	0.25	0.23
Sat Flow, veh/h	1347	1401	1272	926	2070	1754	1175	1306	426	1341	61	1450
Grp Volume(v), veh/h	121	610	39	33	406	50	41	0	61	30	0	247
Grp Sat Flow(s),veh/h/ln	1347	1401	1272	926	2070	1754	1175	0	1732	1341	0	1511
Q Serve(g_s), s	2.4	16.2	0.7	1.4	7.4	0.9	1.4	0.0	1.2	0.7	0.0	6.4
Cycle Q Clear(g_c), s	2.4	16.2	0.7	8.2	7.4	0.9	7.8	0.0	1.2	0.9	0.0	6.4
Prop In Lane	1.00		1.00	1.00	1.00	1.00	1.00		0.25	1.00		0.96
Lane Grp Cap(c), veh/h	397	720	654	295	614	479	292	0	441	502	0	385
V/C Ratio(X)	0.30	0.85	0.06	0.11	0.66	0.10	0.14	0.00	0.14	0.06	0.00	0.64
Avail Cap(c_a), veh/h	509	1783	1619	921	2012	1664	673	0	1002	937	0	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.5	9.0	5.3	16.6	13.3	11.7	17.8	0.0	12.5	12.4	0.0	14.8
Incr Delay (d2), s/veh	0.4	2.9	0.0	0.2	1.2	0.1	0.2	0.0	0.1	0.0	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	5.4	0.2	0.4	4.8	0.5	0.6	0.0	0.8	0.3	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	11.9	5.3	16.8	14.5	11.8	18.1	0.0	12.7	12.5	0.0	16.6
LnGrp LOS	A	B	A	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h	770			489			102			277		
Approach Delay, s/veh	11.1			14.4			14.8			16.2		
Approach LOS	B			B			B			B		
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	27.2		16.0		9.4		17.8		16.0			
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0		6.0			
Max Green Setting (Gmax), s	54.0		24.0		7.0		41.0		24.0			
Max Q Clear Time (g_c+I1), s	18.2		8.4		4.4		10.2		9.8			
Green Ext Time (p_c), s	2.3		0.9		0.1		1.6		0.2			

Intersection Summary

HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

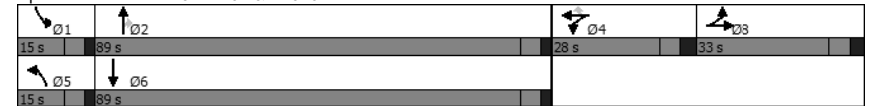
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1559	87
Future Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1559	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.992	
Flt Protected	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Flt Permitted	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Right Turn on Red			No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		5			
Link Speed (mph)	45		45		45		45		45			
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	310	215	43	177	287	52	75	1576	126	121	1607	90
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	279	289	0	177	287	52	75	1576	126	121	1697	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2		1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	33.0	33.0		28.0	28.0	28.0	15.0	89.0	89.0	15.0	89.0	
Total Split (%)	20.0%	20.0%		17.0%	17.0%	17.0%	9.1%	53.9%	53.9%	9.1%	53.9%	
Maximum Green (s)	26.0	26.0		21.0	21.0	21.0	9.0	83.0	83.0	9.0	83.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1559	87
Future Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1559	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No											
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	284	251	43	177	287	52	75	1576	126	121	1607	90
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	296	269	46	242	260	226	110	1816	843	102	1687	42
Arrive On Green	0.16	0.16	0.16	0.13	0.13	0.13	0.06	0.51	0.51	0.06	0.51	0.50
Sat Flow, veh/h	1807	1642	281	1816	1949	1693	1856	3568	1655	1688	3191	178
Grp Volume(v), veh/h	284	0	294	177	287	52	75	1576	126	121	830	867
Grp Sat Flow(s), veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1712
Q Serve(g_s), s	25.7	0.0	24.9	15.4	22.0	4.5	6.5	64.1	6.7	10.0	81.1	82.8
Cycle Q Clear(g_c), s	25.7	0.0	24.9	15.4	22.0	4.5	6.5	64.1	6.7	10.0	81.1	82.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	296	0	315	242	260	226	110	1816	843	102	846	883
V/C Ratio(X)	0.96	0.00	0.93	0.73	1.10	0.23	0.68	0.87	0.15	1.18	0.98	0.98
Avail Cap(c_a), veh/h	296	0	315	242	260	226	112	1816	843	102	846	874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	0.0	68.2	68.7	71.5	63.9	76.1	36.7	21.5	77.5	40.4	40.4
Incr Delay (d2), s/veh	41.5	0.0	34.0	10.7	86.7	0.5	15.3	5.9	0.4	146.4	26.8	26.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.0	138.5	132.4
%ile BackOfQ(95%),veh/ln	21.5	0.0	21.4	12.4	25.0	3.5	6.4	40.0	4.8	13.9	81.7	83.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	110.0	0.0	102.2	79.4	158.2	64.4	91.4	45.9	21.9	223.9	205.6	199.0
LnGrp LOS	F	A	F	E	F	E	F	D	C	F	F	F
Approach Vol, veh/h	578			516			1777			1818		
Approach Delay, s/veh	106.0			121.7			46.1			203.7		
Approach LOS	F			F			D			F		
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	5.0	89.0	28.0	14.7	89.3	33.0						
Change Period (Y+Rc), s	6.0	6.0	7.0	6.0	6.0	7.0						
Max Green Setting (Gmax)9s	9.0	83.0	21.0	9.0	83.0	26.0						
Max Q Clear Time (g_c+1)11s	11.0	66.6	24.5	9.0	84.8	28.2						
Green Ext Time (p_c), s	0.0	13.3	0.0	0.0	0.0	0.0						

Intersection Summary	
HCM 6th Ctrl Delay	122.9
HCM 6th LOS	F

**Notes**  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1839	364
Future Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1839	364
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%			2%			2%			-3%		
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100		75			75			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00
Frt			0.850		0.933				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.622			0.623								
Satd. Flow (perm)	1098	1888	1621	1110	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red	No			No			Yes			Yes		
Satd. Flow (RTOR)				56						239		
Link Speed (mph)	25			25			45			45		
Link Distance (ft)	637			560			1356			940		
Travel Time (s)	17.4			15.3			20.5			14.2		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	356	170	19	90	95	76	0	1735	74	0	1977	391
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	170	19	90	171	0	0	1735	74	0	1977	391
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right			Right			Right			Right		
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)	15			15			450			450		
Detector 2 Size(ft)	6			6			40			40		
Detector 2 Type	CI+Ex			CI+Ex			CI+Ex			CI+Ex		
Detector 2 Channel												
Detector 2 Extend (s)	0.0			0.0			0.0			0.0		
Detector 3 Position(ft)	36			36								
Detector 3 Size(ft)	6			6								
Detector 3 Type	CI+Ex			CI+Ex								
Detector 3 Channel												
Detector 3 Extend (s)	0.0			0.0						0.0		
Detector 4 Position(ft)	62			62								
Detector 4 Size(ft)	6			6								
Detector 4 Type	CI+Ex			CI+Ex								

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Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2025 with Dev Weekday Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0			75.0	75.0		75.0	75.0
Total Split (%)	37.5%	37.5%	37.5%	37.5%	37.5%			62.5%	62.5%		62.5%	62.5%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0			68.0	68.0		68.0	68.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Description: Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd

02	04
75 s	45 s
06	08
75 s	45 s

Lanes, Volumes, Timings

2025 with Dev Weekday Afternoon Peak Hour

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Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2025 with Dev Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1839	364
Future Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1839	364
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	356	170	19	90	95	76	0	1735	74	0	1977	391
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	391	649	540	365	301	241	0	1835	901	0	2042	969
Arrive On Green	0.32	0.32	0.31	0.32	0.32	0.31	0.00	0.57	0.57	0.00	0.57	0.57
Sat Flow, veh/h	1351	2051	1751	1198	951	761	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	356	170	19	90	0	171	0	1735	74	0	1977	391
Grp Sat Flow(s),veh/h/ln	1351	2051	1751	1198	0	1712	0	1595	1567	0	1776	1685
Q Serve(g_s), s	29.4	7.4	0.9	7.3	0.0	9.1	0.0	60.8	2.5	0.0	64.0	15.4
Cycle Q Clear(g_c), s	38.0	7.4	0.9	14.7	0.0	9.1	0.0	60.8	2.5	0.0	64.0	15.4
Prop In Lane	1.00		1.00	1.00		0.44	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	391	649	540	365	0	542	0	1835	901	0	2042	969
V/C Ratio(X)	0.91	0.26	0.04	0.25	0.00	0.32	0.00	0.95	0.08	0.00	0.97	0.40
Avail Cap(c_a), veh/h	391	649	540	365	0	542	0	1835	901	0	2042	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	30.5	29.0	36.0	0.0	31.3	0.0	23.8	11.4	0.0	24.4	14.1
Incr Delay (d2), s/veh	25.1	0.2	0.0	0.3	0.0	0.3	0.0	11.6	0.2	0.0	13.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	6.8	0.7	3.9	0.0	7.0	0.0	31.0	1.6	0.0	36.1	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.4	30.8	29.0	36.4	0.0	31.6	0.0	35.3	11.6	0.0	38.1	15.4
LnGrp LOS	E	C	C	D	A	C	A	D	B	A	D	B
Approach Vol, veh/h	545			261			1809			2368		
Approach Delay, s/veh	57.3			33.3			34.4			34.4		
Approach LOS	E			C			C			C		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	75.0			45.0			75.0			45.0		
Change Period (Y+Rc), s	7.0			8.0			7.0			8.0		
Max Green Setting (Gmax), s	68.0			37.0			68.0			37.0		
Max Q Clear Time (g_c+I1), s	66.5			17.2			63.3			40.5		
Green Ext Time (p_c), s	1.5			1.1			4.7			0.0		

Intersection Summary

HCM 6th Ctrl Delay

36.8

HCM 6th LOS

D

HCM 6th Signalized Intersection Summary

2025 with Dev Weekday Afternoon Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑	
Traffic Volume (vph)	0	0	38	0	0	43	57	1744	79	126	1725	346
Future Volume (vph)	0	0	38	0	0	43	57	1744	79	126	1725	346
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.993			0.975		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3299	0	1678	3324	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3299	0	1678	3324	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			553			858		3154		1356		
Travel Time (s)			10.8			16.7		47.8		20.5		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	41	0	0	46	61	1875	85	135	1855	372
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	41	0	0	46	61	1960	0	135	2227	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑	
Traffic Vol, veh/h	0	0	38	0	0	43	57	1744	79	126	1725	346
Future Vol, veh/h	0	0	38	0	0	43	57	1744	79	126	1725	346
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	0	0	0	0	0	0	0	0	0	0	0
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	41	0	0	46	61	1875	85	135	1855	372

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1114	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	209	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	209	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	26.4	22.9	0.7	1.4
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	258	-	-	209	247	322	-
HCM Lane V/C Ratio	0.238	-	-	0.196	0.187	0.421	-
HCM Control Delay (s)	23.2	-	-	26.4	22.9	24.1	-
HCM Lane LOS	C	-	-	D	C	C	-
HCM 95th %tile Q(veh)	0.9	-	-	0.7	0.7	2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	34	0	5	397	1	4
Future Volume (vph)	34	0	5	397	1	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected				0.999	0.950	
Satd. Flow (prot)	1705	0	0	1756	1636	1414
Fit Permitted				0.999	0.950	
Satd. Flow (perm)	1705	0	0	1756	1636	1414
Link Speed (mph)	35			35	35	
Link Distance (ft)	215			553	359	
Travel Time (s)	4.2			10.8	7.0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	45	0	7	529	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	0	536	1	5
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	34	0	5	397	1	4
Future Vol, veh/h	34	0	5	397	1	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	0
Veh in Median Storage#	-	-	-	-	0	0
Grade, %	4			-4	2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	45	0	7	529	1	5

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	45
Stage 1	-	-	45
Stage 2	-	-	543
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1159	500
Stage 1	-	-	1137
Stage 2	-	-	622
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1159	496
Mov Cap-2 Maneuver	-	-	496
Stage 1	-	-	1137
Stage 2	-	-	616

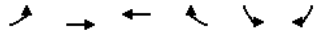
**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	496	1093	-	-	1159	-
HCM Lane V/C Ratio	0.003	0.005	-	-	0.006	-
HCM Control Delay (s)	12.3	8.3	-	-	8.1	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	188	14	377	21	20	149
Future Volume (vph)	188	14	377	21	20	149
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.993		0.881	
Flt Protected		0.956			0.994	
Satd. Flow (prot)	0	1630	1737	0	1576	0
Flt Permitted		0.956			0.994	
Satd. Flow (perm)	0	1630	1737	0	1576	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		170	215		401	
Travel Time (s)		3.3	4.2		7.8	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	251	19	503	28	27	199
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	270	531	0	226	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 7.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	188	14	377	21	20	149
Future Vol, veh/h	188	14	377	21	20	149
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, %	-	4	-3	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	251	19	503	28	27	199

**Major/Minor**

	Major1	Major2	Minor2
Conflicting Flow All	531	0	1038
Stage 1	-	-	517
Stage 2	-	-	521
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	788	-	283
Stage 1	-	-	680
Stage 2	-	-	677
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	788	-	192
Mov Cap-2 Maneuver	-	-	192
Stage 1	-	-	461
Stage 2	-	-	677

**Approach**

	EB	WB	SB
HCM Control Delay, s	19.9	0	19.3
HCM LOS			C

**Minor Lane/Major Mvmt**

	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	788	-	-	-	474	-
HCM Lane V/C Ratio	0.318	-	-	-	-0.475	-
HCM Control Delay (s)	11.7	0	-	-	19.3	-
HCM Lane LOS	B	A	-	-	C	-
HCM 95th %tile Q(veh)	1.4	-	-	-	2.5	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Volume (vph)	202	0	0	526	0	0
Future Volume (vph)	202	0	0	526	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	268			170	323	
Travel Time (s)	5.2			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	269	0	0	701	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	269	0	0	701	0	0
Sign Control	Free			Free	Stop	

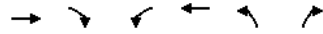
**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized

<b>Intersection</b>						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	202	0	0	526	0	0
Future Vol, veh/h	202	0	0	526	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	269	0	0	701	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	970
Stage 1	-	-	269
Stage 2	-	-	701
Critical Hdwy	-	-	6
Critical Hdwy Stg 1	-	-	5
Critical Hdwy Stg 2	-	-	5
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	0	0	347
Stage 1	0	0	922
Stage 2	0	0	598
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	347
Mov Cap-2 Maneuver	-	-	347
Stage 1	-	-	922
Stage 2	-	-	598

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	44	4	266	260	3	158
Future Volume (vph)	44	4	266	260	3	158
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	0.989			0.868		
Fit Protected				0.975	0.999	
Satd. Flow (prot)	1692	0	0	1688	1530	0
Fit Permitted				0.975	0.999	
Satd. Flow (perm)	1692	0	0	1688	1530	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1700			268	830	
Travel Time (s)	33.1			5.2	16.2	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	59	5	355	347	4	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	702	215	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	44	4	266	260	3	158
Future Vol, veh/h	44	4	266	260	3	158
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	-
Grade, %	3	-	-	-3	0	-
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	59	5	355	347	4	211

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	64
Stage 1	-	-	62
Stage 2	-	-	1057
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1142	251
Stage 1	-	-	1122
Stage 2	-	-	368
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1142	154
Mov Cap-2 Maneuver	-	-	154
Stage 1	-	-	1122
Stage 2	-	-	226

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	9.8
HCM LOS			A

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1142	-
HCM Lane V/C Ratio	0.223	-	-	0.311	-
HCM Control Delay (s)	9.8	-	-	9.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	1.3	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	57	2	14	218	1	9
Future Volume (vph)	57	2	14	218	1	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995			0.875		
Flt Protected				0.997	0.996	
Satd. Flow (prot)	1704	0	0	1742	1487	0
Flt Permitted				0.997	0.996	
Satd. Flow (perm)	1704	0	0	1742	1487	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	858			1700	418	
Travel Time (s)	16.7			33.1	8.1	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	1%	2%	2%
Adj. Flow (vph)	76	3	19	291	1	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	0	310	13	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	57	2	14	218	1	9
Future Vol, veh/h	57	2	14	218	1	9
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	-
Grade, %	3			-3	0	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	2	2	1	2	2
Mvmt Flow	76	3	19	291	1	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	79
Stage 1	-	-	78
Stage 2	-	-	329
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	-2.218	-3.518
Pot Cap-1 Maneuver	-	1519	600
Stage 1	-	-	945
Stage 2	-	-	729
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1519	591
Mov Cap-2 Maneuver	-	-	591
Stage 1	-	-	945
Stage 2	-	-	718

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9
HCM LOS			A

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	922	-	-	1519	-
HCM Lane V/C Ratio	0.014	-	-	0.012	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	3	52	13	10	197	12	7	0	6	1	0	2
Future Volume (vph)	3	52	13	10	197	12	7	0	6	1	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	10	10	12	12	12	10	12	10
Grade (%)	3%			-3%			0%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974				0.993				0.936			
Frt Protected	0.998				0.998				0.974			
Satd. Flow (prot)	0	1602	0	0	1673	0	0	1609	0	0	1591	0
Frt Permitted	0.998				0.998				0.974			
Satd. Flow (perm)	0	1602	0	0	1673	0	0	1609	0	0	1591	0
Link Speed (mph)	35				35				25			
Link Distance (ft)	591				858				382			
Travel Time (s)	11.5				16.7				10.4			
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	2%	2%	1%	0%	2%	2%	0%	0%	2%	0%
Adj. Flow (vph)	4	69	17	13	263	16	9	0	8	1	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	292	0	0	17	0	0	4	0
Sign Control	Free			Free			Stop			Stop		

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	3	52	13	10	197	12	7	0	6	1	0	2
Future Vol, veh/h	3	52	13	10	197	12	7	0	6	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free		Free		Free		Free		Stop		Stop	
RT Channelized	-		None		-		None		-		None	
Storage Length	-											
Veh in Median Storage, #	0											
Grade, %	-3			-			-3			0		
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	2	1	0	2	2	0	2	0	0
Mvmt Flow	4	69	17	13	263	16	9	0	8	1	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	279	0	86	0
Stage 1	-	-	86	86
Stage 2	-	-	299	305
Critical Hdwy	4.3	-	4.3	-
Critical Hdwy Stg 1	-	-	6.12	5.52
Critical Hdwy Stg 2	-	-	6.12	5.52
Follow-up Hdwy	3	-	3	-
Pot Cap-1 Maneuver	64	-	1122	-
Stage 1	-	-	1074	824
Stage 2	-	-	815	662
Platoon blocked, %	-			
Mov Cap-1 Maneuver	64	-	1122	-
Mov Cap-2 Maneuver	-	-	644	535
Stage 1	-	-	1070	821
Stage 2	-	-	801	653

Approach	EB	WB	NB	SB
HCM Control Delay, s	4	0.4	9.7	9.9
HCM LOS			A	A

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	784	964	-	-	1122	-	-	738
HCM Lane V/C Ratio	0.022	0.004	-	-	0.012	-	-	0.005
HCM Control Delay (s)	9.7	8.8	0	-	8.2	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	T
Traffic Volume (vph)	156	50	266	45	23	299
Future Volume (vph)	156	50	266	45	23	299
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.967		0.980			
Fit Protected	0.964					0.996
Satd. Flow (prot)	1678	0	1749	0	0	1793
Fit Permitted	0.964					0.996
Satd. Flow (perm)	1678	0	1749	0	0	1793
Link Speed (mph)	35		35			35
Link Distance (ft)	591		636			619
Travel Time (s)	11.5		12.4			12.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	177	57	302	51	26	340
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	0	353	0	0	366
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	T
Traffic Vol, veh/h	156	50	266	45	23	299
Future Vol, veh/h	156	50	266	45	23	299
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	177	57	302	51	26	340

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	720	328	0
Stage 1	328	-	-
Stage 2	392	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuver	444	758	-
Stage 1	839	-	-
Stage 2	781	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	428	758	-
Mov Cap-2 Maneuver	428	-	-
Stage 1	839	-	-
Stage 2	754	-	-

Approach	WB	NB	SB
HCM Control Delay	19.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	479	909	-
HCM Lane V/C Ratio	-	-	0.489	0.029	-
HCM Control Delay (s)	-	-	19.5	9.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.6	0.1	-

*Base*

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	421	262	33	163	153	39	25	1494	136	74	1427	89
Future Volume (vph)	421	262	33	163	153	39	25	1494	136	74	1427	89
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt		0.986				0.850		0.850			0.991	
Flt Protected	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (prot)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Flt Permitted	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (perm)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			5
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	448	279	35	173	163	41	27	1589	145	79	1518	95
Shared Lane Traffic (%)	16%											
Lane Group Flow (vph)	376	386	0	173	163	41	27	1589	145	79	1613	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2		1	6	
Permitted Phases						4			2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	43.0	43.0		24.0	24.0	24.0	13.0	85.0	85.0	13.0	85.0	
Total Split (%)	26.1%	26.1%		14.5%	14.5%	14.5%	7.9%	51.5%	51.5%	7.9%	51.5%	
Maximum Green (s)	36.0	36.0		17.0	17.0	17.0	7.0	79.0	79.0	7.0	79.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

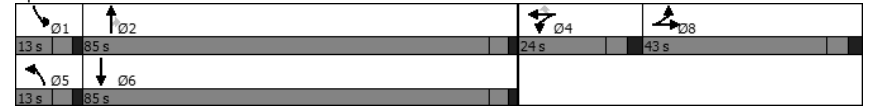
Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev Weekday AM





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↑	↑	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	421	262	33	163	153	39	25	1494	136	74	1427	89
Future Volume (veh/h)	421	262	33	163	153	39	25	1494	136	74	1427	89
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	381	373	35	173	163	41	27	1589	145	79	1518	95
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	399	412	8	194	203	163	49	1704	796	75	1525	95
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.03	0.48	0.48	0.05	0.51	0.50
Sat Flow, veh/h	1780	1697	159	1775	1864	1492	1761	3514	1643	1554	3015	188
Grp Volume(v), veh/h	381	0	408	173	163	41	27	1589	145	79	791	822
Grp Sat Flow(s),veh/h/ln	1780	0	1856	1775	1864	1492	1761	1757	1643	1554	1577	1626
Q Serve(g_s), s	34.9	0.0	36.1	15.9	14.1	4.2	2.5	70.2	8.2	8.0	82.0	83.4
Cycle Q Clear(g_c), s	34.9	0.0	36.1	15.9	14.1	4.2	2.5	70.2	8.2	8.0	82.0	83.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	399	0	421	194	203	163	49	1704	796	75	797	822
V/C Ratio(X)	0.95	0.00	0.97	0.89	0.80	0.25	0.56	0.93	0.18	1.05	0.99	1.00
Avail Cap(c_a), veh/h	399	0	416	194	203	163	85	1704	796	75	797	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	0.0	64.0	72.6	71.8	67.3	79.2	42.0	24.0	78.5	40.4	40.8
Incr Delay (d2), s/veh	33.4	0.0	36.0	36.8	20.1	0.8	9.6	10.8	0.5	117.7	29.9	31.4
Initial Q Delay(d3),s/veh	51.7	0.0	37.2	0.0	0.0	0.0	0.0	19.5	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	83.2	0.0	33.6	14.1	12.4	2.9	2.3	49.2	5.9	9.7	46.8	49.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	149.0	0.0	137.2	109.3	91.9	68.1	88.8	72.3	24.5	196.2	70.3	72.3
LnGrp LOS	F	A	F	F	F	E	F	E	C	F	E	F
Approach Vol, veh/h		789			377			1761			1692	
Approach Delay, s/veh		142.9			97.3			68.6			77.1	
Approach LOS		F			F			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	85.0		24.0	9.6	88.4		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	79.0	79.0		17.0	7.0	79.0		36.0				
Max Q Clear Time (g_c+1),s	72.7	72.7		18.4	5.0	85.4		38.1				
Green Ext Time (p_c), s	0.0	5.7		0.0	0.0	0.0		0.0				

**Intersection Summary**

HCM 6th Ctrl Delay	86.8
HCM 6th LOS	F

**Notes**

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↙	↖	↙	↘	↗	↘	↙	↗	↘
Traffic Volume (vph)	309	180	29	73	174	84	0	1526	75	0	1535	514
Future Volume (vph)	309	180	29	73	174	84	0	1526	75	0	1535	514
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00
Frt		0.850		0.951				0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1645	1782	1487	1612	1694	0	0	3164	1417	0	3156	1660
Flt Permitted	0.452			0.584								
Satd. Flow (perm)	783	1782	1487	991	1694	0	0	3164	1417	0	3156	1660
Right Turn on Red			No			No		Yes		Yes		
Satd. Flow (RTOR)								74				458
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	336	196	32	79	189	91	0	1659	82	0	1668	559
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	196	32	79	280	0	0	1659	82	0	1668	559
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right				Right				Right			
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

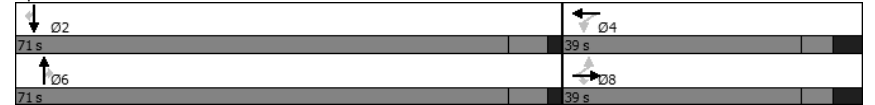
Lanes, Volumes, Timings  
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	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0			71.0	71.0		71.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	35.5%			64.5%	64.5%		64.5%	64.5%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0			64.0	64.0		64.0	64.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd



Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev Weekday AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗	↘	↘	↗	↗	↘	↗	↗
Traffic Volume (veh/h)	309	180	29	73	174	84	0	1526	75	0	1535	514
Future Volume (veh/h)	309	180	29	73	174	84	0	1526	75	0	1535	514
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1944	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	336	196	32	79	189	91	0	1659	82	0	1668	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	245	571	462	301	321	155	0	1886	823	0	1987	951
Arrive On Green	0.29	0.29	0.28	0.29	0.29	0.28	0.00	0.59	0.59	0.00	0.59	0.59
Sat Flow, veh/h	1206	1962	1638	1111	1104	532	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	336	196	32	79	0	280	0	1659	82	0	1668	559
Grp Sat Flow(s),veh/h/ln	1206	1962	1638	1111	0	1636	0	1595	1394	0	1681	1610
Q Serve(g_s), s	16.4	8.7	1.6	6.6	0.0	16.1	0.0	48.7	2.8	0.0	44.3	23.9
Cycle Q Clear(g_c), s	32.0	8.7	1.6	15.3	0.0	16.1	0.0	48.7	2.8	0.0	44.3	23.9
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	245	571	462	301	0	476	0	1886	823	0	1987	951
V/C Ratio(X)	1.37	0.34	0.07	0.26	0.00	0.59	0.00	0.88	0.10	0.00	0.84	0.59
Avail Cap(c_a), veh/h	245	571	462	301	0	476	0	1886	823	0	1987	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	30.7	28.9	36.7	0.0	33.5	0.0	19.2	9.8	0.0	18.3	14.1
Incr Delay (d2), s/veh	191.3	0.4	0.1	0.5	0.0	1.9	0.0	6.3	0.2	0.0	4.5	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	7.5	1.1	3.3	0.0	10.9	0.0	23.8	1.5	0.0	22.6	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	240.3	31.1	29.0	37.2	0.0	35.4	0.0	25.4	10.0	0.0	22.7	16.8
LnGrp LOS	F	C	C	D	A	D	A	C	B	A	C	B
Approach Vol, veh/h		564			359			1741			2227	
Approach Delay, s/veh		155.6			35.8			24.7			21.2	
Approach LOS		F			D			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.0		39.0		71.0		39.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		64.0		31.0		64.0		31.0				
Max Q Clear Time (g_c+11), s		46.8		18.1		51.2		34.5				
Green Ext Time (p_c), s		17.2		1.5		12.7		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				39.0								
HCM 6th LOS				D								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1559	87
Future Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1559	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.992	
Flt Protected	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Flt Permitted	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Right Turn on Red			No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		5			
Link Speed (mph)	45		45		45		45		45			
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	310	215	43	177	287	52	75	1576	126	121	1607	90
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	279	289	0	177	287	52	75	1576	126	121	1697	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2	2	1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		27.0	27.0	27.0	13.0	87.0	87.0	13.0	87.0	
Total Split (%)	23.0%	23.0%		16.4%	16.4%	16.4%	7.9%	52.7%	52.7%	7.9%	52.7%	
Maximum Green (s)	31.0	31.0		20.0	20.0	20.0	7.0	81.0	81.0	7.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

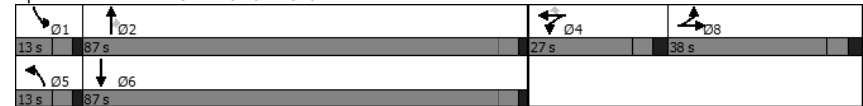
Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev\Weekday Base Syn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 164.7  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3 - 2025 with Dev\Weekday Base Syn



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1559	87
Future Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1559	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	284	251	43	177	287	52	75	1576	126	121	1607	90
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	325	295	50	235	252	219	92	1805	837	83	1671	42
Arrive On Green	0.18	0.18	0.17	0.13	0.13	0.13	0.05	0.51	0.51	0.05	0.51	0.50
Sat Flow, veh/h	1807	1642	281	1816	1949	1693	1856	3568	1655	1688	3191	178
Grp Volume(v), veh/h	284	0	294	177	287	52	75	1576	126	121	830	867
Grp Sat Flow(s),veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1712
Q Serve(g_s), s	24.8	0.0	24.0	15.2	21.0	4.5	6.5	63.4	6.6	8.0	80.5	82.0
Cycle Q Clear(g_c), s	24.8	0.0	24.0	15.2	21.0	4.5	6.5	63.4	6.6	8.0	80.5	82.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	325	0	345	235	252	219	92	1805	837	83	838	875
V/C Ratio(X)	0.88	0.00	0.85	0.75	1.14	0.24	0.82	0.87	0.15	1.45	0.99	0.99
Avail Cap(c_a), veh/h	357	0	380	235	252	219	92	1805	837	83	838	866
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.7	0.0	64.5	68.0	70.6	63.4	76.3	36.6	21.4	77.1	40.1	40.1
Incr Delay (d2), s/veh	19.6	0.0	15.7	12.8	98.5	0.6	42.0	6.2	0.4	258.5	28.9	28.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	144.1	138.0
%ile BackOfQ(95%),veh/ln	8.9	0.0	19.0	12.4	25.5	3.5	7.4	39.7	4.7	15.9	82.1	83.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	84.3	0.0	80.1	80.8	169.1	63.9	118.3	46.2	21.8	335.5	213.1	206.4
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h		578			516			1777			1818	
Approach Delay, s/veh		82.2			128.2			47.5			218.0	
Approach LOS		F			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	87.0		27.0	13.0	87.0		35.1				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	81.0	81.0		20.0	7.0	81.0		31.0				
Max Q Clear Time (g_c+1),s	65.9	65.9		23.5	9.0	84.0		27.3				
Green Ext Time (p_c), s	0.0	12.4		0.0	0.0	0.0		0.8				

Intersection Summary

HCM 6th Ctrl Delay	126.8
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1839	364
Future Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1839	364
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.933			0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.619			0.621								
Satd. Flow (perm)	1093	1888	1621	1107	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No		Yes		Yes		
Satd. Flow (RTOR)								74				338
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	356	170	19	90	95	76	0	1735	74	0	1977	391
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	170	19	90	171	0	0	1735	74	0	1977	391
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right					Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0			70.0	70.0		70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%			70.0%	70.0%		70.0%	70.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0			63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

**Intersection Summary**

Area Type: Other

Cycle Length: 100

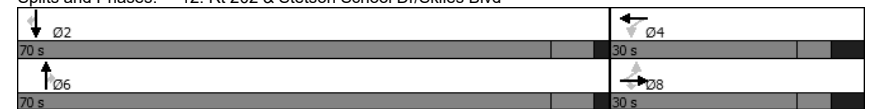
Actuated Cycle Length: 100

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Description: Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd



McMahon Associates, Inc.

Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2025 with Dev Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔	↔	↔	↑↑	↔	↔	↑↑	↔
Traffic Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1839	364
Future Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1839	364
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	356	170	19	90	95	76	0	1735	74	0	1977	391
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	274	472	385	264	219	175	0	2042	1003	0	2273	1078
Arrive On Green	0.23	0.23	0.22	0.23	0.23	0.22	0.00	0.64	0.64	0.00	0.64	0.64
Sat Flow, veh/h	1351	2051	1751	1198	951	761	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	356	170	19	90	0	171	0	1735	74	0	1977	391
Grp Sat Flow(s),veh/h/ln	1351	2051	1751	1198	0	1712	0	1595	1567	0	1776	1685
Q Serve(g_s), s	14.9	7.0	0.9	6.8	0.0	8.6	0.0	42.9	1.8	0.0	45.2	10.9
Cycle Q Clear(g_c), s	23.0	7.0	0.9	13.8	0.0	8.6	0.0	42.9	1.8	0.0	45.2	10.9
Prop In Lane	1.00		1.00	1.00		0.44	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	274	472	385	264	0	394	0	2042	1003	0	2273	1078
V/C Ratio(X)	1.30	0.36	0.05	0.34	0.00	0.43	0.00	0.85	0.07	0.00	0.87	0.36
Avail Cap(c_a), veh/h	274	472	385	264	0	394	0	2042	1003	0	2273	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.5	32.3	30.8	38.1	0.0	33.1	0.0	14.2	6.8	0.0	14.6	8.4
Incr Delay (d2), s/veh	159.6	0.5	0.1	0.8	0.0	0.8	0.0	4.7	0.1	0.0	4.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	29.7	6.3	0.7	3.7	0.0	6.6	0.0	19.6	1.0	0.0	22.4	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	204.1	32.8	30.8	38.9	0.0	33.9	0.0	18.9	6.9	0.0	19.5	9.4
LnGrp LOS	F	C	C	D	A	C	A	B	A	A	B	A
Approach Vol, veh/h		545			261			1809			2368	
Approach Delay, s/veh		144.6			35.6			18.4			17.8	
Approach LOS		F			D			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		63.0		22.0		63.0		22.0				
Max Q Clear Time (g_c+11), s		47.7		16.3		45.4		25.5				
Green Ext Time (p_c), s		15.3		0.6		17.6		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				32.8								
HCM 6th LOS				C								

*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*



McMahon Associates, Inc. Robinson Tract  
 2: Bridlewood Blvd/Connector Road & Rt 926 2025 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	119	598	38	32	398	49	40	45	15	29	260	232
Future Volume (vph)	119	598	38	32	398	49	40	45	15	29	260	232
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%				-8%				-1%		0%	
Storage Length (ft)	150		350	120		150	0		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.963			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1609	1678	1567	1719	1835	1560	1719	1716	0	1676	1639	0
Flt Permitted	0.266			0.398			0.253			0.717		
Satd. Flow (perm)	451	1678	1567	720	1835	1560	458	1716	0	1265	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			109			15			50
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		2436			2349			414			1473	
Travel Time (s)		36.9			35.6			11.3			28.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	121	610	39	33	406	50	41	46	15	30	265	237
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	610	39	33	406	50	41	61	0	30	502	0
Number of Detectors	1	1	1	1	1	1	1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30	30	30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	40	40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	13.0	60.0	60.0	47.0	47.0	47.0	30.0	30.0		30.0	30.0	
Total Split (%)	14.4%	66.7%	66.7%	52.2%	52.2%	52.2%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	54.0	54.0	41.0	41.0	41.0	24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	

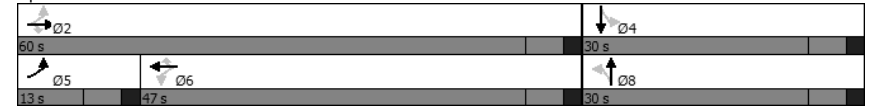
Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3E - 2025 with Dev with US 301 Divisions\Weekd:

McMahon Associates, Inc. Robinson Tract  
 2: Bridlewood Blvd/Connector Road & Rt 926 2025 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 68.1  
 Natural Cycle: 60  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Bridlewood Blvd/Connector Road & Rt 926



Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3E - 2025 with Dev with US 301 Divisions\Weekd:



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑	↗	↘	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	119	598	38	32	398	49	40	45	15	29	260	232
Future Volume (veh/h)	119	598	38	32	398	49	40	45	15	29	260	232
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1415	1401	1501	2098	2070	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	121	610	39	33	406	50	41	46	15	30	265	237
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	0	0	2	2	0	2	2	2	2	2
Cap, veh/h	349	689	625	197	681	551	179	474	155	580	313	280
Arrive On Green	0.09	0.49	0.49	0.33	0.33	0.31	0.36	0.36	0.35	0.36	0.36	0.35
Sat Flow, veh/h	1347	1401	1272	926	2070	1754	929	1306	426	1341	862	771
Grp Volume(v), veh/h	121	610	39	33	406	50	41	0	61	30	0	502
Grp Sat Flow(s),veh/h/ln	1347	1401	1272	926	2070	1754	929	0	1732	1341	0	1633
Q Serve(g_s), s	3.7	27.0	1.1	2.3	11.3	1.4	2.9	0.0	1.6	1.0	0.0	19.5
Cycle Q Clear(g_c), s	3.7	27.0	1.1	18.1	11.3	1.4	22.4	0.0	1.6	1.6	0.0	19.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.25	1.00		0.47
Lane Grp Cap(c), veh/h	349	689	625	197	681	551	179	0	629	580	0	593
V/C Ratio(X)	0.35	0.89	0.06	0.17	0.60	0.09	0.23	0.00	0.10	0.05	0.00	0.85
Avail Cap(c_a), veh/h	384	1119	1016	457	1263	1044	179	0	629	580	0	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.0	15.8	9.2	28.9	19.3	16.7	30.5	0.0	14.6	14.7	0.0	20.4
Incr Delay (d2), s/veh	0.6	5.3	0.0	0.4	0.8	0.1	0.6	0.0	0.1	0.0	0.0	11.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	12.2	0.5	0.9	8.4	0.9	1.2	0.0	1.1	0.5	0.0	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	21.0	9.2	29.3	20.1	16.7	31.1	0.0	14.6	14.7	0.0	31.4
LnGrp LOS	B	C	A	C	C	B	C	A	B	B	A	C
Approach Vol, veh/h		770			489			102			532	
Approach Delay, s/veh		19.3			20.4			21.3			30.4	
Approach LOS		B			C			C			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		38.8		30.0	11.2	27.6		30.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		54.0		24.0	7.0	41.0		24.0				
Max Q Clear Time (g_c+11), s		29.0		21.5	5.7	20.1		24.4				
Green Ext Time (p_c), s		2.2		0.6	0.0	1.6		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			22.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1309	87
Future Volume (vph)	301	209	42	172	278	50	73	1529	122	117	1309	87
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.991	
Flt Protected	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3259	0
Flt Permitted	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3259	0
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									112		6	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	310	215	43	177	287	52	75	1576	126	121	1349	90
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	279	289	0	177	287	52	75	1576	126	121	1439	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases	4											
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	35.0	35.0		28.0	28.0	28.0	15.0	87.0	87.0	15.0	87.0	
Total Split (%)	21.2%	21.2%		17.0%	17.0%	17.0%	9.1%	52.7%	52.7%	9.1%	52.7%	
Maximum Green (s)	28.0	28.0		21.0	21.0	21.0	9.0	81.0	81.0	9.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

↖ 01	↗ 02	↘ 04	↖ 08
15 s	87 s	28 s	35 s
↖ 05	↘ 06		
15 s	87 s		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1309	87
Future Volume (veh/h)	301	209	42	172	278	50	73	1529	122	117	1309	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	284	251	43	177	287	52	75	1576	126	121	1349	90
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	317	288	49	242	260	226	110	1774	823	102	1648	41
Arrive On Green	0.18	0.18	0.17	0.13	0.13	0.13	0.06	0.50	0.50	0.06	0.50	0.49
Sat Flow, veh/h	1807	1642	281	1816	1949	1693	1856	3568	1655	1688	3153	210
Grp Volume(v), veh/h	284	0	294	177	287	52	75	1576	126	121	707	732
Grp Sat Flow(s),veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1706
Q Serve(g_s), s	25.4	0.0	24.6	15.4	22.0	4.5	6.5	65.6	6.8	10.0	61.5	62.1
Cycle Q Clear(g_c), s	25.4	0.0	24.6	15.4	22.0	4.5	6.5	65.6	6.8	10.0	61.5	62.1
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	317	0	337	242	260	226	110	1774	823	102	826	863
V/C Ratio(X)	0.90	0.00	0.87	0.73	1.10	0.23	0.68	0.89	0.15	1.18	0.86	0.85
Avail Cap(c_a), veh/h	318	0	338	242	260	226	113	1774	823	102	826	851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.5	0.0	66.3	68.6	71.4	63.9	76.1	38.5	22.6	77.4	41.3	41.3
Incr Delay (d2), s/veh	26.3	0.0	21.2	10.7	86.4	0.5	15.3	7.1	0.4	146.1	11.0	10.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	85.3	75.8
%ile BackOfQ(95%),veh/ln	19.9	0.0	20.0	12.4	25.0	3.5	6.4	41.3	4.9	13.9	63.8	63.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	92.8	0.0	87.5	79.3	157.9	64.4	91.4	49.6	22.9	223.6	137.7	127.3
LnGrp LOS	F	A	F	E	F	E	F	D	C	F	F	F
Approach Vol, veh/h		578			516			1777			1560	
Approach Delay, s/veh		90.1			121.5			49.4			139.5	
Approach LOS		F			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	87.0		28.0	14.7	87.3		34.9				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax)9s	81.0	81.0		21.0	9.0	81.0		28.0				
Max Q Clear Time (g_c+1)2s	68.1	68.1		24.5	9.0	64.1		27.9				
Green Ext Time (p_c), s	0.0	10.8		0.0	0.0	11.9		0.0				

Intersection Summary

HCM 6th Ctrl Delay	94.8
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2025 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↙	↖	↗	↘	↙	↖	↗	↘	↙
Traffic Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1589	614
Future Volume (vph)	331	158	18	84	88	71	0	1614	69	0	1589	614
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.933				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.626			0.628								
Satd. Flow (perm)	1105	1888	1621	1119	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No			Yes		Yes	
Satd. Flow (RTOR)									54			449
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	356	170	19	90	95	76	0	1735	74	0	1709	660
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	170	19	90	171	0	0	1735	74	0	1709	660
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right					Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		Cl+Ex			Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		Cl+Ex			Cl+Ex							

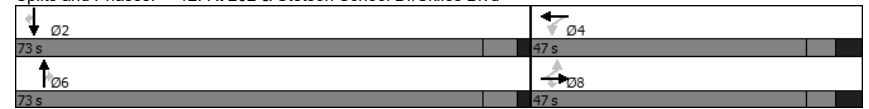
Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3E - 2025 with Dev with US 202 Divisions\Weekd:

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2025 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	47.0	47.0	47.0	47.0	47.0			73.0	73.0		73.0	73.0
Total Split (%)	39.2%	39.2%	39.2%	39.2%	39.2%			60.8%	60.8%		60.8%	60.8%
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0			66.0	66.0		66.0	66.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 119.8  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Description: Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd



Lanes, Volumes, Timings 2025 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\3E - 2025 with Dev with US 202 Divisions\Weekd:



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔	↔	↔	↑↑	↔	↔	↑↑	↔
Traffic Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1589	614
Future Volume (veh/h)	331	158	18	84	88	71	0	1614	69	0	1589	614
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	356	170	19	90	95	76	0	1735	74	0	1709	660
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	416	684	569	387	317	254	0	1782	875	0	1983	941
Arrive On Green	0.33	0.33	0.32	0.33	0.33	0.32	0.00	0.56	0.56	0.00	0.56	0.56
Sat Flow, veh/h	1351	2051	1751	1198	951	761	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	356	170	19	90	0	171	0	1735	74	0	1709	660
Grp Sat Flow(s),veh/h/ln	1351	2051	1751	1198	0	1712	0	1595	1567	0	1776	1685
Q Serve(g_s), s	31.6	7.2	0.9	7.1	0.0	8.9	0.0	63.2	2.6	0.0	49.2	34.1
Cycle Q Clear(g_c), s	40.0	7.2	0.9	14.3	0.0	8.9	0.0	63.2	2.6	0.0	49.2	34.1
Prop In Lane	1.00		1.00	1.00		0.44	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	416	684	569	387	0	571	0	1782	875	0	1983	941
V/C Ratio(X)	0.86	0.25	0.03	0.23	0.00	0.30	0.00	0.97	0.08	0.00	0.86	0.70
Avail Cap(c_a), veh/h	416	684	569	387	0	571	0	1782	875	0	1983	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.2	29.1	27.6	34.3	0.0	29.8	0.0	25.7	12.3	0.0	22.6	19.2
Incr Delay (d2), s/veh	16.1	0.2	0.0	0.3	0.0	0.3	0.0	16.0	0.2	0.0	5.2	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	6.6	0.7	3.8	0.0	6.8	0.0	33.4	1.6	0.0	27.1	19.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.3	29.3	27.7	34.6	0.0	30.1	0.0	41.6	12.5	0.0	27.8	23.6
LnGrp LOS	E	C	C	C	A	C	A	D	B	A	C	C
Approach Vol, veh/h		545			261			1809			2369	
Approach Delay, s/veh		49.5			31.6			40.4			26.6	
Approach LOS		D			C			D			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		73.0		47.0		73.0		47.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		66.0		39.0		66.0		39.0				
Max Q Clear Time (g_c+11), s		51.7		16.8		65.7		42.5				
Green Ext Time (p_c), s		14.3		1.2		0.3		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				34.4								
HCM 6th LOS				C								



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	38	0	0	43	57	1744	79	126	1475	346
Future Volume (vph)	0	0	38	0	0	43	57	1744	79	126	1475	346
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.993			0.972		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3299	0	1678	3314	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3299	0	1678	3314	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			553			858		3154		1356		
Travel Time (s)			10.8			16.7		47.8		20.5		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	41	0	0	46	61	1875	85	135	1586	372
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	41	0	0	46	61	1960	0	135	1958	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

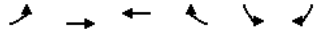
Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	38	0	0	43	57	1744	79	126	1475	346
Future Vol, veh/h	0	0	38	0	0	43	57	1744	79	126	1475	346
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	0	0	0	0	0	0	0	0	0	0	0
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	41	0	0	46	61	1875	85	135	1586	372

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	979	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	260	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	260	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	24.4	22.9	0.6	1.6
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	322	-	-	260	247	322	-
HCM Lane V/C Ratio	0.19	-	-	0.157	0.187	0.421	-
HCM Control Delay (s)	18.8	-	-	21.4	22.9	24.1	-
HCM Lane LOS	C	-	-	C	C	C	-
HCM 95th %tile Q(veh)	0.7	-	-	0.5	0.7	2	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	188	14	377	21	20	399
Future Volume (vph)	188	14	377	21	20	399
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction		0.993		0.872		
Fit Protected		0.955		0.998		
Satd. Flow (prot)	0	1628	1737	0	1566	0
Fit Permitted		0.955		0.998		
Satd. Flow (perm)	0	1628	1737	0	1566	0
Link Speed (mph)		35		35		
Link Distance (ft)		170	215	401		
Travel Time (s)		3.3	4.2	7.8		
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	221	16	444	25	24	469
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	237	469	0	493	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 15.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	188	14	377	21	20	399
Future Vol, veh/h	188	14	377	21	20	399
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, %	-	4	-3	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	221	16	444	25	24	469

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	469	0	0
Stage 1	-	-	457
Stage 2	-	-	458
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	628	-	337
Stage 1	-	-	727
Stage 2	-	-	726
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	628	-	246
Mov Cap-2 Maneuver	-	-	246
Stage 1	-	-	531
Stage 2	-	-	726

Approach	EB	WB	SB
HCM Control Delay, s	19.2	0	33.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	828	-	-	-	-	594
HCM Lane V/C Ratio	0.267	-	-	-	-	0.83
HCM Control Delay (s)	10.9	0	-	-	-	33.8
HCM Lane LOS	B	A	-	-	-	D
HCM 95th %tile Q(veh)	1.1	-	-	-	-	8.7





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	202	0	0	776	0	0
Future Volume (vph)	202	0	0	776	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	268			170	323	
Travel Time (s)	5.2			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	269	0	0	1035	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	269	0	0	1035	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized

<b>Intersection</b>						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	202	0	0	776	0	0
Future Vol, veh/h	202	0	0	776	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	269	0	0	1035	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 1304 269
Stage 1	-	-	- 269 -
Stage 2	-	-	- 1035 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	- 0	0	- 224 831
Stage 1	- 0	0	- 922 -
Stage 2	- 0	0	- 425 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 224 831
Mov Cap-2 Maneuver	-	-	- 224 -
Stage 1	-	-	- 922 -
Stage 2	-	-	- 425 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	44	4	516	260	3	158
Future Volume (vph)	44	4	516	260	3	158
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.868	
Flt Protected				0.968	0.999	
Satd. Flow (prot)	1692	0	0	1676	1530	0
Flt Permitted				0.968	0.999	
Satd. Flow (perm)	1692	0	0	1676	1530	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1700			268	830	
Travel Time (s)	33.1			5.2	16.2	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	59	5	688	347	4	211
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	1035	215	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 9.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	44	4	516	260	3	158
Future Vol, veh/h	44	4	516	260	3	158
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	-
Grade, %	3	-	-	-3	0	-
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	59	5	688	347	4	211

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	64
Stage 1	-	-	62
Stage 2	-	-	1723
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1142	96
Stage 1	-	-	1122
Stage 2	-	-	169
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1142	24
Mov Cap-2 Maneuver	-	-	24
Stage 1	-	-	1122
Stage 2	-	-	43

Approach	EB	WB	NB
HCM Control Delay, s	0	8.5	14.5
HCM LOS			B

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	591	-	-	1142	-
HCM Lane V/C Ratio	0.363	-	-	0.602	-
HCM Control Delay (s)	14.5	-	-	12.8	0
HCM Lane LOS	B	-	-	B	A
HCM 95th %tile Q(veh)	1.7	-	-	4.2	-

## Appendix R

# Future (2030) Capacity/Level-of-Service Without Development Analysis Worksheets

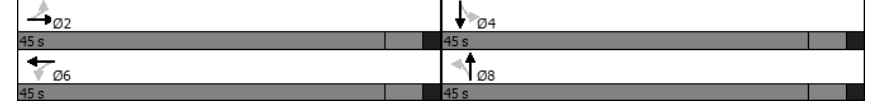


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↕			↔			↕		
Traffic Volume (vph)	108	718	4	12	333	54	3	88	24	57	262	168
Future Volume (vph)	108	718	4	12	333	54	3	88	24	57	262	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.982			0.972			0.953		
Flt Protected	0.994			0.998			0.999			0.994		
Satd. Flow (prot)	0	1636	0	0	1512	0	0	1569	0	0	1565	0
Flt Permitted	0.881			0.969			0.989			0.950		
Satd. Flow (perm)	0	1450	0	0	1468	0	0	1553	0	0	1496	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)				11			19			38		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%
Adj. Flow (vph)	113	748	4	13	347	56	3	92	25	59	273	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	865	0	0	416	0	0	120	0	0	507	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	81.3
Natural Cycle:	100
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (veh/h)	108	718	4	12	333	54	3	88	24	57	262	168
Future Volume (veh/h)	108	718	4	12	333	54	3	88	24	57	262	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1794	1794	1794	1794
Adj Flow Rate, veh/h	112	748	4	12	347	56	3	92	25	59	273	175
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	145	778	4	56	716	113	51	492	130	99	333	201
Arrive On Green	0.50	0.52	0.50	0.50	0.52	0.50	0.34	0.35	0.34	0.34	0.35	0.34
Sat Flow, veh/h	178	1506	8	16	1385	219	10	1388	368	133	941	566
Grp Volume(v), veh/h	864	0	0	415	0	0	120	0	0	507	0	0
Grp Sat Flow(s),veh/h/ln	1692	0	0	1620	0	0	1765	0	0	1641	0	0
Q Serve(g_s), s	26.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0
Cycle Q Clear(g_c), s	39.0	0.0	0.0	12.8	0.0	0.0	3.7	0.0	0.0	22.7	0.0	0.0
Prop In Lane	0.13		0.00	0.03		0.13	0.02		0.21	0.12		0.35
Lane Grp Cap(c), veh/h	905	0	0	864	0	0	650	0	0	612	0	0
V/C Ratio(X)	0.96	0.00	0.00	0.48	0.00	0.00	0.18	0.00	0.00	0.83	0.00	0.00
Avail Cap(c_a), veh/h	905	0	0	864	0	0	931	0	0	875	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	18.5	0.0	0.0	12.2	0.0	0.0	17.4	0.0	0.0	23.6	0.0	0.0
Incr Delay (d2), s/veh	20.8	0.0	0.0	1.9	0.0	0.0	0.1	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.8	0.0	0.0	7.9	0.0	0.0	2.7	0.0	0.0	13.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.3	0.0	0.0	14.1	0.0	0.0	17.5	0.0	0.0	28.2	0.0	0.0
LnGrp LOS	D	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h	864			415			120			507		
Approach Delay, s/veh	39.3			14.1			17.5			28.2		
Approach LOS	D			B			B			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	45.0		32.4		45.0		32.4					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	39.0		39.0		39.0		39.0					
Max Q Clear Time (g_c+11), s	41.0		24.7		14.8		5.7					
Green Ext Time (p_c), s	0.0		1.7		2.9		0.4					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	29.5											
HCM 6th LOS	C											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	513	260	11	168	153	40	15	1532	140	67	1455	183
Future Volume (vph)	513	260	11	168	153	40	15	1532	140	67	1455	183
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%				-4%		0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75		75			75			75
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Frt	0.996				0.850				0.850		0.983	
Flt Protected	0.950	0.984		0.950		0.950		0.950		0.950		
Satd. Flow (prot)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Flt Permitted	0.950	0.984		0.950		0.950		0.950		0.950		
Satd. Flow (perm)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									112		11	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	546	277	12	179	163	43	16	1630	149	71	1548	195
Shared Lane Traffic (%)	25%											
Lane Group Flow (vph)	409	426	0	179	163	43	16	1630	149	71	1743	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	43.0	43.0		24.0	24.0	24.0	13.0	85.0	85.0	13.0	85.0	
Total Split (%)	26.1%	26.1%		14.5%	14.5%	14.5%	7.9%	51.5%	51.5%	7.9%	51.5%	
Maximum Green (s)	36.0	36.0		17.0	17.0	17.0	7.0	79.0	79.0	7.0	79.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

**Intersection Summary**

Area Type: Other  
 Cycle Length: 165  
 Actuated Cycle Length: 165  
 Natural Cycle: 115  
 Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

Ø1		Ø2		Ø4		Ø8	
13 s	35 s			24 s		43 s	
Ø5	Ø6						
13 s	35 s						

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	513	260	11	168	153	40	15	1532	140	67	1455	183
Future Volume (veh/h)	513	260	11	168	153	40	15	1532	140	67	1455	183
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	418	457	12	179	163	43	16	1630	149	71	1548	195
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	399	419	3	194	203	163	33	1704	796	75	1453	181
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.02	0.48	0.48	0.05	0.51	0.51
Sat Flow, veh/h	1780	1828	48	1775	1864	1492	1761	3514	1643	1554	2822	351
Grp Volume(v), veh/h	418	0	469	179	163	43	16	1630	149	71	856	887
Grp Sat Flow(s),veh/h/ln	1780	0	1876	1775	1864	1492	1761	1757	1643	1554	1577	1596
Q Serve(g_s), s	37.0	0.0	37.0	16.5	14.1	4.4	1.5	73.5	8.5	7.5	84.9	84.9
Cycle Q Clear(g_c), s	37.0	0.0	37.0	16.5	14.1	4.4	1.5	73.5	8.5	7.5	84.9	84.9
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	399	0	422	194	203	163	33	1704	796	75	812	822
V/C Ratio(X)	1.05	0.00	1.11	0.92	0.80	0.26	0.49	0.96	0.19	0.94	1.05	1.08
Avail Cap(c_a), veh/h	399	0	421	194	203	163	85	1704	796	75	812	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	0.0	64.0	72.8	71.8	67.4	80.2	42.5	24.1	78.3	40.0	40.1
Incr Delay (d2), s/veh	57.9	0.0	77.5	43.8	20.1	0.9	10.8	13.7	0.5	83.9	46.9	55.3
Initial Q Delay(d3),s/veh	72.1	0.0	51.2	0.0	0.0	0.0	0.0	29.1	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	189.6	0.0	43.1	14.9	12.4	3.0	1.4	53.2	6.1	8.3	54.7	58.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	194.1	0.0	192.6	116.6	91.9	68.3	91.0	85.3	24.6	162.2	86.9	95.4
LnGrp LOS	F	A	F	F	F	E	F	F	C	F	F	F
Approach Vol, veh/h	887			385				1795			1814	
Approach Delay, s/veh	193.3			100.8				80.3			94.0	
Approach LOS	F			F				F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.0	85.0		24.0	8.1	89.9		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	79.0	79.0		17.0	7.0	79.0		36.0				
Max Q Clear Time (g_c+I10), s	76.0	76.0		19.0	4.0	87.4		39.5				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	0.0		0.0				

**Intersection Summary**

HCM 6th Ctrl Delay: 107.6  
 HCM 6th LOS: F

**Notes**

User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.

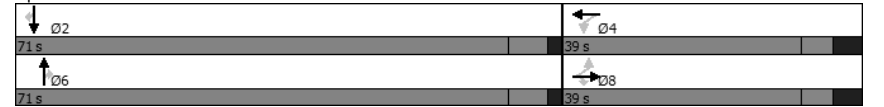
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↗	↘	↔	↗	↘	↔	↗	↘	↔	↗	↘
Traffic Volume (vph)	173	185	31	74	179	86	0	1647	76	0	1656	425
Future Volume (vph)	173	185	31	74	179	86	0	1647	76	0	1656	425
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.952			0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1554	1782	1487	1612	1696	0	0	3164	1417	0	3156	1660
Flt Permitted	0.432			0.573								
Satd. Flow (perm)	707	1782	1487	972	1696	0	0	3164	1417	0	3156	1660
Right Turn on Red			No			No		Yes		Yes		
Satd. Flow (RTOR)								69				351
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	188	201	34	80	195	93	0	1790	83	0	1800	462
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	201	34	80	288	0	0	1790	83	0	1800	462
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right				Right				Right			
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		Cl+Ex			Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		Cl+Ex			Cl+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0			71.0	71.0		71.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	35.5%			64.5%	64.5%		64.5%	64.5%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0			64.0	64.0		64.0	64.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	108.5
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd





McMahon Associates, Inc.

Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2030 without Dev Weekday AM Opt



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗	↘	↑	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	173	185	31	74	179	86	0	1647	76	0	1656	425
Future Volume (veh/h)	173	185	31	74	179	86	0	1647	76	0	1656	425
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No			No			No	
Adj Sat Flow, veh/h/ln	1858	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	188	201	34	80	195	93	0	1790	83	0	1800	462
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	230	571	462	297	322	154	0	1886	823	0	1987	951
Arrive On Green	0.29	0.29	0.28	0.29	0.29	0.28	0.00	0.59	0.59	0.00	0.59	0.59
Sat Flow, veh/h	1144	1962	1638	1104	1108	529	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	188	201	34	80	0	288	0	1790	83	0	1800	462
Grp Sat Flow(s),veh/h/ln	1144	1962	1638	1104	0	1637	0	1595	1394	0	1681	1610
Q Serve(g_s), s	15.8	8.9	1.7	6.8	0.0	16.7	0.0	57.5	2.9	0.0	51.8	18.1
Cycle Q Clear(g_c), s	32.0	8.9	1.7	15.7	0.0	16.7	0.0	57.5	2.9	0.0	51.8	18.1
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	230	571	462	297	0	476	0	1886	823	0	1987	951
V/C Ratio(X)	0.82	0.35	0.07	0.27	0.00	0.60	0.00	0.95	0.10	0.00	0.91	0.49
Avail Cap(c_a), veh/h	230	571	462	297	0	476	0	1886	823	0	1987	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	30.8	29.0	37.0	0.0	33.7	0.0	21.0	9.8	0.0	19.8	12.9
Incr Delay (d2), s/veh	20.1	0.4	0.1	0.5	0.0	2.2	0.0	11.8	0.2	0.0	7.4	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	7.7	1.2	3.4	0.0	11.3	0.0	28.9	1.5	0.0	26.6	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	68.2	31.2	29.0	37.5	0.0	35.9	0.0	32.8	10.0	0.0	27.2	14.7
LnGrp LOS	E	C	C	D	A	D	A	C	B	A	C	B
Approach Vol, veh/h		423			368			1873			2262	
Approach Delay, s/veh		47.5			36.2			31.8			24.7	
Approach LOS		D			D			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.0		39.0		71.0		39.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		64.0		31.0		64.0		31.0				
Max Q Clear Time (g_c+11), s		54.3		18.7		60.0		34.5				
Green Ext Time (p_c), s		9.6		1.5		4.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				30.2								
HCM 6th LOS				C								

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	788	39	8	358	48	29
Future Volume (vph)	788	39	8	358	48	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1662	1521	1719	1717	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1662	1521	1719	1717	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	3%	0%	9%	0%	0%
Adj. Flow (vph)	838	41	9	381	51	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	838	41	9	381	51	31
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	788	39	8	358	48	29
Future Vol, veh/h	788	39	8	358	48	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	- None			- None	- None	
Storage Length	-	350	120	-	0	0
Veh in Median Storage	#	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	4	3	0	9	0	0
Mvmt Flow	838	41	9	381	51	31

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	879
Stage 1	-	-	838
Stage 2	-	-	399
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	592	228
Stage 1	-	-	497
Stage 2	-	-	793
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	592	225
Mov Cap-2 Maneuver	-	-	225
Stage 1	-	-	497
Stage 2	-	-	781

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	21.6
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	225	394	-	-	592	-
HCM Lane V/C Ratio	0.227	0.078	-	-	0.014	-
HCM Control Delay (s)	25.6	14.9	-	-	11.2	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	66	0	0	33	37	1998	50	64	1640	136
Future Volume (vph)	0	0	66	0	0	33	37	1998	50	64	1640	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.996			0.988		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1344	1515	3147	0	1613	3077	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1344	1515	3147	0	1613	3077	0
Link Speed (mph)			35			35		45			45	
Link Distance (ft)			499			858		3154			1356	
Travel Time (s)			9.7			16.7		47.8			20.5	
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%	0%	0%	0%	0%	17%	8%	7%	13%	4%	12%	5%
Adj. Flow (vph)	0	0	75	0	0	38	42	2270	57	73	1864	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	75	0	0	38	42	2327	0	73	2019	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

Int Delay, s/veh 1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	66	0	0	33	37	1998	50	64	1640	136
Future Vol, veh/h	0	0	66	0	0	33	37	1998	50	64	1640	136
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	0	-	-	0	350	-	-	380	-	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	-	0	-	-
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	17	8	7	13	4	12	5
Mvmt Flow	0	0	75	0	0	38	42	2270	57	73	1864	155

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1010	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.2	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	241	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	241	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	26.5	31.3	0.4	1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	269	-	-	241	174	223	-
HCM Lane V/C Ratio	0.156	-	-	0.311	0.216	0.326	-
HCM Control Delay (s)	20.8	-	-	26.5	31.3	28.8	-
HCM Lane LOS	C	-	-	D	D	D	-
HCM 95th %tile Q(veh)	0.5	-	-	1.3	0.8	1.4	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	66	1	9	164	1	0
Future Volume (vph)	66	1	9	164	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr	0.999					
Fit Protected				0.997	0.950	
Satd. Flow (prot)	1703	0	0	1689	1636	1663
Fit Permitted				0.997	0.950	
Satd. Flow (perm)	1703	0	0	1689	1636	1663
Link Speed (mph)	35			35	35	
Link Distance (ft)	224			499	469	
Travel Time (s)	4.4			9.7	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	94	1	13	234	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	0	0	247	1	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh	0.3					
<b>Movement</b>	<b>EBT</b>	<b>EBR</b>	<b>WBL</b>	<b>WBT</b>	<b>NBL</b>	<b>NBR</b>
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	66	1	9	164	1	0
Future Vol, veh/h	66	1	9	164	1	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	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	4	-	-	-4	2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	94	1	13	234	1	0

**Major/Minor**

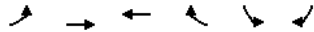
	Major1	Major2	Minor1
Conflicting Flow All	0	0	95
Stage 1	-	-	95
Stage 2	-	-	260
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1114	709
Stage 1	-	-	1071
Stage 2	-	-	878
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1114	700
Mov Cap-2 Maneuver	-	-	700
Stage 1	-	-	1071
Stage 2	-	-	867

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.4	10.2
HCM LOS			B

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	700	-	-	-	1114	-
HCM Lane V/C Ratio	0.002	-	-	-	0.012	-
HCM Control Delay (s)	10.2	0	-	-	8.3	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Traffic Volume (vph)	31	52	135	30	15	34
Future Volume (vph)	31	52	135	30	15	34
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction		0.975		0.905		
Fit Protected		0.982		0.985		
Satd. Flow (prot)	0	1675	1654	0	1605	0
Fit Permitted		0.982		0.985		
Satd. Flow (perm)	0	1675	1654	0	1605	0
Link Speed (mph)		35		35		
Link Distance (ft)		206		486		
Travel Time (s)		4.0		4.4		
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	44	74	193	43	21	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	118	236	0	70	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 2.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↑	↑
Traffic Vol, veh/h	31	52	135	30	15	34
Future Vol, veh/h	31	52	135	30	15	34
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	0	0	-
Grade, %	-	4	-3	-	0	-
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	0	0	5	0	0	0
Mvmt Flow	44	74	193	43	21	49

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	236	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.3	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3	-	-
Pot Cap-1 Maneuver	997	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	997	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	997	-	-	-	807
HCM Lane V/C Ratio	0.044	-	-	-	-0.087
HCM Control Delay (s)	8.8	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Volume (vph)	83	0	0	169	0	0
Future Volume (vph)	83	0	0	169	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	13	13
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Fit Protected</b>						
Satd. Flow (prot)	1714	0	0	1682	1879	0
<b>Fit Permitted</b>						
Satd. Flow (perm)	1714	0	0	1682	1879	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2929			206	436	
Travel Time (s)	57.1			4.0	8.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	119	0	0	241	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	119	0	0	241	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

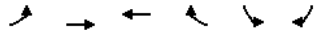
Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	83	0	0	169	0	0
Future Vol, veh/h	83	0	0	169	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	119	0	0	241	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 360 119
Stage 1	-	-	- 119 -
Stage 2	-	-	- 241 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	-	0	0 - 762 1002
Stage 1	-	0	0 - 1068 -
Stage 2	-	0	0 - 948 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 762 1002
Mov Cap-2 Maneuver	-	-	- 762 -
Stage 1	-	-	- 1068 -
Stage 2	-	-	- 948 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	0	49	140	3	5	2
Future Volume (vph)	0	49	140	3	5	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.997		0.959	
Fit Protected					0.966	
Satd. Flow (prot)	0	1655	1652	0	1441	0
Fit Permitted					0.966	
Satd. Flow (perm)	0	1655	1652	0	1441	0
Link Speed (mph)		35	35		25	
Link Distance (ft)		496	2929		306	
Travel Time (s)		9.7	57.1		8.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	2%	50%	0%	25%
Adj. Flow (vph)	0	70	200	4	7	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	70	204	0	10	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	0	49	140	3	5	2
Future Vol, veh/h	0	49	140	3	5	2
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	0	0	-
Grade, %	-	3	-3	-	1	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	2	50	0	25
Mvmt Flow	0	70	200	4	7	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	204	0	272
Stage 1	-	-	202
Stage 2	-	-	70
Critical Hdwy	4.3	-	6.6
Critical Hdwy Stg 1	-	-	5.6
Critical Hdwy Stg 2	-	-	5.6
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	823	-	815
Stage 1	-	-	952
Stage 2	-	-	1108
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	823	-	815
Mov Cap-2 Maneuver	-	-	815
Stage 1	-	-	952
Stage 2	-	-	1108

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1023	-	-	-	818
HCM Lane V/C Ratio	-	-	-	-	-0.012
HCM Control Delay (s)	0	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑			↘
Traffic Volume (vph)	115	28	217	32	17	373
Future Volume (vph)	115	28	217	32	17	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.974		0.983			
Fit Protected	0.961					0.998
Satd. Flow (prot)	1621	0	1739	0	0	1774
Fit Permitted	0.961					0.998
Satd. Flow (perm)	1621	0	1739	0	0	1774
Link Speed (mph)	35		35			35
Link Distance (ft)	496		2543			619
Travel Time (s)	9.7		49.5			12.1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	12%	2%	0%	7%	1%
Adj. Flow (vph)	132	32	249	37	20	429
Shared Lane Traffic (%)						
Lane Group Flow (vph)	164	0	286	0	0	449
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑			↘
Traffic Vol, veh/h	115	28	217	32	17	373
Future Vol, veh/h	115	28	217	32	17	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	12	2	0	7	1
Mvmt Flow	132	32	249	37	20	429

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	737	268	0
Stage 1	268	-	-
Stage 2	469	-	-
Critical Hdwy	6.42	6.32	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.2	-
Pot Cap-1 Maneuver#	31	790	-
Stage 1	894	-	-
Stage 2	716	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver#	19	790	-
Mov Cap-2 Maneuver#	19	-	-
Stage 1	894	-	-
Stage 2	696	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	461	924	-
HCM Lane V/C Ratio	-	-	0.357	0.021	-
HCM Control Delay (s)	-	-	17.1	9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.6	0.1	-



