PA 58 CORRIDOR SAFETY REPORT

PA 58 CORRIDOR SAFETY STUDY

GREENVILLE BOROUGH, HEMPFIELD TOWNSHIP, DELAWARE TOWNSHIP,
JEFFERSON TOWNSHIP, COOLSPRING TOWNSHIP, MERCER BOROUGH
MERCER COUNTY, PENNSYLVANIA

For

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 1-0
Oil City, PA
September 2019

MEG Project File No. 18-055A

IMPORTANT: *THIS TRAFFIC ENGINEERING AND SAFETY STUDY IS CONFIDENTIAL PURSUANT TO 75 PA. C.S. §3754 AND 23 U.S.C. §409 AND MAY NOT BE DISCLOSED OR USED IN LITIGATION WITHOUT WRITTEN PERMISSION FROM PENNDOT.*

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BACKGROUND

This PA 58 Corridor Safety Study evaluates the PA 58 corridor from the intersection of PA 58 & PA 18 (Main Street) in Greenville Borough to the intersection of PA 58 & SR 3020 (North Street) in Mercer Borough in Mercer County, PA. The purpose of the study is to identify safety and operational deficiencies and identify potential safety improvement strategies that can be implemented in stages as time and resources permit.

The section of PA 58 that is included in the study is predominantly rural. It spans approximately 14.7 miles with forty-nine (49) intersecting roads located along the corridor. In addition, numerous residential driveways and commercial driveways are interspersed throughout. The northern limit of the corridor is in Greenville Borough at Segment 0210/0000 and the southern limit is at Segment 0550/0000 in Mercer Borough. The corridor encompasses six (6) different municipalities: 1.) Greenville Borough 2.) Hempfield Township 3.) Delaware Township, 4.) Jefferson Township, 5.) Coolspring Township and 6) Mercer Borough.

SR 58 is signed as an East/West route. However, on a map the route is oriented North/South with Greenville at the northern most limit and Mercer at the southernmost limit. For purposes of this study SR 58 Westbound is designated the northbound direction and SR 58 Eastbound is designated as the southbound direction. This orientation was set to match the orientation of existing data used to develop this study such as Crash History reports.

See *Exhibit Study Location Map*.

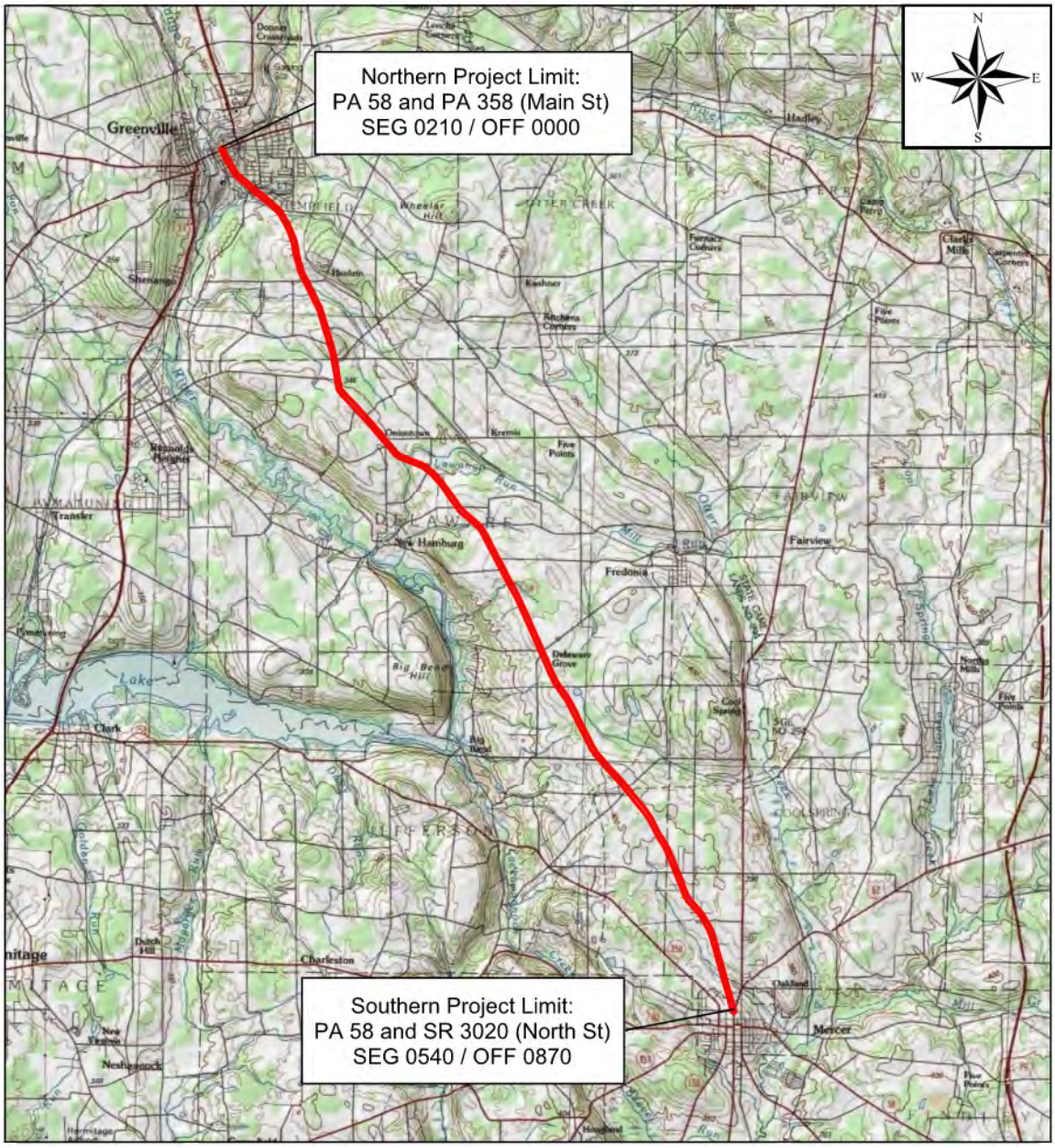


Exhibit 1: Study Location Map

CORRIDOR SAFETY STUDY PROCESS

PROJECT STAKEHOLDERS

At the onset of the study, the project team coordinated with the District to develop a comprehensive list of stakeholders. The project stakeholders were split into two separate categories that included public officials and general stakeholders.

The public officials included PennDOT, PA Senate, PA House of Representatives, US Senate, US House of Representatives, Greenville Borough (officials/planning commission/public works), Delaware Township, Hempfield Township, Jefferson Township and Coolspring Township (officials/planning commission/public works), Mercer Borough (officials/planning commission/public works), Mercer County Regional Planning Commission, Mercer County Commissioners, Mercer County Planning Commission and the Shenango Valley Area Transportation Metropolitan Organization.

The general stakeholders included local/county/state emergency service providers, US Postal Service, local recreation authorities, local school districts and colleges and numerous local businesses.

Copies of the Project Stakeholder Lists are included for reference in *Exhibit – Project Stakeholder Lists*.

PUBLIC INVOLVEMENT

A Public Officials and Public meeting was held on Wednesday, April 24, 2019 to discuss concerns related to the PA 58 corridor between SR 58/SR 358 in Greenville Borough and SR 58/SR 19 in Mercer Borough. Representatives from Senator Nesbit's and Senator Wentling's office, Mercer County Regional Planning Commission, Greenville Borough, Hempfield Township and Delaware Township attended the public officials meeting. After the Public Officials Meeting, a separate meeting was held for the project stakeholders and general public. Invitations were mailed to the general stakeholders. The general public was made aware of the project through a PennDOT Press Release, advertisement in the local newspaper, and/or public notices that were displayed in each municipality's office. We also encouraged the municipalities to share the meeting announcement and project questionnaire on their social media sites.

In addition, invitations for the general public meeting were mailed to stakeholders within the corridor primarily consisting of the various businesses and developments. Nineteen (19) people signed in and provided their contact information. Many more were in attendance and chose not to provide their name and contact information.

A PowerPoint presentation was given to provide an overview of the study. After the formal presentation, attendees were invited to review the project mapping and document any issues or concerns within the project limits; identify any environmental constraints within the project

that were not identified on our mapping; and to engage in discussion with PennDOT and the project team staff. For both meetings, feedback from participants was encouraged to be provided by marking comments on the plans that were displayed and/or by completing the project survey questionnaire. The resulting feedback was summarized and is included for reference in Appendix D - *Public Involvement Feedback*.

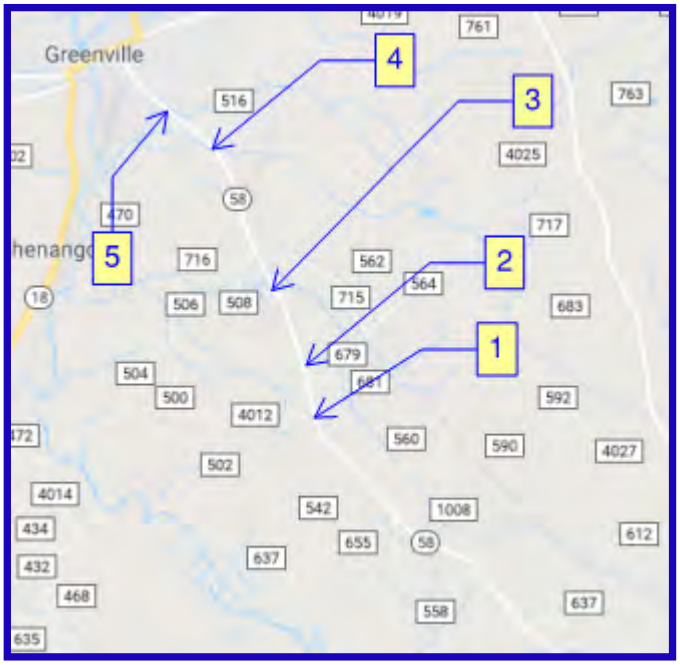
Feedback from those in attendance at the meeting along with survey forms provided insight into the issues along the corridor from customers who use it on a daily basis.

Public feedback indicated the five (5) most significant issues people are concerned with along the corridor are:

1. Speeding
2. Sight Distance
3. Drainage
4. Passing Lanes
5. Pedestrian/Bicycle Access

The top five (5) locations commented on along the corridor were:

1. Kidds Mill Road intersection
2. Wasser Bridge Road intersection
3. Railroad Crossing (south of Methodist Road)
4. Fredonia Road Intersection
5. Columbia Avenue/Hamburg Road intersection



INITIAL CORRIDOR ASSESSMENT

ROADWAY CHARACTERISTICS

The section of SR 58 a two-lane Rural Community Arterial serving as a connector between the urban areas in Greenville and Mercer that lie on each end of the corridor, north and south. The current ADT and %T varies throughout the corridor. Roadway widths are predominately 11' with shoulder widths varying throughout. The general terrain of the area would be considered a rolling terrain. The corridor between Greenville and Mercer spans approximately 14.7 miles and is predominately rural with land uses consisting mostly of farms and residential dwellings. Side streets and driveways are interspersed throughout.

CRASH ANALYSIS

A review of the available crash data from PennDOT's CDART system was completed for the corridor. The crash data was reviewed for a five (5) year period from 01/01/2013 thru 12/31/2017. Additional information is contained within the Crash Analysis Report (May 2019) submitted to and approved by the District. The crash analysis was used to initially isolate locations with notable concerns for further review.

Issues identified at the public meeting along with additional research and review served to identify and further determine areas of notable concern. The intersection of SR 58/SR 19/North Street was initially identified as a concern. However, research determined the intersection was included in a construction project (SR 19 Sec 01S) that was completed in November of 2014. Along with lane reassignments and restrictions the traffic signal at the intersection was completely replaced. Five of the nine crashes at this intersection occurred prior to the construction project. The remaining crashes were attributed to driver error and did not result in any injuries. While the signalized intersection of SR 58/SR 19/North Street in Mercer Borough was reviewed for strategic improvements, it is not considered a location of notable concern. See Appendix H – *Crash Location Map*.

ENVIRONMENTAL CONSTRAINTS

On August 20, 2019 representatives of the Markosky Engineering Group visited the project corridor to perform a windshield survey of community facilities, potential waste sites requiring an environmental site assessment, and environmental features such as agricultural areas, potential wetlands, and streams, as well as parks and recreational facilities. Community facilities were identified based on their public services, such as religious institutions, education, fire and police, hospitals and care facilities, public parks and spaces, and assisted living centers. Prior to the windshield survey, a review of secondary resources such as NWI wetland mapping, USGS topographic maps, and aerial imagery was performed. In addition, state and federal databases such as PA DEP eMap, PA DEP eFACTS, PA DEP AUL, and EPA Envirofacts were scanned for listed properties and businesses in the corridor and recorded related documents.

Properties that appeared in the databases were flagged for review and visual confirmation, if applicable. After completing the windshield survey, Markosky personnel updated the environmental constraints map based on visual cues revealed within the corridor. See Appendix B – *Environmental Constraints Map*.

CULTURAL RESOURCES CONSTRAINTS

Cursory background research was conducted for both archaeological and historic structures resources within the PA 58 corridor. Previously recorded archaeological sites and historic structures were identified using the Pennsylvania State Historic Preservation Office's (PA SHPO's) Cultural Resources Geographic Information System (CRGIS). Additionally, historic maps and aerial photographs of the corridor were reviewed. Field verification reconnaissance surveys were also conducted, which included identifying areas of disturbed soils and also potential historic structure resources that were not previously recorded in the PA SHPO CRGIS. The results of this cursory background research and field verification reconnaissance surveys are presented on the Cultural Resources Constraints Mapping. See Appendix C – *Cultural Resources Map*.

MULTIMODAL ACCOMMODATIONS

BICYCLE AND PEDESTRIAN ACCOMMODATIONS

Sidewalks are present throughout Greenville Borough. On SR 58 specifically, sidewalks are provided from the SR 58/SR 18 intersection to the Greenville Borough/Hempfield Township municipal line. Beyond this point there are no sidewalks provided along the corridor until reaching the Mercer Borough/Coolspring Township municipal line. At this point sidewalks are provided and continue to and beyond the SR 58/SR19/North Street intersection. Sidewalks are provided throughout Mercer Borough.

Pedestrian volume data collected shows evidence of pedestrian activity at the northern study intersections in Greenville Borough.

The SR 58 corridor does not have any designated bike lanes. No official bike route is posted along the corridor; however, near the intersection of SR 3024 (Delaware Road) in Delaware Township a W16-101 SHARE THE ROAD sign is posted and visible to traffic travelling public in the southbound direction toward Mercer. In Mercer Borough, directional signing for Bike Route A is present on Erie Street (SR 19) The signs direct bicyclists onto SR 19 North in the direction of Franklin and Meadville.

TRANSIT ACCOMMODATIONS

The Mercer County Community Transit provides door to door service Monday through Friday to residents who live along and in the vicinity of the SR 58 corridor. Residents must request services and schedule in them in advance of the need. No set schedule is provided. The

Shenango Valley Shuttle Service is located in Hermitage. They provide a daily fixed route schedule. However it is only available within the Shenango Valley (Sharon, Mercer, Hermitage).

ATV ACCOMMODATIONS

Delaware Township passed ordinance (#01-2015-01) designating ATV's are permitted to travel and share the road with vehicular traffic on certain Township roads. Green ATV signs posted on T-635 Hamburg Road are visible from SR 58. The placement of the signs indicates ATV's could potentially be crossing SR 58 at this intersection.

AMISH BUGGY ACCOMMODATIONS

Public comments indicated Amish Buggies cross SR 58 at the SR 58/Columbia Road/Hamburg Road intersection. There was no indication of this type of use; additionally, no Amish Buggy signs are present in the area.

TRAFFIC DATA COLLECTION AND ANALYSIS

Data collection efforts included automatic traffic recorder (ATR) counts which capture the volume of traffic using the corridor. ATR counts were collected at three (3) key locations along the corridor using Miovision cameras. Peak hours for the turning movement counts (TMC) were established based on the data obtained from the ATR counts. Turning movement counts were collected at four (4) locations and 24 hour counts were taken at two (2) additional locations. Peak hour data was extracted from the turning movement counts and used in the traffic analysis.

AUTOMATIC TRAFFIC RECORDER COUNTS

Traffic volumes were collected in February 2019 for three consecutive weekdays at each location.

The ATR locations included:

1. Along PA 58 at an area north of Stewart Ave/York St in Greenville
2. Along PA 58 at a location north of North St in Mercer
3. Along PA 58 at a location south of Beil Hill Rd.

The data was summarized by direction and hour for each average weekday and is included for reference in *Appendix E – Traffic Count Data*. This information was used to determine the peak hours for traffic for the collection of turning movement data and the average daily traffic (ADT). The ADT information is summarized in *Exhibit ADT Summary.*

ADT Summary				
	Eastbound	**Westbound**	**2-Way**	**Truck %**
ATR 1	2,410	2,498	4,908	4.69%
ATR 2	2,750	2,798	5,540	5.10%
ATR 3	1,969	1,981	3,949	5.83%

Exhibit 2: ADT Summary

INTERSECTION TURNING MOVEMENT COUNTS

TMCs were collected for two hours during the average weekday (Tuesday – Thursday) AM peak period from 7:00 AM – 9:00 AM and PM peak period from 3:00 PM – 5:00 PM. In addition to the vehicular turning movements, pedestrian volumes, and truck and bus percentages were collected at each intersection.

The turning movement counts were conducted at the following locations:

1. PA 58 & PA 18 (Main St)
2. PA 58 & Clinton St
3. PA 58 & Stewart Ave/York St
4. PA 58 & SR 3020 (North St)

The turning movement data was collected in May 2019 using Miovision cameras and is included for reference in *Appendix E – Traffic Count Data*. For consistency throughout the corridor, a common peak hour was selected for all intersections. The peak hours are:

- AM Peak – 7:30 AM – 8:30 AM
- PM Peak – 3:00 PM – 4:00 PM

TWENTY-FOUR HOUR INTERSECTION COUNTS

TMCs were collected at two (2) locations for evaluation of traffic control and are included for reference in *Appendix E – Traffic Count Data*. The 24-hour counts were conducted at the following locations:

1. PA 58 & Columbia Ave/Hamburg Rd
2. PA 58 & SR 4012 (Kidds Mill Rd)

TRAVEL TIME STUDY

All studies were completed in accordance with the requirements of the Pennsylvania Department of Transportation's Traffic Engineering Manual (Publication 46). Tru-Traffic software was used to collect and record the travel-time and delay data.

Travel time and delay data were collected along the corridor in Greenville Borough as follows:

1. Southbound PA 58 encompassing PA 18 (Main Street) through the Stewart Avenue/York Street intersection.
2. Northbound PA 58 encompassing Stewart Avenue/York Street through the PA 18 (Main Street) intersection.

Data was collected for each of the runs during the AM and PM peak hours. Corresponding results for each of the travel time runs are:

1. PA 58 southbound traffic travel time varied between 1.9 and 2.2 minutes with 0.3 to 2.4 stops.
2. PA 58 northbound traffic travel time varied between 1.9 and 2.6 minutes with 1.2 to 2.4 stops.

The travel time summaries are included for reference in *Appendix F – Field Data*.

FUTURE TRAFFIC VOLUMES

An annual compounding growth rate factor of 0.35% obtained from PennDOT's latest annual compounding growth rate for Mercer County. This rate was confirmed with Mercer County Regional Planning Commission to be appropriate. The growth rate was used to determine the opening year (2025) and design year (2045) traffic volumes.

CAPACITY ANALYSIS METHODOLOGY

A base model was created for each of the four (4) signalized intersections using Synchro 10 Studio. The base model was calibrated (See CALIBRATION PROCESS) and provided the source for all of the additional analyses. Input parameters such as lane widths, auxiliary lane storage lengths, approach grades for each of the intersection were obtained from the existing traffic signal permit plans for the base model. Traffic volumes were collected in 2019. Volumes for the base analysis were obtained from the TMC information.

Timings, clearances and pedestrian intervals for the base model were determined by using the existing traffic signal permits and data collected in the field. Models were developed for the weekday AM and PM peak hours. The calibrated base model was the basis for all of the additional analyses.

Levels of Service (LOS) for the study intersections were evaluated using the Synchro analyses to for comparisons with the base year, the opening year and the design year. In an urban area, a LOS D or better is considered an acceptable range of operations. Results of the analysis are summarized in the "Traffic Analysis" section of the report and are provided in *Appendix G – Capacity Analysis.*

CALIBRATION PROCESS: The main goal of calibration is for the Synchro model to reflect the travel time and delay as accurately as possible between each intersection found in the field. During the calibration process speed limits and saturation flow rates were adjusted to best represent field conditions. Changes varied peak to peak and by direction. Speed limits at most of the intersections were adjusted based on the actual speed of vehicles found to be traveling in the field. In addition to the using the data collected from Tru-Traffic, queue data was collected at each of the intersection during peak hours. The observed queue data was compared to the Synchro model to ensure queue lengths determined by Synchro were reasonable. In order to fit (calibrate) the traffic flow curve as closely as possible between the Synchro base model and actual field conditions the following parameters were adjusted:

- Travel time was increased or decreased between intersections,
- The speed was increased or decreased,
- The saturation flow rate was increased or decreased.

CAPACITY ANALYSIS RESULTS

2019 BASE YEAR RESULTS

In 2019 during the AM and PM Peak hours the intersections located within the corridor are functioning at a LOS C or better. See results in *Exhibit 3*.

Intersection		AM	PM
1: PA 58 & PA 18 (Main St)	Delay	12.8	13.1
	LOS	B	B
2: PA 58 & Clinton St	Delay	12.2	12.6
	LOS	B	B
3: PA 58 & Stewart Ave/York St	Delay	5.7	5.3
	LOS	A	A
4: PA 58 & SR 19	Delay	26.2	27.2
	LOS	C	C

Exhibit 3: 2019 Base Year Level of Service

Base Year 2019 conditions were used to analyze the future opening year 2025 conditions and the design year 2045. Traffic was projected using the PennDOT approved growth rate. All timing and input parameters remained the same as the 2019 Base condition.

2025 OPENING YEAR RESULTS

In 2025 during the AM and PM Peak hours the intersections located within the corridor are functioning at a LOS C or better. See results in *Exhibit 4*.

Intersection		AM	PM
1: PA 58 & PA 18 (Main St)	Delay	12.9	13.2
	LOS	B	B
2: PA 58 & Clinton St	Delay	12.3	12.7
	LOS	B	B
3: PA 58 & Stewart Ave/York St	Delay	5.7	5.3
	LOS	A	A
4: PA 58 & SR 19	Delay	26.7	27.4
	LOS	C	C

Exhibit 4: 2025 Opening Year Level of Service

2045 DESIGN YEAR RESULTS

In 2045 during the AM and PM Peak hours the intersections located within the corridor are functioning at a LOS C or better. See results in *Exhibit 5*.

Intersection		AM	PM
1: PA 58 & PA 18 (Main St)	Delay	13.1	13.5
	LOS	B	B
2: PA 58 & Clinton St	Delay	12.5	13.1
	LOS	B	B
3: PA 58 & Stewart Ave/York St	Delay	5.7	5.4
	LOS	A	A
4: PA 58 & SR 19	Delay	27.3	27.9
	LOS	C	C

Exhibit 5: Overall 2045 No-Build Level of Service

The results do not indicate any issues with capacity at the intersections. A LOS D is considered acceptable for an urban area. The base LOS and the projected LOS for each of the intersections indicate that they will continue to operate at a LOS C.

FUTURE MAINTENANCE CONSIDERATIONS

ROADWAY IMPROVEMENTS (SHORT-TERM)

Based on our review of the corridor, several low to moderate cost improvement strategies were developed to address safety issues that could be implemented by District maintenance forces or by contract.

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• Illumination along the rural section of the corridor is limited	• Install centerline raised pavement markings in the predominantly rural areas. • Improve delineation of State Roads and side streets to define access point for turning vehicles.	Low	Short-term	PennDOT
• Centerline and Edges Lines along the corridor are worn	• Re-paint Center and Edge lines	Low	Short-term	PennDOT
• Trees/Foliage overgrowth blocking signs	• Trim back trees and foliage with in the right-of-way along the corridor	Low	Short-term	PennDOT
• Vehicles traveling to fast for conditions	• Add high friction surface treatment to improve vehicle handling and stopping	Low	Short-term	PennDOT
• Existing shoulders are narrow	• Add rumble strips to the shoulder to alert distract drivers that they are leaving the roadway	Medium	Short-term	PennDOT
• Water ponding on the roadway	• Clean existing drainage facilities such as inlets, swales and pipes	Medium	Short-term	PennDOT

EXISTING GUIDE RAIL

The existing guide rail runs are dispersed throughout the corridor. Overall, the existing guide rail runs are visually in good condition, have plastic offset blocks, and have adequate end treatments. Guide rail runs will need further evaluation to ensure that they meet the minimum height of 26.5" as described in Publication 13M Section 12.3.B.2. Following is a list of the guide rail locations:

EXISTING GUIDE RAIL

SEGMENT/OFFSET		APPROACH DIRECTION	LENGTH	END TREATMENT LOCATION	
From	To			LEADING	TRAILING
0230/0008	0230/0037	NB	29	THRIE-BEAM	WRAPPED TERM SECTION
0230/0018	0230/0053	SB	35	WRAPPED TERM SECTION	THRIE-BEAM
0240/0984	0250/0110	SB	291	ATTENUATOR	WRAPPED TERM SECTION
0240/1115	0250/0170	NB	220	ATTENUATOR	ATTENUATOR
0250/1496	0260/0084	SB	177	WRAPPED TERM SECTION	WRAPPED TERM SECTION
0260/0002	0260/0104	NB	102	WRAPPED TERM SECTION	WRAPPED TERM SECTION
0280/0493	0280/0603	NB	110	THRIE-BEAM	ATTENUATOR
0280/0578	0280/0603	SB	25	WRAPPED TERM SECTION	THRIE-BEAM
0280/0674	0280/0772	NB	98	ATTENUATOR	THRIE-BEAM
0280/0674	0280/0772	SB	98	THRIE-BEAM	ATTENUATOR
0340/0547	0340/1302	SB	755	ATTENUATOR	WRAPPED TERM SECTION
0340/0768	0340/1447	NB	679	WRAPPED TERM SECTION	ATTENUATOR
0370/1537	0370/1679	SB	142	WRAPPED TERM SECTION	WRAPPED TERM SECTION
0380/0135	0380/0391	SB	256	ATTENUATOR	ATTENUATOR
0380/0227	0380/0352	NB	125	WRAPPED TERM SECTION	ATTENUATOR
0530/0371	0530/0574	SB	203	WRAPPED TERM SECTION	WRAPPED TERM SECTION
0530/0438	0530/0889	NB	451	WRAPPED TERM SECTION	WRAPPED TERM SECTION

GUIDE RAIL IMPROVEMENTS

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **SR 58 Segment 0240/0984 to 0250/0110 SB – Existing guide rail connects to a deteriorating bridge parapet wall.**	• Consider replacing the guide rail run, removing the bridge parapet wall down to existing ground, and spanning the existing culvert in accordance with current standards. Also, consider replacing the end treatments to be in accordance with current standards.	High	Short-term	PennDOT
• **SR 58 Segment 0240/0115 to 0250/0170 NB – Existing guide rail connects to a deteriorating bridge parapet wall.**	• Consider replacing the guide rail run, removing the bridge barrier down to existing ground, reconstructing bridge curb line and spanning the existing culvert in accordance with current standards. Also, consider replacing the end treatments to be in accordance with current standards.	High	Short-term	PennDOT
• **The guide rail does not meet current design standards.**	• Replace/upgrade guide rail to be in accordance with current design standards.	Low	Long-term	PennDOT
• **Guide rail attenuating devices are not in accordance with MASH criteria**	• Replace/upgrade guide rail to be in accordance with current design standards.	Low	Long-term	PennDOT

DRAINAGE IMPROVEMENTS

PA 58 near Railroad Crossing

PA 58 near Coolspring St

The ability to review the corridor during rain events highlighted numerous drainage issues along the corridor. The following drainage site specific drainage issues were observed along the corridor.

- Cornell Rd – A comment was received at the public meeting regarding a drainage issue near the intersection; however, this area was reviewed in the field and no major issues were observed. It was discussed with two local individuals during the field view who stated there were no known issues.

- SR 58/SR 4027 (Fredonia Road) Segment 0240/0807 –A steep approach grade exists on Fredonia Road. A drainage issue is present for the property across the street. Existing inlets are full of debris and water appears to be bypassing them. Further review of the roadway approach grading and the existing drainage network is needed during design.

- SR 58/Stoney Brook Blvd/Celebrity Bowl Segment 0250/1256 - The approach to Stoney Brook Boulevard appears to be ponding as there are no inlets present near the bowling alley driveway. Based on our initial evaluation of this area, new drainage is necessary especially at low point near house driveway.

- SR 58 /Canadian National RR Crossing Segment 0280/1450 - Ponding is occurring on SR 58 and appears to be a result of a clogged or crushed pipe in a nearby drainage system. The system also appears to be contributing to the creation of a sink hole that opened up in the parking lot adjacent to the RR Tracks. The clogged/crushed pipe(s) shall be replaced in accordance with standards. Additionally, a hydrologic analysis should be performed to determine if any additional capacity is needed for the system. The current drainage system layout/design is recommended to be reviewed to ensure proper layout in accordance with

standard design practices. Coordination with the Canadian National Railroad will be necessary as this drainage system flows under their rail tracks.

- SR 58/SR 4019 (Methodist Road) Segment 0280/0000 - Southbound SR 58 pipe is full of debris and needs cleaned. Inlets with curb gutter are present on the northbound approach of SR 58. The inlets on the northbound approach of SR 58 have debris covering the type C inlet tops blocking water entry. The inlets need cleaned. Once the existing inlets are cleaned and capturing runoff, the site should be reviewed to determine if additional drainage feature are needed.

- SR 58/ SR 4003 (Wasser Bridge Road) Segment 0300/0000 – Southbound SR 58 inlets need cleaned or new inlets need to be installed. Along SR 58 NB, there is a driveway present with a very small diameter pipe underneath which may be the cause of the issues. The northbound SR 58 shoulder appears to be narrow in this area and the hillside backslope is somewhat steep. A possible remedial action would be to cut back the hillside and provide additional shoulder/drainage capacity area. Another option would be to provide pipes and inlets through this area. Any of these remedial actions will require a drainage analysis to determine if action is warranted, as well as the corrective action to take.

- SR 58/ SR 4012 (Kidds Mills Road) Segment 0310/0000 - The southbound approach of SR 58 (Northwest Quadrant) appears to have a plugged or crushed pipe. The back of the shoulder in this area is beginning to break up with a drop-off being created behind the shoulder. There are no inlets present on the northbound approach of SR 58. The existing drainage system should be cleaned of debris, repairing the pipe if necessary. Once this corrective action is made, the area should be reviewed to determine if additional drainage features are needed to properly convey water off of SR 58.

- SR 58/SR 4014 (Oniontown Road) Segment 0330/2420 – Ponding is occurring on the radius of Oniontown Road near the stop sign. The ponding is significant (> 6"deep) and is encroaching into the SR 58 southbound lane. Installing a drainage system to address this issue will require creating a swale along SR 58 to outlet the water in an appropriate manner.

- SR 58 (Seg 530/1788-1850). A drainage pipe/channel clogged with debris in the area of the Driver's License Center drive is creating a back-up of water. Water is running onto SR 58 and ponding in both lanes in the area of T-919 (Coolspring Street). Cleaning the channel and cleaning the pipe of debris should help to resolve this issue; however, a detailed investigation and analysis may be needed. If the issue cannot be solved by cleaning the existing drainage system, a proposed system or portion of a system may need to be constructed depending on the issues that are found.

- Several other drainage-related issues and observations were noted throughout the corridor:
    - Drainage channels are greater than 2’ deep with non-recoverable slopes within the clear zone. Remedial action will consist of updating these swales in order to be recoverable in accordance with DM-2 criteria.
    - Rutting of the wearing course.
    - The general terrain of this area was observed to be relatively flat in several areas throughout the corridor. This poses a challenge in proper drainage and stormwater management.

TRAFFIC SIGNALS IMPROVEMENTS

Within the 14.7 corridor of SR 58 there are four (4) signalized intersections. Three (3) of the traffic signals are located in Greenville Borough and one (1) is located in Mercer Borough.

SR 18 (MAIN STREET) AND SR 58 (MERCER STREET)

This traffic signal in Greenville Borough is a two-phase semi-actuated operation with sequential loop detectors on SR 58. Pedestrian signal heads (Person/Hand) and pushbuttons are present on each quadrant. Crosswalks are marked with decorative brick and ADA ramps are present. The intersection is located in heart of the borough where local businesses, shops and eateries are located. Pedestrian connectivity is provided to these facilities with the sidewalks leading to/from the intersection in all directions.

The signal is part of a time-based coordination system with the other intersections along Main Street (SR 18). It has been in place for approximately twelve years and is in good condition.

The traffic signal was originally installed in 1947 with various revisions occurring. The latest revision included decorative mast arm and pedestals and occurred in 2007. All of the existing traffic signal housings are black. It should be noted that there is nothing on permit or permit drawing to indicate the black housing was approved by Central Office or that any replacement housing unit will be black.

With continued maintenance the traffic signal installation has the potential to serve the intersection for many more years. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Pedestrian signal heads mounted to the street light pedestals are skewed**	• Adjust the pedestrian signal heads to align with each of the respective crosswalks.	Low	Short-term	Greenville Borough
• **The Street Lighting Pedestal foundations are showing signs of deterioration with the concrete breaking apart and creating a tripping hazard and/or interfering with the navigation of a wheel chair or scooter.**	• Repair concrete to ensure the pieces do not become a tripping hazard or interfere with the navigation of a wheel chair or scooter.	Low	Short-term	Greenville Borough
• **Visibility of traffic signals with black housing can be improved to enhance visibility during hours of darkness.**	• Install backplates with 2-inch fluorescent yellow, Type IX retroreflective border.	Low	Short-term	Greenville Borough
• **Visibility of signal/pedestrian signal lenses can be improved.**	• Consider updating the LED Bulbs with signal/pedestrian heads with LED Retrofit Modules	Low	Short-term	Greenville Borough
• **Pedestrian safety can be improved**	• Consider upgrading the Person/Hand Pedestrian Signal heads with Countdown Pedestrian Signal heads.	Low	Long-term	Greenville Borough
• **Efficiency of the intersection can be improved, resulting in less delay.**	• Consider full actuation and emergency vehicle preemption.	Low	Long-term	Greenville Borough

SR 58 (MERCER STREET) AND CLINTON STREET

This traffic signal in Greenville Borough is a two-phase pretimed operation located at an intersection with businesses, restaurants and residential housing. Pedestrian signal heads (Walk/Don't Walk) are present on each quadrant. The pedestrian walk with traffic, no push buttons are present. Painted crosswalks are visible and ADA ramps with detectable warning surface tiles are present. Local businesses, eateries and residential homes are adjacent to the intersection. Pedestrian connectivity is provided to these facilities with the sidewalks leading to/from the intersection in all directions.

The signal permit indicated the signal is part of a time-based coordination system with the other traffic signals on Mercer Street (SR 58) and has been in place for approximately thirty years.

The traffic signal was originally installed in 1954 and upgraded in 1989. The signals are installed on span wire attached to strain poles and utility poles. With continued maintenance, the traffic signal installation will serve the intersection for several more years. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Walk/Don't Walk Pedestrian signal heads are not working**	• Repair/Replace as needed to restore to service.	Low	Short-term	Greenville Borough
• **The Walk/Don't Walk Pedestrian Signal Heads are not aligned with the crosswalk in the northeast quadrant.**	• Realign the signal heads to align with the crosswalk	Low	Short-term	Greenville Borough
• **Pavement /Crosswalks markings are faded.**	• Repaint Crosswalks, Stop Bars, Pavement Marking Legends.	Low	Short-term	Greenville Borough

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• Intersection does not have Street name signs	• Add post mounted street name signs for the benefit of non-locals and the businesses located on Clinton Street.	Low	Short-Term	Greenville Borough
• Visibility of signal/pedestrian signal lenses can be improved	• Consider updating the LED Bulbs with signal/pedestrian heads with LED Retrofit Modules	Low	Short-Term	Greenville Borough
• Pedestrian safety can be improved	• Consider upgrading the Person/Hand Pedestrian Signal heads with Countdown Pedestrian Signal heads.	Low	Long-term	Greenville Borough
• Efficiency of the intersection can be improved, resulting in less delay.	• Consider full actuation and emergency vehicle preemption.	Low	Long-term	Greenville Borough
• ADA Compliance	• Update current to meet current standards	High	Long-term	Greenville Borough
• Age/Condition of traffic signal	• Upgrade/replace traffic signal installation	High	Long-term	Greenville Borough

SR 58 (MERCER STREET) AND STEWART AVENUE/YORK STREET

This traffic signal in Greenville Borough is operating as a two-phase pretimed operation. York Street provides the only access an industrial site with several buildings available for sale/lease. A large tract of developable property is in the northeast quadrant adjacent to Stewart Avenue. A neighborhood market is in the southeast quadrant and all other properties in and around the intersection are residential.

The intersection is located on a horizontal curve that creates a sight distance problem for traffic exiting from Stewart Avenue onto State Route 58. Pedestrian connectivity is provided with sidewalks leading to/from the intersection in all directions.

The intersection operated as a 4-way stop for a short period of time in July 2019 while repairs were made to the traffic signal. According to the Greenville Borough manager, the traffic signal was repaired and placed back in operation in August 2019. The traffic signal was originally installed in 1954 with revisions made in 1972 but the nature of the revisions are unclear. The signals are installed on span wire attached to strain poles and utility poles. Continued maintenance will keep the signal in operation however, the traffic signal is in poor condition and in need of an upgrade/replacement. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Traffic signal is not operating in accordance with the approved traffic signal permit.**	• Provide two vehicular signal heads for each direction of travel • Repair/replace pedestrian push buttons. • Repaint crosswalks and stop bars. • Improve Street Names signing	Low	Short-term	Greenville Borough
• **S1-1 School crossing signs are posted in advance of the intersection in both directions on SR 58**	• Replace the S1-1 signs with fluorescent yellow green signs to enhance visibility and awareness of the crossing.			PennDOT / Reynolds School District / Greenville Borough
• **Visibility of Signal Heads**	• Install backplates with 2-inch fluorescent yellow, Type IX retroreflective border.	Low	Short-term	Greenville Borough
• **Age/Condition of traffic signal**	• Upgrade/replace traffic signal installation	High	Short-term	Greenville Borough

SR 58 (MERCER STREET) AND SR 19/NORTH STREET/ERIE STREET:

This traffic signal in Mercer Borough is a three-phase fully actuated system operating in time-based coordination with three other traffic signals on SR 19. This intersection is the master location for referencing offsets. The traffic signal was originally installed in 1954, revised in 1999 and replaced in 2014. The traffic signal is in very good condition. Sidewalks are provided on all approaches except the north approach of SR 19/SR 62. The sidewalks along with pedestrian signal heads and pushbuttons for six (6) established crossing at the intersection provide pedestrian connectivity to neighboring land uses. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Visibility of Signal Heads**	• To improve visibility add 2-inch fluorescent yellow, Type IX retroreflective border to backplates.	Low	Short-term	Mercer Borough
• **Crosswalks are showing signs of wear**	• Repair/replacement should be scheduled. The heavy volume of traffic and cross traffic at this intersection may lend itself to installing Type B crosswalks for enhanced visual awareness and durability.	Low	Short-term	Mercer Borough

SIGNING IMPROVEMENTS

A windshield roadway signing inventory/review was conducted focusing on the warning and advisory signs within the corridor. Two field views were conducted; one during the day and one during the night. The existing signs found during the field views were compared to the Department's provided signing inventory list. The condition of the warning signs was analyzed based on the daylight field view. The retroreflectivity of the roadway signs were reviewed during a nighttime field view. While many of the signs exhibited retroreflective qualities, some did appear to have a reduced level of retroreflectivity. It should be noted that the nighttime sign review was a visual windshield inspection and is subject to interpretation. The actual retroreflectivity of the signs was not measured. A full inventory of the signs was not completed. However, some of the signing noted that appeared to have reduced retroreflectivity qualities included R2-1 Signs (35 MPH and 45 MPH), R4-1 Signs (Do Not Pass), S3-3 Signs School Bus Stop Ahead Signs among others.

The existing warning and advisory signs were reviewed and found to be consistent with the District's signing inventory with the exception of the four signs described in the Table below. Generally, the number and locations of signs within the corridor was appropriate (i.e. no sign clutter). In the Greenville Borough corridor, the height of route marking could be evaluated to ensure that signs are not installed at excessive heights.

The following signs were identified during the daytime review for correction:

Location	Issues Identified
Segment 0310/0917	• Post on W1-6 LARGE SINGLE ARROW is leaning
Segment 0360/0568	• W11-3 DEER CROSSING Sign is damaged
Segment 0360/2053	• Post on W14-3 NO PASSING ZONE is leaning
Segment 0430/0122	• Sign W16-101 missing from sign inventory

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **S3-1 School Bus Stop Signs with black lettering on yellow sign blanks are located throughout corridor.**	• Consider upgrading to S3-1 signs with the newest S3-1 in Fluorescent Yellow Green with arrow and symbols.	Low	Short-term	PennDOT / Reynolds School District / Greenville Borough
• **Retroreflectivity of some signs appeared to be inadequate**	• Perform a nighttime review of the corridor using a Reetroreflectometer to determine the need for replacement.	Low	Short-term	PennDOT

OPERATIONAL CHARACTERISTICS

CORRIDOR SPEED

The corridor has had crashes occurring throughout the entire length. The speed of vehicles traveling the corridor was the number one concern received from the public. Speeding has been identified as a contributing factor in many of crashes that have occurred along the corridor, including fatal and serious injury crashes.

Speed limits are posted throughout the corridor ranging from 35 mph to 55 mph. Following is a list of the speed limits and the key intersections encompassed within the speed limit:

Speed Limit	Segment/Offset		Length** (Approximate)		No. Signs Posted		Key Intersections Located within zone
MPH	**From**	**To**	**Feet**	**Mile**	**SB**	**NB**	
25*	0210/0150	0210/0415	265	0.05	1	----	
35	0210/0415	0230/1027	4463	0.85	5	4	SR 4011 Columbia /Hamburg Rd.
No Signs Posted	0230/1027	0250/0872	4151	0.79	----	----	SR 4027 Fredonia Road (SB)
40	0250/0872	0270/0604	2336	0.44	1	----	SR 4027 Fredonia Road (NB)
40	0250/0872	0280/0241	2414	0.46	----	2	SR 4019 Methodist Road
45	0270/0604	0300/1210	8687	1.65	3	----	SR 4003 Wasser Bridge Road
45	0270/0604	0310/1827	11886	2.25	----	5	SR 4003 Wasser Bridge Road, SR 4012 Kidds Mill Road
55	0300/1210	0530/0732	56352	10.67	1	----	SR 4012 Kidds Mill Road, SR 1004 District Road/Oniontown Road, SR 3022 Line Road, T555 Fulling Mill Road
55	0310/1827	0530/0732	53153	10.07	----	1	SR 1004 District Road/Oniontown Road, SR 3022 Line Road, T555 Fulling Mill Road
45	0530/0732	0530/2295	1563	0.30	1	----	T-919 Coolspring Street
45	0530/0732	0530/2071	1339	0.25	----	1	T-919 Coolspring Street
35*	0530/2295	0550/0000	1058	0.20	2	----	SR 2010 Penn Street
35*	0530/2071	0550/0000	1282	0.24	----	0	SR 2010 Penn Street

*Speed Limit extends beyond project limits

** Limits are based on sign placement and do not necessarily reflect length of the enforceable zone.

Consistent police presence and enforcement is an effective way to reduce speeds. The length and rural nature of the corridor make this a challenging corridor for enforcement. In addition to enforcement, measures to alert drivers to pay attention to the speed they are travelling and begin to change their attitude toward speeding are needed. Speeding can be systematically addressed with low cost strategies. These strategies can help to reduce speed related crashes and the severity of the injuries that occur. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **~25% of the Driver's Actions in the crashes that have occurred can be considered Aggressive Driving** • **~17% of the Driver Actions contributing to the crashes along the corridor was attributed to speed.**	• Review the 55 MPH section of the corridor to determine if it can qualify to be signed for an Aggressive Driving Corridor and begin targeted enforcement of these areas.	Low	Short-term	PennDOT
	• Use Speed Feedback sign(s) at different locations throughout the corridor.	Low	Short-term	PennDOT
• **Speeding**	• Use changeable message boards during key events with messages to capture driver attention. Examples of what the message boards could say SLOW DOWN, SCHOOL IS BACK IN SESSION STOP FOR SCHOOL BUSSES DRIVE LIKE IT'S YOUR CHILDREN GETTING ON THE BUS, etc…..	Low	Short-term	PennDOT
• **Speeding**	• Work with PSP to identify and target areas for enforcement	Low	Short-term	PennDOT
• **Speeding**	• Coordinate with partner agencies/communities to develop an Outreach/Media blitz with oversized sign/billboards or changeable message boards located throughout at strategic locations with the corridor with sayings to capture driver attention. There are many different slogans that can be used, however; something as simple as ***Thank you for travelling the speed limit*** could have a significant impact on driver behavior.	Low	Short-term	PennDOT / PSP / Local Police / Local Partner Agencies

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• Speeding	• Develop Outreach and Education related to speeding and encourage public reporting of speeding and aggressive driving. Education outreach – One idea is to place removable yard-type signs (similar to what political candidates use) along the corridor with safety messages. Signs can be placed to coincide with NHTSA campaigns, i.e. Distracted Driving, Drive Sober, Buckle Up • Seat Belts, Speeding, School Bus Safety	Low	Short-Term	PennDOT / PSP / Local Police / Local Partner Agencies
• Speeding	• Use oversized speed limit sign for the lead sign in areas where the speed is transitioning to a lower speed.	Low	Short-Term	PennDOT
• Speeding	• To lessen the severity of crashes improve roadway design and geometrics and recovery area/clear zone.	High	Long-Term	PennDOT

CURVE ADVISORY SPEEDS

Driving through the 14.7 mile corridor at the posted speed limits, driver comfort was not compromised. Other than the three (3) areas detailed below; no other areas alerted us to the need to review them in greater detail. Therefore, areas with existing advisory speeds were the only areas where ball-bank readings were recorded.

A traditional ball-bank indicator was used to access three (3) curves posted with advisory speeds within the corridor. The methodology detailed in The Manual of Uniform Traffic Control Devices (MUTCD), the Pennsylvania Department of Transportation's Traffic Engineering Manual (Publication 46) and Official Traffic Control Devices (Publication 212) were used to determine the ball-bank degree readings. To ensure speed consistency through the curve the test vehicle's speed was set using cruise control. Results are included in *Appendix F – Field Data*.

Since advisory speeds were already established and posted, testing began with three (3) successive runs at the posted speed limit. Each succeeding run was reduced by 5 MPH until the acceptable levels of curve degree found.

A 40 MPH advisory speed is posted on SR 58 between **Segment 310/0622 -310/1402** in each direction. The curve is located to the south of Kidds Mill Road and north of Beil Hill Road. SR 58 northbound is posted speed limit of 45 MPH. Southbound SR 58 is posted at 55 MPH. The southbound approach to the curve is signed with a Left Curve Sign (W1-2L) and a 40 MPH advisory speed. The northbound approach is signed with a Right Curve Sign (W1-2R) with a 40 MPH advisory speed limit. Travelling northbound and southbound at 40 MPH the ball-bank reading averaged 8˚. The maximum recommended ball-bank indicator reading for this speed is 12˚. The advisory speed for this curve is posted appropriately.

A 35 MPH advisory speed is posted on SR 58 at **Segment 370/0000** in each direction. A four-way, skewed, intersection (T-635, Hamburg Road) is located within the curve. SR 58 has a posted speed limit of 55 MPH northbound and southbound approaching the curve. Southbound the road is signed with a Left Curve Sign (W1-2L) with a 35 MPH advisory speed. Northbound SR 58 is signed with a Right Curve Sign (W1-2R) with a 35 MPH advisory speed limit. Travelling northbound and southbound at 55 MPH the ball-bank reading averaged 10˚. The maximum recommended ball-bank indicator reading for this speed is 12˚. Successive runs at 50 MPH resulted in average ball-bank reading of 5˚. A single trial run was made at 35 MPH in the northbound direction that resulted in a ball-bank reading of 3˚. The results indicate that an advisory speed may not be needed for this curve in either direction. Even though the ball-bank readings do not indicate the need to post an advisory speed for the curve; this intersection did not experience any crashes in the 5-year time period that was analyzed for this study. The advisory speeds may be providing an added level of caution to approaching traffic. Additionally, an intersection sign with a 35 MPH advisory speed is posted on the southbound approach to this intersection. Currently, there is no reason to remove the advisory speed signs for the curve.

A 50 MPH advisory speed is posted on SR 58 between **Segment 500/1800 -500/2500**. The curve lies between Old Fredonia Road & Cornell Road. SR 58 SOUTHBOUND has a posted speed limit of 55 MPH in both directions. The road is signed with a Left Curve Sign (W1-2L) northbound with a 50 MPH advisory speed and a Right Curve Sign (W1-2R) with a 50 MPH advisory speed limit. Travelling northbound and southbound at 55 MPH the ball-bank reading averaged 8˚. The maximum recommended ball-bank indicator reading for this speed is 12˚. Due to the reading at 55 MPH only one run at 50 MPH was made in each direction. The ball-bank ready was 8˚ southbound and 5˚ northbound confirming that an advisory speed for this curve does not need to be decreased. In addition to the curve signs, Chevron Alignment Signs (W1-8) have been installed. In accordance with the MUTCD Chevron Alignment Signs are optional if the difference between the speed limit and the advisory speed is 5 MPH. Information provided in Publication 46 indicates the Chevron Alignment sign should be considered for use when the curve is greater than 7˚. The Chevron Alignment Signs should remain at this location.

INTERSECTION SIGHT DISTANCE

Sight distance measurements were collected at four (4) intersections to determine if there is sufficient sight distance for the posted speed limit on SR 58. Sight distance was measured in accordance with AASHTO setbacks and driver eye and object heights. Sight distance adequacy was assessed by comparing the measured sight distance to the minimum required sight distance determined based on the AASHTO green book formula.

Sight distance measurements were collected at the following intersections:

1. SR 4011 (Columbia Road) /T470 (Hamburg Road)/ SR 58 Segment 0220/1583:

   Sight distance measurements were taken at this intersection as part of an overall safety assessment of the intersection. The sight distance measurements were found to meet and/or exceed the required sight distance for the 35 MPH posted speed limit.

2. SR 4003 (Wasser Bridge Road) SR 58 Segment 0300/0000:

   Sight distance measurements were taken at this intersection based on concerns expressed by the public. Sight distance measurements were found to be less than the minimum required sight distance for the 45 MPH posted speed limit. See the Location-Specific Improvements section of this report.

3. SR 4012 (Kidds Mill Road) SR 58 Segment 0310/0000:

   Sight distance measurements were taken at this intersection as part of an overall safety assessment of the intersection. The sight distance measurements were found to meet and/or exceed the required sight distance for the 35 MPH posted speed limit.

4. SR 3022 (Line Road)/T595 (Line Road) SR 58 Segment 0440/0000:

   Sight distance measurements were taken at this intersection based on concerns expressed by the public. Sight distance measurements were found to be less than the required sight distance for the 55 MPH posted speed limit. See the Location-Specific Improvements section of this report.

PASSING ZONES

Passing zones are present throughout the corridor. A cursory review of the passing zones along the corridor noted the following issues that the Department may want to review further.

Near the Fulling Mill Road Intersection, the passing zone for southbound traffic begins at the intersection. Drivers could potentially focus more on the approaching passing zone than the intersection itself. If the passing zone did not begin until traffic is through the intersection it may help to keep drivers focused the vehicular maneuvers occurring at the intersection. At the Kidds Mill Road Intersection, the northbound passing zone begins at the intersection potentially taking the driver's focus off of the intersection. In Jefferson Township between Lake/Cornell Road in the vicinity of segment 480/1600, the northbound passing appears to begin before the northbound vehicle is able to see around the curve.

OPERATIONAL IMPROVEMENT STRATEGIES

SHORT-TERM CORRIDOR-WIDE

The three predominant collision types cited in the crashes that have occurred along the corridor are hit fixed object, angle and rear-end. An improvement strategy for the corridor can be implemented to work toward reducing the number of these types of crashes along with the severity for the crashes.

The following improvements strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• Illumination along the rural section of the corridor is limited	• Install centerline raised pavement markings in the predominantly rural areas.	Low	Short-term	PennDOT
• Illumination along the rural section of the corridor is limited	• Improve delineation of State Roads and side streets to define access point for turning vehicles.	Low	Short-term	PennDOT
• Centerline and Edges Lines along the corridor need to be reestablished.	• Re-paint Center and Edge lines	Low	Short-term	PennDOT
• Roadway Departure crashes have occurred throughout the corridor	• Consider adding shoulder rumble strips	Low	Short-term	PennDOT
• Trees/Foliage overgrowth blocking signs	• Trim back trees and foliage with in the right-of-way along the corridor	Low	Short-term	PennDOT

LOCATION-SPECIFIC IMPROVEMENTS

ROADWAY DESIGN CRITERIA

PA 58 the majority of the study corridor is functionally classified as a Minor Arterial Rural with a posted speed limit of 55 mph. Due to the varying role of PA 58 within the study corridor, design criteria vary depending on the location. See *Exhibit 6 – Roadway Design Criteria*.

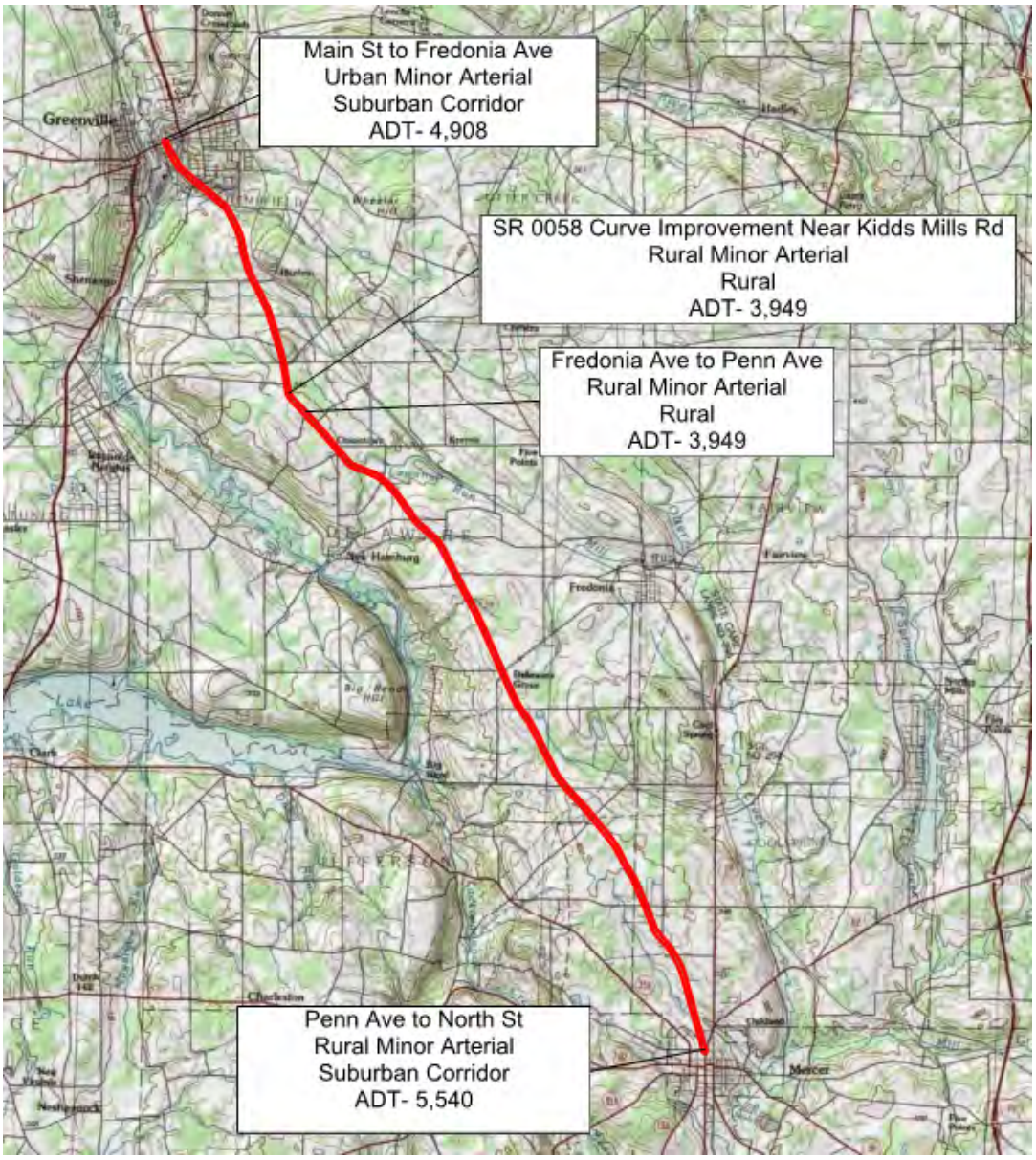


Exhibit 6 – Roadway Design Criteria

DESIGN CRITERIA – PA 58 FROM MAIN STREET TO FREDONIA AVENUE

The improvements between Main Street and Fredonia Avenue are anticipated to primarily consist of the addition of curb and a flashing beacon, as well as other minor safety improvements. As such, the use of 3R design criteria is appropriate. Within this section of the overall project corridor, PA 58 operates as an Urban Minor Community Arterial and resembles the Suburban Corridor typology. See *Exhibit 7: Roadway Design Criteria – PA 58 from Main Street to Fredonia Avenue*.

Design Element/Criteria	Existing Value	Required Value	Proposed Value	Source of Criteria
Design Criteria	-	-	3R	DM-2, Section 1.2.A
Area System (Urban/Rural)	-	-	Urban	PA OneMap
Functional Classification	-	-	Minor Arterial	PA OneMap
Roadway Typology	-	-	Suburban Corridor	DM-2, Figure 1.2
Current ADT	4,908	-		
Current ADTT	231	-		
Topography	-	-	Rolling	N/A
Design Speed	35 mph	35 mph	35 mph	DM-2, Table 1.10
Pavement Width	22' +/-	22'	22'	DM-2, Table 1.11
Shoulder Width	4' +/-	4'	4'	DM-2, Table 1.11
Clear Zone Width	14'	14'	14'	DM-2, Table 1.11

Exhibit 7: Roadway Design Criteria – PA 58 from Main Street to Fredonia Avenue

DESIGN CRITERIA – PA 58 FROM FREDONIA AVENUE TO PENN AVE

The improvements between Fredonia Avenue and Penn Avenue are anticipated to primarily consist of shoulder widening to increase roadway area for drivers, pavement milling/overlay, a two-way center left turn lane, and drainage updates. As such, the use of 3R design criteria is appropriate. Within this section of the overall project corridor, PA 58 operates as a Rural Minor Community Arterial and resembles the Rural typology with an ADT of 3,949 which requires additional shoulder width. See *Exhibit 8: Roadway Design Criteria – PA 58 from Fredonia Avenue to Penn Avenue*.