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Robinson Tract  
2030 without Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↕			↕			↔		
Traffic Volume (vph)	57	651	15	26	414	67	11	184	40	66	211	324
Future Volume (vph)	57	651	15	26	414	67	11	184	40	66	211	324
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%				-2%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.982				0.977		0.927	
Flt Protected	0.996				0.997				0.998		0.995	
Satd. Flow (prot)	0	1637	0	0	1623	0	0	1646	0	0	1528	0
Flt Permitted	0.925				0.947				0.969		0.935	
Satd. Flow (perm)	0	1520	0	0	1542	0	0	1598	0	0	1436	0
Right Turn on Red	Yes				Yes				Yes		Yes	
Satd. Flow (RTOR)	1				10				13		73	
Link Speed (mph)	45				45				25		35	
Link Distance (ft)	819				2436				714		826	
Travel Time (s)	12.4				36.9				19.5		16.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	58	664	15	27	422	68	11	188	41	67	215	331
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	737	0	0	517	0	0	240	0	0	613	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left		Thru		Left		Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6				8		4	
Permitted Phases	2				6				8		4	
Detector Phase	2				6				8		4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	53.0	53.0		53.0	53.0		52.0	52.0		52.0	52.0	
Total Split (%)	50.5%	50.5%		50.5%	50.5%		49.5%	49.5%		49.5%	49.5%	
Maximum Green (s)	47.0	47.0		47.0	47.0		46.0	46.0		46.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0				-1.0		-1.0	
Total Lost Time (s)	5.0				5.0				5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lanes, Volumes, Timings  
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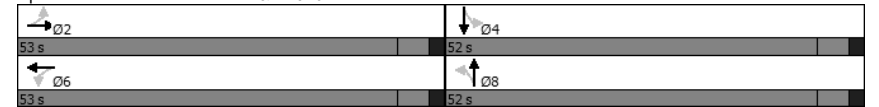
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Robinson Tract  
2030 without Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

**Intersection Summary**  
 Area Type: Other  
 Cycle Length: 105  
 Actuated Cycle Length: 101.3  
 Natural Cycle: 90  
 Control Type: Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\4 - 2030 without Dev\Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (veh/h)	57	651	15	26	414	67	11	184	40	66	211	324
Future Volume (veh/h)	57	651	15	26	414	67	11	184	40	66	211	324
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	58	664	15	27	422	68	11	188	41	67	215	331
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	85	756	17	59	653	102	50	612	129	94	249	356
Arrive On Green	0.47	0.48	0.47	0.47	0.48	0.47	0.41	0.42	0.41	0.41	0.42	0.41
Sat Flow, veh/h	96	1583	35	45	1368	214	30	1446	304	129	588	842
Grp Volume(v), veh/h	737	0	0	517	0	0	240	0	0	613	0	0
Grp Sat Flow(s),veh/h/ln	1714	0	0	1626	0	0	1781	0	0	1559	0	0
Q Serve(g_s), s	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28.5	0.0	0.0
Cycle Q Clear(g_c), s	40.2	0.0	0.0	22.9	0.0	0.0	8.9	0.0	0.0	38.1	0.0	0.0
Prop In Lane	0.08		0.02	0.05		0.13	0.05		0.17	0.11		0.54
Lane Grp Cap(c), veh/h	840	0	0	798	0	0	773	0	0	684	0	0
V/C Ratio(X)	0.88	0.00	0.00	0.65	0.00	0.00	0.31	0.00	0.00	0.90	0.00	0.00
Avail Cap(c_a), veh/h	840	0	0	798	0	0	850	0	0	752	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	24.0	0.0	0.0	19.7	0.0	0.0	19.4	0.0	0.0	27.8	0.0	0.0
Incr Delay (d2), s/veh	12.5	0.0	0.0	4.1	0.0	0.0	0.2	0.0	0.0	12.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.6	0.0	0.0	14.3	0.0	0.0	6.9	0.0	0.0	22.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.5	0.0	0.0	23.7	0.0	0.0	19.6	0.0	0.0	40.5	0.0	0.0
LnGrp LOS	D	A	A	C	A	A	B	A	A	D	A	A
Approach Vol, veh/h	737			517			240			613		
Approach Delay, s/veh	36.5			23.7			19.6			40.5		
Approach LOS	D			C			B			D		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	53.0		47.6		53.0		47.6					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	47.0		46.0		47.0		46.0					
Max Q Clear Time (g_c+I1), s	42.2		40.1		24.9		10.9					
Green Ext Time (p_c), s	2.3		1.4		3.8		0.9					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	32.6											
HCM 6th LOS	C											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	437	211	28	176	268	51	42	1568	125	113	1594	180
Future Volume (vph)	437	211	28	176	268	51	42	1568	125	113	1594	180
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%		-4%		-4%		0%		0%		0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75		75			75			75
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fit	0.988				0.850		0.850		0.985			
Flt Protected	0.950	0.985		0.950		0.950			0.950			
Satd. Flow (prot)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Flt Permitted	0.950	0.985		0.950		0.950			0.950			
Satd. Flow (perm)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Right Turn on Red	No			No			Yes			Yes		
Satd. Flow (RTOR)							112			10		
Link Speed (mph)	45			45			45			45		
Link Distance (ft)	2349			982			1123			3154		
Travel Time (s)	35.6			14.9			17.0			47.8		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	451	218	29	181	276	53	43	1616	129	116	1643	186
Shared Lane Traffic (%)	23%											
Lane Group Flow (vph)	347	351	0	181	276	53	43	1616	129	116	1829	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
<b>Detector 1 Channel</b>												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
<b>Switch Phase</b>												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		27.0	27.0	27.0	13.0	87.0	87.0	13.0	87.0	
Total Split (%)	23.0%	23.0%		16.4%	16.4%	16.4%	7.9%	52.7%	52.7%	7.9%	52.7%	
Maximum Green (s)	31.0	31.0		20.0	20.0	20.0	7.0	81.0	81.0	7.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 165

Natural Cycle: 115

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

Phase 1		Phase 2		Phase 3		Phase 4	
Dir	Split (s)	Dir	Split (s)	Dir	Split (s)	Dir	Split (s)
←	13 s	↑	37 s	←	27 s	↑	38 s
←	13 s	↓	37 s				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	437	211	28	176	268	51	42	1568	125	113	1594	180
Future Volume (veh/h)	437	211	28	176	268	51	42	1568	125	113	1594	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	349	361	29	181	276	53	43	1616	129	116	1643	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	350	350	28	231	248	215	72	1773	823	82	1625	83
Arrive On Green	0.19	0.19	0.19	0.13	0.13	0.13	0.04	0.50	0.50	0.05	0.51	0.50
Sat Flow, veh/h	1807	1803	145	1816	1949	1693	1856	3568	1655	1688	3005	335
Grp Volume(v), veh/h	349	0	390	181	276	53	43	1616	129	116	895	934
Grp Sat Flow(s),veh/h/ln	1807	0	1947	1816	1949	1693	1856	1784	1655	1688	1657	1684
Q Serve(g_s), s	31.8	0.0	32.0	15.9	21.0	4.7	3.8	68.7	7.0	8.0	83.6	83.6
Cycle Q Clear(g_c), s	31.8	0.0	32.0	15.9	21.0	4.7	3.8	68.7	7.0	8.0	83.6	83.6
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	350	0	378	231	248	215	72	1773	823	82	839	869
V/C Ratio(X)	1.00	0.00	1.03	0.78	1.11	0.25	0.60	0.91	0.16	1.42	1.07	1.08
Avail Cap(c_a), veh/h	350	0	378	231	248	215	90	1773	823	82	839	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.4	0.0	66.5	69.8	72.0	64.9	78.0	39.3	22.6	78.5	40.7	40.7
Incr Delay (d2), s/veh	46.9	0.0	55.0	16.0	90.7	0.6	7.7	8.6	0.4	245.2	50.1	52.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	148.0	143.0
%ile BackOfQ(95%),veh/ln	0.0	0.0	29.5	13.1	24.4	3.7	3.5	43.5	5.1	15.2	92.4	95.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	113.3	0.0	121.5	85.8	162.7	65.5	85.8	53.0	23.0	323.7	238.8	236.7
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h	739			510			1788			1945		
Approach Delay, s/veh	117.6			125.3			51.6			242.8		
Approach LOS	F			F			D			F		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	3.0	87.0	27.0		11.4	88.6	38.0					
Change Period (Y+Rc), s	6.0	6.0	7.0		6.0	6.0	7.0					
Max Green Setting (Gmax), s	79	81.0	20.0		7.0	81.0	31.0					
Max Q Clear Time (g_c+I10), s	71.2	71.2	23.5		6.3	86.1	34.3					
Green Ext Time (p_c), s	0.0	8.5	0.0		0.0	0.0	0.0					

Intersection Summary

HCM 6th Ctrl Delay 143.6

HCM 6th LOS F

Notes

User approved pedestrian interval to be less than phase max green.  
User approved volume balancing among the lanes for turning movement.

McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2030 without Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	162	19	86	90	73	0	1784	70	0	1943	249
Future Volume (vph)	171	162	19	86	90	73	0	1784	70	0	1943	249
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850		0.933				0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.605			0.608								
Satd. Flow (perm)	1068	1888	1621	1083	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No		Yes		Yes		Yes
Satd. Flow (RTOR)								73				219
Link Speed (mph)	25				25		45				45	
Link Distance (ft)	719				560		1356				940	
Travel Time (s)	19.6				15.3		20.5				14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	184	174	20	92	97	78	0	1918	75	0	2089	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	174	20	92	175	0	0	1918	75	0	2089	268
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right								Right		Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)	15				15				450		450	
Detector 2 Size(ft)	6				6		40				40	
Detector 2 Type	Cl+Ex				Cl+Ex		Cl+Ex				Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0				0.0		0.0				0.0	
Detector 3 Position(ft)	36				36							
Detector 3 Size(ft)	6				6							
Detector 3 Type	Cl+Ex				Cl+Ex							
Detector 3 Channel												
Detector 3 Extend (s)	0.0				0.0							
Detector 4 Position(ft)	62				62							
Detector 4 Size(ft)	6				6							
Detector 4 Type	Cl+Ex				Cl+Ex							

Lanes, Volumes, Timings 2030 without Dev Weekday Afternoon Peak Hour  
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McMahon Associates, Inc. Robinson Tract  
 12: Rt 202 & Stetson School Dr/Skiles Blvd 2030 without Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)	0.0				0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases	8				4				6		2	
Permitted Phases	8		8		4				6		2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0			70.0	70.0		70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%			70.0%	70.0%		70.0%	70.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0			63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	97.5
Natural Cycle:	80
Control Type:	Actuated-Uncoordinated
Description:	Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd

	02		04
70 s		30 s	
	06		08
70 s		30 s	

Lanes, Volumes, Timings 2030 without Dev Weekday Afternoon Peak Hour  
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↔	↑	↘	↔	↑	↘	↔	↑	↘
Traffic Volume (veh/h)	171	162	19	86	90	73	0	1784	70	0	1943	249
Future Volume (veh/h)	171	162	19	86	90	73	0	1784	70	0	1943	249
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	184	174	20	92	97	78	0	1918	75	0	2089	268
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	270	472	385	261	218	175	0	2042	1003	0	2273	1078
Arrive On Green	0.23	0.23	0.22	0.23	0.23	0.22	0.00	0.64	0.64	0.00	0.64	0.64
Sat Flow, veh/h	1346	2051	1751	1193	949	763	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	184	174	20	92	0	175	0	1918	75	0	2089	268
Grp Sat Flow(s),veh/h/ln	1346	2051	1751	1193	0	1711	0	1595	1567	0	1776	1685
Q Serve(g_s), s	13.5	7.1	0.9	7.0	0.0	8.8	0.0	54.2	1.8	0.0	51.4	6.8
Cycle Q Clear(g_c), s	21.8	7.1	0.9	14.2	0.0	8.8	0.0	54.2	1.8	0.0	51.4	6.8
Prop In Lane	1.00		1.00	1.00		0.45	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	270	472	385	261	0	394	0	2042	1003	0	2273	1078
V/C Ratio(X)	0.68	0.37	0.05	0.35	0.00	0.44	0.00	0.94	0.07	0.00	0.92	0.25
Avail Cap(c_a), veh/h	270	472	385	261	0	394	0	2042	1003	0	2273	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	32.4	30.8	38.4	0.0	33.2	0.0	16.2	6.8	0.0	15.7	7.7
Incr Delay (d2), s/veh	6.8	0.5	0.1	0.8	0.0	0.8	0.0	10.0	0.1	0.0	7.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.7	6.5	0.7	3.8	0.0	6.8	0.0	25.3	1.0	0.0	25.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	32.9	30.8	39.2	0.0	34.0	0.0	26.2	7.0	0.0	23.2	8.3
LnGrp LOS	D	C	C	D	A	C	A	C	A	A	C	A
Approach Vol, veh/h		378			267			1993			2357	
Approach Delay, s/veh		40.6			35.8			25.5			21.5	
Approach LOS		D			D			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		63.0		22.0		63.0		22.0				
Max Q Clear Time (g_c+11), s		53.9		16.7		56.7		24.3				
Green Ext Time (p_c), s		9.1		0.5		6.3		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		25.3
HCM 6th LOS		C

	→	↖	↗	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	723	39	33	499	41	44
Future Volume (vph)	723	39	33	499	41	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	14	11	12	12	14
Grade (%)	8%			-8%	-1%	
Storage Length (ft)		350	120		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1678	1567	1719	1835	1719	1640
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1678	1567	1719	1835	1719	1640
Link Speed (mph)	45			45	25	
Link Distance (ft)	2436			2349	414	
Travel Time (s)	36.9			35.6	11.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	0%	2%	0%	0%
Adj. Flow (vph)	738	40	34	509	42	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	738	40	34	509	42	45
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**


Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Vol, veh/h	723	39	33	499	41	44
Future Vol, veh/h	723	39	33	499	41	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	350	120	-	0	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	8	-	-	-8	-1	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	3	0	0	2	0	0
Mvmt Flow	738	40	34	509	42	45

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	778
Stage 1	-	-	738
Stage 2	-	-	577
Critical Hdwy	-	4.3	6.2
Critical Hdwy Stg 1	-	-	5.2
Critical Hdwy Stg 2	-	-	5.2
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	644	205
Stage 1	-	-	553
Stage 2	-	-	657
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	644	194
Mov Cap-2 Maneuver	-	-	194
Stage 1	-	-	553
Stage 2	-	-	622

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	21
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	194	449	-	-	644	-
HCM Lane V/C Ratio	0.216	0.1	-	-	0.052	-
HCM Control Delay (s)	28.6	13.9	-	-	10.9	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑	
Traffic Volume (vph)	0	0	28	0	0	43	58	1917	81	129	1860	321
Future Volume (vph)	0	0	28	0	0	43	58	1917	81	129	1860	321
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.994			0.978		
Flt Protected						0.950			0.950			
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3302	0	1678	3333	0
Flt Permitted						0.950			0.950			
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3302	0	1678	3333	0
Link Speed (mph)			35			35		45		45		
Link Distance (ft)			553			858		3154		1356		
Travel Time (s)			10.8			16.7		47.8		20.5		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	30	0	0	46	62	2061	87	139	2000	345
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	30	0	0	46	62	2148	0	139	2345	0
Sign Control		Stop			Stop			Free			Free	

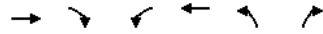
Intersection Summary  
Area Type: Other  
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑	
Traffic Vol, veh/h	0	0	28	0	0	43	58	1917	81	129	1860	321
Future Vol, veh/h	0	0	28	0	0	43	58	1917	81	129	1860	321
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	-	-	0	-	-	0	-	0	-	0	-
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	30	0	0	46	62	2061	87	139	2000	345

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1173	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	190	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	190	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	27.5	26.7	0.7	1.7
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	234	-	-	190	212	275	-
HCM Lane V/C Ratio	0.267	-	-	0.158	0.218	0.504	-
HCM Control Delay (s)	25.9	-	-	27.5	26.7	30.7	-
HCM Lane LOS	D	-	-	D	D	D	-
HCM 95th %tile Q(veh)	1	-	-	0.6	0.8	2.6	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	23	0	5	374	1	4
Future Volume (vph)	23	0	5	374	1	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected				0.999	0.950	
Satd. Flow (prot)	1705	0	0	1756	1636	1414
Fit Permitted				0.999	0.950	
Satd. Flow (perm)	1705	0	0	1756	1636	1414
Link Speed (mph)	35			35	35	
Link Distance (ft)	215			553	359	
Travel Time (s)	4.2			10.8	7.0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	31	0	7	499	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	506	1	5
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	23	0	5	374	1	4
Future Vol, veh/h	23	0	5	374	1	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	0
Veh in Median Storage#	-	-	-	-	0	0
Grade, %	4			-4	2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	31	0	7	499	1	5

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	31
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.3
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	-	-	1171
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1171
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

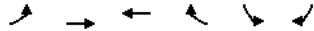
**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.1	8.9
HCM LOS			A

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	1114	-	-	1171	-
HCM Lane V/C Ratio	0.003	0.005	-	-	0.006	-
HCM Control Delay (s)	11.8	8.2	-	-	8.1	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	25	3	354	21	20	29
Future Volume (vph)	25	3	354	21	20	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.920	
Flt Protected		0.957			0.980	
Satd. Flow (prot)	0	1632	1736	0	1623	0
Flt Permitted		0.957			0.980	
Satd. Flow (perm)	0	1632	1736	0	1623	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		170	215		401	
Travel Time (s)		3.3	4.2		7.8	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	33	4	472	28	27	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	37	500	0	66	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

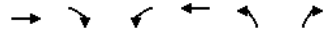
Int Delay, s/veh 1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	25	3	354	21	20	29
Future Vol, veh/h	25	3	354	21	20	29
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, %	-	4	-3	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	33	4	472	28	27	39

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	500	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.3	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3	-	-
Pot Cap-1 Maneuver	608	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	608	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	9.6	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBRn1
Capacity (veh/h)	808	-	-	-	580	-
HCM Lane V/C Ratio	0.041	-	-	-	-0.113	-
HCM Control Delay (s)	9.6	0	-	-	12	-
HCM Lane LOS	A	A	-	-	B	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	28	0	0	383	0	0
Future Volume (vph)	28	0	0	383	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Flt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	2826			170	323	
Travel Time (s)	55.1			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	37	0	0	511	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	37	0	0	511	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized

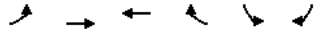
**Intersection**  
 Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	28	0	0	383	0	0
Future Vol, veh/h	28	0	0	383	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	37	0	0	511	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	548
Stage 1	-	-	37
Stage 2	-	-	511
Critical Hdwy	-	-	6
Critical Hdwy Stg 1	-	-	5
Critical Hdwy Stg 2	-	-	5
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	0	0	600
Stage 1	0	0	1158
Stage 2	0	0	725
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	600
Mov Cap-2 Maneuver	-	-	600
Stage 1	-	-	1158
Stage 2	-	-	725

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	3	45	339	12	1	2
Future Volume (vph)	3	45	339	12	1	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10
Grade (%)		3%	-3%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr		0.995		0.899		
Flt Protected		0.997		0.988		
Satd. Flow (prot)	0	1650	1680	0	1485	0
Flt Permitted		0.997		0.988		
Satd. Flow (perm)	0	1650	1680	0	1485	0
Link Speed (mph)		35		25		
Link Distance (ft)		591		2826		
Travel Time (s)		11.5		55.1		
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	4	60	452	16	1	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	64	468	0	4	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	3	45	339	12	1	2
Future Vol, veh/h	3	45	339	12	1	2
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, %	-	3	-3	-	1	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	4	60	452	16	1	3

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	468	0	528
Stage 1	-	-	460
Stage 2	-	-	68
Critical Hdwy	4.3	-	6.6
Critical Hdwy Stg 1	-	-	5.6
Critical Hdwy Stg 2	-	-	5.6
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	629	-	563
Stage 1	-	-	706
Stage 2	-	-	1110
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	629	-	560
Mov Cap-2 Maneuver	-	-	560
Stage 1	-	-	702
Stage 2	-	-	1110

Approach	EB	WB	SB
HCM Control Delay, s	6	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	829	-	-	-	604
HCM Lane V/C Ratio	0.005	-	-	-	-0.007
HCM Control Delay (s)	9.4	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↘	↙	↓
Traffic Volume (vph)	294	47	273	35	14	306
Future Volume (vph)	294	47	273	35	14	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982		0.985			
Fit Protected	0.959					0.998
Satd. Flow (prot)	1695	0	1757	0	0	1796
Fit Permitted	0.959					0.998
Satd. Flow (perm)	1695	0	1757	0	0	1796
Link Speed (mph)	35		35			35
Link Distance (ft)	591		636			619
Travel Time (s)	11.5		12.4			12.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	334	53	310	40	16	348
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	0	350	0	0	364
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 14.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖	↗	↑	↘	↙	↓
Traffic Vol, veh/h	294	47	273	35	14	306
Future Vol, veh/h	294	47	273	35	14	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	334	53	310	40	16	348

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	710	330	0
Stage 1	330	-	-
Stage 2	380	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuver	450	756	-
Stage 1	837	-	-
Stage 2	792	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	440	756	-
Mov Cap-2 Maneuver	440	-	-
Stage 1	837	-	-
Stage 2	775	-	-

Approach	WB	NB	SB
HCM Control Delay	46.3	0	0.4
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	467	911	-
HCM Lane V/C Ratio	-	-	0.83	0.17	-
HCM Control Delay (s)	-	-	40.3	9	0
HCM Lane LOS	-	-	E	A	A
HCM 95th %tile Q(veh)	-	-	8.1	0.1	-

*Base*

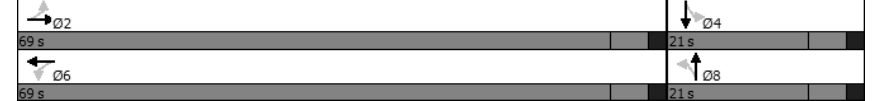
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	108	718	4	12	333	54	3	88	24	57	262	168
Future Volume (vph)	108	718	4	12	333	54	3	88	24	57	262	168
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.982			0.972			0.953		
Frt Protected	0.994			0.998			0.999			0.994		
Satd. Flow (prot)	0	1636	0	0	1512	0	0	1569	0	0	1565	0
Frt Permitted	0.887			0.971			0.970			0.925		
Satd. Flow (perm)	0	1460	0	0	1471	0	0	1524	0	0	1457	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	1			22			13			26		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%
Adj. Flow (vph)	113	748	4	13	347	56	3	92	25	59	273	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	865	0	0	416	0	0	120	0	0	507	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Natural Cycle:	100
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	108	718	4	12	333	54	3	88	24	57	262	168
Future Volume (veh/h)	108	718	4	12	333	54	3	88	24	57	262	168
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	112	748	4	12	347	56	3	92	25	59	273	175
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	173	1065	6	53	984	155	43	249	66	72	166	102
Arrive On Green	0.70	0.71	0.70	0.70	0.71	0.70	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	180	1498	8	17	1383	218	13	1398	371	154	934	573
Grp Volume(v), veh/h	864	0	0	415	0	0	120	0	0	507	0	0
Grp Sat Flow(s),veh/h/ln	1686	0	0	1618	0	0	1782	0	0	1661	0	0
Q Serve(g_s), s	16.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0
Cycle Q Clear(g_c), s	26.6	0.0	0.0	8.9	0.0	0.0	5.4	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.13		0.00	0.03		0.13	0.02		0.21	0.12		0.35
Lane Grp Cap(c), veh/h	1225	0	0	1174	0	0	338	0	0	321	0	0
V/C Ratio(X)	0.71	0.00	0.00	0.35	0.00	0.00	0.35	0.00	0.00	1.58	0.00	0.00
Avail Cap(c_a), veh/h	1225	0	0	1174	0	0	338	0	0	321	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.5	0.0	0.0	5.1	0.0	0.0	32.8	0.0	0.0	37.8	0.0	0.0
Incr Delay (d2), s/veh	3.4	0.0	0.0	0.8	0.0	0.0	0.6	0.0	0.0	274.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	0.0	0.0	4.4	0.0	0.0	4.3	0.0	0.0	48.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.9	0.0	0.0	5.9	0.0	0.0	33.4	0.0	0.0	312.1	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	864			415			120			507		
Approach Delay, s/veh	10.9			5.9			33.4			312.1		
Approach LOS	B			A			C			F		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		21.0		69.0		21.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		15.0		63.0		15.0					
Max Q Clear Time (g_c+11), s	28.6		17.0		10.9		7.4					
Green Ext Time (p_c), s	9.1		0.0		3.3		0.2					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	91.3											
HCM 6th LOS	F											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	513	260	11	168	153	40	15	1532	140	67	1455	183
Future Volume (vph)	513	260	11	168	153	40	15	1532	140	67	1455	183
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	0.95
Frt		0.996				0.850		0.850			0.983	
Flt Protected	0.950	0.984		0.950			0.950			0.950		
Satd. Flow (prot)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Flt Permitted	0.950	0.984		0.950			0.950			0.950		
Satd. Flow (perm)	1494	1715	0	1536	1732	1411	1630	3260	1619	1527	3062	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			10
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	546	277	12	179	163	43	16	1630	149	71	1548	195
Shared Lane Traffic (%)	25%											
Lane Group Flow (vph)	409	426	0	179	163	43	16	1630	149	71	1743	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lanes, Volumes, Timings 2030 without Dev Weekday Morning Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic Analysis\2019-08 Robinson Tract TIS4 - 2030 without Dev Weekday Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 157.4  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

13 s	76 s	38 s
13 s	76 s	38 s

Lanes, Volumes, Timings 2030 without Dev Weekday Morning Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic Analysis\2019-08 Robinson Tract TIS4 - 2030 without Dev Weekday Morning Peak Hour





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	513	260	11	168	153	40	15	1532	140	67	1455	183
Future Volume (veh/h)	513	260	11	168	153	40	15	1532	140	67	1455	183
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	418	457	12	179	163	43	16	1630	149	71	1548	195
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	374	393	3	227	238	190	34	1637	765	82	1409	175
Arrive On Green	0.21	0.21	0.20	0.13	0.13	0.13	0.02	0.47	0.47	0.05	0.50	0.49
Sat Flow, veh/h	1780	1828	48	1775	1864	1492	1761	3514	1643	1554	2822	351
Grp Volume(v), veh/h	418	0	469	179	163	43	16	1630	149	71	856	887
Grp Sat Flow(s),veh/h/ln	1780	0	1876	1775	1864	1492	1761	1757	1643	1554	1577	1596
Q Serve(g_s), s	32.0	0.0	32.0	14.9	12.7	3.9	1.4	70.5	8.1	6.9	76.1	76.1
Cycle Q Clear(g_c), s	32.0	0.0	32.0	14.9	12.7	3.9	1.4	70.5	8.1	6.9	76.1	76.1
Prop In Lane	1.00		0.03	1.00		1.00	1.00		1.00	1.00		0.22
Lane Grp Cap(c), veh/h	374	0	395	227	238	190	34	1637	765	82	787	797
V/C Ratio(X)	1.12	0.00	1.19	0.79	0.69	0.23	0.48	1.00	0.19	0.87	1.09	1.11
Avail Cap(c_a), veh/h	374	0	394	373	391	313	92	1637	765	82	787	797
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	0.0	60.2	64.5	63.6	59.7	74.0	40.7	23.9	71.7	38.2	38.3
Incr Delay (d2), s/veh	82.7	0.0	106.9	6.1	3.5	0.6	10.1	21.3	0.6	58.9	58.4	67.9
Initial Q Delay(d3),s/veh	77.1	0.0	54.7	0.0	0.0	0.0	0.0	48.8	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	40.5	0.0	44.5	11.4	10.3	2.7	1.3	54.7	5.8	7.3	54.4	58.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	220.0	0.0	221.8	70.6	67.0	60.3	84.1	110.9	24.5	130.6	96.6	106.2
LnGrp LOS	F	A	F	E	E	E	F	F	C	F	F	F
Approach Vol, veh/h		887			385			1795			1814	
Approach Delay, s/veh		221.0			67.9			103.5			102.6	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	76.0		25.5	7.9	81.1		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax), s	70.0	70.0		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+119), s	73.0	73.0		17.4	3.9	78.6		34.5				
Green Ext Time (p_c), s	0.0	0.0		1.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	121.7
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	57	651	15	26	414	67	11	184	40	66	211	324
Future Volume (vph)	57	651	15	26	414	67	11	184	40	66	211	324
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.982		0.977				0.927	
Frt Protected	0.996				0.997		0.998				0.995	
Satd. Flow (prot)	0	1637	0	0	1623	0	0	1646	0	0	1528	0
Frt Permitted	0.926				0.946		0.909				0.860	
Satd. Flow (perm)	0	1522	0	0	1540	0	0	1499	0	0	1321	0
Right Turn on Red			Yes				Yes				Yes	
Satd. Flow (RTOR)	2				15		9				53	
Link Speed (mph)	45				45		25				35	
Link Distance (ft)	819				2436		714				826	
Travel Time (s)	12.4				36.9		19.5				16.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	58	664	15	27	422	68	11	188	41	67	215	331
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	737	0	0	517	0	0	240	0	0	613	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left		Thru				Left Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6		8				4	
Permitted Phases	2				6		8				4	
Detector Phase	2				6		8				4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	74.0	74.0		74.0	74.0		31.0	31.0		31.0	31.0	
Total Split (%)	70.5%	70.5%		70.5%	70.5%		29.5%	29.5%		29.5%	29.5%	
Maximum Green (s)	68.0	68.0		68.0	68.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0	
Total Lost Time (s)	5.0				5.0		5.0				5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	105
Natural Cycle:	90
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	57	651	15	26	414	67	11	184	40	66	211	324
Future Volume (veh/h)	57	651	15	26	414	67	11	184	40	66	211	324
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	58	664	15	27	422	68	11	188	41	67	215	331
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	101	1052	23	67	927	145	44	358	76	72	145	211
Arrive On Green	0.65	0.66	0.65	0.65	0.66	0.65	0.24	0.25	0.24	0.24	0.25	0.24
Sat Flow, veh/h	97	1600	35	47	1410	221	34	1448	305	139	586	850
Grp Volume(v), veh/h	737	0	0	517	0	0	240	0	0	613	0	0
Grp Sat Flow(s),veh/h/ln	1733	0	0	1678	0	0	1787	0	0	1575	0	0
Q Serve(g_s), s	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9	0.0	0.0
Cycle Q Clear(g_c), s	25.5	0.0	0.0	15.4	0.0	0.0	12.1	0.0	0.0	25.0	0.0	0.0
Prop In Lane	0.08		0.02	0.05		0.13	0.05		0.17	0.11		0.54
Lane Grp Cap(c), veh/h	1159	0	0	1123	0	0	461	0	0	413	0	0
V/C Ratio(X)	0.64	0.00	0.00	0.46	0.00	0.00	0.52	0.00	0.00	1.48	0.00	0.00
Avail Cap(c_a), veh/h	1159	0	0	1123	0	0	461	0	0	413	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.5	0.0	0.0	8.9	0.0	0.0	34.4	0.0	0.0	40.5	0.0	0.0
Incr Delay (d2), s/veh	2.7	0.0	0.0	1.4	0.0	0.0	1.0	0.0	0.0	230.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	0.0	0.0	9.2	0.0	0.0	9.4	0.0	0.0	57.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	0.0	10.2	0.0	0.0	35.4	0.0	0.0	270.9	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	D	A	A	F	A	A
Approach Vol, veh/h	737			517			240			613		
Approach Delay, s/veh	13.1			10.2			35.4			270.9		
Approach LOS	B			B			D			F		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	74.0		31.0		74.0		31.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	68.0		25.0		68.0		25.0					
Max Q Clear Time (g_c+11), s	27.5		27.0		17.4		14.1					
Green Ext Time (p_c), s	7.1		0.0		4.4		0.6					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	90.0											
HCM 6th LOS	F											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	437	211	28	176	268	51	42	1568	125	113	1594	180
Future Volume (vph)	437	211	28	176	268	51	42	1568	125	113	1594	180
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.988				0.850				0.850		0.985	
Flt Protected	0.950	0.985	0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Flt Permitted	0.950	0.985	0.950		0.950		0.950		0.950			
Satd. Flow (perm)	1524	1780	0	1581	1836	1632	1744	3322	1635	1676	3239	0
Right Turn on Red			No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		9			
Link Speed (mph)	45		45		45		45		45			
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	451	218	29	181	276	53	43	1616	129	116	1643	186
Shared Lane Traffic (%)	23%											
Lane Group Flow (vph)	347	351	0	181	276	53	43	1616	129	116	1829	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2	2	1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		38.0	38.0	38.0	13.0	76.0	76.0	13.0	76.0	
Total Split (%)	23.0%	23.0%		23.0%	23.0%	23.0%	7.9%	46.1%	46.1%	7.9%	46.1%	
Maximum Green (s)	31.0	31.0		31.0	31.0	31.0	7.0	70.0	70.0	7.0	70.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type:	Other
Cycle Length:	165
Actuated Cycle Length:	161.8
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

13 s	76 s	38 s	38 s
13 s	76 s		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	437	211	28	176	268	51	42	1568	125	113	1594	180
Future Volume (veh/h)	437	211	28	176	268	51	42	1568	125	113	1594	180
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	349	361	29	181	276	53	43	1616	129	116	1643	186
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	363	362	29	301	323	281	72	1589	737	85	1464	75
Arrive On Green	0.20	0.20	0.19	0.17	0.17	0.17	0.04	0.45	0.45	0.05	0.46	0.45
Sat Flow, veh/h	1807	1803	145	1816	1949	1693	1856	3568	1655	1688	3005	335
Grp Volume(v), veh/h	349	0	390	181	276	53	43	1616	129	116	895	934
Grp Sat Flow(s),veh/h/ln	1807	0	1947	1816	1949	1693	1856	1784	1655	1688	1657	1684
Q Serve(g_s), s	30.5	0.0	31.9	14.7	21.9	4.3	3.6	71.0	7.5	8.0	72.8	72.8
Cycle Q Clear(g_c), s	30.5	0.0	31.9	14.7	21.9	4.3	3.6	71.0	7.5	8.0	72.8	72.8
Prop In Lane	1.00		0.07	1.00		1.00	1.00		1.00	1.00		0.20
Lane Grp Cap(c), veh/h	363	0	391	301	323	281	72	1589	737	85	756	782
V/C Ratio(X)	0.96	0.00	1.00	0.60	0.85	0.19	0.59	1.02	0.18	1.37	1.18	1.19
Avail Cap(c_a), veh/h	363	0	391	364	391	340	93	1589	737	85	756	768
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	63.7	61.6	64.6	57.3	75.4	44.2	26.6	75.7	43.3	43.4
Incr Delay (d2), s/veh	37.2	0.0	44.9	1.9	14.4	0.3	7.5	26.9	0.5	224.8	95.7	99.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	31.7	0.0	0.0	164.2	158.7
%ile BackOfQ(95%),veh/ln	24.4	0.0	27.8	11.2	17.7	3.3	3.4	53.5	5.5	14.7	102.3	106.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	100.4	0.0	108.6	63.5	79.0	57.6	82.9	102.9	27.1	300.5	303.3	301.8
LnGrp LOS	F	A	F	E	E	E	F	F	C	F	F	F
Approach Vol, veh/h		739			510			1788			1945	
Approach Delay, s/veh		104.7			71.3			96.9			302.4	
Approach LOS		F			E			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	76.0		32.4	11.2	77.8		38.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	70.0	70.0		31.0	7.0	70.0		31.0				
Max Q Clear Time (g_c+I1),s	73.5	73.5		24.4	6.1	75.3		33.9				
Green Ext Time (p_c), s	0.0	0.0		1.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	175.7
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.



## Appendix S

# Future (2030) Capacity/Level-of-Service With Development Analysis Worksheets



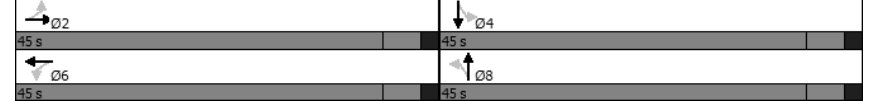


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	111	721	4	16	417	54	3	89	25	57	265	99
Future Volume (vph)	111	721	4	16	417	54	3	89	25	57	265	99
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.985			0.971			0.968		
Fit Protected	0.993			0.998			0.999			0.993		
Satd. Flow (prot)	0	1634	0	0	1516	0	0	1567	0	0	1591	0
Fit Permitted	0.859			0.964			0.990			0.941		
Satd. Flow (perm)	0	1414	0	0	1464	0	0	1553	0	0	1507	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)				9			20			22		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
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 (%)	3%	3%	0%	27%	8%	6%	33%	3%	9%	4%	0%	2%
Adj. Flow (vph)	116	751	4	17	434	56	3	93	26	59	276	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	871	0	0	507	0	0	122	0	0	438	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	45.0	45.0		45.0	45.0		45.0	45.0		45.0	45.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		39.0	39.0		39.0	39.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	77.9
Natural Cycle:	90
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



McMahon Associates, Inc.  
1: New St & Rt 926

Robinson Tract  
2030 with Dev Weekday AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (veh/h)	111	721	4	16	417	54	3	89	25	57	265	99
Future Volume (veh/h)	111	721	4	16	417	54	3	89	25	57	265	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1682	1682	1682	1832	1832	1832	1794	1794	1794
Adj Flow Rate, veh/h	116	751	4	17	434	56	3	93	26	59	276	103
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
Percent Heavy Veh, %	3	3	3	8	8	8	3	3	3	0	0	0
Cap, veh/h	153	810	4	63	779	98	54	430	117	105	348	122
Arrive On Green	0.54	0.55	0.54	0.54	0.55	0.54	0.30	0.31	0.30	0.30	0.31	0.30
Sat Flow, veh/h	177	1471	8	21	1416	178	10	1378	376	157	1115	391
Grp Volume(v), veh/h	871	0	0	507	0	0	122	0	0	438	0	0
Grp Sat Flow(s), veh/h/ln	1656	0	0	1616	0	0	1763	0	0	1663	0	0
Q Serve(g_s), s	22.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.8	0.0	0.0
Cycle Q Clear(g_c), s	37.3	0.0	0.0	14.7	0.0	0.0	3.7	0.0	0.0	18.1	0.0	0.0
Prop In Lane	0.13	0.00	0.03	0.11	0.02	0.21	0.13	0.00	0.13	0.24	0.00	0.00
Lane Grp Cap(c), veh/h	945	0	0	918	0	0	577	0	0	552	0	0
V/C Ratio(X)	0.92	0.00	0.00	0.55	0.00	0.00	0.21	0.00	0.00	0.79	0.00	0.00
Avail Cap(c_a), veh/h	945	0	0	918	0	0	990	0	0	943	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.5	0.0	0.0	10.7	0.0	0.0	18.6	0.0	0.0	23.5	0.0	0.0
Incr Delay (d2), s/veh	15.6	0.0	0.0	2.4	0.0	0.0	0.2	0.0	0.0	2.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.1	0.0	0.0	8.5	0.0	0.0	2.8	0.0	0.0	11.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	0.0	0.0	13.1	0.0	0.0	18.8	0.0	0.0	26.1	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	B	A	A	C	A	A
Approach Vol, veh/h	871			507			122			438		
Approach Delay, s/veh	31.1			13.1			18.8			26.1		
Approach LOS	C			B			B			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	45.0		27.7		45.0		27.7					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	39.0		39.0		39.0		39.0					
Max Q Clear Time (g_c+11), s	39.3		20.1		16.7		5.7					
Green Ext Time (p_c), s	0.0		1.5		3.7		0.4					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	24.5											
HCM 6th LOS	C											

McMahon Associates, Inc.  
2: Bridlewood Blvd/Connector Road & Rt 926

Robinson Tract  
2030 with Dev Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (vph)	82	710	39	8	267	14	48	23	10	46	15	179
Future Volume (vph)	82	710	39	8	267	14	48	23	10	46	15	179
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%				-8%				-1%		0%	
Storage Length (ft)	150		350	120		150	0		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850			0.953			0.862	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1609	1662	1521	1719	1717	1560	1719	1701	0	1676	1521	0
Flt Permitted	0.468			0.377			0.597			0.734		
Satd. Flow (perm)	793	1662	1521	682	1717	1560	1080	1701	0	1295	1521	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		41			109			11			190	
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	2436			2349			414			1828		
Travel Time (s)	36.9			35.6			11.3			35.6		
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 (%)	2%	4%	3%	0%	9%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	87	755	41	9	284	15	51	24	11	49	16	190
Shared Lane Traffic (%)												
Lane Group Flow (vph)	87	755	41	9	284	15	51	35	0	49	206	0
Number of Detectors	1	1	1	1	1	1	1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30	30	30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	40	40	40	40	40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8				4
Permitted Phases	2		2	6		6	8				4	
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	13.0	69.0	69.0	56.0	56.0	56.0	21.0	21.0		21.0	21.0	
Total Split (%)	14.4%	76.7%	76.7%	62.2%	62.2%	62.2%	23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	7.0	63.0	63.0	50.0	50.0	50.0	15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	

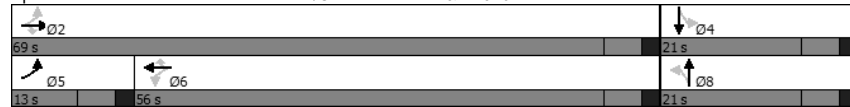


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead		Lag			Lag				5.0	5.0	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	51.3
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated

Splits and Phases: 2: Bridlewood Blvd/Connector Road & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (veh/h)	82	710	39	8	267	14	48	23	10	46	15	179
Future Volume (veh/h)	82	710	39	8	267	14	48	23	10	46	15	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No		No		No		
Adj Sat Flow, veh/h/ln	1415	1387	1457	2098	1970	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	87	755	41	9	284	15	51	24	11	49	16	190
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
Percent Heavy Veh, %	2	4	3	0	9	2	0	2	2	2	2	2
Cap, veh/h	523	831	739	228	853	727	258	257	118	422	26	307
Arrive On Green	0.07	0.60	0.60	0.43	0.43	0.41	0.22	0.22	0.20	0.22	0.22	0.20
Sat Flow, veh/h	1347	1387	1235	808	1970	1754	1219	1174	538	1373	118	1402
Grp Volume(v), veh/h	87	755	41	9	284	15	51	0	35	49	0	206
Grp Sat Flow(s),veh/h/ln	1347	1387	1235	808	1970	1754	1219	0	1712	1373	0	1520
Q Serve(g_s), s	1.7	26.3	0.8	0.5	5.2	0.3	2.1	0.0	0.9	1.6	0.0	6.8
Cycle Q Clear(g_c), s	1.7	26.3	0.8	17.7	5.2	0.3	8.4	0.0	0.9	2.0	0.0	6.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.31	1.00		0.92
Lane Grp Cap(c), veh/h	523	831	739	228	853	727	258	0	374	422	0	332
V/C Ratio(X)	0.17	0.91	0.06	0.04	0.33	0.02	0.20	0.00	0.09	0.12	0.00	0.62
Avail Cap(c_a), veh/h	619	1618	1441	629	1832	1599	347	0	499	522	0	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.5	9.7	4.6	21.5	10.3	9.5	23.0	0.0	17.2	17.7	0.0	19.8
Incr Delay (d2), s/veh	0.1	4.2	0.0	0.1	0.2	0.0	0.4	0.0	0.1	0.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.6	8.9	0.2	0.2	3.1	0.1	1.1	0.0	0.6	0.8	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.6	13.9	4.6	21.6	10.5	9.5	23.3	0.0	17.3	17.8	0.0	21.7
LnGrp LOS	A	B	A	C	B	A	C	A	B	B	A	C
Approach Vol, veh/h	883			308			86			255		
Approach Delay, s/veh	12.8			10.8			20.9			20.9		
Approach LOS	B			B			C			C		
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	37.9		17.0		9.1		28.7		17.0			
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0		6.0			
Max Green Setting (Gmax), s	63.0		15.0		7.0		50.0		15.0			
Max Q Clear Time (g_c+I1), s	28.8		8.8		4.2		20.2		10.9			
Green Ext Time (p_c), s	3.1		0.5		0.0		1.0		0.1			

Intersection Summary

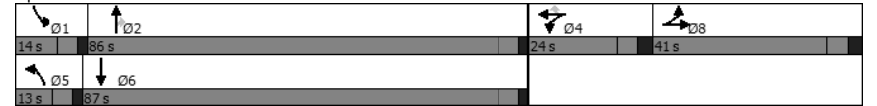
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt		0.986				0.850		0.850		0.991		
Flt Protected	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (prot)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Flt Permitted	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (perm)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)									112			5
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	459	285	36	179	167	43	27	1630	149	80	1556	98
Shared Lane Traffic (%)	16%											
Lane Group Flow (vph)	386	394	0	179	167	43	27	1630	149	80	1654	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases						4			2			
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	41.0	41.0		24.0	24.0	24.0	13.0	86.0	86.0	14.0	87.0	
Total Split (%)	24.8%	24.8%		14.5%	14.5%	14.5%	7.9%	52.1%	52.1%	8.5%	52.7%	
Maximum Green (s)	34.0	34.0		17.0	17.0	17.0	7.0	80.0	80.0	8.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

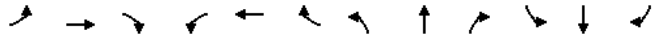
Intersection Summary	
Area Type:	Other
Cycle Length:	165
Actuated Cycle Length:	165
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	390	382	36	179	167	43	27	1630	149	80	1556	98
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	378	390	8	194	203	163	49	1725	806	85	1561	98
Arrive On Green	0.21	0.21	0.21	0.11	0.11	0.11	0.03	0.49	0.49	0.05	0.52	0.51
Sat Flow, veh/h	1780	1696	160	1775	1864	1492	1761	3514	1643	1554	3013	189
Grp Volume(v), veh/h	390	0	418	179	167	43	27	1630	149	80	810	844
Grp Sat Flow(s), veh/h/ln	1780	0	1856	1775	1864	1492	1761	1757	1643	1554	1577	1626
Q Serve(g_s), s	35.0	0.0	35.0	16.5	14.5	4.4	2.5	72.7	8.4	8.5	84.1	85.4
Cycle Q Clear(g_c), s	35.0	0.0	35.0	16.5	14.5	4.4	2.5	72.7	8.4	8.5	84.1	85.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	378	0	398	194	203	163	49	1725	806	85	816	842
V/C Ratio(X)	1.03	0.00	1.05	0.92	0.82	0.26	0.56	0.94	0.18	0.94	0.99	1.00
Avail Cap(c_a), veh/h	378	0	394	194	203	163	85	1725	806	85	816	842
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	65.0	72.8	71.9	67.4	79.2	41.9	23.5	77.7	39.4	39.8
Incr Delay (d2), s/veh	55.0	0.0	58.6	43.8	22.8	0.9	9.6	12.0	0.5	79.0	29.7	31.6
Initial Q Delay(d3),s/veh	76.3	0.0	54.2	0.0	0.0	0.0	0.0	23.2	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	77.5	0.0	37.7	14.9	12.8	3.0	2.3	51.7	6.0	9.0	47.7	50.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	196.3	0.0	177.8	116.6	94.8	68.3	88.8	77.2	24.0	156.7	69.1	71.4
LnGrp LOS	F	A	F	F	F	E	F	E	C	F	E	F
Approach Vol, veh/h	808		389				1806				1734	
Approach Delay, s/veh	186.7		101.9				73.0				74.3	
Approach LOS	F		F				E				E	
Timer - Assigned Phs	1	2	4	5	6	8						
Phs Duration (G+Y+Rc), s	4.0	86.0	24.0	9.6	90.4	41.0						
Change Period (Y+Rc), s	6.0	6.0	7.0	6.0	6.0	7.0						
Max Green Setting (Gmax), s	80.0	80.0	17.0	7.0	81.0	34.0						
Max Q Clear Time (g_c+I1)1.0	75.2	75.2	19.0	5.0	87.4	37.5						
Green Ext Time (p_c), s	0.0	4.4	0.0	0.0	0.0	0.0						
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	95.2											
HCM 6th LOS	F											
<b>Notes</b>												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	316	185	31	74	179	86	0	1565	76	0	1575	526
Future Volume (vph)	316	185	31	74	179	86	0	1565	76	0	1575	526
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	0.95	1.00
Frt		0.850			0.952			0.850				0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1645	1782	1487	1612	1696	0	0	3164	1417	0	3156	1660
Flt Permitted	0.479			0.592								
Satd. Flow (perm)	829	1782	1487	1005	1696	0	0	3164	1417	0	3156	1660
Right Turn on Red			No		No			Yes		Yes		Yes
Satd. Flow (RTOR)								58				367
Link Speed (mph)		25			25			45				45
Link Distance (ft)		637			560			1356				940
Travel Time (s)		17.4			15.3			20.5				14.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	343	201	34	80	195	93	0	1701	83	0	1712	572
Shared Lane Traffic (%)												
Lane Group Flow (vph)	343	201	34	80	288	0	0	1701	83	0	1712	572
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right					Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	50.0	50.0	50.0	50.0	50.0			70.0	70.0		70.0	70.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%			58.3%	58.3%		58.3%	58.3%
Maximum Green (s)	42.0	42.0	42.0	42.0	42.0			63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd

70 s	50 s
50 s	50 s

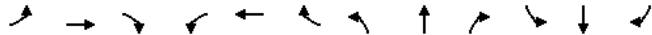


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	185	31	74	179	86	0	1565	76	0	1575	526
Future Volume (veh/h)	316	185	31	74	179	86	0	1565	76	0	1575	526
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No				No
Adj Sat Flow, veh/h/ln	1944	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	343	201	34	80	195	93	0	1701	83	0	1712	572
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	329	703	573	375	397	189	0	1702	743	0	1793	859
Arrive On Green	0.36	0.36	0.35	0.36	0.36	0.35	0.00	0.53	0.53	0.00	0.53	0.53
Sat Flow, veh/h	1197	1962	1638	1104	1108	529	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	343	201	34	80	0	288	0	1701	83	0	1712	572
Grp Sat Flow(s),veh/h/ln	1197	1962	1638	1104	0	1637	0	1595	1394	0	1681	1610
Q Serve(g_s), s	27.0	8.8	1.7	6.7	0.0	16.5	0.0	63.9	3.5	0.0	58.1	30.9
Cycle Q Clear(g_c), s	43.0	8.8	1.7	15.5	0.0	16.5	0.0	63.9	3.5	0.0	58.1	30.9
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	329	703	573	375	0	587	0	1702	743	0	1793	859
V/C Ratio(X)	1.04	0.29	0.06	0.21	0.00	0.49	0.00	1.00	0.11	0.00	0.95	0.67
Avail Cap(c_a), veh/h	329	703	573	375	0	587	0	1702	743	0	1793	859
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.0	27.5	25.9	33.1	0.0	30.1	0.0	28.0	13.9	0.0	26.6	20.3
Incr Delay (d2), s/veh	60.7	0.2	0.0	0.3	0.0	0.6	0.0	21.7	0.3	0.0	12.9	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.7	7.6	1.2	3.3	0.0	10.9	0.0	35.5	2.0	0.0	32.2	17.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	109.6	27.7	25.9	33.3	0.0	30.8	0.0	49.7	14.2	0.0	39.6	24.3
LnGrp LOS	F	C	C	C	A	C	A	D	B	A	D	C
Approach Vol, veh/h	578				368			1784			2284	
Approach Delay, s/veh	76.2				31.3			48.0			35.8	
Approach LOS	E				C			D			D	
Timer - Assigned Phs	2			4		6		8				
Phs Duration (G+Y+Rc), s	70.0			50.0		70.0		50.0				
Change Period (Y+Rc), s	7.0			8.0		7.0		8.0				
Max Green Setting (Gmax), s	63.0			42.0		63.0		42.0				
Max Q Clear Time (g_c+I1), s	60.6			18.5		66.4		45.5				
Green Ext Time (p_c), s	2.4			1.9		0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay 44.5

HCM 6th LOS D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	82	0	0	33	37	1916	50	64	1549	146
Future Volume (vph)	0	0	82	0	0	33	37	1916	50	64	1549	146
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.996			0.987		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1344	1515	3147	0	1613	3076	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1344	1515	3147	0	1613	3076	0
Link Speed (mph)			35			35		45			45	
Link Distance (ft)			499			858		3154			1356	
Travel Time (s)			9.7			16.7		47.8			20.5	
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%	0%	0%	0%	0%	17%	8%	7%	13%	4%	12%	5%
Adj. Flow (vph)	0	0	93	0	0	38	42	2177	57	73	1760	166
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	93	0	0	38	42	2234	0	73	1926	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

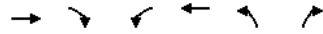
Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	82	0	0	33	37	1916	50	64	1549	146
Future Vol, veh/h	0	0	82	0	0	33	37	1916	50	64	1549	146
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length			0			0	350			380		
Veh in Median Storage, #			0			0				0		
Grade, %		-1			-2					2		-3
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	17	8	7	13	4	12	5
Mvmt Flow	0	0	93	0	0	38	42	2177	57	73	1760	166

Major/Minor	Minor2	Minor1	Major1	Major2								
Conflicting Flow All	-	-	963	-	-	1117	1926	0	0	2234	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.2	-	-	7.3	4.1	-	-	4	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.9	-	-	3.1	2.5	-	-	2.4	-	-
Pot Cap-1 Maneuver	0	0	260	0	0	188	291	-	-	241	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %												
Mov Cap-1 Maneuver	-	-	260	-	-	188	291	-	-	241	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	26.4	28.9	0.4	1
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	291	-	-	260	188	241	-
HCM Lane V/C Ratio	0.144	-	-	0.358	0.199	0.302	-
HCM Control Delay (s)	19.4	-	-	26.4	28.9	26.3	-
HCM Lane LOS	C	-	-	D	D	D	-
HCM 95th %tile Q(veh)	0.5	-	-	1.6	0.7	1.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	82	1	9	174	1	0
Future Volume (vph)	82	1	9	174	1	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr	0.999					
Fit Protected				0.998	0.950	
Satd. Flow (prot)	1703	0	0	1691	1636	1663
Fit Permitted				0.998	0.950	
Satd. Flow (perm)	1703	0	0	1691	1636	1663
Link Speed (mph)	35			35	35	
Link Distance (ft)	224			499	469	
Travel Time (s)	4.4			9.7	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	117	1	13	249	1	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	0	262	1	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	82	1	9	174	1	0
Future Vol, veh/h	82	1	9	174	1	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	0
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	4			-4	2	
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	117	1	13	249	1	0

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	118
Stage 1	-	-	118
Stage 2	-	-	275
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1094	670
Stage 1	-	-	1042
Stage 2	-	-	862
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1094	661
Mov Cap-2 Maneuver	-	-	661
Stage 1	-	-	1042
Stage 2	-	-	850

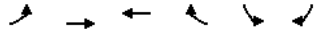
**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.4	10.5
HCM LOS			B

**Minor Lane/Major Mvmt**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	661	-	-	-	1094	-
HCM Lane V/C Ratio	0.002	-	-	-	0.012	-
HCM Control Delay (s)	10.5	0	-	-	8.3	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0	-





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	174	68	145	30	15	135
Future Volume (vph)	174	68	145	30	15	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977		0.878	
Flt Protected		0.965			0.995	
Satd. Flow (prot)	0	1646	1657	0	1572	0
Flt Permitted		0.965			0.995	
Satd. Flow (perm)	0	1646	1657	0	1572	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		206	224		486	
Travel Time (s)		4.0	4.4		9.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	5%	0%	0%	0%
Adj. Flow (vph)	249	97	207	43	21	193
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	346	250	0	214	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 6.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	174	68	145	30	15	135
Future Vol, veh/h	174	68	145	30	15	135
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, %	-	4	-3	-	0	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	5	0	0	0
Mvmt Flow	249	97	207	43	21	193

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	250	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.3	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	3	-	-
Pot Cap-1 Maneuver	886	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	886	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	986	-	-	-	715
HCM Lane V/C Ratio	0.252	-	-	-	0.3
HCM Control Delay (s)	9.9	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	1	-	-	-	1.3



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	242	0	0	280	0	0
Future Volume (vph)	242	0	0	280	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	13	13
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr						
Fit Protected						
Satd. Flow (prot)	1714	0	0	1682	1879	0
Fit Permitted						
Satd. Flow (perm)	1714	0	0	1682	1879	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	223			206	436	
Travel Time (s)	4.3			4.0	8.5	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	0%	5%	0%	0%
Adj. Flow (vph)	346	0	0	400	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	346	0	0	400	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	242	0	0	280	0	0
Future Vol, veh/h	242	0	0	280	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	-
Grade, %	3	-	-	-3	-2	-
Peak Hour Factor	70	70	70	70	70	70
Heavy Vehicles, %	0	0	0	5	0	0
Mvmt Flow	346	0	0	400	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	- 746 346
Stage 1	-	-	- 346 -
Stage 2	-	-	- 400 -
Critical Hdwy	-	-	- 6 6
Critical Hdwy Stg 1	-	-	- 5 -
Critical Hdwy Stg 2	-	-	- 5 -
Follow-up Hdwy	-	-	- 3 3.1
Pot Cap-1 Maneuver	-	0	0 - 465 754
Stage 1	-	0	0 - 854 -
Stage 2	-	0	0 - 810 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	- 465 754
Mov Cap-2 Maneuver	-	-	- 465 -
Stage 1	-	-	- 854 -
Stage 2	-	-	- 810 -

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T	T	T	T	T	T
Traffic Volume (vph)	106	1	180	100	4	136
Future Volume (vph)	106	1	180	100	4	136
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.869		
Flt Protected				0.969	0.999	
Satd. Flow (prot)	1712	0	0	1678	1532	0
Flt Permitted				0.969	0.999	
Satd. Flow (perm)	1712	0	0	1678	1532	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1821			223	448	
Travel Time (s)	35.5			4.3	8.7	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	151	1	257	143	6	194
Shared Lane Traffic (%)						
Lane Group Flow (vph)	152	0	0	400	200	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	T	T	T	T	T	T
Traffic Vol, veh/h	106	1	180	100	4	136
Future Vol, veh/h	106	1	180	100	4	136
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	-
Grade, %	3	-	-	-3	0	-
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	151	1	257	143	6	194

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	152
Stage 1	-	-	152
Stage 2	-	-	657
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1065	390
Stage 1	-	-	1016
Stage 2	-	-	580
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1065	288
Mov Cap-2 Maneuver	-	-	288
Stage 1	-	-	1016
Stage 2	-	-	428

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	6.1	10.2
HCM LOS			B

**Minor Lane/Major Mvm**

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	894	-	-	1065	-
HCM Lane V/C Ratio	0.224	-	-	0.241	-
HCM Control Delay (s)	10.2	-	-	9.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	0.9	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (vph)	59	0	4	75	1	13
Future Volume (vph)	59	0	4	75	1	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	6%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit					0.872	
Fit Protected				0.997	0.998	
Satd. Flow (prot)	1688	0	0	1726	1536	0
Fit Permitted				0.997	0.998	
Satd. Flow (perm)	1688	0	0	1726	1536	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	885			1821	335	
Travel Time (s)	17.2			35.5	9.1	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	84	0	6	107	1	19
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	0	113	20	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	59	0	4	75	1	13
Future Vol, veh/h	59	0	4	75	1	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	-
Grade, %	6	-	-	-3	0	-
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	84	0	6	107	1	19

**Major/Minor**

	Major1	Major2	Minor1
Conflicting Flow All	0	0	84
Stage 1	-	-	84
Stage 2	-	-	119
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1124	908
Stage 1	-	-	1095
Stage 2	-	-	1054
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1124	903
Mov Cap-2 Maneuver	-	-	903
Stage 1	-	-	1095
Stage 2	-	-	1048

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.4	8.6
HCM LOS			A

**Minor Lane/Major Mvm**

	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1030	-	-	1124	-
HCM Lane V/C Ratio	0.019	-	-	0.005	-
HCM Control Delay (s)	8.6	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	0	51	4	3	69	3	12	0	9	5	0	2
Future Volume (vph)	0	51	4	3	69	3	12	0	9	5	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	10	10	12	12	12	10	12	10
Grade (%)		3%			-3%			0%			1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990			0.995			0.941			0.959		
Fit Protected					0.998			0.972			0.966	
Satd. Flow (prot)	0	1636	0	0	1631	0	0	1614	0	0	1543	0
Fit Permitted					0.998			0.972			0.966	
Satd. Flow (perm)	0	1636	0	0	1631	0	0	1614	0	0	1543	0
Link Speed (mph)		35			35			25			25	
Link Distance (ft)		496			885			304			306	
Travel Time (s)		9.7			17.2			8.3			8.3	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles (%)	0%	0%	2%	2%	2%	50%	2%	2%	0%	2%	25%	25%
Adj. Flow (vph)	0	73	6	4	99	4	17	0	13	7	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	107	0	0	30	0	0	10	0
Sign Control	Free			Free			Stop			Stop		

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	0	51	4	3	69	3	12	0	9	5	0	2
Future Vol, veh/h	0	51	4	3	69	3	12	0	9	5	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free		Free		Free		Stop		Stop		Stop	
RT Channelized	-		None		-		None		-		None	
Storage Length	-		-		-		-		-		-	
Veh in Median Storage, #	0		-		0		-		0		-	
Grade, %	-		3		-		-3		-		1	
Peak Hour Factor	70	70	70	70	70	70	70	70	70	70	70	70
Heavy Vehicles, %	0	0	2	2	2	50	2	2	2	0	2	25
Mvmt Flow	0	73	6	4	99	4	17	0	13	7	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	103	0	79	0
Stage 1	-	-	76	76
Stage 2	-	-	111	111
Critical Hdwy	4.3	-	4.3	-
Critical Hdwy Stg 1	-	-	6.12	5.52
Critical Hdwy Stg 2	-	-	6.12	5.52
Follow-up Hdwy	3	-	3	-
Pot Cap-1 Maneuver	107	-	1128	-
Stage 1	-	-	1088	832
Stage 2	-	-	1040	804
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	107	-	1128	-
Mov Cap-2 Maneuver	-	-	890	705
Stage 1	-	-	1088	832
Stage 2	-	-	1033	801

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	8.9	9.1
HCM LOS			A	A

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	953	1107	-	-	1128	-	-	889
HCM Lane V/C Ratio	0.031	-	-	-	-0.004	-	-	-0.011
HCM Control Delay (s)	8.9	0	-	-	8.2	0	-	9.1
HCM Lane LOS	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↘
Traffic Volume (vph)	49	35	217	35	20	373
Future Volume (vph)	49	35	217	35	20	373
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944		0.981			
Fit Protected	0.972					0.997
Satd. Flow (prot)	1556	0	1736	0	0	1771
Fit Permitted	0.972					0.997
Satd. Flow (perm)	1556	0	1736	0	0	1771
Link Speed (mph)	35		35			35
Link Distance (ft)	496		2543			619
Travel Time (s)	9.7		49.5			12.1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	2%	12%	2%	0%	7%	1%
Adj. Flow (vph)	56	40	249	40	23	429
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	289	0	0	452
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑	↗		↘
Traffic Vol, veh/h	49	35	217	35	20	373
Future Vol, veh/h	49	35	217	35	20	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	12	2	0	7	1
Mvmt Flow	56	40	249	40	23	429

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	744	269	0
Stage 1	269	-	-
Stage 2	475	-	-
Critical Hdwy	6.42	6.32	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.2	-
Pot Cap-1 Maneuver#	27	789	-
Stage 1	893	-	-
Stage 2	711	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver#	13	789	-
Mov Cap-2 Maneuver#	13	-	-
Stage 1	893	-	-
Stage 2	688	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	515	921	-
HCM Lane V/C Ratio	-	-	0.187	0.025	-
HCM Control Delay (s)	-	-	13.6	9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.1	-

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Robinson Tract  
2030 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	65	660	15	29	559	67	11	187	44	66	213	188
Future Volume (vph)	65	660	15	29	559	67	11	187	44	66	213	188
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%				-2%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.986				0.975		0.946	
Frt Protected	0.996				0.998				0.998		0.993	
Satd. Flow (prot)	0	1637	0	0	1631	0	0	1642	0	0	1557	0
Frt Permitted	0.896				0.949				0.974		0.919	
Satd. Flow (perm)	0	1472	0	0	1551	0	0	1603	0	0	1441	0
Right Turn on Red	Yes				Yes				Yes		Yes	
Satd. Flow (RTOR)	1				7				14		42	
Link Speed (mph)	45				45				25		35	
Link Distance (ft)	819				2436				714		826	
Travel Time (s)	12.4				36.9				19.5		16.1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	3%	0%	0%	1%	0%	0%	0%	3%	0%	1%	1%
Adj. Flow (vph)	66	673	15	30	570	68	11	191	45	67	217	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	754	0	0	668	0	0	247	0	0	476	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left		Thru		Left		Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6				8		4	
Permitted Phases	2				6				8		4	
Detector Phase	2				6				8		4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	53.0	53.0		53.0	53.0		52.0	52.0		52.0	52.0	
Total Split (%)	50.5%	50.5%		50.5%	50.5%		49.5%	49.5%		49.5%	49.5%	
Maximum Green (s)	47.0	47.0		47.0	47.0		46.0	46.0		46.0	46.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0				-1.0		-1.0	
Total Lost Time (s)	5.0				5.0				5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
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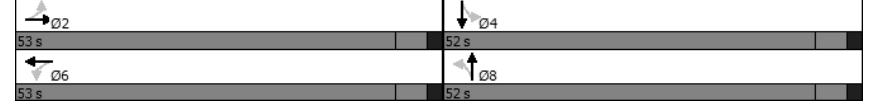
Robinson Tract  
2030 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type: Other  
Cycle Length: 105  
Actuated Cycle Length: 92.5  
Natural Cycle: 70  
Control Type: Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926



Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
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Robinson Tract  
2030 with Dev Weekday Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (veh/h)	65	660	15	29	559	67	11	187	44	66	213	188
Future Volume (veh/h)	65	660	15	29	559	67	11	187	44	66	213	188
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No		No		No		No		No	
Adj Sat Flow, veh/h/ln	1832	1832	1832	1780	1780	1780	1875	1875	1875	1780	1780	1780
Adj Flow Rate, veh/h	66	673	15	30	570	68	11	191	45	67	217	192
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	3	3	3	1	1	1	0	0	0	1	1	1
Cap, veh/h	100	834	18	65	807	94	53	490	112	104	265	218
Arrive On Green	0.54	0.55	0.54	0.54	0.55	0.54	0.33	0.34	0.33	0.33	0.34	0.33
Sat Flow, veh/h	102	1526	33	40	1477	172	30	1445	329	168	782	642
Grp Volume(v), veh/h	754	0	0	668	0	0	247	0	0	476	0	0
Grp Sat Flow(s),veh/h/ln	1661	0	0	1689	0	0	1804	0	0	1593	0	0
Q Serve(g_s), s	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.8	0.0	0.0
Cycle Q Clear(g_c), s	33.5	0.0	0.0	25.4	0.0	0.0	9.2	0.0	0.0	25.0	0.0	0.0
Prop In Lane	0.09		0.02	0.04		0.10	0.04		0.18	0.14		0.40
Lane Grp Cap(c), veh/h	934	0	0	947	0	0	634	0	0	569	0	0
V/C Ratio(X)	0.81	0.00	0.00	0.71	0.00	0.00	0.39	0.00	0.00	0.84	0.00	0.00
Avail Cap(c_a), veh/h	934	0	0	947	0	0	978	0	0	873	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.2	0.0	0.0	14.7	0.0	0.0	22.3	0.0	0.0	27.4	0.0	0.0
Incr Delay (d2), s/veh	7.4	0.0	0.0	4.4	0.0	0.0	0.4	0.0	0.0	4.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	0.0	0.0	14.7	0.0	0.0	7.2	0.0	0.0	14.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.7	0.0	0.0	19.1	0.0	0.0	22.7	0.0	0.0	31.8	0.0	0.0
LnGrp LOS	C	A	A	B	A	A	C	A	A	C	A	A
Approach Vol, veh/h	754			668			247			476		
Approach Delay, s/veh	23.7			19.1			22.7			31.8		
Approach LOS	C			B			C			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	53.0		34.8		53.0		34.8					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	47.0		46.0		47.0		46.0					
Max Q Clear Time (g_c+I1), s	35.5		27.0		27.4		11.2					
Green Ext Time (p_c), s	4.6		1.8		5.1		0.9					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	24.0											
HCM 6th LOS	C											

HCM 6th Signalized Intersection Summary 2030 with Dev Weekday Afternoon Peak Hour  
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Robinson Tract  
2030 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔		↔		↔		↔		↔		↔	
Traffic Volume (vph)	122	614	39	33	409	49	41	46	15	29	10	238
Future Volume (vph)	122	614	39	33	409	49	41	46	15	29	10	238
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%				-8%				-1%		0%	
Storage Length (ft)	150		350		120		150		0		150	
Storage Lanes	1		1		1		1		1		1	
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.850				0.850		0.964		0.856			
Flt Protected	0.950		0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1609	1678	1567	1719	1835	1560	1719	1718	0	1676	1511	0
Flt Permitted	0.313		0.427		0.510		0.964		0.856			
Satd. Flow (perm)	530	1678	1567	773	1835	1560	923	1718	0	1265	1511	0
Right Turn on Red	Yes		Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)	40		109		15		243					
Link Speed (mph)	45		45		25		35					
Link Distance (ft)	2436		2349		414		1473					
Travel Time (s)	36.9		35.6		11.3		28.7					
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	124	627	40	34	417	50	42	47	15	30	10	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	627	40	34	417	50	42	62	0	30	253	0
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Left	Thru	Left	Thru
Leading Detector (ft)	30	30	30	30	30	30	30	30	30	30	30	30
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10	-10
Detector 1 Size(ft)	40	40	40	40	40	40	40	40	40	40	40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	NA
Protected Phases	5		2		6		6		8		4	
Permitted Phases	2		2		6		6		8		4	
Detector Phase	5		2		6		6		8		4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Total Split (s)	13.0	60.0	60.0	47.0	47.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.4%	66.7%	66.7%	52.2%	52.2%	52.2%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	7.0	54.0	54.0	41.0	41.0	41.0	24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0

Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
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Robinson Tract

2: Bridlewood Blvd/Connector Road & Rt 926

2030 with Dev Weekday Afternoon Peak Hour

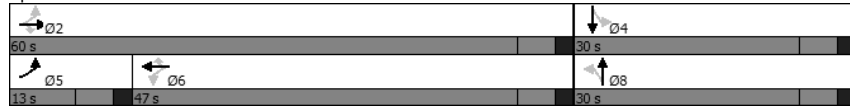


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead		Lag			Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	

**Intersection Summary**

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	48.8
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated

Splits and Phases: 2: Bridlewood Blvd/Connector Road & Rt 926



Lanes, Volumes, Timings

2030 with Dev Weekday Afternoon Peak Hour

I:\eng\816451 - Crebilly Farm\TrafficAnalysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev\Weekday Synchro\9

McMahon Associates, Inc.