Design Element/Criteria	Existing Value	Required Value	Proposed Value	Source of Criteria
Design Criteria	-	-	3R	DM-2, Section 1.2.A
Area System (Urban/Rural)	-	-	Rural	PA OneMap
Functional Classification	-	-	Minor Arterial	PA OneMap
Roadway Typology	-	-	Rural	DM-2, Figure 1.2
Current ADT	3,949	-	-	-
Current ADTT	231	-	-	-
Topography	-	-	Rolling	N/A
Design Speed	55 mph	55 mph	55 mph	DM-2, Table 1.10
Pavement Width	22' +/-	22'	22'	DM-2, Table 1.11
Shoulder Width	3' +/-	4'	5'*	DM-2, Table 1.11
Clear Zone Width	24	24	24	DM-2, Table 12.1

*** Current ADT requires 4' shoulders per DM-2, Table 1.11, however 5' shoulders are being proposed due to traffic volume being close to ADT requirements.**

Exhibit 8: Roadway Design Criteria – PA 58 from Fredonia Avenue to Penn Avenue

DESIGN CRITERIA – PA 58 FROM PENN AVENUE TO NORTH STREET

The improvements between Penn Avenue and North Street are anticipated to primarily consist of signal improvements. As such, the use of 3R design criteria is appropriate. Within this section of the overall project corridor, PA 58 operates as a Rural Minor Community Arterial and resembles the Suburban Corridor typology with an ADT of 5,540. See *Exhibit 9: Roadway Design Criteria – PA 58 from Penn Avenue to North Street*.

Design Element/Criteria	Existing Value	Required Value	Proposed Value	Source of Criteria
Design Criteria	-	-	3R	DM-2, Section 1.2.A
Area System (Urban/Rural)	-	-	Rural	PA OneMap
Functional Classification	-	-	Minor Arterial	PA OneMap
Roadway Typology	-	-	Suburban Corridor	DM-2, Figure 1.2
ADT	5,540	-	-	-
ADTT	283	-	-	-
Topography	-	-	Rolling	N/A
Design Speed	35 mph	35 mph	35 mph	DM-2, Table 1.10
Pavement Width	22' +/-	20' to 24'	22'	DM-2, Table 1.11
Shoulder Width	Varies 0' +/- to 2' +/-	4'	Match Existing*	DM-2, Table 1.11
Clear Zone Width	14'	14'	14'	DM-2, Table 12.1

*** Existing shoulder is less than the minimum width of 4' as listed in DM-2, Table 1.11, however roadway widening is not anticipated in this area.**

Exhibit 9: Roadway Design Criteria – PA 58 from Penn Avenue to North Street

DESIGN CRITERIA – PA 58 CURVE IMPROVEMENT NEAR KIDDS MILLS ROAD

The improvement to the curve south of the Kidds Mills Road intersection with PA 58 are anticipated to primarily re-aligning the existing horizontal curve to have a larger radius, providing wider shoulders, pavement reconstruction, and drainage upgrades. As such, the use of Reconstruction design criteria is appropriate. Within this section of the overall project corridor, PA 58 operates as a Rural Minor Community Arterial and resembles the Rural typology. See *Exhibit 10: Roadway Design Criteria – PA 58 Curve Improvement Near Kidds Mills Road*.

Design Element/Criteria	Existing Value	Required Value	Proposed Value	Source of Criteria
Design Criteria	-	-	Reconstruction	DM-2, Section 1.2.A
Area System (Urban/Rural)	-	-	Rural	PA OneMap
Functional Classification	-	-	Minor Arterial	PA OneMap
Roadway Typology	-	-	Rural	DM-2, Figure 1.2
ADT	3,949	-	-	-
ADTT	231	-	-	-
Topography	-	-	Rolling	N/A
Design Speed	45 NB/55 SB mph	35-55 mph	45 mph	DM-2, Table 1.4
Pavement Width	22' +/-	20' to 24'	22'	DM-2, Table 1.4
Shoulder Width	Varies 3' +/-	8'	8' *	DM-2, Table 1.4
Clear Zone Width	24	24	24	DM-2, Table 12.1

*** Existing shoulder is less than the minimum width of 8' as listed in DM-2, Table 1.4, therefore should be widened to meet this criteria.**

Exhibit 10: Roadway Design Criteria – PA 58 Curve Improvement Near Kidds Mills Road

PA 58 AND SR 4011 (COLUMBIA AVE) & T470 (HAMBURG RD)

This intersection is a four-way unsignalized intersection with the minor street approach located in Greenville Borough on SR 58 at Segment 220/1583. The current ADT on SR 58 is 5,505 with 4.4% trucks. The ADT on Columbia Avenue is 1,026 and 1,116 on Hamburg Road. The peak hour for the intersection is from 3:00 PM to 4:00 PM. State Route 58 is posted with a 35 MPH Speed Limit. The intersection is located in a built-up area with businesses and residential dwellings present. Activity at the intersection can create a distraction for traffic on SR 58 approaching the intersection creating a situation where driver's may not be alert to the intersection or to traffic exiting from it.

Using the 2045 PM Peak volumes, left turn warrants were analyzed for SR 58 northbound and found not to be warranted. Copies of the turn warrants are included in *Appendix I –Warrant Analysis*.

The Peak Hour traffic signal warrant was reviewed using the 24 hour counts completed May 22, 2019, while school was in session. Based on this warrant a traffic signal is not met for this intersection. *The purpose of the signal warrant review was to ascertain the need for potential safety improvements at the intersection. A complete traffic signal warrant analysis was not completed.*

Sight distance measurements were collected at the intersection and found to meet and/or exceed the required sight distance for the 35 MPH posted speed limit. It is important to note that local businesses have off-street parking on all four quadrants of the intersection. Vehicles pulling in/out of these areas have the potential to block sight distance for traffic on the side street.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe/	Responsible Party
• **The intersection sits within a busy area with adjacent businesses and residences that distract approaching drivers from noticing the intersection.**	• Add Intersection Warning Pavement Markings on SR 58 northbound and southbound. • Add STOP BARS to the side street. • Install delineators on the radii of the approaches.	Low	Short-term	PennDOT / Greenville Borough
• **The intersection sits within a busy area with adjacent businesses and residences distracting approaching road users from noticing the intersection.**	• Install Intersection Control Beacon to highlight the location of the intersection. In lieu of a 24/7 operation; for added effectiveness of the beacon consider activation only when vehicles are present on Side Street.	Medium	Long-Term	PennDOT / Greenville Borough
• **Improve/Define the radius on the Hamburg Road approach.**	• Install curb to delineate the approach boundaries at the intersection and to restrict vehicles from accesses a local business at the intersection in advance of the STOP Sign location.	High	Long-Term	PennDOT / Greenville Borough

PA 58 AND SR 4012 (KIDDS MILL ROAD)

This intersection is a three-way unsignalized intersection in Delaware Township on SR 58 at Segment 0310/0000. Kidds Mill Road is the minor road with traffic coming to a stop condition approaching SR 58. The current ADT on SR 58 is 4,799 with 5.21% trucks. The ADT on Kidds Mill Road is 1026. The peak hour for the intersection is from 3:00 PM to 4:00 PM. State Route 58 is posted with a 45 MPH Speed Limit northbound and with a 55 MPH Speed Limit southbound. Numerous comments from the public were received regarding this intersection. The intersection is located on the western side of SR 58 and is predominately isolated from other intersections. Two businesses have access drives on the eastern side of SR 58; one is approximately 100' south and the other is approximately 70' north of Kidds Mill Road.

Near the intersection of SR 58 Kidds Mill Road is a rural two-lane tangent roadway. The speed limit approaching the intersection is 55 MPH. Entering onto Kidds Mill Road, a passing zone is in place for westbound traffic within 350' of the intersection with SR 58. Eastbound traffic approaching SR 58 also has a passing zone that ends approximately 500' before the stop condition at the intersection.

The Shenago Valley RV Park and the Reynolds School District are accessed via Kidds Mill Road. Additionally, with no bridge or roadway weight limits on Kidds Mill Road, manufacturing facilities located off Kidds Mill Road on Keystone Road (T- 500) and the Reynolds Industrial Park located on the western end closer to SR 18, utilize Kidds Mill Road. Attraction signing on SR 58 directs traffic onto Kidds Mill Road for these facilities.

Speed has been noted as a contributing factor to crashes at this intersection for traffic on SR 58 and on Kidds Mill Road. The crashes on SR 58 involved vehicles travelling northbound on wet roads. Northbound traffic is transitioning from a horizontal curve to a tangent section before approaching the Kidds Mill Road intersection.

Using the 2045 PM Peak volumes left turn warrants were analyzed for SR 58 northbound and found not to be warranted. Additionally, right turn lanes were analyzed for the SR 58 southbound approach and found not to be warranted. Copies of the turn warrants are included in *Appendix I –Warrant Analysis*. To further analyze if a left or right turn lane would provide a benefit to the intersection, a HCS analysis using the 2045 PM peak volumes was completed to determine the LOS with and without the addition of the lanes. See *Exhibit 11 – LOS Summary @ Kidds Mill Road*.

Lane Group	Approach	SR 4012 (EASTBOUND)	SR 58 (NORTHBOUND)
1: Existing Configuration	Delay	14.1	1.8
	LOS	B	A
2: SR 58 NB Left Turn Lane	Delay	14.1	1.5
	LOS	B	A
3: SR 58 SB Right Turn Lane	Delay	13.5	1.8
	LOS	B	A
4: SR 58 NB Left Turn Lane & SR 58 SB Right Turn Lane	Delay	13.4	1.5
	LOS	B	A

Exhibit 11: LOS Summary @ Kidds Mills Road

No notable increase in capacity is gained with the addition of the turn lanes. The LOS on Kidds Mill Road with the addition of the left turn lane on SR 58 does not indicate that it will be impacted negatively or otherwise. However, adding a left turn lane on SR 58 will require traffic turning left out of Kidds Mill Road to observe the location and movement of two approaching lanes of traffic before turning left onto SR 58.

The Peak Hour traffic signal warrant was reviewed using the 24 hour counts completed May 22, 2019, while school was in session. A copy is provided in *Appendix I – Warrant Analysis*. Based on this warrant, a traffic signal is not required for this intersection. *The purpose of the signal warrant review was to ascertain the need for potential safety improvements at the intersection. A complete traffic signal warrant analysis was not completed.*

Sight distance measurements collected at the intersection were found to meet and/or exceed the required sight distance for the posted speed limits northbound and southbound. The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe/	Responsible Party
• **Proximity of Intersection to Curve**	• Relocate Kidds Mill Rd name plaque to the top of the W2-2L sign. • Add a distance plaque to the bottom of the sign.	Low	Short-term	PennDOT

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe/	Responsible Party
• **Visibility and target value of existing signs**	• Add reflective strip to the posts of existing chevron signs.	Low	Short-term	PennDOT
• **The speed limits on SR 58 southbound approaching Kidds Mill Road changes from a 45 to a 55 MPH ~1600' before the intersection and before entering into a curve with a 40 MPH advisory speed.**	• Extend the 45 MPH speed limit for traffic on SR 58 southbound to coincide with the 45 MPH speed limit northbound through this area.	Low	Short-Term	PennDOT
• **Passing Zones on SR 4012 Kidds Mill Road approaching SR 58 ends 500' before the stop condition.**	• Review where the end of the the passing zones begin and end eastbound and westbound to reduce conflicts on the approach. Restricting the passing zone ~100' before the current location will provide eastbound drivers with more time to perceive the approaching Stop condition and eliminate potential conflicts with traffic turning into the intersection. Starting the passing zone westbound at the same location will minimize conflicts with approaching eastbound traffic.	Low	Short-term	PennDOT
• **Increase awareness of Stop Condition on Kidds Mill Road**	• Add reflective strips to the existing Stop Sign • Add another Stop sign on the opposite side of the road.	Low	Short-Term	PennDOT

PA 58 AND SR 4003 (WASSER BRIDGE ROAD)

The intersection is a T- intersection situated on a crest vertical at Segment 0300/0000. Comments received from the public alerted the project team to a potential problem with sight distance at this intersection. Sight distance measurements were collected in the field and found to be less than the AASHTO minimum required sight distance for the the 45 MPH posted speed limit. However, a review of the crash history did not highlight a problem at this intersection. The two crashes that occurred at this intersection were rear-ending crashes involving vehicles traveling southbound.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Intersection Sight Distance is less than the required for the posted speed limit for traffic approaching the intersection southbound.**	• Replace the existing W2-2R Side Road sign and add a 30 MPH advisory below the sign. • Add reflective strip to the sign post • Add a street name sign to the top of the sign.	Low	Short-term	PennDOT
• **Intersection Sight Distance is less than the required for the posted speed limit for traffic approaching the intersection northbound**	• Replace the existing W2-2L Side Road sign and add a 20 MPH advisory below the sign. • Add reflective strip to the sign post • Add a street name sign to the top of the sign.	Low	Short-term	PennDOT
• **S3-1 School Bus Stop Ahead sign located on W2-2 sign SR 58 northbound**	• Replace S3-1 with updated sign and install on a new sign post sign post.	Low	Short-term	PennDOT / School District
• **Intersection Sight Distance is less than the required for the posted speed limit**	• Trim trees South and North of the intersection. • Confirm available sight distance. If necessary adjust advisory speed limit to reflect improvement.	Low	Short-term	PennDOT

PA 58 AND SR 3022/T595 (LINE ROAD)

The intersection is a 4-way intersection located at the Delaware Township/Jefferson County Line. Comments received from the public alerted the project team to a potential problem with sight distance at this intersection. Sight distance measurements were collected in the field and found to be less than the AASHTO minimum required sight distance for the 55 MPH posted speed limit on the northbound approach. However, a review of the crash history did not highlight a problem at this intersection. The two crashes that occurred at this intersection were single vehicle crashes involving vehicles traveling southbound. Both of the crashes occurred during icy conditions; one in 2013 and one in 2015.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Intersection Sight Distance is less than the required for the posted speed limit SR 58 northbound**	• Install W2-1 Cross Road Sign with Advisory Speed of 25 MPH.	Low	Short-term	PennDOT

PA 58 – DELAWARE TOWNSHIP KIDDS MILL CURVE – SEG 0310/0622 TO SEG 0310/1402

This is horizontal curve located between on SR 58 Segment 310/0622 to Segment 310/1402 is signed with a curve sign and 40 MPH advisory speed in both directions. Northbound traffic approaches the curve in a 45 MPH speed zone and southbound traffic approaches the curve in 55 MPH speed zone. According to record drawings, the horizontal curve currently has a radius of 776.55'. The horizontal curve does meet the current design standards for the northbound traffic; however, the horizontal curve does not meet the design criteria for the southbound traffic with a 55 MPH speed zone. AASHTO requires the minimum radius of the curve be 960' for a 55 MPH design speed with a superelevation rate of 8.0%. Of the five (5) crashes that occurred, three (3) were on snow/wet road conditions with a causation factor were attributed to driving too fast for conditions. In addition to the advisory speed, other measures in place at the intersection include chevrons, large single arrows and pavement markings advising traffic of the curve and to slow down.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Northbound traffic has a view of the Regulatory 45 MPH speed limit sign and the the curve sign with a 40 MPH advisory speed at the same time.**	• Relocate the regulatory 45 MPH Speed Limit sign out of the view of the 40 MPH advisory sign. • Replace the existing W1-2 signs northbound and south bound with W1-2a signing and enhance the sign posts for the sign with reflective strips.	Low	Short-term	PennDOT
• **Tree are located on the inside of the curve northbound**	• Trim trees to improve the sight distance around the curve. Easement	Low	Short-term	PennDOT
• **Existing Pavement Markings**	• The SLOW pavement markings appear to be effective. Continue their use.	Low	Short-term	PennDOT
• **Existing Signing**	• Maintain the Curve Sign with the 40 MPH advisory, the Chevrons and the Single Arrow Signs. Enhance the signing by adding reflective strips to the sign posts.	Low	Short-Term	PennDOT
• **Increase pavement friction during Snow/Wet conditions**	• Consider the placement of High Friction Surface treatment on the curve in both directions.	Low	Short-Term	PennDOT

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Tree are located on the inside of the curve northbound restrict sight distance.**	• Trim trees to improve the sight distance around the curve. Limited availability of right-of-way may require the need to secure easements.	Low	Short-Term	PennDOT
• **Pavement markings and signing require continual maintenance.**	• Consider project to re-align the curve. A larger horizontal radius would increase sight distance of the intersection. Reduced superelevation percent would reduce potential of the weather-related crashes.	High	Long-Term	PennDOT

PA 58 - SEG 530/1489 TO SEG 530/2202 – COOLSPRING TOWNSHIP

Coolspring Road (T-919) is located within this section of SR 58 and provides a connector to SR 19 as well as to residential and commercial buildings. The speed limit is posted at 45 MPH through the area. Crashes that have occurred were not specifically at Coolspring Road but were attributed to improper entrance onto SR 58 and improper turning movements. It is a busy corridor with access to numerous retail/commercial facilities. In addition to Coolspring Road, driveways for the Dollar General, the Driver's License Center, Mercer Plaza, Nelson's Greenhouse, the Sharon Regional Mercer medical facility as well as a vacant commercial office site for lease are within this corridor. Coolspring Road blends in with the surrounding driveway and does not stand out as a local road.

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Coolspring Road does not stand out as a local road**	• W2-2 Side Road Sign with Street Name • Add delineators to the approach radii.	Low	Short-term	PennDOT
• **Coolspring Road does not stand out as a local road**	• Increase the size of the existing Street Name sign	Low	Short-term	PennDOT
• **Driver's License Center Driveway**	• Reduce drive radius with paint, and pavement markings arrows to re-establish one-way in/out drives and replace existing STOP sign	Low	Short-term	Driver's License Center
• **Mercer Plaza is an uncontrolled commercial driveway.**	• Add Stop Sign(s) to Drives	Low	Short-term	Mercer Plaza Owner
• **Improper Entrance/Turning**	• Construct Center Left Turn Lane with an exclusive left turn for Coolspring Road.	High	Long-Term	PennDOT

PA 58 AND SR 4014 (ONIONTOWN ROAD)

SR 4014 Oniontown Road intersects with PA 58 as a T- intersection at Segment 0330/2420. Ponding is occurring on the radius of Oniontown Road near the stop sign. The ponding is significant (> 6"deep) and is encroaching into the SR 58 southbound lane.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Ponding is occurring on the radius of Oniontown Road near the stop sign and encroaching into the southbound lanes.**	• Installing a drainage system to address this issue will require creating a swale along SR 58 to outlet the water in an appropriate manner.	Medium	Long-Term	PennDOT

PA 58 AND SR 4027 (FREDONIA ROAD)

4027 (Fredonia Road) intersects with PA 58 at Segment 0240/0807 as a T-intersection. A steep approach grade exists on Fredonia Road. A drainage issue is present for the property across the street. Existing inlets are full of debris and water appears to be bypassing them. Further review of the roadway approach grading and the existing drainage network is needed during design.

The following improvement strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **A steep approach grade exists on Fredonia Road. The property owner on the opposite side of SR 58 is seeing water drainage issues are present for the property across the street.**	• Add inlets and drainage on SR 58 and regrade the approach to Fredonia Road	High	Long-Term	PennDOT

PA 58 SR 4027 (FREDONIA RD) TO SR 2010 (PENN AVENUE)

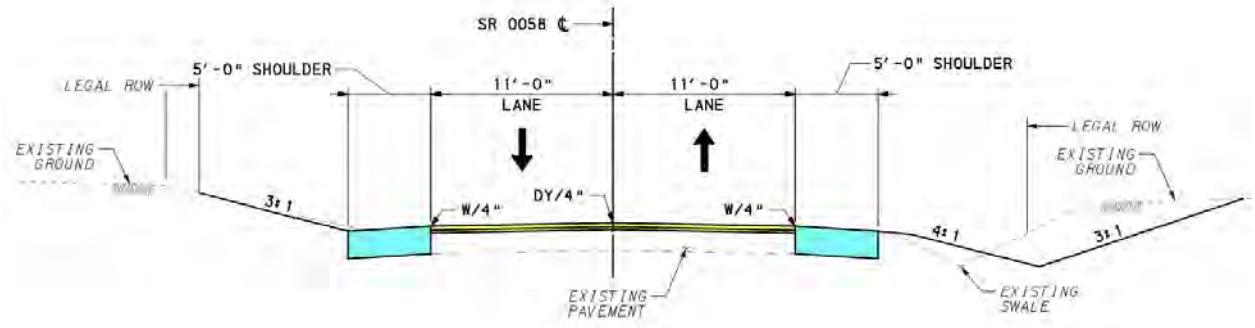
This 13.3 mile corridor operates as a Rural Community Arterial and resembles the rural typology. This section of SR 58 is a two-lane road with predominantly 11' lanes and varying shoulder widths. This section of SR 58 has had numerous roadway departure crashes throughout the corridor. Drainage swales located adjacent to the shoulders with non-recoverable slopes along the corridor may be contributing to the severity of the roadway departure crashes.

The corridor segments identified within the crash analysis report fall within the limits of this proposed project. These segments will benefit from the safety improvements identified below by minimizing the frequency and severity of the crashes occurring through these areas.

The following improvements strategies are offered for consideration:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Responsible Party
• **Roadway Departure crashes have occurred throughout the corridor.** • **Drainage swales along corridor have non-recoverable slopes.**	• Widen shoulders to meet the current design 3R criteria.	High	Long-term	PennDOT
	• Redesign/regrade the existing swales along the corridor to have recoverable slopes within the clear zone of the roadway.	High	Long-term	PennDOT

These long-term improvement strategies can be used in conjunction with the short-term improvement strategies discussed in the previous section of the report.



SR 0058 TYPICAL SECTION RURAL

NOT TO SCALE

CONCLUSION

The purpose of the study was to detect safety and operational deficiencies and identify potential safety improvement strategies that can be implemented in stages as time and resources permit.

A matrix of improvements has been provided as a tool for the Department to plan future maintenance activities, program future projects, and coordinate improvements with municipalities and other partner agencies.

Coordination with involved municipal and agency partners will be needed to clarify responsibility for funding, construction and maintenance. If there is strategy consensus, many of the short-term strategies can be implemented within a three (3) year timeframe with minimal planning and effort.

Long-term strategic improvements will require a greater effort and a more in depth review including input from partner agencies and the public prior to implementation.

APPENDIX A:

PROJECT STAKEHOLDER LISTS

PA 58 Roadway Safety Study
Stakeholders

Organization	Street Address 1	City	State	Zip Code	Telephone	Contact	Title
PennDOT Engineering District 1-0	255 Elm Street	Oil City	PA	16301	(814) 678-7358	Thomas J. McClelland, P.E., PTOE	Design Services Engineer
Mercer County Regional Planning Commission	2491 Highland Road	Hermitage	PA	16148	(724) 981-2412 Ext. 3206	Matthew Stewart	Senior Planner
Shenango Valley Area Transportation Study MPO (SVATS MPO)	2491 Highland Road	Hermitage	PA	16148	(724) 981-2412 Ext. 3206	Matthew Stewart	Senior Planner
Mercer County	Mercer County Courthouse	Mercer	PA	16137	(724) 662-3800	Brad Elder	County Bridge Engineer
Mercer County	Mercer County Courthouse	Mercer	PA	16137	(724)-662-7533	Scott Boyd	Commissioner
Mercer County	Mercer County Courthouse	Mercer	PA	16137	(724)-662-7532	Matthew B. McConnell	Commissioner
Mercer County	Mercer County Courthouse	Mercer	PA	16137	(724)-662-7531	Timothy M. McGonigle	Commissioner
Pennsylvania State Senate	Senate Box 203050	Harrisburg	PA	17120-3050	(717) 787-1322	Honorable Michele Brooks	Senator
Pennsylvania House of Representatives, House District 7	2213 Shenango Valley Freeway	Hermitage	PA	16148	(724) 981-4655	Honorable Mark Longietti	Representative
Pennsylvania House of Representatives, House District 17	395 High Street	Conneaut Lake	PA	16316	(814) 382-7200	Honorable Parke Wentling	Representative
Pennsylvania House of Representatives, House District 8	234 W. Pine Street	Grove City	PA	16127	(724) 458-4911	Honorable Tedd C. Nesbit	Representative
Mercer County Community Transit	2495 Highland Rd	Hermitage	PA	16148	724-981-1561	Kim Dicintio	
Greenville Borough	125 Main St.	Greenville	PA	16125	(724) 588-4193	Paul Hamill	Council President
Greenville Borough	125 Main St.	Greenville	PA	16125	(724) 588-4193	Jason Urey	Borough Manager
Greenville Fire Department	111 East Avenue	Greenville	PA	16125	(724) 588-3111		
Greenville Borough Police Department	125 Main St.	Greenville	PA	16125	(724) 588-4190	Dennis Stephens	Chief of Police
Hempfield Township	278 South Mercer St	Greenville	PA	16125-1539	(724) 588-5032	Gary E. Hittle	Chairman of the Board of Supervisors
Hempfield Township Police Department	278 S. Mercer St.	Greenville	PA	16125	(724) 588-7369	David W. Morgan	Chief of Police
Delaware Township	53 Oniontown Rd.	Greenville	PA	16125	(724) 588-2040	Janice M. Boyd	Secretary
Delaware Township	53 Oniontown Rd.	Greenville	PA	16125	(724) 475-2900	Bill Anthony	Supervisor
Jefferson Township	7407 Lamor Rd	Mercer	PA	16137	(724) 662-3310	Linda J. Adams	Secretary/Treasurer
Jefferson Township	7407 Lamor Rd	Mercer	PA	16137	(724) 662-0627	Garth Falkner	Supervisor
Mercer Borough	145 N Pitt St	Mercer	PA	16137	(724) 662-3980	Debbie Sarvis	Secretary
Mercer County Sheriff's Office	205 South Erie Street	Mercer	PA	16137-1553	(724) 662-6135	Roni Shilling	Sheriff
Mercer Borough Police Department	99 E. Venango St	Mercer	PA	16137	(724) 662-3851	Bradley Shrawder	Chief
Mercer East End Fire Department	104 Wilson Ave	Mercer	PA	16137	(724) 662-3290		
Mercer Area School District	545 West Butler Street	Mercer	PA	16137	(724) 662-2182 Ext. 40	Stephen Hoover	Transportation Director
Coolspring Township	852 N. Perry Hwy	Mercer	PA	16137	(724) 475-2010	Terri Ligo	Secretary/Treasurer
Greenville Area School District	9 Donation Rd	Greenville	PA	16125	(724) 588-2502 Ext. 2300	Donna Scott	Transportation Coordinator
Reynolds School District	531 Reynolds Road	Greenville	PA	16125	(724) 646-5500	James Lumpp	Supervisor of Transportation
Pennsylvania Department of Transportation DMV	519-B Greenville Road	Mercer	PA	16137	(800) 932-4600		
Pennsylvania State Police	826 Franklin Road	Mercer	PA	16137	(724) 662-6162	Sergeant Lian T. Elliot	Commander
Avalon Springs Place	745 Greenville Rd	Mercer	PA	16137	(724) 662-5400		
The Grove at Greenville	110 Fredonia Rd	Greenville	PA	16125	(724) 588-8090		
Reynolds Industrial Park	301 Arlington Drive	Greenville	PA	16125	(724) 646-1144	Bradley R. Gosser	Executive Dirctor and VP
Canadian National Railroad	700 Pershing Road	Pontiac	MI	48340	248.452.4854	Thomas Brasseur	Mananger of Public Works
Norfolk Southern Railroad	1200 Peachtree Street N.E.	Atlanta	GA	30309	404.527.2536	Shawn Starling, P.E.	Senior Engineer Public Improvements

APPENDIX B:

ENVIRONMENTAL CONSTRAINTS MAP

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware, Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Environmental Constraints Map
Page 1 of 4

Aerial Photography Source: World Imagery (ESRI)

0 500 1,000 1,500 2,000 Feet

0 200 400 600 800 Meters

- Community Facility
- Cemetery
- Agriculture
- Stream
- Potential Phase I Site
- Previously Recorded Historic Resources
- Study Area
- NWI Wetlands
- Potential Wetland

Date: 8/22/2019

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PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware, Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Environmental Constraints Map
Page 2 of 4

Aerial Photography Source: World Imagery (ESRI)

0 500 1,000 1,500 2,000 Feet

0 200 400 600 800 Meters

- Community Facility
- Cemetery
- Agriculture
- Stream
- Potential Phase I Site
- Previously Recorded Historic Resources
- Study Area
- NWI Wetlands
- Potential Wetland

Date: 8/22/2019

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Page 3

Page 3

Page 4

Route 58

Route 58

Route 58

Line Road

Pew Road

Golf Road

Fullingmill Road

Document Path: G:\18-055A SR 58 Corridor Study\GIS\ENV\1.Maps\Environmental Constraints Large Plan.mxd

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware, Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Environmental Constraints Map
Page 3 of 4

Aerial Photography Source: World Imagery (ESRI)

0 500 1,000 1,500 2,000 Feet

0 200 400 600 800 Meters

- Community Facility
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- NWI Wetlands
- Potential Wetland

Date: 8/22/2019

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware, Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Environmental Constraints Map
Page 4 of 4

Aerial Photography Source: World Imagery (ESRI)

0 500 1,000 1,500 2,000 Feet

0 200 400 600 800 Meters

- Community Facility
- Cemetery
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- Stream
- Potential Phase I Site
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- Study Area
- NWI Wetlands
- Potential Wetland

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Date: 8/22/2019

APPENDIX C:

CULTURAL RESOURCES CONSTRAINTS MAP

Previously Recorded Historic Resources	
Key # 064525	Greenville U.S. Post Office (Eligible)
Key # 105794	Greenville Commercial Historic District (Eligible)
Key # 155749	New York, Lake Erie, and Western Railroad (Aggregate)

Potential Historic Resources	
1	ca. 1890 Colonial Revival House
2	ca. 1860 Greek Revival House
3	ca. 1870 Italianate House
4	ca. 1860 Greek Revival House
5	ca. 1900 Classical Revival School
6	ca. 1890 Queen Anne House
7	ca. 1890 Queen Anne House
8	ca. 1920 Art Deco Commercial Building

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 1 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
9	ca. 1930 Tudor House
10	ca. 1960 Bowling Alley

Page 1

Page 2

Fredonia Road

ER # 2016-4002-084-A

9

10

Route 58

Page 2

Page 3

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
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Mercer County, Pennsylvania
Cultural Resources Constraints Map
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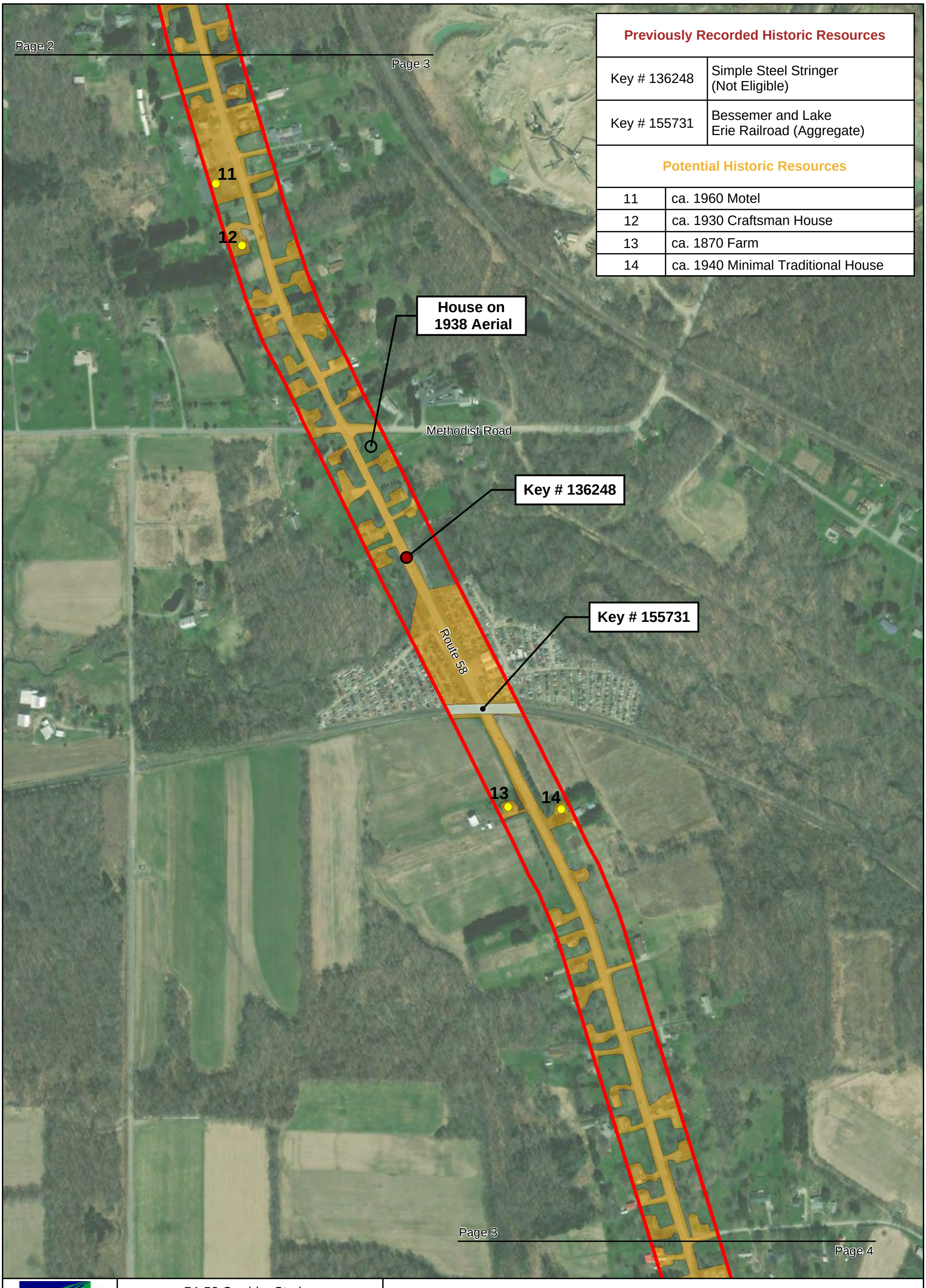
Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary



Previously Recorded Historic Resources	
Key # 136248	Simple Steel Stringer (Not Eligible)
Key # 155731	Bessemer and Lake Erie Railroad (Aggregate)
Potential Historic Resources	
11	ca. 1960 Motel
12	ca. 1930 Craftsman House
13	ca. 1870 Farm
14	ca. 1940 Minimal Traditional House

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 3 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Page 3

Page 4

Potential Historic Resources	
15	Bigler Cemetery/Old Salem Cemetery

15

Salem Road

Route 58

Page 4

Page 5

PENNDOT

N

W E

S

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 4 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Page 4

Page 5

Potential Historic Resources	
16	ca. 1870 Farm

Route 58

16

Page 5

Page 6

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 5 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

N
W E
S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
17	ca. 1870 Farmhouse

District Road

Page 5

Page 6

Route 58

17

Page 6

Quarry Road

Page 7

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 6 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
18	ca. 1870 Farm
19	ca. 1890 Farm
20	Delaware Cemetery
21	ca. 1921 St. John's Church and Cemetery
22	ca. 1900 Beringer-Caldwell One Room School House
23	ca. 1870 Farmhouse with Early 20th Century Barn

Page 6

Page 7

18

19

20

21

21

22

Hamburg Road

Route 58

Page 7

23

Page 8

PENNDOT

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PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 7 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
23	ca. 1870 Farmhouse with Early 20th Century Barn

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23

Route 58

Cochran Road

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PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 8 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

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- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
24	ca. 1870 Farm
25	ca. 1870 Farm
26	ca. 1850 Farmhouse

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 9 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
27	ca. 1890 Queen Anne Farmhouse and Late 19th/Early 20th Century Outbuildings

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27

Line Road

Route 58

Page 10

Page 11

PENNDOT

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PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 10 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

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Page 11

Potential Historic Resources	
28	ca. 1959 Mercer Public Golf Course
29	ca. 1910 Four-Square Farmhouse
30	ca. 1950 Kinder Morgan Tennessee Gas Pipeline Facilities

Route 58

Golf Road

28

29

30

ER # 1991-0951-042-A

ER # 2013-1705-042-B

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PENNDOT

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PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
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Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 11 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Potential Historic Resources	
31	ca. 1910 House
32	All Saints Cemetery
33	Late 19th Century Farmhouse

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Fullingmill Road

Page 12

31

Route 58

32

33

Page 12

Page 13

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 12 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

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Page 13

Potential Historic Resources	
33	Late 19th Century Farmhouse
34	Late 19th/Early 20th Century Farm
35	ca. 1900 19th Century Farm
36	ca. 1860 Farmhouse
37	ca. 1850 Farmhouse and Early 20th Century Outbuildings
38	Mid-to-late 19th Century Farmhouse
39	ca. 1890 Farm

33

34

Route 58

35

36

37

Lake Road

38

Route 58

Old Fredonia Road

39

Page 13

Page 14

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 13 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Previously Recorded Historic Resources	
Key # 123676	Mercer County Home Cemetery (Not Eligible)
Key # 206615	Poor Farm; County Home; County Farm (Unevaluated)
Potential Historic Resources	
40	ca. 1870 Gothic Revival Farmhouse and Early 10th Century Barn
41	ca. 1900 Farmhouse and Early 10th Century Barn

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Page 14

Key # 206615

Key # 123676

Route 58

40

41

Page 14

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PENNDOT

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W E

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PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 14 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800
Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Previously Recorded Historic Resources	
Key # 155774	Mercer Historical District (Local Historic District)
Potential Historic Resources	
41	ca. 1900 Farmhouse and Early 10th Century Barn
42	Old Mercer Graveyard

Page 14
Page 15
Page 15
Page 16

41

ER # 1992-1988-085-A

Route 58

Route 19

42

Key # 155774

PENNDOT

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map
Page 15 of 16

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

N W E S

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

Previously Recorded Historic Resources	
Key # 155774	Mercer Historical District (Local Historic District)
Potential Historic Resources	
42	Old Mercer Graveyard

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Route 19

42

Key # 155774

PA 58 Corridor Study
Mercer and Greenville Boroughs
Coolspring, Delaware,
Hempfield, and Jefferson Townships
Mercer County, Pennsylvania
Cultural Resources Constraints Map

Aerial Photography Source: World Imagery (ESRI)

0 200 400 600 800 Feet

- Study Area
- Disturbed Area
- Stream
- Previously Surveyed Area
- Potential Historic Resource
- Previously Recorded Historic Resource
- Previously Recorded Historic Resource-Not Eligible
- Previously Recorded Historic Resource-Aggregate
- Historic District
- Approximate Cemetery Boundary

APPENDIX D:

PUBLIC INVOLVEMENT FEEDBACK

PA 58 Roadway Safety Study
Public Involvement Feedback

PA 58 Corridor Safety Study																																			
	Speeding	Sight distance	Drainage issue	Passing Lane issue	Pedestrian/Bicycle access	Area of concern	Safety issue	Roadway width	Roadway Signing	Police Enforcement	Parking issues	Vehicle access/driveways	Signal concern	Alignment issue	Truck turning radius issue	Bus traffic	RV traffic	Median reflectors needed	Eliminate reduced speed	Uneven road	Congestion	Truck traffic	Black ice in rumble strips	Shoulder issue	Property damage	Sidewalk needed	Safety berm	Visibility issue	Blinking caution light	Tree trimming	Amish traffic	Mailboxes on side of house	TOTAL
Penn Avenue to Coolspring Street			1																						1								2
Cornell Rd			2																														2
Fullingmill Road						3			1																								4
Tennessee Gas (North of Fullingmill Road)	1	2				1																				1							5
Golf Road		2																						1									3
Line Road		3																															3
Grove Road		1																															1
Delaware Township	1			1																													2
Delaware Street						1								1	1																		3
Cochran Road						1																											1
Quarry Road to Methodist Road	1			1																													2
District Road		3							1																								4
District Road to Young Road																				1													1
Young Road																																	0
District Road to Kidds Mills Road	1																																1
Kidds Mills Road	1	2	1			2										1													1	1			9
Kidds Mills Road to Wasser Road						2																											2
Wasser Bridge Road		5	1			1			1				1			1																	10
Railroad crossing (South of Methodist Road)			6																1	1													8
Methodist Road			1	1		1											1					1											5
Celebrity Bowl (South of Fredonia Road)			1																														1
Fredonia Road			1											3		1																	5
Columbia Avenue/Hamburg Road	1	2				1						1	3	1							1	1									1		12
Stewart Avenue/York Street						2							1		1																		4
Main Street															2																		2
Entire Corridor*	27	12	9	18	20		11	10	7	9	8	5					2	3	2		1		2	2				1				1	150
TOTALS	**33**	**32**	**23**	**21**	**20**	**15**	**11**	**10**	**10**	**9**	**8**	**6**	**5**	**5**	**4**	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	

*Survey Form ratings of 0/1/2, or if written comment was provided are noted above.

APPENDIX E:

TRAFFIC COUNT DATA

Automatic Traffic Recorder (ATR) Data Summary

Project: **Project:** *SR 58 Study*
Location: **Location:** *ATR 1*
Direction: **Direction:** *Eastbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		17	17	17											17	17	#DIV/0!	#DIV/0!	#DIV/0!
01:00		11	7	16											11	11	#DIV/0!	#DIV/0!	#DIV/0!
02:00		12	9	11											11	11	#DIV/0!	#DIV/0!	#DIV/0!
03:00		11	6	11											9	9	#DIV/0!	#DIV/0!	#DIV/0!
04:00		31	28	31											30	30	#DIV/0!	#DIV/0!	#DIV/0!
05:00		55	54	57											55	55	#DIV/0!	#DIV/0!	#DIV/0!
06:00		75	80	75											77	77	#DIV/0!	#DIV/0!	#DIV/0!
07:00		**148**	**163**	**154**											**155**	**155**	#DIV/0!	#DIV/0!	#DIV/0!
08:00		141	158	141											147	147	#DIV/0!	#DIV/0!	#DIV/0!
09:00		139	142	127											136	136	#DIV/0!	#DIV/0!	#DIV/0!
10:00		119	144	139											134	134	#DIV/0!	#DIV/0!	#DIV/0!
11:00		133	138	154											142	142	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		160	160	179											166	166	#DIV/0!	#DIV/0!	#DIV/0!
01:00		159	170	165											165	165	#DIV/0!	#DIV/0!	#DIV/0!
02:00		**195**	**173**	**186**											**185**	**185**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		**224**	234	217											225	225	#DIV/0!	#DIV/0!	#DIV/0!
04:00		211	**237**	**234**											**227**	**227**	#DIV/0!	#DIV/0!	#DIV/0!
05:00		204	166	210											193	193	#DIV/0!	#DIV/0!	#DIV/0!
06:00		151	130	137											139	139	#DIV/0!	#DIV/0!	#DIV/0!
07:00		108	105	101											105	105	#DIV/0!	#DIV/0!	#DIV/0!
08:00		90	106	89											95	95	#DIV/0!	#DIV/0!	#DIV/0!
09:00		64	72	73											70	70	#DIV/0!	#DIV/0!	#DIV/0!
10:00		47	58	53											53	53	#DIV/0!	#DIV/0!	#DIV/0!
11:00		23	25	29											26	26	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**2,528**	**2,582**	**2,606**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,572**	**2,572**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	98%	100%	101%	0%	0%	0%	0%	8100%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	98%	100%	101%	0%	0%	0%	0%	7100%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	148	163	154	0	0	0	0	149	0	0	0	0	0	155	155	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	195	173	186	0	0	0	0	364	0	0	0	0	0	185	185	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	224	237	234	0	0	0	0	738	0	0	0	0	0	227	227	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,572**

AADT Adjust:	**0.937**

AADT:	**2,410**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: **ATR 1**
Direction: *Westbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		13	12	13											13	13	#DIV/0!	#DIV/0!	#DIV/0!
01:00		6	6	3											5	5	#DIV/0!	#DIV/0!	#DIV/0!
02:00		2	5	6											4	4	#DIV/0!	#DIV/0!	#DIV/0!
03:00		6	7	9											7	7	#DIV/0!	#DIV/0!	#DIV/0!
04:00		15	20	19											18	18	#DIV/0!	#DIV/0!	#DIV/0!
05:00		43	46	62											50	50	#DIV/0!	#DIV/0!	#DIV/0!
06:00		108	88	101											99	99	#DIV/0!	#DIV/0!	#DIV/0!
07:00		170	171	176											172	172	#DIV/0!	#DIV/0!	#DIV/0!
08:00		**225**	**222**	**212**											**220**	**220**	#DIV/0!	#DIV/0!	#DIV/0!
09:00		167	163	142											157	157	#DIV/0!	#DIV/0!	#DIV/0!
10:00		164	130	131											142	142	#DIV/0!	#DIV/0!	#DIV/0!
11:00		128	177	162											156	156	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		**182**	162	155											166	166	#DIV/0!	#DIV/0!	#DIV/0!
01:00		152	163	179											165	165	#DIV/0!	#DIV/0!	#DIV/0!
02:00		181	**188**	**187**											**185**	**185**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		230	**243**	**267**											**247**	**247**	#DIV/0!	#DIV/0!	#DIV/0!
04:00		**242**	224	204											223	223	#DIV/0!	#DIV/0!	#DIV/0!
05:00		174	183	201											186	186	#DIV/0!	#DIV/0!	#DIV/0!
06:00		155	144	140											146	146	#DIV/0!	#DIV/0!	#DIV/0!
07:00		103	85	92											93	93	#DIV/0!	#DIV/0!	#DIV/0!
08:00		83	88	78											83	83	#DIV/0!	#DIV/0!	#DIV/0!
09:00		51	49	65											55	55	#DIV/0!	#DIV/0!	#DIV/0!
10:00		49	39	43											44	44	#DIV/0!	#DIV/0!	#DIV/0!
11:00		28	24	35											29	29	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**2,677**	**2,639**	**2,682**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,666**	**2,666**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	100%	99%	101%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	100%	99%	101%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	225	222	212	0	0	0	0	0	0	0	0	0	0	220	220	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	182	188	187	0	0	0	0	0	0	0	0	0	0	185	185	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	242	243	267	0	0	0	0	0	0	0	0	0	0	247	247	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,666**
AADT Adjust:	**0.937**
AADT:	**2,498**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: ATR 1
Direction:

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Average Daily (7-Day) EB	WB	Total	Dir Dist	Average Weekday (Tue-Thur) EB	WB	Total	Dir Dist
12:00 AM	17	13	**30**	**57%**	17	13	**30**	**57%**
01:00	11	5	**16**	**69%**	11	5	**16**	**69%**
02:00	11	4	**15**	**71%**	11	4	**15**	**71%**
03:00	9	7	**17**	**56%**	9	7	**17**	**56%**
04:00	30	18	**48**	**63%**	30	18	**48**	**63%**
05:00	55	50	**106**	**52%**	55	50	**106**	**52%**
06:00	77	99	**176**	**44%**	77	99	**176**	**44%**
07:00	**155**	172	**327**	**47%**	**155**	172	**327**	**47%**
08:00	147	**220**	**366**	**40%**	147	**220**	**366**	**40%**
09:00	136	157	**293**	**46%**	136	157	**293**	**46%**
10:00	134	142	**276**	**49%**	134	142	**276**	**49%**
11:00	142	156	**297**	**48%**	142	156	**297**	**48%**
12:00 PM	166	166	**333**	**50%**	166	166	**333**	**50%**
01:00	165	165	**329**	**50%**	165	165	**329**	**50%**
02:00	**185**	**185**	**370**	**50%**	**185**	**185**	**370**	**50%**
03:00	225	**247**	**472**	**48%**	225	**247**	**472**	**48%**
04:00	**227**	223	**451**	**50%**	**227**	223	**451**	**50%**
05:00	193	186	**379**	**51%**	193	186	**379**	**51%**
06:00	139	146	**286**	**49%**	139	146	**286**	**49%**
07:00	105	93	**198**	**53%**	105	93	**198**	**53%**
08:00	95	83	**178**	**53%**	95	83	**178**	**53%**
09:00	70	55	**125**	**56%**	70	55	**125**	**56%**
10:00	53	44	**96**	**55%**	53	44	**96**	**55%**
11:00	26	29	**55**	**47%**	26	29	**55**	**47%**
Day Total	2,572	2,666	**5,238**	**49%**	2,572	2,666	**5,238**	**49%**
% Avg Daily	100%	100%	**100%**	-	100%	100%	**100%**	-
% Avg WkDay	100%	100%	**100%**	-	100%	100%	**100%**	-
AM Peak Volume	155	220	**366**	-	155	220	**366**	-
MD Peak Volume	185	185	**370**	-	185	185	**370**	-
PM Peak Volume	227	247	**472**	-	227	247	**472**	-

TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

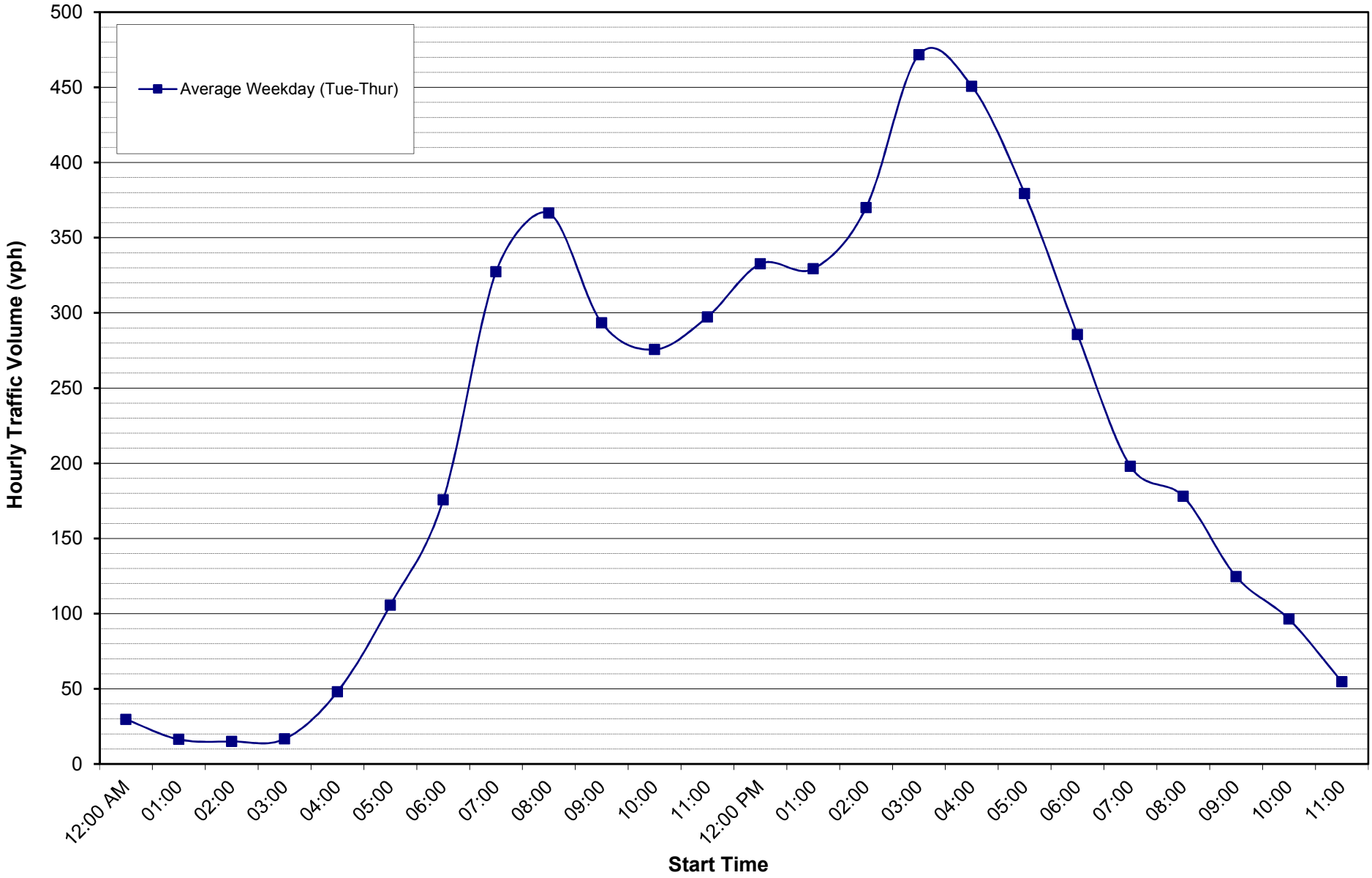
Table 355, Page 39 – January 2017

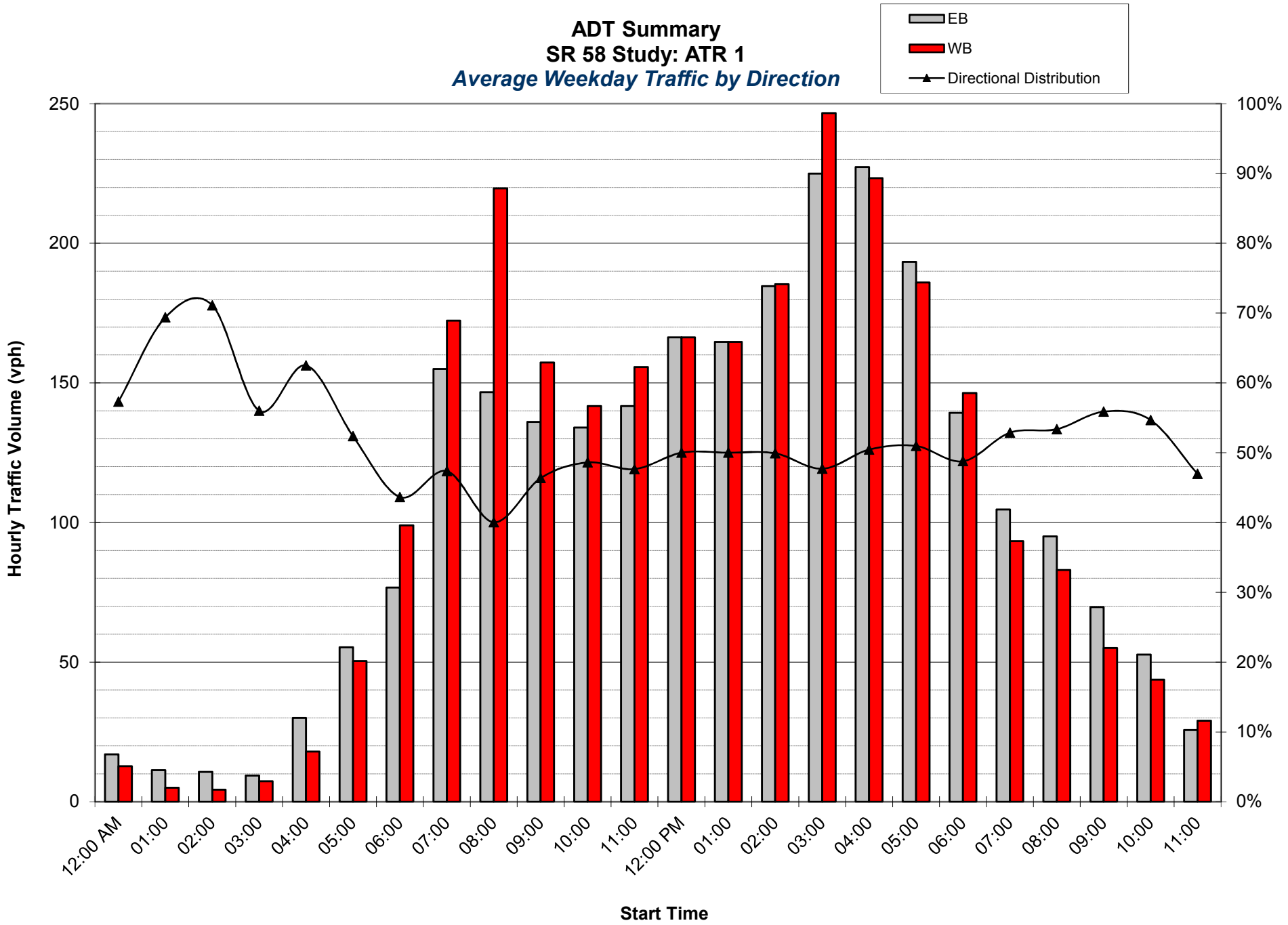
January 2017										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.038	1.227	1.087	1.129	1.053	1.203	1.209	1.168	1.106	1.490
Tuesday	0.993	1.213	0.966	1.142	0.990	1.207	1.162	1.166	1.089	1.560
Wednesday	0.953	1.159	0.920	1.049	0.910	1.070	1.063	1.038	0.963	1.507
Thursday	0.936	1.112	0.915	1.012	0.911	1.054	1.037	0.979	0.942	1.422
Friday	0.917	1.073	0.900	0.981	0.909	1.030	0.993	0.944	0.966	1.333
Saturday	1.156	1.356	1.197	1.287	1.144	1.324	1.269	1.206	1.284	1.335
Sunday	1.329	1.425	1.497	1.398	1.397	1.542	1.474	1.444	1.410	1.578
DAY OF MONTH	1.046	1.224	1.069	1.143	1.045	1.204	1.172	1.135	1.108	1.461

Avg Wkdy ADT:	**5,238**
AADT Adjust:	**0.937**
AADT:	**4,908**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

ADT Summary
SR 58 Study: ATR 1
Two-Way Hourly Volumes by Day




ADT Summary
SR 58 Study: ATR 1
Average Weekday Traffic by Direction
EB
WB
Directional Distribution
Hourly Traffic Volume (vph)
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12:00 AM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00 PM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
Start Time

Automatic Traffic Recorder (ATR) Data Summary

Project: **Project:** *SR 58 Study*
Location: **Location:** *ATR 2*
Direction: **Direction:** *Eastbound*

Work Order: *18-055A*
ADT Site Code: *2*
Compiled By: *LNS*
Reviewed By:

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		6	9	12											9	9	#DIV/0!	#DIV/0!	#DIV/0!
01:00		10	2	5											6	6	#DIV/0!	#DIV/0!	#DIV/0!
02:00		8	9	10											9	9	#DIV/0!	#DIV/0!	#DIV/0!
03:00		18	22	17											19	19	#DIV/0!	#DIV/0!	#DIV/0!
04:00		48	40	42											43	43	#DIV/0!	#DIV/0!	#DIV/0!
05:00		110	109	115											111	111	#DIV/0!	#DIV/0!	#DIV/0!
06:00		142	142	138											141	141	#DIV/0!	#DIV/0!	#DIV/0!
07:00		189	175	192											185	185	#DIV/0!	#DIV/0!	#DIV/0!
08:00		**216**	**205**	**193**											**205**	**205**	#DIV/0!	#DIV/0!	#DIV/0!
09:00		157	140	145											147	147	#DIV/0!	#DIV/0!	#DIV/0!
10:00		181	166	194											180	180	#DIV/0!	#DIV/0!	#DIV/0!
11:00		205	188	231											208	208	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		187	170	185											181	181	#DIV/0!	#DIV/0!	#DIV/0!
01:00		239	206	241											229	229	#DIV/0!	#DIV/0!	#DIV/0!
02:00		**255**	**218**	**251**											**241**	**241**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		232	208	228											223	223	#DIV/0!	#DIV/0!	#DIV/0!
04:00		**245**	**225**	**239**											**236**	**236**	#DIV/0!	#DIV/0!	#DIV/0!
05:00		178	185	188											184	184	#DIV/0!	#DIV/0!	#DIV/0!
06:00		123	130	130											128	128	#DIV/0!	#DIV/0!	#DIV/0!
07:00		89	94	63											82	82	#DIV/0!	#DIV/0!	#DIV/0!
08:00		68	67	49											61	61	#DIV/0!	#DIV/0!	#DIV/0!
09:00		67	59	63											63	63	#DIV/0!	#DIV/0!	#DIV/0!
10:00		24	29	33											29	29	#DIV/0!	#DIV/0!	#DIV/0!
11:00		11	15	21											16	16	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**3,008**	**2,813**	**2,985**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,935**	**2,935**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
									87										
% Avg Daily	0%	102%	96%	102%	0%	0%	0%	0%	8100%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	102%	96%	102%	0%	0%	0%	0%	7100%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	216	205	193	0	0	0	0	149	0	0	0	0	0	205	205	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	255	218	251	0	0	0	0	364	0	0	0	0	0	241	241	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	245	225	239	0	0	0	0	738	0	0	0	0	0	236	236	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,935**	**AADT Adjust:**	**0.937**	**AADT:**	**2,750**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: **ATR 2**
Direction: *Westbound*

Work Order: *18-055A*
ADT Site Code: *2*
Compiled By: *LNS*
Reviewed By:

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		16	9	12											12	12	#DIV/0!	#DIV/0!	#DIV/0!
01:00		1	8	5											5	5	#DIV/0!	#DIV/0!	#DIV/0!
02:00		6	11	9											9	9	#DIV/0!	#DIV/0!	#DIV/0!
03:00		5	8	14											9	9	#DIV/0!	#DIV/0!	#DIV/0!
04:00		20	10	12											14	14	#DIV/0!	#DIV/0!	#DIV/0!
05:00		35	30	49											38	38	#DIV/0!	#DIV/0!	#DIV/0!
06:00		91	90	76											86	86	#DIV/0!	#DIV/0!	#DIV/0!
07:00		**186**	**169**	159											**171**	**171**	#DIV/0!	#DIV/0!	#DIV/0!
08:00		156	152	**160**											156	156	#DIV/0!	#DIV/0!	#DIV/0!
09:00		155	131	149											145	145	#DIV/0!	#DIV/0!	#DIV/0!
10:00		176	138	180											165	165	#DIV/0!	#DIV/0!	#DIV/0!
11:00		207	204	210											207	207	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		202	191	208											200	200	#DIV/0!	#DIV/0!	#DIV/0!
01:00		198	189	208											198	198	#DIV/0!	#DIV/0!	#DIV/0!
02:00		**274**	**242**	**270**											**262**	**262**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		286	262	**324**											291	291	#DIV/0!	#DIV/0!	#DIV/0!
04:00		**290**	**315**	301											**302**	**302**	#DIV/0!	#DIV/0!	#DIV/0!
05:00		239	247	261											249	249	#DIV/0!	#DIV/0!	#DIV/0!
06:00		159	152	140											150	150	#DIV/0!	#DIV/0!	#DIV/0!
07:00		89	107	86											94	94	#DIV/0!	#DIV/0!	#DIV/0!
08:00		77	71	74											74	74	#DIV/0!	#DIV/0!	#DIV/0!
09:00		71	50	53											58	58	#DIV/0!	#DIV/0!	#DIV/0!
10:00		54	52	61											56	56	#DIV/0!	#DIV/0!	#DIV/0!
11:00		28	23	28											26	26	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**3,021**	**2,861**	**3,049**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,977**	**2,977**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	101%	96%	102%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	101%	96%	102%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	186	169	160	0	0	0	0	0	0	0	0	0	0	171	171	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	274	242	270	0	0	0	0	0	0	0	0	0	0	262	262	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	290	315	324	0	0	0	0	0	0	0	0	0	0	302	302	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,977**
AADT Adjust:	**0.937**
AADT:	**2,789**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: ATR 2
Direction:

Work Order: *18-055A*
ADT Site Code: *2*
Compiled By: *LNS*
Reviewed By:

Start Time	Average Daily (7-Day) EB	WB	Total	Dir Dist	Average Weekday (Tue-Thur) EB	WB	Total	Dir Dist
12:00 AM	9	12	**21**	**42%**	9	12	**21**	**42%**
01:00	6	5	**10**	**55%**	6	5	**10**	**55%**
02:00	9	9	**18**	**51%**	9	9	**18**	**51%**
03:00	19	9	**28**	**68%**	19	9	**28**	**68%**
04:00	43	14	**57**	**76%**	43	14	**57**	**76%**
05:00	111	38	**149**	**75%**	111	38	**149**	**75%**
06:00	141	86	**226**	**62%**	141	86	**226**	**62%**
07:00	185	**171**	**357**	**52%**	185	**171**	**357**	**52%**
08:00	**205**	156	**361**	**57%**	**205**	156	**361**	**57%**
09:00	147	145	**292**	**50%**	147	145	**292**	**50%**
10:00	180	165	**345**	**52%**	180	165	**345**	**52%**
11:00	208	207	**415**	**50%**	208	207	**415**	**50%**
12:00 PM	181	200	**381**	**47%**	181	200	**381**	**47%**
01:00	229	198	**427**	**54%**	229	198	**427**	**54%**
02:00	**241**	**262**	**503**	**48%**	**241**	**262**	**503**	**48%**
03:00	223	291	**513**	**43%**	223	291	**513**	**43%**
04:00	**236**	**302**	**538**	**44%**	**236**	**302**	**538**	**44%**
05:00	184	249	**433**	**42%**	184	249	**433**	**42%**
06:00	128	150	**278**	**46%**	128	150	**278**	**46%**
07:00	82	94	**176**	**47%**	82	94	**176**	**47%**
08:00	61	74	**135**	**45%**	61	74	**135**	**45%**
09:00	63	58	**121**	**52%**	63	58	**121**	**52%**
10:00	29	56	**84**	**34%**	29	56	**84**	**34%**
11:00	16	26	**42**	**37%**	16	26	**42**	**37%**
Day Total	2,935	2,977	**5,912**	**50%**	2,935	2,977	**5,912**	**50%**
% Avg Daily	100%	100%	**100%**	-	100%	100%	**100%**	-
% Avg WkDay	100%	100%	**100%**	-	100%	100%	**100%**	-
AM Peak Volume	205	171	**361**	-	205	171	**361**	-
MD Peak Volume	241	262	**503**	-	241	262	**503**	-
PM Peak Volume	236	302	**538**	-	236	302	**538**	-

TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

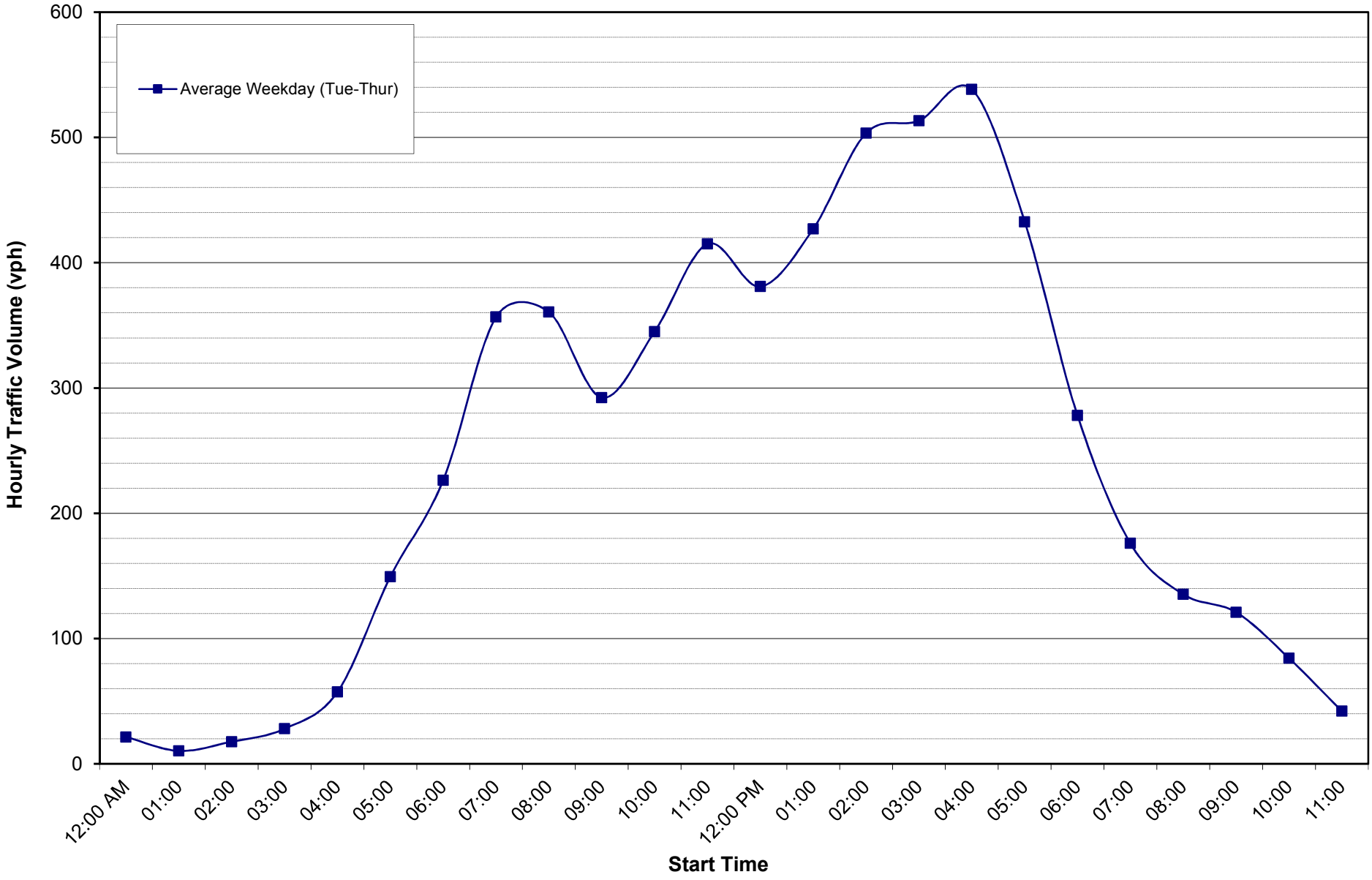
Table 355, Page 39 – January 2017

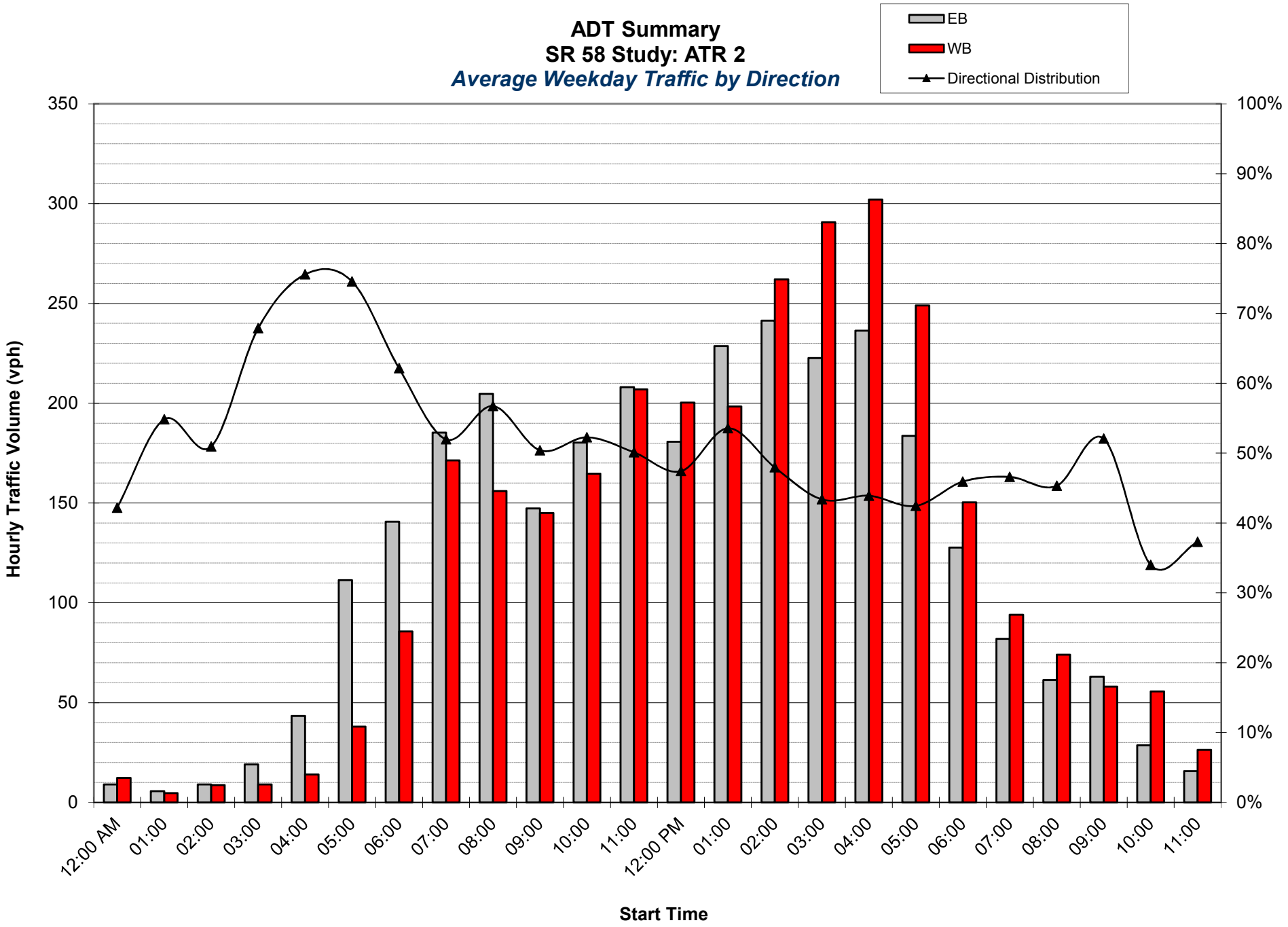
January 2017										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.038	1.227	1.087	1.129	1.053	1.203	1.209	1.168	1.106	1.490
Tuesday	0.993	1.213	0.966	1.142	0.990	1.207	1.162	1.166	1.089	1.560
Wednesday	0.953	1.159	0.920	1.049	0.910	1.070	1.063	1.038	0.963	1.507
Thursday	0.936	1.112	0.915	1.012	0.911	1.054	1.037	0.979	0.942	1.422
Friday	0.917	1.073	0.900	0.981	0.909	1.030	0.993	0.944	0.966	1.333
Saturday	1.156	1.356	1.197	1.287	1.144	1.324	1.269	1.206	1.284	1.335
Sunday	1.329	1.425	1.497	1.398	1.397	1.542	1.474	1.444	1.410	1.578
DAY OF MONTH	1.046	1.224	1.069	1.143	1.045	1.204	1.172	1.135	1.108	1.461

Avg Wkdy ADT:	**5,912**	**AADT Adjust:**	**0.937**	**AADT:**	**5,540**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

ADT Summary
SR 58 Study: ATR 2
Two-Way Hourly Volumes by Day




ADT Summary
SR 58 Study: ATR 2
Average Weekday Traffic by Direction
EB
WB
Directional Distribution
Hourly Traffic Volume (vph)
350
300
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12:00 AM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00 PM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
Start Time

Automatic Traffic Recorder (ATR) Data Summary

Project: **Project:** *SR 58 Study*
Location: **Location:** *ATR 3*
Direction: **Direction:** *Eastbound*

Work Order: *18-055A*
ADT Site Code: *3*
Compiled By: *LNS*
Reviewed By:

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		6	8	9											8	8	#DIV/0!	#DIV/0!	#DIV/0!
01:00		7	2	8											6	6	#DIV/0!	#DIV/0!	#DIV/0!
02:00		10	7	12											10	10	#DIV/0!	#DIV/0!	#DIV/0!
03:00		9	10	10											10	10	#DIV/0!	#DIV/0!	#DIV/0!
04:00		42	38	42											41	41	#DIV/0!	#DIV/0!	#DIV/0!
05:00		93	87	85											88	88	#DIV/0!	#DIV/0!	#DIV/0!
06:00		109	101	102											104	104	#DIV/0!	#DIV/0!	#DIV/0!
07:00		**193**	**175**	**181**											**183**	**183**	#DIV/0!	#DIV/0!	#DIV/0!
08:00		152	155	140											149	149	#DIV/0!	#DIV/0!	#DIV/0!
09:00		93	108	108											103	103	#DIV/0!	#DIV/0!	#DIV/0!
10:00		114	108	98											107	107	#DIV/0!	#DIV/0!	#DIV/0!
11:00		109	98	109											105	105	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		111	116	118											115	115	#DIV/0!	#DIV/0!	#DIV/0!
01:00		145	141	130											139	139	#DIV/0!	#DIV/0!	#DIV/0!
02:00		**153**	**151**	**132**											**145**	**145**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		158	**202**	176											**179**	**179**	#DIV/0!	#DIV/0!	#DIV/0!
04:00		**173**	179	143											165	165	#DIV/0!	#DIV/0!	#DIV/0!
05:00		149	115	**181**											148	148	#DIV/0!	#DIV/0!	#DIV/0!
06:00		72	94	80											82	82	#DIV/0!	#DIV/0!	#DIV/0!
07:00		59	69	84											71	71	#DIV/0!	#DIV/0!	#DIV/0!
08:00		42	60	59											54	54	#DIV/0!	#DIV/0!	#DIV/0!
09:00		51	36	46											44	44	#DIV/0!	#DIV/0!	#DIV/0!
10:00		24	30	30											28	28	#DIV/0!	#DIV/0!	#DIV/0!
11:00		14	21	21											19	19	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**2,088**	**2,111**	**2,104**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,101**	**2,101**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
									87										
% Avg Daily	0%	99%	100%	100%	0%	0%	0%	0%	8100%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	99%	100%	100%	0%	0%	0%	0%	7100%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	193	175	181	0	0	0	0	149	0	0	0	0	0	183	183	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	153	151	132	0	0	0	0	364	0	0	0	0	0	145	145	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	173	202	181	0	0	0	0	738	0	0	0	0	0	179	179	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,101**	**AADT Adjust:**	**0.937**	**AADT:**	**1,969**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: **ATR 3**
Direction: *Westbound*

Work Order: *18-055A*
ADT Site Code: *3*
Compiled By: *LNS*
Reviewed By:

Start Time	Mon	Tue 2/26/2019	Wed 2/27/2019	Thu 2/28/2019	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM		9	7	11											9	9	#DIV/0!	#DIV/0!	#DIV/0!
01:00		1	5	5											4	4	#DIV/0!	#DIV/0!	#DIV/0!
02:00		2	3	5											3	3	#DIV/0!	#DIV/0!	#DIV/0!
03:00		6	8	12											9	9	#DIV/0!	#DIV/0!	#DIV/0!
04:00		28	20	42											30	30	#DIV/0!	#DIV/0!	#DIV/0!
05:00		49	41	55											48	48	#DIV/0!	#DIV/0!	#DIV/0!
06:00		112	101	105											106	106	#DIV/0!	#DIV/0!	#DIV/0!
07:00		**163**	**161**	**165**											**163**	**163**	#DIV/0!	#DIV/0!	#DIV/0!
08:00		129	139	116											128	128	#DIV/0!	#DIV/0!	#DIV/0!
09:00		104	104	86											98	98	#DIV/0!	#DIV/0!	#DIV/0!
10:00		127	92	100											106	106	#DIV/0!	#DIV/0!	#DIV/0!
11:00		91	126	106											108	108	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM		136	106	107											116	116	#DIV/0!	#DIV/0!	#DIV/0!
01:00		95	122	121											113	113	#DIV/0!	#DIV/0!	#DIV/0!
02:00		**147**	**149**	**125**											**140**	**140**	#DIV/0!	#DIV/0!	#DIV/0!
03:00		149	209	**208**											189	189	#DIV/0!	#DIV/0!	#DIV/0!
04:00		**231**	**233**	207											**224**	**224**	#DIV/0!	#DIV/0!	#DIV/0!
05:00		173	169	182											175	175	#DIV/0!	#DIV/0!	#DIV/0!
06:00		112	99	120											110	110	#DIV/0!	#DIV/0!	#DIV/0!
07:00		53	67	57											59	59	#DIV/0!	#DIV/0!	#DIV/0!
08:00		70	59	59											63	63	#DIV/0!	#DIV/0!	#DIV/0!
09:00		50	45	45											47	47	#DIV/0!	#DIV/0!	#DIV/0!
10:00		44	41	46											44	44	#DIV/0!	#DIV/0!	#DIV/0!
11:00		25	20	25											23	23	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**2,106**	**2,126**	**2,110**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,114**	**2,114**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	100%	101%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	100%	101%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	163	161	165	0	0	0	0	0	0	0	0	0	0	163	163	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	147	149	125	0	0	0	0	0	0	0	0	0	0	140	140	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	231	233	208	0	0	0	0	0	0	0	0	0	0	224	224	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,114**
AADT Adjust:	**0.937**
AADT:	**1,981**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: ATR 3
Direction:

Work Order: *18-055A*
ADT Site Code: *3*
Compiled By: *LNS*
Reviewed By:

Start Time	Average Daily (7-Day)				Average Weekday (Tue-Thur)			
	EB	WB	Total	Dir Dist	EB	WB	Total	Dir Dist
12:00 AM	8	9	**17**	**46%**	8	9	**17**	**46%**
01:00	6	4	**9**	**61%**	6	4	**9**	**61%**
02:00	10	3	**13**	**74%**	10	3	**13**	**74%**
03:00	10	9	**18**	**53%**	10	9	**18**	**53%**
04:00	41	30	**71**	**58%**	41	30	**71**	**58%**
05:00	88	48	**137**	**65%**	88	48	**137**	**65%**
06:00	104	106	**210**	**50%**	104	106	**210**	**50%**
07:00	**183**	**163**	**346**	**53%**	**183**	**163**	**346**	**53%**
08:00	149	128	**277**	**54%**	149	128	**277**	**54%**
09:00	103	98	**201**	**51%**	103	98	**201**	**51%**
10:00	107	106	**213**	**50%**	107	106	**213**	**50%**
11:00	105	108	**213**	**49%**	105	108	**213**	**49%**
12:00 PM	115	116	**231**	**50%**	115	116	**231**	**50%**
01:00	139	113	**251**	**55%**	139	113	**251**	**55%**
02:00	**145**	**140**	**286**	**51%**	**145**	**140**	**286**	**51%**
03:00	**179**	189	**367**	**49%**	**179**	189	**367**	**49%**
04:00	165	**224**	**389**	**42%**	165	**224**	**389**	**42%**
05:00	148	175	**323**	**46%**	148	175	**323**	**46%**
06:00	82	110	**192**	**43%**	82	110	**192**	**43%**
07:00	71	59	**130**	**54%**	71	59	**130**	**54%**
08:00	54	63	**116**	**46%**	54	63	**116**	**46%**
09:00	44	47	**91**	**49%**	44	47	**91**	**49%**
10:00	28	44	**72**	**39%**	28	44	**72**	**39%**
11:00	19	23	**42**	**44%**	19	23	**42**	**44%**
Day Total	2,101	2,114	**4,215**	**50%**	2,101	2,114	**4,215**	**50%**
% Avg Daily	100%	100%	**100%**	-	100%	100%	**100%**	-
% Avg WkDay	100%	100%	**100%**	-	100%	100%	**100%**	-
AM Peak Volume	183	163	**346**	-	183	163	**346**	-
MD Peak Volume	145	140	**286**	-	145	140	**286**	-
PM Peak Volume	179	224	**389**	-	179	224	**389**	-

TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

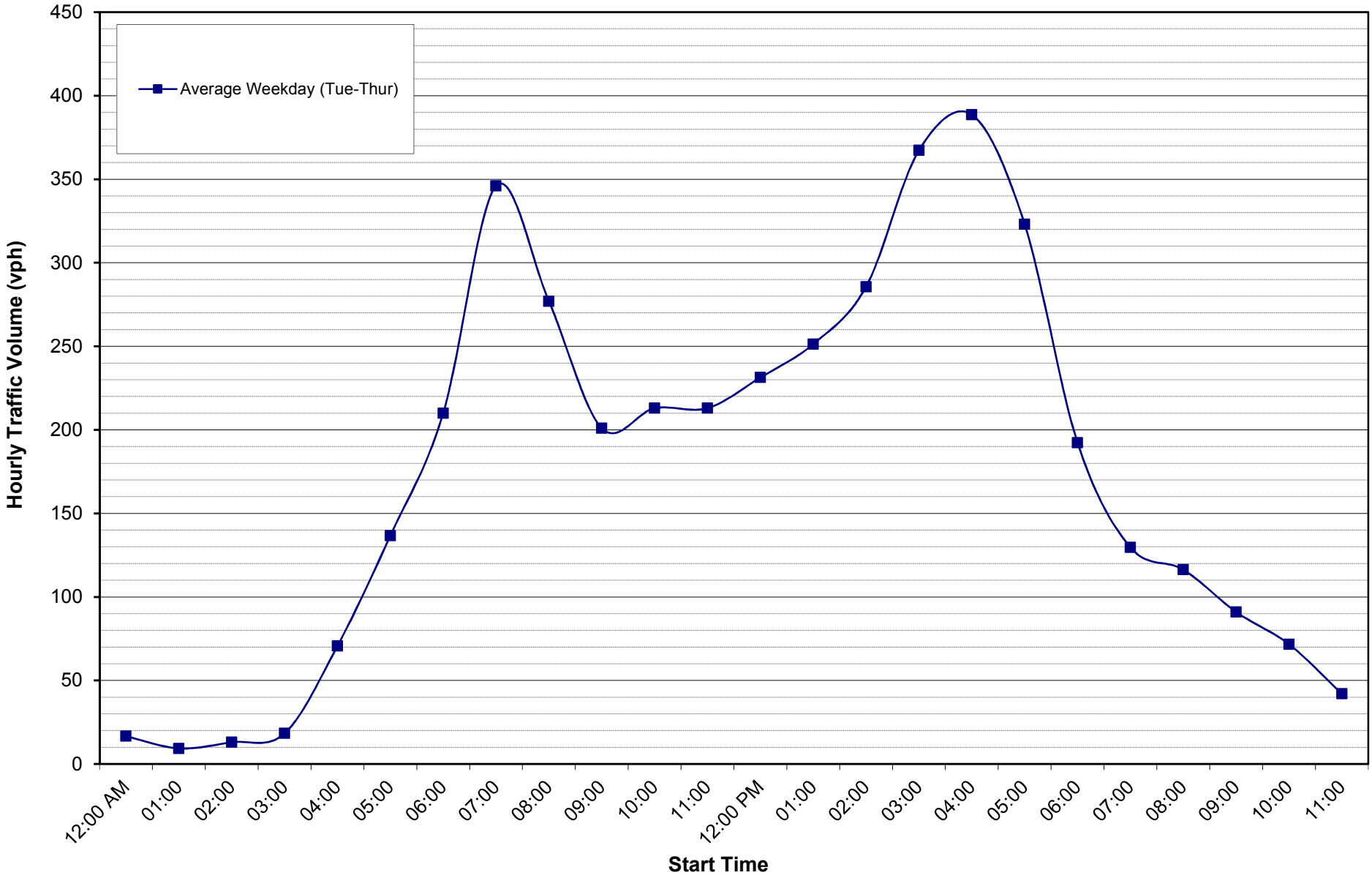
Table 355, Page 39 – January 2017

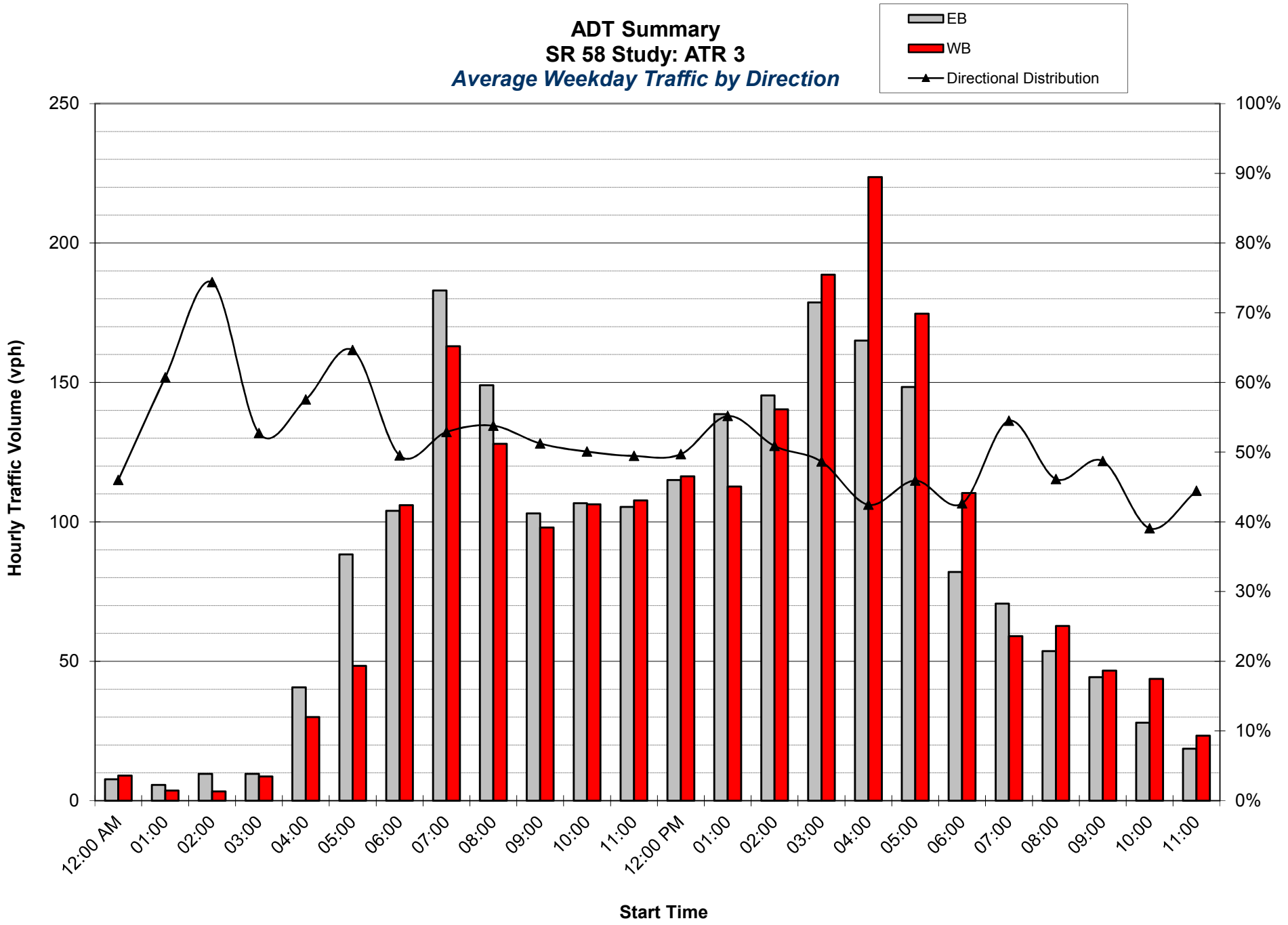
January 2017										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.038	1.227	1.087	1.129	1.053	1.203	1.209	1.168	1.106	1.490
Tuesday	0.993	1.213	0.966	1.142	0.990	1.207	1.162	1.166	1.089	1.560
Wednesday	0.953	1.159	0.920	1.049	0.910	1.070	1.063	1.038	0.963	1.507
Thursday	0.936	1.112	0.915	1.012	0.911	1.054	1.037	0.979	0.942	1.422
Friday	0.917	1.073	0.900	0.981	0.909	1.030	0.993	0.944	0.966	1.333
Saturday	1.156	1.356	1.197	1.287	1.144	1.324	1.269	1.206	1.284	1.335
Sunday	1.329	1.425	1.497	1.398	1.397	1.542	1.474	1.444	1.410	1.578
DAY OF MONTH	1.046	1.224	1.069	1.143	1.045	1.204	1.172	1.135	1.108	1.461

Avg Wkdy ADT:	**4,215**	**AADT Adjust:**	**0.937**	**AADT:**	**3,949**

NOTES: *2017 January AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

ADT Summary
SR 58 Study: ATR 3
Two-Way Hourly Volumes by Day



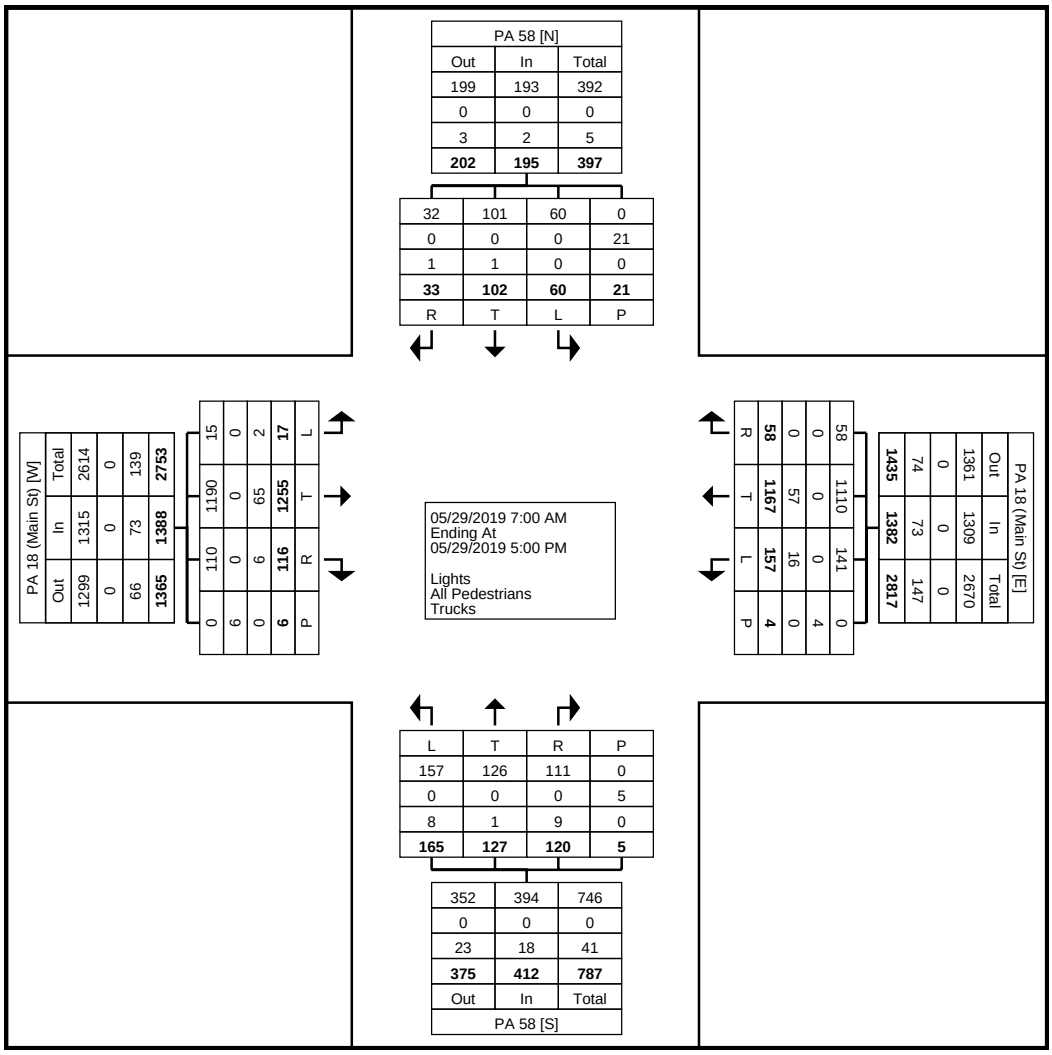

ADT Summary
SR 58 Study: ATR 3
Average Weekday Traffic by Direction
EB
WB
Directional Distribution
Hourly Traffic Volume (vph)
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12:00 AM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00 PM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
Start Time

Count Name: PA 58 @ PA 18 (Main St)
Site Code: TMC 1
Start Date: 05/29/2019
Page No: 1

Turning Movement Data

Start Time	PA 18 (Main St) Eastbound					PA 18 (Main St) Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	54	11	0	66	9	49	0	0	58	1	4	6	0	11	0	0	1	0	1	136
7:15 AM	0	71	6	1	77	10	75	3	0	88	13	3	8	0	24	3	2	0	1	5	194
7:30 AM	0	62	1	0	63	10	69	3	0	82	7	8	6	0	21	1	6	2	2	9	175
7:45 AM	2	88	7	0	97	10	50	3	0	63	9	13	4	0	26	0	9	1	1	10	196
Hourly Total	3	275	25	1	303	39	243	9	0	291	30	28	24	0	82	4	17	4	4	25	701
8:00 AM	1	57	3	0	61	6	52	4	0	62	10	5	4	0	19	1	2	0	0	3	145
8:15 AM	1	71	6	1	78	9	55	2	0	66	9	9	4	0	22	1	6	1	1	8	174
8:30 AM	2	68	4	0	74	5	45	5	0	55	10	10	6	1	26	4	4	0	1	8	163
8:45 AM	1	82	5	0	88	8	58	4	0	70	9	6	6	0	21	0	2	1	3	3	182
Hourly Total	5	278	18	1	301	28	210	15	0	253	38	30	20	1	88	6	14	2	5	22	664
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	1	88	18	1	107	12	86	1	1	99	16	7	7	1	30	6	5	7	3	18	254
3:15 PM	1	85	13	0	99	7	70	2	3	79	12	13	12	1	37	5	5	2	1	12	227
3:30 PM	3	97	6	1	106	14	95	6	0	115	10	4	12	0	26	5	12	2	2	19	266
3:45 PM	0	95	5	1	100	10	82	5	0	97	14	12	12	0	38	7	14	2	2	23	258
Hourly Total	5	365	42	3	412	43	333	14	4	390	52	36	43	2	131	23	36	13	8	72	1005
4:00 PM	0	86	5	0	91	16	84	5	0	105	10	14	12	0	36	8	11	4	0	23	255
4:15 PM	1	83	10	0	94	9	92	7	0	108	16	9	6	2	31	9	8	5	1	22	255
4:30 PM	2	85	10	0	97	12	109	5	0	126	10	6	5	0	21	7	6	3	2	16	260
4:45 PM	1	83	6	1	90	10	96	3	0	109	9	4	10	0	23	3	10	2	1	15	237
Hourly Total	4	337	31	1	372	47	381	20	0	448	45	33	33	2	111	27	35	14	4	76	1007
Grand Total	17	1255	116	6	1388	157	1167	58	4	1382	165	127	120	5	412	60	102	33	21	195	3377
Approach %	1.2	90.4	8.4	-	-	11.4	84.4	4.2	-	-	40.0	30.8	29.1	-	-	30.8	52.3	16.9	-	-	-
Total %	0.5	37.2	3.4	-	41.1	4.6	34.6	1.7	-	40.9	4.9	3.8	3.6	-	12.2	1.8	3.0	1.0	-	5.8	-
Lights	15	1190	110	-	1315	141	1110	58	-	1309	157	126	111	-	394	60	101	32	-	193	3211
% Lights	88.2	94.8	94.8	-	94.7	89.8	95.1	100.0	-	94.7	95.2	99.2	92.5	-	95.6	100.0	99.0	97.0	-	99.0	95.1
All Pedestrians	-	-	-	6	-	-	-	-	4	-	-	-	-	5	-	-	-	-	21	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-
Trucks	2	65	6	-	73	16	57	0	-	73	8	1	9	-	18	0	1	1	-	2	166
% Trucks	11.8	5.2	5.2	-	5.3	10.2	4.9	0.0	-	5.3	4.8	0.8	7.5	-	4.4	0.0	1.0	3.0	-	1.0	4.9

Count Name: PA 58 @ PA 18 (Main St)
Site Code: TMC 1
Start Date: 05/29/2019
Page No: 2

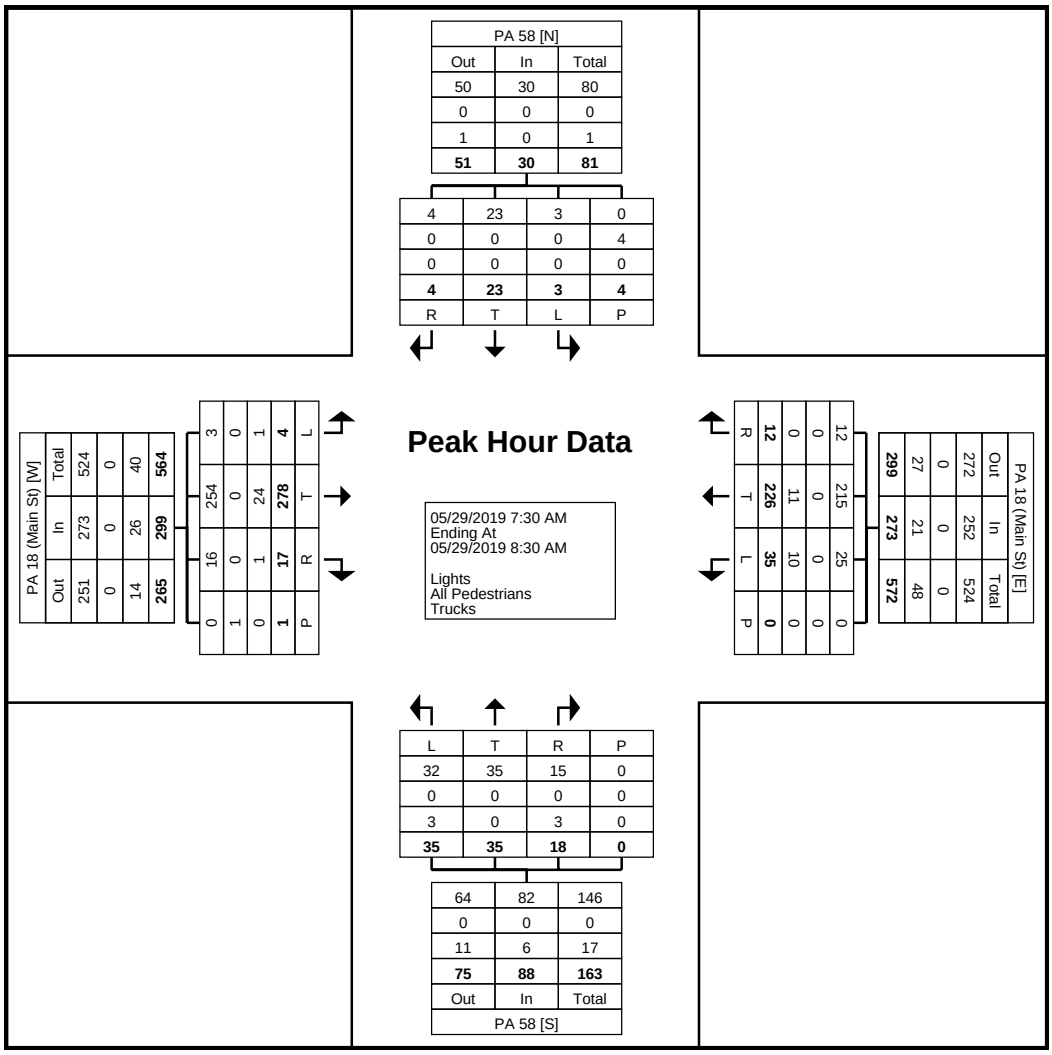


Turning Movement Data Plot

Count Name: PA 58 @ PA 18 (Main St)
Site Code: TMC 1
Start Date: 05/29/2019
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	PA 18 (Main St) Eastbound					PA 18 (Main St) Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	0	62	1	0	63	10	69	3	0	82	7	8	6	0	21	1	6	2	2	9	175
7:45 AM	2	88	7	0	97	10	50	3	0	63	9	13	4	0	26	0	9	1	1	10	196
8:00 AM	1	57	3	0	61	6	52	4	0	62	10	5	4	0	19	1	2	0	0	3	145
8:15 AM	1	71	6	1	78	9	55	2	0	66	9	9	4	0	22	1	6	1	1	8	174
Total	4	278	17	1	299	35	226	12	0	273	35	35	18	0	88	3	23	4	4	30	690
Approach %	1.3	93.0	5.7	-	-	12.8	82.8	4.4	-	-	39.8	39.8	20.5	-	-	10.0	76.7	13.3	-	-	-
Total %	0.6	40.3	2.5	-	43.3	5.1	32.8	1.7	-	39.6	5.1	5.1	2.6	-	12.8	0.4	3.3	0.6	-	4.3	-
PHF	0.500	0.790	0.607	-	0.771	0.875	0.819	0.750	-	0.832	0.875	0.673	0.750	-	0.846	0.750	0.639	0.500	-	0.750	0.880
Lights	3	254	16	-	273	25	215	12	-	252	32	35	15	-	82	3	23	4	-	30	637
% Lights	75.0	91.4	94.1	-	91.3	71.4	95.1	100.0	-	92.3	91.4	100.0	83.3	-	93.2	100.0	100.0	100.0	-	100.0	92.3
All Pedestrians	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	4	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-
Trucks	1	24	1	-	26	10	11	0	-	21	3	0	3	-	6	0	0	0	-	0	53
% Trucks	25.0	8.6	5.9	-	8.7	28.6	4.9	0.0	-	7.7	8.6	0.0	16.7	-	6.8	0.0	0.0	0.0	-	0.0	7.7

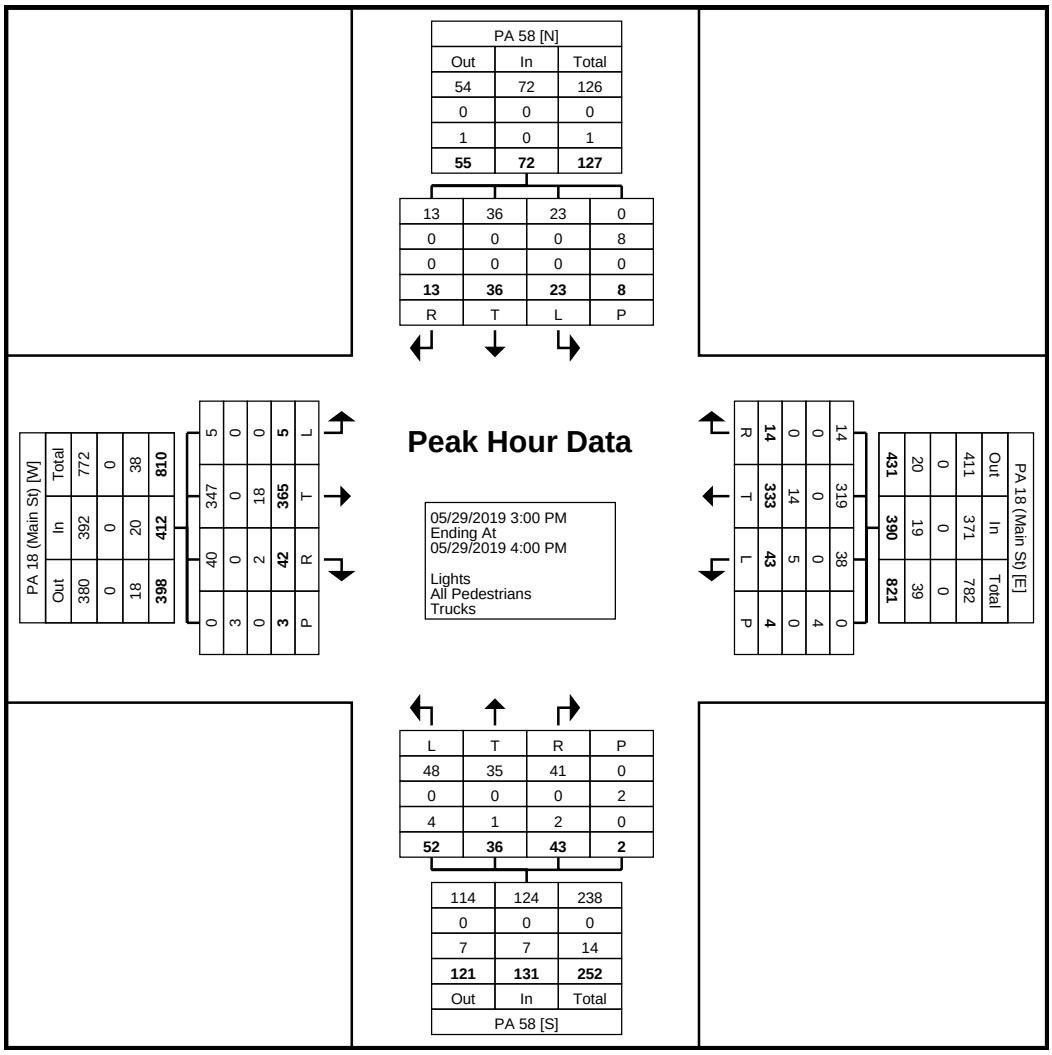


Turning Movement Peak Hour Data Plot (7:30 AM)

Count Name: PA 58 @ PA 18 (Main St)
Site Code: TMC 1
Start Date: 05/29/2019
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

Start Time	PA 18 (Main St) Eastbound					PA 18 (Main St) Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	1	88	18	1	107	12	86	1	1	99	16	7	7	1	30	6	5	7	3	18	254
3:15 PM	1	85	13	0	99	7	70	2	3	79	12	13	12	1	37	5	5	2	1	12	227
3:30 PM	3	97	6	1	106	14	95	6	0	115	10	4	12	0	26	5	12	2	2	19	266
3:45 PM	0	95	5	1	100	10	82	5	0	97	14	12	12	0	38	7	14	2	2	23	258
Total	5	365	42	3	412	43	333	14	4	390	52	36	43	2	131	23	36	13	8	72	1005
Approach %	1.2	88.6	10.2	-	-	11.0	85.4	3.6	-	-	39.7	27.5	32.8	-	-	31.9	50.0	18.1	-	-	-
Total %	0.5	36.3	4.2	-	41.0	4.3	33.1	1.4	-	38.8	5.2	3.6	4.3	-	13.0	2.3	3.6	1.3	-	7.2	-
PHF	0.417	0.941	0.583	-	0.963	0.768	0.876	0.583	-	0.848	0.813	0.692	0.896	-	0.862	0.821	0.643	0.464	-	0.783	0.945
Lights	5	347	40	-	392	38	319	14	-	371	48	35	41	-	124	23	36	13	-	72	959
% Lights	100.0	95.1	95.2	-	95.1	88.4	95.8	100.0	-	95.1	92.3	97.2	95.3	-	94.7	100.0	100.0	100.0	-	100.0	95.4
All Pedestrians	-	-	-	3	-	-	-	-	4	-	-	-	-	2	-	-	-	-	8	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-
Trucks	0	18	2	-	20	5	14	0	-	19	4	1	2	-	7	0	0	0	-	0	46
% Trucks	0.0	4.9	4.8	-	4.9	11.6	4.2	0.0	-	4.9	7.7	2.8	4.7	-	5.3	0.0	0.0	0.0	-	0.0	4.6



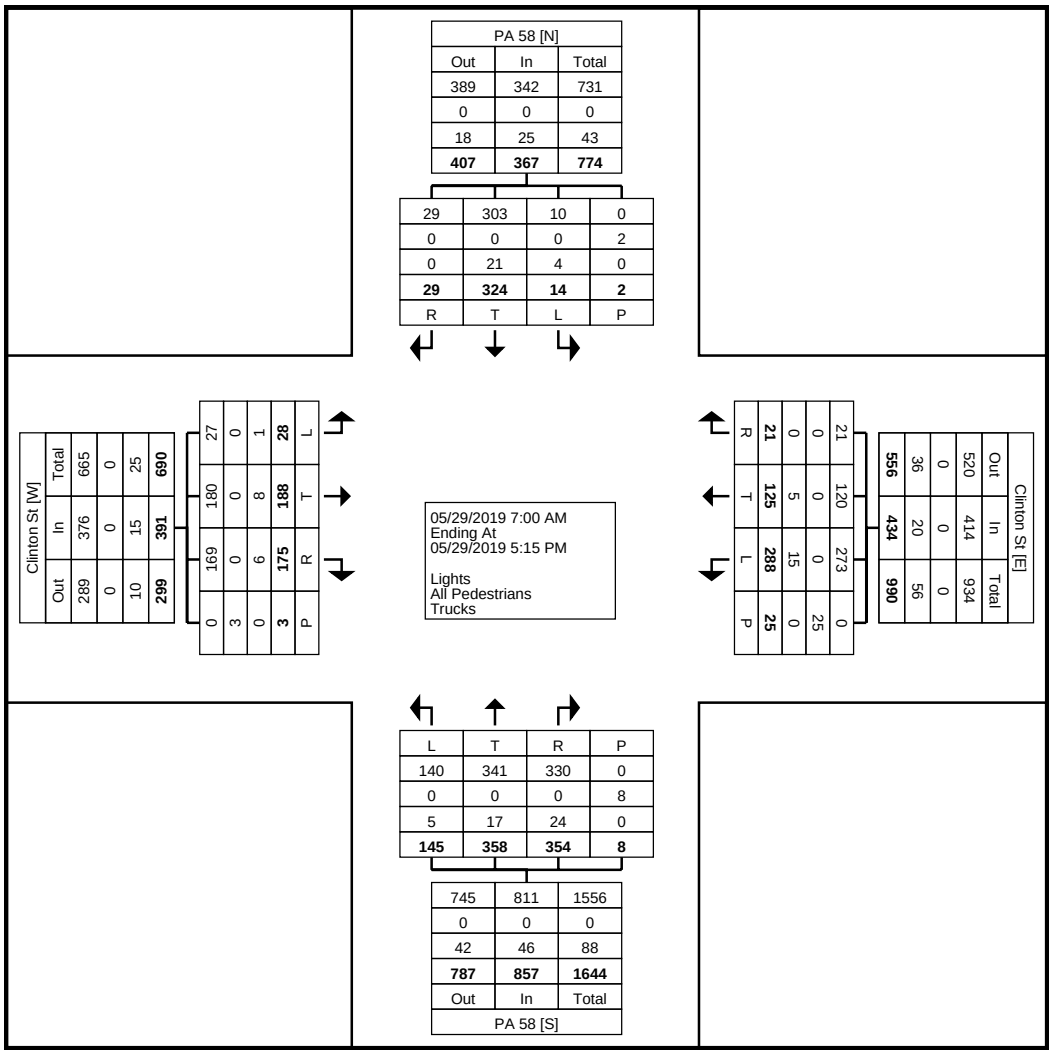
Turning Movement Peak Hour Data Plot (3:00 PM)

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 1

Turning Movement Data

Start Time	Clinton St Eastbound					Clinton St Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	1	4	0	6	6	5	0	0	11	6	12	5	0	23	0	20	0	0	20	60
7:15 AM	1	6	3	0	10	14	5	0	0	19	8	21	23	0	52	0	14	1	0	15	96
7:30 AM	1	5	6	0	12	17	7	0	4	24	11	20	13	0	44	0	16	2	0	18	98
7:45 AM	1	1	18	0	20	20	13	0	0	33	10	26	22	2	58	0	26	0	0	26	137
Hourly Total	4	13	31	0	48	57	30	0	4	87	35	79	63	2	177	0	76	3	0	79	391
8:00 AM	0	4	2	1	6	16	6	0	0	22	6	20	14	1	40	2	8	3	0	13	81
8:15 AM	0	11	17	0	28	16	6	1	0	23	6	22	22	0	50	1	20	0	0	21	122
8:30 AM	0	6	9	0	15	12	3	0	1	15	15	27	27	0	69	1	10	0	0	11	110
8:45 AM	1	15	11	0	27	9	10	0	0	19	8	21	17	0	46	0	15	1	0	16	108
Hourly Total	1	36	39	1	76	53	25	1	1	79	35	90	80	1	205	4	53	4	0	61	421
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	2	18	23	0	43	25	12	4	5	41	13	26	21	0	60	2	26	4	0	32	176
3:15 PM	0	11	5	0	16	28	7	1	4	36	9	32	22	0	63	0	18	3	0	21	136
3:30 PM	3	20	12	0	35	27	14	4	1	45	16	22	30	1	68	0	28	2	2	30	178
3:45 PM	5	14	13	1	32	17	8	1	4	26	9	33	26	1	68	2	24	4	0	30	156
Hourly Total	10	63	53	1	126	97	41	10	14	148	47	113	99	2	259	4	96	13	2	113	646
4:00 PM	6	12	11	0	29	23	7	4	0	34	5	21	29	0	55	2	26	3	0	31	149
4:15 PM	5	19	14	0	38	30	13	1	0	44	7	24	23	3	54	2	21	3	0	26	162
4:30 PM	2	25	10	1	37	15	6	1	5	22	9	15	26	0	50	1	26	3	0	30	139
4:45 PM	0	20	17	0	37	13	3	4	1	20	7	16	34	0	57	1	26	0	0	27	141
Hourly Total	13	76	52	1	141	81	29	10	6	120	28	76	112	3	216	6	99	9	0	114	591
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	28	188	175	3	391	288	125	21	25	434	145	358	354	8	857	14	324	29	2	367	2049
Approach %	7.2	48.1	44.8	-	-	66.4	28.8	4.8	-	-	16.9	41.8	41.3	-	-	3.8	88.3	7.9	-	-	-
Total %	1.4	9.2	8.5	-	19.1	14.1	6.1	1.0	-	21.2	7.1	17.5	17.3	-	41.8	0.7	15.8	1.4	-	17.9	-
Lights	27	180	169	-	376	273	120	21	-	414	140	341	330	-	811	10	303	29	-	342	1943
% Lights	96.4	95.7	96.6	-	96.2	94.8	96.0	100.0	-	95.4	96.6	95.3	93.2	-	94.6	71.4	93.5	100.0	-	93.2	94.8
All Pedestrians	-	-	-	3	-	-	-	-	25	-	-	-	-	8	-	-	-	-	2	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-
Trucks	1	8	6	-	15	15	5	0	-	20	5	17	24	-	46	4	21	0	-	25	106
% Trucks	3.6	4.3	3.4	-	3.8	5.2	4.0	0.0	-	4.6	3.4	4.7	6.8	-	5.4	28.6	6.5	0.0	-	6.8	5.2