Robinson Tract

2: Bridlewood Blvd/Connector Road & Rt 926

2030 with Dev Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↑	↔	↔	↑	↔	↔	↔	↔
Traffic Volume (veh/h)	122	614	39	33	409	49	41	46	15	29	10	238
Future Volume (veh/h)	122	614	39	33	409	49	41	46	15	29	10	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No		No		No		No
Adj Sat Flow, veh/h/ln	1415	1401	1501	2098	2070	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	124	627	40	34	417	50	42	47	15	30	10	243
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	0	0	2	2	0	2	2	2	2	2
Cap, veh/h	397	733	665	284	644	507	281	337	107	495	15	372
Arrive On Green	0.10	0.52	0.52	0.31	0.31	0.29	0.26	0.26	0.23	0.26	0.26	0.23
Sat Flow, veh/h	1347	1401	1272	911	2070	1754	1168	1314	419	1340	60	1451
Grp Volume(v), veh/h	124	627	40	34	417	50	42	0	62	30	0	253
Grp Sat Flow(s),veh/h/ln	1347	1401	1272	911	2070	1754	1168	0	1733	1340	0	1511
Q Serve(g_s), s	2.5	17.5	0.7	1.5	7.9	0.9	1.5	0.0	1.3	0.8	0.0	6.9
Cycle Q Clear(g_c), s	2.5	17.5	0.7	9.4	7.9	0.9	8.4	0.0	1.3	1.0	0.0	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.96
Lane Grp Cap(c), veh/h	397	733	665	284	644	507	281	0	444	495	0	387
V/C Ratio(X)	0.31	0.86	0.06	0.12	0.65	0.10	0.15	0.00	0.14	0.06	0.00	0.65
Avail Cap(c_a), veh/h	498	1700	1544	845	1919	1587	627	0	956	891	0	834
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	9.3	5.3	17.5	13.5	11.8	18.8	0.0	13.1	13.0	0.0	15.5
Incr Delay (d2), s/veh	0.4	3.0	0.0	0.2	1.1	0.1	0.2	0.0	0.1	0.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	6.1	0.2	0.5	5.2	0.5	0.7	0.0	0.8	0.4	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	12.3	5.4	17.7	14.6	11.9	19.1	0.0	13.2	13.1	0.0	17.4
LnGrp LOS	A	B	A	B	B	B	B	A	B	B	A	B
Approach Vol, veh/h	791			501			104		283			
Approach Delay, s/veh	11.5			14.5			15.6		16.9			
Approach LOS	B			B			B		B			
Timer - Assigned Phs	2		4		5		6		8			
Phs Duration (G+Y+Rc), s	28.7		16.6		9.6		19.1		16.6			
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0		6.0			
Max Green Setting (Gmax), s	54.0		24.0		7.0		41.0		24.0			
Max Q Clear Time (g_c+I1), s	19.5		8.9		4.5		11.4		10.4			
Green Ext Time (p_c), s	2.4		0.9		0.1		1.7		0.2			

**Intersection Summary**

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

HCM 6th Signalized Intersection Summary

2030 with Dev Weekday Afternoon Peak Hour

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.992	
Flt Protected	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Flt Permitted	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									112		5	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	319	222	44	181	294	53	76	1616	129	123	1648	93
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	287	298	0	181	294	53	76	1616	129	123	1741	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases	4											
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	33.0	33.0		28.0	28.0	28.0	15.0	89.0	89.0	15.0	89.0	
Total Split (%)	20.0%	20.0%		17.0%	17.0%	17.0%	9.1%	53.9%	53.9%	9.1%	53.9%	
Maximum Green (s)	26.0	26.0		21.0	21.0	21.0	9.0	83.0	83.0	9.0	83.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

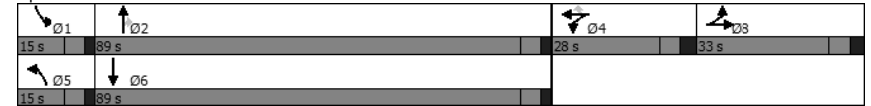
Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



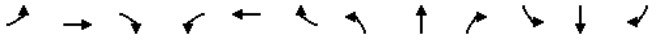
Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev\Weekday Synchro9n

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	292	259	44	181	294	53	76	1616	129	123	1648	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	296	269	46	242	260	226	111	1816	843	102	1683	43
Arrive On Green	0.16	0.16	0.16	0.13	0.13	0.13	0.06	0.51	0.51	0.06	0.51	0.50
Sat Flow, veh/h	1807	1644	279	1816	1949	1693	1856	3568	1655	1688	3189	179
Grp Volume(v), veh/h	292	0	303	181	294	53	76	1616	129	123	851	890
Grp Sat Flow(s),veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1712
Q Serve(g_s), s	26.6	0.0	25.8	15.8	22.0	4.6	6.6	67.1	6.8	10.0	84.2	84.2
Cycle Q Clear(g_c), s	26.6	0.0	25.8	15.8	22.0	4.6	6.6	67.1	6.8	10.0	84.2	84.2
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	296	0	315	242	260	226	111	1816	843	102	845	882
V/C Ratio(X)	0.99	0.00	0.96	0.75	1.13	0.23	0.69	0.89	0.15	1.20	1.01	1.01
Avail Cap(c_a), veh/h	296	0	315	242	260	226	112	1816	843	102	845	873
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.8	0.0	68.6	68.8	71.5	64.0	76.1	37.5	21.6	77.5	40.4	40.4
Incr Delay (d2), s/veh	48.7	0.0	40.7	12.0	95.9	0.5	15.7	7.0	0.4	153.3	32.8	32.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	147.0	140.9
%ile BackOfQ(95%),veh/ln	22.7	0.0	22.6	12.7	26.1	3.6	6.5	41.9	4.9	14.3	85.5	87.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.6	0.0	109.2	80.9	167.4	64.5	91.8	48.4	21.9	230.8	220.2	213.9
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h	595			528			1821			1864		
Approach Delay, s/veh	113.3			127.4			48.3			217.9		
Approach LOS	F			F			D			F		
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	5.0	89.0	28.0	14.8	89.2	33.0						
Change Period (Y+Rc), s	6.0	6.0	7.0	6.0	6.0	7.0						
Max Green Setting (Gmax),s	90	83.0	21.0	9.0	83.0	26.0						
Max Q Clear Time (g_c+1),s	11	69.6	24.5	9.1	86.7	29.1						
Green Ext Time (p_c), s	0.0	11.3	0.0	0.0	0.0	0.0						

Intersection Summary												
HCM 6th Ctrl Delay	130.8											
HCM 6th LOS	F											

**Notes**  
 User approved pedestrian interval to be less than phase max green.  
 User approved volume balancing among the lanes for turning movement.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1886	371
Future Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1886	371
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%		2%		2%		-3%					
Storage Length (ft)	200		200		350		0		0		220	
Storage Lanes	1		1		1		0		0		1	
Taper Length (ft)	75		100		75		75					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.850		0.933		0.850		0.850					
Flt Protected	0.950		0.950									
Satd. Flow (prot)	1678		1888		1621		1693		1773		0	
Flt Permitted	0.616		0.617									
Satd. Flow (perm)	1088		1888		1621		1099		1773		0	
Right Turn on Red	No		No		Yes		Yes					
Satd. Flow (RTOR)	55		238									
Link Speed (mph)	25		25		45		45					
Link Distance (ft)	637		560		1356		940					
Travel Time (s)	17.4		15.3		20.5		14.2					
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	363	174	20	92	97	78	0	1781	75	0	2028	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	174	20	92	175	0	0	1781	75	0	2028	399
Number of Detectors	1	4	1	1	4	2		1	2		1	
Detector Template	Right						Right		Right			
Leading Detector (ft)	35	68	30	35	68	490		30	490		30	
Trailing Detector (ft)	-5	-1	-10	-5	-1	-10		-10	-10		-10	
Detector 1 Position(ft)	-5	-1	-10	-5	-1	-10		-10	-10		-10	
Detector 1 Size(ft)	40	6	40	40	6	40		40	40		40	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Detector 2 Position(ft)	15		15		450		450					
Detector 2 Size(ft)	6		6		40		40					
Detector 2 Type	CI+Ex		CI+Ex		CI+Ex		CI+Ex					
Detector 2 Channel												
Detector 2 Extend (s)	0.0		0.0		0.0		0.0					
Detector 3 Position(ft)	36		36									
Detector 3 Size(ft)	6		6									
Detector 3 Type	CI+Ex		CI+Ex									
Detector 3 Channel												
Detector 3 Extend (s)	0.0		0.0									
Detector 4 Position(ft)	62		62									
Detector 4 Size(ft)	6		6									
Detector 4 Type	CI+Ex		CI+Ex									




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0			75.0	75.0		75.0	75.0
Total Split (%)	37.5%	37.5%	37.5%	37.5%	37.5%			62.5%	62.5%		62.5%	62.5%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0			68.0	68.0		68.0	68.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

**Intersection Summary**

Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Description: Signal	

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd

02	04
75 s	45 s
06	08
75 s	45 s



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1886	371
Future Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1886	371
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No		No					No
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	363	174	20	92	97	78	0	1781	75	0	2028	399
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	387	649	540	362	300	242	0	1835	901	0	2042	969
Arrive On Green	0.32	0.32	0.31	0.32	0.32	0.31	0.00	0.57	0.57	0.00	0.57	0.57
Sat Flow, veh/h	1346	2051	1751	1193	949	763	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	363	174	20	92	0	175	0	1781	75	0	2028	399
Grp Sat Flow(s),veh/h/ln	1346	2051	1751	1193	0	1711	0	1595	1567	0	1776	1685
Q Serve(g_s), s	29.1	7.6	1.0	7.5	0.0	9.4	0.0	64.4	2.6	0.0	67.9	15.8
Cycle Q Clear(g_c), s	38.0	7.6	1.0	15.1	0.0	9.4	0.0	64.4	2.6	0.0	67.9	15.8
Prop In Lane	1.00		1.00	1.00		0.45	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	387	649	540	362	0	542	0	1835	901	0	2042	969
V/C Ratio(X)	0.94	0.27	0.04	0.25	0.00	0.32	0.00	0.97	0.08	0.00	0.99	0.41
Avail Cap(c_a), veh/h	387	649	540	362	0	542	0	1835	901	0	2042	969
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	46.9	30.6	29.0	36.2	0.0	31.4	0.0	24.5	11.4	0.0	25.3	14.2
Incr Delay (d2), s/veh	30.6	0.2	0.0	0.4	0.0	0.3	0.0	15.1	0.2	0.0	18.4	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	20.6	7.0	0.7	4.1	0.0	7.2	0.0	33.5	1.6	0.0	39.3	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.4	30.8	29.1	36.6	0.0	31.7	0.0	39.7	11.6	0.0	43.6	15.5
LnGrp LOS	E	C	C	D	A	C	A	D	B	A	D	B
Approach Vol, veh/h		557			267		1856				2427	
Approach Delay, s/veh		61.1			33.4		38.5				39.0	
Approach LOS		E			C		D				D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		75.0		45.0		75.0		45.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		68.0		37.0		68.0		37.0				
Max Q Clear Time (g_c+I1), s		70.4		17.6		66.9		40.5				
Green Ext Time (p_c), s		0.0		1.2		1.1		0.0				

**Intersection Summary**

HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	39	0	0	43	58	1789	81	129	1770	354
Future Volume (vph)	0	0	39	0	0	43	58	1789	81	129	1770	354
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865	0.994			0.975		
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3302	0	1678	3324	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3302	0	1678	3324	0
Link Speed (mph)			35			35		45			45	
Link Distance (ft)			553			858		3154			1356	
Travel Time (s)			10.8			16.7		47.8			20.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	42	0	0	46	62	1924	87	139	1903	381
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	42	0	0	46	62	2011	0	139	2284	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary  
Area Type: Other  
Control Type: Unsignalized

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	39	0	0	43	58	1789	81	129	1770	354
Future Vol, veh/h	0	0	39	0	0	43	58	1789	81	129	1770	354
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	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	0	0	0	0	0	0	0	0	0	0	0
Grade, %	-	-1	-	-	-2	-	-	-	-	2	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	0	9	0	2	0	0	2
Mvmt Flow	0	0	42	0	0	46	62	1924	87	139	1903	381

Major/Minor	Minor2	Minor1	Major1	Major2								
Conflicting Flow All	-	-	1142	-	-	1006	2284	0	0	2011	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.1	-	-	7.2	3.9	-	-	3.9	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.9	-	-	3	2.4	-	-	2.4	-	-
Pot Cap-1 Maneuver	0	0	200	0	0	237	246	-	-	308	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	200	-	-	237	246	-	-	308	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	27.7	23.8	0.7	1.5
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	246	-	-	200	237	308	-
HCM Lane V/C Ratio	0.254	-	-	0.21	0.195	0.45	-
HCM Control Delay (s)	24.5	-	-	27.7	23.8	25.9	-
HCM Lane LOS	C	-	-	D	C	D	-
HCM 95th %tile Q(veh)	1	-	-	0.8	0.7	2.2	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	34	0	5	407	1	4
Future Volume (vph)	34	0	5	407	1	4
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	10
Grade (%)	4%			-4%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Fit Protected				0.999	0.950	
Satd. Flow (prot)	1705	0	0	1756	1636	1414
Fit Permitted				0.999	0.950	
Satd. Flow (perm)	1705	0	0	1756	1636	1414
Link Speed (mph)	35			35	35	
Link Distance (ft)	215			553	359	
Travel Time (s)	4.2			10.8	7.0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	45	0	7	543	1	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	0	550	1	5
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	34	0	5	407	1	4
Future Vol, veh/h	34	0	5	407	1	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	0
Veh in Median Storage#	-	-	-	-	0	0
Grade, %	4			-4	2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	45	0	7	543	1	5

**Major/Minor**

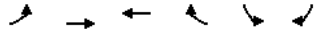
	Major1	Major2	Minor1
Conflicting Flow All	0	0	45
Stage 1	-	-	45
Stage 2	-	-	557
Critical Hdwy	-	4.3	6.8
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1159	489
Stage 1	-	-	1137
Stage 2	-	-	611
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1159	485
Mov Cap-2 Maneuver	-	-	485
Stage 1	-	-	1137
Stage 2	-	-	606

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

**Minor Lane/Major Mvm**

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	485	1093	-	-	1159	-
HCM Lane V/C Ratio	0.003	0.005	-	-	0.006	-
HCM Control Delay (s)	12.4	8.3	-	-	8.1	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	192	14	387	21	20	151
Future Volume (vph)	192	14	387	21	20	151
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.881	
Flt Protected		0.956			0.994	
Satd. Flow (prot)	0	1630	1737	0	1576	0
Flt Permitted		0.956			0.994	
Satd. Flow (perm)	0	1630	1737	0	1576	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		170	215		401	
Travel Time (s)		3.3	4.2		7.8	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	256	19	516	28	27	201
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	275	544	0	228	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

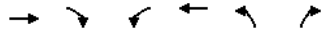
Int Delay, s/veh 7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	192	14	387	21	20	151
Future Vol, veh/h	192	14	387	21	20	151
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, %	-	4	-3	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	256	19	516	28	27	201

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	544	0	0
Stage 1	-	-	530
Stage 2	-	-	531
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	79	-	274
Stage 1	-	-	670
Stage 2	-	-	670
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	79	-	183
Mov Cap-2 Maneuver	-	-	183
Stage 1	-	-	448
Stage 2	-	-	670

Approach	EB	WB	SB
HCM Control Delay, s	14.1	0	20.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBL	SBR
Capacity (veh/h)	779	-	-	-	463	-
HCM Lane V/C Ratio	0.329	-	-	-	0.492	-
HCM Control Delay (s)	11.9	0	-	-	20.1	-
HCM Lane LOS	B	A	-	-	C	-
HCM 95th %tile Q(veh)	1.4	-	-	-	2.7	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Volume (vph)	206	0	0	538	0	0
Future Volume (vph)	206	0	0	538	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	268			170	323	
Travel Time (s)	5.2			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	275	0	0	717	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	275	0	0	717	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized

<b>Intersection</b>						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↓	↓
Traffic Vol, veh/h	206	0	0	538	0	0
Future Vol, veh/h	206	0	0	538	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	275	0	0	717	0	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	-	992
Stage 1	-	-	275
Stage 2	-	-	717
Critical Hdwy	-	-	6
Critical Hdwy Stg 1	-	-	5
Critical Hdwy Stg 2	-	-	5
Follow-up Hdwy	-	-	3
Pot Cap-1 Maneuver	0	0	338
Stage 1	0	0	916
Stage 2	0	0	589
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	338
Mov Cap-2 Maneuver	-	-	338
Stage 1	-	-	916
Stage 2	-	-	589

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

Minor Lane/Major Mvm	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-





Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	44	4	272	266	3	162
Future Volume (vph)	44	4	272	266	3	162
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.867	
Flt Protected				0.975	0.999	
Satd. Flow (prot)	1692	0	0	1688	1528	0
Flt Permitted				0.975	0.999	
Satd. Flow (perm)	1692	0	0	1688	1528	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1700			268	830	
Travel Time (s)	33.1			5.2	16.2	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	59	5	363	355	4	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	718	220	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	44	4	272	266	3	162
Future Vol, veh/h	44	4	272	266	3	162
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	-
Grade, %	3			-3	0	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	59	5	363	355	4	216

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	64
Stage 1	-	-	62
Stage 2	-	-	1081
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1142	242
Stage 1	-	-	1122
Stage 2	-	-	358
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1142	146
Mov Cap-2 Maneuver	-	-	146
Stage 1	-	-	1122
Stage 2	-	-	216

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	9.9
HCM LOS			A

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	960	-	-	1142	-
HCM Lane V/C Ratio	0.229	-	-	0.318	-
HCM Control Delay (s)	9.9	-	-	9.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.9	-	-	1.4	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	58	2	14	222	1	9
Future Volume (vph)	58	2	14	222	1	9
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	11	11
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995			0.875		
Flt Protected				0.997	0.996	
Satd. Flow (prot)	1704	0	0	1742	1487	0
Flt Permitted				0.997	0.996	
Satd. Flow (perm)	1704	0	0	1742	1487	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	858			1700	418	
Travel Time (s)	16.7			33.1	8.1	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	1%	2%	2%
Adj. Flow (vph)	77	3	19	296	1	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	315	13	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	58	2	14	222	1	9
Future Vol, veh/h	58	2	14	222	1	9
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	-
Grade, %	3			-3	0	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	2	2	1	2	2
Mvmt Flow	77	3	19	296	1	12

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	80
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-2.218	-3.518
Pot Cap-1 Maneuver	-	-	1518
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1518
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9
HCM LOS			A

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	919	-	-	1518	-
HCM Lane V/C Ratio	0.015	-	-	0.012	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	3	52	13	10	202	12	7	0	6	1	0	2
Future Volume (vph)	3	52	13	10	202	12	7	0	6	1	0	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	12	12	10	10	12	12	12	10	12	10
Grade (%)	3%				-3%		0%				1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974				0.993		0.936				0.899	
Frt Protected	0.998				0.998		0.974				0.988	
Satd. Flow (prot)	0	1602	0	0	1673	0	0	1609	0	0	1591	0
Frt Permitted	0.998				0.998		0.974				0.988	
Satd. Flow (perm)	0	1602	0	0	1673	0	0	1609	0	0	1591	0
Link Speed (mph)	35				35		25				25	
Link Distance (ft)	591				858		382				385	
Travel Time (s)	11.5				16.7		10.4				10.5	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	2%	2%	1%	0%	2%	2%	0%	2%	0%	0%
Adj. Flow (vph)	4	69	17	13	269	16	9	0	8	1	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	298	0	0	17	0	0	4	0
Sign Control	Free				Free		Stop				Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	3	52	13	10	202	12	7	0	6	1	0	2
Future Vol, veh/h	3	52	13	10	202	12	7	0	6	1	0	2
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	
Storage Length	-		-		-		-		-		-	
Veh in Median Storage, #	0		-		0		-		0		-	
Grade, %	-3		-		-3		-		0		-1	
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	2	2	1	0	2	2	0	2	0	0
Mvmt Flow	4	69	17	13	269	16	9	0	8	1	0	3

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	285	0	86	391
Stage 1	-	-	-	86
Stage 2	-	-	-	305
Critical Hdwy	4.3	-	4.3	7.12
Critical Hdwy Stg 1	-	-	-	6.12
Critical Hdwy Stg 2	-	-	-	6.12
Follow-up Hdwy	3	-	3	34.018
Pot Cap-1 Maneuver	59	-	1122	649
Stage 1	-	-	-	1074
Stage 2	-	-	-	809
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	59	-	1122	638
Mov Cap-2 Maneuver	-	-	-	638
Stage 1	-	-	-	1070
Stage 2	-	-	-	795

Approach	EB	WB	NB	SB
HCM Control Delay, s	4	0.4	9.7	9.9
HCM LOS			A	A

Minor Lane/Major Mvm	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	779	959	-	-	1122	-	-	732
HCM Lane V/C Ratio	0.022	0.004	-	-	0.012	-	-	0.005
HCM Control Delay (s)	9.7	8.8	0	-	8.2	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↑	↓	↓
Traffic Volume (vph)	160	51	273	46	23	306
Future Volume (vph)	160	51	273	46	23	306
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Friction	0.967		0.981			
Fit Protected	0.963					0.997
Satd. Flow (prot)	1676	0	1751	0	0	1795
Fit Permitted	0.963					0.997
Satd. Flow (perm)	1676	0	1751	0	0	1795
Link Speed (mph)	35		35			35
Link Distance (ft)	591		636			619
Travel Time (s)	11.5		12.4			12.1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	182	58	310	52	26	348
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	0	362	0	0	374
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↑	↓	↓
Traffic Vol, veh/h	160	51	273	46	23	306
Future Vol, veh/h	160	51	273	46	23	306
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	0	-	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	182	58	310	52	26	348

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	736	336	0
Stage 1	336	-	-
Stage 2	400	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuver#	34	750	-
Stage 1	831	-	-
Stage 2	774	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver#	18	750	-
Mov Cap-2 Maneuver#	18	-	-
Stage 1	831	-	-
Stage 2	746	-	-

Approach	WB	NB	SB
HCM Control Delay	29.5	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	468	902	-
HCM Lane V/C Ratio	-	-	0.512	0.029	-
HCM Control Delay (s)	-	-	20.5	9.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	2.9	0.1	-

*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*

McMahon Associates, Inc. Robinson Tract  
 2: Bridlewood Blvd/Connector Road & Rt 926 2030 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↘	↘	↑	↙	↙	↑	↘	↘	↓	↘
Traffic Volume (vph)	122	614	39	33	409	49	41	46	15	29	260	238
Future Volume (vph)	122	614	39	33	409	49	41	46	15	29	260	238
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	11	12	12	12	12	14	12	12	12
Grade (%)	8%			-8%			-1%			0%		
Storage Length (ft)	150		350	120		150	0		0	150		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.964			0.928	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1609	1678	1567	1719	1835	1560	1719	1718	0	1676	1638	0
Flt Permitted	0.260			0.379			0.241			0.717		
Satd. Flow (perm)	440	1678	1567	686	1835	1560	436	1718	0	1265	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			40			109		15			51	
Link Speed (mph)		45			45			25			35	
Link Distance (ft)		2436			2349			414			1473	
Travel Time (s)		36.9			35.6			11.3			28.7	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	0%	0%	2%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	124	627	40	34	417	50	42	47	15	30	265	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	627	40	34	417	50	42	62	0	30	508	0
Number of Detectors	1	1	1	1	1	1	1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	30	30	30	30	30	30	30	30		30	30	
Trailing Detector (ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Position(ft)	-10	-10	-10	-10	-10	-10	-10	-10		-10	-10	
Detector 1 Size(ft)	40	40	40	40	40	40	40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2			6			8			4	
Permitted Phases	2		2	6		6	8			4		
Detector Phase	5	2	2	6	6	6	8	8		4	4	
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Minimum Split (s)	9.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0		15.0	15.0	
Total Split (s)	13.0	60.0	60.0	47.0	47.0	47.0	30.0	30.0		30.0	30.0	
Total Split (%)	14.4%	66.7%	66.7%	52.2%	52.2%	52.2%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	7.0	54.0	54.0	41.0	41.0	41.0	24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	0.0	-1.0	-1.0		-1.0	-1.0	

Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5E - 2030 with Dev US 202 3\3\20190805 Weekday PI

McMahon Associates, Inc. Robinson Tract  
 2: Bridlewood Blvd/Connector Road & Rt 926 2030 with Dev Weekday Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	6.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead			Lag			Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None	None	Min	Min		Min	Min	
Intersection Summary												
Area Type:	Other											
Cycle Length:	90											
Actuated Cycle Length:	68.8											
Natural Cycle:	60											
Control Type:	Actuated-Uncoordinated											
Splits and Phases:	2: Bridlewood Blvd/Connector Road & Rt 926											

Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5E - 2030 with Dev US 202 3\3\20190805 Weekday PI



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↑	↗	↘	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	122	614	39	33	409	49	41	46	15	29	260	238
Future Volume (veh/h)	122	614	39	33	409	49	41	46	15	29	260	238
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1415	1401	1501	2098	2070	2070	1837	1809	1881	1772	1772	1772
Adj Flow Rate, veh/h	124	627	40	34	417	50	42	47	15	30	265	243
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	3	0	0	2	2	0	2	2	2	2	2
Cap, veh/h	354	704	640	193	707	574	160	467	149	565	302	277
Arrive On Green	0.09	0.50	0.50	0.34	0.34	0.33	0.36	0.36	0.34	0.36	0.36	0.34
Sat Flow, veh/h	1347	1401	1272	911	2070	1754	924	1314	419	1340	851	780
Grp Volume(v), veh/h	124	627	40	34	417	50	42	0	62	30	0	508
Grp Sat Flow(s),veh/h/ln	1347	1401	1272	911	2070	1754	924	0	1733	1340	0	1631
Q Serve(g_s), s	3.9	28.4	1.1	2.5	11.7	1.4	3.1	0.0	1.7	1.1	0.0	20.6
Cycle Q Clear(g_c), s	3.9	28.4	1.1	19.5	11.7	1.4	23.7	0.0	1.7	1.7	0.0	20.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.24	1.00		0.48
Lane Grp Cap(c), veh/h	354	704	640	193	707	574	160	0	615	565	0	579
V/C Ratio(X)	0.35	0.89	0.06	0.18	0.59	0.09	0.26	0.00	0.10	0.05	0.00	0.88
Avail Cap(c_a), veh/h	385	1094	993	426	1235	1021	160	0	615	565	0	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	15.7	9.0	29.6	19.1	16.4	32.4	0.0	15.3	15.4	0.0	21.5
Incr Delay (d2), s/veh	0.6	6.1	0.0	0.4	0.8	0.1	0.9	0.0	0.1	0.0	0.0	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.8	12.8	0.5	0.9	8.7	0.9	1.3	0.0	1.2	0.5	0.0	14.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	21.8	9.0	30.0	19.9	16.5	33.2	0.0	15.3	15.5	0.0	35.7
LnGrp LOS	B	C	A	C	B	B	C	A	B	B	A	D
Approach Vol, veh/h		791			501			104				538
Approach Delay, s/veh		19.9			20.2			22.6				34.6
Approach LOS		B			C			C				C
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		40.4		30.0	11.4	29.0		30.0				
Change Period (Y+Rc), s		6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s		54.0		24.0	7.0	41.0		24.0				
Max Q Clear Time (g_c+11), s		30.4		22.6	5.9	21.5		25.7				
Green Ext Time (p_c), s		2.3		0.4	0.0	1.6		0.0				

Intersection Summary

HCM 6th Ctrl Delay	24.2
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↔	↗	↖	↔	↗	↖	↔	↗	↖	↔	↗
Traffic Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1349	90
Future Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1349	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.991	
Flt Protected	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3259	0
Flt Permitted	0.950	0.995	0.950				0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3259	0
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									112		6	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	319	222	44	181	294	53	76	1616	129	123	1391	93
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	287	298	0	181	294	53	76	1616	129	123	1484	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	35.0	35.0		28.0	28.0	28.0	15.0	87.0	87.0	15.0	87.0	
Total Split (%)	21.2%	21.2%		17.0%	17.0%	17.0%	9.1%	52.7%	52.7%	9.1%	52.7%	
Maximum Green (s)	28.0	28.0		21.0	21.0	21.0	9.0	81.0	81.0	9.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

↖ 01	↔ 02	↗ 04	↖ 08
15 s	87 s	28 s	35 s
↖ 05	↔ 06		
15 s	87 s		





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1349	90
Future Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1349	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	292	259	44	181	294	53	76	1616	129	123	1391	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	318	289	49	242	260	226	111	1773	823	102	1643	42
Arrive On Green	0.18	0.18	0.17	0.13	0.13	0.13	0.06	0.50	0.50	0.06	0.50	0.49
Sat Flow, veh/h	1807	1644	279	1816	1949	1693	1856	3568	1655	1688	3153	210
Grp Volume(v), veh/h	292	0	303	181	294	53	76	1616	129	123	729	755
Grp Sat Flow(s),veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1706
Q Serve(g_s), s	26.2	0.0	25.4	15.8	22.0	4.6	6.6	68.7	7.0	10.0	65.1	65.8
Cycle Q Clear(g_c), s	26.2	0.0	25.4	15.8	22.0	4.6	6.6	68.7	7.0	10.0	65.1	65.8
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	318	0	338	242	260	226	111	1773	823	102	825	861
V/C Ratio(X)	0.92	0.00	0.90	0.75	1.13	0.23	0.69	0.91	0.16	1.20	0.88	0.88
Avail Cap(c_a), veh/h	318	0	338	242	260	226	112	1773	823	102	825	849
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.8	0.0	66.6	68.8	71.5	64.0	76.1	39.3	22.6	77.5	41.4	41.4
Incr Delay (d2), s/veh	30.6	0.0	25.1	12.0	95.9	0.5	15.7	8.6	0.4	153.3	13.2	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	0.0	0.0	98.2	89.1
%ile BackOfQ(95%),veh/ln	20.9	0.0	20.9	12.7	26.1	3.6	6.5	43.5	5.1	14.3	67.2	67.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	97.5	0.0	91.7	80.9	167.4	64.5	91.8	53.0	23.0	230.8	152.9	142.8
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h		595			528			1821			1607	
Approach Delay, s/veh		94.5			127.4			52.5			154.1	
Approach LOS		F			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.0	87.0		28.0	14.8	87.2		35.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax)9s	81.0	81.0		21.0	9.0	81.0		28.0				
Max Q Clear Time (g_c+11)2s	71.2	71.2		24.5	9.1	67.8		28.7				
Green Ext Time (p_c), s	0.0	8.5		0.0	0.0	10.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	102.6
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↙	↘	↙	↖	↗	↘	↙	↘	↙
Traffic Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1636	621
Future Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1636	621
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.933				0.850			0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.621			0.622								
Satd. Flow (perm)	1097	1888	1621	1108	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No			Yes		Yes	
Satd. Flow (RTOR)									53			441
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	363	174	20	92	97	78	0	1781	75	0	1759	668
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	174	20	92	175	0	0	1781	75	0	1759	668
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template	Right								Right			
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

	↖	→	↘	↙	←	↖	↙	↘	↗	↘	↙	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)	0.0				0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases	8				4				6		2	
Permitted Phases	8		8	4					6			2
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	47.0	47.0	47.0	47.0	47.0			73.0	73.0		73.0	73.0
Total Split (%)	39.2%	39.2%	39.2%	39.2%	39.2%			60.8%	60.8%		60.8%	60.8%
Maximum Green (s)	39.0	39.0	39.0	39.0	39.0			66.0	66.0		66.0	66.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type: Other

Cycle Length: 120

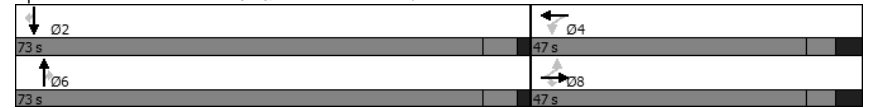
Actuated Cycle Length: 120

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Description: Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↓	↔	↔	↑	↔	↔	↑	↔
Traffic Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1636	621
Future Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1636	621
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	363	174	20	92	97	78	0	1781	75	0	1759	668
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	412	684	569	384	316	254	0	1782	875	0	1983	941
Arrive On Green	0.33	0.33	0.32	0.33	0.33	0.32	0.00	0.56	0.56	0.00	0.56	0.56
Sat Flow, veh/h	1346	2051	1751	1193	949	763	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	363	174	20	92	0	175	0	1781	75	0	1759	668
Grp Sat Flow(s),veh/h/ln	1346	2051	1751	1193	0	1711	0	1595	1567	0	1776	1685
Q Serve(g_s), s	31.3	7.4	0.9	7.3	0.0	9.2	0.0	67.0	2.7	0.0	52.0	34.8
Cycle Q Clear(g_c), s	40.0	7.4	0.9	14.7	0.0	9.2	0.0	67.0	2.7	0.0	52.0	34.8
Prop In Lane	1.00		1.00	1.00		0.45	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	412	684	569	384	0	570	0	1782	875	0	1983	941
V/C Ratio(X)	0.88	0.25	0.04	0.24	0.00	0.31	0.00	1.00	0.09	0.00	0.89	0.71
Avail Cap(c_a), veh/h	412	684	569	384	0	570	0	1782	875	0	1983	941
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.8	29.1	27.7	34.5	0.0	29.9	0.0	26.5	12.3	0.0	23.2	19.4
Incr Delay (d2), s/veh	19.4	0.2	0.0	0.3	0.0	0.3	0.0	21.2	0.2	0.0	6.3	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	19.1	6.8	0.7	3.9	0.0	7.0	0.0	36.4	1.7	0.0	28.7	19.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.3	29.3	27.7	34.8	0.0	30.2	0.0	47.7	12.5	0.0	29.5	23.9
LnGrp LOS	E	C	C	C	A	C	A	D	B	A	C	C
Approach Vol, veh/h	557			267			1856			2427		
Approach Delay, s/veh	52.0			31.8			46.3			28.0		
Approach LOS	D			C			D			C		
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	73.0		47.0		73.0		47.0					
Change Period (Y+Rc), s	7.0		8.0		7.0		8.0					
Max Green Setting (Gmax), s	66.0		39.0		66.0		39.0					
Max Q Clear Time (g_c+11), s	54.5		17.2		69.5		42.5					
Green Ext Time (p_c), s	11.5		1.2		0.0		0.0					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	37.5											
HCM 6th LOS	D											



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Volume (vph)	0	0	39	0	0	43	58	1789	81	129	1520	354
Future Volume (vph)	0	0	39	0	0	43	58	1789	81	129	1520	354
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	16	16	12	12	12	11	12	12	11	12	12
Grade (%)		-1%			-2%			2%			-3%	
Storage Length (ft)	0		0	0		0	350		0	380		0
Storage Lanes	0		1	0		1	1		0	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95	
Frt			0.865			0.865		0.994			0.972	
Flt Protected							0.950			0.950		
Satd. Flow (prot)	0	0	1773	0	0	1443	1636	3302	0	1678	3314	0
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	0	0	1773	0	0	1443	1636	3302	0	1678	3314	0
Link Speed (mph)			35			35		45			45	
Link Distance (ft)			553			858		3154			1356	
Travel Time (s)			10.8			16.7		47.8			20.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	2%	0%	0%	2%	1%
Adj. Flow (vph)	0	0	42	0	0	46	62	1924	87	139	1634	381
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	42	0	0	46	62	2011	0	139	2015	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other  
Control Type: Unsignalized

Intersection

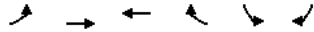
Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑	↑↑	↑↑		↑	↑↑	
Traffic Vol, veh/h	0	0	39	0	0	43	58	1789	81	129	1520	354
Future Vol, veh/h	0	0	39	0	0	43	58	1789	81	129	1520	354
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	350	-	-	380	-	-
Veh in Median Storage, #	0	0	0	0	0	0	0	0	0	0	0	0
Grade, %	-	-1	-	-	-2	-	-	-	2	-	-	-3
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	0	0	9	0	2	0	0	2	1
Mvmt Flow	0	0	42	0	0	46	62	1924	87	139	1634	381

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	-	1008	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	-	7.1	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	2.9	-
Pot Cap-1 Maneuver	0	0	248	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	248	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay	22.4	23.8	0.6	1.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	307	-	-	248	237	308	-
HCM Lane V/C Ratio	0.203	-	-	0.169	0.195	0.45	-
HCM Control Delay (s)	19.7	-	-	22.4	23.8	25.9	-
HCM Lane LOS	C	-	-	C	C	D	-
HCM 95th %tile Q(veh)	0.7	-	-	0.6	0.7	2.2	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Volume (vph)	192	14	387	21	20	401
Future Volume (vph)	192	14	387	21	20	401
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)		4%	-3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr			0.993		0.872	
Flt Protected		0.955			0.998	
Satd. Flow (prot)	0	1628	1737	0	1566	0
Flt Permitted		0.955			0.998	
Satd. Flow (perm)	0	1628	1737	0	1566	0
Link Speed (mph)		35	35		35	
Link Distance (ft)		170	215		401	
Travel Time (s)		3.3	4.2		7.8	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	226	16	455	25	24	472
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	242	480	0	496	0
Sign Control		Free	Free		Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

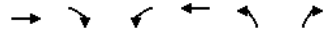
Int Delay, s/veh 16.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	↕
Traffic Vol, veh/h	192	14	387	21	20	401
Future Vol, veh/h	192	14	387	21	20	401
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	-	0
Grade, %	-	4	-3	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	1	0	0	0
Mvmt Flow	226	16	455	25	24	472

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	480	0	936
Stage 1	-	-	468
Stage 2	-	-	468
Critical Hdwy	4.3	-	6.4
Critical Hdwy Stg 1	-	-	5.4
Critical Hdwy Stg 2	-	-	5.4
Follow-up Hdwy	3	-	3
Pot Cap-1 Maneuver	621	-	327
Stage 1	-	-	718
Stage 2	-	-	718
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	621	-	236
Mov Cap-2 Maneuver	-	-	236
Stage 1	-	-	518
Stage 2	-	-	718

Approach	EB	WB	SB
HCM Control Delay, s	16.3	0	36.3
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	821	-	-	-	584
HCM Lane V/C Ratio	0.275	-	-	-	-0.848
HCM Control Delay (s)	11	0	-	-	36.3
HCM Lane LOS	B	A	-	-	E
HCM 95th %tile Q(veh)	1.1	-	-	-	9.2



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Volume (vph)	206	0	0	788	0	0
Future Volume (vph)	206	0	0	788	0	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	3%			-3%	-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1773	0	0	1809	1818	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1773	0	0	1809	1818	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	268			170	323	
Travel Time (s)	5.2			3.3	6.3	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	275	0	0	1051	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	275	0	0	1051	0	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized

**Intersection**

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Int Delay, s/veh	0					
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	206	0	0	788	0	0
Future Vol, veh/h	206	0	0	788	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	-
Grade, %	3			-3	-2	
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	275	0	0	1051	0	0

**Major/Minor**

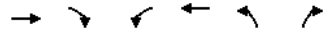
	Major1	Major2	Minor1	
Conflicting Flow All	0	-	-	1326 275
Stage 1	-	-	-	275 -
Stage 2	-	-	-	1051 -
Critical Hdwy	-	-	-	6 6
Critical Hdwy Stg 1	-	-	-	5 -
Critical Hdwy Stg 2	-	-	-	5 -
Follow-up Hdwy	-	-	-	3 3.1
Pot Cap-1 Maneuver	-	0	0	- 218 825
Stage 1	-	0	0	- 916 -
Stage 2	-	0	0	- 418 -
Platoon blocked, %	-			-
Mov Cap-1 Maneuver	-	-	-	- 218 825
Mov Cap-2 Maneuver	-	-	-	- 218 -
Stage 1	-	-	-	- 916 -
Stage 2	-	-	-	- 418 -

**Approach**

	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

**Minor Lane/Major Mvm**

	NBLn1	EBT	WBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	0	-	-
HCM Lane LOS	A	-	-
HCM 95th %tile Q(veh)	-	-	-



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (vph)	44	4	522	266	3	162
Future Volume (vph)	44	4	522	266	3	162
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	11	11	11	12	12
Grade (%)	3%			-3%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.867	
Flt Protected				0.968	0.999	
Satd. Flow (prot)	1692	0	0	1676	1528	0
Flt Permitted				0.968	0.999	
Satd. Flow (perm)	1692	0	0	1676	1528	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	1700			268	830	
Travel Time (s)	33.1			5.2	16.2	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Heavy Vehicles (%)	0%	2%	2%	2%	2%	2%
Adj. Flow (vph)	59	5	696	355	4	216
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	0	1051	220	0
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 9.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Vol, veh/h	44	4	522	266	3	162
Future Vol, veh/h	44	4	522	266	3	162
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	-
Grade, %	3	-	-	-3	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	0	2	2	2	2	2
Mvmt Flow	59	5	696	355	4	216

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	64
Stage 1	-	-	62
Stage 2	-	-	1747
Critical Hdwy	-	4.3	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	3	3
Pot Cap-1 Maneuver	-	1142	92
Stage 1	-	-	1122
Stage 2	-	-	164
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1142	22
Mov Cap-2 Maneuver	-	-	22
Stage 1	-	-	1122
Stage 2	-	-	40

Approach	EB	WB	NB
HCM Control Delay, s	0	8.6	15.1
HCM LOS			C

Minor Lane/Major Mvm	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	574	-	-	1142	-
HCM Lane V/C Ratio	0.383	-	-	0.609	-
HCM Control Delay (s)	15.1	-	-	12.9	0
HCM Lane LOS	C	-	-	B	A
HCM 95th %tile Q(veh)	1.8	-	-	4.3	-

*Base*



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.986				0.850				0.850		0.991	
Flt Protected	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (prot)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Flt Permitted	0.950	0.991		0.950			0.950			0.950		
Satd. Flow (perm)	1494	1698	0	1536	1732	1411	1630	3260	1619	1527	3084	0
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									112		5	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	459	285	36	179	167	43	27	1630	149	80	1556	98
Shared Lane Traffic (%)	16%											
Lane Group Flow (vph)	386	394	0	179	167	43	27	1630	149	80	1654	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4		5	2		1	6	
Permitted Phases	4											
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	43.0	43.0		24.0	24.0	24.0	13.0	85.0	85.0	13.0	85.0	
Total Split (%)	26.1%	26.1%		14.5%	14.5%	14.5%	7.9%	51.5%	51.5%	7.9%	51.5%	
Maximum Green (s)	36.0	36.0		17.0	17.0	17.0	7.0	79.0	79.0	7.0	79.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

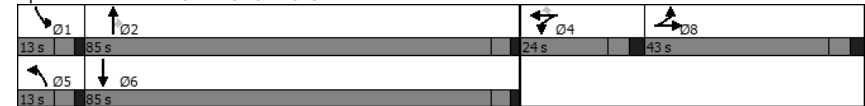
Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev Weekday AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag							Lead		Lag		Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Lanes, Volumes, Timings  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev Weekday AM



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1660
Adj Flow Rate, veh/h	390	382	36	179	167	43	27	1630	149	80	1556	98
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	10
Cap, veh/h	399	413	8	194	203	163	49	1704	796	75	1524	95
Arrive On Green	0.22	0.22	0.22	0.11	0.11	0.11	0.03	0.48	0.48	0.05	0.51	0.50
Sat Flow, veh/h	1780	1696	160	1775	1864	1492	1761	3514	1643	1554	3013	189
Grp Volume(v), veh/h	390	0	418	179	167	43	27	1630	149	80	810	844
Grp Sat Flow(s),veh/h/ln	1780	0	1856	1775	1864	1492	1761	1757	1643	1554	1577	1626
Q Serve(g_s), s	35.9	0.0	37.0	16.5	14.5	4.4	2.5	73.5	8.5	8.0	83.4	83.4
Cycle Q Clear(g_c), s	35.9	0.0	37.0	16.5	14.5	4.4	2.5	73.5	8.5	8.0	83.4	83.4
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		0.12
Lane Grp Cap(c), veh/h	399	0	421	194	203	163	49	1704	796	75	797	822
V/C Ratio(X)	0.98	0.00	0.99	0.92	0.82	0.26	0.56	0.96	0.19	1.06	1.02	1.03
Avail Cap(c_a), veh/h	399	0	416	194	203	163	85	1704	796	75	797	822
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.0	0.0	64.0	72.8	71.9	67.4	79.2	42.5	24.1	78.5	40.8	40.8
Incr Delay (d2), s/veh	38.8	0.0	42.0	43.8	22.8	0.9	9.6	13.7	0.5	121.7	35.9	38.3
Initial Q Delay(d3),s/veh	61.8	0.0	47.9	0.0	0.0	0.0	0.0	29.1	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	85.1	0.0	35.6	14.9	12.8	3.0	2.3	53.2	6.1	9.8	49.7	52.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	164.7	0.0	154.0	116.6	94.8	68.3	88.8	85.3	24.6	200.2	76.7	79.1
LnGrp LOS	F	A	F	F	F	E	F	F	C	F	F	F
Approach Vol, veh/h		808			389			1806			1734	
Approach Delay, s/veh		159.1			101.9			80.4			83.6	
Approach LOS		F			F			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	85.0		24.0	9.6	88.4		43.0				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	79.0	79.0		17.0	7.0	79.0		36.0				
Max Q Clear Time (g_c+1),s	76.0	76.0		19.0	5.0	85.9		39.0				
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	0.0		0.0				

Intersection Summary

HCM 6th Ctrl Delay	96.7
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

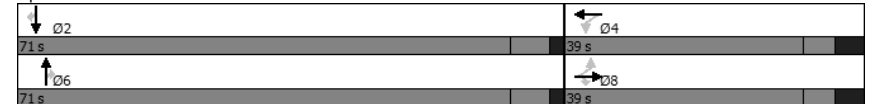
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	316	185	31	74	179	86	0	1565	76	0	1575	526
Future Volume (vph)	316	185	31	74	179	86	0	1565	76	0	1575	526
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)		-5%			2%			2%			-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850			0.952			0.850				0.850
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1645	1782	1487	1612	1696	0	0	3164	1417	0	3156	1660
Flt Permitted	0.440			0.576								
Satd. Flow (perm)	762	1782	1487	978	1696	0	0	3164	1417	0	3156	1660
Right Turn on Red			No			No		Yes		Yes		Yes
Satd. Flow (RTOR)								73				457
Link Speed (mph)		25			25			45				45
Link Distance (ft)		637			560			1356				940
Travel Time (s)		17.4			15.3			20.5				14.2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	7%	9%	5%	8%	4%	0%	7%	14%	0%	10%	6%
Adj. Flow (vph)	343	201	34	80	195	93	0	1701	83	0	1712	572
Shared Lane Traffic (%)												
Lane Group Flow (vph)	343	201	34	80	288	0	0	1701	83	0	1712	572
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right					Right			Right	
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	39.0	39.0	39.0	39.0	39.0			71.0	71.0		71.0	71.0
Total Split (%)	35.5%	35.5%	35.5%	35.5%	35.5%			64.5%	64.5%		64.5%	64.5%
Maximum Green (s)	31.0	31.0	31.0	31.0	31.0			64.0	64.0		64.0	64.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Natural Cycle:	110
Control Type:	Actuated-Uncoordinated

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑	↗	↘	↗	↘	↘	↗	↗	↘	↗	↗
Traffic Volume (veh/h)	316	185	31	74	179	86	0	1565	76	0	1575	526
Future Volume (veh/h)	316	185	31	74	179	86	0	1565	76	0	1575	526
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1944	1962	1933	1707	1732	1732	0	1679	1644	0	1770	1900
Adj Flow Rate, veh/h	343	201	34	80	195	93	0	1701	83	0	1712	572
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	7	9	5	8	8	0	7	14	0	10	6
Cap, veh/h	238	571	462	297	322	154	0	1886	823	0	1987	951
Arrive On Green	0.29	0.29	0.28	0.29	0.29	0.28	0.00	0.59	0.59	0.00	0.59	0.59
Sat Flow, veh/h	1197	1962	1638	1104	1108	529	0	3275	1394	0	3451	1610
Grp Volume(v), veh/h	343	201	34	80	0	288	0	1701	83	0	1712	572
Grp Sat Flow(s),veh/h/ln	1197	1962	1638	1104	0	1637	0	1595	1394	0	1681	1610
Q Serve(g_s), s	15.8	8.9	1.7	6.8	0.0	16.7	0.0	51.4	2.9	0.0	46.7	24.8
Cycle Q Clear(g_c), s	32.0	8.9	1.7	15.7	0.0	16.7	0.0	51.4	2.9	0.0	46.7	24.8
Prop In Lane	1.00		1.00	1.00		0.32	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	238	571	462	297	0	476	0	1886	823	0	1987	951
V/C Ratio(X)	1.44	0.35	0.07	0.27	0.00	0.60	0.00	0.90	0.10	0.00	0.86	0.60
Avail Cap(c_a), veh/h	238	571	462	297	0	476	0	1886	823	0	1987	951
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	30.8	29.0	37.0	0.0	33.7	0.0	19.7	9.8	0.0	18.8	14.3
Incr Delay (d2), s/veh	222.0	0.4	0.1	0.5	0.0	2.2	0.0	7.5	0.2	0.0	5.2	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/lt	84.5	7.7	1.2	3.4	0.0	11.3	0.0	25.2	1.5	0.0	23.8	13.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	271.3	31.2	29.0	37.5	0.0	35.9	0.0	27.2	10.0	0.0	24.0	17.1
LnGrp LOS	F	C	C	D	A	D	A	C	B	A	C	B
Approach Vol, veh/h		578			368			1784			2284	
Approach Delay, s/veh		173.6			36.2			26.4			22.2	
Approach LOS		F			D			C			C	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.0		39.0		71.0		39.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		64.0		31.0		64.0		31.0				
Max Q Clear Time (g_c+11), s		49.2		18.7		53.9		34.5				
Green Ext Time (p_c), s		14.8		1.5		10.1		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				42.2								
HCM 6th LOS				D								

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	450		0	200		215	305		170	375		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95	
Frt	0.978				0.850				0.850		0.992	
Flt Protected	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (prot)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Flt Permitted	0.950	0.995	0.950		0.950		0.950		0.950			
Satd. Flow (perm)	1524	1776	0	1581	1836	1632	1744	3322	1635	1676	3262	0
Right Turn on Red			No		No		Yes		Yes		Yes	
Satd. Flow (RTOR)							112		5			
Link Speed (mph)	45		45		45		45		45			
Link Distance (ft)	2349		982		1123		3154		47.8			
Travel Time (s)	35.6		14.9		17.0		47.8					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	2%	4%	4%	
Adj. Flow (vph)	319	222	44	181	294	53	76	1616	129	123	1648	93
Shared Lane Traffic (%)	10%											
Lane Group Flow (vph)	287	298	0	181	294	53	76	1616	129	123	1741	0
Number of Detectors	1	1		1	1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	8	8		4	4	4	5	2	2	1	6	
Permitted Phases												
Detector Phase	8	8		4	4	4	5			1		
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	
Minimum Split (s)	43.0	43.0		10.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	
Total Split (s)	38.0	38.0		27.0	27.0	27.0	13.0	87.0	87.0	13.0	87.0	
Total Split (%)	23.0%	23.0%		16.4%	16.4%	16.4%	7.9%	52.7%	52.7%	7.9%	52.7%	
Maximum Green (s)	31.0	31.0		20.0	20.0	20.0	7.0	81.0	81.0	7.0	81.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	

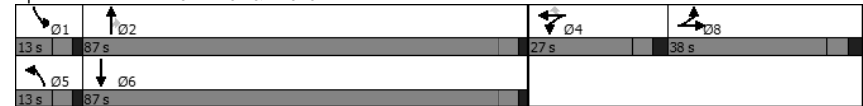
Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev\Weekday Base Syn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		6.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	
Pedestrian Calls (#/hr)	0	0						0	0		0	

Intersection Summary

Area Type: Other  
Cycle Length: 165  
Actuated Cycle Length: 165  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926



Lanes, Volumes, Timings 2030 with Dev Weekday Afternoon Peak Hour  
I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\5 - 2030 with Dev\Weekday Base Syn



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	292	259	44	181	294	53	76	1616	129	123	1648	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	331	301	51	234	251	218	91	1797	834	83	1662	43
Arrive On Green	0.18	0.18	0.18	0.13	0.13	0.13	0.05	0.50	0.50	0.05	0.50	0.50
Sat Flow, veh/h	1807	1644	279	1816	1949	1693	1856	3568	1655	1688	3189	179
Grp Volume(v), veh/h	292	0	303	181	294	53	76	1616	129	123	851	890
Grp Sat Flow(s),veh/h/ln	1807	0	1923	1816	1949	1693	1856	1784	1655	1688	1657	1712
Q Serve(g_s), s	25.6	0.0	24.9	15.7	21.0	4.6	6.6	66.9	6.8	8.0	82.0	82.0
Cycle Q Clear(g_c), s	25.6	0.0	24.9	15.7	21.0	4.6	6.6	66.9	6.8	8.0	82.0	82.0
Prop In Lane	1.00		0.15	1.00		1.00	1.00		1.00	1.00		0.10
Lane Grp Cap(c), veh/h	331	0	352	234	251	218	91	1797	834	83	834	871
V/C Ratio(X)	0.88	0.00	0.86	0.77	1.17	0.24	0.83	0.90	0.15	1.48	1.02	1.02
Avail Cap(c_a), veh/h	355	0	378	234	251	218	91	1797	834	83	834	862
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.8	0.0	64.6	68.6	70.9	63.8	76.7	37.8	21.8	77.4	40.4	40.4
Incr Delay (d2), s/veh	21.0	0.0	17.1	14.7	110.4	0.6	45.4	7.7	0.4	271.0	36.4	36.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	0.0	0.0	148.9	142.7
%ile BackOfQ(95%),veh/ln	19.6	0.0	19.7	12.8	26.8	3.6	7.7	42.1	4.9	16.3	85.9	88.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.8	0.0	81.6	83.3	181.3	64.3	122.1	49.8	22.1	348.4	225.6	219.3
LnGrp LOS	F	A	F	F	F	E	F	D	C	F	F	F
Approach Vol, veh/h		595			528			1821			1864	
Approach Delay, s/veh		83.7			136.0			50.9			230.7	
Approach LOS		F			F			D			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.0	87.0		27.0	13.0	87.0		35.8				
Change Period (Y+Rc), s	6.0	6.0		7.0	6.0	6.0		7.0				
Max Green Setting (Gmax),s	81.0	81.0		20.0	7.0	81.0		31.0				
Max Q Clear Time (g_c+1),s	69.4	69.4		23.5	9.1	84.5		28.1				
Green Ext Time (p_c), s	0.0	9.9		0.0	0.0	0.0		0.7				

Intersection Summary

HCM 6th Ctrl Delay	134.0
HCM 6th LOS	F

Notes

- User approved pedestrian interval to be less than phase max green.
- User approved volume balancing among the lanes for turning movement.

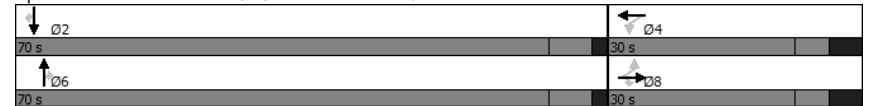
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1886	371
Future Volume (vph)	338	162	19	86	90	73	0	1656	70	0	1886	371
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	13	13	12	14	14	12	12	14	12	12	16
Grade (%)	-5%				2%		2%				-3%	
Storage Length (ft)	200		200	350		0	0		220	0		200
Storage Lanes	1		1	1		0	0		1	0		1
Taper Length (ft)	75			100			75			75		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.850		0.933				0.850			0.850	
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1678	1888	1621	1693	1773	0	0	3164	1616	0	3370	1760
Flt Permitted	0.610			0.612								
Satd. Flow (perm)	1077	1888	1621	1091	1773	0	0	3164	1616	0	3370	1760
Right Turn on Red			No			No		Yes			Yes	
Satd. Flow (RTOR)								75			337	
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		637			560			1356			940	
Travel Time (s)		17.4			15.3			20.5			14.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%	0%	7%	0%	0%	3%	0%
Adj. Flow (vph)	363	174	20	92	97	78	0	1781	75	0	2028	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	363	174	20	92	175	0	0	1781	75	0	2028	399
Number of Detectors	1	4	1	1	4			2	1		2	1
Detector Template			Right						Right			Right
Leading Detector (ft)	35	68	30	35	68			490	30		490	30
Trailing Detector (ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Position(ft)	-5	-1	-10	-5	-1			-10	-10		-10	-10
Detector 1 Size(ft)	40	6	40	40	6			40	40		40	40
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex			CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0			0.0	0.0		0.0	0.0
Detector 2 Position(ft)		15			15			450			450	
Detector 2 Size(ft)		6			6			40			40	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Detector 3 Position(ft)		36			36							
Detector 3 Size(ft)		6			6							
Detector 3 Type		CI+Ex			CI+Ex							
Detector 3 Channel												
Detector 3 Extend (s)		0.0			0.0							
Detector 4 Position(ft)		62			62							
Detector 4 Size(ft)		6			6							
Detector 4 Type		CI+Ex			CI+Ex							

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Detector 4 Channel												
Detector 4 Extend (s)		0.0			0.0							
Turn Type	Perm	NA	Perm	Perm	NA			NA	Perm		NA	Perm
Protected Phases		8			4			6			2	
Permitted Phases	8		8	4				6			2	
Detector Phase	8	8	8	4	4			6	6		2	2
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0			15.0	15.0		15.0	15.0
Minimum Split (s)	15.0	15.0	15.0	15.0	15.0			22.0	22.0		22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	30.0			70.0	70.0		70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%			70.0%	70.0%		70.0%	70.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0			63.0	63.0		63.0	63.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0			5.0	5.0		5.0	5.0
All-Red Time (s)	4.0	4.0	4.0	4.0	4.0			2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	0.0	-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	7.0	7.0	8.0	7.0	7.0			6.0	6.0		6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0			6.0	6.0		6.0	6.0
Minimum Gap (s)	3.0	3.0	3.0	3.0	3.0			3.0	3.0		3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0	0.0	0.0			48.0	48.0		48.0	48.0
Time To Reduce (s)	0.0	0.0	0.0	0.0	0.0			24.0	24.0		24.0	24.0
Recall Mode	None	None	None	None	None			Max	Max		Max	Max

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Description:	Signal

Splits and Phases: 12: Rt 202 & Stetson School Dr/Skiles Blvd



McMahon Associates, Inc.

Robinson Tract

12: Rt 202 & Stetson School Dr/Skiles Blvd

2030 with Dev Weekday Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↔	↔	↔	↑↑	↔	↔	↑↑	↔
Traffic Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1886	371
Future Volume (veh/h)	338	162	19	86	90	73	0	1656	70	0	1886	371
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1972	2051	2066	1778	1849	1849	0	1679	1849	0	1869	1988
Adj Flow Rate, veh/h	363	174	20	92	97	78	0	1781	75	0	2028	399
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	1	0	0	0	0	0	7	0	0	3	0
Cap, veh/h	270	472	385	261	218	175	0	2042	1003	0	2273	1078
Arrive On Green	0.23	0.23	0.22	0.23	0.23	0.22	0.00	0.64	0.64	0.00	0.64	0.64
Sat Flow, veh/h	1346	2051	1751	1193	949	763	0	3275	1567	0	3645	1685
Grp Volume(v), veh/h	363	174	20	92	0	175	0	1781	75	0	2028	399
Grp Sat Flow(s),veh/h/ln	1346	2051	1751	1193	0	1711	0	1595	1567	0	1776	1685
Q Serve(g_s), s	14.7	7.1	0.9	7.0	0.0	8.8	0.0	45.5	1.8	0.0	47.9	11.2
Cycle Q Clear(g_c), s	23.0	7.1	0.9	14.2	0.0	8.8	0.0	45.5	1.8	0.0	47.9	11.2
Prop In Lane	1.00		1.00	1.00		0.45	0.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	270	472	385	261	0	394	0	2042	1003	0	2273	1078
V/C Ratio(X)	1.35	0.37	0.05	0.35	0.00	0.44	0.00	0.87	0.07	0.00	0.89	0.37
Avail Cap(c_a), veh/h	270	472	385	261	0	394	0	2042	1003	0	2273	1078
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	32.4	30.8	38.4	0.0	33.2	0.0	14.7	6.8	0.0	15.1	8.5
Incr Delay (d2), s/veh	177.9	0.5	0.1	0.8	0.0	0.8	0.0	5.5	0.1	0.0	5.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	6.5	0.7	3.8	0.0	6.8	0.0	20.8	1.0	0.0	23.8	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	222.6	32.9	30.8	39.2	0.0	34.0	0.0	20.2	7.0	0.0	21.0	9.5
LnGrp LOS	F	C	C	D	A	C	A	C	A	A	C	A
Approach Vol, veh/h		557			267			1856			2427	
Approach Delay, s/veh		156.4			35.8			19.6			19.1	
Approach LOS		F			D			B			B	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		70.0		30.0		70.0		30.0				
Change Period (Y+Rc), s		7.0		8.0		7.0		8.0				
Max Green Setting (Gmax), s		63.0		22.0		63.0		22.0				
Max Q Clear Time (g_c+11), s		50.4		16.7		48.0		25.5				
Green Ext Time (p_c), s		12.6		0.5		15.0		0.0				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			35.1									
HCM 6th LOS			D									



## Appendix T

# Future (2030) Collector Road Internal Intersection Analysis

## INTERSECTION VOLUME SUMMARY Connector Road/Road N

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road N			NORTHBOUND Connector Road			WESTBOUND Road N			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>132</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>178</b>	<b>3</b>
Robinson Tract	8	0	8	2	35	0	0	0	0	0	11	3
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	46	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	30	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>132</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>178</b>	<b>3</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road N

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road N			NORTHBOUND Connector Road			WESTBOUND Road N			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>268</b>	<b>8</b>
Robinson Tract	5	0	5	8	22	0	0	0	0	0	37	8
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>268</b>	<b>8</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road D

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road D			NORTHBOUND Connector Road			WESTBOUND Road D			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>21</b>	<b>0</b>	<b>52</b>	<b>16</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>7</b>
Robinson Tract	21	0	52	16	16	0	0	0	0	0	12	7
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	46	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	30	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>21</b>	<b>0</b>	<b>52</b>	<b>16</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>179</b>	<b>7</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road D

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road D			NORTHBOUND Connector Road			WESTBOUND Road D			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>13</b>	<b>0</b>	<b>34</b>	<b>57</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>23</b>
Robinson Tract	13	0	34	57	17	0	0	0	0	0	19	23
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>13</b>	<b>0</b>	<b>34</b>	<b>57</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>23</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road B (North)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (North)			NORTHBOUND Connector Road			WESTBOUND Road B (North)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>125</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>230</b>	<b>1</b>	
Robinson Tract	4	0	2	1	28	0	0	0	0	63	1	
	0	0	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	0	0	
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	46	0	
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	30	0	
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	91	0	
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>125</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>230</b>	<b>1</b>	
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	100.0	100.0	

## INTERSECTION VOLUME SUMMARY Connector Road/Road B (North)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (North)			NORTHBOUND Connector Road			WESTBOUND Road B (North)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>209</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>5</b>
Robinson Tract	3	0	2	3	71	0	0	0	0	0	48	5
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>209</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>5</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road C

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road C			NORTHBOUND Connector Road			WESTBOUND Road C			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>121</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>232</b>	<b>0</b>
Robinson Tract	0	0	0	0	24	1	3	0	5	0	65	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	46	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	30	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>121</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>232</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	0.0



## INTERSECTION VOLUME SUMMARY Connector Road/Road C

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road C			NORTHBOUND Connector Road			WESTBOUND Road C			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>276</b>	<b>0</b>
Robinson Tract	0	0	0	0	71	4	2	0	3	5	45	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>276</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0

### INTERSECTION VOLUME SUMMARY Connector Road/Road B (South)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (South)			NORTHBOUND Connector Road			WESTBOUND Road B (South)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>234</b>	<b>1</b>
Robinson Tract	3	0	4	1	22	0	0	0	0	0	67	1
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	46	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	30	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>234</b>	<b>1</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road B (South)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (South)			NORTHBOUND Connector Road			WESTBOUND Road B (South)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>275</b>	<b>3</b>
Robinson Tract	2	0	3	5	73	0	0	0	0	0	44	3
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>275</b>	<b>3</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road A

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\2(Weekday 7-9 AM  
 Design Year (2030)

Traffic Component	EASTBOUND Road A			NORTHBOUND Connector Road			WESTBOUND Road A			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>238</b>	<b>0</b>
Robinson Tract	1	0	2	0	22	0	0	0	0	0	71	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	78	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	46	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	19	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	30	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	91	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>238</b>	<b>0</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road A

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Analysis\2019-08 Robinson Tract TIS\SDS\20 Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road A			NORTHBOUND Connector Road			WESTBOUND Road A			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>276</b>	<b>2</b>
Robinson Tract	1	0	1	2	77	0	0	0	0	0	45	2
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>276</b>	<b>2</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	100.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Volume (vph)	8	8	2	132	178	3
Future Volume (vph)	8	8	2	132	178	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.998		
Fit Protected	0.976			0.999		
Satd. Flow (prot)	1605	0	0	1763	1761	0
Fit Permitted	0.976			0.999		
Satd. Flow (perm)	1605	0	0	1763	1761	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	174			133	261	
Travel Time (s)	4.7			3.0	5.9	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	10	10	3	165	223	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	168	227	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	8	8	2	132	178	3
Future Vol, veh/h	8	8	2	132	178	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None	- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	10	3	165	223	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	396	225	227
Stage 1	225	-	-
Stage 2	171	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	695	866	1004
Stage 1	938	-	-
Stage 2	995	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	693	866	1004
Mov Cap-2 Maneuve	693	-	-
Stage 1	935	-	-
Stage 2	995	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	1004	-	770	-	-
HCM Lane V/C Ratio	0.002	-	0.026	-	-
HCM Control Delay (s)	8.6	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔		↕	↕	
Traffic Volume (vph)	21	52	16	113	179	7
Future Volume (vph)	21	52	16	113	179	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.904			0.995		
Fit Protected	0.986			0.994		
Satd. Flow (prot)	1573	0	0	1754	1756	0
Fit Permitted	0.986			0.994		
Satd. Flow (perm)	1573	0	0	1754	1756	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	209			58	104	
Travel Time (s)	5.7			1.3	2.4	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	26	65	20	141	224	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	91	0	0	161	233	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔		↕	↕	
Traffic Vol, veh/h	21	52	16	113	179	7
Future Vol, veh/h	21	52	16	113	179	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	65	20	141	224	9

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	410	229	233
Stage 1	229	-	-
Stage 2	181	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	682	861	1000
Stage 1	934	-	-
Stage 2	984	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	667	861	1000
Mov Cap-2 Maneuve	667	-	-
Stage 1	913	-	-
Stage 2	984	-	-

Approach	EB	NB	SB
HCM Control Delay, s	1.1	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1000	-	795	-	-
HCM Lane V/C Ratio	0.02	-	0.115	-	-
HCM Control Delay (s)	8.7	-	0	10.1	-
HCM Lane LOS	A	-	A	B	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	4	2	1	125	230	1
Future Volume (vph)	4	2	1	125	230	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949					
Fit Protected	0.970					
Satd. Flow (prot)	1624	0	0	1765	1765	0
Fit Permitted	0.970					
Satd. Flow (perm)	1624	0	0	1765	1765	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	207			123	121	
Travel Time (s)	5.6			2.8	2.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	5	3	1	156	288	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	8	0	0	157	289	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	4	2	1	125	230	1
Future Vol, veh/h	4	2	1	125	230	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		-		0	
Grade, %	0		-		0	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	3	1	156	288	1

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	447	289	289
Stage 1	289	-	-
Stage 2	158	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	648	796	956
Stage 1	874	-	-
Stage 2	1010	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	647	796	956
Mov Cap-2 Maneuve	647	-	-
Stage 1	873	-	-
Stage 2	1010	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	956	-	690	-	-
HCM Lane V/C Ratio	0.001	-	0.011	-	-
HCM Control Delay (s)	8.8	-	10.3	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-





Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↔
Traffic Volume (vph)	3	5	121	1	0	232
Future Volume (vph)	3	5	121	1	0	232
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.919		0.999			
Fit Protected	0.980					
Satd. Flow (prot)	1589	0	1763	0	0	1765
Fit Permitted	0.980					
Satd. Flow (perm)	1589	0	1763	0	0	1765
Link Speed (mph)	25		30			30
Link Distance (ft)	251		324			216
Travel Time (s)	6.8		7.4			4.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	4	6	151	1	0	290
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	152	0	0	290
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔	↔	↑	↔	↔	↔
Traffic Vol, veh/h	3	5	121	1	0	232
Future Vol, veh/h	3	5	121	1	0	232
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		0		-	
Grade, %	0		-		-	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	6	151	1	0	290

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	442	152	0
Stage 1	152	-	-
Stage 2	290	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuv	652	953	-
Stage 1	1016	-	-
Stage 2	873	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	652	953	-
Mov Cap-2 Maneuv	652	-	-
Stage 1	1016	-	-
Stage 2	873	-	-

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

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	812	1065	-
HCM Lane V/C Ratio	-	-	0.012	-	-
HCM Control Delay (s)	-	-	9.5	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	3	4	1	119	234	1
Future Volume (vph)	3	4	1	119	234	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.925					
Fit Protected	0.978					
Satd. Flow (prot)	1596	0	0	1765	1765	0
Fit Permitted	0.978					
Satd. Flow (perm)	1596	0	0	1765	1765	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	289			253	222	
Travel Time (s)	7.9			5.8	5.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	4	5	1	149	293	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	0	0	150	294	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	3	4	1	119	234	1
Future Vol, veh/h	3	4	1	119	234	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None	- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	5	1	149	293	1

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	445	294	294
Stage 1	294	-	-
Stage 2	151	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	649	791	952
Stage 1	869	-	-
Stage 2	1017	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	648	791	952
Mov Cap-2 Maneuve	648	-	-
Stage 1	868	-	-
Stage 2	1017	-	-

Approach	EB	NB	SB
HCM Control Delay, s/10		0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	952	-	723	-	-
HCM Lane V/C Ratio	0.001	-	0.012	-	-
HCM Control Delay (s)	8.8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Volume (vph)	1	2	0	119	238	0
Future Volume (vph)	1	2	0	119	238	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.899					
Fit Protected	0.988					
Satd. Flow (prot)	1567	0	0	1765	1765	0
Fit Permitted	0.988					
Satd. Flow (perm)	1567	0	0	1765	1765	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	170			97	98	
Travel Time (s)	4.6			2.2	2.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1	3	0	149	298	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	0	0	149	298	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			Y	Y	
Traffic Vol, veh/h	1	2	0	119	238	0
Future Vol, veh/h	1	2	0	119	238	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0					
Veh in Median Storage#				0	0	
Grade, %	0			0	0	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	3	0	149	298	0