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 2



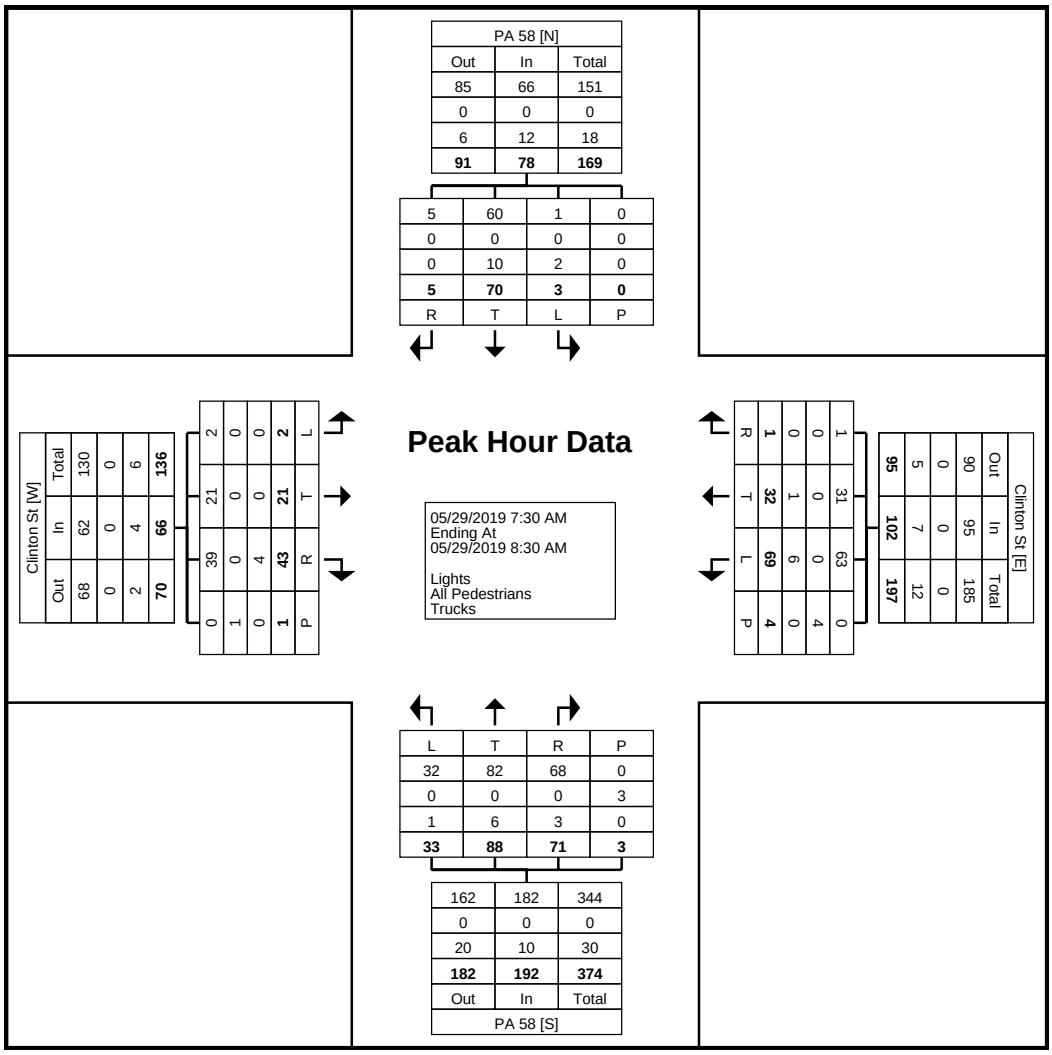
Turning Movement Data Plot

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Clinton St Eastbound					Clinton St Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	1	5	6	0	12	17	7	0	4	24	11	20	13	0	44	0	16	2	0	18	98
7:45 AM	1	1	18	0	20	20	13	0	0	33	10	26	22	2	58	0	26	0	0	26	137
8:00 AM	0	4	2	1	6	16	6	0	0	22	6	20	14	1	40	2	8	3	0	13	81
8:15 AM	0	11	17	0	28	16	6	1	0	23	6	22	22	0	50	1	20	0	0	21	122
Total	2	21	43	1	66	69	32	1	4	102	33	88	71	3	192	3	70	5	0	78	438
Approach %	3.0	31.8	65.2	-	-	67.6	31.4	1.0	-	-	17.2	45.8	37.0	-	-	3.8	89.7	6.4	-	-	-
Total %	0.5	4.8	9.8	-	15.1	15.8	7.3	0.2	-	23.3	7.5	20.1	16.2	-	43.8	0.7	16.0	1.1	-	17.8	-
PHF	0.500	0.477	0.597	-	0.589	0.863	0.615	0.250	-	0.773	0.750	0.846	0.807	-	0.828	0.375	0.673	0.417	-	0.750	0.799
Lights	2	21	39	-	62	63	31	1	-	95	32	82	68	-	182	1	60	5	-	66	405
% Lights	100.0	100.0	90.7	-	93.9	91.3	96.9	100.0	-	93.1	97.0	93.2	95.8	-	94.8	33.3	85.7	100.0	-	84.6	92.5
All Pedestrians	-	-	-	1	-	-	-	-	4	-	-	-	-	3	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Trucks	0	0	4	-	4	6	1	0	-	7	1	6	3	-	10	2	10	0	-	12	33
% Trucks	0.0	0.0	9.3	-	6.1	8.7	3.1	0.0	-	6.9	3.0	6.8	4.2	-	5.2	66.7	14.3	0.0	-	15.4	7.5

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 4



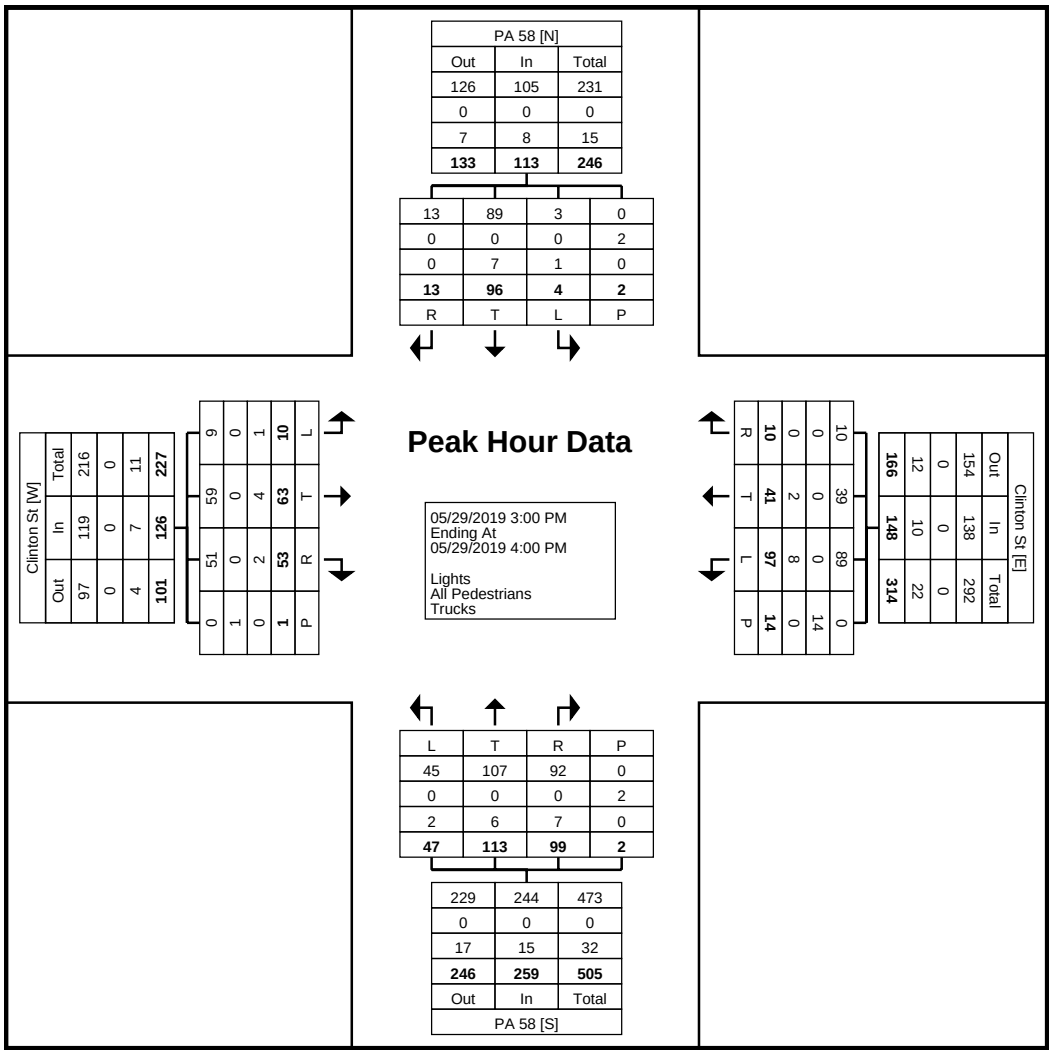
Turning Movement Peak Hour Data Plot (7:30 AM)

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

Start Time	Clinton St Eastbound					Clinton St Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	2	18	23	0	43	25	12	4	5	41	13	26	21	0	60	2	26	4	0	32	176
3:15 PM	0	11	5	0	16	28	7	1	4	36	9	32	22	0	63	0	18	3	0	21	136
3:30 PM	3	20	12	0	35	27	14	4	1	45	16	22	30	1	68	0	28	2	2	30	178
3:45 PM	5	14	13	1	32	17	8	1	4	26	9	33	26	1	68	2	24	4	0	30	156
Total	10	63	53	1	126	97	41	10	14	148	47	113	99	2	259	4	96	13	2	113	646
Approach %	7.9	50.0	42.1	-	-	65.5	27.7	6.8	-	-	18.1	43.6	38.2	-	-	3.5	85.0	11.5	-	-	-
Total %	1.5	9.8	8.2	-	19.5	15.0	6.3	1.5	-	22.9	7.3	17.5	15.3	-	40.1	0.6	14.9	2.0	-	17.5	-
PHF	0.500	0.788	0.576	-	0.733	0.866	0.732	0.625	-	0.822	0.734	0.856	0.825	-	0.952	0.500	0.857	0.813	-	0.883	0.907
Lights	9	59	51	-	119	89	39	10	-	138	45	107	92	-	244	3	89	13	-	105	606
% Lights	90.0	93.7	96.2	-	94.4	91.8	95.1	100.0	-	93.2	95.7	94.7	92.9	-	94.2	75.0	92.7	100.0	-	92.9	93.8
All Pedestrians	-	-	-	1	-	-	-	-	14	-	-	-	-	2	-	-	-	-	2	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-
Trucks	1	4	2	-	7	8	2	0	-	10	2	6	7	-	15	1	7	0	-	8	40
% Trucks	10.0	6.3	3.8	-	5.6	8.2	4.9	0.0	-	6.8	4.3	5.3	7.1	-	5.8	25.0	7.3	0.0	-	7.1	6.2

Count Name: PA 58 @ Clinton St
Site Code: TMC 2
Start Date: 05/29/2019
Page No: 6



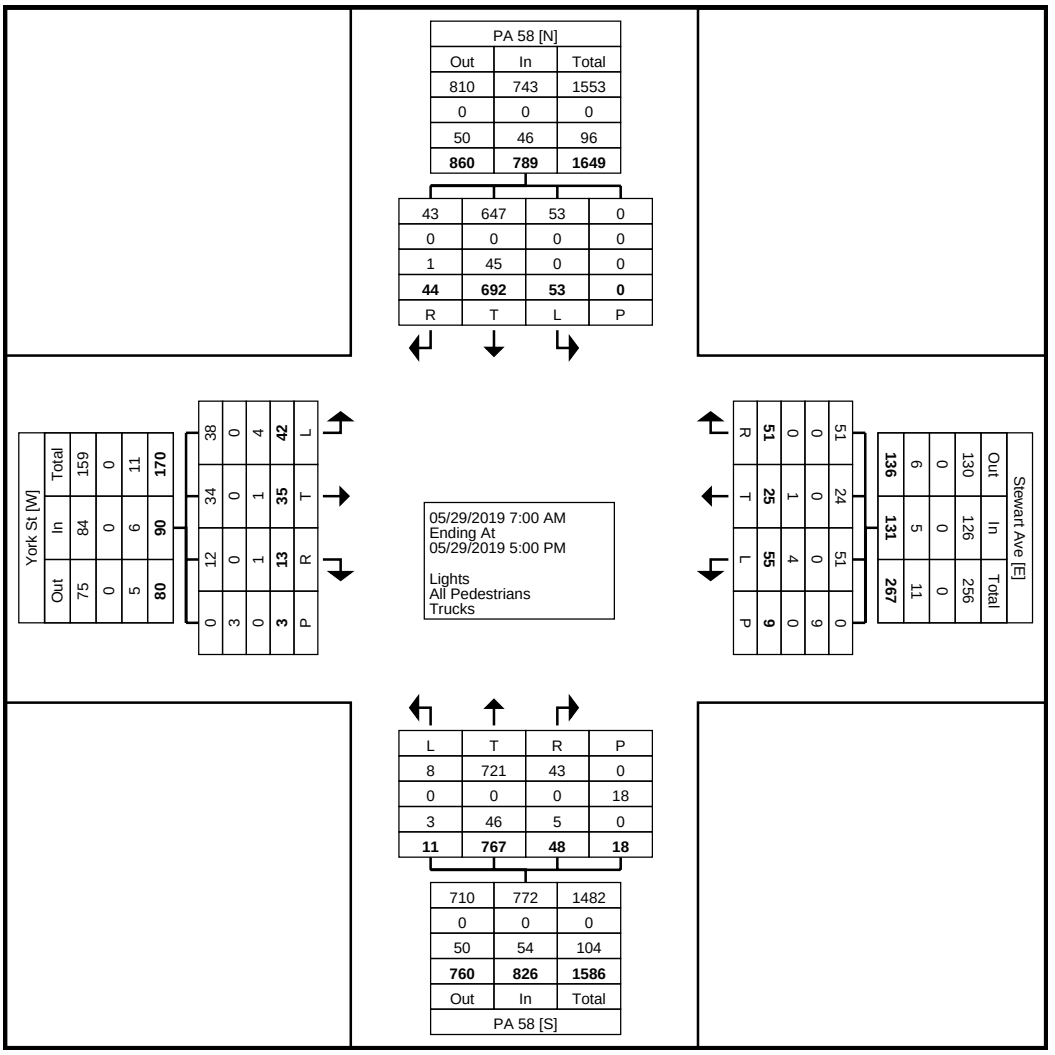
Turning Movement Peak Hour Data Plot (3:00 PM)

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 1

Turning Movement Data

Start Time	York St Eastbound					Stewart Ave Westbound					PA 58 Northbound					PA 58 Southbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
7:00 AM	1	1	1	0	3	2	1	0	0	3	0	24	2	0	26	3	28	2	0	33	65
7:15 AM	4	6	0	0	10	4	0	3	0	7	1	48	3	1	52	1	32	0	0	33	102
7:30 AM	4	4	0	0	8	2	5	4	0	11	0	48	1	0	49	0	36	1	0	37	105
7:45 AM	4	0	0	0	4	4	0	2	0	6	0	43	0	0	43	3	48	4	0	55	108
Hourly Total	13	11	1	0	25	12	6	9	0	27	1	163	6	1	170	7	144	7	0	158	380
8:00 AM	7	4	0	0	11	6	1	0	1	7	0	33	2	0	35	3	26	0	0	29	82
8:15 AM	0	1	3	0	4	5	2	6	0	13	0	41	0	1	41	3	52	1	0	56	114
8:30 AM	2	0	3	0	5	4	0	2	2	6	1	61	4	1	66	2	27	1	0	30	107
8:45 AM	2	0	1	0	3	1	0	1	0	2	0	46	1	0	47	1	34	4	0	39	91
Hourly Total	11	5	7	0	23	16	3	9	3	28	1	181	7	2	189	9	139	6	0	154	394
9:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hourly Total	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	2	2	2	0	6	2	2	6	3	10	0	62	4	2	66	4	69	6	0	79	161
3:15 PM	2	2	0	1	4	5	2	4	0	11	1	56	4	0	61	3	43	4	0	50	126
3:30 PM	2	1	1	1	4	6	3	1	0	10	1	64	5	0	70	7	54	3	0	64	148
3:45 PM	3	3	1	0	7	4	0	5	0	9	0	54	3	0	57	6	44	3	0	53	126
Hourly Total	9	8	4	2	21	17	7	16	3	40	2	236	16	2	254	20	210	16	0	246	561
4:00 PM	2	4	1	0	7	4	4	3	2	11	1	45	6	0	52	1	44	4	0	49	119
4:15 PM	3	0	0	0	3	3	3	5	0	11	2	48	1	10	51	8	67	4	0	79	144
4:30 PM	3	3	0	0	6	0	1	3	0	4	3	45	9	0	57	3	42	1	0	46	113
4:45 PM	1	4	0	1	5	3	1	5	1	9	1	49	3	3	53	5	46	6	0	57	124
Hourly Total	9	11	1	1	21	10	9	16	3	35	7	187	19	13	213	17	199	15	0	231	500
Grand Total	42	35	13	3	90	55	25	51	9	131	11	767	48	18	826	53	692	44	0	789	1836
Approach %	46.7	38.9	14.4	-	-	42.0	19.1	38.9	-	-	1.3	92.9	5.8	-	-	6.7	87.7	5.6	-	-	-
Total %	2.3	1.9	0.7	-	4.9	3.0	1.4	2.8	-	7.1	0.6	41.8	2.6	-	45.0	2.9	37.7	2.4	-	43.0	-
Lights	38	34	12	-	84	51	24	51	-	126	8	721	43	-	772	53	647	43	-	743	1725
% Lights	90.5	97.1	92.3	-	93.3	92.7	96.0	100.0	-	96.2	72.7	94.0	89.6	-	93.5	100.0	93.5	97.7	-	94.2	94.0
All Pedestrians	-	-	-	3	-	-	-	-	9	-	-	-	-	18	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Trucks	4	1	1	-	6	4	1	0	-	5	3	46	5	-	54	0	45	1	-	46	111
% Trucks	9.5	2.9	7.7	-	6.7	7.3	4.0	0.0	-	3.8	27.3	6.0	10.4	-	6.5	0.0	6.5	2.3	-	5.8	6.0

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 2



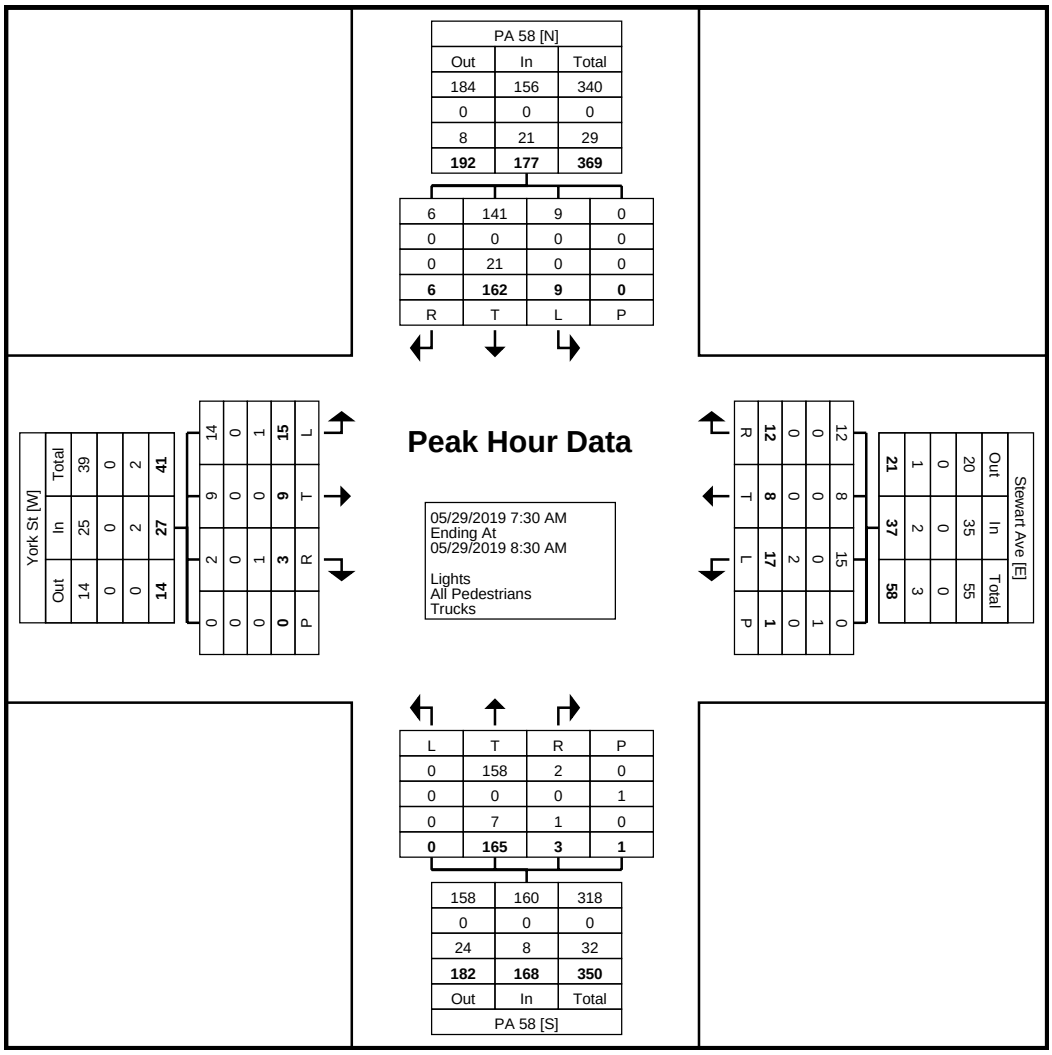
Turning Movement Data Plot

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	York St Eastbound					Stewart Ave Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	4	4	0	0	8	2	5	4	0	11	0	48	1	0	49	0	36	1	0	37	105
7:45 AM	4	0	0	0	4	4	0	2	0	6	0	43	0	0	43	3	48	4	0	55	108
8:00 AM	7	4	0	0	11	6	1	0	1	7	0	33	2	0	35	3	26	0	0	29	82
8:15 AM	0	1	3	0	4	5	2	6	0	13	0	41	0	1	41	3	52	1	0	56	114
Total	15	9	3	0	27	17	8	12	1	37	0	165	3	1	168	9	162	6	0	177	409
Approach %	55.6	33.3	11.1	-	-	45.9	21.6	32.4	-	-	0.0	98.2	1.8	-	-	5.1	91.5	3.4	-	-	-
Total %	3.7	2.2	0.7	-	6.6	4.2	2.0	2.9	-	9.0	0.0	40.3	0.7	-	41.1	2.2	39.6	1.5	-	43.3	-
PHF	0.536	0.563	0.250	-	0.614	0.708	0.400	0.500	-	0.712	0.000	0.859	0.375	-	0.857	0.750	0.779	0.375	-	0.790	0.897
Lights	14	9	2	-	25	15	8	12	-	35	0	158	2	-	160	9	141	6	-	156	376
% Lights	93.3	100.0	66.7	-	92.6	88.2	100.0	100.0	-	94.6	-	95.8	66.7	-	95.2	100.0	87.0	100.0	-	88.1	91.9
All Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Trucks	1	0	1	-	2	2	0	0	-	2	0	7	1	-	8	0	21	0	-	21	33
% Trucks	6.7	0.0	33.3	-	7.4	11.8	0.0	0.0	-	5.4	-	4.2	33.3	-	4.8	0.0	13.0	0.0	-	11.9	8.1

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 4



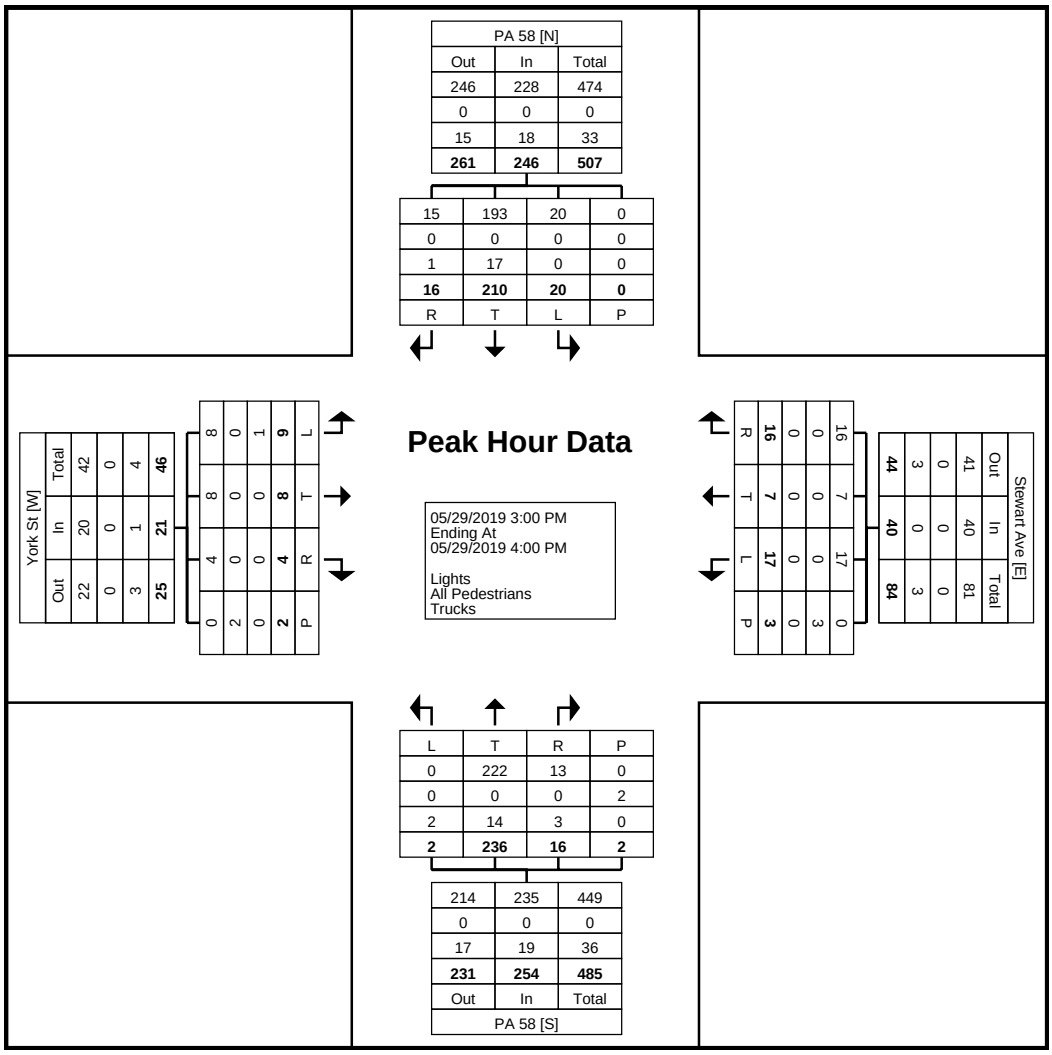
Turning Movement Peak Hour Data Plot (7:30 AM)

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 5

Turning Movement Peak Hour Data (3:00 PM)

Start Time	York St Eastbound					Stewart Ave Westbound					PA 58 Northbound					PA 58 Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
3:00 PM	2	2	2	0	6	2	2	6	3	10	0	62	4	2	66	4	69	6	0	79	161
3:15 PM	2	2	0	1	4	5	2	4	0	11	1	56	4	0	61	3	43	4	0	50	126
3:30 PM	2	1	1	1	4	6	3	1	0	10	1	64	5	0	70	7	54	3	0	64	148
3:45 PM	3	3	1	0	7	4	0	5	0	9	0	54	3	0	57	6	44	3	0	53	126
Total	9	8	4	2	21	17	7	16	3	40	2	236	16	2	254	20	210	16	0	246	561
Approach %	42.9	38.1	19.0	-	-	42.5	17.5	40.0	-	-	0.8	92.9	6.3	-	-	8.1	85.4	6.5	-	-	-
Total %	1.6	1.4	0.7	-	3.7	3.0	1.2	2.9	-	7.1	0.4	42.1	2.9	-	45.3	3.6	37.4	2.9	-	43.9	-
PHF	0.750	0.667	0.500	-	0.750	0.708	0.583	0.667	-	0.909	0.500	0.922	0.800	-	0.907	0.714	0.761	0.667	-	0.778	0.871
Lights	8	8	4	-	20	17	7	16	-	40	0	222	13	-	235	20	193	15	-	228	523
% Lights	88.9	100.0	100.0	-	95.2	100.0	100.0	100.0	-	100.0	0.0	94.1	81.3	-	92.5	100.0	91.9	93.8	-	92.7	93.2
All Pedestrians	-	-	-	2	-	-	-	-	3	-	-	-	-	2	-	-	-	-	0	-	-
% All Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-
Trucks	1	0	0	-	1	0	0	0	-	0	2	14	3	-	19	0	17	1	-	18	38
% Trucks	11.1	0.0	0.0	-	4.8	0.0	0.0	0.0	-	0.0	100.0	5.9	18.8	-	7.5	0.0	8.1	6.3	-	7.3	6.8

Count Name: PA 58 @ Stewart Ave/York St
Site Code: TMC 3
Start Date: 05/29/2019
Page No: 6



Turning Movement Peak Hour Data Plot (3:00 PM)

PA 58

60's and Cloudy
Counted by MEG

File Name : PA 58 @ SR 3020 (North St)_05-29-2019
Site Code : TMC 4
Start Date : 5/29/2019
Page No : 1

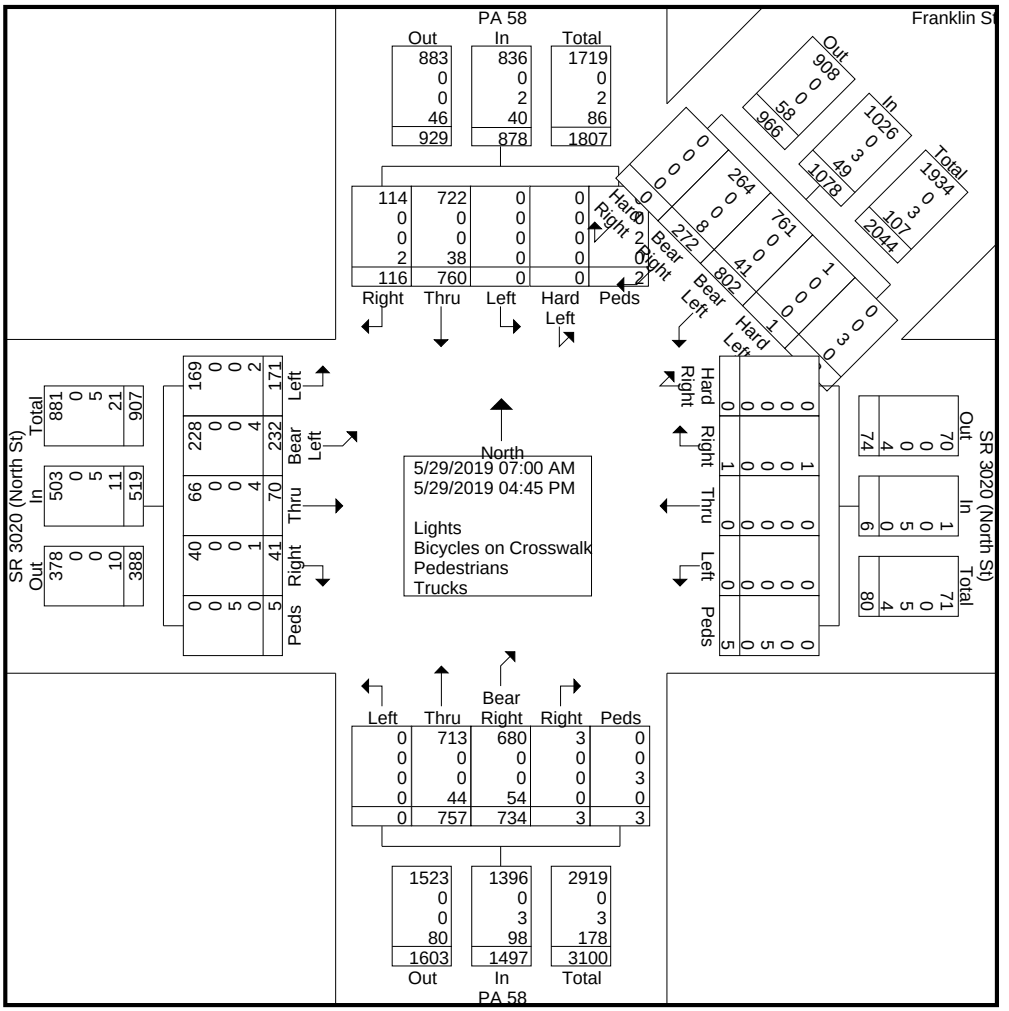
Groups Printed- Lights - Bicycles on Crosswalk - Pedestrians - Trucks

	SR 3020 (North St) Eastbound						SR 3020 (North St) Westbound						PA 58 Northbound						PA 58 Southbound						Franklin St From Northeast						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Int. Total
07:00 AM	2	10	0	1	0	13	0	0	0	0	0	0	0	34	24	0	0	58	0	0	32	1	0	33	0	39	9	0	0	48	152
07:15 AM	6	12	0	1	0	19	0	0	0	0	0	0	0	24	35	0	0	59	0	0	40	3	0	43	0	70	13	0	0	83	204
07:30 AM	5	13	7	2	0	27	0	0	0	0	1	1	0	45	41	0	1	87	0	0	50	10	0	60	0	63	25	0	0	88	263
07:45 AM	7	20	9	6	0	42	0	0	0	0	0	0	0	42	30	0	0	72	0	0	42	9	0	51	0	62	27	0	0	89	254
Total	20	55	16	10	0	101	0	0	0	0	1	1	0	145	130						164					234					
08:00 AM	7	12	6	2	1	28	0	0	0	0	0	0	0	31	43	0	0	74	0	0	46	5	1	52	0	47	25	0	0	72	226
08:15 AM	9	5	2	2	1	19	0	0	1	0	0	1	0	41	28	0	0	69	0	0	68	11	1	80	0	49	14	0	1	64	233
08:30 AM	11	10	4	4	1	30	0	0	0	0	0	0	0	19	26	0	0	45	0	0	44	7	0	51	0	44	16	0	0	60	186
08:45 AM	6	6	6	4	1	23	0	0	0	0	0	0	0	39	31	1	2	73	0	0	37	5	0	42	0	43	18	0	0	61	199
Total	33	33	18	12	4	100	0	0	1	0	0	1	0	130	128						195					183					
03:00 PM	16	18	9	6	0	49	0	0	0	0	0	0	0	54	63	0	0	117	0	0	35	7	0	42	0	42	16	0	0	58	266
03:15 PM	14	18	6	3	0	41	0	0	0	0	0	0	0	60	61	0	0	121	0	0	54	7	0	61	0	45	10	0	0	55	278
03:30 PM	17	6	5	4	0	32	0	0	0	0	3	3	0	64	58	0	0	122	0	0	59	7	0	66	1	48	16	0	2	67	290
03:45 PM	16	25	4	0	0	45	0	0	0	0	0	0	0	65	55	0	0	120	0	0	52	8	0	60	0	45	14	0	0	59	284
Total	63	67	24	13	0	167	0	0	0	0	3	3	0	243	237						200					180					1118
04:00 PM	17	26	2	0	0	45	0	0	0	0	0	0	0	57	59	0	0	116	0	0	47	8	0	55	0	56	20	0	0	76	292
04:15 PM	8	18	1	4	0	31	0	0	0	0	0	0	0	59	63	0	0	122	0	0	55	2	0	57	0	44	15	0	0	59	269
04:30 PM	16	18	4	1	1	40	0	0	0	0	1	1	0	76	55	2	0	133	0	0	51	15	0	66	0	50	20	0	0	70	310
04:45 PM	14	15	5	1	0	35	0	0	0	0	0	0	0	47	62	0	0	109	0	0	48	11	0	59	0	55	14	0	0	69	272
Total	55	77	12	6	1	151	0	0	0	0	1	1	0	239	239						201					205					1143
Grand Total	171	232	70	41	5	519	0	0	1	0	5	6	0	757	734	3	3	1497	0	0	760	116	2	878	1	802	272	0	3	1078	3978
Apprch %	32.9	44.7	13.5	7.9	1		0	0	16.7	0	83.3		0	50.6	49	0.2	0.2		0	0	86.6	13.2	0.2		0.1	74.4	25.2	0	0.3		
Total %	4.3	5.8	1.8	1	0.1	13	0	0	0	0	0.1	0.2	0	19	18.5	0.1	0.1	37.6	0	0	19.1	2.9	0.1	22.1	0	20.2	6.8	0	0.1	27.1	
Lights	169	228	66	40	0	503	0	0	1	0	0	1	0	713	680	3	0	1396	0	0	722	114	0	836	1	761	264	0	0	1026	3762
% Lights	98.8	98.3	94.3	97.6	0	96.9	0	0	100	0	0	16.7	0	94.2	92.6	100	0	93.3	0	0	95	98.3	0	95.2	100	94.9	97.1	0	0	95.2	94.6
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	5	5	0	0	0	0	5	5	0	0	0	0	3	3	0	0	0	0	2	2	0	0	0	0	3	3	18
% Pedestrians	0	0	0	0	100	1	0	0	0	0	100	83.3	0	0	0	0	100	0.2	0	0	0	0	100	0.2	0	0	0	0	100	0.3	0.5
Trucks	2	4	4	1	0	11	0	0	0	0	0	0	0	44	54	0	0	98	0	0	38	2	0	40	0	41	8	0	0	49	198
% Trucks	1.2	1.7	5.7	2.4	0	2.1	0	0	0	0	0	0	0	5.8	7.4	0	0	6.5	0	0	5	1.7	0	4.6	0	5.1	2.9	0	0	4.5	5

PA 58

60's and Cloudy
Counted by MEG

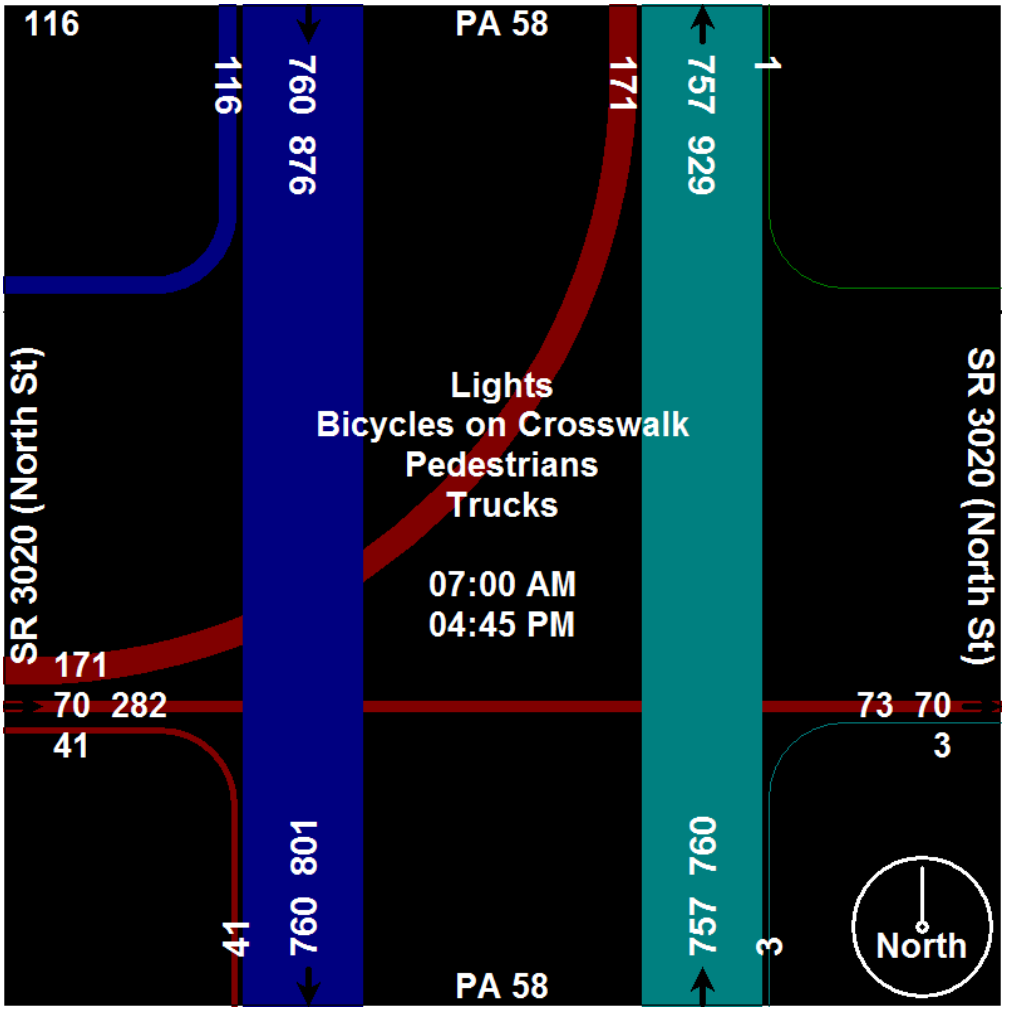
File Name : PA 58 @ SR 3020 (North St)_05-29-2019
Site Code : TMC 4
Start Date : 5/29/2019
Page No : 2



PA 58

60's and Cloudy
Counted by MEG

File Name : PA 58 @ SR 3020 (North St)_05-29-2019
Site Code : TMC 4
Start Date : 5/29/2019
Page No : 3

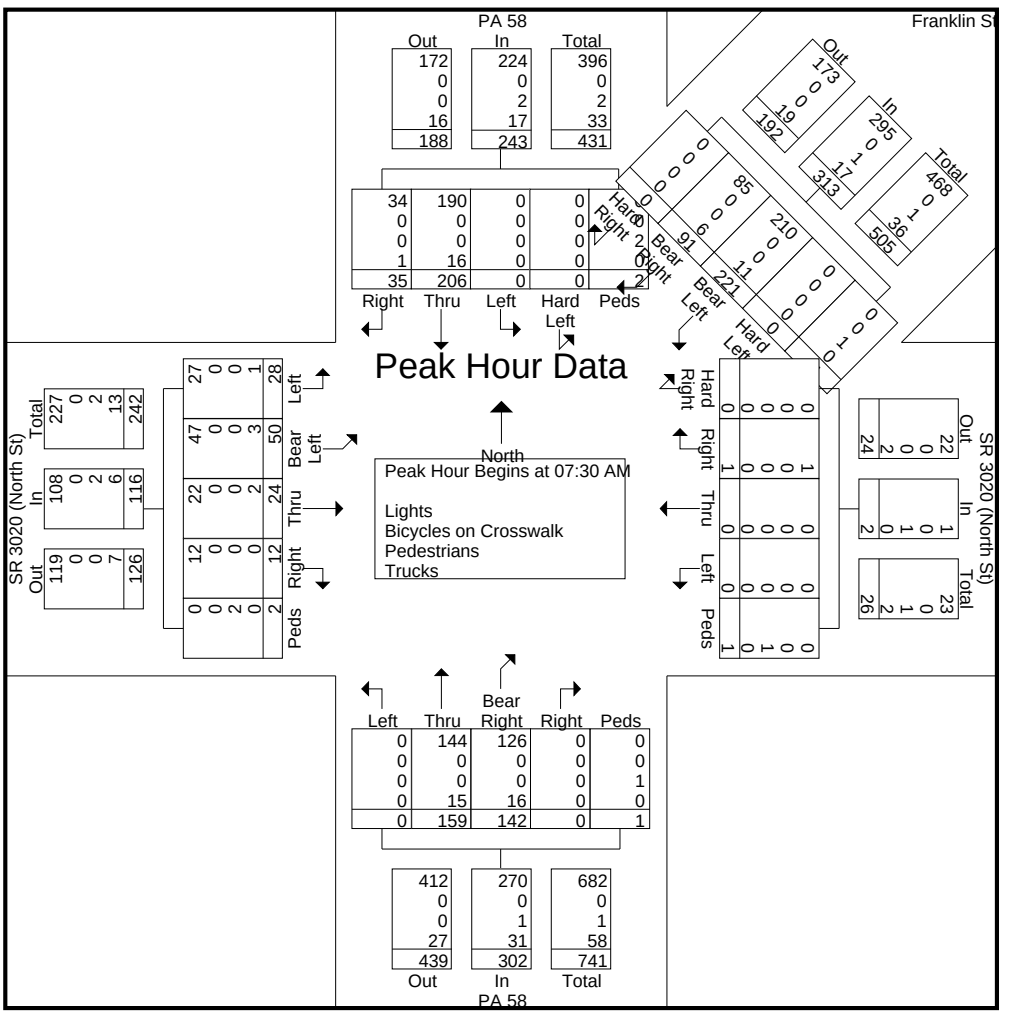


PA 58

60's and Cloudy
Counted by MEG

File Name : PA 58 @ SR 3020 (North St)_05-29-2019
Site Code : TMC 4
Start Date : 5/29/2019
Page No : 4

	SR 3020 (North St) Eastbound						SR 3020 (North St) Westbound						PA 58 Northbound						PA 58 Southbound						Franklin St From Northeast						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:30 AM to 08:15 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:30 AM																															
07:30 AM	5	13	7	2	0	27	0	0	0	0	**1**	**1**	0	**45**	41	0	**1**	**87**	0	0	50	10	0	60	0	**63**	25	0	0	88	**263**
07:45 AM	7	**20**	**9**	**6**	0	**42**	0	0	0	0	0	0	0	42	30	0	0	72	0	0	42	9	0	51	0	62	**27**	0	0	**89**	254
08:00 AM	7	12	6	2	**1**	28	0	0	0	0	0	0	0	31	**43**	0	0	74	0	0	46	5	**1**	52	0	47	25	0	0	72	226
08:15 AM	**9**	5	2	2	1	19	0	0	**1**	0	0	1	0	41	28	0	0	69	0	0	**68**	**11**	1	**80**	0	49	14	0	**1**	64	233
Total Volume	28	50	24	12	2	116	0	0	1	0	1	2	0	159	142	0	1	302	0	0	206	35	2	243	0	221	91	0	1	313	976
% App. Total	24.1	43.1	20.7	10.3	1.7		0	0	50	0	50		0	52.6	47	0	0.3		0	0	84.8	14.4	0.8		0	70.6	29.1	0	0.3		
PHF	.778	.625	.667	.500	.500	.690	.000	.000	.250	.000	.250	.500	.000	.883	.826	.000	.250	.868	.000	.000	.757	.795	.500	.759	.000	.877	.843	.000	.250	.879	.928
Lights	27	47	22	12	0	108	0	0	1	0	0	1	0	144	126	0	0	270	0	0	190	34	0	224	0	210	85	0	0	295	898
% Lights	96.4	94.0	91.7	100	0	93.1	0	0	100	0	0	50.0	0	90.6	88.7	0	0	89.4	0	0	92.2	97.1	0	92.2	0	95.0	93.4	0	0	94.2	92.0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	2	2	0	0	0	0	1	1	0	0	0	0	1	1	0	0	0	0	2	2	0	0	0	0	1	1	7
% Pedestrians	0	0	0	0	100	1.7	0	0	0	0	100	50.0	0	0	0	0	100	0.3	0	0	0	0	100	0.8	0	0	0	0	100	0.3	0.7
Trucks	1	3	2	0	0	6	0	0	0	0	0	0	0	15	16	0	0	31	0	0	16	1	0	17	0	11	6	0	0	17	71
% Trucks	3.6	6.0	8.3	0	0	5.2	0	0	0	0	0	0	0	9.4	11.3	0	0	10.3	0	0	7.8	2.9	0	7.0	0	5.0	6.6	0	0	5.4	7.3

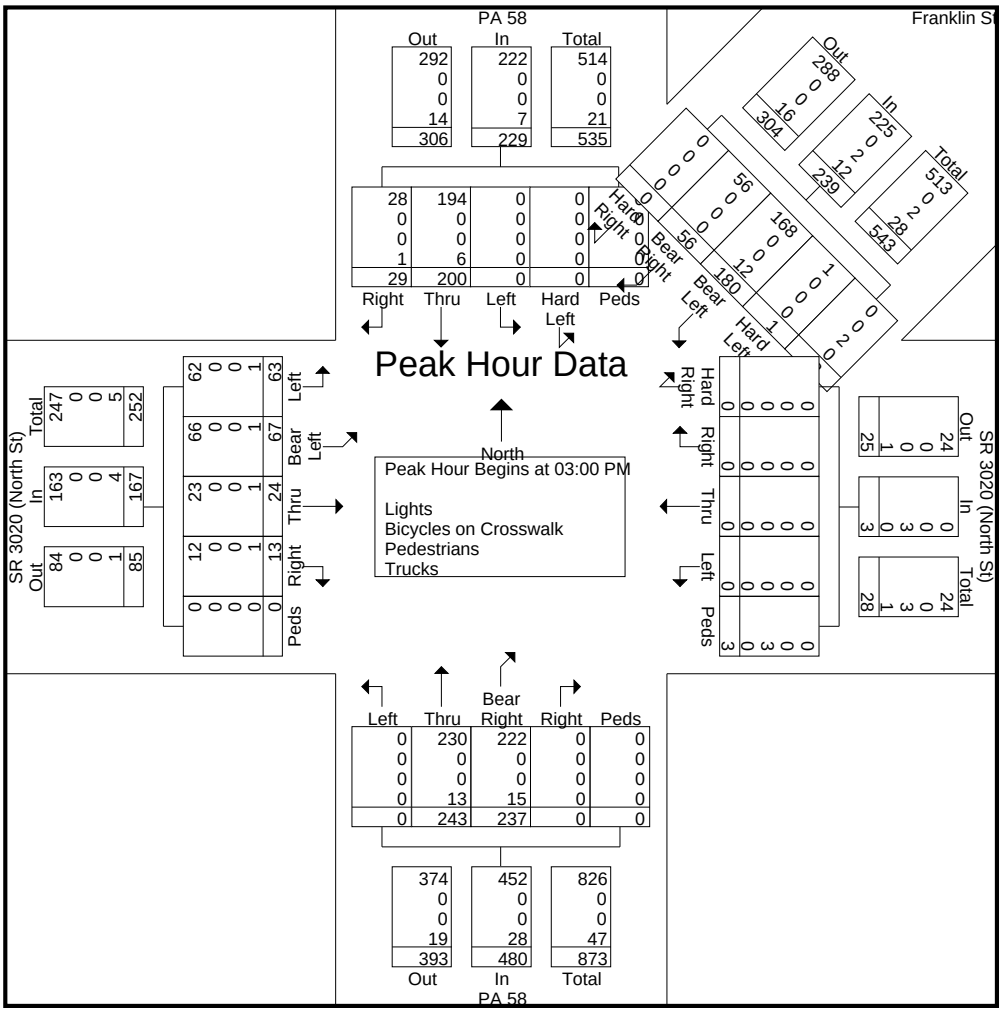


PA 58

60's and Cloudy
Counted by MEG

File Name : PA 58 @ SR 3020 (North St)_05-29-2019
Site Code : TMC 4
Start Date : 5/29/2019
Page No : 5

	SR 3020 (North St) Eastbound						SR 3020 (North St) Westbound						PA 58 Northbound						PA 58 Southbound						Franklin St From Northeast						
Start Time	Left	Bear Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Hard Right	Peds	App. Total	Left	Thru	Bear Right	Right	Peds	App. Total	Hard Left	Left	Thru	Right	Peds	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 03:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 03:00 PM																															
03:00 PM	16	18	**9**	**6**	0	**49**	0	0	0	0	0	0	0	54	**63**	0	0	117	0	0	35	7	0	42	0	42	**16**	0	0	58	266
03:15 PM	14	18	6	3	0	41	0	0	0	0	0	0	0	60	61	0	0	121	0	0	54	7	0	61	0	45	10	0	0	55	278
03:30 PM	**17**										**3**	**3**						**122**			**59**			**66**	**1**	**48**			**2**	**67**	**290**
03:45 PM	16	**25**	4	0	0	45	0	0	0	0	0	0	0	**65**	55	0	0	120	0	0	52	**8**	0	60	0	45	14	0	0	59	284
Total Volume	63	67	24	13	0	167	0	0	0	0	3	3	0	243	237	0	0	480	0	0	200	29	0	229	1	180	56	0	2	239	1118
% App. Total	37.7	40.1	14.4	7.8	0		0	0	0	0	100		0	50.6	49.4	0	0		0	0	87.3	12.7	0		0.4	75.3	23.4	0	0.8		
PHF	.926	.670	.667	.542	.000	.852	.000	.000	.000	.000	.250	.250	.000	.935	.940	.000	.000	.984	.000	.000	.847	.906	.000	.867	.250	.938	.875	.000	.250	.892	.964
Lights	62	66	23	12	0	163	0	0	0	0	0	0	0	230	222	0	0	452	0	0	194	28	0	222	1	168	56	0	0	225	1062
% Lights	98.4	98.5	95.8	92.3	0	97.6	0	0	0	0	0	0	0	94.7	93.7	0	0	94.2	0	0	97.0	96.6	0	96.9	100	93.3	100	0	0	94.1	95.0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	5
% Pedestrians	0	0	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.8	0.4
Trucks	1	1	1	1	0	4	0	0	0	0	0	0	0	13	15	0	0	28	0	0	6	1	0	7	0	12	0	0	0	12	51
% Trucks	1.6	1.5	4.2	7.7	0	2.4	0	0	0	0	0	0	0	5.3	6.3	0	0	5.8	0	0	3.0	3.4	0	3.1	0	6.7	0	0	0	5.0	4.6



Automatic Traffic Recorder (ATR) Data Summary

Project: **Project:** *SR 58 Study*
Location: **Location:** *Columbia/Hamburg 24hr*
Direction: **Direction:** *Eastbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue	Wed 5/22/2019	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM			14												14	14	#DIV/0!	#DIV/0!	#DIV/0!
01:00			9												9	9	#DIV/0!	#DIV/0!	#DIV/0!
02:00			7												7	7	#DIV/0!	#DIV/0!	#DIV/0!
03:00			11												11	11	#DIV/0!	#DIV/0!	#DIV/0!
04:00			22												22	22	#DIV/0!	#DIV/0!	#DIV/0!
05:00			61												61	61	#DIV/0!	#DIV/0!	#DIV/0!
06:00			115												115	115	#DIV/0!	#DIV/0!	#DIV/0!
07:00			136												136	136	#DIV/0!	#DIV/0!	#DIV/0!
08:00			**187**												**187**	**187**	#DIV/0!	#DIV/0!	#DIV/0!
09:00			117												117	117	#DIV/0!	#DIV/0!	#DIV/0!
10:00			144												144	144	#DIV/0!	#DIV/0!	#DIV/0!
11:00			178												178	178	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM			174												174	174	#DIV/0!	#DIV/0!	#DIV/0!
01:00			154												154	154	#DIV/0!	#DIV/0!	#DIV/0!
02:00			**197**												**197**	**197**	#DIV/0!	#DIV/0!	#DIV/0!
03:00			**225**												**225**	**225**	#DIV/0!	#DIV/0!	#DIV/0!
04:00			214												214	214	#DIV/0!	#DIV/0!	#DIV/0!
05:00			164												164	164	#DIV/0!	#DIV/0!	#DIV/0!
06:00			136												136	136	#DIV/0!	#DIV/0!	#DIV/0!
07:00			152												152	152	#DIV/0!	#DIV/0!	#DIV/0!
08:00			111												111	111	#DIV/0!	#DIV/0!	#DIV/0!
09:00			54												54	54	#DIV/0!	#DIV/0!	#DIV/0!
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11:00			29												29	29	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**0**	**2,654**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,654**	**2,654**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	0%	100%	0%	0%	0%	0%	0%	8100%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	0%	100%	0%	0%	0%	0%	0%	7100%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	0	187	0	0	0	0	0	149	0	0	0	0	0	187	187	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	0	197	0	0	0	0	0	364	0	0	0	0	0	197	197	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	0	225	0	0	0	0	0	738	0	0	0	0	0	225	225	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,654**	**AADT Adjust:**	**0.835**	**AADT:**	**2,216**

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: *Columbia/Hamburg 24hr*
Direction: *Westbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue	Wed 5/22/2019	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM			8												8	8	#DIV/0!	#DIV/0!	#DIV/0!
01:00			7												7	7	#DIV/0!	#DIV/0!	#DIV/0!
02:00			4												4	4	#DIV/0!	#DIV/0!	#DIV/0!
03:00			7												7	7	#DIV/0!	#DIV/0!	#DIV/0!
04:00			16												16	16	#DIV/0!	#DIV/0!	#DIV/0!
05:00			29												29	29	#DIV/0!	#DIV/0!	#DIV/0!
06:00			104												104	104	#DIV/0!	#DIV/0!	#DIV/0!
07:00			193												193	193	#DIV/0!	#DIV/0!	#DIV/0!
08:00			**225**												**225**	**225**	#DIV/0!	#DIV/0!	#DIV/0!
09:00			131												131	131	#DIV/0!	#DIV/0!	#DIV/0!
10:00			161												161	161	#DIV/0!	#DIV/0!	#DIV/0!
11:00			161												161	161	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM			**176**												**176**	**176**	#DIV/0!	#DIV/0!	#DIV/0!
01:00			175												175	175	#DIV/0!	#DIV/0!	#DIV/0!
02:00			168												168	168	#DIV/0!	#DIV/0!	#DIV/0!
03:00			**277**												**277**	**277**	#DIV/0!	#DIV/0!	#DIV/0!
04:00			235												235	235	#DIV/0!	#DIV/0!	#DIV/0!
05:00			223												223	223	#DIV/0!	#DIV/0!	#DIV/0!
06:00			170												170	170	#DIV/0!	#DIV/0!	#DIV/0!
07:00			113												113	113	#DIV/0!	#DIV/0!	#DIV/0!
08:00			106												106	106	#DIV/0!	#DIV/0!	#DIV/0!
09:00			75												75	75	#DIV/0!	#DIV/0!	#DIV/0!
10:00			44												44	44	#DIV/0!	#DIV/0!	#DIV/0!
11:00			43												43	43	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**0**	**2,851**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,851**	**2,851**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	0	225	0	0	0	0	0	0	0	0	0	0	0	225	225	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	0	176	0	0	0	0	0	0	0	0	0	0	0	176	176	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	0	277	0	0	0	0	0	0	0	0	0	0	0	277	277	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,851**	**AADT Adjust:**	**0.835**	**AADT:**	**2,381**

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: *Columbia/Hamburg 24hr*
Direction:

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Average Daily (7-Day)				Average Weekday (Tue-Thur)			
	EB	WB	Total	Dir Dist	EB	WB	Total	Dir Dist
12:00 AM	14	8	**22**	**64%**	14	8	**22**	**64%**
01:00	9	7	**16**	**56%**	9	7	**16**	**56%**
02:00	7	4	**11**	**64%**	7	4	**11**	**64%**
03:00	11	7	**18**	**61%**	11	7	**18**	**61%**
04:00	22	16	**38**	**58%**	22	16	**38**	**58%**
05:00	61	29	**90**	**68%**	61	29	**90**	**68%**
06:00	115	104	**219**	**53%**	115	104	**219**	**53%**
07:00	136	193	**329**	**41%**	136	193	**329**	**41%**
08:00	**187**	**225**	**412**	**45%**	**187**	**225**	**412**	**45%**
09:00	117	131	**248**	**47%**	117	131	**248**	**47%**
10:00	144	161	**305**	**47%**	144	161	**305**	**47%**
11:00	178	161	**339**	**53%**	178	161	**339**	**53%**
12:00 PM	174	**176**	**350**	**50%**	174	**176**	**350**	**50%**
01:00	154	175	**329**	**47%**	154	175	**329**	**47%**
02:00	**197**	168	**365**	**54%**	**197**	168	**365**	**54%**
03:00	**225**	**277**	**502**	**45%**	**225**	**277**	**502**	**45%**
04:00	214	235	**449**	**48%**	214	235	**449**	**48%**
05:00	164	223	**387**	**42%**	164	223	**387**	**42%**
06:00	136	170	**306**	**44%**	136	170	**306**	**44%**
07:00	152	113	**265**	**57%**	152	113	**265**	**57%**
08:00	111	106	**217**	**51%**	111	106	**217**	**51%**
09:00	54	75	**129**	**42%**	54	75	**129**	**42%**
10:00	43	44	**87**	**49%**	43	44	**87**	**49%**
11:00	29	43	**72**	**40%**	29	43	**72**	**40%**
Day Total	2,654	2,851	**5,505**	**48%**	2,654	2,851	**5,505**	**48%**
% Avg Daily	100%	100%	**100%**	-	100%	100%	**100%**	-
% Avg WkDay	100%	100%	**100%**	-	100%	100%	**100%**	-
AM Peak Volume	187	225	**412**	-	187	225	**412**	-
MD Peak Volume	197	176	**365**	-	197	176	**365**	-
PM Peak Volume	225	277	**502**	-	225	277	**502**	-

Avg Wkdy ADT:	**5,505**
AADT Adjust:	**0.835**
AADT:	**4,597**

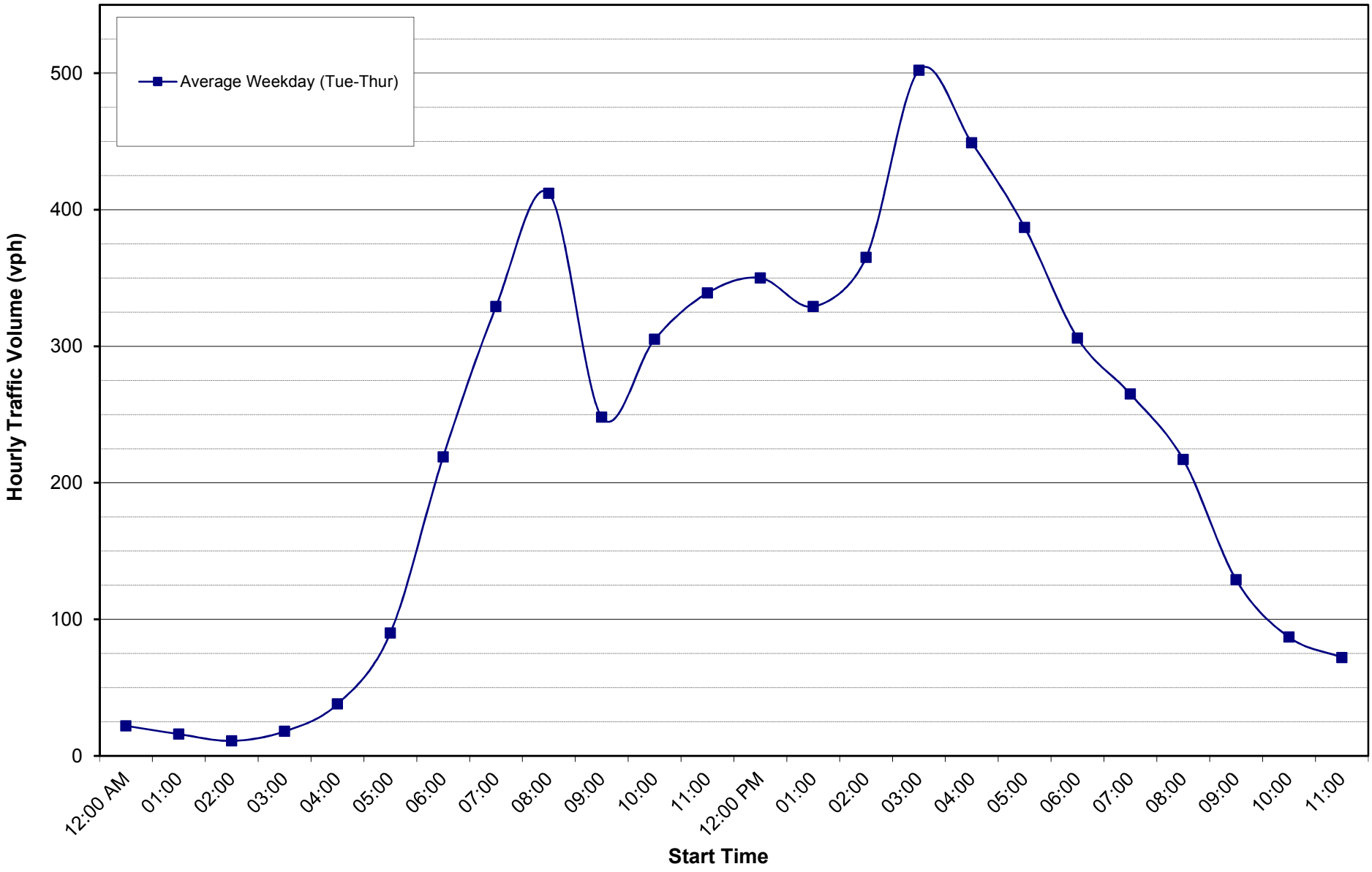
TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

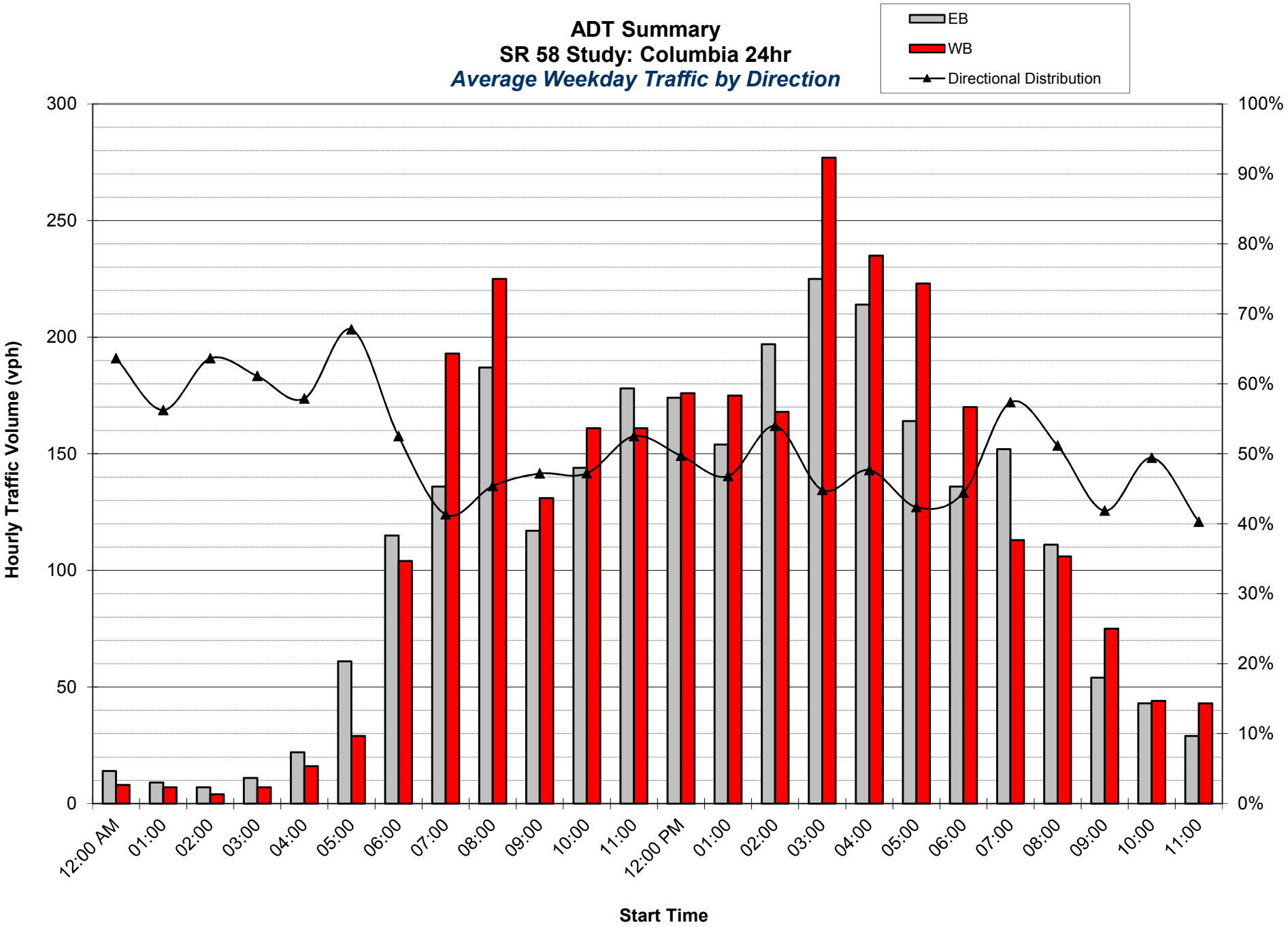
Table 355, Page 44 – May 2018

May 2018										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.043	0.914	0.996	0.956	0.939	0.897	0.988	0.903	0.961	0.937
Tuesday	0.954	0.921	0.869	0.892	0.841	0.891	0.887	0.880	0.863	0.926
Wednesday	0.864	0.909	0.847	0.878	0.835	0.877	0.858	0.856	0.850	0.919
Thursday	0.840	0.851	0.832	0.841	0.840	0.854	0.856	0.833	0.836	0.877
Friday	0.790	0.775	0.811	0.787	0.775	0.788	0.805	0.781	0.800	0.711
Saturday	1.083	0.905	1.031	1.000	0.955	0.975	0.963	1.000	1.003	0.743
Sunday	1.100	0.954	1.198	1.111	1.111	1.045	1.129	1.052	1.188	0.696
DAY OF MONTH	0.953	0.890	0.940	0.924	0.899	0.904	0.927	0.901	0.929	0.830

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

ADT Summary
SR 58 Study: Columbia 24hr
Two-Way Hourly Volumes by Day




ADT Summary
SR 58 Study: Columbia 24hr
Average Weekday Traffic by Direction
EB
WB
Directional Distribution
Hourly Traffic Volume (vph)
300
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12:00 AM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00 PM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
Start Time

Automatic Traffic Recorder (ATR) Data Summary

Project: **Project:** *SR 58 Study*
Location: **Location:** *Kidds Mill 24hr*
Direction: **Direction:** *Eastbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue	Wed 5/22/2019	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM			9												9	9	#DIV/0!	#DIV/0!	#DIV/0!
01:00			4												4	4	#DIV/0!	#DIV/0!	#DIV/0!
02:00			7												7	7	#DIV/0!	#DIV/0!	#DIV/0!
03:00			9												9	9	#DIV/0!	#DIV/0!	#DIV/0!
04:00			25												25	25	#DIV/0!	#DIV/0!	#DIV/0!
05:00			46												46	46	#DIV/0!	#DIV/0!	#DIV/0!
06:00			137												137	137	#DIV/0!	#DIV/0!	#DIV/0!
07:00			**179**												**179**	**179**	#DIV/0!	#DIV/0!	#DIV/0!
08:00			145												145	145	#DIV/0!	#DIV/0!	#DIV/0!
09:00			111												111	111	#DIV/0!	#DIV/0!	#DIV/0!
10:00			120												120	120	#DIV/0!	#DIV/0!	#DIV/0!
11:00			132												132	132	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM			153												153	153	#DIV/0!	#DIV/0!	#DIV/0!
01:00			155												155	155	#DIV/0!	#DIV/0!	#DIV/0!
02:00			**160**												**160**	**160**	#DIV/0!	#DIV/0!	#DIV/0!
03:00			223												223	223	#DIV/0!	#DIV/0!	#DIV/0!
04:00			**228**												**228**	**228**	#DIV/0!	#DIV/0!	#DIV/0!
05:00			206												206	206	#DIV/0!	#DIV/0!	#DIV/0!
06:00			140												140	140	#DIV/0!	#DIV/0!	#DIV/0!
07:00			115												115	115	#DIV/0!	#DIV/0!	#DIV/0!
08:00			87												87	87	#DIV/0!	#DIV/0!	#DIV/0!
09:00			54												54	54	#DIV/0!	#DIV/0!	#DIV/0!
10:00			45												45	45	#DIV/0!	#DIV/0!	#DIV/0!
11:00			33												33	33	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**0**	**2,523**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,523**	**2,523**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	0%	100%	0%	0%	0%	0%	0%	8100%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	0%	100%	0%	0%	0%	0%	0%	7100%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	0	179	0	0	0	0	0	149	0	0	0	0	0	179	179	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	0	160	0	0	0	0	0	364	0	0	0	0	0	160	160	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	0	228	0	0	0	0	0	738	0	0	0	0	0	228	228	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,523**	**AADT Adjust:**	**0.835**	**AADT:**	**2,107**

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: *Kidds Mill 24hr*
Direction: *Westbound*

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Mon	Tue	Wed 5/22/2019	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg Daily (7-Day)	Avg Wkdy (Tue-Thu)	Avg Friday	Avg Saturday	Avg Sunday
12:00 AM			16												16	16	#DIV/0!	#DIV/0!	#DIV/0!
01:00			3												3	3	#DIV/0!	#DIV/0!	#DIV/0!
02:00			6												6	6	#DIV/0!	#DIV/0!	#DIV/0!
03:00			5												5	5	#DIV/0!	#DIV/0!	#DIV/0!
04:00			36												36	36	#DIV/0!	#DIV/0!	#DIV/0!
05:00			102												102	102	#DIV/0!	#DIV/0!	#DIV/0!
06:00			179												179	179	#DIV/0!	#DIV/0!	#DIV/0!
07:00			**238**												**238**	**238**	#DIV/0!	#DIV/0!	#DIV/0!
08:00			199												199	199	#DIV/0!	#DIV/0!	#DIV/0!
09:00			148												148	148	#DIV/0!	#DIV/0!	#DIV/0!
10:00			158												158	158	#DIV/0!	#DIV/0!	#DIV/0!
11:00			160												160	160	#DIV/0!	#DIV/0!	#DIV/0!
12:00 PM			165												165	165	#DIV/0!	#DIV/0!	#DIV/0!
01:00			**184**												**184**	**184**	#DIV/0!	#DIV/0!	#DIV/0!
02:00			165												165	165	#DIV/0!	#DIV/0!	#DIV/0!
03:00			206												206	206	#DIV/0!	#DIV/0!	#DIV/0!
04:00			**219**												**219**	**219**	#DIV/0!	#DIV/0!	#DIV/0!
05:00			192												192	192	#DIV/0!	#DIV/0!	#DIV/0!
06:00			107												107	107	#DIV/0!	#DIV/0!	#DIV/0!
07:00			104												104	104	#DIV/0!	#DIV/0!	#DIV/0!
08:00			92												92	92	#DIV/0!	#DIV/0!	#DIV/0!
09:00			60												60	60	#DIV/0!	#DIV/0!	#DIV/0!
10:00			36												36	36	#DIV/0!	#DIV/0!	#DIV/0!
11:00			24												24	24	#DIV/0!	#DIV/0!	#DIV/0!
Day Total	**0**	**0**	**2,804**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2,804**	**2,804**	**#DIV/0!**	**#DIV/0!**	**#DIV/0!**
% Avg Daily	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	**100%**	100%	#DIV/0!	#DIV/0!	#DIV/0!
% Avg WkDay	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	**100%**	#DIV/0!	#DIV/0!	#DIV/0!
AM Peak Volume	0	0	238	0	0	0	0	0	0	0	0	0	0	0	238	238	#DIV/0!	#DIV/0!	#DIV/0!
MID Peak Volume	0	0	184	0	0	0	0	0	0	0	0	0	0	0	184	184	#DIV/0!	#DIV/0!	#DIV/0!
PM Peak Volume	0	0	219	0	0	0	0	0	0	0	0	0	0	0	219	219	#DIV/0!	#DIV/0!	#DIV/0!

Avg Wkdy ADT:	**2,804**	**AADT Adjust:**	**0.835**	**AADT:**	**2,341**

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

Automatic Traffic Recorder (ATR) Data Summary

Project: *SR 58 Study*
Location: *Kidds Mill 24hr*
Direction:

Work Order: *18-055A*
ADT Site Code: *1*
Compiled By: *LNS*
Reviewed By: *KRP*

Start Time	Average Daily (7-Day)				Average Weekday (Tue-Thur)			
	EB	WB	Total	Dir Dist	EB	WB	Total	Dir Dist
12:00 AM	9	16	**25**	**36%**	9	16	**25**	**36%**
01:00	4	3	**7**	**57%**	4	3	**7**	**57%**
02:00	7	6	**13**	**54%**	7	6	**13**	**54%**
03:00	9	5	**14**	**64%**	9	5	**14**	**64%**
04:00	25	36	**61**	**41%**	25	36	**61**	**41%**
05:00	46	102	**148**	**31%**	46	102	**148**	**31%**
06:00	137	179	**316**	**43%**	137	179	**316**	**43%**
07:00	**179**	**238**	**417**	**43%**	**179**	**238**	**417**	**43%**
08:00	145	199	**344**	**42%**	145	199	**344**	**42%**
09:00	111	148	**259**	**43%**	111	148	**259**	**43%**
10:00	120	158	**278**	**43%**	120	158	**278**	**43%**
11:00	132	160	**292**	**45%**	132	160	**292**	**45%**
12:00 PM	153	165	**318**	**48%**	153	165	**318**	**48%**
01:00	155	**184**	**339**	**46%**	155	**184**	**339**	**46%**
02:00	**160**	165	**325**	**49%**	**160**	165	**325**	**49%**
03:00	223	206	**429**	**52%**	223	206	**429**	**52%**
04:00	**228**	**219**	**447**	**51%**	**228**	**219**	**447**	**51%**
05:00	206	192	**398**	**52%**	206	192	**398**	**52%**
06:00	140	107	**247**	**57%**	140	107	**247**	**57%**
07:00	115	104	**219**	**53%**	115	104	**219**	**53%**
08:00	87	92	**179**	**49%**	87	92	**179**	**49%**
09:00	54	60	**114**	**47%**	54	60	**114**	**47%**
10:00	45	36	**81**	**56%**	45	36	**81**	**56%**
11:00	33	24	**57**	**58%**	33	24	**57**	**58%**
Day Total	2,523	2,804	**5,327**	**47%**	2,523	2,804	**5,327**	**47%**
% Avg Daily	100%	100%	**100%**	-	100%	100%	**100%**	-
% Avg WkDay	100%	100%	**100%**	-	100%	100%	**100%**	-
AM Peak Volume	179	238	**417**	-	179	238	**417**	-
MD Peak Volume	160	184	**339**	-	160	184	**339**	-
PM Peak Volume	228	219	**447**	-	228	219	**447**	-

TRAFFIC PATTERN GROUP	DESCRIPTION
TPG 1	URBAN - INTERSTATE
TPG 2	RURAL - INTERSTATE
TPG 3	URBAN - OTHER PRINCIPAL ARTERIALS
TPG 4	RURAL - OTHER PRINCIPAL ARTERIALS
TPG 5	URBAN - MINOR ARTERIALS, COLLECTORS, LOCAL ROADS
TPG 6	NORTH RURAL - MINOR ARTERIALS
TPG 7	CENTRAL RURAL- MINOR ARTERIALS
TPG 8	NORTH RURAL - COLLECTORS AND LOCAL ROADS
TPG 9	CENTRAL RURAL- COLLECTORS AND LOCAL ROADS
TPG 10	SPECIAL RECREATIONAL

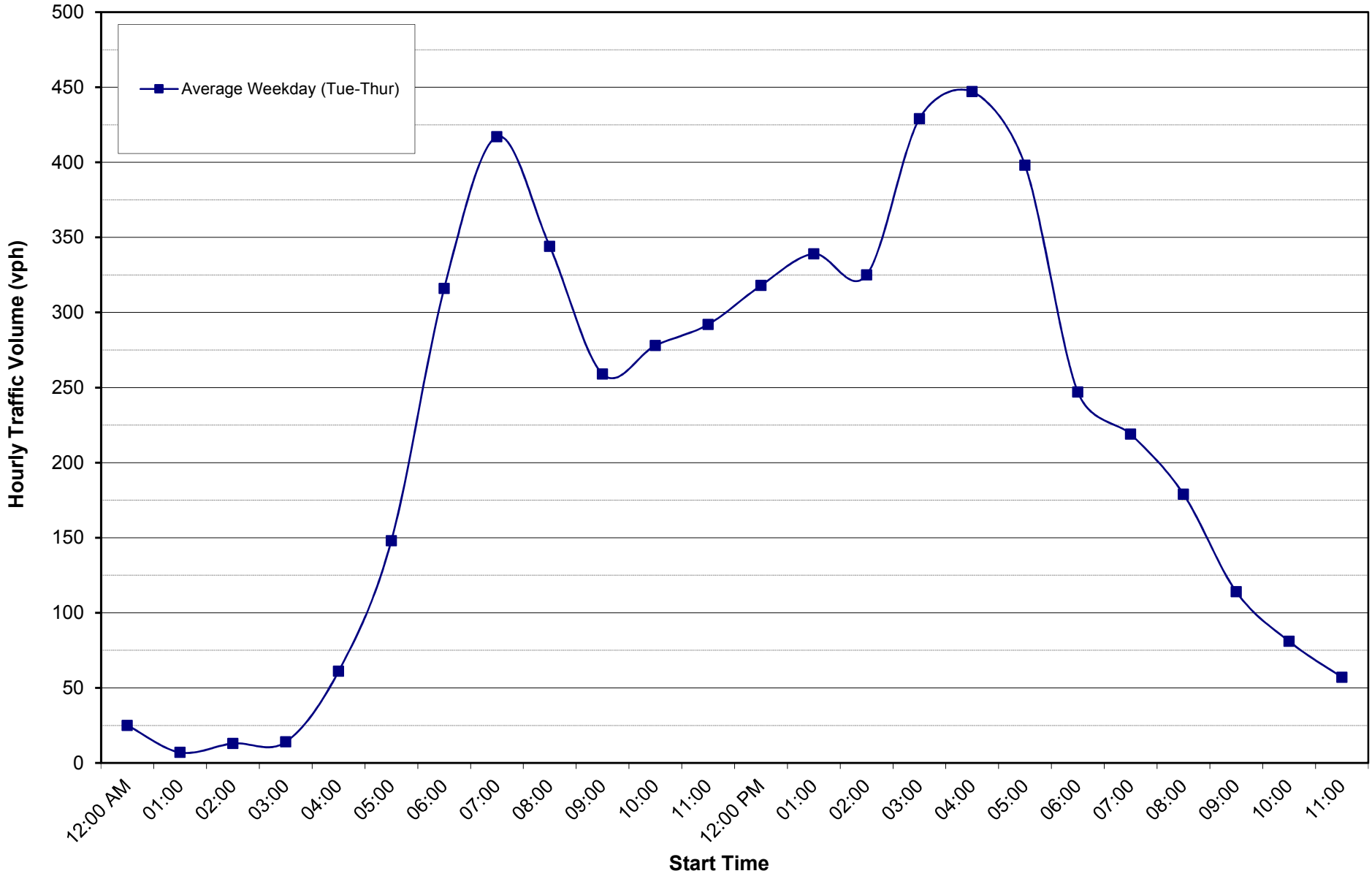
Table 355, Page 44 – May 2018

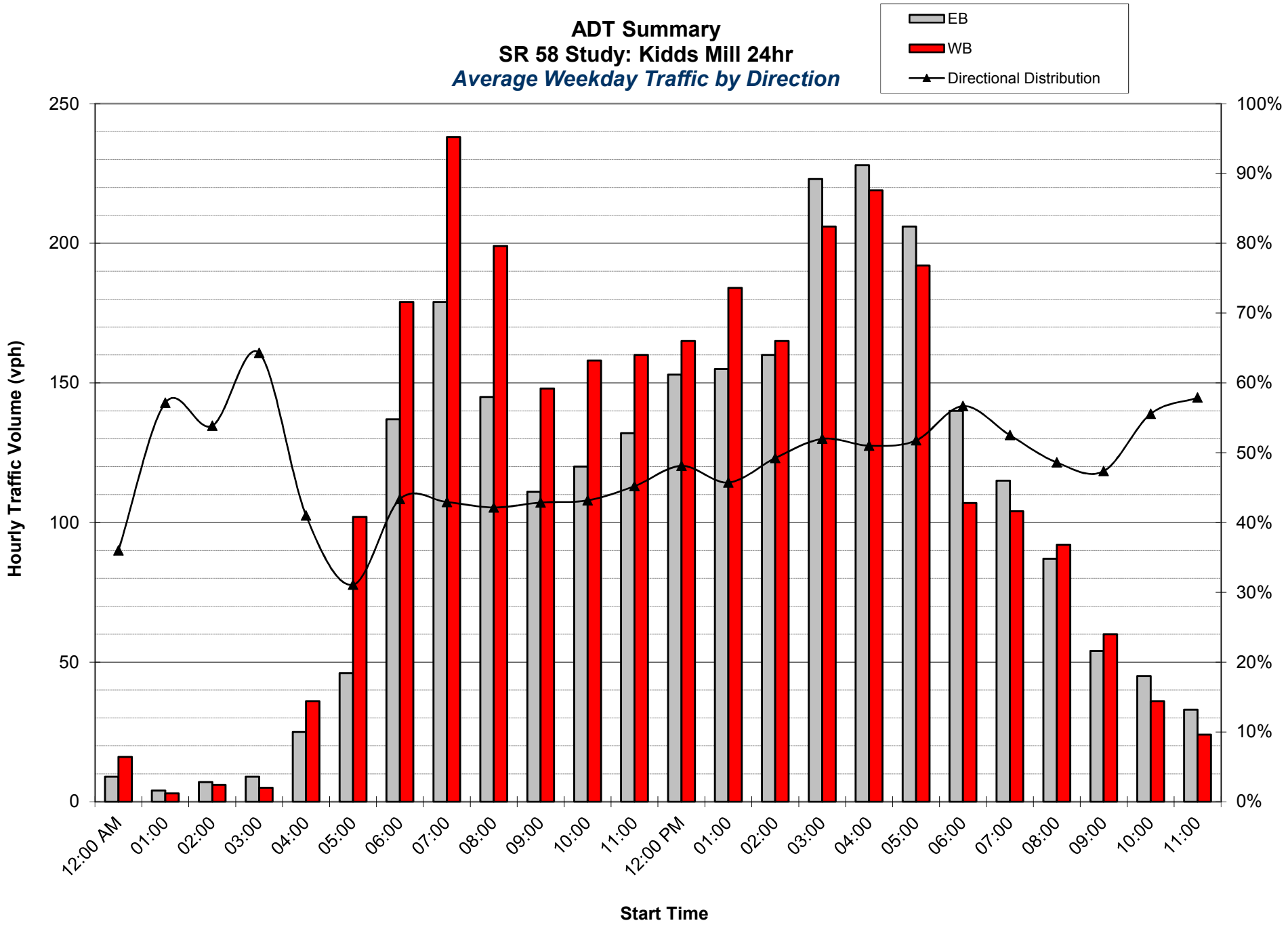
May 2018										
DAY	TPG 1	TPG 2	TPG 3	TPG 4	TPG 5	TPG 6	TPG 7	TPG 8	TPG 9	TPG 10
Monday	1.043	0.914	0.996	0.956	0.939	0.897	0.988	0.903	0.961	0.937
Tuesday	0.954	0.921	0.869	0.892	0.841	0.891	0.887	0.880	0.863	0.926
Wednesday	0.864	0.909	0.847	0.878	0.835	0.877	0.858	0.856	0.850	0.919
Thursday	0.840	0.851	0.832	0.841	0.840	0.854	0.856	0.833	0.836	0.877
Friday	0.790	0.775	0.811	0.787	0.775	0.788	0.805	0.781	0.800	0.711
Saturday	1.083	0.905	1.031	1.000	0.955	0.975	0.963	1.000	1.003	0.743
Sunday	1.100	0.954	1.198	1.111	1.111	1.045	1.129	1.052	1.188	0.696
DAY OF MONTH	0.953	0.890	0.940	0.924	0.899	0.904	0.927	0.901	0.929	0.830

Avg Wkdy ADT:	**5,327**	**AADT Adjust:**	**0.835**	**AADT:**	**4,448**

NOTES: *2018 May AADT Adjustment Factor For: TPG 5 Urban - Minor Arterials, Collectors, Local Roads*

ADT Summary
SR 58 Study: Kidds Mill 24hr
Two-Way Hourly Volumes by Day




ADT Summary
SR 58 Study: Kidds Mill 24hr
Average Weekday Traffic by Direction
EB
WB
Directional Distribution
Hourly Traffic Volume (vph)
250
200
150
100
50
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
12:00 AM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
12:00 PM
01:00
02:00
03:00
04:00
05:00
06:00
07:00
08:00
09:00
10:00
11:00
Start Time

PA 58 STUDY
EXISTING 2019 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 18 (MAIN ST)
CLINTON ST
CLINTON ST
PA 58 (MERCER ST)
PA 18 (MAIN ST)
STEWART AVE
YORK ST
PA 58 (MERCER ST)
1000 ft
N
Google Earth

PA 58 STUDY
EXISTING 2019 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 58 STUDY
OPENING YEAR 2025 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 18 (MAIN ST)

CLINTON ST

CLINTON ST

PA 18 (MAIN ST)

PA 58 (MERCER ST)

STEWART AVE

YORK ST

PA 58 (MERCER ST)

Google Earth

1000 ft

N

PA 58 STUDY
OPENING YEAR 2025 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 58 STUDY
DESIGN YEAR 2045 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 18 (MAIN ST)
CLINTON ST
CLINTON ST
PA 18 (MAIN ST)
PA 58 (MERCER ST)
STEWART AVE
YORK ST
PA 58 (MERCER ST)

25 3 (25)
4 (39) (14)
13 (15)
247 (363)
38 (47)
4 (5)
303 (398)
19 (46)
20
38 (47)
38 (39)
(57)

3
76 (105)
5 (14)
(4)
1 (11)
35 (45)
75 (106)
2 (11)
23 (69)
47 (58)
77 (108)
96 (123)
36 (51)

10
177
7 (22)
(229)
(17)
13 (17)
9 (8)
19 (19)
16 (10)
10 (9)
3 (4)
3
180 (17)
0 (257)
(2)

Google Earth
1000 ft
N

PA 58 STUDY
DESIGN YEAR 2045 VOLUMES

LEGEND:

XX = WEEKDAY AM PEAK
(XX) = WEEKDAY PM PEAK

PA 58 (GREENVILLE AVE)

PA 62 (PERRY HWY)

SR 3020 (NORTH ST)

SR 3020 (NORTH ST)

VENANGO ST

VENANGO ST

PA 19 (PERRY HWY)

225 (218)
38 (32)

99 (61)
241 (196)

31 (69)
55 (73)
26 (26)
13 (14)

0 (0)
155 (259)
173 (265)
0 (0)

Google Earth

N

1000 ft

APPENDIX F:

FIELD DATA

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	45	45	302	302	38	38	7	7	4.6	4.6	28	25	1	1
to SR 58 @ Clinton St		EB	12	57	343	646	4	42	8	16	19.2	7.7	28	25	0	1
to SR 58 @ Stewart Ave		EB	41	98	1847	2492	-4	38	45	61	30.8	17.3	28	25	0	1

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	63	63	304	304	56	56	7	7	3.3	3.3	28	25	1	1
to SR 58 @ Clinton St		EB	12	75	343	647	3	59	8	16	19.8	5.9	28	25	0	1
to SR 58 @ Stewart Ave		EB	39	114	1848	2495	-6	54	45	61	32.2	14.9	28	25	0	1

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	51	51	303	303	44	44	7	7	4	4	28	25	1	1
to SR 58 @ Clinton St		EB	12	63	343	646	4	48	8	16	19.7	7	28	25	0	1
to SR 58 @ Stewart Ave		EB	40	104	1848	2494	-5	43	45	61	31.2	16.4	28	25	0	1

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	52	52	301	301	45	45	7	7	4	4	28	25	1	1
to SR 58 @ Clinton St		EB	12	64	343	644	4	48	8	16	19.2	6.8	28	25	0	1
to SR 58 @ Stewart Ave		EB	40	104	1848	2493	-5	44	45	61	31.4	16.3	28	25	0	1

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	65	65	304	304	58	58	7	7	3.2	3.2	28	25	1	1
to SR 58 @ Clinton St		EB	13	79	343	648	5	63	8	16	17.4	5.6	28	25	0	1
to SR 58 @ Stewart Ave		EB	60	139	1850	2497	15	78	45	61	20.9	12.3	28	25	1	2

pennsylvania
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PA 58 Study
Travel Time Summary (Average Data)

Corridor: Mercer, Pa
Direction Eastbound
Scenario: AM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
Dir = Direction of Travel

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Running Time (sec @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT_{DS}**	**CRT_{DS}**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#100	0	EB	0	0	0	0	0	0	0	0	-	-	-	-	0.0	0.0
to SR 58 @ Main St	0	EB	55	55	303	303	48	48	7	7	19	9	28	25	0.3	0.3
to SR 58 @ Clinton St	0	EB	12	67	343	646	4	52	8	15	26	11	28	25	0.0	0.3
to SR 58 @ Stewart Ave	0	EB	44	111	1,848	2,494	-1	51	45	60	31	17	28	25	0.0	0.3
Corridor Average			**111**		**2,494**		**51**		**60**		**13**		**25**		**0**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Running Time (min @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT**	**CRT**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#100	0	EB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0
to SR 58 @ Main St	0	EB	0.9	0.9	0.1	0.1	0.8	0.8	0.1	0.1	19	9	28	25	0.3	0.3
to SR 58 @ Clinton St	0	EB	0.2	1.1	0.1	0.1	0.1	0.9	0.1	0.3	26	11	28	25	0.0	0.3
to SR 58 @ Stewart Ave	0	EB	0.7	1.9	0.4	0.5	0.0	0.9	0.8	1.0	31	17	28	25	0.0	0.3
Corridor Average			**1.9**		**0.5**		**0.9**		**1.0**		**13**		**25.0**		**0.3**	

0.7 (stops/mi)

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (95% Confidence Interval)

Corridor: Mercer, Pa
Direction Eastbound
Scenario: AM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

TT_{avg} = Average Field-measured Travel Tiime (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)
TT_n = Travel Time for Run "n" (from Previous Node)
CTT_n = Travel Time for Run "n" (Cumulative)
StDev = Standard Deviation of all CTT_i values
Int = ± Interval Value for 95% Confidence Interval
TT_{Lower} = 95% Confidence Travel Time Lower Boundary
TT_{Upper} = 95% Confidence Travel Time Upper Boundary

N = # of Travel Time Runs (*Enter Here*):	5

Statistics Table: Per Run Travel Times and Confidence Interval (Seconds)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#100	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0
to SR 58 @ Main St	55	55	45	45	63	63	51	51	52	52	65	65					8.5	7.4	48	63
to SR 58 @ Clinton St	12	67	12	57	12	75	12	63	12	64	13	78					8.8	7.7	60	75
to SR 58 @ Stewart Ave	44	111	41	98	39	114	40	103	40	104	60	138					16.0	14.0	97	125
Corridor Average (sec)			**98**		**114**		**103**		**104**		**138**						**± 14.0**		**97**	**125**

Statistics Table: Per Run Travel Times and Confidence Interval (Minutes)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
to SR 58 @ Main St	0.9	0.9	0.8	0.8	1.1	1.1	0.9	0.9	0.9	0.9	1.1	1.1	0.0	0.0	0.0	0.0	0.1	0.1	0.8	1.0
to SR 58 @ Clinton St	0.2	1.1	0.2	1.0	0.2	1.3	0.2	1.1	0.2	1.1	0.2	1.3	0.0	0.0	0.0	0.0	0.1	0.1	1.0	1.3
to SR 58 @ Stewart Ave	0.7	1.9	0.7	1.6	0.7	1.9	0.7	1.7	0.7	1.7	1.0	2.3	0.0	0.0	0.0	0.0	0.3	0.2	1.6	2.1
Corridor Average (minutes)	**1.9**		**1.6**		**1.9**		**1.7**		**1.7**		**2.3**		**0.0**		**0.0**		**± 0.2**		**1.6**	**2.1**

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DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Synchro Calibration Check)

Corridor: **Mercer, Pa**
Direction Eastbound
Scenario: AM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

LS = Link Speed (as coded in Synchro Model)

RT_{LS} = "No Stop" Running Time @ Link Speed (from Previous Node)
CRT_{LS} = "No Stop" Running Time @ Link Speed (Cumulative)

$Delay_S$ = Synchro Signal Delay (or other appropriate delay estimate)
CD_S = Synchro Signal Delay (Cumulative)

TT_S = Synchro-estimated Travel Time (from Previous Node)
CTT_S = Synchro-estimated Travel Time (Cumulative)

%Δ = % Error in Synchro-estimated Travel Times = (TT_{avg} - TT_S) / TT_{avg}
FIX/OK = Status of Synchro-estimated Travel Times vs specified thresholds

Summary Table: Synchro Calibration Data / Calculations (feet, seconds, mph)

Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (feet)		Speed (mph)	Running Time (sec @ DS)		Travel Delay (sec)		Travel Time (sec)		Speed (mph)	Running Time (sec @ LS)		Synchro Delay (sec)		Travel Time (sec)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#100	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
to SR 58 @ Main St	0	303	303	28	7	7	48	48	55	55	10	21	21	19	19	40	40	28%	FIX
to SR 58 @ Clinton St	0	343	646	28	8	15	4	52	12	67	15	16	36	13	32	29	69	-137%	FIX
to SR 58 @ Stewart Ave	0	1,848	2,494	28	45	60	-1	51	44	111	30	42	78	4	37	46	115	-5%	OK
Corridor Average		**2,494**		**-**	**60**		**51**		**111**		**-**	**78**		**37**		**115**		**-3%**	**OK**

Summary Table: Synchro Calibration Data / Calculations (miles, minutes, mph)

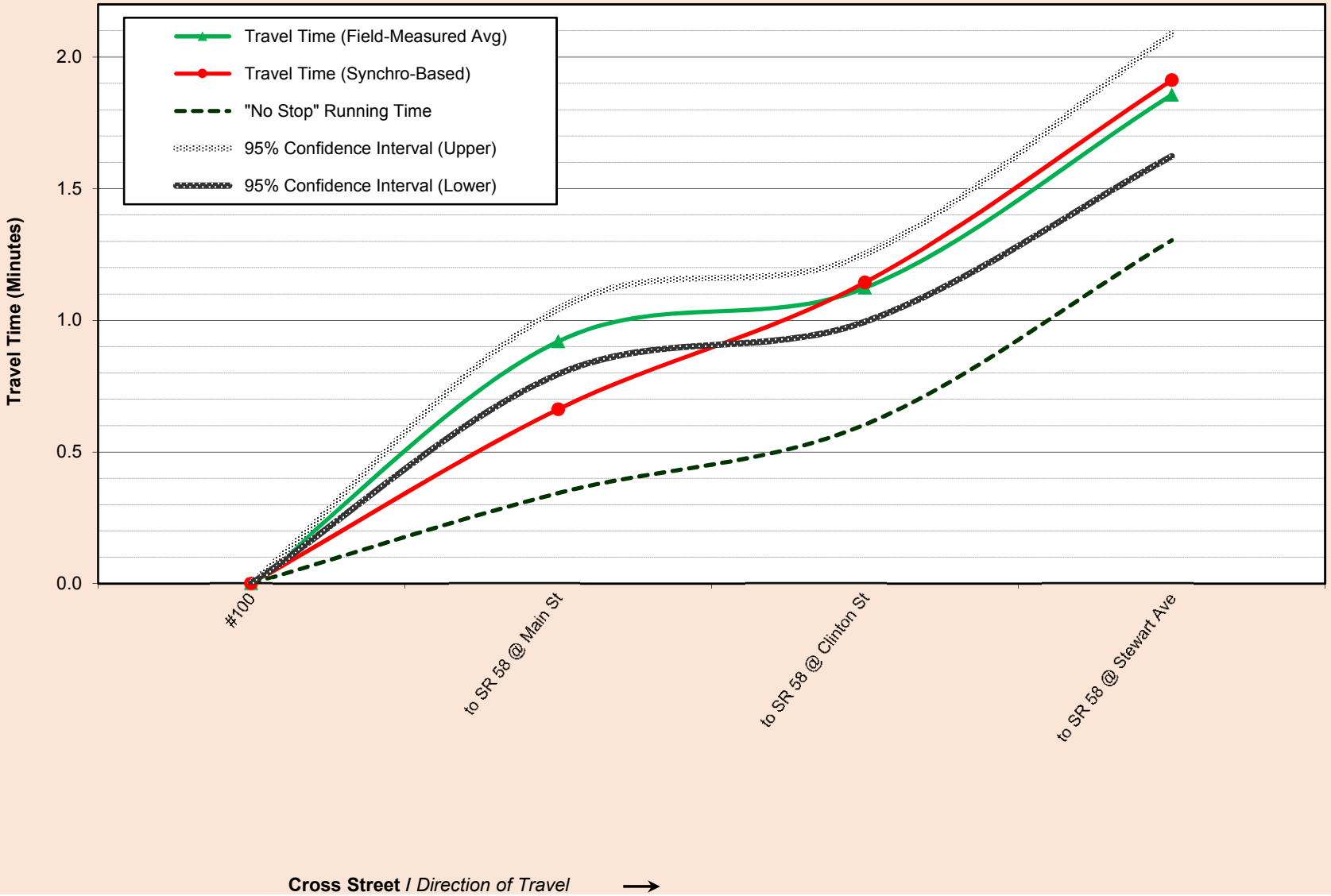
Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (mile)		Speed (mph)	Running Time (min @ DS)		Travel Delay (min)		Travel Time (min)		Speed (mph)	Running Time (min @ LS)		Synchro Delay (min)		Travel Time (min)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#100	0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-
to SR 58 @ Main St	0	0.1	0.1	28	0.1	0.0	0.8	0.8	0.9	0.9	10	0.3	0.3	0.3	0.3	0.7	0.7	28%	FIX
to SR 58 @ Clinton St	0	0.1	0.1	28	0.1	0.0	0.1	0.9	0.2	1.1	15	0.3	0.6	0.2	0.5	0.5	1.1	-137%	FIX
to SR 58 @ Stewart Ave	0	0.4	0.5	28	0.8	0.0	0.0	0.9	0.7	1.9	30	0.7	1.3	0.1	0.6	0.8	1.9	-5%	OK
Corridor Average		**0.5**		**-**	**0.0**		**0.9**		**1.9**		**-**	**1.3**		**0.6**		**1.9**		**-3%**	**OK**

PA 58 Study

Mercer, PA

Raw Travel Time Data for: 2019 Weekday Peaks by Run / AM Peak Eastbound



Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	37	37	1545	1545	0	0	38	38	28.3	28.3	28	25	0	0
to SR 58 @ Clinton St		WB	83	120	1845	3391	38	38	45	83	15.2	19.2	28	25	1	1
to SR 58 @ Main St		WB	24	144	345	3736	16	53	8	91	9.8	17.7	28	25	1	2

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	32	32	1544	1544	-6	-6	38	38	32.9	32.9	28	25	0	0
to SR 58 @ Clinton St		WB	37	70	1846	3390	-7	-13	45	83	33.6	33.2	28	25	0	0
to SR 58 @ Main St		WB	11	80	344	3734	2	-11	8	91	22	31.8	28	25	0	0

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	33	33	1544	1544	-4	-4	38	38	31.8	31.8	28	25	0	0
to SR 58 @ Clinton St		WB	38	71	1845	3389	-7	-12	45	83	33.4	32.7	28	25	0	0
to SR 58 @ Main St		WB	14	84	344	3733	5	-6	8	91	17.1	30.1	28	25	0	0

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	30	30	1545	1545	-8	-8	38	38	35.1	35.1	28	25	0	0
to SR 58 @ Clinton St		WB	76	106	1855	3400	31	23	45	83	16.7	21.9	28	25	1	1
to SR 58 @ Main St		WB	26	132	347	3747	18	41	8	91	8.9	19.3	28	25	1	2

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	32	32	1544	1544	-6	-6	38	38	32.8	32.8	28	25	0	0
to SR 58 @ Clinton St		WB	62	95	1846	3391	18	12	45	83	20.2	24.5	28	25	1	1
to SR 58 @ Main St		WB	29	123	346	3737	20	32	8	91	8.2	20.7	28	25	1	2

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DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Average Data)

Corridor: Mercer, Pa
Direction Westbound
Scenario: AM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
Dir = Direction of Travel

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Running Time (sec @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT_{DS}**	**CRT_{DS}**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#500	0	EB	0	0	0	0	0	0	0	0	-	-	-	-	0.0	0.0
to SR 58 @ Stewart Ave	0	WB	33	33	1,544	1,544	-5	-5	38	38	32	32	28	25	0.0	0.0
to SR 58 @ Clinton St	0	WB	59	92	1,847	3,392	15	10	45	83	24	26	28	25	0.6	0.6
to SR 58 @ Main St	0	WB	21	113	345	3,737	12	22	8	91	13	24	28	25	0.6	1.2
Corridor Average			**113**		**3,737**		**22**		**91**		**27**		**25**		**1**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Running Time (min @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT**	**CRT**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#500	0	EB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0
to SR 58 @ Stewart Ave	0	WB	0.5	0.5	0.3	0.3	-0.1	-0.1	0.6	0.6	32	32	28	25	0.0	0.0
to SR 58 @ Clinton St	0	WB	1.0	1.5	0.3	0.6	0.2	0.2	0.8	1.4	24	26	28	25	0.6	0.6
to SR 58 @ Main St	0	WB	0.3	1.9	0.1	0.7	0.2	0.4	0.1	1.5	13	24	28	25	0.6	1.2
Corridor Average			**1.9**		**0.7**		**0.4**		**1.5**		**27**		**25.0**		**1.2**	

1.7 (stops/mi)

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DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (95% Confidence Interval)

Corridor: Mercer, Pa
Direction Westbound
Scenario: AM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

TT_{avg} = Average Field-measured Travel Tiime (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)
TT_n = Travel Time for Run "n" (from Previous Node)
CTT_n = Travel Time for Run "n" (Cumulative)
StDev = Standard Deviation of all CTT_i values
Int = ± Interval Value for 95% Confidence Interval
TT_{Lower} = 95% Confidence Travel Time Lower Boundary
TT_{Upper} = 95% Confidence Travel Time Upper Boundary

N = # of Travel Time Runs (*Enter Here*):	5

Statistics Table: Per Run Travel Times and Confidence Interval (Seconds)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#500	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0
to SR 58 @ Stewart Ave	33	33	37	37	32	32	33	33	30	30	32	32					2.6	2.3	31	35
to SR 58 @ Clinton St	59	92	83	120	37	69	38	71	76	106	62	94					22.1	19.4	73	111
to SR 58 @ Main St	21	113	24	144	11	80	14	85	26	132	29	123					28.7	25.2	88	138
Corridor Average (sec)			**144**		**80**		**85**		**132**		**123**							**± 25.2**	**88**	**138**

Statistics Table: Per Run Travel Times and Confidence Interval (Minutes)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
to SR 58 @ Stewart Ave	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.6
to SR 58 @ Clinton St	1.0	1.5	1.4	2.0	0.6	1.2	0.6	1.2	1.3	1.8	1.0	1.6	0.0	0.0	0.0	0.0	0.4	0.3	1.2	1.9
to SR 58 @ Main St	0.3	1.9	0.4	2.4	0.2	1.3	0.2	1.4	0.4	2.2	0.5	2.1	0.0	0.0	0.0	0.0	0.5	0.4	1.5	2.3
Corridor Average (minutes)	**1.9**		**2.4**		**1.3**		**1.4**		**2.2**		**2.1**		**0.0**		**0.0**			**± 0.4**	**1.5**	**2.3**

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Synchro Calibration Check)

Corridor: Mercer, Pa
Direction Westbound
Scenario: AM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

LS = Link Speed (as coded in Synchro Model)

RT_{LS} = "No Stop" Running Time @ Link Speed (from Previous Node)
CRT_{LS} = "No Stop" Running Time @ Link Speed (Cumulative)

$Delay_S$ = Synchro Signal Delay (or other appropriate delay estimate)
CD_S = Synchro Signal Delay (Cumulative)

TT_S = Synchro-estimated Travel Time (from Previous Node)
CTT_S = Synchro-estimated Travel Time (Cumulative)

%Δ = % Error in Synchro-estimated Travel Times = (TT_{avg} - TT_S) / TT_{avg}
FIX/OK = Status of Synchro-estimated Travel Times vs specified thresholds

Summary Table: Synchro Calibration Data / Calculations (feet, seconds, mph)

Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (feet)		Speed (mph)	Running Time (sec @ DS)		Travel Delay (sec)		Travel Time (sec)		Speed (mph)	Running Time (sec @ LS)		Synchro Delay (sec)		Travel Time (sec)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#500	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
to SR 58 @ Stewart Ave	0	1,544	1,544	28	38	38	-5	-5	33	33	40	26	26	4	4	30	30	8%	OK
to SR 58 @ Clinton St	0	1,847	3,392	28	45	83	15	10	59	92	25	50	77	14	18	64	95	-9%	OK
to SR 58 @ Main St	0	345	3,737	28	8	91	12	22	21	113	25	9	86	29	47	38	133	-83%	FIX
Corridor Average		**3,737**		**-**	**91**		**22**		**113**		**-**	**86**		**47**		**133**		**-18%**	**FIX**

Summary Table: Synchro Calibration Data / Calculations (miles, minutes, mph)

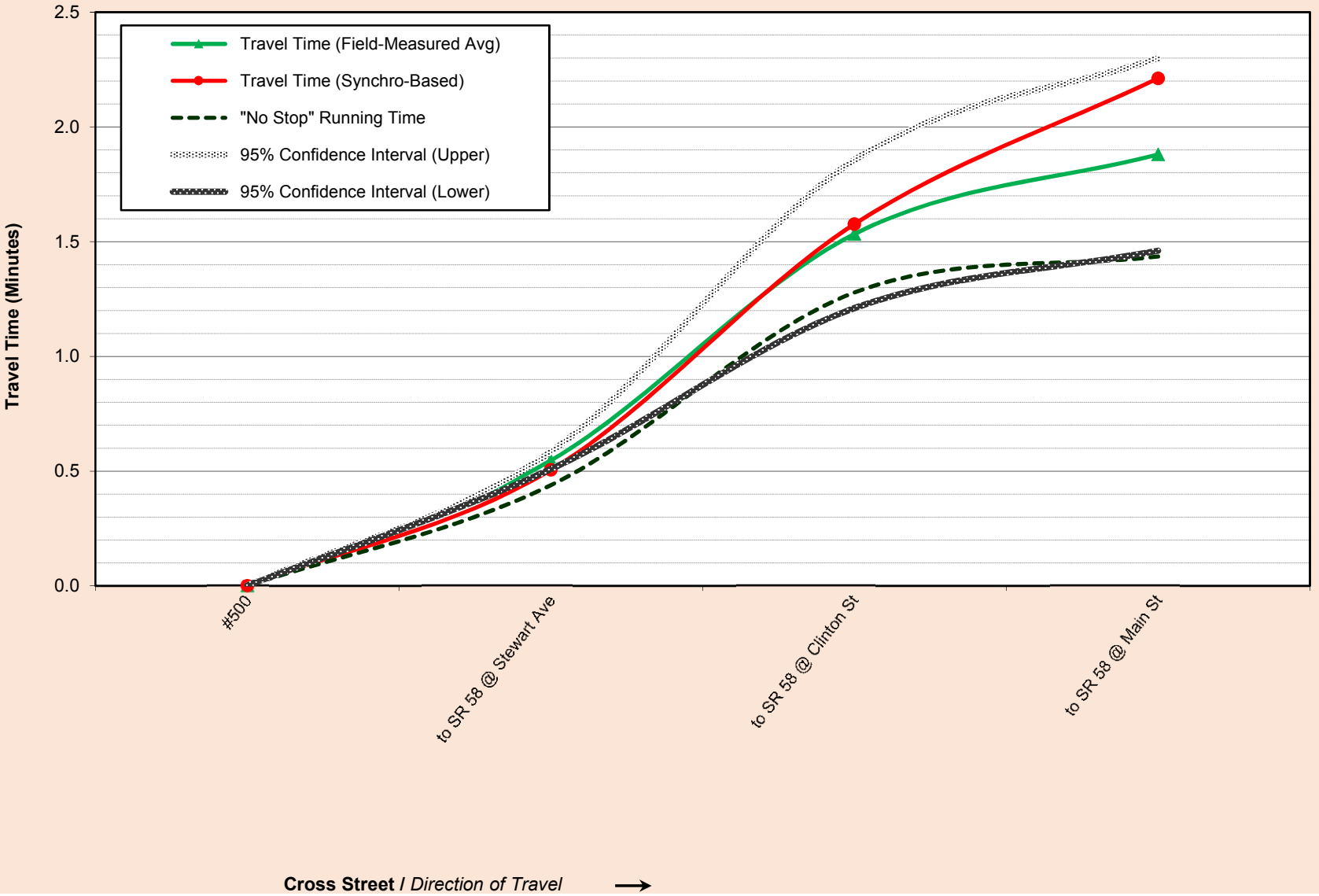
Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (mile)		Speed (mph)	Running Time (min @ DS)		Travel Delay (min)		Travel Time (min)		Speed (mph)	Running Time (min @ LS)		Synchro Delay (min)		Travel Time (min)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#500	0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-
to SR 58 @ Stewart Ave	0	0.3	0.3	28	0.6	0.0	-0.1	-0.1	0.5	0.5	40	0.4	0.4	0.1	0.1	0.5	0.5	8%	OK
to SR 58 @ Clinton St	0	0.3	0.6	28	0.8	0.0	0.2	0.2	1.0	1.5	25	0.8	1.3	0.2	0.3	1.1	1.6	-9%	OK
to SR 58 @ Main St	0	0.1	0.7	28	0.1	0.0	0.2	0.4	0.3	1.9	25	0.2	1.4	0.5	0.8	0.6	2.2	-83%	FIX
Corridor Average		**0.7**		**-**	**0.0**		**0.4**		**1.9**		**-**	**1.4**		**0.8**		**2.2**		**-18%**	**FIX**

PA 58 Study

Mercer, PA

Raw Travel Time Data for: 2019 Weekday Peaks by Run / AM Peak Westbound



Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	23	23	302	302	16	16	7	7	8.8	8.8	28	25	1	1
to SR 58 @ Clinton St		EB	50	74	345	647	42	58	8	16	4.7	6	28	25	1	2
to SR 58 @ Stewart Ave		EB	44	117	1845	2492	-1	57	45	61	28.8	14.5	28	25	0	2

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	28	28	302	302	21	21	7	7	7.4	7.4	28	25	1	1
to SR 58 @ Clinton St		EB	46	74	345	646	37	58	8	16	5.2	6	28	25	1	2
to SR 58 @ Stewart Ave		EB	68	141	1849	2495	23	81	45	61	18.6	12.1	28	25	1	3

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	27	27	303	303	20	20	7	7	7.6	7.6	28	25	1	1
to SR 58 @ Clinton St		EB	39	66	344	648	30	50	8	16	6.1	6.7	28	25	1	2
to SR 58 @ Stewart Ave		EB	41	107	1850	2498	-4	47	45	61	30.7	15.9	28	25	0	2

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	23	23	306	306	16	16	7	7	9	9	28	25	1	1
to SR 58 @ Clinton St		EB	46	69	345	651	37	53	8	16	5.2	6.5	28	25	1	2
to SR 58 @ Stewart Ave		EB	67	136	1854	2506	22	75	45	61	18.9	12.6	28	25	1	3

Entered artery traveling Eastbound from #100

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Main St		EB	60	60	305	305	53	53	7	7	3.4	3.4	28	25	1	1
to SR 58 @ Clinton St		EB	46	107	347	651	38	91	8	16	5.1	4.2	28	25	1	2
to SR 58 @ Stewart Ave		EB	47	154	1849	2500	2	94	45	61	26.6	11.1	28	25	0	2

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PA 58 Study
Travel Time Summary (Average Data)

Corridor: Mercer, Pa
Direction Eastbound
Scenario: PM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
Dir = Direction of Travel

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Running Time (sec @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT_{DS}**	**CRT_{DS}**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#100	0	EB	0	0	0	0	0	0	0	0	-	-	-	-	0.0	0.0
to SR 58 @ Main St	0	EB	32	32	304	304	25	25	7	7	7	7	28	25	1.0	1.0
to SR 58 @ Clinton St	0	EB	45	78	345	649	37	62	8	15	5	6	28	25	1.0	2.0
to SR 58 @ Stewart Ave	0	EB	53	131	1,849	2,498	8	70	45	60	25	13	28	25	0.4	2.4
Corridor Average			**131**		**2,498**		**70**		**60**		**9**		**25**		**2**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Running Time (min @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT**	**CRT**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#100	0	EB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0
to SR 58 @ Main St	0	EB	0.5	0.5	0.1	0.1	0.4	0.4	0.1	0.1	7	7	28	25	1.0	1.0
to SR 58 @ Clinton St	0	EB	0.8	1.3	0.1	0.1	0.6	1.0	0.1	0.3	5	6	28	25	1.0	2.0
to SR 58 @ Stewart Ave	0	EB	0.9	2.2	0.4	0.5	0.1	1.2	0.8	1.0	25	13	28	25	0.4	2.4
Corridor Average			**2.2**		**0.5**		**1.2**		**1.0**		**9**		**25.0**		**2.4**	

5.1 (stops/mi)

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PA 58 Study
Travel Time Summary (95% Confidence Interval)

Corridor: Mercer, Pa
Direction Eastbound
Scenario: PM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

TT_{avg} = Average Field-measured Travel Tiime (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)
TT_n = Travel Time for Run "n" (from Previous Node)
CTT_n = Travel Time for Run "n" (Cumulative)
StDev = Standard Deviation of all CTT_i values
Int = ± Interval Value for 95% Confidence Interval
TT_{Lower} = 95% Confidence Travel Time Lower Boundary
TT_{Upper} = 95% Confidence Travel Time Upper Boundary