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	447	298	298
Stage 1	298	-	-
Stage 2	149	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	648	787	949
Stage 1	865	-	-
Stage 2	1020	-	-
Platoon blocked, %			
Mov Cap-1 Maneuve	648	787	949
Mov Cap-2 Maneuve	648	-	-
Stage 1	865	-	-
Stage 2	1020	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	949	-	734	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	5	5	8	160	268	8
Future Volume (vph)	5	5	8	160	268	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.996		
Fit Protected	0.976			0.998		
Satd. Flow (prot)	1605	0	0	1761	1758	0
Fit Permitted	0.976			0.998		
Satd. Flow (perm)	1605	0	0	1761	1758	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	174			133	261	
Travel Time (s)	4.7			3.0	5.9	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	6	6	10	200	335	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	210	345	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	5	5	8	160	268	8
Future Vol, veh/h	5	5	8	160	268	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0					
Veh in Median Storage#	-			0	0	
Grade, %	0			0	0	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	6	10	200	335	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	560	340	345
Stage 1	340	-	-
Stage 2	220	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	553	744	914
Stage 1	826	-	-
Stage 2	943	-	-
Platoon blocked, %			
Mov Cap-1 Maneuve	546	744	914
Mov Cap-2 Maneuve	546	-	-
Stage 1	816	-	-
Stage 2	943	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.8	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	914	-	630	-	-
HCM Lane V/C Ratio	0.011	-	0.02	-	-
HCM Control Delay (s)	9	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	13	34	57	155	250	23
Future Volume (vph)	13	34	57	155	250	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902			0.989		
Fit Protected	0.987			0.987		
Satd. Flow (prot)	1571	0	0	1742	1745	0
Fit Permitted	0.987			0.987		
Satd. Flow (perm)	1571	0	0	1742	1745	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	209			58	104	
Travel Time (s)	5.7			1.3	2.4	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	16	43	71	194	313	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	265	342	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	13	34	57	155	250	23
Future Vol, veh/h	13	34	57	155	250	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None	- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	43	71	194	313	29

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	664	328	342
Stage 1	328	-	-
Stage 2	336	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuver	478	756	917
Stage 1	837	-	-
Stage 2	830	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	436	756	917
Mov Cap-2 Maneuver	436	-	-
Stage 1	764	-	-
Stage 2	830	-	-

Approach	EB	NB	SB
HCM Control Delay	14.3	2.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	917	-	628	-	-
HCM Lane V/C Ratio	0.078	-	0.094	-	-
HCM Control Delay (s)	9.3	-	0	11.3	-
HCM Lane LOS	A	-	A	B	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	3	2	3	209	279	5
Future Volume (vph)	3	2	3	209	279	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942			0.998		
Fit Protected	0.972			0.999		
Satd. Flow (prot)	1616	0	0	1763	1761	0
Fit Permitted	0.972			0.999		
Satd. Flow (perm)	1616	0	0	1763	1761	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	207			123	121	
Travel Time (s)	5.6			2.8	2.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	4	3	4	261	349	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	265	355	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	3	2	3	209	279	5
Future Vol, veh/h	3	2	3	209	279	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	3	4	261	349	6

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	621	352	355
Stage 1	352	-	-
Stage 2	269	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	508	733	907
Stage 1	815	-	-
Stage 2	893	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	505	733	907
Mov Cap-2 Maneuve	505	-	-
Stage 1	811	-	-
Stage 2	893	-	-

Approach	EB	NB	SB
HCM Control Delay	14.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	907	-	577	-	-
HCM Lane V/C Ratio	0.004	-	0.011	-	-
HCM Control Delay (s)	9	0	11.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↙
Traffic Volume (vph)	2	3	209	4	5	276
Future Volume (vph)	2	3	209	4	5	276
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.923		0.997			
Fit Protected	0.979					0.999
Satd. Flow (prot)	1595	0	1759	0	0	1763
Fit Permitted	0.979					0.999
Satd. Flow (perm)	1595	0	1759	0	0	1763
Link Speed (mph)	25		30			30
Link Distance (ft)	251		324			216
Travel Time (s)	6.8		7.4			4.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	3	4	261	5	6	345
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	266	0	0	351
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↙
Traffic Vol, veh/h	2	3	209	4	5	276
Future Vol, veh/h	2	3	209	4	5	276
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		0		-	
Grade, %	0		-		-	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	261	5	6	345

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	621	264	0
Stage 1	264	-	-
Stage 2	357	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuve	508	823	-
Stage 1	898	-	-
Stage 2	811	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	504	823	-
Mov Cap-2 Maneuve	504	-	-
Stage 1	898	-	-
Stage 2	805	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	657	974	-
HCM Lane V/C Ratio	-	-	0.010	0.006	-
HCM Control Delay (s)	-	-	10.5	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	2	3	5	211	275	3
Future Volume (vph)	2	3	5	211	275	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923			0.998		
Fit Protected	0.979			0.999		
Satd. Flow (prot)	1595	0	0	1763	1761	0
Fit Permitted	0.979			0.999		
Satd. Flow (perm)	1595	0	0	1763	1761	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	289			253	222	
Travel Time (s)	7.9			5.8	5.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	3	4	6	264	344	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	270	348	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

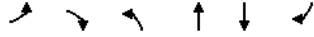
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	2	3	5	211	275	3
Future Vol, veh/h	2	3	5	211	275	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	6	264	344	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	622	346	348
Stage 1	346	-	-
Stage 2	276	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	607	739	912
Stage 1	820	-	-
Stage 2	887	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuve	603	739	912
Mov Cap-2 Maneuve	603	-	-
Stage 1	813	-	-
Stage 2	887	-	-

Approach	EB	NB	SB
HCM Control Delay, s	19.8	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	622	-	-
HCM Lane V/C Ratio	0.007	-	0.01	-	-
HCM Control Delay (s)	9	0	10.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	1	1	2	215	276	2
Future Volume (vph)	1	1	2	215	276	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.999		
Fit Protected	0.976			0.999		
Satd. Flow (prot)	1605	0	0	1763	1763	0
Fit Permitted	0.976			0.999		
Satd. Flow (perm)	1605	0	0	1763	1763	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	170			97	98	
Travel Time (s)	4.6			2.2	2.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1	1	3	269	345	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	272	348	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	1	1	2	215	276	2
Future Vol, veh/h	1	1	2	215	276	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0					
Veh in Median Storage#	-			0	0	
Grade, %	0			0	0	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	3	269	345	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	622	347	348
Stage 1	347	-	-
Stage 2	275	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuve	507	738	912
Stage 1	820	-	-
Stage 2	888	-	-
Platoon blocked, %			
Mov Cap-1 Maneuve	505	738	912
Mov Cap-2 Maneuve	505	-	-
Stage 1	817	-	-
Stage 2	888	-	-

Approach	EB	NB	SB
HCM Control Delay, s	1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	912	-	600	-	-
HCM Lane V/C Ratio	0.003	-	0.004	-	-
HCM Control Delay (s)	9	0	11	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*

## INTERSECTION VOLUME SUMMARY Connector Road/Road N

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road N			NORTHBOUND Connector Road			WESTBOUND Road N			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor 1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth 0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>268</b>	<b>8</b>
Robinson Tract	5	0	5	8	22	0	0	0	0	0	37	8
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>5</b>	<b>0</b>	<b>5</b>	<b>8</b>	<b>160</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>518</b>	<b>8</b>
"New" Site Traffic % of Total ####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	51.7	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road D

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road D			NORTHBOUND Connector Road			WESTBOUND Road D			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                   0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>13</b>	<b>0</b>	<b>34</b>	<b>57</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>23</b>
Robinson Tract	13	0	34	57	17	0	0	0	0	0	19	23
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>13</b>	<b>0</b>	<b>34</b>	<b>57</b>	<b>155</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>500</b>	<b>23</b>
"New" Site Traffic % of Total      ####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	50.0	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road B (North)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (North)			NORTHBOUND Connector Road			WESTBOUND Road B (North)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>209</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>279</b>	<b>5</b>
Robinson Tract	3	0	2	3	71	0	0	0	0	0	48	5
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>209</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>529</b>	<b>5</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	52.7	100.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road C

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road C			NORTHBOUND Connector Road			WESTBOUND Road C			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>276</b>	<b>0</b>
Robinson Tract	0	0	0	0	71	4	2	0	3	5	45	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>209</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>526</b>	<b>0</b>
"New" Site Traffic % of Total      #####	0.0	0.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	52.5	0.0

## INTERSECTION VOLUME SUMMARY Connector Road/Road B (South)

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road B (South)			NORTHBOUND Connector Road			WESTBOUND Road B (South)			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
EXISTING TRAFFIC	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor    1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth            0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
EXISTING W/ BACKGROUND	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL "OTHER" DEVELOPMENTS	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>275</b>	<b>3</b>
Robinson Tract	2	0	3	5	73	0	0	0	0	0	44	3
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>211</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>525</b>	<b>3</b>
"New" Site Traffic % of Total   ####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	52.4	100.0



## INTERSECTION VOLUME SUMMARY Connector Road/Road A

Robinson Tract  
 I:\eng\816451 - Crebilly Farm\Traffic\Report\2019-08 Robinson Tract Twp TIS\LOS Weekday 4-6 PM  
 Design Year (2030)

Traffic Component	EASTBOUND Road A			NORTHBOUND Connector Road			WESTBOUND Road A			SOUTHBOUND Connector Road		
	L	S	R	L	S	R	L	S	R	L	S	R
<b>EXISTING TRAFFIC</b>	0	0	0	0	0	0	0	0	0	0	0	0
Seasonal Adjustment Factor      1.000	0	0	0	0	0	0	0	0	0	0	0	0
Balancing Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>ADJUSTED EXISTING TRAFFIC</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Background Growth                      0.00 %	0	0	0	0	0	0	0	0	0	0	0	0
<b>EXISTING W/ BACKGROUND</b>	0	0	0	0	0	0	0	0	0	0	0	0
<b>TOTAL "OTHER" DEVELOPMENTS</b>	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/O PROJECT</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>TOTAL "NEW" SITE TRAFFIC</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>276</b>	<b>2</b>
Robinson Tract	1	0	1	2	77	0	0	0	0	0	45	2
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0
Diversion A - EBL 926 to NB 202	0	0	0	0	109	0	0	0	0	0	0	0
Diversion B - SBR 202 to WPG/New	0	0	0	0	0	0	0	0	0	0	118	0
Diversion D - NBR Bridlewood to 202	0	0	0	0	29	0	0	0	0	0	0	0
Diversion F - EBR Stetson to SB 202	0	0	0	0	0	0	0	0	0	0	23	0
Diversion E - SBR 202 @ 926	0	0	0	0	0	0	0	0	0	0	90	0
Diversion G - US 202 Through Diversion	0	0	0	0	0	0	0	0	0	0	250	0
Other Adjustments	0	0	0	0	0	0	0	0	0	0	0	0
<b>FUTURE TRAFFIC W/ PROJECT</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>215</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>526</b>	<b>2</b>
"New" Site Traffic % of Total      #####	100.0	0.0	100.0	100.0	100.0	0.0	0.0	0.0	0.0	0.0	52.5	100.0



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Volume (vph)	5	5	8	160	518	8
Future Volume (vph)	5	5	8	160	518	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.998		
Fit Protected	0.976			0.998		
Satd. Flow (prot)	1605	0	0	1761	1761	0
Fit Permitted	0.976			0.998		
Satd. Flow (perm)	1605	0	0	1761	1761	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	174			133	261	
Travel Time (s)	4.7			3.0	5.9	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	6	6	10	200	648	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	210	658	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔			↕	↕	
Traffic Vol, veh/h	5	5	8	160	518	8
Future Vol, veh/h	5	5	8	160	518	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None	- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	6	10	200	648	10

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	873	653	658
Stage 1	653	-	-
Stage 2	220	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuv	856	491	710
Stage 1	582	-	-
Stage 2	943	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	850	491	710
Mov Cap-2 Maneuv	850	-	-
Stage 1	573	-	-
Stage 2	943	-	-

Approach	EB	NB	SB
HCM Control Delay	14.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	710	-	409	-	-
HCM Lane V/C Ratio	0.014	-	0.031	-	-
HCM Control Delay (s)	10.1	-	0	14.1	-
HCM Lane LOS	B	-	A	B	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T	T	
Traffic Volume (vph)	13	34	57	155	500	23
Future Volume (vph)	13	34	57	155	500	23
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.902			0.994		
Fit Protected	0.987			0.987		
Satd. Flow (prot)	1571	0	0	1742	1754	0
Fit Permitted	0.987			0.987		
Satd. Flow (perm)	1571	0	0	1742	1754	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	209			58	104	
Travel Time (s)	5.7			1.3	2.4	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	16	43	71	194	625	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	0	265	654	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T	T	
Traffic Vol, veh/h	13	34	57	155	500	23
Future Vol, veh/h	13	34	57	155	500	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None	- None	
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	43	71	194	625	29

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	976	640	654
Stage 1	640	-	-
Stage 2	336	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuv	808	500	713
Stage 1	591	-	-
Stage 2	830	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	874	500	713
Mov Cap-2 Maneuv	874	-	-
Stage 1	525	-	-
Stage 2	830	-	-

Approach	EB	NB	SB
HCM Control Delay	15.3	2.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	713	-	407	-	-
HCM Lane V/C Ratio	0.1	-	0.144	-	-
HCM Control Delay (s)	10.6	-	15.3	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	3	2	3	209	529	5
Future Volume (vph)	3	2	3	209	529	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942			0.999		
Fit Protected	0.972			0.999		
Satd. Flow (prot)	1616	0	0	1763	1763	0
Fit Permitted	0.972			0.999		
Satd. Flow (perm)	1616	0	0	1763	1763	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	207			123	121	
Travel Time (s)	5.6			2.8	2.8	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	4	3	4	261	661	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	265	667	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	3	2	3	209	529	5
Future Vol, veh/h	3	2	3	209	529	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	3	4	261	661	6

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	933	664	667
Stage 1	664	-	-
Stage 2	269	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuv	827	484	705
Stage 1	575	-	-
Stage 2	893	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	825	484	705
Mov Cap-2 Maneuv	825	-	-
Stage 1	571	-	-
Stage 2	893	-	-

Approach	EB	NB	SB
HCM Control Delay	14.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NB	EBLn1	SBT	SBR
Capacity (veh/h)	705	-	374	-	-
HCM Lane V/C Ratio	0.005	-	0.017	-	-
HCM Control Delay (s)	10.1	0	14.8	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↙
Traffic Volume (vph)	2	3	209	4	5	526
Future Volume (vph)	2	3	209	4	5	526
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923		0.997			
Fit Protected	0.979					
Satd. Flow (prot)	1595	0	1759	0	0	1765
Fit Permitted	0.979					
Satd. Flow (perm)	1595	0	1759	0	0	1765
Link Speed (mph)	25		30			30
Link Distance (ft)	251		324			216
Travel Time (s)	6.8		7.4			4.9
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	3	4	261	5	6	658
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	266	0	0	664
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↙
Traffic Vol, veh/h	2	3	209	4	5	526
Future Vol, veh/h	2	3	209	4	5	526
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None		- None		- None	
Storage Length	0		-		-	
Veh in Median Storage#	-		0		-	
Grade, %	0		-		-	
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	261	5	6	658

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	934	264	0
Stage 1	264	-	-
Stage 2	670	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	-
Pot Cap-1 Maneuv#	827	823	-
Stage 1	898	-	-
Stage 2	571	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv#	824	823	-
Mov Cap-2 Maneuv#	824	-	-
Stage 1	898	-	-
Stage 2	565	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NB	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	509	974	-
HCM Lane V/C Ratio	-	-	0.012	0.006	-
HCM Control Delay (s)	-	-	12.2	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (vph)	2	3	5	211	525	3
Future Volume (vph)	2	3	5	211	525	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.923			0.999		
Fit Protected	0.979			0.999		
Satd. Flow (prot)	1595	0	0	1763	1763	0
Fit Permitted	0.979			0.999		
Satd. Flow (perm)	1595	0	0	1763	1763	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	289			253	222	
Travel Time (s)	7.9			5.8	5.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	3	4	6	264	656	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	270	660	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Vol, veh/h	2	3	5	211	525	3
Future Vol, veh/h	2	3	5	211	525	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0	-	-	-	-	-
Veh in Median Storage#	-	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	4	6	264	656	4

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	934	658	660
Stage 1	658	-	-
Stage 2	276	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuv	827	488	709
Stage 1	579	-	-
Stage 2	887	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	824	488	709
Mov Cap-2 Maneuv	824	-	-
Stage 1	573	-	-
Stage 2	887	-	-

Approach	EB	NB	SB
HCM Control Delay, s/veh	14	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	709	-	406	-	-
HCM Lane V/C Ratio	0.009	-	0.015	-	-
HCM Control Delay (s)	10.1	0	14	-	-
HCM Lane LOS	B	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1	1	2	215	526	2
Future Volume (vph)	1	1	2	215	526	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932			0.999		
Fit Protected	0.976			0.999		
Satd. Flow (prot)	1605	0	0	1763	1763	0
Fit Permitted	0.976			0.999		
Satd. Flow (perm)	1605	0	0	1763	1763	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	170			97	98	
Travel Time (s)	4.6			2.2	2.2	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1	1	3	269	658	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	272	661	0
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
Control Type: Unsignalized

**Intersection**

Int Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Vol, veh/h	1	1	2	215	526	2
Future Vol, veh/h	1	1	2	215	526	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	- None			- None		- None
Storage Length	0			0		0
Veh in Median Storage#	-			0		0
Grade, %	0			0		0
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	3	269	658	3

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	935	660	661
Stage 1	660	-	-
Stage 2	275	-	-
Critical Hdwy	6.42	6.22	4.3
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3.1	3
Pot Cap-1 Maneuv	826	487	709
Stage 1	578	-	-
Stage 2	888	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuv	824	487	709
Mov Cap-2 Maneuv	824	-	-
Stage 1	575	-	-
Stage 2	888	-	-

Approach	EB	NB	SB
HCM Control Delay	14.3	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBL	EBR	SBT	SBR
Capacity (veh/h)	709	-	389	-	-	-
HCM Lane V/C Ratio	0.004	-	0.006	-	-	-
HCM Control Delay (s)	10.1	-	0	14.3	-	-
HCM Lane LOS	B	-	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-	-





## Appendix U

# U.S. Route 202 and Street Road (S.R. 0926) PennDOT Improvement Project Analysis Worksheets



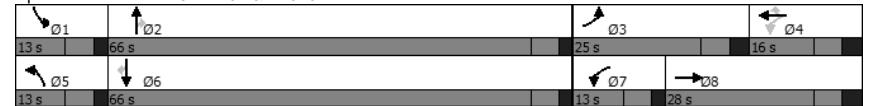
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	→	↘	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (vph)	431	268	34	168	157	40	25	1532	140	75	1463	92
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)		-3%			-4%			-4%				0%
Storage Length (ft)	380		0	200		215	305		170	375		130
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Frt		0.983				0.850		0.850			0.850	0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3051	1785	0	1536	1732	1411	1630	3260	1619	1527	3109	1417
Flt Permitted	0.950			0.400			0.950			0.950		
Satd. Flow (perm)	3051	1785	0	647	1732	1411	1630	3260	1619	1527	3109	1417
Right Turn on Red			No			No			Yes		Yes	
Satd. Flow (RTOR)									209		209	
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		2349			982			1123			3154	
Travel Time (s)		35.6			14.9			17.0			47.8	
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 (%)	3%	7%	10%	6%	6%	18%	7%	7%	6%	12%	10%	8%
Adj. Flow (vph)	459	285	36	179	167	43	27	1630	149	80	1556	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	459	321	0	179	167	43	27	1630	149	80	1556	98
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	30
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	40
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	4	5	2		1	6	
Permitted Phases				4		4			2			6
Detector Phase	3	8		7	4	4	5			1		6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	20.0
Minimum Split (s)	43.0	43.0		9.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	29.0
Total Split (s)	25.0	28.0		13.0	16.0	16.0	13.0	66.0	66.0	13.0	66.0	66.0
Total Split (%)	20.8%	23.3%		10.8%	13.3%	13.3%	10.8%	55.0%	55.0%	10.8%	55.0%	55.0%
Maximum Green (s)	18.0	21.0		7.0	9.0	9.0	7.0	60.0	60.0	7.0	60.0	60.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0

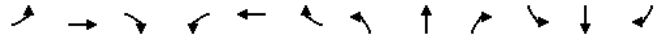
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	5.5
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	37.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	15.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	8.0
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)	0	0						0	0		0	0

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Future Volume (veh/h)	431	268	34	168	157	40	25	1532	140	75	1463	92
Initial Q (Qb), veh	8	6	0	0	0	0	0	23	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1869	1885	1885	1864	1864	1761	1850	1850	1938	1632	1660	1688
Adj Flow Rate, veh/h	459	285	36	179	167	43	27	1630	149	80	1556	98
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
Percent Heavy Veh, %	3	7	7	6	6	18	7	7	6	12	10	8
Cap, veh/h	547	328	7	184	155	124	52	1786	835	104	1719	780
Arrive On Green	0.16	0.18	0.17	0.07	0.08	0.08	0.03	0.51	0.51	0.07	0.55	0.55
Sat Flow, veh/h	3453	1640	207	1775	1864	1492	1761	3514	1643	1554	3153	1430
Grp Volume(v), veh/h	459	0	321	179	167	43	27	1630	149	80	1556	98
Grp Sat Flow(s),veh/h/ln	1727	0	1847	1775	1864	1492	1761	1757	1643	1554	1577	1430
Q Serve(g_s), s	15.5	0.0	20.6	8.0	10.0	3.3	1.8	51.0	5.9	6.1	53.2	4.0
Cycle Q Clear(g_c), s	15.5	0.0	20.6	8.0	10.0	3.3	1.8	51.0	5.9	6.1	53.2	4.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	547	0	344	184	155	124	52	1786	835	104	1719	780
V/C Ratio(X)	0.84	0.00	0.93	0.97	1.08	0.35	0.52	0.91	0.18	0.77	0.90	0.13
Avail Cap(c_a), veh/h	547	0	339	196	156	125	117	1786	835	104	1719	780
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	0.0	49.0	50.7	55.0	51.9	57.4	28.5	16.0	55.1	24.5	13.3
Incr Delay (d2), s/veh	11.2	0.0	32.2	55.4	93.7	1.6	7.7	8.6	0.5	29.4	8.3	0.3
Initial Q Delay(d3),s/veh	9.6	0.0	32.3	0.0	0.0	0.0	0.0	13.6	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.2	0.0	22.1	7.6	13.8	2.3	1.6	35.3	4.0	5.7	27.1	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.4	0.0	113.4	106.1	148.7	53.6	65.0	50.8	16.4	84.5	32.8	13.6
LnGrp LOS	E	A	F	F	F	D	E	D	B	F	C	B
Approach Vol, veh/h		780			389			1806			1734	
Approach Delay, s/veh		88.1			118.6			48.1			34.1	
Approach LOS		F			F			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	66.0	25.0	16.0	8.6	70.4	13.0	28.0				
Change Period (Y+Rc), s	6.0	6.0	7.0	7.0	6.0	6.0	6.0	7.0				
Max Green Setting (Gmax),s	60.0	60.0	18.0	9.0	7.0	60.0	7.0	21.0				
Max Q Clear Time (g_c+11),s	3.6	53.5	18.0	12.5	4.3	55.7	10.5	22.6				
Green Ext Time (p_c), s	0.0	5.8	0.0	0.0	0.0	3.9	0.0	0.0				

**Intersection Summary**

HCM 6th Ctrl Delay	55.4
HCM 6th LOS	E

**Notes**

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1599	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	380		0	200		215	305		170	375		120
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.975				0.850				0.850		0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3112	1872	0	1581	1836	1632	1744	3322	1635	1676	3288	1471
Flt Permitted	0.950			0.314			0.950			0.950		
Satd. Flow (perm)	3112	1872	0	522	1836	1632	1744	3322	1635	1676	3288	1471
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									145		145	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	319	222	44	181	294	53	76	1616	129	123	1648	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	319	266	0	181	294	53	76	1616	129	123	1648	93
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	30
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	40
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	2		2	1	6	
Permitted Phases												
Detector Phase	3	8		7	4	4	5			1		6
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	20.0
Minimum Split (s)	43.0	43.0		9.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	29.0
Total Split (s)	17.0	26.0		13.0	22.0	22.0	13.0	68.0	68.0	13.0	68.0	68.0
Total Split (%)	14.2%	21.7%		10.8%	18.3%	18.3%	10.8%	56.7%	56.7%	10.8%	56.7%	56.7%
Maximum Green (s)	10.0	19.0		7.0	15.0	15.0	7.0	62.0	62.0	7.0	62.0	62.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	5.5
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	37.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	15.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	8.0
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)	0	0						0	0		0	0

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Natural Cycle:	115
Control Type:	Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926

Ø1	Ø2	Ø3	Ø4
13 s	68 s	17 s	22 s
Ø5	Ø6	Ø7	Ø8
13 s	68 s	13 s	26 s



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Future Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1599	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	319	222	44	181	294	53	76	1616	129	123	1648	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	321	267	53	225	260	226	119	1873	869	113	1747	779
Arrive On Green	0.09	0.17	0.16	0.07	0.13	0.13	0.06	0.52	0.52	0.07	0.53	0.53
Sat Flow, veh/h	3506	1599	317	1816	1949	1693	1856	3568	1655	1688	3313	1478
Grp Volume(v), veh/h	319	0	266	181	294	53	76	1616	129	123	1648	93
Grp Sat Flow(s),veh/h/ln	1753	0	1916	1816	1949	1693	1856	1784	1655	1688	1657	1478
Q Serve(g_s), s	10.9	0.0	16.1	8.0	16.0	3.4	4.8	47.2	4.8	8.0	56.1	3.8
Cycle Q Clear(g_c), s	10.9	0.0	16.1	8.0	16.0	3.4	4.8	47.2	4.8	8.0	56.1	3.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	0	319	225	260	226	119	1873	869	113	1747	779
V/C Ratio(X)	0.99	0.00	0.83	0.81	1.13	0.23	0.64	0.86	0.15	1.09	0.94	0.12
Avail Cap(c_a), veh/h	321	0	319	225	260	226	124	1873	869	113	1747	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	0.0	48.5	46.1	52.0	46.5	54.8	25.6	14.7	56.0	28.4	14.3
Incr Delay (d2), s/veh	48.1	0.0	16.9	18.9	95.9	0.5	9.9	5.5	0.4	112.2	11.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	116.6	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	13.9	4.5	21.9	2.6	4.5	29.1	3.2	11.4	62.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.5	0.0	65.4	65.0	147.9	47.1	64.6	34.0	15.0	168.2	156.6	14.6
LnGrp LOS	F	A	E	E	F	D	E	C	B	F	F	B
Approach Vol, veh/h	585			528				1821			1864	
Approach Delay, s/veh	85.6			109.4				34.0			150.3	
Approach LOS	F			F				C			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	68.0	17.0	22.0	12.7	68.3	13.0	26.0				
Change Period (Y+Rc), s	6.0	6.0	7.0	7.0	6.0	6.0	6.0	7.0				
Max Green Setting (Gmax),s	62.0	10.0	15.0	15.0	7.0	62.0	7.0	19.0				
Max Q Clear Time (g_c+1),s	49.7	13.4	18.5	7.3	58.6	10.5	18.1					
Green Ext Time (p_c), s	0.0	10.5	0.0	0.0	0.0	3.1	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	93.8
HCM 6th LOS	F

Notes

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

*Weekday Afternoon Peak Hour  
with US 202 SB Through Diversions*

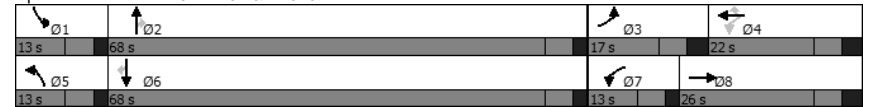
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1349	90
Future Volume (vph)	309	215	43	176	285	51	74	1568	125	119	1349	90
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	14	14	10	12	14	12	12	15	12	12	12
Grade (%)	-3%				-4%						0%	
Storage Length (ft)	380		0	200		215	305		170	375		120
Storage Lanes	2		0	1		1	1		1	1		1
Taper Length (ft)	75			75			75			75		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Frt	0.975				0.850				0.850		0.850	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3112	1872	0	1581	1836	1632	1744	3322	1635	1676	3288	1471
Flt Permitted	0.950			0.314			0.950			0.950		
Satd. Flow (perm)	3112	1872	0	522	1836	1632	1744	3322	1635	1676	3288	1471
Right Turn on Red			No				No		Yes		Yes	
Satd. Flow (RTOR)									145		145	
Link Speed (mph)	45				45				45		45	
Link Distance (ft)	2349				982				1123		3154	
Travel Time (s)	35.6				14.9				17.0		47.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	4%	3%	0%	2%	0%	5%	5%	2%	4%	4%
Adj. Flow (vph)	319	222	44	181	294	53	76	1616	129	123	1391	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	319	266	0	181	294	53	76	1616	129	123	1391	93
Number of Detectors	1	1		1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40		35	35	35	40	30	30	35	30	30
Trailing Detector (ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Position(ft)	0	0		-5	-5	-5	0	-10	-10	-5	-10	-10
Detector 1 Size(ft)	40	40		40	40	40	40	40	40	40	40	40
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4	5	2		2	1	6	
Permitted Phases			4		4				2		6	
Detector Phase	3	8		7	4	4	5		2	1	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	3.0	20.0	20.0	3.0	20.0	20.0
Minimum Split (s)	43.0	43.0		9.0	10.0	10.0	9.0	29.0	29.0	9.0	29.0	29.0
Total Split (s)	17.0	26.0		13.0	22.0	22.0	13.0	68.0	68.0	13.0	68.0	68.0
Total Split (%)	14.2%	21.7%		10.8%	18.3%	18.3%	10.8%	56.7%	56.7%	10.8%	56.7%	56.7%
Maximum Green (s)	10.0	19.0		7.0	15.0	15.0	7.0	62.0	62.0	7.0	62.0	62.0
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0		2.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0
Last Time Adjust (s)	-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	6.0	6.0		5.0	6.0	6.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	5.5	5.5	3.0	5.5	5.5
Minimum Gap (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.5	3.5	3.0	3.5	3.5
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	37.0	37.0	0.0	37.0	37.0
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	15.0	0.0	15.0	15.0
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	Max
Walk Time (s)	13.0	13.0						8.0	8.0		8.0	8.0
Flash Dont Walk (s)	23.0	23.0						15.0	15.0		15.0	15.0
Pedestrian Calls (#/hr)	0	0						0	0		0	0

Intersection Summary

Area Type: Other  
Cycle Length: 120  
Actuated Cycle Length: 120  
Natural Cycle: 115  
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: Rt 202 & Rt 926







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1349	90
Future Volume (veh/h)	309	215	43	176	285	51	74	1568	125	119	1349	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	14	0	0	69	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1898	1973	1973	1906	1949	1997	1949	1878	1953	1772	1744	1744
Adj Flow Rate, veh/h	319	222	44	181	294	53	76	1616	129	123	1391	93
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	3	0	2	0	5	5	2	4	4
Cap, veh/h	321	267	53	225	260	226	119	1873	869	113	1747	779
Arrive On Green	0.09	0.17	0.16	0.07	0.13	0.13	0.06	0.52	0.52	0.07	0.53	0.53
Sat Flow, veh/h	3506	1599	317	1816	1949	1693	1856	3568	1655	1688	3313	1478
Grp Volume(v), veh/h	319	0	266	181	294	53	76	1616	129	123	1391	93
Grp Sat Flow(s),veh/h/ln	1753	0	1916	1816	1949	1693	1856	1784	1655	1688	1657	1478
Q Serve(g_s), s	10.9	0.0	16.1	8.0	16.0	3.4	4.8	47.2	4.8	8.0	41.0	3.8
Cycle Q Clear(g_c), s	10.9	0.0	16.1	8.0	16.0	3.4	4.8	47.2	4.8	8.0	41.0	3.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	0	319	225	260	226	119	1873	869	113	1747	779
V/C Ratio(X)	0.99	0.00	0.83	0.81	1.13	0.23	0.64	0.86	0.15	1.09	0.80	0.12
Avail Cap(c_a), veh/h	321	0	319	225	260	226	124	1873	869	113	1747	779
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	0.0	48.5	46.1	52.0	46.5	54.8	25.6	14.7	56.0	27.2	14.3
Incr Delay (d2), s/veh	48.1	0.0	16.9	18.9	95.9	0.5	9.9	5.5	0.4	112.2	3.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.0	55.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	13.9	4.5	21.9	2.6	4.5	29.1	3.2	11.4	42.7	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.5	0.0	65.4	65.0	147.9	47.1	64.6	34.0	15.0	168.2	86.1	14.6
LnGrp LOS	F	A	E	E	F	D	E	C	B	F	F	B
Approach Vol, veh/h	585			528				1821			1607	
Approach Delay, s/veh	85.6			109.4				34.0			88.2	
Approach LOS	F			F				C			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	3.0	68.0	17.0	22.0	12.7	68.3	13.0	26.0				
Change Period (Y+Rc), s	6.0	6.0	7.0	7.0	6.0	6.0	6.0	7.0				
Max Green Setting (Gmax),s	62.0	10.0	15.0	7.0	62.0	7.0	62.0	19.0				
Max Q Clear Time (g_c+1),s	49.7	13.4	18.5	7.3	43.5	10.5	18.1					
Green Ext Time (p_c), s	0.0	10.5	0.0	0.0	0.0	13.2	0.0	0.1				

Intersection Summary

HCM 6th Ctrl Delay	68.6
HCM 6th LOS	E

Notes

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



**ALBERT FEDERICO CONSULTING, LLC**

**Traffic Engineering and Mobility Solutions**

133 Rutgers Avenue  
Swarthmore, PA 19081

January 29, 2020

**via email only**

Russell Hatton, Chair  
Westtown Township Planning Commission  
1039 Wilmington Pike  
West Chester, PA 19382

**Re:** Conditional Use - Traffic Review  
Robinson Tract (aka Crebilly Farms) Development  
Westtown Township, Chester County

**Mr. Hatton:**

As requested, a technical review of the following materials has been completed relative to the Westtown Township Zoning Ordinance as well as reasonable and customary standards of Traffic Engineering practice:

- Transportation Impact Study for the Robinson Tract (prepared by McMahon Associates, dated August 13, 2019, revised December 2, 2019)
- Conditional Use Subdivision Plan for the Robinson Tract, sheet 12 of 71 (prepared by ESE Consultants, dated August 9, 2019, revised November 22, 2019)
- Correspondence to Mr. Will Etheridge (prepared by ESE Consultants, dated December 2, 2019)

Please note that this review should be considered preliminary and subject to change based on the submission of revised materials to address the comments presented herein.