N = # of Travel Time Runs (*Enter Here*):	5

Statistics Table: Per Run Travel Times and Confidence Interval (Seconds)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#100	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0
to SR 58 @ Main St	32	32	23	23	28	28	27	27	23	23	60	60					15.7	13.8	18	46
to SR 58 @ Clinton St	45	78	50	73	46	74	39	66	46	69	46	106					16.2	14.2	63	92
to SR 58 @ Stewart Ave	53	131	44	117	68	142	41	107	67	136	47	153					18.7	16.4	115	147
Corridor Average (sec)			**117**		**142**		**107**		**136**		**153**						**± 16.4**		**115**	**147**

Statistics Table: Per Run Travel Times and Confidence Interval (Minutes)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
to SR 58 @ Main St	0.5	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	1.0	1.0	0.0	0.0	0.0	0.0	0.3	0.2	0.3	0.8
to SR 58 @ Clinton St	0.8	1.3	0.8	1.2	0.8	1.2	0.7	1.1	0.8	1.2	0.8	1.8	0.0	0.0	0.0	0.0	0.3	0.2	1.1	1.5
to SR 58 @ Stewart Ave	0.9	2.2	0.7	2.0	1.1	2.4	0.7	1.8	1.1	2.3	0.8	2.6	0.0	0.0	0.0	0.0	0.3	0.3	1.9	2.5
Corridor Average (minutes)	**2.2**		**2.0**		**2.4**		**1.8**		**2.3**		**2.6**		**0.0**		**0.0**		**± 0.3**		**1.9**	**2.5**

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Synchro Calibration Check)

Corridor: **Mercer, Pa**
Direction Eastbound
Scenario: PM EB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

LS = Link Speed (as coded in Synchro Model)

RT_{LS} = "No Stop" Running Time @ Link Speed (from Previous Node)
CRT_{LS} = "No Stop" Running Time @ Link Speed (Cumulative)

$Delay_S$ = Synchro Signal Delay (or other appropriate delay estimate)
CD_S = Synchro Signal Delay (Cumulative)

TT_S = Synchro-estimated Travel Time (from Previous Node)
CTT_S = Synchro-estimated Travel Time (Cumulative)

%Δ = % Error in Synchro-estimated Travel Times = (TT_{avg} - TT_S) / TT_{avg}
FIX/OK = Status of Synchro-estimated Travel Times vs specified thresholds

Summary Table: Synchro Calibration Data / Calculations (feet, seconds, mph)

Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (feet)		Speed (mph)	Running Time (sec @ DS)		Travel Delay (sec)		Travel Time (sec)		Speed (mph)	Running Time (sec @ LS)		Synchro Delay (sec)		Travel Time (sec)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#100	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
to SR 58 @ Main St	0	304	304	28	7	7	25	25	32	32	15	14	14	19	19	32	32	-1%	OK
to SR 58 @ Clinton St	0	345	649	28	8	15	37	62	45	78	15	16	29	13	32	29	61	37%	FIX
to SR 58 @ Stewart Ave	0	1,849	2,498	28	45	60	8	70	53	131	25	50	80	4	36	55	116	-3%	OK
Corridor Average		**2,498**		**-**	**60**		**70**		**131**		**-**	**80**		**36**		**116**		**11%**	**FIX**

Summary Table: Synchro Calibration Data / Calculations (miles, minutes, mph)

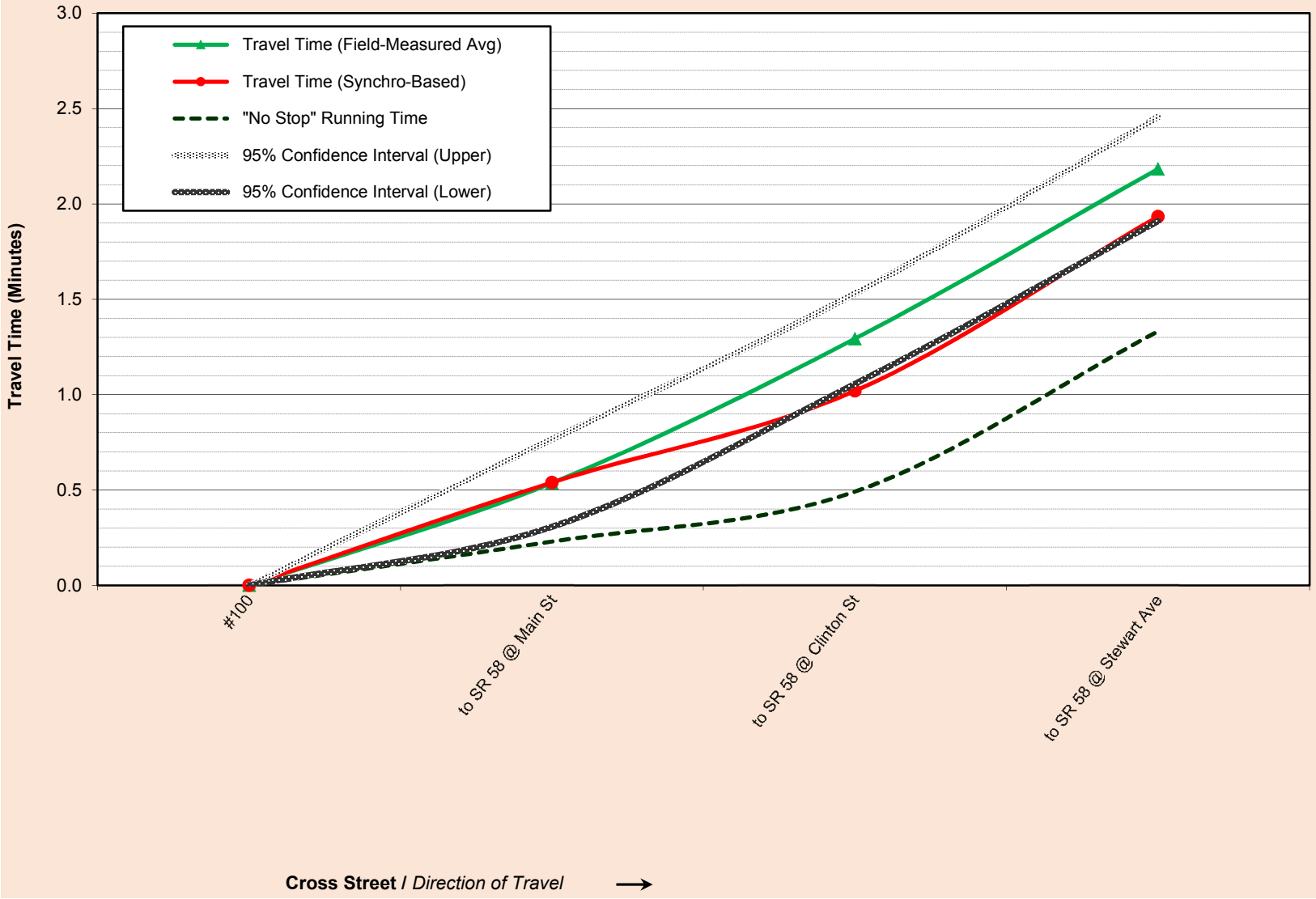
Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (mile)		Speed (mph)	Running Time (min @ DS)		Travel Delay (min)		Travel Time (min)		Speed (mph)	Running Time (min @ LS)		Synchro Delay (min)		Travel Time (min)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#100	0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-
to SR 58 @ Main St	0	0.1	0.1	28	0.1	0.0	0.4	0.4	0.5	0.5	15	0.2	0.2	0.3	0.3	0.5	0.5	-1%	OK
to SR 58 @ Clinton St	0	0.1	0.1	28	0.1	0.0	0.6	1.0	0.8	1.3	15	0.3	0.5	0.2	0.5	0.5	1.0	37%	FIX
to SR 58 @ Stewart Ave	0	0.4	0.5	28	0.8	0.0	0.1	1.2	0.9	2.2	25	0.8	1.3	0.1	0.6	0.9	1.9	-3%	OK
Corridor Average		**0.5**		**-**	**0.0**		**1.2**		**2.2**		**-**	**1.3**		**0.6**		**1.9**		**11%**	**FIX**

PA 58 Study

Mercer, PA

Raw Travel Time Data for: 2019 Weekday Peaks by Run / AM Peak Westbound



Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	48	48	1545	1545	10	10	38	38	22	22	28	25	1	1
to SR 58 @ Clinton St		WB	83	131	1845	3391	38	48	45	83	15.2	17.7	28	25	1	2
to SR 58 @ Main St		WB	36	166	346	3737	27	76	8	91	6.6	15.3	28	25	1	3

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	47	47	1543	1543	9	9	38	38	22.5	22.5	28	25	0	0
to SR 58 @ Clinton St		WB	77	124	1844	3387	32	41	45	83	16.3	18.6	28	25	1	1
to SR 58 @ Main St		WB	33	157	346	3733	25	66	8	91	7	16.2	28	25	1	2

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	30	30	1493	1493	-8	-8	38	38	33.8	33.8	28	25	0	0
to SR 58 @ Clinton St		WB	67	97	1892	3385	22	15	45	83	19.2	23.7	28	25	1	1
to SR 58 @ Main St		WB	36	134	349	3735	28	43	8	91	6.5	19	28	25	1	2

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	52	52	1545	1545	15	15	38	38	20.1	20.1	28	25	1	1
to SR 58 @ Clinton St		WB	86	138	1843	3388	41	56	45	83	14.6	16.7	28	25	1	2
to SR 58 @ Main St		WB	37	175	348	3736	28	84	8	91	6.4	14.5	28	25	1	3

Entered artery traveling Westbound from #500

Node	NID	Dir	TT	CTT	TL	CTL	Delay	CD	RT	CRT	AS	CAS	DS	PLS	Stops	CStops
to SR 58 @ Stewart Ave		WB	45	45	1543	1543	7	7	38	38	23.4	23.4	28	25	0	0
to SR 58 @ Clinton St		WB	78	122	1845	3389	33	40	45	83	16.2	18.9	28	25	1	1
to SR 58 @ Main St		WB	32	154	347	3736	24	63	8	91	7.4	16.5	28	25	1	2

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Average Data)

Corridor: Mercer, Pa
Direction Westbound
Scenario: PM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
Dir = Direction of Travel

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Running Time (sec @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT_{DS}**	**CRT_{DS}**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#500	0	EB	0	0	0	0	0	0	0	0	-	-	-	-	0.0	0.0
to SR 58 @ Stewart Ave	0	WB	44	44	1,534	1,534	7	7	38	38	24	24	28	25	0.4	0.4
to SR 58 @ Clinton St	0	WB	78	123	1,854	3,388	33	40	45	83	16	19	28	25	1.0	1.4
to SR 58 @ Main St	0	WB	35	157	347	3,735	26	66	8	91	7	16	28	25	1.0	2.4
Corridor Average			**157**		**3,735**		**66**		**91**		**20**		**25**		**2**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Running Time (min @ DS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	**NID**	**Dir**	**TT_{avg}**	**CTT_{avg}**	**TL**	**CTL**	**Delay**	**CD**	**RT**	**CRT**	**AS**	**CAS**	**DS**	**PLS**	**Stops**	**CStops**
#500	0	EB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-	-	-	0.0	0.0
to SR 58 @ Stewart Ave	0	WB	0.7	0.7	0.3	0.3	0.1	0.1	0.6	0.6	24	24	28	25	0.4	0.4
to SR 58 @ Clinton St	0	WB	1.3	2.0	0.4	0.6	0.6	0.7	0.8	1.4	16	19	28	25	1.0	1.4
to SR 58 @ Main St	0	WB	0.6	2.6	0.1	0.7	0.4	1.1	0.1	1.5	7	16	28	25	1.0	2.4
Corridor Average			**2.6**		**0.7**		**1.1**		**1.5**		**20**		**25.0**		**2.4**	

3.4 (stops/mi)

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (95% Confidence Interval)

Corridor: Mercer, Pa
Direction Westbound
Scenario: PM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

TT_{avg} = Average Field-measured Travel Tiime (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)
TT_n = Travel Time for Run "n" (from Previous Node)
CTT_n = Travel Time for Run "n" (Cumulative)
StDev = Standard Deviation of all CTT_i values
Int = ± Interval Value for 95% Confidence Interval
TT_{Lower} = 95% Confidence Travel Time Lower Boundary
TT_{Upper} = 95% Confidence Travel Time Upper Boundary

N = # of Travel Time Runs (*Enter Here*):	5

Statistics Table: Per Run Travel Times and Confidence Interval (Seconds)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#500	0	0	0	0	0	0	0	0	0	0	0	0					0	0	0	0
to SR 58 @ Stewart Ave	44	44	48	48	47	47	30	30	52	52	45	45					8.4	7.4	37	52
to SR 58 @ Clinton St	78	123	83	131	77	124	67	97	86	138	78	123					15.5	13.6	109	136
to SR 58 @ Main St	35	157	36	167	33	157	36	133	37	175	32	155					15.8	13.9	144	171
Corridor Average (sec)			**167**		**157**		**133**		**175**		**155**						**± 13.9**		**144**	**171**

Statistics Table: Per Run Travel Times and Confidence Interval (Minutes)

Average Travel Time Data			Individual Travel-Time Runs														95% Confidence Interval			
Node	TT_{avg}	CTT_{avg}	TT_1	CTT_1	TT_2	CTT_2	TT_3	CTT_3	TT_4	CTT_4	TT_5	CTT_5	TT_6	CTT_6	TT_7	CTT_7	StDev	Int	TT_{Lower}	TT_{Upper}
#500	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
to SR 58 @ Stewart Ave	0.7	0.7	0.8	0.8	0.8	0.8	0.5	0.5	0.9	0.9	0.8	0.8	0.0	0.0	0.0	0.0	0.1	0.1	0.6	0.9
to SR 58 @ Clinton St	1.3	2.0	1.4	2.2	1.3	2.1	1.1	1.6	1.4	2.3	1.3	2.1	0.0	0.0	0.0	0.0	0.3	0.2	1.8	2.3
to SR 58 @ Main St	0.6	2.6	0.6	2.8	0.6	2.6	0.6	2.2	0.6	2.9	0.5	2.6	0.0	0.0	0.0	0.0	0.3	0.2	2.4	2.9
Corridor Average (minutes)	**2.6**		**2.8**		**2.6**		**2.2**		**2.9**		**2.6**		**0.0**		**0.0**		**± 0.2**		**2.4**	**2.9**

pennsylvania
DEPARTMENT OF TRANSPORTATION

PA 58 Study
Travel Time Summary (Synchro Calibration Check)

Corridor: Mercer, Pa
Direction Westbound
Scenario: PM WB
By: LNS

Notes / Definitions / Abbreviations

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

LS = Link Speed (as coded in Synchro Model)

RT_{LS} = "No Stop" Running Time @ Link Speed (from Previous Node)
CRT_{LS} = "No Stop" Running Time @ Link Speed (Cumulative)

$Delay_S$ = Synchro Signal Delay (or other appropriate delay estimate)
CD_S = Synchro Signal Delay (Cumulative)

TT_S = Synchro-estimated Travel Time (from Previous Node)
CTT_S = Synchro-estimated Travel Time (Cumulative)

%Δ = % Error in Synchro-estimated Travel Times = (TT_{avg} - TT_S) / TT_{avg}
FIX/OK = Status of Synchro-estimated Travel Times vs specified thresholds

Summary Table: Synchro Calibration Data / Calculations (feet, seconds, mph)

Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (feet)		Speed (mph)	Running Time (sec @ DS)		Travel Delay (sec)		Travel Time (sec)		Speed (mph)	Running Time (sec @ LS)		Synchro Delay (sec)		Travel Time (sec)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#500	0	0	0	-	0	0	0	0	0	0	-	0	0	0	0	0	0	-	-
to SR 58 @ Stewart Ave	0	1,534	1,534	28	38	38	7	7	44	44	30	35	35	4	4	39	39	12%	OK
to SR 58 @ Clinton St	0	1,854	3,388	28	45	83	33	40	78	123	20	63	98	15	19	78	117	0%	OK
to SR 58 @ Main St	0	347	3,735	28	8	91	26	66	35	157	20	12	110	25	44	36	153	-5%	OK
Corridor Average		**3,735**		**-**	**91**		**66**		**157**		**-**	**110**		**44**		**153**		**3%**	**OK**

Summary Table: Synchro Calibration Data / Calculations (miles, minutes, mph)

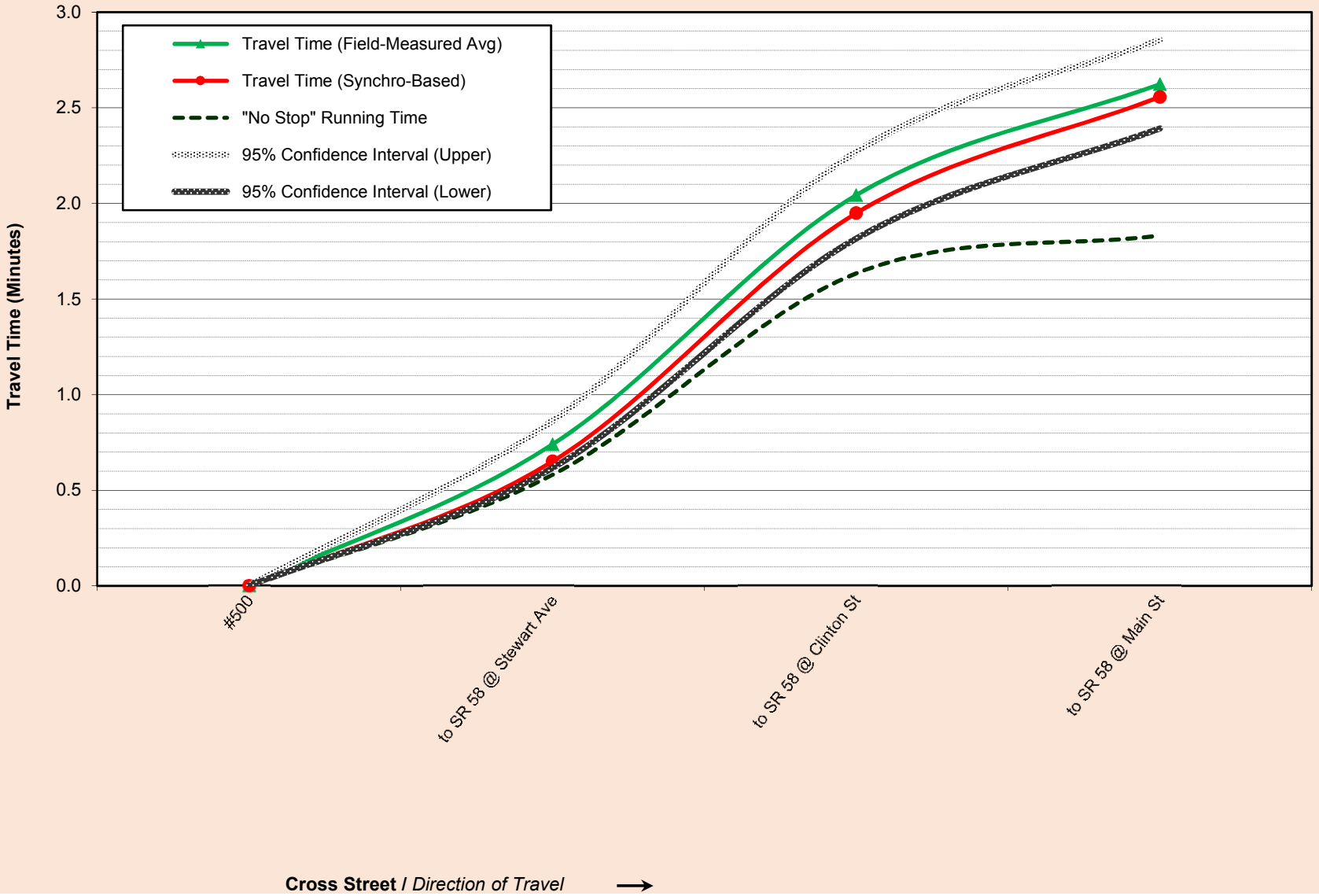
Specified Threshold for Synchro link-to-link travel times: **20%**
Specified Threshold for Synchro end-to-end travel time: **10%**

Intersection / Link Data		FIELD TRAVEL TIME DATA									SYNCHRO DATA								
		Travel Length (mile)		Speed (mph)	Running Time (min @ DS)		Travel Delay (min)		Travel Time (min)		Speed (mph)	Running Time (min @ LS)		Synchro Delay (min)		Travel Time (min)		Synchro Error	
Node	**NID**	**TL**	**CTL**	**DS**	**RT_{DS}**	**CRT_{DS}**	**Delay**	**CD**	**TT_{avg}**	**CTT_{avg}**	**LS**	**RT_{LS}**	**CRT_{LS}**	**$Delay_S$**	**CD_S**	**TT_S**	**CTT_S**	**%Δ**	**FIX/OK**
#500	0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-
to SR 58 @ Stewart Ave	0	0.3	0.3	28	0.6	0.0	0.1	0.1	0.7	0.7	30	0.6	0.6	0.1	0.1	0.7	0.7	12%	OK
to SR 58 @ Clinton St	0	0.4	0.6	28	0.8	0.0	0.6	0.7	1.3	2.0	20	1.1	1.6	0.2	0.3	1.3	1.9	0%	OK
to SR 58 @ Main St	0	0.1	0.7	28	0.1	0.0	0.4	1.1	0.6	2.6	20	0.2	1.8	0.4	0.7	0.6	2.6	-5%	OK
Corridor Average		**0.7**		**-**	**0.0**		**1.1**		**2.6**		**-**	**1.8**		**0.7**		**2.6**		**3%**	**OK**

PA 58 Study

Mercer, PA

Raw Travel Time Data for: 2019 Weekday Peaks by Run / PM Peak Westbound



PA 58: Roadway Study
Ball Bank Recordings

POSTED SPEED LIMIT (MPH)	LOCATION	DIRECTION OF TRAVEL	SPEED (MPH)	BALL -BANK READING (DEGREES) RUN	AVERAGE READING	MAXIMUM ALLOWABLE READING	COMMENTS
	SR 58 BETWEEN KIDDS MILL RD & BEIL HILL RD SEG 310/0622 0310/1402		55	15			
			55	15			
55		SOUTH	55	15	15	12	CURVE IS SIGNED WITH A CURVE LEFT/40 MPH ADV.
			45	10			
			45	10			
		SOUTH	45	10	10	12	
			40	8			
			40	8			
		SOUTH	40	8	8	12	
	SR 58 BETWEEN BEIL HILL RD & KIDDS MILL RD SEG 310/0622 0310/1402		45	10			
			45	10			CURVE IS SIGNED WITH A CURVE RIGHT/40 MPH ADV.
45		NORTH	45	10	10	12	
			40	8			
			40	8			
		NORTH	40	8	8	12	
		NORTH			0	12	
			35	5			
		NORTH	35	5			COMPLETED FOR A CHECK ONLY
						12	

Note: Ball Bank Reading began with the posted speed limit and were reduced by 5 MPH for each subsequent run

DATE: JULY 17,2019

WEATHER: CLOUDY

RECORDED BY: D.BORING/S. WEAVER

FINDINGS:

THE EXISTING 40 MPH ADVISORY IS ADEQUATE FOR THIS CURVE.
THE SOUTHBOUND SPEED LIMIT INCREASES FROM 45 MPH TO 55 MPH AT ~Seg 300/1200 -- ~1400' BEFORE KIDDS MILL ROAD
THE NORTHBOUND SPEED LIMIT IS 45 MPH IN THIS AREA.

PA 58: Roadway Study
Ball Bank Recordings

POSTED SPEED LIMIT (MPH)	LOCATION	DIRECTION OF TRAVEL	SPEED (MPH)	BALL -BANK READING (DEGREES) RUN	AVERAGE READING	MAXIMUM ALLOWABLE READING	COMMENTS
	SR 58 APPROACHING HAMBURG ROAD T635 SEG 370/0000 (AT CEMETARY)		55	10			CURVE IS SIGNED WITH A CURVE LEFT/35 MPH ADV. AND AN INTERSECTION SIGN WITH A 35 MPH ADV
			55	10			
55		SOUTH	55	10	10	12	
			50	5			
			50	5			
		SOUTH	50	5	5	12	
			35	3			RAN FOR CHECK ONLY BALL BANK READING BETWEEN 0^0 & 5^0
		SOUTH				12	
	SR 58 APPROACHING HAMBURG ROAD T635 SEG 370/0000 (AT CEMETARY)		55	10			
			55	10			CURVE IS SIGNED WITH A CURVE RIGHT/35 MPH ADV.
55		NORTH	55	10	10	12	
			50	5			
			50	5			
		NORTH	50	5	5	12	
			35	3			RAN FOR CHECK ONLY BALL BANK READING BETWEEN 0^0 & 5^0
		NORTH				12	

Note: Ball Bank Reading began with the posted speed limit and were reduced by 5 MPH for each subsequent run

DATE: JULY 17,2019

WEATHER: CLOUDY

RECORDED BY: D.BORING/S. WEAVER

FINDINGS:

THE EXISTING 35 MPH ADVISORY IS ADEQUATE FOR THIS CURVE.
BALL BANK READING INDICATED THE CURVE SPEED COULD BE INCREASED TO 50 MPH
MORE DRIVER COMFORT TRAVELING SB THROUGH THE CURVE DUE TO BETTER VISIBILYT OF INTERSECTION.

PA 58: Roadway Study
Ball Bank Recordings

POSTED SPEED LIMIT (MPH)	LOCATION	DIRECTION OF TRAVEL	SPEED (MPH)	BALL -BANK READING (DEGREES) RUN	AVERAGE READING	MAXIMUM ALLOWABLE READING	COMMENTS
	SR 58 BETWEEN W.CORNELL ROAD & OLD FREEDONIA ROAD		55	8			
			55	8			CURVE IS SIGNED WITH A CURVE LEFT/50 MPH ADV.
55	500/1800-2500	SOUTH	55	8	8	12	AND CHEVRONS
			*50	8			
							AT 55 & 50 MPH BALL BANK READING WAS OVER 5^0 BUT
		SOUTH				12	DID NOT REACH 10^0
	SR 58 BETWEEN OLD FREEDONIA ROAD & W. CORNELL ROAD		55	8			
			55	8			CURVE IS SIGNED WITH A CURVE RIGHT 50 MPH
55	500/1800-2500	NORTH	55	8	8	12	ADV.AND CHEVRONS
			*50	5			
							AT 55 & 50 MPH BALL BANK READING WAS OVER 5^0 BUT
		NORTH				12	DID NOT REACH 10^0
			35	5			RAN FOR CHECK ONLY
		NORTH				12	

Note: Ball Bank Reading began with the posted speed limit and were reduced by 5 MPH for each subsequent run

DATE: JULY 17,2019

WEATHER: CLOUDY

RECORDED BY: D.BORING/S. WEAVER

FINDINGS:

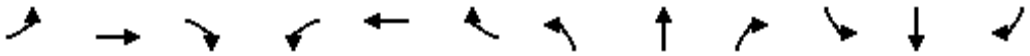
THE EXISTING 50 MPH ADVISORY IS ADEQUATE FOR THIS CURVE.

BALL BANK READINGS INDICATE THAT AN ADVISORY SPEED LIMIT IS NOT NEEDED

* Due to the readings at 55 MPH we did not complete three (3) runs at 50 MPH.

APPENDIX G:

CAPACITY ANALYSIS



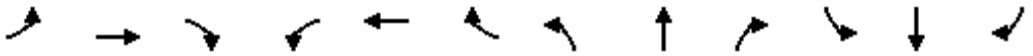
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	278	17	35	226	12	35	35	18	3	23	4
Future Volume (vph)	4	278	17	35	226	12	35	35	18	3	23	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.991			0.992			0.950			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1430	1713	0	1413	1817	0	1538	1586	0	1426	1465	0
Flt Permitted	0.590			0.534			0.737			0.718		
Satd. Flow (perm)	888	1713	0	794	1817	0	1193	1586	0	1078	1465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			6			20			5	
Link Speed (mph)		35			35			25			10	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			8.7			22.0	
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 (%)	25%	9%	6%	29%	5%	0%	9%	0%	17%	0%	0%	0%
Adj. Flow (vph)	5	316	19	40	257	14	40	40	20	3	26	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	335	0	40	271	0	40	60	0	3	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.35		0.09	0.26		0.12	0.13		0.01	0.07	
Control Delay	7.8	10.6		8.8	9.6		32.2	26.3		20.7	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	10.6		8.8	9.6		32.2	26.3		20.7	19.0	
LOS	A	B		A	A		C	C		C	B	
Approach Delay		10.5			9.5			28.7			19.1	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 12.8 Intersection LOS: B
Intersection Capacity Utilization 47.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 58 & Main St

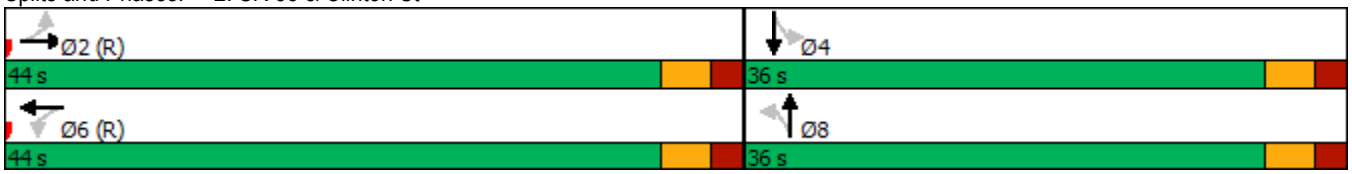


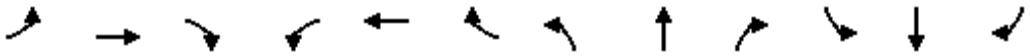
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	21	43	69	32	1	33	88	71	3	70	5
Future Volume (vph)	2	21	43	69	32	1	33	88	71	3	70	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.899			0.999			0.933			0.990	
Flt Protected	0.950				0.967		0.950			0.950		
Satd. Flow (prot)	1745	1557	0	0	1600	0	1636	1566	0	1009	1552	0
Flt Permitted	0.703				0.785		0.696			0.611		
Satd. Flow (perm)	1291	1557	0	0	1299	0	1198	1566	0	649	1552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			1			59			5	
Link Speed (mph)		25			25			25			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			49.2			14.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	9%	9%	3%	0%	3%	7%	4%	67%	14%	0%
Adj. Flow (vph)	3	26	54	86	40	1	41	110	89	4	88	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	80	0	0	127	0	41	199	0	4	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.00	0.10			0.20		0.09	0.31		0.02	0.16	
Control Delay	10.5	5.4			12.6		16.3	13.3		13.3	13.2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.5	5.4			12.6		16.3	13.3		13.3	13.2	
LOS	B	A			B		B	B		B	B	
Approach Delay		5.6			12.6			13.9			13.2	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St



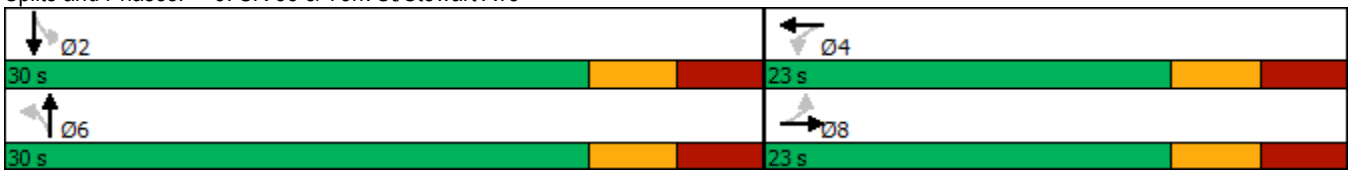


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	9	3	17	8	12	0	165	3	9	162	6
Future Volume (vph)	15	9	3	17	8	12	0	165	3	9	162	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.957			0.998			0.995	
Flt Protected		0.972			0.977						0.997	
Satd. Flow (prot)	0	1698	0	0	1730	0	0	1997	0	0	1853	0
Flt Permitted					0.976						0.985	
Satd. Flow (perm)	0	1746	0	0	1729	0	0	1997	0	0	1831	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			13			2			4	
Link Speed (mph)		25			25			40			30	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			7.2			41.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	0%	33%	12%	0%	0%	0%	4%	33%	0%	13%	0%
Adj. Flow (vph)	17	10	3	19	9	13	0	183	3	10	180	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	41	0	0	186	0	0	197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.6			6.6			35.4			35.4	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.11			0.15			0.12			0.13	
Control Delay		15.7			13.7			4.0			4.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			13.7			4.0			4.1	
LOS		B			B			A			A	
Approach Delay		15.7			13.7			4.0			4.1	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 53			
Actuated Cycle Length: 43.9			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.15			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 32.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: SR 58 & York St/Stewart Ave

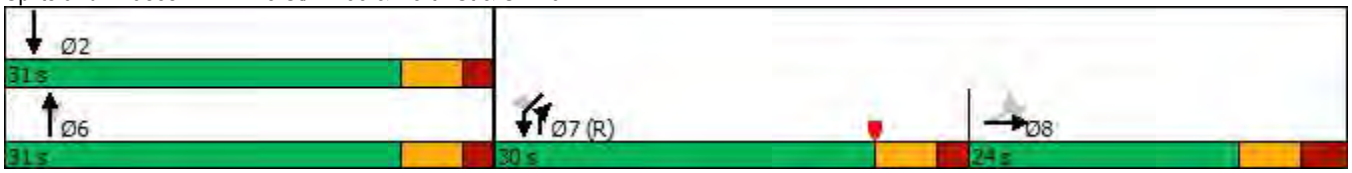


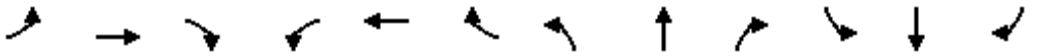
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	28	50	24	12	159	142	206	35	221	91
Future Volume (vph)	28	50	24	12	159	142	206	35	221	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			0.850	0.980			0.850
Flt Protected			0.967						0.950	
Satd. Flow (prot)	0	0	1663	0	1719	1583	1692	0	1604	1408
Flt Permitted			0.967						0.950	
Satd. Flow (perm)	0	0	1663	0	1719	1583	1692	0	1604	1408
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	6%	8%	0%	9%	11%	8%	3%	5%	7%
Adj. Flow (vph)	30	54	26	13	171	153	222	38	238	98
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	123	0	171	153	260	0	238	98
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			11.7		20.7	64.3	20.7		36.4	36.4
Actuated g/C Ratio			0.14		0.24	0.76	0.24		0.43	0.43
v/c Ratio			0.54		0.41	0.13	0.63		0.35	0.16
Control Delay			42.1		29.2	4.7	35.5		22.0	20.6
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			42.1		29.2	4.7	35.5		22.0	20.6
LOS			D		C	A	D		C	C
Approach Delay			42.1		17.6		35.5		21.6	
Approach LOS			D		B		D		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 26.2		Intersection LOS: C	
Intersection Capacity Utilization 47.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19





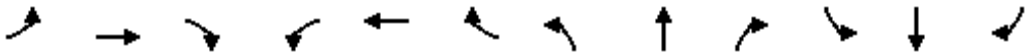
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	365	42	43	333	14	52	36	43	23	36	13
Future Volume (vph)	5	365	42	43	333	14	52	36	43	23	36	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.985			0.994			0.919			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1765	0	1628	1837	0	1552	1558	0	1693	1711	0
Flt Permitted	0.508			0.457			0.723			0.703		
Satd. Flow (perm)	956	1765	0	783	1837	0	1181	1558	0	1253	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			4			45			14	
Link Speed (mph)		35			35			20			15	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			10.8			14.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	5%	12%	4%	0%	8%	3%	5%	0%	0%	0%
Adj. Flow (vph)	5	384	44	45	351	15	55	38	45	24	38	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	428	0	45	366	0	55	83	0	24	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.43		0.10	0.35		0.16	0.17		0.07	0.10	
Control Delay	7.8	11.4		8.9	10.7		28.8	19.6		21.5	17.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	11.4		8.9	10.7		28.8	19.6		21.5	17.2	
LOS	A	B		A	B		C	B		C	B	
Approach Delay		11.4			10.5			23.2			18.6	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.43
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 54.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 58 & Main St

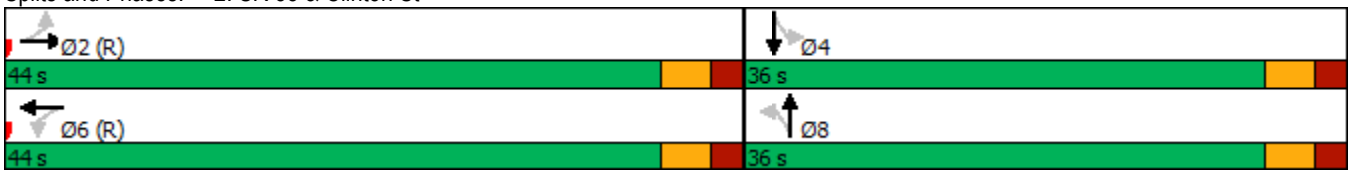


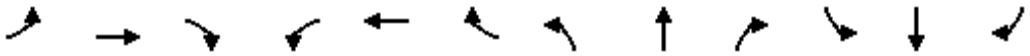
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	63	53	97	41	10	47	113	99	4	96	13
Future Volume (vph)	10	63	53	97	41	10	47	113	99	4	96	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.931			0.991			0.930			0.982	
Flt Protected	0.950				0.968		0.950			0.950		
Satd. Flow (prot)	1586	1627	0	0	1595	0	1620	1557	0	1135	1381	0
Flt Permitted	0.675				0.753		0.681			0.568		
Satd. Flow (perm)	1127	1627	0	0	1241	0	1161	1557	0	679	1381	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		58			6			65			10	
Link Speed (mph)		25			25			20			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			61.5			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	6%	4%	8%	5%	0%	4%	5%	7%	25%	7%	0%
Adj. Flow (vph)	11	69	58	107	45	11	52	124	109	4	105	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	127	0	0	163	0	52	233	0	4	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.02	0.15			0.27		0.12	0.36		0.02	0.22	
Control Delay	10.9	7.1			13.1		16.7	14.3		13.0	13.1	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.9	7.1			13.1		16.7	14.3		13.0	13.1	
LOS	B	A			B		B	B		B	B	
Approach Delay		7.4			13.1			14.7			13.1	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 12.6		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St



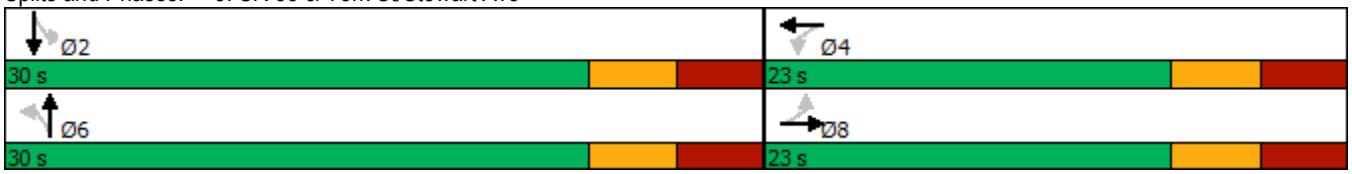


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	8	4	17	7	16	2	236	16	20	210	16
Future Volume (vph)	9	8	4	17	7	16	2	236	16	20	210	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1700	1700	1700
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.947			0.992			0.991	
Flt Protected		0.980			0.979						0.996	
Satd. Flow (prot)	0	1731	0	0	1811	0	0	1930	0	0	1721	0
Flt Permitted		0.944			0.957			0.998			0.963	
Satd. Flow (perm)	0	1667	0	0	1770	0	0	1926	0	0	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			18			8			8	
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			9.6			49.2	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	11%	0%	0%	0%	0%	0%	100%	6%	19%	0%	8%	6%
Adj. Flow (vph)	10	9	5	20	8	18	2	271	18	23	241	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	46	0	0	291	0	0	282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.6			6.6			35.5			35.5	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.09			0.16			0.19			0.21	
Control Delay		14.9			13.1			4.2			4.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.9			13.1			4.2			4.4	
LOS		B			B			A			A	
Approach Delay		14.9			13.1			4.2			4.4	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 53			
Actuated Cycle Length: 44			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.21			
Intersection Signal Delay: 5.3		Intersection LOS: A	
Intersection Capacity Utilization 45.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: SR 58 & York St/Stewart Ave

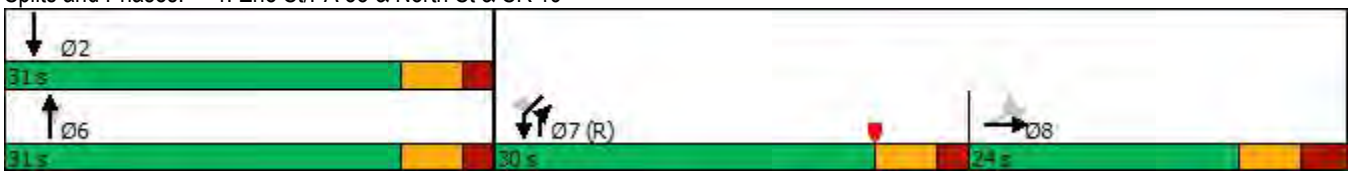


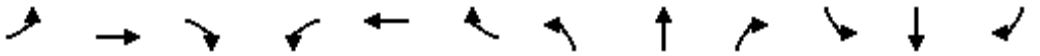
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	63	67	24	13	243	237	200	29	180	56
Future Volume (vph)	63	67	24	13	243	237	200	29	180	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989			0.850	0.983			0.850
Flt Protected			0.963						0.950	
Satd. Flow (prot)	0	0	1702	0	1784	1658	1768	0	1574	1507
Flt Permitted			0.963						0.950	
Satd. Flow (perm)	0	0	1702	0	1784	1658	1768	0	1574	1507
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	4%	8%	5%	6%	3%	3%	7%	0%
Adj. Flow (vph)	66	70	25	14	253	247	208	30	188	58
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	175	0	253	247	238	0	188	58
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			13.6		20.0	58.4	20.0		32.4	32.4
Actuated g/C Ratio			0.16		0.24	0.69	0.24		0.38	0.38
v/c Ratio			0.64		0.60	0.22	0.57		0.31	0.10
Control Delay			44.1		34.8	6.0	33.8		22.7	20.9
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			44.1		34.8	6.0	33.8		22.7	20.9
LOS			D		C	A	C		C	C
Approach Delay			44.1		20.6		33.8		22.3	
Approach LOS			D		C		C		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19





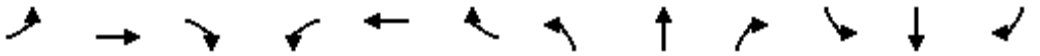
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	284	17	36	231	12	36	36	18	3	23	4
Future Volume (vph)	4	284	17	36	231	12	36	36	18	3	23	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.992			0.992			0.951			0.976	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1430	1715	0	1413	1817	0	1538	1589	0	1426	1465	0
Flt Permitted	0.585			0.528			0.737			0.717		
Satd. Flow (perm)	880	1715	0	785	1817	0	1193	1589	0	1076	1465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			5			20			5	
Link Speed (mph)		35			35			25			10	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			8.7			22.0	
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 (%)	25%	9%	6%	29%	5%	0%	9%	0%	17%	0%	0%	0%
Adj. Flow (vph)	5	323	19	41	263	14	41	41	20	3	26	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	342	0	41	277	0	41	61	0	3	31	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.35		0.09	0.27		0.12	0.13		0.01	0.07	
Control Delay	7.8	10.7		8.8	9.7		32.3	26.6		20.7	19.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	10.7		8.8	9.7		32.3	26.6		20.7	19.0	
LOS	A	B		A	A		C	C		C	B	
Approach Delay		10.6			9.6			28.9			19.1	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.35
Intersection Signal Delay: 12.9 Intersection LOS: B
Intersection Capacity Utilization 48.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 58 & Main St

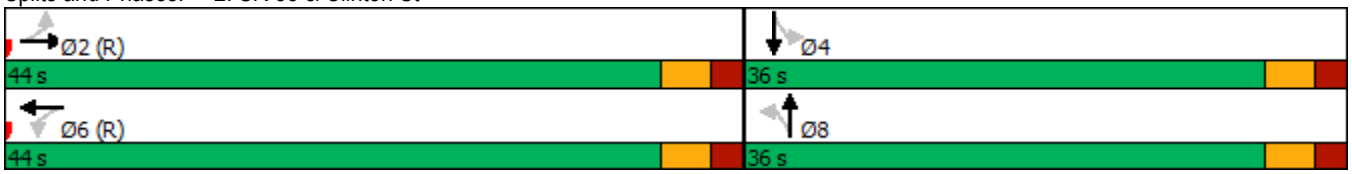


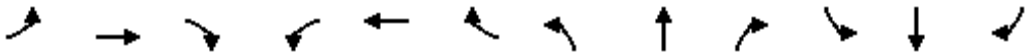
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	21	44	70	33	1	34	90	72	3	71	5
Future Volume (vph)	2	21	44	70	33	1	34	90	72	3	71	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.898			0.999			0.933			0.991	
Flt Protected	0.950				0.967		0.950			0.950		
Satd. Flow (prot)	1745	1554	0	0	1600	0	1636	1566	0	1009	1554	0
Flt Permitted	0.701				0.783		0.695			0.605		
Satd. Flow (perm)	1288	1554	0	0	1296	0	1197	1566	0	642	1554	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			1			59			5	
Link Speed (mph)		25			25			25			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			49.2			14.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	9%	9%	3%	0%	3%	7%	4%	67%	14%	0%
Adj. Flow (vph)	3	26	55	88	41	1	43	113	90	4	89	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	81	0	0	130	0	43	203	0	4	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.00	0.10			0.21		0.09	0.32		0.02	0.16	
Control Delay	10.5	5.4			12.7		16.4	13.5		13.3	13.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.5	5.4			12.7		16.4	13.5		13.3	13.3	
LOS	B	A			B		B	B		B	B	
Approach Delay		5.6			12.7			14.0			13.3	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 12.3		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St



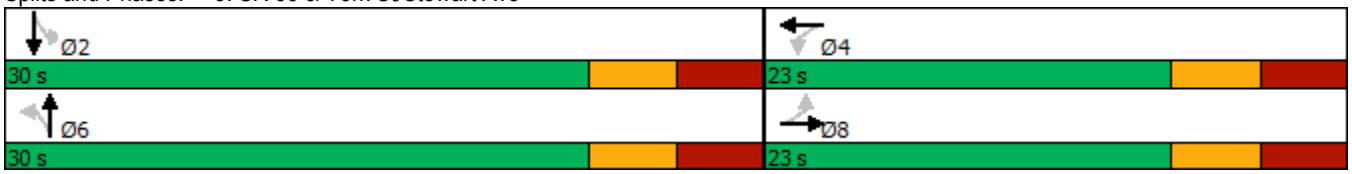


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	9	3	17	8	12	0	168	3	9	165	6
Future Volume (vph)	15	9	3	17	8	12	0	168	3	9	165	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.957			0.998			0.995	
Flt Protected		0.972			0.977						0.998	
Satd. Flow (prot)	0	1698	0	0	1730	0	0	1997	0	0	1855	0
Flt Permitted					0.976						0.986	
Satd. Flow (perm)	0	1746	0	0	1729	0	0	1997	0	0	1832	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			13			2			4	
Link Speed (mph)		25			25			40			30	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			7.2			41.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	0%	33%	12%	0%	0%	0%	4%	33%	0%	13%	0%
Adj. Flow (vph)	17	10	3	19	9	13	0	187	3	10	183	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	41	0	0	190	0	0	200	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.6			6.6			35.4			35.4	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.11			0.15			0.12			0.14	
Control Delay		15.7			13.7			4.0			4.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.7			13.7			4.0			4.1	
LOS		B			B			A			A	
Approach Delay		15.7			13.7			4.0			4.1	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 53			
Actuated Cycle Length: 43.9			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.15			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 33.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: SR 58 & York St/Stewart Ave

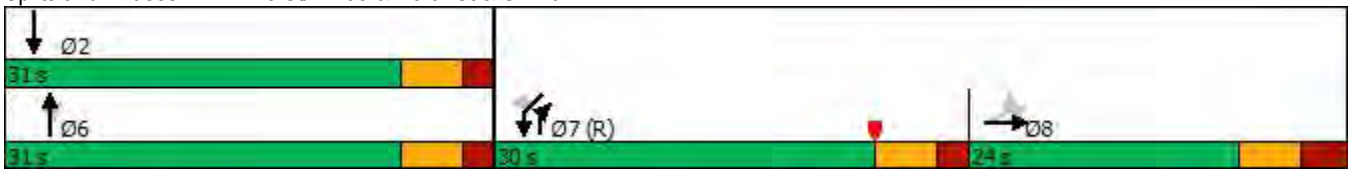


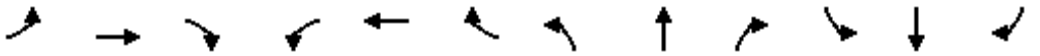
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	29	51	25	12	162	145	210	36	226	93
Future Volume (vph)	29	51	25	12	162	145	210	36	226	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			0.850	0.980			0.850
Flt Protected			0.967						0.950	
Satd. Flow (prot)	0	0	1663	0	1719	1583	1693	0	1604	1408
Flt Permitted			0.967						0.950	
Satd. Flow (perm)	0	0	1663	0	1719	1583	1693	0	1604	1408
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	6%	8%	0%	9%	11%	8%	3%	5%	7%
Adj. Flow (vph)	31	55	27	13	174	156	226	39	243	100
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	126	0	174	156	265	0	243	100
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			11.9		20.8	60.1	20.8		33.4	33.4
Actuated g/C Ratio			0.14		0.24	0.71	0.24		0.39	0.39
v/c Ratio			0.54		0.42	0.14	0.64		0.39	0.18
Control Delay			42.1		29.2	5.0	35.7		23.2	21.1
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			42.1		29.2	5.0	35.7		23.2	21.1
LOS			D		C	A	D		C	C
Approach Delay			42.1		17.8		35.7		22.6	
Approach LOS			D		B		D		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 26.7		Intersection LOS: C	
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19



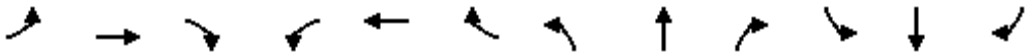


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	373	43	44	340	14	53	37	44	23	37	13
Future Volume (vph)	5	373	43	44	340	14	53	37	44	23	37	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.985			0.994			0.919			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1765	0	1628	1837	0	1552	1558	0	1693	1711	0
Flt Permitted	0.502			0.449			0.722			0.702		
Satd. Flow (perm)	944	1765	0	769	1837	0	1180	1558	0	1251	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			4			46			14	
Link Speed (mph)		35			35			20			15	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			10.8			14.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	5%	12%	4%	0%	8%	3%	5%	0%	0%	0%
Adj. Flow (vph)	5	393	45	46	358	15	56	39	46	24	39	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	438	0	46	373	0	56	85	0	24	53	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.44		0.11	0.36		0.17	0.18		0.07	0.11	
Control Delay	7.8	11.6		9.0	10.7		28.9	19.7		21.5	17.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	11.6		9.0	10.7		28.9	19.7		21.5	17.3	
LOS	A	B		A	B		C	B		C	B	
Approach Delay		11.5			10.5			23.3			18.6	
Approach LOS		B			B			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 55.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: SR 58 & Main St

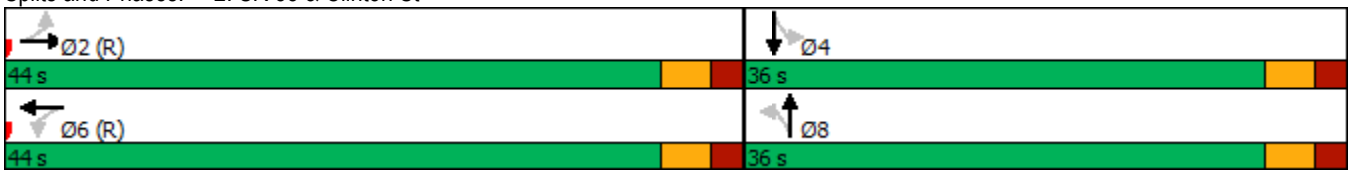


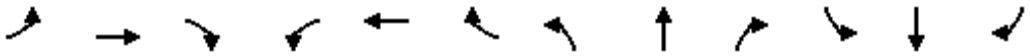
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	64	54	99	42	10	48	115	101	4	98	13
Future Volume (vph)	10	64	54	99	42	10	48	115	101	4	98	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.931			0.991			0.930			0.983	
Flt Protected	0.950				0.968		0.950			0.950		
Satd. Flow (prot)	1586	1627	0	0	1595	0	1620	1557	0	1135	1382	0
Flt Permitted	0.672				0.751		0.679			0.563		
Satd. Flow (perm)	1122	1627	0	0	1238	0	1158	1557	0	673	1382	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			6			65			10	
Link Speed (mph)		25			25			20			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			61.5			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	6%	4%	8%	5%	0%	4%	5%	7%	25%	7%	0%
Adj. Flow (vph)	11	70	59	109	46	11	53	126	111	4	108	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	129	0	0	166	0	53	237	0	4	122	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.02	0.16			0.27		0.12	0.37		0.02	0.23	
Control Delay	10.9	7.1			13.2		16.7	14.4		13.0	13.3	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.9	7.1			13.2		16.7	14.4		13.0	13.3	
LOS	B	A			B		B	B		B	B	
Approach Delay		7.4			13.2			14.8			13.2	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 12.7		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St





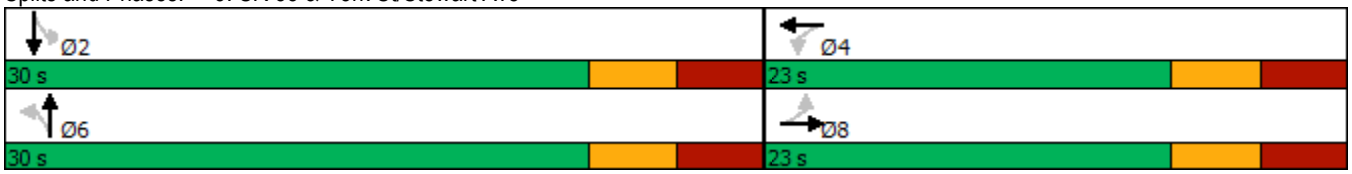
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	8	4	17	7	16	2	241	16	20	214	16
Future Volume (vph)	9	8	4	17	7	16	2	241	16	20	214	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1700	1700	1700
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.972			0.947			0.992			0.992	
Flt Protected		0.980			0.979						0.996	
Satd. Flow (prot)	0	1731	0	0	1811	0	0	1930	0	0	1723	0
Flt Permitted		0.944			0.957			0.998			0.963	
Satd. Flow (perm)	0	1667	0	0	1770	0	0	1926	0	0	1666	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			18			8			8	
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			9.6			49.2	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	11%	0%	0%	0%	0%	0%	100%	6%	19%	0%	8%	6%
Adj. Flow (vph)	10	9	5	20	8	18	2	277	18	23	246	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	24	0	0	46	0	0	297	0	0	287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.6			6.6			35.5			35.5	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.09			0.16			0.19			0.21	
Control Delay		14.9			13.1			4.2			4.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.9			13.1			4.2			4.4	
LOS		B			B			A			A	
Approach Delay		14.9			13.1			4.2			4.4	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 53
Actuated Cycle Length: 44
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.21
Intersection Signal Delay: 5.3 Intersection LOS: A
Intersection Capacity Utilization 45.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: SR 58 & York St/Stewart Ave

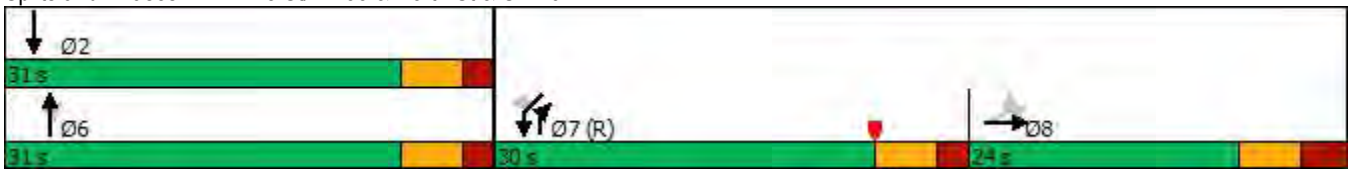


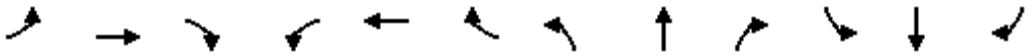
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	64	68	25	13	248	242	204	30	184	57
Future Volume (vph)	64	68	25	13	248	242	204	30	184	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989			0.850	0.983			0.850
Flt Protected			0.963						0.950	
Satd. Flow (prot)	0	0	1702	0	1784	1658	1768	0	1574	1507
Flt Permitted			0.963						0.950	
Satd. Flow (perm)	0	0	1702	0	1784	1658	1768	0	1574	1507
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	4%	8%	5%	6%	3%	3%	7%	0%
Adj. Flow (vph)	67	71	26	14	258	252	213	31	192	59
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	178	0	258	252	244	0	192	59
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			13.7		20.1	58.3	20.1		32.2	32.2
Actuated g/C Ratio			0.16		0.24	0.69	0.24		0.38	0.38
v/c Ratio			0.65		0.61	0.22	0.58		0.32	0.10
Control Delay			44.3		35.0	6.0	34.0		23.0	21.1
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			44.3		35.0	6.0	34.0		23.0	21.1
LOS			D		C	A	C		C	C
Approach Delay			44.3		20.7		34.0		22.5	
Approach LOS			D		C		C		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19





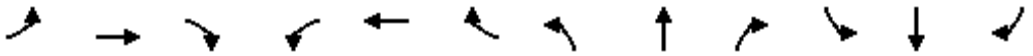
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	303	19	38	247	13	38	38	20	3	25	4
Future Volume (vph)	4	303	19	38	247	13	38	38	20	3	25	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.991			0.992			0.948			0.977	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1430	1713	0	1413	1817	0	1538	1579	0	1426	1466	0
Flt Permitted	0.568			0.508			0.736			0.714		
Satd. Flow (perm)	855	1713	0	756	1817	0	1191	1579	0	1072	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			5			23			5	
Link Speed (mph)		35			35			25			10	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			8.7			22.0	
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 (%)	25%	9%	6%	29%	5%	0%	9%	0%	17%	0%	0%	0%
Adj. Flow (vph)	5	344	22	43	281	15	43	43	23	3	28	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	366	0	43	296	0	43	66	0	3	33	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.38		0.10	0.29		0.13	0.14		0.01	0.08	
Control Delay	7.8	11.0		8.9	9.9		32.4	26.3		20.7	19.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	11.0		8.9	9.9		32.4	26.3		20.7	19.1	
LOS	A	B		A	A		C	C		C	B	
Approach Delay		10.9			9.8			28.7			19.3	
Approach LOS		B			A			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 13.1 Intersection LOS: B
Intersection Capacity Utilization 49.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 1: SR 58 & Main St

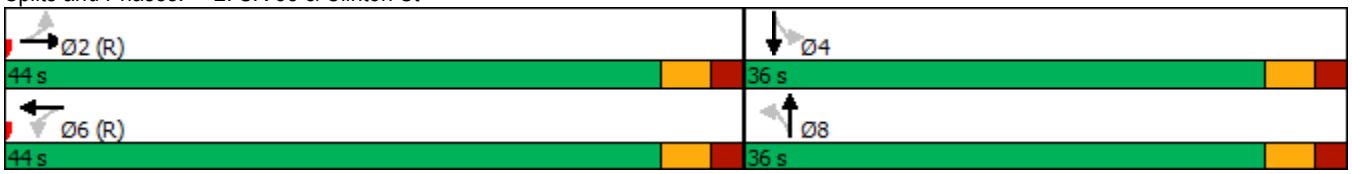


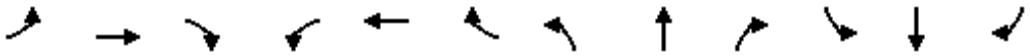
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	23	47	75	35	1	36	96	77	3	76	5
Future Volume (vph)	2	23	47	75	35	1	36	96	77	3	76	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.899			0.999			0.933			0.991	
Flt Protected	0.950				0.967		0.950			0.950		
Satd. Flow (prot)	1745	1557	0	0	1600	0	1636	1566	0	1009	1553	0
Flt Permitted	0.693				0.776		0.692			0.589		
Satd. Flow (perm)	1273	1557	0	0	1284	0	1191	1566	0	625	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			1			59			5	
Link Speed (mph)		25			25			25			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			49.2			14.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	9%	9%	3%	0%	3%	7%	4%	67%	14%	0%
Adj. Flow (vph)	3	29	59	94	44	1	45	120	96	4	95	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	88	0	0	139	0	45	216	0	4	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.00	0.11			0.22		0.10	0.34		0.02	0.17	
Control Delay	10.5	5.4			12.9		16.4	14.1		13.3	13.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.5	5.4			12.9		16.4	14.1		13.3	13.4	
LOS	B	A			B		B	B		B	B	
Approach Delay		5.5			12.9			14.5			13.4	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 12.5		Intersection LOS: B	
Intersection Capacity Utilization 66.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St



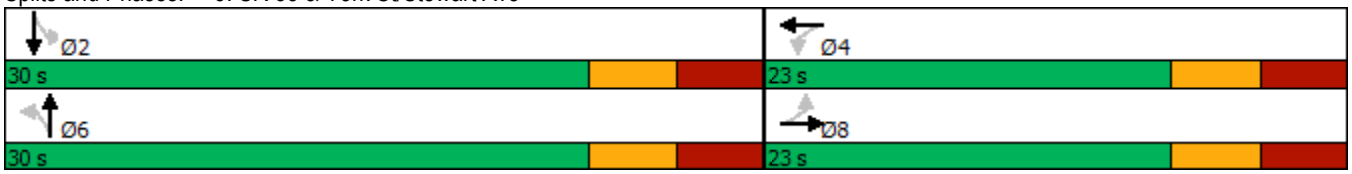


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	10	3	19	9	13	0	180	3	10	177	7
Future Volume (vph)	16	10	3	19	9	13	0	180	3	10	177	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.987			0.958			0.998			0.995	
Flt Protected		0.973			0.977						0.997	
Satd. Flow (prot)	0	1705	0	0	1731	0	0	1997	0	0	1854	0
Flt Permitted					0.978						0.984	
Satd. Flow (perm)	0	1752	0	0	1733	0	0	1997	0	0	1829	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			14			2			5	
Link Speed (mph)		25			25			40			30	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			7.2			41.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	7%	0%	33%	12%	0%	0%	0%	4%	33%	0%	13%	0%
Adj. Flow (vph)	18	11	3	21	10	14	0	200	3	11	197	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	32	0	0	45	0	0	203	0	0	216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	0.88	0.88	0.88
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.7			6.7			35.0			35.0	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.12			0.16			0.13			0.15	
Control Delay		15.5			13.5			4.1			4.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.5			13.5			4.1			4.2	
LOS		B			B			A			A	
Approach Delay		15.5			13.5			4.1			4.2	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 53			
Actuated Cycle Length: 43.4			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.16			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: SR 58 & York St/Stewart Ave

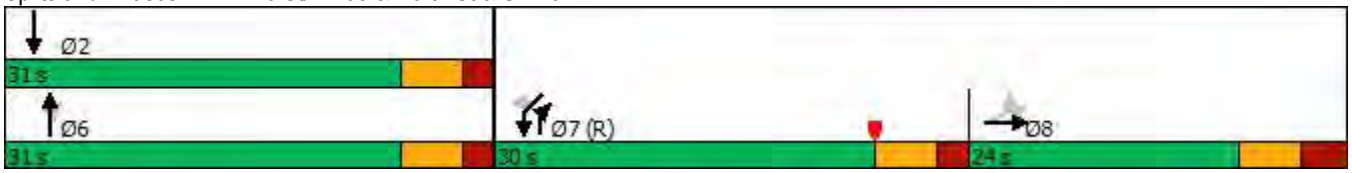


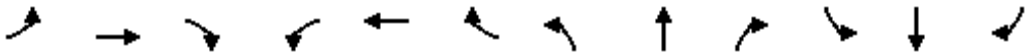
Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	31	55	26	13	173	155	225	38	241	99
Future Volume (vph)	31	55	26	13	173	155	225	38	241	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			0.850	0.980			0.850
Flt Protected			0.967						0.950	
Satd. Flow (prot)	0	0	1663	0	1719	1583	1692	0	1604	1408
Flt Permitted			0.967						0.950	
Satd. Flow (perm)	0	0	1663	0	1719	1583	1692	0	1604	1408
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	4%	6%	8%	0%	9%	11%	8%	3%	5%	7%
Adj. Flow (vph)	33	59	28	14	186	167	242	41	259	106
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	134	0	186	167	283	0	259	106
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			12.3		21.2	59.7	21.2		32.5	32.5
Actuated g/C Ratio			0.14		0.25	0.70	0.25		0.38	0.38
v/c Ratio			0.56		0.43	0.15	0.67		0.42	0.20
Control Delay			42.1		29.3	5.2	36.6		24.4	21.8
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			42.1		29.3	5.2	36.6		24.4	21.8
LOS			D		C	A	D		C	C
Approach Delay			42.1		17.9		36.6		23.6	
Approach LOS			D		B		D		C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 27.3		Intersection LOS: C	
Intersection Capacity Utilization 50.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19





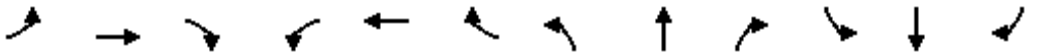
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	398	46	47	363	15	57	39	47	25	39	14
Future Volume (vph)	5	398	46	47	363	15	57	39	47	25	39	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	10	10	10	10	10	10
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	75		0	135		0	80		0	60		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	50			50			50			50		
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		0.985			0.994			0.918			0.960	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1765	0	1628	1837	0	1552	1556	0	1693	1711	0
Flt Permitted	0.481			0.426			0.720			0.699		
Satd. Flow (perm)	905	1765	0	730	1837	0	1176	1556	0	1246	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			4			49			15	
Link Speed (mph)		35			35			20			15	
Link Distance (ft)		375			430			318			323	
Travel Time (s)		7.3			8.4			10.8			14.7	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	5%	5%	12%	4%	0%	8%	3%	5%	0%	0%	0%
Adj. Flow (vph)	5	419	48	49	382	16	60	41	49	26	41	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	467	0	49	398	0	60	90	0	26	56	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.10	1.10	1.10	1.09	1.09	1.09
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	0	0		0	0		2	2		2	2	
Detector Template												
Leading Detector (ft)	0	0		0	0		55	45		55	45	
Trailing Detector (ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Position(ft)	0	0		0	0		5	-5		5	-5	
Detector 1 Size(ft)	20	6		20	6		20	20		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)							35	25		35	25	
Detector 2 Size(ft)							20	20		20	20	
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	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
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	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		22.0	22.0		22.0	22.0	
Total Split (s)	51.0	51.0		51.0	51.0		29.0	29.0		29.0	29.0	
Total Split (%)	63.8%	63.8%		63.8%	63.8%		36.3%	36.3%		36.3%	36.3%	
Maximum Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
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)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	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		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Flash Dont Walk (s)	7.0	7.0		7.0	7.0		8.0	8.0		8.0	8.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	45.0	45.0		45.0	45.0		23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.56	0.56		0.56	0.56		0.29	0.29		0.29	0.29	
v/c Ratio	0.01	0.47		0.12	0.38		0.18	0.19		0.07	0.11	
Control Delay	7.8	12.0		9.2	11.0		29.0	19.7		21.6	17.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	7.8	12.0		9.2	11.0		29.0	19.7		21.6	17.3	
LOS	A	B		A	B		C	B		C	B	
Approach Delay		12.0			10.8			23.4			18.6	
Approach LOS		B			B			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 80
Actuated Cycle Length: 80
Offset: 43 (54%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 13.5 Intersection LOS: B
Intersection Capacity Utilization 56.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR 58 & Main St

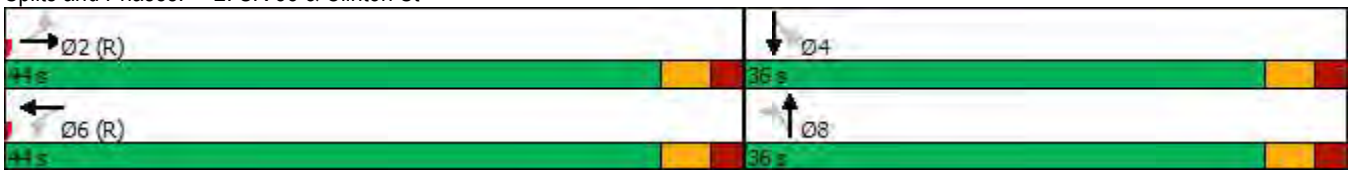


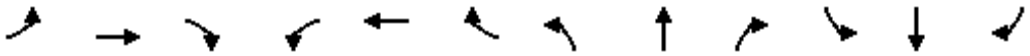
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	69	58	106	45	11	51	123	108	4	105	14
Future Volume (vph)	11	69	58	106	45	11	51	123	108	4	105	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1600	1600	1600
Lane Width (ft)	11	11	11	10	10	10	10	10	10	10	10	10
Storage Length (ft)	70		0	0		0	110		0	70		0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (ft)	50			25			50			50		
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		0.931			0.991			0.930			0.983	
Flt Protected	0.950				0.968		0.950			0.950		
Satd. Flow (prot)	1586	1627	0	0	1595	0	1620	1557	0	1135	1382	0
Flt Permitted	0.664				0.742		0.674			0.543		
Satd. Flow (perm)	1109	1627	0	0	1223	0	1149	1557	0	649	1382	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64			6			65			10	
Link Speed (mph)		25			25			20			15	
Link Distance (ft)		404			482			1803			318	
Travel Time (s)		11.0			13.1			61.5			14.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	6%	4%	8%	5%	0%	4%	5%	7%	25%	7%	0%
Adj. Flow (vph)	12	76	64	116	49	12	56	135	119	4	115	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	140	0	0	177	0	56	254	0	4	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.09	1.09	1.09	1.09	1.09	1.09	1.35	1.35	1.35
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Minimum Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (s)	44.0	44.0		44.0	44.0		36.0	36.0		36.0	36.0	
Total Split (%)	55.0%	55.0%		55.0%	55.0%		45.0%	45.0%		45.0%	45.0%	
Maximum Green (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effct Green (s)	39.0	39.0			39.0		31.0	31.0		31.0	31.0	
Actuated g/C Ratio	0.49	0.49			0.49		0.39	0.39		0.39	0.39	
v/c Ratio	0.02	0.17			0.30		0.13	0.40		0.02	0.24	
Control Delay	10.9	7.1			13.5		16.8	15.1		13.2	13.7	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay	10.9	7.1			13.5		16.8	15.1		13.2	13.7	
LOS	B	A			B		B	B		B	B	
Approach Delay		7.4			13.5			15.4			13.7	
Approach LOS		A			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Pretimed			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 103.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 2: SR 58 & Clinton St



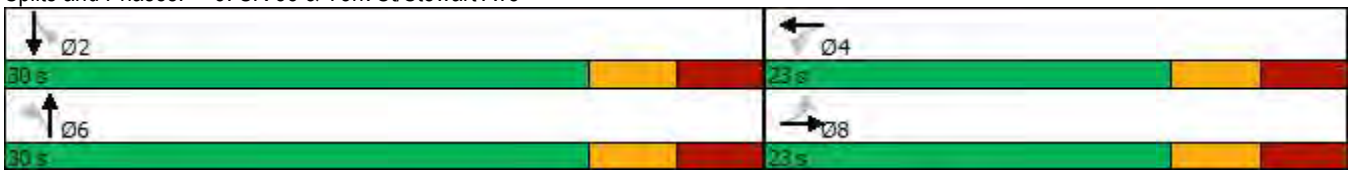


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	9	4	19	8	17	2	257	17	22	229	17
Future Volume (vph)	10	9	4	19	8	17	2	257	17	22	229	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1700	1700	1700
Lane Width (ft)	12	12	12	13	13	13	15	15	15	15	15	15
Grade (%)		0%			1%			0%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.947			0.991			0.991	
Flt Protected		0.979			0.979						0.996	
Satd. Flow (prot)	0	1731	0	0	1811	0	0	1928	0	0	1721	0
Flt Permitted		0.949			0.954			0.998			0.960	
Satd. Flow (perm)	0	1678	0	0	1765	0	0	1924	0	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20			8			8	
Link Speed (mph)		25			25			30			25	
Link Distance (ft)		643			413			424			1803	
Travel Time (s)		17.5			11.3			9.6			49.2	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	11%	0%	0%	0%	0%	0%	100%	6%	19%	0%	8%	6%
Adj. Flow (vph)	11	10	5	22	9	20	2	295	20	25	263	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	51	0	0	317	0	0	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			10			10	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	0.96	0.96	0.96	0.88	0.88	0.88	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	0		1	0	
Detector Template	Left			Left			Left			Left		
Leading Detector (ft)	20	56		20	56		20	0		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		50			50							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (s)	23.0	23.0		23.0	23.0		30.0	30.0		30.0	30.0	
Total Split (%)	43.4%	43.4%		43.4%	43.4%		56.6%	56.6%		56.6%	56.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		23.0	23.0		23.0	23.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effct Green (s)		6.7			6.7			35.0			35.0	
Actuated g/C Ratio		0.15			0.15			0.81			0.81	
v/c Ratio		0.10			0.18			0.20			0.23	
Control Delay		14.7			12.9			4.3			4.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.7			12.9			4.3			4.6	
LOS		B			B			A			A	
Approach Delay		14.7			12.9			4.3			4.6	
Approach LOS		B			B			A			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 53			
Actuated Cycle Length: 43.4			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.23			
Intersection Signal Delay: 5.4		Intersection LOS: A	
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: SR 58 & York St/Stewart Ave

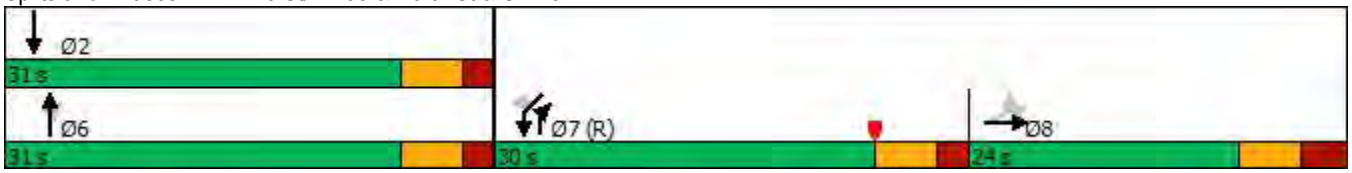


Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Lane Configurations										
Traffic Volume (vph)	69	73	26	14	265	259	218	32	196	61
Future Volume (vph)	69	73	26	14	265	259	218	32	196	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	11	12	11	14	12	12	11	11
Grade (%)			0%		-4%		5%		7%	
Storage Length (ft)		0		0		0		0	150	0
Storage Lanes		0		0		1		0	1	1
Taper Length (ft)		25							60	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989			0.850	0.983			0.850
Flt Protected			0.963						0.950	
Satd. Flow (prot)	0	0	1702	0	1784	1658	1768	0	1574	1507
Flt Permitted			0.963						0.950	
Satd. Flow (perm)	0	0	1702	0	1784	1658	1768	0	1574	1507
Right Turn on Red				No				No		
Satd. Flow (RTOR)										
Link Speed (mph)			35		35		35		35	
Link Distance (ft)			430		543		755		743	
Travel Time (s)			8.4		10.6		14.7		14.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	4%	8%	5%	6%	3%	3%	7%	0%
Adj. Flow (vph)	72	76	27	15	276	270	227	33	204	64
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	0	190	0	276	270	260	0	204	64
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right	Left	Right	Left	Right
Median Width(ft)			0		0		0		11	
Link Offset(ft)			0		0		0		0	
Crosswalk Width(ft)			16		16		16		16	
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.04	1.00	1.02	0.89	1.03	1.03	1.09	1.09
Turning Speed (mph)	15	15		9		9		9	15	9
Number of Detectors	1	1	2		2	1	2		2	2
Detector Template	Left	Left								
Leading Detector (ft)	20	20	85		55	45	55		55	55
Trailing Detector (ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Position(ft)	0	0	-10		-10	-5	-10		-10	-10
Detector 1 Size(ft)	20	20	40		10	50	10		10	10
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			35		5		5		5	5
Detector 2 Size(ft)			50		50		50		50	50
Detector 2 Type			Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 2 Channel										
Detector 2 Extend (s)			0.0		0.0		0.0		0.0	0.0

Lane Group	EBL2	EBL	EBT	EBR	NBT	NBR	SBT	SBR	SWL	SWR
Turn Type	Perm	Perm	NA		NA	pm+ov	NA		Prot	Perm
Protected Phases			8		6	7	2		7	
Permitted Phases	8	8			6	6				7
Detector Phase	8	8	8		6	7	2		7	7
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0		15.0	15.0	15.0		15.0	15.0
Minimum Split (s)	14.0	14.0	14.0		21.0	21.0	21.0		21.0	21.0
Total Split (s)	24.0	24.0	24.0		31.0	30.0	31.0		30.0	30.0
Total Split (%)	28.2%	28.2%	28.2%		36.5%	35.3%	36.5%		35.3%	35.3%
Maximum Green (s)	17.0	17.0	17.0		25.0	24.0	25.0		24.0	24.0
Yellow Time (s)	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		2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)			0.0		0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)			7.0		6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lag	Lag			Lead			Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes			Yes			Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0		6.0	6.0	6.0		6.0	6.0
Recall Mode	None	None	None		Min	C-Min	Min		C-Min	C-Min
Act Effct Green (s)			14.1		20.6	57.9	20.6		31.3	31.3
Actuated g/C Ratio			0.17		0.24	0.68	0.24		0.37	0.37
v/c Ratio			0.67		0.64	0.24	0.61		0.35	0.12
Control Delay			44.9		35.5	6.3	34.4		24.1	21.8
Queue Delay			0.0		0.0	0.0	0.0		0.0	0.0
Total Delay			44.9		35.5	6.3	34.4		24.1	21.8
LOS			D		D	A	C		C	C
Approach Delay			44.9		21.0		34.4		23.5	
Approach LOS			D		C		C		C	

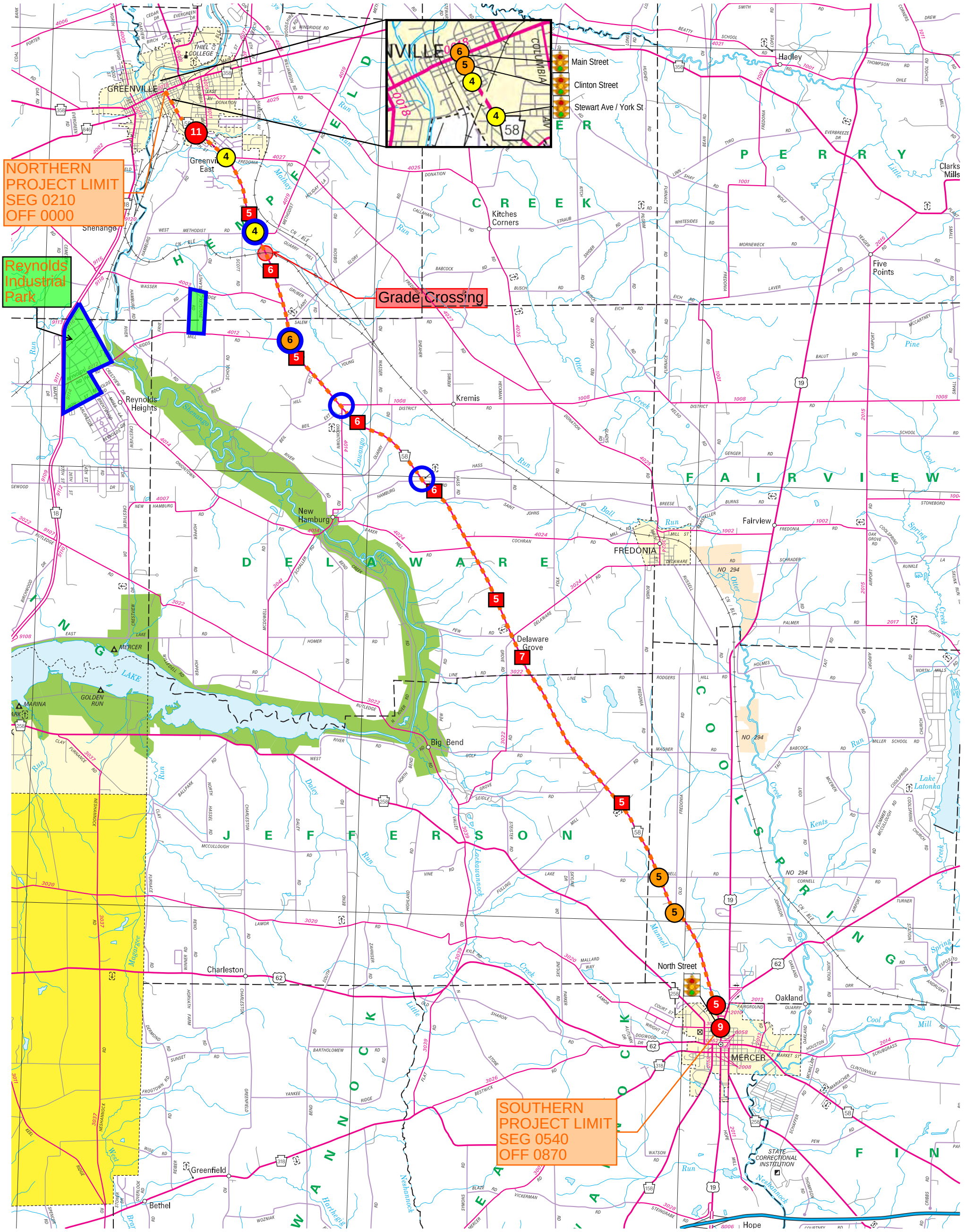
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 7:SWL, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 27.9		Intersection LOS: C	
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Erie St/PA 58 & North St & SR 19



APPENDIX H:

CRASH LOCATION MAP



LEGEND

- (#) INTERSECTION W/ LESS THAN 5 CRASHES (NO FURTHER EVALUATION)
- (#) INTERSECTION W/ 5 OR MORE CRASHES (NO FURTHER EVALUATION)
- (#) INTERSECTION W/ 5 OR MORE CRASHES (FURTHER EVALUATION)
- [5] CORRIDOR W/ 5 OR MORE CRASHES
- LOCATION IDENTIFIED IN MARKOSKY SCOPE OF WORK

PA 58 CORRIDOR

LOCATIONS IDENTIFIED THROUGH CRASH ANALYSIS

NUMBER OF CRASHES PER LOCATION

NORTHERN PROJECT LIMIT
SEG 0210
OFF 0000

Reynolds Industrial Park

Grade Crossing

Main Street

Clinton Street

Stewart Ave / York St

SOUTHERN PROJECT LIMIT
SEG 0540
OFF 0870

LEGEND

- # INTERSECTION NUMBER (NO FURTHER EVALUATION)
- # INTERSECTION NUMBER (FURTHER EVALUATION)
- # CORRIDOR (FURTHER EVALUATION)
- LOCATION IDENTIFED IN MARKOSKY SCOPE OF WORK

PA 58 CORRIDOR

LOCATIONS IDENTIFIED THROUGH CRASH ANALYSIS

REFERENCED TO CRASH REPORT

APPENDIX I:

WARRANT ANALYSIS

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Columbia Ave/Hamburg Road - NB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**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	44	2.5%	46
	Through	-	81	1.4%	83
	Right	Yes	16	6.7%	18
Opposing	Left	Yes	45	2.4%	47
	Through	-	50	2.2%	52
	Right	Yes	11	0.0%	11

Advancing Volume:	147
Opposing Volume:	110
Left Turn Volume:	46
% Left Turns in Advancing Volume:	31.29%

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

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	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

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:

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Columbia Ave/Hamburg Road - NB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Rolling	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

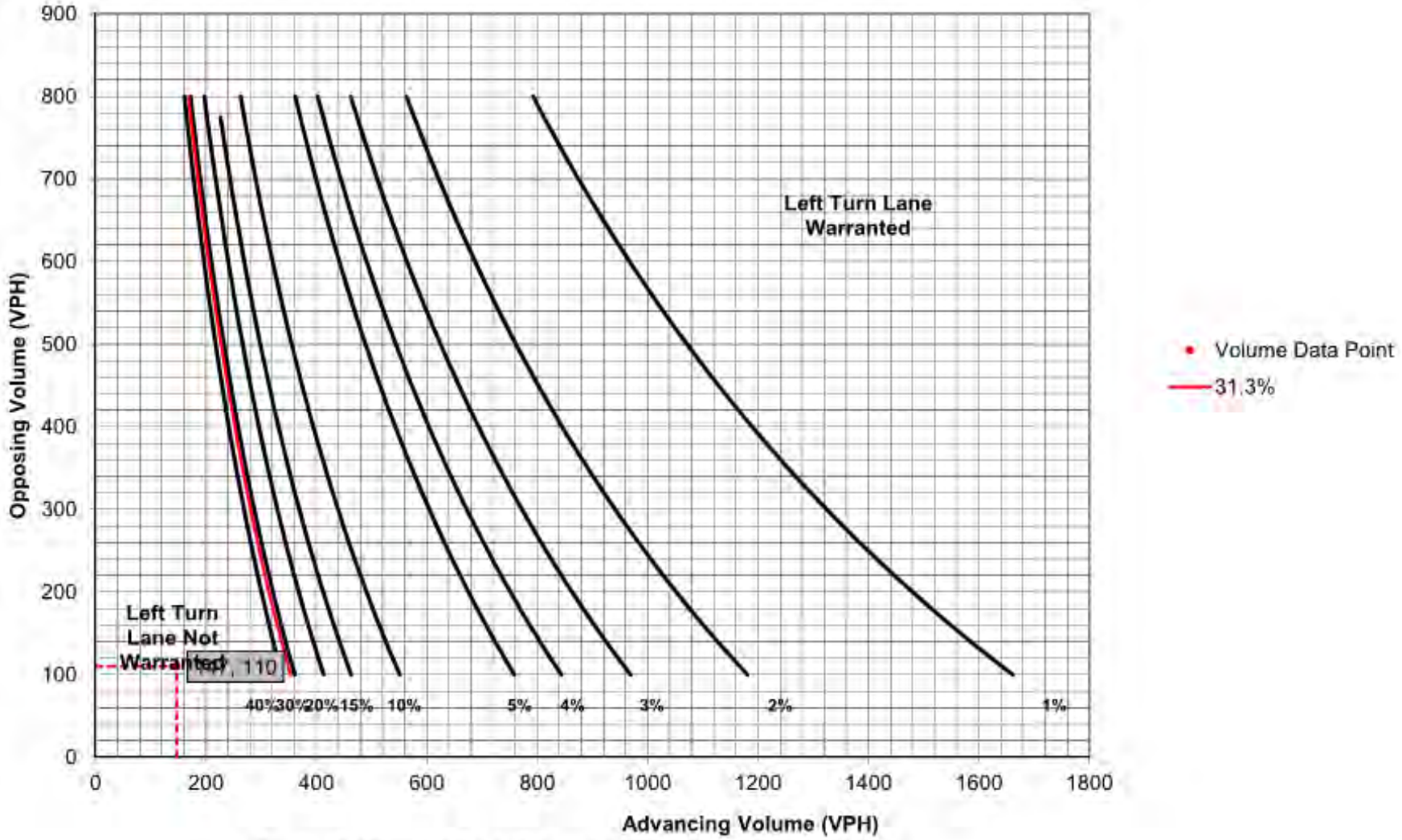


Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Columbia Ave/Hamburg Road - SB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**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	45	2.4%	47
	Through	-	50	2.2%	52
	Right	Yes	11	0.0%	11
Opposing	Left	Yes	44	2.5%	46
	Through	-	81	1.4%	83
	Right	Yes	16	6.7%	18

Advancing Volume:	110
Opposing Volume:	147
Left Turn Volume:	47
% Left Turns in Advancing Volume:	42.73%

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

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 1**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	47
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:

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Columbia Ave/Hamburg Road - SB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Rolling	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

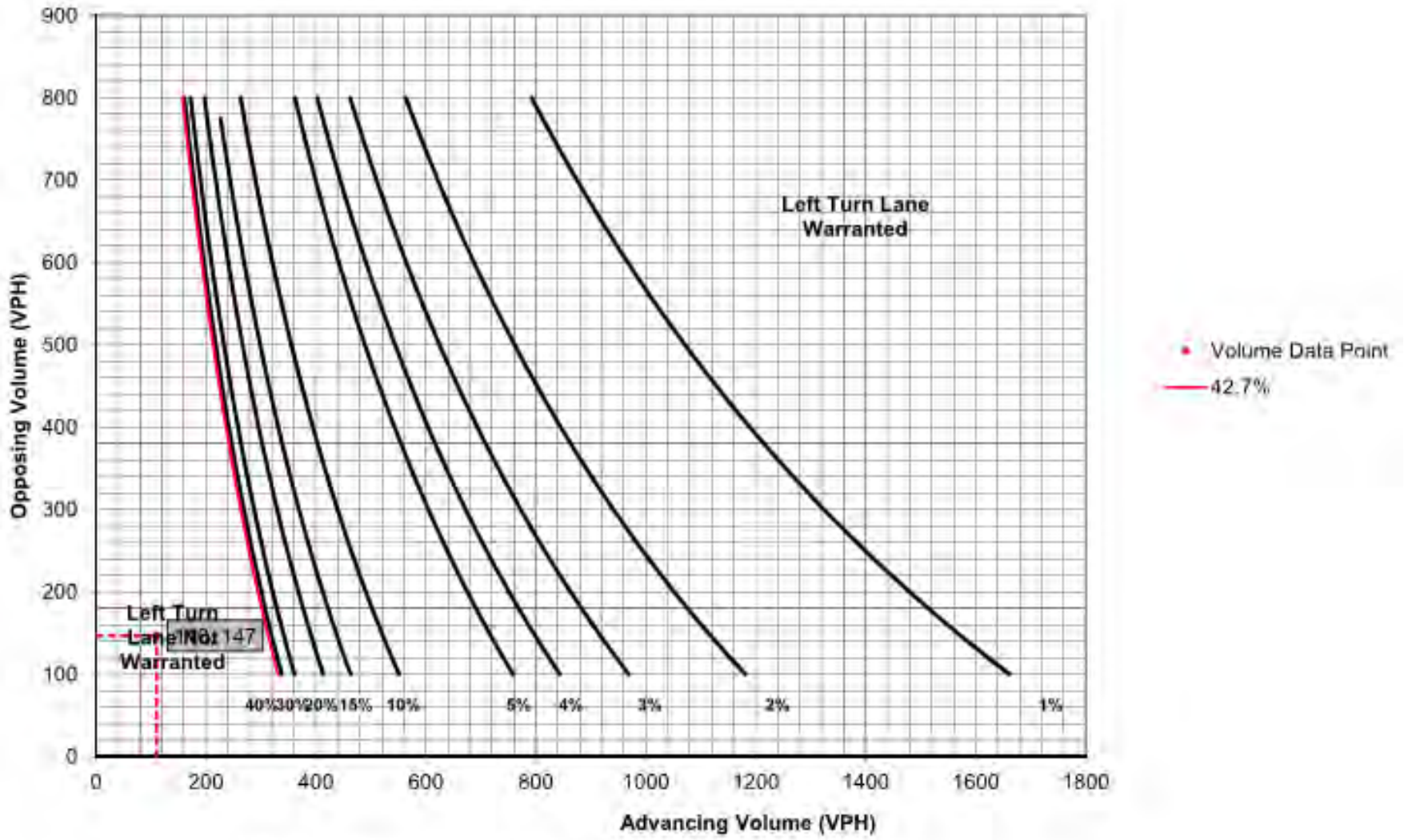


Figure 1. Warrant for left turn lanes on two-lane roadways (speeds to 35 mph, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Delaware Township	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Kidds Mill Road (SR 4012) - NB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
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	44	7.5%	49
	Through	-	200	3.8%	212
	Right	No	0	0.0%	N/A
Opposing	Left	No	0	0.0%	N/A
	Through	-	143	4.6%	153
	Right	Yes	82	1.3%	84

Advancing Volume:	261
Opposing Volume:	237
Left Turn Volume:	49
% Left Turns in Advancing Volume:	18.77%

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

Left Turn Lane Warrant Findings

Applicable Warrant Figure: **Figure 3**

Warrant Met?: **No**

Right Turn Lane Warrant Findings

Applicable Warrant Figure: **N/A**

Warrant Met?: **N/A**

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	49
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:

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Delaware Township	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Kidds Mill Road (SR 4012) - NB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		**Type of Analysis**
Type of Terrain:	Rolling	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

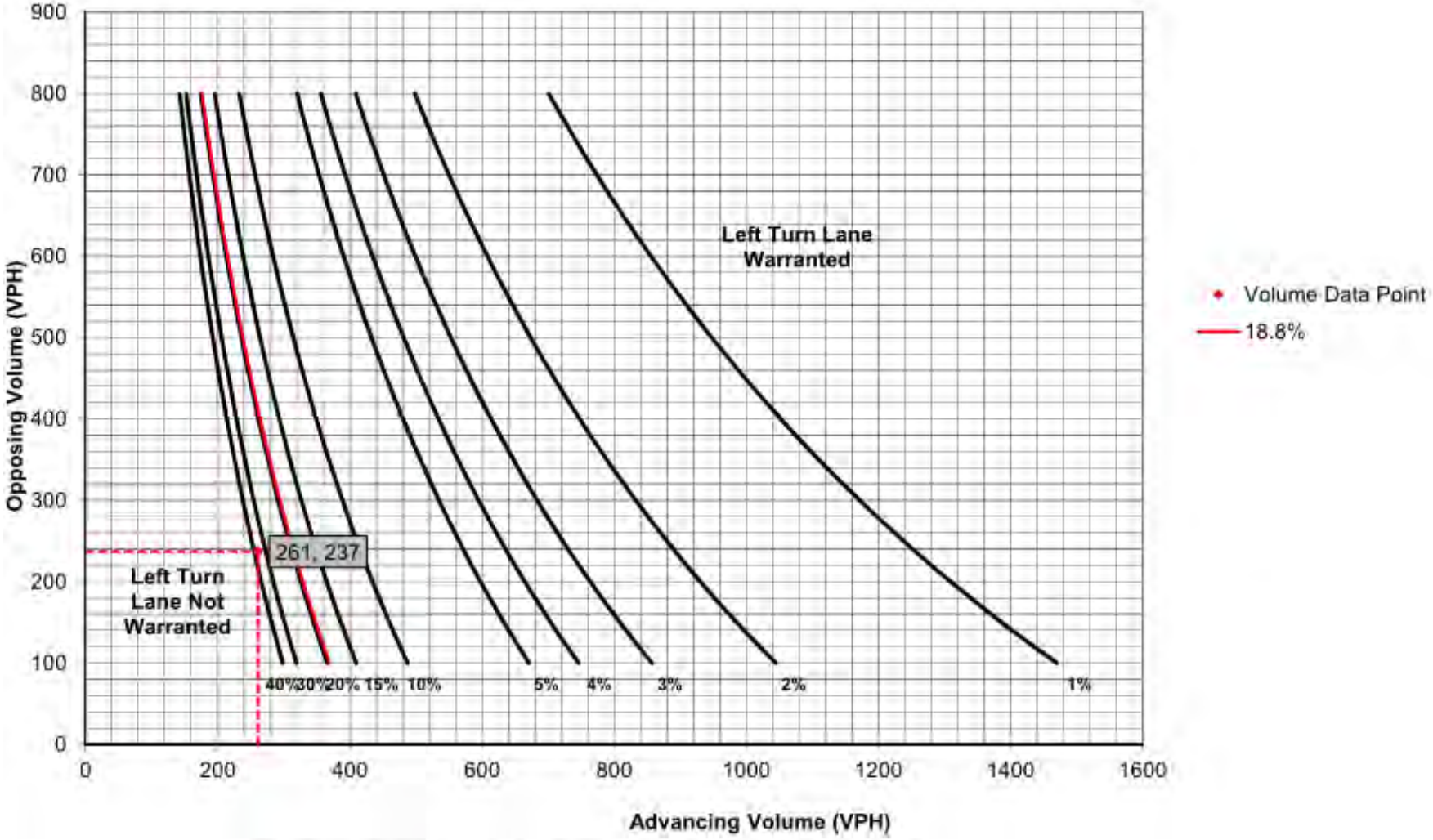


Figure 3. Warrant for left turn lanes on two-lane highways (45 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Delaware Township	**Analysis Date:**	8/8/2019
County:	Mercer County	**Conducted By:**	KRP
PennDOT Engineering District:	1	**Checked By:**	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Kidds Mill Road (SR 4012) - SB SR 58 Approach

Analysis Period:	2045 Design	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		**Type of Analysis**
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	No	44	7.5%	N/A
	Through	-	200	3.8%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	143	4.6%	N/A
	Right	No	82	1.3%	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	0	0.0%	N/A
	Through	-	143	4.6%	153
	Right	-	82	1.3%	84

Advancing Volume:	237
Right Turn Volume:	84

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?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	84
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:

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Delaware Township	Analysis Date:	8/8/2019
County:	Mercer County	Conducted By:	KRP
PennDOT Engineering District:	1	Checked By:	LNS
		Agency/Company Name:	Markosky Engineering Group

Intersection & Approach Description: SR 58 & Kidds Mill Road (SR 4012) - SB SR 58 Approach

Analysis Period:	2045 Design	Number of Approach Lanes:	1
Design Hour:	PM Peak Hour	Undivided or Divided Highway:	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	45		Type of Analysis
Type of Terrain:	Rolling	Left or Right-Turn Lane Analysis?:	Right Turn Lane

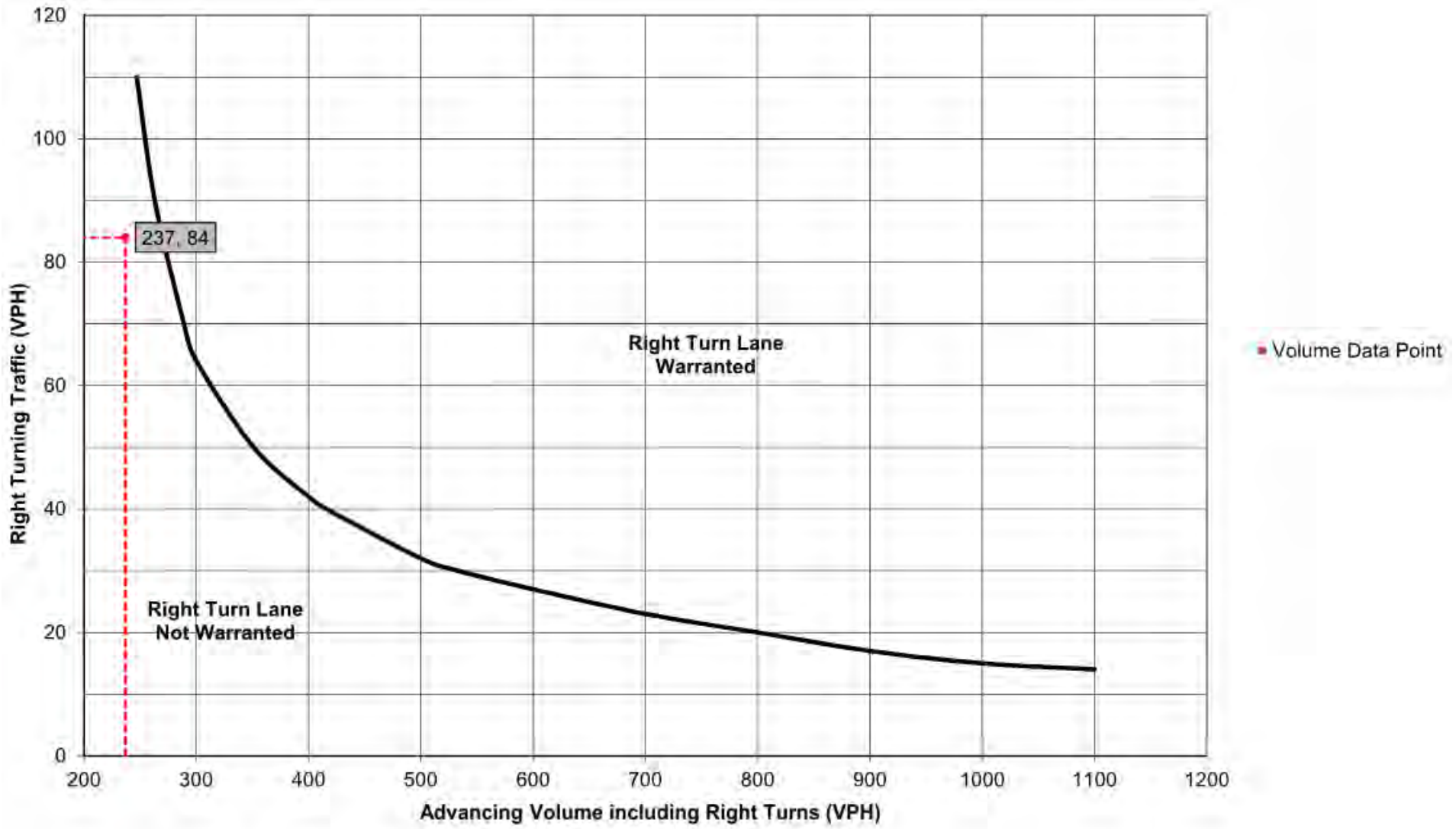


Figure 10. Warrant for right turn lanes on two-lane roadways (45 mph or greater speeds, unsignalized and signalized intersections)

Traffic Signal Warrant Analysis Workbook

STUDY AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	6/3/2019
County:	Mercer County	**Conducted By:**	LNS
PennDOT Engineering District:	1	**Agency/Company Name:**	Markosky

Analysis Information

Data Collection Date:	5/22/2019
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? Yes

Major Street Information

Major Street Name and Route Number:	PA 58
Major Street Approach #1 Direction:	E-Bound
Major Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	35	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Columbia_Hamburg
Minor Street Approach #1 Direction:	N-Bound
Minor Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**No**	**N/A**
Warrant 2, Four-Hour Vehicular Volume	**No**	**N/A**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**Yes**	**No**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

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 (N-Bound)	Minor Street Approach #2 (S-Bound)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM	6	1	7	3	2
12:15 AM	12:29 AM	5	2	7	1	3
12:30 AM	12:44 AM	3	1	4	2	3
12:45 AM	12:59 AM	0	4	4	3	1
1:00 AM	1:14 AM	5	3	8	2	2
1:15 AM	1:29 AM	0	2	2	0	0
1:30 AM	1:44 AM	2	1	3	1	0
1:45 AM	1:59 AM	2	1	3	2	0
2:00 AM	2:14 AM	3	1	4	0	0
2:15 AM	2:29 AM	2	2	4	1	0
2:30 AM	2:44 AM	1	1	2	1	1
2:45 AM	2:59 AM	1	0	1	0	0
3:00 AM	3:14 AM	2	2	4	1	0
3:15 AM	3:29 AM	0	1	1	0	1
3:30 AM	3:44 AM	2	1	3	2	0
3:45 AM	3:59 AM	7	3	10	1	1
4:00 AM	4:14 AM	4	3	7	0	2
4:15 AM	4:29 AM	4	3	7	0	0
4:30 AM	4:44 AM	6	3	9	2	2
4:45 AM	4:59 AM	8	7	15	2	5
5:00 AM	5:14 AM	15	2	17	2	8
5:15 AM	5:29 AM	10	2	12	3	3
5:30 AM	5:44 AM	18	12	30	2	7
5:45 AM	5:59 AM	18	13	31	4	3
6:00 AM	6:14 AM	21	20	41	3	7
6:15 AM	6:29 AM	24	26	50	8	12
6:30 AM	6:44 AM	43	32	75	17	14
6:45 AM	6:59 AM	27	26	53	11	24
7:00 AM	7:14 AM	32	36	68	12	20
7:15 AM	7:29 AM	33	48	81	22	19
7:30 AM	7:44 AM	40	59	99	18	27
7:45 AM	7:59 AM	31	50	81	21	12
8:00 AM	8:14 AM	41	37	78	15	22
8:15 AM	8:29 AM	62	49	111	18	13
8:30 AM	8:44 AM	50	89	139	19	21
8:45 AM	8:59 AM	34	50	84	16	11
9:00 AM	9:14 AM	24	32	56	12	13
9:15 AM	9:29 AM	25	29	54	12	8
9:30 AM	9:44 AM	34	28	62	10	12
9:45 AM	9:59 AM	34	42	76	6	16
10:00 AM	10:14 AM	39	36	75	10	9
10:15 AM	10:29 AM	43	46	89	12	16
10:30 AM	10:44 AM	33	44	77	16	16
10:45 AM	10:59 AM	29	35	64	16	17
11:00 AM	11:14 AM	44	34	78	18	12
11:15 AM	11:29 AM	39	54	93	9	12
11:30 AM	11:44 AM	54	40	94	22	13
11:45 AM	11:59 AM	41	33	74	18	13

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 (N-Bound)	Minor Street Approach #2 (S-Bound)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 PM	12:14 PM	46	47	93	21	13
12:15 PM	12:29 PM	41	49	90	13	20
12:30 PM	12:44 PM	51	43	94	15	17
12:45 PM	12:59 PM	36	37	73	12	19
1:00 PM	1:14 PM	34	39	73	11	19
1:15 PM	1:29 PM	42	46	88	14	18
1:30 PM	1:44 PM	41	46	87	16	16
1:45 PM	1:59 PM	37	44	81	15	10
2:00 PM	2:14 PM	42	44	86	15	14
2:15 PM	2:29 PM	52	31	83	15	13
2:30 PM	2:44 PM	59	45	104	24	14
2:45 PM	2:59 PM	44	48	92	14	22
3:00 PM	3:14 PM	58	49	107	37	23
3:15 PM	3:29 PM	59	83	142	29	27
3:30 PM	3:44 PM	50	84	134	34	20
3:45 PM	3:59 PM	58	61	119	29	27
4:00 PM	4:14 PM	52	51	103	34	18
4:15 PM	4:29 PM	62	53	115	25	27
4:30 PM	4:44 PM	46	66	112	26	16
4:45 PM	4:59 PM	54	65	119	23	22
5:00 PM	5:14 PM	44	56	100	24	14
5:15 PM	5:29 PM	50	47	97	27	19
5:30 PM	5:44 PM	31	63	94	26	15
5:45 PM	5:59 PM	39	57	96	19	15
6:00 PM	6:14 PM	45	31	76	23	16
6:15 PM	6:29 PM	32	62	94	21	21
6:30 PM	6:44 PM	29	41	70	10	10
6:45 PM	6:59 PM	30	36	66	18	14
7:00 PM	7:14 PM	33	28	61	15	11
7:15 PM	7:29 PM	48	37	85	7	8
7:30 PM	7:44 PM	33	25	58	9	10
7:45 PM	7:59 PM	38	23	61	19	7
8:00 PM	8:14 PM	34	28	62	12	15
8:15 PM	8:29 PM	22	35	57	9	9
8:30 PM	8:44 PM	30	20	50	17	8
8:45 PM	8:59 PM	25	23	48	5	12
9:00 PM	9:14 PM	16	28	44	13	12
9:15 PM	9:29 PM	8	24	32	8	6
9:30 PM	9:44 PM	17	12	29	8	2
9:45 PM	9:59 PM	13	11	24	3	2
10:00 PM	10:14 PM	12	12	24	5	9
10:15 PM	10:29 PM	16	15	31	3	4
10:30 PM	10:44 PM	10	10	20	4	2
10:45 PM	10:59 PM	5	7	12	1	1
11:00 PM	11:14 PM	9	12	21	5	0
11:15 PM	11:29 PM	8	16	24	4	1
11:30 PM	11:44 PM	8	6	14	1	2
11:45 PM	11:59 PM	4	9	13	2	3
	Approach Totals:	2654	2851	5505	1116	1026

MUTCD WARRANT 3, PEAK HOUR

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

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?	No

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?	Yes
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?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	22	9	
12:15 AM	23	9	
12:30 AM	18	7	
12:45 AM	17	6	
1:00 AM	16	5	
1:15 AM	12	3	
1:30 AM	14	4	
1:45 AM	13	4	
2:00 AM	11	2	
2:15 AM	11	3	
2:30 AM	8	2	
2:45 AM	9	3	
3:00 AM	18	4	
3:15 AM	21	4	
3:30 AM	27	3	
3:45 AM	33	5	
4:00 AM	38	9	
4:15 AM	48	15	
4:30 AM	53	18	
4:45 AM	74	23	
5:00 AM	90	21	
5:15 AM	114	20	
5:30 AM	152	29	
5:45 AM	197	36	
6:00 AM	219	57	
6:15 AM	246	70	
6:30 AM	277	77	
6:45 AM	301	90	
7:00 AM	329	78	
7:15 AM	339	80	
7:30 AM	369	74	
7:45 AM	409	73	
8:00 AM	412	68	
8:15 AM	390	65	

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
8:30 AM	333	59	
8:45 AM	256	50	
9:00 AM	248	49	
9:15 AM	267	45	
9:30 AM	302	53	
9:45 AM	317	57	
10:00 AM	305	58	
10:15 AM	308	62	
10:30 AM	312	59	
10:45 AM	329	65	
11:00 AM	339	67	
11:15 AM	354	70	
11:30 AM	351	74	
11:45 AM	351	67	
12:00 PM	350	69	
12:15 PM	330	75	
12:30 PM	328	73	
12:45 PM	321	72	
1:00 PM	329	63	
1:15 PM	342	60	
1:30 PM	337	61	
1:45 PM	354	69	
2:00 PM	365	68	
2:15 PM	386	90	
2:30 PM	445	104	
2:45 PM	475	114	
3:00 PM	502	129	
3:15 PM	498	126	
3:30 PM	471	122	
3:45 PM	449	114	
4:00 PM	449	108	
4:15 PM	446	98	
4:30 PM	428	100	
4:45 PM	410	100	
5:00 PM	387	96	
5:15 PM	363	95	
5:30 PM	360	89	
5:45 PM	336	73	
6:00 PM	306	72	
6:15 PM	291	64	
6:30 PM	282	50	
6:45 PM	270	49	
7:00 PM	265	50	
7:15 PM	266	47	
7:30 PM	238	49	
7:45 PM	230	57	
8:00 PM	217	44	
8:15 PM	199	44	
8:30 PM	174	43	
8:45 PM	153	34	
9:00 PM	129	32	
9:15 PM	109	24	
9:30 PM	108	19	
9:45 PM	99	17	
10:00 PM	87	16	
10:15 PM	84	13	
10:30 PM	77	14	
10:45 PM	71	11	
11:00 PM	72	12	

WARRANT PA-1, ADT VOLUME WARRANT

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

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

Estimated ADT of Major Street (Both Approaches)*: 5505 vpd

**If applicable, attach all supporting calculations and documentation.*

Estimated ADT of Higher-Volume Minor Street (One Direction Only)*: 1116 vpd

**If applicable, attach all supporting calculations and documentation.*

Condition A - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	10,000	7,000	3,000	2,100
2 or More	1	12,000	8,400	3,000	2,100
2 or More	2 or More	12,000	8,400	4,000	2,800
1	2 or More	10,000	7,000	4,000	2,800

Condition B - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	15,000	10,500	1,500	1,050
2 or More	1	18,000	12,600	1,500	1,050
2 or More	2 or More	18,000	12,600	2,000	1,400
1	2 or More	15,000	10,500	2,000	1,400

Condition A Met?	**No**
Condition B Met?	**No**

Traffic Signal Warrant Analysis Workbook

STUDY AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	8/13/2019
County:	Mercer County	**Conducted By:**	LNS
PennDOT Engineering District:	1	**Agency/Company Name:**	Markosky

Analysis Information

Data Collection Date:	5/29/2019
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? Yes

Major Street Information

Major Street Name and Route Number:	PA 58
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	35	**MPH**

Minor Street Information

Minor Street Name and Route Number:	York St / Stewart Ave
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	W-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**No**	**N/A**
Warrant 2, Four-Hour Vehicular Volume	**No**	**N/A**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**No**	**N/A**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (N-Bound)	Major Street Approach #2 (S-Bound)	Major Street Combined	Minor Street Approach #1 (E-Bound)	Minor Street Approach #2 (W-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	26	33	59	3	3
7:15 AM	7:29 AM	52	33	85	10	7
7:30 AM	7:44 AM	49	37	86	8	11
7:45 AM	7:59 AM	43	55	98	4	6
8:00 AM	8:14 AM	35	29	64	11	7
8:15 AM	8:29 AM	41	56	97	4	13
8:30 AM	8:44 AM	66	30	96	5	6
8:45 AM	8:59 AM	47	39	86	3	2
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 (N-Bound)	Major Street Approach #2 (S-Bound)	Major Street Combined	Minor Street Approach #1 (E-Bound)	Minor Street Approach #2 (W-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	66	79	145	6	10
3:15 PM	3:29 PM	61	50	111	4	11
3:30 PM	3:44 PM	70	64	134	4	10
3:45 PM	3:59 PM	57	53	110	7	9
4:00 PM	4:14 PM	52	49	101	7	11
4:15 PM	4:29 PM	51	79	130	3	11
4:30 PM	4:44 PM	57	46	103	6	4
4:45 PM	4:59 PM	53	57	110	5	9
5:00 PM	5:14 PM			0		
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		
Approach Totals:		826	789	1615	90	130

MUTCD WARRANT 3, PEAK HOUR

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

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?	No

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?	Yes
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?	No
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
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	59	3	
6:30 AM	144	13	
6:45 AM	230	21	
7:00 AM	328	27	
7:15 AM	333	33	
7:30 AM	345	37	
7:45 AM	355	32	
8:00 AM	343	28	
8:15 AM	279	21	

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
8:30 AM	182	8	
8:45 AM	86	3	
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	145	10	
2:30 PM	256	21	
2:45 PM	390	31	
3:00 PM	500	40	
3:15 PM	456	41	
3:30 PM	475	41	
3:45 PM	444	35	
4:00 PM	444	35	
4:15 PM	343	24	
4:30 PM	213	13	
4:45 PM	110	9	
5:00 PM	0	0	
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	

WARRANT PA-1, ADT VOLUME WARRANT

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

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

Estimated ADT of Major Street (Both Approaches)*: 0 vpd

**If applicable, attach all supporting calculations and documentation.*

Estimated ADT of Higher-Volume Minor Street (One Direction Only)*: 0 vpd

**If applicable, attach all supporting calculations and documentation.*

Condition A - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	10,000	7,000	3,000	2,100
2 or More	1	12,000	8,400	3,000	2,100
2 or More	2 or More	12,000	8,400	4,000	2,800
1	2 or More	10,000	7,000	4,000	2,800

Condition B - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	15,000	10,500	1,500	1,050
2 or More	1	18,000	12,600	1,500	1,050
2 or More	2 or More	18,000	12,600	2,000	1,400
1	2 or More	15,000	10,500	2,000	1,400

Condition A Met?	**No**
Condition B Met?	**No**

Traffic Signal Warrant Analysis Workbook

STUDY AND ANALYSIS INFORMATION

Municipality:	Greenville Borough	**Analysis Date:**	6/3/2019
County:	Mercer County	**Conducted By:**	LNS
PennDOT Engineering District:	1	**Agency/Company Name:**	Markosky

Analysis Information

Data Collection Date:	5/22/2019
Day of the Week:	Wednesday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

Major Street Information

Major Street Name and Route Number:	PA 58
Major Street Approach #1 Direction:	N-Bound
Major Street Approach #2 Direction:	S-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street:	55	**MPH**

Minor Street Information

Minor Street Name and Route Number:	Kidds Mills Rd
Minor Street Approach #1 Direction:	E-Bound
Minor Street Approach #2 Direction:	N/A

Number of Lanes for Moving Traffic on Each Minor Street Approach:	1	**LANE(S)**

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Met?
Warrant 1, Eight-Hour Vehicular Volume	**No**	**N/A**
Warrant 2, Four-Hour Vehicular Volume	**No**	**N/A**
Warrant 3, Peak Hour	**Yes**	**No**
Warrant 4, Pedestrian Volume	**No**	**N/A**
Warrant 5, School Crossing	**No**	**N/A**
Warrant 6, Coordinated Signal System	**No**	**N/A**
Warrant 7, Crash Experience	**No**	**N/A**
Warrant 8, Roadway Network	**No**	**N/A**
Warrant 9, Intersection Near a Grade Crossing	**No**	**N/A**
Warrant PA-1, ADT Volume Warrant	**Yes**	**No**
Warrant PA-2, Midblock and Trail Crossings	**No**	**N/A**