The site is located on the Crebilly Farm property along the west side of US Route 202, between West Pleasant Grove Road and PA Route 926 (Street Road). The applicant proposes to develop 317 new dwelling units. Vehicular access to the Crebilly Farms property is proposed via connections to PA Route 926 and West Pleasant Grove Road. Onsite vehicular circulation is proposed via a central Collector Road and supporting local roads, including several cul-de-sacs. Limited non-vehicular facilities are also proposed.

The following comments are offered for the Township's consideration:

1. *In consideration of conditional use approval, the Township may require the applicant to submit a development impact study which considers the impact of the proposed flexible development on traffic volume and safety. {§170-906.D(2)}*
  - a. To allow for consideration of the impact of the proposed development the Transportation Impact Study (TIS) should be revised to address the following:
    - i. As previously noted, Table 1 should be updated to identify West Pleasant Grove Road as a Township Collector Roadway. {*Westtown Township Comprehensive Plan Update, page 9-7*}.
    - ii. The sections of the TIS discussing improvements should note that the internal Collector Road provides access to the property.



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- iii. As previously noted, the Crash Summary only includes data for State "Reportable" collisions. In order to provide a more complete assessment of transportation safety within the study area "Non-reportable" collisions should be included. Note that the Traffic Safety Office is unaware of an outstanding request for "more detailed information". The applicant should resubmit the request to the Traffic Safety Office and Township Traffic Engineer, including the specific details being requested.
- iv. As previously noted, the scope of physical improvements required to provide acceptable sight distance to public roads should be clearly indicated on the plans.
- v. As previously noted, confirm that the sight distance measurements consider the widening (approximately seven feet) of West Pleasant Grove Road required to meet Code.  $\{\S 149-903.A(2)\}$
- vi. Provide calculations supporting the assumed diversions associated with Orvis Way and the proposed Collector Road. Additionally cross-reference the Collector Road diversions within the body of the study with the figures in Appendix K.
- vii. The Travel Time Comparisons presented in Appendix K should be revised to address the following:
  - (1) Verify the assumed route lengths. The Diversion Routes generally appear to be shorter than the Base conditions.
  - (2) Ensure that the impacts of the regular queuing along US Route 202 North during the morning peak, extending from the interchange into the study area, is included.
  - (3) The evaluation of diversions should include an alternative that considers operations following the completion of the PennDOT improvements planned for US Route 202 and PA Route 926.
  - (4) The traffic calming anticipated to be installed along Bridlewood Boulevard should be considered.
- viii. As previously noted, the anticipated increase in larger vehicles traveling along West Pleasant Grove Road and turning to/from New Street increases the possibility of potential vehicular conflicts. It is noted that:
  - (1) The Applicant has indicated a willingness to widen the roadway along the property frontage, but additional clarification regarding the specific scope of work is warranted.
  - (2) West Pleasant Grove Road is designated as a Collector Road and the total Right-of-way shall be 60 feet and cartway width shall be 28 feet.  $\{\S 149-903.A(2)\}$
- ix. As previously noted, the future operations presented for PA Route 926 and New Street rely primarily on "optimized" traffic signal timings that appear unlikely to be approved by PennDOT. Written confirmation from PennDOT should be provided that the assumed "optimized" timings can be implemented. If confirmation cannot be provided an alternative analysis utilizing a timing approved by the Township should be provided.
- x. As previously noted, the Cross Section Assumptions Exhibit for PA Route 926 and New Street in Appendix I is based on a traditional widening. Alternative alignments that minimize the number of properties from which right-of-way would be needed should be



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- considered. Additionally, the Applicant is not precluded from coordinating with property owners to determine if the right-of-way could be reasonably obtained.
- xi. As previously noted, Cost Estimates for necessary improvements to accommodate future traffic should be provided. {§149-804.A(10)}
  - xii. As previously noted, an Implementation Strategy for necessary improvements to accommodate future traffic should be provided. {§149-804.A(11)}
2. *The burden of proof shall be upon the applicant to prove to the satisfaction of the Board of Supervisors, by credible evidence, that the use will not result in or substantially add to a significant traffic hazard or significant traffic congestion. The peak traffic generated by the development shall be accommodated in a safe and efficient manner. Such analysis shall consider any improvements to streets that the applicant is committed to complete or fund. {§170-2009.D(1)(h)}*
- a. The conclusion that the project does not adversely impact the intersection of US Route 202 and PA Route 926 continues to be based in large part on assumed diversions. As noted above, additional supporting information and analyses should be provided.
  - b. The Applicant has indicated that turn lanes will be provided to accommodate post development volumes at the following intersections, but these improvements are not reflected on the plans:
    - i. US Route 202 at Pleasant Grove Road – Southbound Right Turn
    - ii. PA Route 926 at New Street – Eastbound Left Turn
  - c. As previously noted:
    - i. Additional grading and/or traffic management measures appear warranted to enhance safety at the three accesses proposed to have insufficient sight distance or the exact minimum distance (with no margin for error):
      - (1) Collector Road at PA Route 926 (grading)
      - (2) Road M at West Pleasant Grove Road (grading and/or roundabout)
      - (3) Collector Road at West Pleasant Grove Road (grading and/or roundabout)
    - ii. In order to minimize external conflict points, promote internal connectivity, reduce the number of cul-de-sacs and enhance overall safety along West Pleasant Grove Road:
      - (1) Road M should be removed
      - (2) Roads L and N should be extended to form a single road
    - iii. The design of the internal Collector Road should incorporate suitable traffic calming measures to maintain a 35 mile per hour average travel speed.
    - iv. The submitted plans should be revised to ensure they accurately reflect existing driveways in the immediate vicinity of the site, in particular the exit-only driveway from the Westminster Presbyterian Church.
    - v. The plans should identify the anticipated limits of required right-of-way and/or easements to accommodate the physical improvements associated with the PennDOT project at US Route 202 and PA Route 926.



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- vi. The following internal roadways should be reconfigured to remove geometric irregularities:
  - (1) Road E and Road F (provide a curve)
  - (2) Road F and Road G (provide a curve)
  - (3) Road I and Road J (remove the jog within the intersection)
- vii. Additional facilities should be provided to address non-vehicular connectivity, including:
  - (1) A perimeter trail around the portion of the site west of the internal Collector Road. {*Westtown Township Comprehensive Plan Update, page 9-15*}
  - (2) Connections to existing and planned facilities along Dunvegan Road and within the Arborview neighborhood. {*Westtown Township Comprehensive Plan Update, page 9-15*}
  - (3) Sidewalks along proposed roads, including accessible crossings. {*§149-916*}
  - (4) Connectivity to pedestrian attractors, including Stetson Middle School, Westminster Presbyterian Church, and the existing retail uses at US Route 202 and PA Route 926. {*§149-916*}
- viii. Provisions should be made for future access from the Westminster Presbyterian Church to the internal Collector Road.
- ix. Provisions should be made for School Bus Stops, including short-term parking for drop-off and pick-up.

Please do not hesitate to contact me at 610.608.4336 or [albert@federico-consulting.com](mailto:albert@federico-consulting.com) should you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Federico', written over the typed name.

Albert Federico, P.E., PTOE



**ALBERT FEDERICO CONSULTING, LLC**

**Traffic Engineering and Mobility Solutions**

133 Rutgers Avenue  
Swarthmore, PA 19081

March 13, 2020

**via email only**

Russell Hatton, Chair  
Westtown Township Planning Commission  
1039 Wilmington Pike  
West Chester, PA 19382

**Re:** Conditional Use - Traffic Review  
Robinson Tract (aka Crebilly Farms) Development  
Westtown Township, Chester County

**Mr. Hatton:**

Subsequent to the previous Traffic Review (January 29, 2020) there has been additional coordination with the Applicant, including:

- Correspondence to Mr. Russell Hatton (prepared by McMahon Associates, dated February 4, 2020) providing responses to the January 29 Traffic Engineering Review
- Meeting with PennDOT and Thornbury Township on February 11, 2020, and the distribution of Draft Meeting Minutes (prepared by McMahon Associates, distributed February 25, 2020)
- Correspondence (prepared by McMahon Associates, dated February 21, 2020 and supplemental emails) providing additional information regarding the traffic diversions assumed for the traffic analyses

Please note that this review should be considered preliminary and subject to change based on the submission of revised materials to address the comments presented herein.

In recognition of these activities the following update to the January 29 review is offered for the Township's consideration:

1. *In consideration of conditional use approval, the Township may require the applicant to submit a development impact study which considers the impact of the proposed flexible development on traffic volume and safety. {§170-906.D(2)}*
  - a. To allow for consideration of the impact of the proposed development the Transportation Impact Study (TIS) should be revised to address the following:
    - i. As previously noted, Table 1 should be updated to identify West Pleasant Grove Road as a Township Collector Roadway. *{Westtown Township Comprehensive Plan Update, page 9-7}*.

**Status: In consideration of the ongoing coordination the Applicant has yet to submit a revised TIS. The submitted correspondence does not commit to this revision.**



**ALBERT FEDERICO CONSULTING, LLC**

- ii. The sections of the TIS discussing improvements should note that the internal Collector Road provides access to the property.

**Status: In consideration of the ongoing coordination the Applicant has yet to submit a revised TIS. The submitted correspondence does not commit to this revision.**

- iii. As previously noted, the Crash Summary only includes data for State "Reportable" collisions. In order to provide a more complete assessment of transportation safety within the study area "Non-reportable" collisions should be included. Note that the Traffic Safety Office is unaware of an outstanding request for "more detailed information". The applicant should resubmit the request to the Traffic Safety Office and Township Traffic Engineer, including the specific details being requested.

**Status: Supplemental information has been provided to the Applicant. Based on coordination with the Applicant it is anticipated that this information will be considered in the revised TIS.**

- iv. As previously noted, the scope of physical improvements required to provide acceptable sight distance to public roads should be clearly indicated on the plans.

**Status: The submitted correspondences requests deferring this item until "detailed engineering" is completed.**

- v. As previously noted, confirm that the sight distance measurements consider the widening (approximately seven feet) of West Pleasant Grove Road required to meet Code.  $\{\S 149-903.A(2)\}$

**Status: The submitted correspondences indicates that the measurements are based on the existing roadway.**

- vi. Provide calculations supporting the assumed diversions associated with Orvis Way and the proposed Collector Road. Additionally, cross-reference the Collector Road diversions within the body of the study with the figures in Appendix K.

**Status: Supplemental materials have been submitted in response to this comment. Coordination is on-going.**

- vii. The Travel Time Comparisons presented in Appendix K should be revised to address the following:
  - (1) Verify the assumed route lengths. The Diversion Routes generally appear to be shorter than the Base conditions.
  - (2) Ensure that the impacts of the regular queuing along US Route 202 North during the morning peak, extending from the interchange into the study area, is included.
  - (3) The evaluation of diversions should include an alternative that considers operations following the completion of the PennDOT improvements planned for US Route 202 and PA Route 926.



(4) The traffic calming anticipated to be installed along Bridlewood Boulevard should be considered.

**Status: Supplemental materials have been submitted which address these comments.**

viii. As previously noted, the anticipated increase in larger vehicles traveling along West Pleasant Grove Road and turning to/from New Street increases the possibility of potential vehicular conflicts. It is noted that:

(1) The Applicant has indicated a willingness to widen the roadway along the property frontage, but additional clarification regarding the specific scope of work is warranted.

(2) West Pleasant Grove Road is designated as a Collector Road and the total Right-of-way shall be 60 feet and cartway width shall be 28 feet. {§149-903.A(2)}

**Status: The submitted correspondences indicates that the Applicant will widen West Pleasant Grove Road along the frontage to Collector Road standards.**

ix. As previously noted, the future operations presented for PA Route 926 and New Street rely primarily on "optimized" traffic signal timings that appear unlikely to be approved by PennDOT. Written confirmation from PennDOT should be provided that the assumed "optimized" timings can be implemented. If confirmation cannot be provided an alternative analysis utilizing a timing approved by the Township should be provided.

**Status: Based on direction from PennDOT it is anticipated that this analysis will be modified in the revised TIS.**

x. As previously noted, the Cross Section Assumptions Exhibit for PA Route 926 and New Street in Appendix I is based on a traditional widening. Alternative alignments that minimize the number of properties from which right-of-way would be needed should be considered. Additionally, the Applicant is not precluded from coordinating with property owners to determine if the right-of-way could be reasonably obtained.

**Status: The Applicant committed to PennDOT (and represented to the Planning Commission) that revised improvement concept(s) would be prepared for PennDOT and Township review and would be used to coordinate with the potentially affected property owners.**

xi. As previously noted, Cost Estimates for necessary improvements to accommodate future traffic should be provided. {§149-804.A(10)}

**Status: The submitted correspondences indicates that the Applicant will provide this information once there is "concurrence" regarding the scope of improvements.**





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- xii. As previously noted, an Implementation Strategy for necessary improvements to accommodate future traffic should be provided. {§149-804.A(11)}

**Status: The submitted correspondences indicates that the Applicant will provide this information once there is "concurrence" regarding the scope of improvements.**

2. *The burden of proof shall be upon the applicant to prove to the satisfaction of the Board of Supervisors, by credible evidence, that the use will not result in or substantially add to a significant traffic hazard or significant traffic congestion. The peak traffic generated by the development shall be accommodated in a safe and efficient manner. Such analysis shall consider any improvements to streets that the applicant is committed to complete or fund. {§170-2009.D(1)(h)}*

- a. The conclusion that the project does not adversely impact the intersection of US Route 202 and PA Route 926 continues to be based in large part on assumed diversions. As noted above, additional supporting information and analyses should be provided.

**Status: Supplemental materials have been submitted and coordination is on-going. The Applicant has yet to submit a revised TIS.**

- b. The Applicant has indicated that turn lanes will be provided to accommodate post development volumes at the following intersections, but these improvements are not reflected on the plans:

- i. US Route 202 at Pleasant Grove Road – Southbound Right Turn

**Status: The submitted correspondences indicates that the Applicant will make this improvement and that plans will be provided there is "concurrence" regarding the scope of improvements.**

- ii. PA Route 926 at New Street – Eastbound Left Turn

**Status: The submitted correspondence offers an opinion that this improvement is unwarranted. Based on direction from PennDOT it is anticipated that the analysis will be modified in the revised TIS.**

- c. As previously noted:

- i. Additional grading and/or traffic management measures appear warranted to enhance safety at the three accesses proposed to have insufficient sight distance or the exact minimum distance (with no margin for error):

(1) Collector Road at PA Route 926 (grading)

(2) Road M at West Pleasant Grove Road (grading and/or roundabout)

(3) Collector Road at West Pleasant Grove Road (grading and/or roundabout)

**Status: The submitted correspondences requests deferring addressing these items until "detailed engineering" is completed.**



**ALBERT FEDERICO CONSULTING, LLC**

- ii. In order to minimize external conflict points, promote internal connectivity, reduce the number of cul-de-sacs and enhance overall safety along West Pleasant Grove Road:
  - (1) Road M should be removed
  - (2) Roads L and N should be extended to form a single road

**Status: The submitted "Alternate" plan removed the external access without connecting the internal roadways. It has been conveyed to the Applicant on several occasions that these items are intended to be addressed together: connect the internal roads (to remove the cul-de-sacs) and remove the external access.**

- iii. The design of the internal Collector Road should incorporate suitable traffic calming measures to maintain a 35 mile per hour average travel speed.

**Status: The submitted correspondences requests deferring this item until Land Development.**

- iv. The submitted plans should be revised to ensure they accurately reflect existing driveways in the immediate vicinity of the site, in particular the exit-only driveway from the Westminster Presbyterian Church.

**Status: The driveway is reflected on the plan but is difficult to discern due to drafting. It appears the proposed site access to West Pleasant Grove Road (via the Collector Road) will impact the Church Driveway. Provisions should be made for future access from the Westminster Presbyterian Church to the internal Collector Road at a mutually agreed upon location.**

- v. The plans should identify the anticipated limits of required right-of-way and/or easements to accommodate the physical improvements associated with the PennDOT project at US Route 202 and PA Route 926.

**Status: The submitted correspondences indicates that right-of-way is being offered. The Applicant does correctly note that the PennDOT project is not fully engineered. The plans should include a note indicating that other reasonable right-of-way and/or easement required for the improvements will be provided to PennDOT as needed.**

- vi. The following internal roadways should be reconfigured to remove geometric irregularities:
  - (1) Road E and Road F (provide a curve)
  - (2) Road F and Road G (provide a curve)
  - (3) Road I and Road J (remove the jog within the intersection)

**Status: The submitted materials do not adequately address these comments. The Applicant has represented to the Planning Commission that Stop signs will be used to compensate for these irregular designs. To date no information has been provided documenting that the signs would meet accepted warrants.**



**ALBERT FEDERICO CONSULTING, LLC**

- vii. Additional facilities should be provided to address non-vehicular connectivity, including:
- (1) A perimeter trail around the portion of the site west of the internal Collector Road. *{Westtown Township Comprehensive Plan Update, page 9-15}*
  - (2) Connections to existing and planned facilities along Dunvegan Road and within the Arborview neighborhood. *{Westtown Township Comprehensive Plan Update, page 9-15}*
  - (3) Sidewalks along proposed roads, including accessible crossings. *{§149-916}*
  - (4) Connectivity to pedestrian attractors, including Stetson Middle School, Westminster Presbyterian Church, and the existing retail uses at US Route 202 and PA Route 926. *{§149-916}*

**Status: The submitted materials do not adequately address these comments. It is noted that a supplemental plan was presented to the Planning Commission which included a partial connection to Arborview and a trail from an internal roadway to the intersection of US Route 202 and PA Route 926.**

- viii. Provisions should be made for future access from the Westminster Presbyterian Church to the internal Collector Road.

**Status: The Alternate Plan does indicate a location for potential access. To date there is no information indicating that this location has been reviewed with the Church. Based on initial coordination with the Church a location further south along the Collector Road may be preferred.**

- ix. Provisions should be made for School Bus Stops, including short-term parking for drop-off and pick-up.

**Status: The submitted correspondences requests deferring this item until Land Development.**

Please do not hesitate to contact me at 610.608.4336 or [albert@federico-consulting.com](mailto:albert@federico-consulting.com) should you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Federico', written over the typed name.

Albert Federico, P.E., PTOE



**ALBERT FEDERICO CONSULTING, LLC**

**Traffic Engineering and Mobility Solutions**

133 Rutgers Avenue  
Swarthmore, PA 19081

May 13, 2020

**via email only**

Russell Hatton, Chair  
Westtown Township Planning Commission  
1039 Wilmington Pike  
West Chester, PA 19382

**Re:** Conditional Use - Traffic Review  
Robinson Tract (aka Crebilly Farms) Development  
Westtown Township, Chester County

**Mr. Hatton:**

As requested, the following has been prepared in anticipation of the Planning Commission's May 20, 2020 meeting.

To date the Applicant has not demonstrated compliance with the condition use criteria in §170-2009.D(1)(h): *In consideration of conditional use approval, the Township may require the applicant to submit a development impact study which considers the impact of the proposed flexible development on traffic volume and safety.* Most notably:

- Traffic analyses which provide the basis for determining project impacts have not been updated to address the outstanding technical aspects associated with the:
  - Assumed traffic diversions
  - Signal operations at PA 926 and New Street
- An implementation strategy for necessary improvements has not been provided
- The submitted Conditional Use plans do not:
  - Illustrate the scope of improvements required to provide compliant sight distance at several accesses
  - Adequately address access to West Pleasant Grove Road
  - Include compliant horizontal alignments of internal roadways

While there has been limited recent coordination with the Applicant's Traffic Engineer and PennDOT these items and the other issues identified in the March 13, 2020 Traffic Review remain outstanding.

The following list of recommended transportation related improvements is also provided for the Planning Commission's consideration in the review of this Application.

- 1) Connector Road, construct:
  - a) Dimensionally compliant with Township standards for a Collector Road
  - b) With a sufficient pavement structure, as determined by the Township Engineer, to accommodate heavy equipment and truck traffic
  - c) Reasonable traffic calming measures to maintain a consistent, appropriate travel speed



**ALBERT FEDERICO CONSULTING, LLC**

- d) Facilities accommodating:
  - i) Non-vehicular travel
  - ii) Personal vehicles waiting for school buses
- 2) West Pleasant Grove Road, modify:
  - a) Along the site frontage in a manner compliant with Township standards for a Collector Road
  - b) At the proposed local road site access(es) to control turning movements in a manner that enhances safety and aesthetics, preferably with a roundabout(s)
  - c) At the Connector Road site access to control turning movements and connectivity with Orvis Way in a manner that enhances safety and aesthetics, preferably with a roundabout
- 3) PA 926 (Street Road), modify as determined appropriate in coordination with PennDOT and Thornbury Township:
  - a) At the Connector Road site access to install a traffic signal and turn lanes
  - b) At New Street to:
    - i) Mitigate project impacts (as determined based on the review of revised analyses, submission pending) and to address PennDOT comments (currently by constructing eastbound and westbound left turn lanes)
    - ii) Provide appropriate non-vehicular connectivity
    - iii) Provide equipment for emergency pre-emption
- 4) US Route 202, modify as determined appropriate in coordination with PennDOT:
  - a) At West Pleasant Grove Road to provide a southbound right turn lane as determined appropriate in coordination with PennDOT
  - b) At PA 926 to:
    - i) Mitigate project impacts (as determined based on the review of revised analyses, submission pending) and address PennDOT comments
    - ii) Provide equipment for emergency pre-emption
- 5) Non-vehicular elements, construct facilities connecting to existing and/or planned non-vehicular facilities, including:
  - i) Arborview
  - ii) Orvis Way
  - iii) Bridlewood Boulevard
  - iv) Signalized intersection of US Route 202 and PA 926
- 6) Westminster Presbyterian Church, as determined appropriate by the Township and in coordination with the Church:
  - a) Remove the existing westernmost driveway adjacent to the Connector Road
  - b) Provide for future access from the Westminster Presbyterian Church to the Collector Road at a mutually agreed upon location

As discussed at previous meetings and noted above, several of these items are within the purview of PennDOT and/or require coordination with Thornbury Township. Therefore, it is recommended that the Township remain engaged in the on-going discussions to ensure that if approved the scope of improvements associated with the Application is consistent with the Township's objectives to the maximum extent feasible.



**ALBERT FEDERICO CONSULTING, LLC**

Please do not hesitate to contact me at 610.608.4336 or [albert@federico-consulting.com](mailto:albert@federico-consulting.com) should you have any questions or require additional information.

Sincerely,

Albert Federico, P.E., PTOE



**ALBERT FEDERICO CONSULTING, LLC**

***Traffic Engineering and Mobility Solutions***

133 Rutgers Avenue  
Swarthmore, PA 19081

EXHIBIT A-43D

July 2, 2020 (revised July 6, 2020)

***via email only***

Russell Hatton, Chair  
Westtown Township Planning Commission  
1039 Wilmington Pike  
West Chester, PA 19382

**Re:** Conditional Use - Traffic Review  
Robinson Tract (aka Crebilly Farms) Development  
Westtown Township, Chester County

**Mr. Hatton:**

As requested, a technical review of the following materials has been completed relative to the Westtown Township Zoning Ordinance as well as reasonable and customary standards of Traffic Engineering practice:

- Roundabout Exhibit (unattributed, dated June 8, 2020)
- Concept Plan, S-ALTPLAN 12 (prepared by ESE Consultants, dated June 5, 2020)
- Transportation Impact Study for the Robinson Tract (prepared by McMahon Associates, dated August 13, 2019, revised May 15, 2020)
- Conceptual Design Exhibit for Wilmington Pike (SR 0202) and Skiles Blvd/Stetson Drive (prepared by McMahon Associates, last revised May 15, 2020)
- Conceptual Design Exhibit for Street Road (SR 0926) and New Street (prepared by McMahon Associates, last revised May 18, 2020)
- Widening Plan for West Pleasant Grove Road (prepared by ESE Consultants, dated May 15, 2020)
- Conceptual Design Exhibit for West Pleasant Grove Mini-Roundabout (prepared by McMahon Associates, last revised May 13, 2020)
- West Pleasant Grove Road Traffic Calming Exhibit (unattributed, dated May 13, 2020)

Please note that this review should be considered preliminary and subject to change based on the submission of revised materials to address the comments presented herein.



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The following comments are offered for the Township's consideration:

1. *In consideration of conditional use approval, the Township may require the applicant to submit a development impact study which considers the impact of the proposed flexible development on traffic volume and safety. {§170-906.D(2)}*

- a. As previously noted, to allow for consideration of the impact of the proposed development the Transportation Impact Study (TIS) should be revised to address the following:

- i. Table 1 should be updated to identify West Pleasant Grove Road as a Township Collector Roadway. *{Westtown Township Comprehensive Plan Update, page 9-7}*.

**Status: This comment remains outstanding. Westtown Township identifies West Pleasant Grove as a Collector Road and the Study should be revised accordingly.**

- ii. The sections of the TIS discussing improvements should note that the internal Collector Road provides access to the property.

**Status: The Study has been revised to address this comment.**

- iii. As previously noted, the scope of physical improvements required to provide acceptable sight distance to public roads should be clearly indicated on the plans.

**Status: This comment remains outstanding. The limits of clearing and/or other improvements required to provide adequate sight distance should be illustrated on the plans to allow the Planning Commission to consider potential impacts. Further, it does not appear that the analyses have been updated to consider required roadway widening.**

- iv. As previously noted, Cost Estimates for necessary improvements to accommodate future traffic should be provided. *{§149-804.A(10)}*

**Status: This comment remains outstanding. The Applicant has previously indicated that this information will be provided once there is "concurrence" regarding the scope of improvements.**

- v. As previously noted, an Implementation Strategy for necessary improvements to accommodate future traffic should be provided. *{§149-804.A(11)}*

**Status: This comment remains outstanding. The Applicant has previously indicated that this information will be provided once there is "concurrence" regarding the scope of improvements.**





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- b. The following comments address new materials presented in the May 15, 2020 Study:
- i. References to Proposed Access Road names should consistent with the Alternative Plan submitted to the Township for consideration.
  - ii. Conclusions regarding project traffic impacts to the intersection of PA Route 926 and New Street remain outstanding pending resolution of the following technical comments below:
    - (1) Verify the capacity analysis inputs for PA Route 926 and New Street, including detector settings and arrival type, to ensure the accuracy of the counter-intuitive results. Of particular note, the average delay for westbound vehicles making left turn and through movements are projected to decrease from 9.9 seconds/vehicle to 0.9 seconds per vehicle, even though the lane group volume increases from 377 vehicles (including right turns) to 406 vehicles per hour (excluding right turns). This improvement in operations appears disproportionate to the additional green time associated with the 49 vehicles assumed to be diverted from the southbound approach.
    - (2) The future coordination presented for PA Route 926 appears unlikely to be approved by PennDOT. Written confirmation from PennDOT should be provided that the New Street and Connector Road intersections will operate at different cycle lengths than US 202 (90 versus 120 seconds) and not be coordinated with US 202. If confirmation cannot be provided an alternative analysis utilizing a consistent cycle length and coordination with US 202 should be provided.
2. *The burden of proof shall be upon the applicant to prove to the satisfaction of the Board of Supervisors, by credible evidence, that the use will not result in or substantially add to a significant traffic hazard or significant traffic congestion. The peak traffic generated by the development shall be accommodated in a safe and efficient manner. Such analysis shall consider any improvements to streets that the applicant is committed to complete or fund. {§170-2009.D(1)(h)}*
- a. As previously noted,
    - i. The Applicant has indicated that turn lanes will be provided to accommodate post development volumes at the following intersections, but these improvements are not reflected on the submitted plans:
      - (1) PA Route 926 at New Street
      - (2) US Route 202 at Pleasant Grove Road

**Status: Supplemental exhibits for the improvement of PA Route 926 and New Street have been provided to the Township and PennDOT. US Route 202 and West Pleasant Grove Road remains outstanding.**



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- ii. Additional grading and/or traffic management measures appear warranted to enhance safety at the three accesses proposed to have insufficient sight distance or the exact minimum distance (without considering required roadway widening):

- (1) Collector Road at PA Route 926
- (2) Road N (previously M) at West Pleasant Grove Road
- (3) Collector Road at West Pleasant Grove Road

**Status: (1) To date the limits of disturbance associated with the Collector Road and PA Route 926 have not been provided. (2) Based on discussions at the Planning Commission Road N may be recommended for Emergency Access only. (3) A separate exhibit (dated June 8, 2020) has been provided for a full roundabout at the Collector Road and West Pleasant Grove Road. Based on the information provided there appear to be very limited impacts to Primary (Steep Slopes) and Secondary resources. These impacts may be further minimized through coordination with the Westminster Presbyterian Church.**

- iii. The design of the internal Collector Road should incorporate suitable traffic calming measures to maintain a 35 mile per hour average travel speed.

**Status: This comment remains outstanding. The Applicant has previously requested to defer this until Land Development.**

- iv. The following internal roadways should be reconfigured to remove geometric irregularities.

**Status: The Concept Plan exhibit (dated June 5, 2020) addresses these items.**

- v. Additional facilities should be provided to address non-vehicular connectivity, including:

- (1) A perimeter trail around the portion of the site west of the internal Collector Road. {*Westtown Township Comprehensive Plan Update, page 9-15*}
- (2) Connections to existing and planned facilities along Dunvegan Road and within the Arborview neighborhood. {*Westtown Township Comprehensive Plan Update, page 9-15*}
- (3) Sidewalks along proposed roads, including accessible crossings. {*§149-916*}
- (4) Connectivity to pedestrian attractors, including Stetson Middle School, Westminster Presbyterian Church, and the existing retail uses at US Route 202 and PA Route 926. {*§149-916*}

**Status: The Concept Plan exhibit (dated June 5, 2020) substantially addresses these items.**



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- vi. Provisions should be made for future access from the Westminster Presbyterian Church to the internal Collector Road.

**Status: This comment remains outstanding. It is noted that the connection should be at a mutually agreed upon location. Based on preliminary conversations with the church it is understood that a connection to the southern parking area may be considered preferable.**

- vii. Provisions should be made for School Bus Stops, including short-term parking for drop-off and pick-up.

**Status: This comment remains outstanding.**

- b. The following comments address supplemental materials submitted to the Township:

- i. The conclusion that the project does not adversely impact the intersection of PA Route 926 and New Street is based in part on an assumed corridor coordination which appears unlikely to be approved by PennDOT. As noted above, additional supporting information and analyses should be provided.
- ii. It is anticipated that School Buses and other large vehicles will use the intersection of the Collector Road and West Pleasant Grove Road. As such a full roundabout is considered preferable to a min-roundabout where vehicles may transverse the central island.

Based on the preceding, the Applicant has not demonstrated compliance with the conditional use criteria in §170-2009.D(1)(h).

As requested by the Planning Commission's Solicitor, the list of recommended transportation related improvements provided to the Planning Commission (May 13, 2020) has been updated and incorporated into this letter, including references to the supplemental materials provided by the Applicant.

- 1) Connector Road, construct:
  - a) Dimensionally compliant with Township standards for a Collector Road
  - b) With a sufficient pavement structure, as determined by the Township Engineer, to accommodate heavy equipment and truck traffic
  - c) Reasonable traffic calming measures to maintain a consistent, appropriate travel speed



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- d) Facilities accommodating:
  - i) Non-vehicular travel
  - ii) Personal vehicles waiting for school buses

**Status: Items "a" and "d.i" are addressed by the most current Alternative Plan (June 5, 2020). Unless otherwise directed by the Board of Supervisors it is anticipated that the remaining items will be addressed during Land Development.**

- 2) West Pleasant Grove Road, modify:
  - a) Along the site frontage in a manner compliant with Township standards for a Collector Road
  - b) At the proposed local road site access(es) to control turning movements in a manner that enhances safety and aesthetics, preferably with a roundabout(s)
  - c) At the Connector Road site access to control turning movements and connectivity with Orvis Way in a manner that enhances safety and aesthetics, preferably with a roundabout

**Status: These items are addressed by the Widening Plan for West Pleasant Grove Road (May 15, 2020), West Pleasant Grove Road Traffic Calming (May 13, 2020) and Roundabout Exhibit (June 8, 2020), subject to certain design aspects that are anticipated to be addressed during Land Development. The full roundabout at the Connector Road is preferred over the mini-roundabout and the location appears reasonable from a transportation perspective.**

- 3) PA 926 (Street Road), modify as determined appropriate in coordination with PennDOT and Thornbury Township:
  - a) At the Connector Road site access to install a traffic signal and turn lanes
  - b) At New Street to:
    - i) Mitigate project impacts (as determined based on the review of revised analyses, submission pending) and to address PennDOT comments (currently by constructing eastbound and westbound left turn lanes)
    - ii) Provide appropriate non-vehicular connectivity

**Status: The Transportation Impact Study for the Robinson Tract (May 15, 2020) commits to completing item "a". Unless otherwise directed by the Board of Supervisors it is anticipated that the detailed design will be completed during Land Development and PennDOT Permitting. The Applicant is currently pursuing turning lanes consistent with the Conceptual Design Exhibit for Street Road (SR 0926) and New Street (May 18, 2020) to address item "b". An opinion regarding the adequacy of these modifications will be provided once the previously noted technical issues with the submitted analysis have been addressed.**



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- 4) US Route 202, modify as determined appropriate in coordination with PennDOT:
  - a) At West Pleasant Grove Road to provide a southbound right turn lane as determined appropriate in coordination with PennDOT
  - b) At PA 926 to mitigate project impacts (as determined based on the review of revised analyses, submission pending) and address PennDOT comments
  - c) At Skiles Boulevard/Stetson Drive to mitigate project impacts and address PennDOT comments

**Status: The Transportation Impact Study for the Robinson Tract (May 15, 2020) commits to completing item "a". To date the Applicant has not provided an exhibit illustrating the scope and impact of the work. Unless otherwise directed by the Board of Supervisors it is anticipated that the detailed design will be completed during Land Development and PennDOT Permitting. The Study also concludes that item "b" is unwarranted. To date PennDOT has not concurred with this opinion. The Conceptual Design Exhibit for Wilmington Pike (SR 0202) and Skiles Blvd/Stetson Drive (May 15, 2020) addresses item "c", subject to certain design aspects that are anticipated to be addressed during Land Development.**

- 5) Non-vehicular elements, construct facilities connecting to existing and/or planned non-vehicular facilities, including:
  - i) Arborview
  - ii) Orvis Way
  - iii) Bridlewood Boulevard
  - iv) Signalized intersection of US Route 202 and PA 926

**Status: These items are addressed by the most current Alternative Plan (June 5, 2020). Unless otherwise directed by the Board of Supervisors it is anticipated that detailed design and issues associated with connecting to adjacent properties will be addressed during Land Development.**

- 6) Westminster Presbyterian Church, as determined appropriate by the Township and in coordination with the Church:
  - a) Remove the existing westernmost driveway adjacent to the Connector Road
  - b) Provide for future access from the Westminster Presbyterian Church to the Collector Road at a mutually agreed upon location

**Status: Based on the Roundabout Exhibit (June 8, 2020) item "a" may be unwarranted. As previously noted, it is understood that a connection to the southern parking area may be considered preferable to address item "b" than the location illustrated by the most current Alternative Plan (June 5, 2020).**



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Please do not hesitate to contact me at 610.608.4336 or [albert@federico-consulting.com](mailto:albert@federico-consulting.com) should you have any questions or require additional information.

Sincerely,

Albert Federico, P.E., PTOE