Traffic Signal Warrant Analysis Workbook

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (N-Bound)	Major Street Approach #2 (S-Bound)	Major Street Combined	Minor Street Approach #1 (E-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 AM	12:14 AM	3	5	8	3	0
12:15 AM	12:29 AM	2	5	7	0	0
12:30 AM	12:44 AM	2	4	6	1	0
12:45 AM	12:59 AM	2	2	4	0	0
1:00 AM	1:14 AM	1	0	1	5	0
1:15 AM	1:29 AM	2	0	2	1	0
1:30 AM	1:44 AM	0	2	2	0	0
1:45 AM	1:59 AM	1	1	2	0	0
2:00 AM	2:14 AM	2	2	4	3	0
2:15 AM	2:29 AM	1	1	2	0	0
2:30 AM	2:44 AM	1	1	2	0	0
2:45 AM	2:59 AM	3	2	5	1	0
3:00 AM	3:14 AM	2	1	3	0	0
3:15 AM	3:29 AM	6	0	6	0	0
3:30 AM	3:44 AM	0	2	2	0	0
3:45 AM	3:59 AM	1	2	3	3	0
4:00 AM	4:14 AM	2	9	11	2	0
4:15 AM	4:29 AM	5	4	9	1	0
4:30 AM	4:44 AM	9	6	15	4	0
4:45 AM	4:59 AM	9	17	26	5	0
5:00 AM	5:14 AM	3	25	28	8	0
5:15 AM	5:29 AM	10	24	34	4	0
5:30 AM	5:44 AM	16	27	43	5	0
5:45 AM	5:59 AM	17	26	43	4	0
6:00 AM	6:14 AM	25	41	66	6	0
6:15 AM	6:29 AM	30	49	79	11	0
6:30 AM	6:44 AM	40	50	90	8	0
6:45 AM	6:59 AM	42	39	81	18	0
7:00 AM	7:14 AM	43	63	106	21	0
7:15 AM	7:29 AM	47	63	110	28	0
7:30 AM	7:44 AM	46	64	110	17	0
7:45 AM	7:59 AM	43	48	91	27	0
8:00 AM	8:14 AM	35	54	89	23	0
8:15 AM	8:29 AM	54	59	113	19	0
8:30 AM	8:44 AM	33	51	84	27	0
8:45 AM	8:59 AM	23	35	58	23	0
9:00 AM	9:14 AM	23	34	57	12	0
9:15 AM	9:29 AM	32	44	76	15	0
9:30 AM	9:44 AM	22	34	56	20	0
9:45 AM	9:59 AM	34	36	70	21	0
10:00 AM	10:14 AM	25	38	63	14	0
10:15 AM	10:29 AM	34	33	67	16	0
10:30 AM	10:44 AM	26	54	80	13	0
10:45 AM	10:59 AM	35	33	68	14	0
11:00 AM	11:14 AM	42	38	80	20	0
11:15 AM	11:29 AM	36	39	75	20	0
11:30 AM	11:44 AM	23	45	68	16	0
11:45 AM	11:59 AM	31	38	69	17	0

ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH

Time Interval		Major Street Approach #1 (N-Bound)	Major Street Approach #2 (S-Bound)	Major Street Combined	Minor Street Approach #1 (E-Bound)	Minor Street Approach #2 (N/A)
Begin At	End Of	Volume	Volume	Total Volume	Volume	Volume
12:00 PM	12:14 PM	37	33	70	22	0
12:15 PM	12:29 PM	42	42	84	27	0
12:30 PM	12:44 PM	40	39	79	13	0
12:45 PM	12:59 PM	34	51	85	22	0
1:00 PM	1:14 PM	35	47	82	23	0
1:15 PM	1:29 PM	39	52	91	19	0
1:30 PM	1:44 PM	45	52	97	15	0
1:45 PM	1:59 PM	36	33	69	19	0
2:00 PM	2:14 PM	33	43	76	18	0
2:15 PM	2:29 PM	43	39	82	33	0
2:30 PM	2:44 PM	43	41	84	34	0
2:45 PM	2:59 PM	41	42	83	40	0
3:00 PM	3:14 PM	49	46	95	43	0
3:15 PM	3:29 PM	67	66	133	36	0
3:30 PM	3:44 PM	68	46	114	51	0
3:45 PM	3:59 PM	39	48	87	38	0
4:00 PM	4:14 PM	47	47	94	36	0
4:15 PM	4:29 PM	50	55	105	41	0
4:30 PM	4:44 PM	65	61	126	44	0
4:45 PM	4:59 PM	66	56	122	36	0
5:00 PM	5:14 PM	52	61	113	47	0
5:15 PM	5:29 PM	56	48	104	45	0
5:30 PM	5:44 PM	51	42	93	51	0
5:45 PM	5:59 PM	47	41	88	35	0
6:00 PM	6:14 PM	41	36	77	18	0
6:15 PM	6:29 PM	36	29	65	16	0
6:30 PM	6:44 PM	33	23	56	19	0
6:45 PM	6:59 PM	30	19	49	21	0
7:00 PM	7:14 PM	33	25	58	18	0
7:15 PM	7:29 PM	23	33	56	14	0
7:30 PM	7:44 PM	27	26	53	23	0
7:45 PM	7:59 PM	32	20	52	19	0
8:00 PM	8:14 PM	20	30	50	17	0
8:15 PM	8:29 PM	31	21	52	15	0
8:30 PM	8:44 PM	16	21	37	16	0
8:45 PM	8:59 PM	20	20	40	15	0
9:00 PM	9:14 PM	20	24	44	15	0
9:15 PM	9:29 PM	17	16	33	9	0
9:30 PM	9:44 PM	9	11	20	5	0
9:45 PM	9:59 PM	8	9	17	9	0
10:00 PM	10:14 PM	9	12	21	9	0
10:15 PM	10:29 PM	13	11	24	7	0
10:30 PM	10:44 PM	9	4	13	6	0
10:45 PM	10:59 PM	14	9	23	2	0
11:00 PM	11:14 PM	8	4	12	8	0
11:15 PM	11:29 PM	14	7	21	4	0
11:30 PM	11:44 PM	8	7	15	5	0
11:45 PM	11:59 PM	3	6	9	5	0
Approach Totals:		2523	2804	5327	1559	0

MUTCD WARRANT 3, PEAK HOUR

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

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?	No

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?	Yes
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?	Yes
**If applicable, attach all supporting calculations and documentation.*	

Total Number of Unique Hours Met On Figure 4C-4
0

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
12:00 AM	25	4	
12:15 AM	18	6	
12:30 AM	13	7	
12:45 AM	9	6	
1:00 AM	7	6	
1:15 AM	10	4	
1:30 AM	10	3	
1:45 AM	10	3	
2:00 AM	13	4	
2:15 AM	12	1	
2:30 AM	16	1	
2:45 AM	16	1	
3:00 AM	14	3	
3:15 AM	22	5	
3:30 AM	25	6	
3:45 AM	38	10	
4:00 AM	61	12	
4:15 AM	78	18	
4:30 AM	103	21	
4:45 AM	131	22	
5:00 AM	148	21	
5:15 AM	186	19	
5:30 AM	231	26	
5:45 AM	278	29	
6:00 AM	316	43	
6:15 AM	356	58	
6:30 AM	387	75	
6:45 AM	407	84	
7:00 AM	417	93	
7:15 AM	400	95	
7:30 AM	403	86	
7:45 AM	377	96	
8:00 AM	344	92	
8:15 AM	312	81	

Hourly Vehicular Volume			
Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Hour Met?
8:30 AM	275	77	
8:45 AM	247	70	
9:00 AM	259	68	
9:15 AM	265	70	
9:30 AM	256	71	
9:45 AM	280	64	
10:00 AM	278	57	
10:15 AM	295	63	
10:30 AM	303	67	
10:45 AM	291	70	
11:00 AM	292	73	
11:15 AM	282	75	
11:30 AM	291	82	
11:45 AM	302	79	
12:00 PM	318	84	
12:15 PM	330	85	
12:30 PM	337	77	
12:45 PM	355	79	
1:00 PM	339	76	
1:15 PM	333	71	
1:30 PM	324	85	
1:45 PM	311	104	
2:00 PM	325	125	
2:15 PM	344	150	
2:30 PM	395	153	
2:45 PM	425	170	
3:00 PM	429	168	
3:15 PM	428	161	
3:30 PM	400	166	
3:45 PM	412	159	
4:00 PM	447	157	
4:15 PM	466	168	
4:30 PM	465	172	
4:45 PM	432	179	
5:00 PM	398	178	
5:15 PM	362	149	
5:30 PM	323	120	
5:45 PM	286	88	
6:00 PM	247	74	
6:15 PM	228	74	
6:30 PM	219	72	
6:45 PM	216	76	
7:00 PM	219	74	
7:15 PM	211	73	
7:30 PM	207	74	
7:45 PM	191	67	
8:00 PM	179	63	
8:15 PM	173	61	
8:30 PM	154	55	
8:45 PM	137	44	
9:00 PM	114	38	
9:15 PM	91	32	
9:30 PM	82	30	
9:45 PM	75	31	
10:00 PM	81	24	
10:15 PM	72	23	
10:30 PM	69	20	
10:45 PM	71	19	
11:00 PM	57	22	

WARRANT PA-1, ADT VOLUME WARRANT

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

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

Estimated ADT of Major Street (Both Approaches)*: 5327 vpd

**If applicable, attach all supporting calculations and documentation.*

Estimated ADT of Higher-Volume Minor Street (One Direction Only)*: 1559 vpd

**If applicable, attach all supporting calculations and documentation.*

Condition A - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	10,000	7,000	3,000	2,100
2 or More	1	12,000	8,400	3,000	2,100
2 or More	2 or More	12,000	8,400	4,000	2,800
1	2 or More	10,000	7,000	4,000	2,800

Condition B - ADT Volume Warrant					
Number of lanes for moving traffic on each approach		Estimated ADT*			
		Major Street (Both Approaches)		Higher-Volume Minor Street Approach (One Direction Only)	
Major Street	Minor Street	100%	70%	100%	70%
1	1	15,000	10,500	1,500	1,050
2 or More	1	18,000	12,600	1,500	1,050
2 or More	2 or More	18,000	12,600	2,000	1,400
1	2 or More	15,000	10,500	2,000	1,400

Condition A Met?	**No**
Condition B Met?	**No**

APPENDIX J:

CONCEPTUAL IMPROVEMENT PLANS

PLOTTED: 8/22/2019 7:09:29 PM

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LEGEND

- PROPOSED LANE/ FULL DEPTH PAVEMENT
- PROPOSED RIGHT-OF-WAY
- PROPOSED DRIVEWAY ADJUSTMENT
- EXISTING RIGHT-OF-WAY LINE
- PROPOSED FLASHING BEACON ON MAST ARM
- TRAFFIC FLOW

PA 58 CORRIDOR SAFETY STUDY

SHEET 1

pennsylvania
DEPARTMENT OF TRANSPORTATION

0 25 50 FEET

CONCEPTUAL IMPROVEMENT PLANS

GREENVILLE BOROUGH
MERCER COUNTY

INTERSECTION OF SR 0058, SR 4011, & HAMBURG ROAD (T-470)

PLOTTED: 8/22/2019 7:09:34 PM

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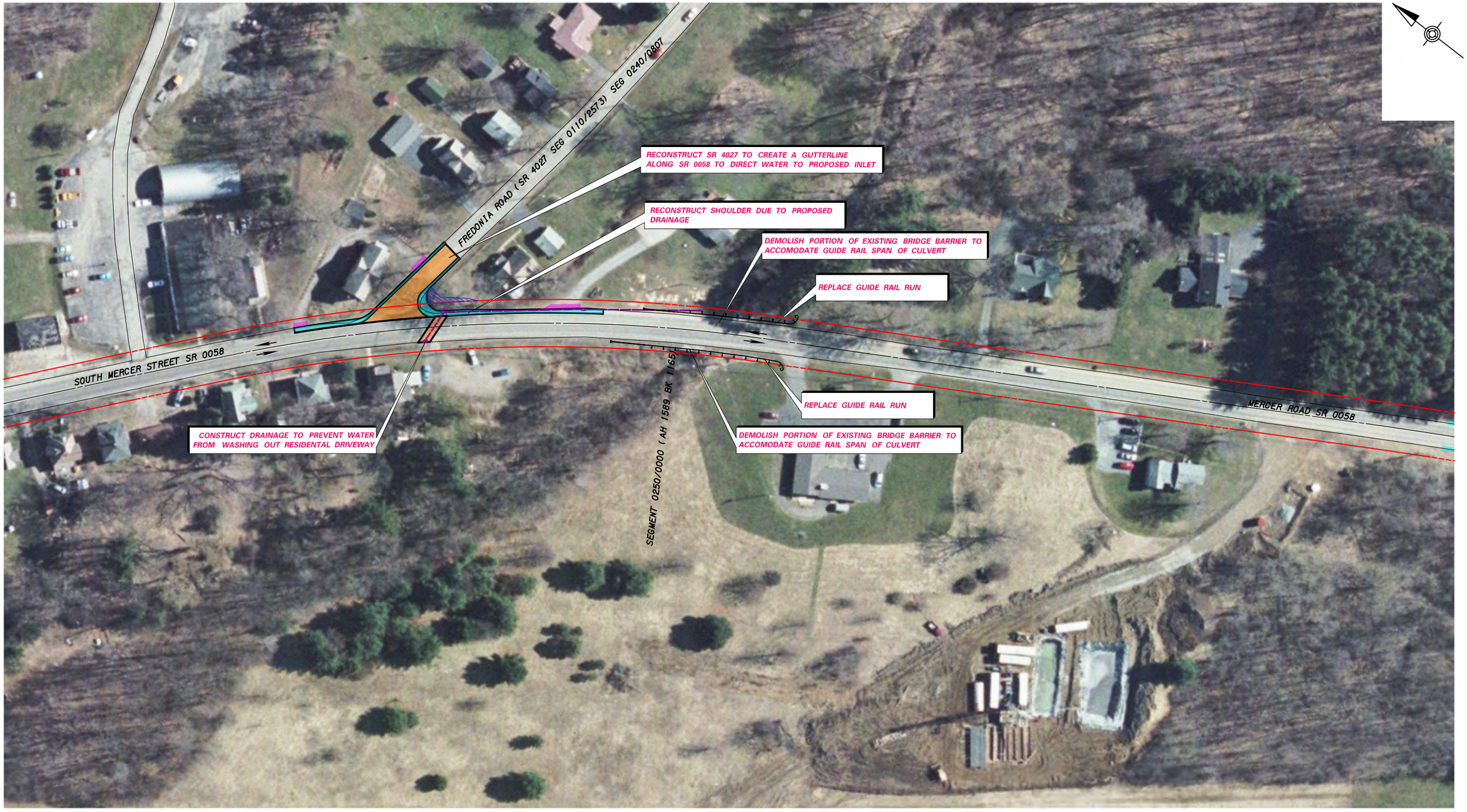

LEGEND

- PROPOSED LANE/ FULL DEPTH PAVEMENT
- PROPOSED SHOULDER/ FULL DEPTH PAVEMENT
- PROPOSED RIGHT-OF-WAY
- PROPOSED DRIVEWAY ADJUSTMENT
- EXISTING RIGHT-OF-WAY LINE
- TRAFFIC FLOW

PA 58 CORRIDOR SAFETY STUDY

SHEET 2

pennsylvania
DEPARTMENT OF TRANSPORTATION

0 50 100 FEET

CONCEPTUAL IMPROVEMENT PLANS

HEMPFIELD TOWNSHIP
MERCER COUNTY

INTERSECTION OF SR 0058
& SR 4027

PLOTTED: 8/22/2019 7:09:40 PM

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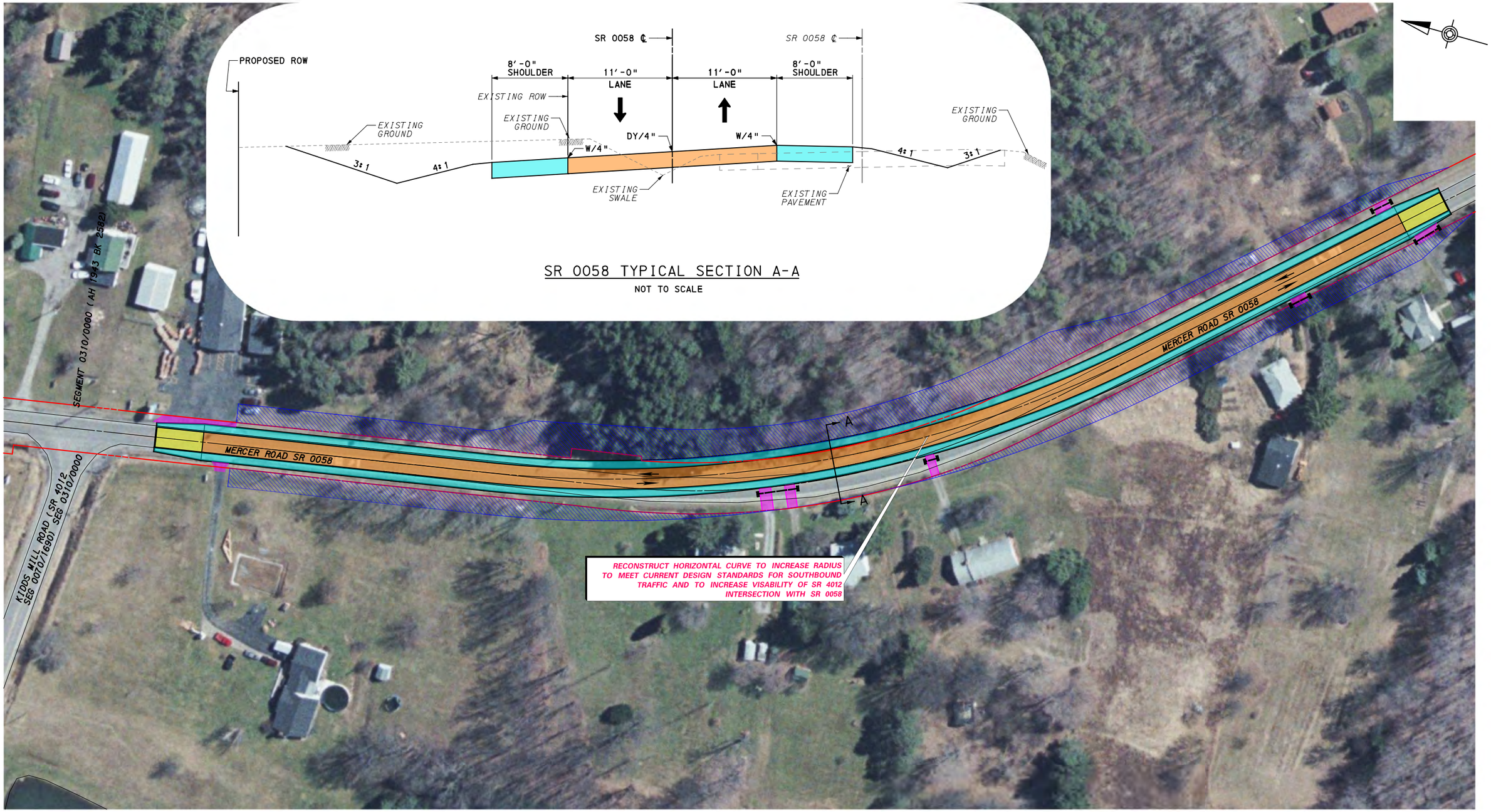

SR 0058 TYPICAL SECTION A-A

NOT TO SCALE

LEGEND

- PROPOSED LANE/ FULL DEPTH PAVEMENT
- PROPOSED SHOULDER/ FULL DEPTH PAVEMENT
- PROPOSED RIGHT-OF-WAY
- MILL AND OVERLAY
- PROPOSED DRIVEWAY ADJUSTMENT
- EXISTING RIGHT-OF-WAY LINE
- TRAFFIC FLOW

PA 58 CORRIDOR SAFETY STUDY

SHEET 3

pennsylvania
DEPARTMENT OF TRANSPORTATION

0 50 100 FEET

CONCEPTUAL IMPROVEMENT PLANS

DELAWARE TOWNSHIP
MERCER COUNTY

SR 0058 CURVE IMPROVEMENT

PLOTTED: 8/22/2019 7:09:46 PM

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LEGEND

- PROPOSED RIGHT-OF-WAY
- PROPOSED SWALE BOTTOM
- EXISTING RIGHT-OF-WAY LINE
- TRAFFIC FLOW

PA 58 CORRIDOR SAFETY STUDY

SHEET 4

pennsylvania
DEPARTMENT OF TRANSPORTATION

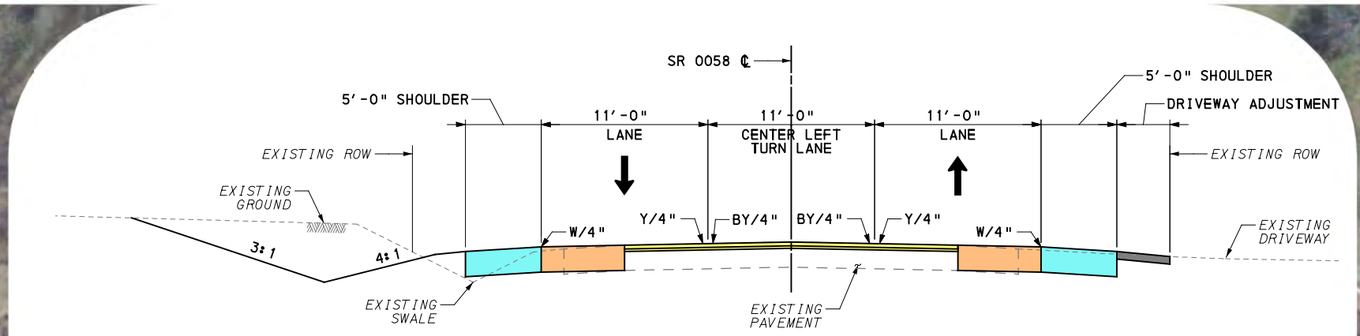
0 50 100 FEET

CONCEPTUAL IMPROVEMENT PLANS

DELAWARE TOWNSHIP
MERCER COUNTY

INTERSECTION OF SR 0058
& SR 4014

PLOTTED: 8/22/2019 7:09:52 PM



SR 0058 TYPICAL SECTION B-B

NOT TO SCALE

LEGEND

- PROPOSED LANE/ FULL DEPTH PAVEMENT
- MILL AND OVERLAY
- TRAFFIC FLOW
- PROPOSED SHOULDER/ FULL DEPTH PAVEMENT
- PROPOSED DRIVEWAY ADJUSTMENT
- PROPOSED RIGHT-OF-WAY
- EXISTING RIGHT-OF-WAY LINE

PA 58 CORRIDOR SAFETY STUDY

SHEET 5

pennsylvania DEPARTMENT OF TRANSPORTATION

0 50 100 FEET

CONCEPTUAL IMPROVEMENT PLANS

COOLSPRING TOWNSHIP
MERCER COUNTY

INTERSECTION OF SR 0058
& COOLSPRING STREET (T-919)

FILE NAME: G:\18-055A SR 58 Corridor Study\CADD\Roadway\ARD0005GFX.dgn

APPENDIX K:

COST ESTIMATES

SR 58 Corridor Safety Study
Conceptual Improvement Cost Estimate
Columbia/Hamburg Intersection Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
PA 58 & Columbia/Hamburg Intersection Improvements				
CY	EXCAVATION	5	$30	$150
LF	CONCRETE CURB	40	$60	$2,400
SY	FULL DEPTH LANE PAVEMENT	11	$200	$2,111
SY	DRIVEWAY ADJUSTMENT	41	$42	$1,727
LS	FLASHING BEACON ON MAST ARM	1	$50,000	$50,000
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%)	1	$1,700	$1,700
		Subtotal Without Mobilization & MPT		**$58,088**
LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$1,162	$1,162
LS	MOBILIZATION (2%)	1	$1,743	$1,743
		Subtotal W/ Mobilization & MPT		**$60,992**
		Contingency @	25%	$15,300
		Total Construction Cost		**$76,292**
		Construction Engineering	10%	$7,319.06
		Preliminary Engineering	10%	$6,099.22
		Final Engineering	15%	$9,148.83
		Additional Utility Impact	5%	$3,049.61
		ROW Acquisition	$10,000/Claim	$10,000.00
		Total Project Cost		**$111,909**

SR 58 Corridor Safety Study
Conceptual Improvement Cost Estimate
Fredonia Road Intersection Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
PA 58 Fredonia Road Intersection Improvements				
CY	EXCAVATION	134	$30	$4,020
SY	WIDENED FULL DEPTH SHOULDERS	192	$67	$12,864
SY	FULL DEPTH LANE PAVEMENT	322	$67	$21,574
SY	DRIVEWAY ADJUSTMENT	37	$42	$1,573
LF	DRAINAGE PIPE	300	$150	$45,000
EACH	INLET	3	$4,200	$12,600
LF	GUIDE RAIL	288	$25	$7,200
EACH	ATTENUATOR	2	$2,500	$5,000
EACH	TERMINAL SECTION, SINGLE	2	$200	$400
EACH	PARTIAL REMOVAL OF BRIDGE BARRIER	2	$10,000	$20,000
LS	CONSTRUCTION SURVEYING	1	$10,000	$10,000
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%)	1	$5,000	$5,000
	Subtotal Without Mobilization & MPT			**$145,231**
LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$5,809	$5,809
LS	MOBILIZATION (6%)	1	$8,714	$8,714
	Subtotal W/ Mobilization & MPT			**$159,754**
	Contingency @		25%	$40,000
	Total Construction Cost			**$199,754**
	Construction Engineering		15%	$23,963.06
	Preliminary Engineering		10%	$15,975.37
	Final Engineering		15%	$23,963.06
	Additional Utility Impact		5%	$15,975.37
	ROW Acquisition		$10,000/Claim	$10,000.00
	Total Project Cost			**$289,631**

SR 58 Corridor Safety Study
Conceptual Improvement Cost Estimate
PA 58 Curve Near Kidds Mill Road Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
PA 58 Curve Near Kidds Mill Road Improvements				
CY	EXCAVATION	2624	$30	$78,706
SY	MILL/OVERLAY	241	$25	$6,014
SY	WIDENED FULL DEPTH SHOULDERS	2476	$67	$165,885
SY	FULL DEPTH LANE PAVEMENT	3223	$67	$215,941
SY	DRIVEWAY ADJUSTMENT	218	$42	$9,156
LF	SWALE	2838	$25	$70,950
LF	DRAINAGE PIPE	185	$150	$27,750
EACH	DRAINAGE ENDWALL	10	$2,800	$28,000
LS	CLEARING AND GRUBBING	1	$20,000	$20,000
LS	INSPECTORS FIELD OFFICE	1	$20,000	$20,000
LS	EQUIPMENT PACKAGE	1	$3,500	$3,500
LS	CONSTRUCTION SURVEYING	1	$10,000	$10,000
LS	NARRATIVE SCHEDULE	1	$1,500	$1,500
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%	1	$25,000	$25,000

Subtotal Without Mobilization & MPT **$682,401**

LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$27,296	$27,296
LS	MOBILIZATION (6%)	1	$40,944	$40,944

Subtotal W/ Mobilization & MPT **$750,641**

Contingency @	25%	$187,700
Total Construction Cost		**$938,341**
Construction Engineering	12%	$90,076.93
Preliminary Engineering	10%	$75,064.11
Final Engineering	15%	$112,596.17
Utility Impact	5%	$37,532.06
ROW Acquisition	$10,000/Claim	$90,000.00
Total Project Cost		**$1,343,610**

SR 58 Corridor Safety Study
Conceptual Improvement Cost Estimate
PA 58 & Oniontown Road Drainage Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
PA 58 & Oniontown Road Drainage Improvements				
LF	SWALE	662	$25.00	$16,550.00
SY	DRIVEWAY ADJUSTMENT	22	$42.00	$938.00
LF	DRAINAGE PIPE	25	$150.00	$3,750.00
EACH	DRAINAGE ENDWALL	2	$2,800.00	$5,600.00
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%	1	$1,000.00	$1,000.00
			Subtotal Without Mobilization & MPT	**$27,838**
LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$557	$557
LS	MOBILIZATION (3%)	1	$835	$835
			Subtotal W/ Mobilization & MPT	**$29,230**
			Contingency @ 25%	$7,400
			Total Construction Cost	**$36,630**
			Construction Engineering 15%	$4,384.49
			Preliminary Engineering 10%	$2,922.99
			Final Engineering 15%	$4,384.49
			Utility Impact 5%	$1,461.50
			ROW Acquisition $10,000/Claim	$20,000.00
			Total Project Cost	**$69,783**

SR 58 Corridor Safety Study

Conceptual Improvement Cost Estimate

PA 58 Center Left Turn Lane Near Coolspring Street Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
PA 58 Center Left Turn Lane Near Coolspring Street Improvements				
CY	EXCAVATION	1231	$30	$36,931
SY	MILL/OVERLAY	3860	$25	$96,506
SY	WIDENED FULL DEPTH SHOULDERS	1589	$67	$106,456
SY	FULL DEPTH LANE PAVEMENT	1366	$67	$91,492
SY	DRIVEWAY ADJUSTMENT	568	$42	$23,861
LF	SWALE	1801	$25	$45,025
LF	DRAINAGE PIPE	725	$150	$108,750
EACH	DRAINAGE ENDWALL	20	$2,800	$56,000
EACH	INLET	2	$4,200	$8,400
LS	INSPECTORS FIELD OFFICE	1	$20,000	$20,000
LS	EQUIPMENT PACKAGE	1	$3,500	$3,500
LS	CONSTRUCTION SURVEYING	1	$10,000	$10,000
LS	NARRATIVE SCHEDULE	1	$1,500	$1,500
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%	1	$20,000	$20,000
		Subtotal Without Mobilization & MPT		**$628,420**
LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$25,137	$25,136.78
LS	MOBILIZATION (6%)	1	$37,705	$37,705.17
		Subtotal W/ Mobilization & MPT		**$691,262**
		Contingency @	25%	$172,900
		Total Construction Cost		**$864,162**
		Construction Engineering	15%	$103,689.23
		Preliminary Engineering	10%	$69,126.15
		Final Engineering	15%	$103,689.23
		Utility Impact	5%	$34,563.08
		ROW Acquisition	$10,000/Claim	$140,000.00
		Total Project Cost		**$1,315,229**

SR 58 Corridor Safety Study
Conceptual Improvement Cost Estimate
PA 58 3R Project Improvements

Long-Term Improvements

Unit	*Item Description*	*Quantity*	*Unit Cost*	*Item Cost*
	PA 58 3R Project Improvements			
CY	EXCAVATION	31778	$30	$953,340
SY	MILL/OVERLAY	167787	$25	$4,194,675
SY	WIDENED FULL DEPTH SHOULDERS	76266	$67	$5,109,822
SY	DRIVEWAY ADJUSTMENT	1840	$42	$77,280
LF	SWALE	34320	$25	$858,000
LS	ADDITIONAL DRAINAGE	1	$350,000	$350,000
LF	GUIDE RAIL	3663	$25	$91,575
EACH	ATTENUATOR	11	$2,500	$27,500
EACH	TERMINAL SECTION, SINGLE	17	$200	$3,400
LS	CLEARING AND GRUBBING	1	$160,000	$160,000
LS	INSPECTORS FIELD OFFICE	1	$20,000	$20,000
LS	EQUIPMENT PACKAGE	1	$3,500	$3,500
LS	CONSTRUCTION SURVEYING	1	$10,000	$10,000
LS	NARRATIVE SCHEDULE	1	$1,500	$1,500
LS	EROSION AND SEDIMENTATION CONTROLS (APPROX.) 3%)	1	$350,000	$350,000
		Subtotal Without Mobilization & MPT		**$12,210,592**
LS	MAINTENANCE AND PROTECTION OF TRAFFIC (4%)	1	$488,424	$488,423.68
LS	MOBILIZATION (6%)	1	$732,636	$732,635.52
		Subtotal W/ Mobilization & MPT		**$13,431,651**
		Contingency @	25%	$3,358,000
		Total Construction Cost		**$16,789,651**
		Construction Engineering	10%	$1,343,165.12
		Preliminary Engineering	10%	$1,343,165.12
		Final Engineering	15%	$2,014,747.68
		Additional Utility Impact	5%	$671,582.56
		ROW Acquisition	$10,000/Claim	$3,500,000.00
		Total Project Cost		**$25,662,312**

NOTE: ALL UNIT COSTS DETERMINED FROM ECMS USING RECENT D-1 PROJECTS WITH SIMILAR QUANTITIES. ALL MEASUREMENTS DETERMINED IN MICROSTATION.

UNIT COST JUSTIFICATION

ITEM NO.	ITEM	UNIT COST	ITEM DESCRIPTION/ASSUMPTION	DESCRIPTION OF CALCULATION/ASSUMPTION
	EXCAVATION	$30/CY		
	CLASS 1 EXCAVATION	$25/CY	FULL DEPTH SHOULDERS	CALCULATED FROM TYPICAL SECTION 1.25' AVG DEPTH X PLAN SF / 27
	CLASS 4 EXCAVATION	$30/CY	DRAINAGE UPGRADES	4' AVG DEPTH X 3' AVG WIDTH X PLAN LENGTH / 27
	MILL AND OVERLAY	$25/SY		
0491-0014	MILLING OF BITUMINOUS PAVEMENT SURFACE, 2 1/2" DEPTH, MILLED MATERIAL RETAINED BY CONTRACTOR	$5/SY		CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-1495	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE (LEVELING), PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, SRL-L	$8/SY	ASSUME 1" SUPERPAVE LEVELING (CONVERTED TO SY)	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-0482	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H	$12/SY	ASSUME 1.5" SUPERPAVE SURFACE COURSE	CALCULATED FROM PLAN VIEW PLAN SF / 9
	WIDENENED FULL DEPTH SHOULDERS	$67/SY		
0350-0106	SUBBASE 6" DEPTH (NO. 2A)	$15/SY	ASSUME 6" DEPTH PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0311-0420	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALs, 25.0 MM MIX, 3" DEPTH	$20/SY	ASSUME 3" SUPERPAVE BASE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-6450	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	$20/SY	ASSUME 2.5" SUPERPAVE SURFACE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-0482	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H	$12/SY	ASSUME 1.5" SUPERPAVE SURFACE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
	CONCRETE CURB	$60/LF		
0630-0001	PLAIN CEMENT CONCRETE CURB	$60/LF		CALCULATED FROM PLAN VIEW PLAN

NOTE: ALL UNIT COSTS DETERMINED FROM ECMS USING RECENT D-1 PROJECTS WITH SIMILAR QUANTITIES. ALL MEASUREMENTS DETERMINED IN MICROSTATION.

UNIT COST JUSTIFICATION

ITEM NO.	ITEM	UNIT COST	ITEM DESCRIPTION/ASSUMPTION	DESCRIPTION OF CALCULATION/ASSUMPTION
	DRIVEWAY ADJUSTMENT	$42/SY		
0350-0103	SUBBASE 3" DEPTH (NO. 2A)	$10/SY	ASSUME 3" DEPTH	CALCULATED FROM PLAN VIEW PLAN SF / 9
0311-0420	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALs, 25.0 MM MIX, 3" DEPTH	$20/SY	ASSUME 3" SUPERPAVE BASE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-0482	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H	$12/SY	ASSUME 1.5" SUPERPAVE SURFACE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
	ADDITIONAL FULL DEPTH LANE	$67/SY		
0350-0106	SUBBASE 6" DEPTH (NO. 2A)	$15/SY	ASSUME 6" DEPTH PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0311-0420	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BASE COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALs, 25.0 MM MIX, 3" DEPTH	$20/SY	ASSUME 3" SUPERPAVE BASE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-6450	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA BINDER COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 19.0 MM MIX, 2 1/2" DEPTH	$20/SY	ASSUME 2.5" SUPERPAVE SURFACE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9
0411-0482	SUPERPAVE ASPHALT MIXTURE DESIGN, WMA WEARING COURSE, PG 64-22, 0.3 TO < 3 MILLION ESALS, 9.5 MM MIX, 1 1/2" DEPTH, SRL-H	$12/SY	ASSUME 1.5" SUPERPAVE SURFACE COURSE PER PUB 242 TABLE 9.4 MIN	CALCULATED FROM PLAN VIEW PLAN SF / 9

APPENDIX L:

MATRIX OF IMPROVEMENTS

FUTURE MAINTENANCE CONSIDERATIONS

ROADWAY IMPROVEMENTS SHORT-TERM

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Illumination along the rural section of the corridor is limited	Install centerline raised pavement markings in the predominantly rural areas. Improve delineation of State Roads and side streets to define access point for turning vehicles.	Low	Short-Term	$25,000	$5,000	PennDOT	PennDOT
Centerline and Edges Lines along the corridor are worn	Re-paint Center and Edge lines	Low	Short-Term	$2,000	Minimal	PennDOT	PennDOT
Trees/Foliage overgrowth blocking signs	Trim back trees and foliage within the right-of-way along the corridor	Low	Short-Term	$5,000	$5,000	PennDOT	PennDOT
Vehicles traveling to fast for conditions	Add high friction surface treatment to improve vehicle handling and stopping	Low	Short-Term	$30,000	$10,000	PennDOT	PennDOT
Existing shoulders are narrow	Add rumble strips to the shoulder to alert distract drivers that they are leaving the roadway	Medium	Short-Term	$25,000	$1,000	PennDOT	PennDOT
Water ponding on the roadway	Clean existing drainage facilities such as inlets, swales and pipes	Medium	Short-Term	$5,000	$5,000	PennDOT	PennDOT

GUIDE RAIL IMPROVEMENTS

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
SR 58 Segment 0240/0984 to 0250/0110 SB – Existing guide rail connects to a deteriorating bridge barrier.	Consider replacing the guide rail run, removing the bridge barrier down to existing ground, and spanning the existing culvert in accordance with current standards. Also, consider replacing the end treatments to be in accordance with current standards.	High	Short-Term	$10,000.00	$5,000	PennDOT	PennDOT
SR 58 Segment 0240/0115 to 0250/0170 NB – Existing guide rail connects to a deteriorating bridge barrier.	Consider replacing the guide rail run, removing the bridge barrier down to existing ground, reconstructing bridge curb line and spanning the existing culvert in accordance with current standards. Also, consider replacing the end treatments to be in accordance with current standards.	High	Short-Term	$10,000.00	$5,000	PennDOT	PennDOT
The guide rail does not meet current design standards.	Replace/upgrade guide rail to be in accordance with current design standards.	Low	Long-Term	$150,000.00	$10,000	PennDOT	PennDOT
Guide rail attenuating devices are not in accordance with MASH criteria	Replace/upgrade guide rail to be in accordance with current design standards.	Low	Long-Term	$150,000.00	$10,000	PennDOT	PennDOT/ Federal

* Estimated cost for item is included with Roadway improvements

**Overall project cost includes additional items. See cost estimate for more information

FUTURE MAINTENANCE CONSIDERATIONS

DRAINAGE ISSUES REQUIRING FURTHER REVIEW

Issue	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
SR 58/Stoney Brook Blvd/Celebrity Bowl. Segment 0250/1256 - The approach to Stoney Brook Blvd. looks like it traps water. No inlets are present near the bowling alley. Appears some may be necessary through this area, especially at low point near house driveway.	Low	Short-Term	To be determined	To be determined	PennDOT	To be determined
SR 58 /Canadian National RR Crossing Segment 0280/1450 - Ponding is occurring on SR 58 and appears to be a result of a clogged or crushed pipe in a nearby drainage system. The system also appears to be contributing to the creation of a sink hole that opened up in the parking lot adjacent to the RR Tracks. The clogged/crushed pipe(s) shall be replaced in accordance with standards. Additionally, a hydrologic analysis should be performed to determine if any additional capacity is needed for the system. The current drainage system layout/design is recommended to be reviewed to ensure proper layout in accordance with standard design practices. Coordination with the Canadian National Railroad will be necessary as this drainage system flows under their rail tracks.	Medium/High	Short-Term	To be determined	To be determined	PennDOT/ Canadian National Railroad	To be determined
SR 58/SR 4019 (Methodist Road) Segment 0280/0000 - southbound SR 58 pipe is full of debris and needs cleaned. Inlets with curb gutter are present on the northbound approach of SR 58. The inlets on the northbound approach of SR 58 have debris covering the type C inlet tops blocking water entry. The inlets need cleaned. Once the existing inlets are cleaned and capturing runoff, the site should be reviewed to determine if additional drainage feature are needed.	Low	Short-Term	To be determined	To be determined	PennDOT	To be determined
SR 58/ SR 4003 (Wasser Bridge Road) Segment 0300/0000 – southbound SR 58 inlets need cleaned or new need to be installed. Northbound SR 58 a drive is present with a very small diameter pipe underneath which may cause some issues. The northbound SR 58 shoulder appears to be narrow in this area and the hillside back slope is somewhat steep. A possible remedial action would be to cut back the hillside and provide additional shoulder/drainage capacity area. Another option would be to provide pipes and inlets through this area. Any of these remedial actions will require a drainage analysis to determine if action is warranted, as well as the corrective action to take.	Medium	Short-Term	To be determined	To be determined	PennDOT	To be determined
SR 58/ SR 4012 (Kidds Mills Road) Segment 0310/0000 - The southbound approach of SR 58 (Northwest Quadrant) appears to have a plugged or crushed pipe. The back of the shoulder in this area is beginning to break up with a drop-off being created behind the shoulder. No inlets are present on the northbound approach of SR 58. The existing drainage system should be cleaned of debris, repairing the pipe if necessary. Once this correction is made the area should be reviewed to determine if additional drainage features are needed to properly convey water off of SR 58.	Medium	Short-Term	To be determined	To be determined	PennDOT	To be determined
SR 58 (Seg 530/1788-1850). A drainage pipe/channel clogged with debris in the area of the Driver's License Center drive is creating a back-up of water. Water is running onto SR 58 and ponding in both lanes in the area of T-919 (Coolspring Street). Cleaning the channel and cleaning the pipe of debris should help to resolve this issue, however, detailed investigation and analysis may be needed. If the issue cannot be solved cleaning the existing drainage system, a proposed system or portion of a system may need to be constructed depending on the issues that are found.	Low/Medium	Short-Term	To be determined	To be determined	PennDOT	To be determined

**** Construction Costs are approximated for discussion purposes only**

*** Maintenance Costs are estimated as indicated below**

Annual Maintenance is part of existing budget = Minimal
Annual Maintenance that may not be needed = $1000
Annual Maintenance that involves labor only = $3000
Annual Maintenance that involves material /labor = $5000
Annual Maintenance that requires Maintenance Contract = $10,000

* Estimated cost for item is included with Roadway improvements
**Overall project cost includes additional items. See cost estimate for more information

FUTURE MAINTENANCE CONSIDERATIONS

TRAFFIC SIGNALS IMPROVEMENTS

SR 18 (Main Street) and SR 58 (Mercer Street)

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Pedestrian signal heads mounted to the street light pedestals are skewed	Adjust the pedestrian signal heads to align with each of the respective crosswalks.	Low	Short-Term	N/A	Minimal	Greenville Borough	Green Light Go
The Street Lighting Pedestal foundations are showing signs of deterioration with the concrete breaking apart and creating a tripping hazard and/or interfering with the navigation of a wheel chair or scooter.	Repair concrete to ensure the pieces do not become a tripping hazard or interfere with the navigation of a wheel chair or scooter.	Low	Short-Term	$500	Minimal	Greenville Borough	Green Light Go
Visibility of traffic signals with black housing can be improved to enhance visibility during hours of darkness.	Install backplates with 2-inch fluorescent yellow, Type IX retroreflective border.	Low	Short-Term	$800	Minimal	Greenville Borough	Green Light Go
Visibility of signal/pedestrian signal lenses can be improved.	Consider updating the LED Bulbs with signal/pedestrian heads with LED Retrofit Modules	Low	Short-Term	$2,500	Minimal	Greenville Borough	Green Light Go
Pedestrian safety can be improved	Consider upgrading the Person/Hand Pedestrian Signal heads with Countdown Pedestrian Signal heads.	Low	Long-Term	$1,200	Minimal	Greenville Borough	Green Light Go
Efficiency of the intersection can be improved, resulting in less delay.	Consider full actuation and emergency vehicle preemption.	Low	Long-Term	$7,500	Minimal	Greenville Borough	Green Light Go

* Estimated cost for item is included with Roadway improvements
**Overall project cost includes additional items. See cost estimate for more information

FUTURE MAINTENANCE CONSIDERATIONS

SR 58 (Mercer Street) and Clinton Street

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Walk/Don't Walk Pedestrian signal heads are not working	Repair/Replace as needed to restore to service.	Low	Short-Term	$500	Minimal	Greenville Borough	Green Light Go
The Walk/Don't Walk Pedestrian Signal Heads are not aligned with the crosswalk in the northeast quadrant.	Realign the signal heads to align with the crosswalk	Low	Short-Term	$0	Minimal	Greenville Borough	Green Light Go
Pavement /Crosswalks markings are faded.	Repaint Crosswalks, Stop Bars, Pavement Marking Legends.	Low	Short-Term	$500	Minimal	Greenville Borough	Green Light Go
Intersection does not have Street name signs	Add post mounted street name signs for the benefit of non-locals and the businesses located on Clinton Street.	Low	Short-Term	$250	Minimal	Greenville Borough	Green Light Go
Visibility of signal/pedestrian signal lenses can be improved	Consider updating the LED Bulbs with signal/pedestrian heads with LED Retrofit Modules	Low	Short-Term	$1,500	Minimal	Greenville Borough	Green Light Go
Pedestrian safety can be improved	Consider upgrading the Person/Hand Pedestrian Signal heads with Countdown Pedestrian Signal heads.	Low	Long-Term	$1,500	Minimal	Greenville Borough	Green Light Go
Efficiency of the intersection can be improved, resulting in less delay.	Consider full actuation and emergency vehicle preemption.	Low	Long-Term	$7,500	Minimal	Greenville Borough	Green Light Go
ADA Compliance	Update current to meet current standards	High	Long-Term	$10,000	Minimal	Greenville Borough	Green Light Go
Age/Condition of traffic signal	Upgrade/replace traffic signal installation	High	Long-Term	$150,000	Minimal	Greenville Borough	Green Light Go

SR 58 (Mercer Street) and Stewart Avenue/York Street

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Traffic signal is not operating in accordance with the approved traffic signal permit.	Provide two vehicular signal heads for each direction of travel Repair/replace pedestrian push buttons. Repaint crosswalks and stop bars. Improve Street Names signing	Low	Short-Term	$10,000	Minimal	Greenville Borough	Green Light Go
S1-1 School crossing signs are posted in advance of the intersection in both directions on SR 58	Replace the S1-1 signs with fluorescent yellow green signs to enhance visibility and awareness of the crossing.	Low	Short-Term	$200	Minimal	PennDOT/ Reynolds School District/ Greenville Borough	Green Light Go
Visibility of Signal Heads	Install backplates with 2-inch fluorescent yellow, Type IX retroreflective border.	Low	Short-Term	$200	Minimal	Greenville Borough	Green Light Go
Age/Condition of traffic signal	Upgrade/replace traffic signal installation	High	Short-Term	$150,000	Minimal	Greenville Borough	Green Light Go

* Estimated cost for item is included with Roadway improvements
**Overall project cost includes additional items. See cost estimate for more information

FUTURE MAINTENANCE CONSIDERATIONS

SR 58 (Mercer Street) and SR 19/North Street/Erie Street:

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Visibility of Signal Heads	To improve visibility add 2-inch fluorescent yellow, Type IX retroreflective border to existing backplates	Low	Short-Term	$1,500	Minimal	Mercer Borough	Green Light Go
Crosswalks are showing signs of wear	Repair/replacement should be scheduled. The heavy volume of traffic and cross traffic at this intersection may lend itself to installing Type B crosswalks for enhanced visual awareness and durability.	Low	Short-Term	$1,500	Minimal	Mercer Borough	Green Light Go

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*** Maintenance Costs are estimated as indicated below**

Annual Maintenance is part of existing budget = Minimal
Annual Maintenance that may not be needed = $1000
Annual Maintenance that involves labor only = $3000
Annual Maintenance that involves material /labor = $5000
Annual Maintenance that requires Maintenance Contract = $10,000

SIGNING IMPROVEMENTS

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
S3-1 School Bus Stop Signs with black lettering on yellow sign blanks are located throughout corridor.	Consider upgrading to S3-1 signs with the newest S3-1 in Fluorescent Yellow Green with arrow and symbols.	Low	Short-Term	$1,500	Minimal	PennDOT/ Reynolds School District/ Greenville Borough	PennDOT/ Reynolds School District/ Greenville Borough
Retroreflectivity of some signs appeared to be less than on other signs noticed in the field.	Perform a nighttime review of the corridor using a Retroreflectometer to determine the need for replacement.	Low	Short-term	N/A	Minimal	PennDOT	PennDOT

**** Construction Costs are approximated for discussion purposes only**

*** Maintenance Costs are estimated as indicated below**

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Annual Maintenance that may not be needed = $1000
Annual Maintenance that involves labor only = $3000
Annual Maintenance that involves material /labor = $5000
Annual Maintenance that requires Maintenance Contract = $10,000

* Estimated cost for item is included with Roadway improvements
**Overall project cost includes additional items. See cost estimate for more information

OPERATIONAL IMPROVEMENTS

CORRIDOR SPEED

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
~25% of the Driver's Actions in the crashes that have occurred can be considered Aggressive Driving	Review the 55 MPH section of the corridor to determine if it can qualify to be signed for an Aggressive Driving Corridor and begin targeted enforcement of these areas.	Low	Short-Term	$2,000	$1,000	PennDOT	PennDOT/ PSP Enforcement Campaign Grants
~17% of the Driver Actions contributing to the crashes along the corridor was attributed to speed.	Use Speed Feedback sign(s) at different locations throughout the corridor.	Low	Short-Term	N/A	N/A	PennDOT	PennDOT/PSP /Local Police/Local Partner Agencies
Speeding	Use changeable message boards during key events with messages to capture driver attention. Examples of what the message boards could say SLOW DOWN, SCHOOL IS BACK IN SESSION STOP FOR SCHOOL BUSSES DRIVE LIKE ITS YOUR CHILDREN GETTING ON THE BUS, etc….	Low	Short-Term	N/A	N/A	PennDOT	PennDOT/PSP /Local Police/Local Partner Agencies
Speeding	Work with PSP to identify and target areas for enforcement	Low	Short-Term	N/A	N/A	PennDOT	PennDOT/ PSP/Local Police Departments
Speeding	Coordinate with partner agencies/communities to develop an Outreach/Media blitz with oversized sign/billboards or changeable message boards located throughout at strategic locations with the corridor with sayings to capture driver attention. There are many different slogans that can be used, however; something as simple as ***Thank you for travelling the speed limit*** could have a significant impact on driver behavior.	Low/Medium	Short-Term	$1,500.00	$3,000.00	PennDOT	PennDOT/PSP /Local Police/Local Partner Agencies
Speeding	Develop Outreach and Education related to speeding and encourage public reporting of speeding and aggressive driving. Education outreach – One idea is to place removable yard-type signs (similar to what political candidates use) along the corridor with safety messages. Signs can be placed to coincide with NHTSA campaigns, i.e. Distracted Driving, Drive Sober, Buckle Up	Low/Medium	Short-Term	$1,500.00	$1,500.00	PennDOT/PSP /Local Police/Local Partner Agencies	PennDOT/PSP /Local Police/Local Partner Agencies
Speeding	Use oversized speed limit sign for the lead sign in areas where the speed is transitioning to a lower speed.	Low	Short-Term	$500.00	Minimal	PennDOT	PennDOT
Speeding	To lessen the severity of crashes improve roadway design and geometrics and recovery area/clear zone.	Low	Long-Term	Site Specific	$5,000.00	PennDOT	PennDOT/FHWA

OPERATIONAL IMPROVEMENTS

PASSING ZONES

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
SB Passing Zones begins at the intersection of Fulling Mill Road. Drivers could potentially be focused on the passing zone than approaching intersection.	Review the passing zone to see if there is sufficient distance to limit the length of the passing zone.	Low	Short-Term	N/A	N/A	PennDOT	PennDOT
SB Passing Zones begins at the intersection of Fulling Mill Road. Drivers could potentially be focused on the passing zone than approaching intersection.	Review the passing zone to see if there is sufficient distance to limit the length of the passing zone.	Low	Short-Term	N/A	N/A	PennDOT	PennDOT
In Jefferson Township between Lake/Cornell Road in the vicinity of segment 480/1600 the northbound passing appears to begin before the northbound vehicle is able to see around the curve.	Review the passing zone to see if there is sufficient distance to limit the length of the passing zone.	Low	Short-Term	N/A	N/A	PennDOT	PennDOT

SHORT-TERM CORRIDOR WIDE

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Illumination along the rural section of the corridor is limited	Install centerline raised pavement markings in the predominantly rural areas.	Low	Short-Term	$10,000	$5,000	PennDOT	PennDOT
Illumination along the rural section of the corridor is limited	Improve delineation of State Roads and side streets to define access point for turning vehicles.	Low	Short-Term	$5,000	$3,000	PennDOT	PennDOT
Centerline and Edges Lines along the corridor need to be reestablished.	Re-paint Center and Edge lines	Low	Short-Term	$5,000	Minimal	PennDOT	PennDOT
Roadway Departure crashes have occurred throughout the corridor	Consider adding shoulder rumble strips	Low	Short-Term	$15,000	Minimal	PennDOT	PennDOT
Trees/Foliage overgrowth blocking signs	Trim back trees and foliage with in the right-of-way along the corridor	Low	Short-Term	$5,000	$3,000	PennDOT	PennDOT

**** Construction Costs are approximated for discussion purposes only**

***** Maintenance Costs are estimated as indicated below**

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Annual Maintenance that may not be needed = $1000

Annual Maintenance that involves labor only = $3000

Annual Maintenance that involves material /labor = $5000

Annual Maintenance that requires Maintenance Contract = $10,000

LOCATION-SPECIFIC IMPROVEMENTS

PA 58 AND SR 4011 (COLUMBIA AVE) & T-470 (HAMBURG RD)

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
The intersection sits within a busy area with adjacent businesses and residences that distract approaching drivers from noticing the intersection.	Add Intersection Warning Pavement Markings on SR 58 northbound and southbound. Add STOP BARS to Side Street. Install delineators on the radii of the approaches.	Low	Short-term	$1,500	$3,000	PennDOT/ Greenville Borough	PennDOT/ Greenville Borough
The intersection sits within a busy area with adjacent businesses and residences distracting approaching road users from noticing the intersection.	Install Intersection Control Beacon to highlight the location of the intersection. In lieu of a 24/7 operation; for added effectiveness of the beacon consider activation only when vehicles are present on Side Street.	Medium	Long-Term	$111,909	Minimal	Greenville Borough/ PennDOT	Green Light Go
Improve/Define the radius on the Hamburg Road approach.	Install curb to delineate the approach boundaries at the intersection and to restrict vehicles from accesses a local business at the intersection in advance of the STOP Sign location.	High	Long-Term		Minimal	PennDOT/ Greenville Borough	PennDOT/FHWA/ Greenville Borough

LOCATION-SPECIFIC IMPROVEMENTS

PA 58 AND SR 4012 (KIDDS MILL ROAD)

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Proximity of Intersection to Curve	Relocate Kidds Mill Rd name plaque to the top of the W2-2L sign. Add a distance plaque to the bottom of the sign.	Low	Short-Term	$500	$1,000	PennDOT	PennDOT
Visibility and target value of existing signs	**Add reflective strip to the posts of existing chevron signs.**	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
The speed limits on SR 58 southbound approaching Kidds Mill Road changes from a 45 to a 55 MPH ~1600' before the intersection and before entering into a curve with a 40 MPH advisory speed.	Extend the 45 MPH speed limit for traffic on SR 58 southbound to coincide with the 45 MPH speed limit northbound through this area.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Passing Zones on SR 4012 Kidds Mill Road approaching SR 58 ends 500' before the stop condition.	Review where the end of the the passing zones begin and end eastbound and westbound to reduce conflicts on the approach. Restricting the passing zone ~100' before the current location will provide eastbound drivers with more time to perceive the approaching Stop condition and eliminate potential conflicts with traffic turning into the intersection. Starting the passing zone westbound at the same location will minimize conflicts with approaching eastbound traffic.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Increase awareness of Stop Condition on Kidds Mill Road	Add reflective strips to the existing Stop Sign Add another Stop sign on the opposite side of the road.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT

LOCATION-SPECIFIC IMPROVEMENTS

PA 58 AND SR 4003 (WASSER BRIDGE ROAD)

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Intersection Sight Distance is less than the required for the posted speed limit for traffic approaching the intersection southbound.	Replace the existing W2-2R Side Road sign and add a 30 MPH advisory below the sign. Add reflective strip to the sign post Add a street name sign to the top of the sign	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Intersection Sight Distance is less than the required for the posted speed limit for traffic approaching the intersection northbound	Replace the existing W2-2LSide Road sign and add a 20 MPH advisory below the sign. Add reflective strip to the sign post Add a street name sign to the top of the sign	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
S3-1 School Bus Stop Ahead sign located on W2-2 sign SR 58 northbound	Replace S3-1 with updated sign and install on a new sign post sign post.	Low	Short-Term	$200	Minimal	PennDOT/ School District	PennDOT
Intersection Sight Distance is less than the required for the posted speed limit	Trim trees South and North of the intersection. Confirm available sight distance. If necessary adjust advisory speed limit to reflect improvement	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT

PA 58 AND SR 3022/T595 (LINE ROAD)

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Intersection Sight Distance is less than the required for the posted speed limit SR 58 northbound	Install W2-1 Cross Road Sign with Advisory Speed of 25 MPH.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT

LOCATION-SPECIFIC IMPROVEMENTS

PA 58 DELAWARE TOWNSHIP KIDDS MILL CURVE - SEG 0310/0622 TO SEG 0310/1402

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Northbound traffic has a view of the Regulatory 45 MPH speed limit sign and the the curve sign with a 40 MPH advisory speed at the same time.	Relocate the regulatory 45 MPH Speed Limit sign out of the view of the 40 MPH advisory sign. Replace the existing W1-2 signs northbound and southbound with W1-2a signing and enhance the sign posts for the sign with reflective strips	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Tree are located on the inside of the curve northbound	Trim trees to improve the sight distance around the curve. Easement	Low	Short-Term	$2,000	Minimal	PennDOT	PennDOT
Existing Pavement Markings	The SLOW pavement markings appear to be effective. Continue their use.	Low	Short-Term	$2,000	Minimal	PennDOT	PennDOT
Existing Signing	Maintain the Curve Sign with the 40 MPH advisory, the Chevrons and the Single Arrow Signs. Enhance the signing by adding reflective strips to the sign posts.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Increase pavement friction during Snow/Wet conditions	Consider the placement of High Friction Surface treatment on the curve in both directions.	Low	Short-Term	$15,000	Minimal	PennDOT	PennDOT
Tree are located on the inside of the curve northbound restrict sight distance.	Trim trees to improve the sight distance around the curve. Limited availability of right-of-way may require the need to secure easements.	Low	Short-Term	$1,000	$1,000	PennDOT	PennDOT
Pavement markings and signing require continual maintenance.	Consider project to re-align the curve. A larger horizontal radius would increase sight distance of the intersection. Reduced super elevation percent would reduce potential of the weather-related crashes.	High	Long-Term	$1,343,610	Minimal	PennDOT	PennDOT

PA 58 - SEG 0530/1489 TO SEG 0530/2202 - COOLSPRING TOWNSHIP

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Coolspring Road does not stand out as a local road	W2-2 Side Road Sign with Street Name Add delineators to the approach radii	Low	Short-term	$1,000	$1,000	PennDOT	PennDOT
Coolspring Road does not stand out as a local road	Increase the size of the existing Street Name sign	Low	Short-term	$1,000	$1,000	PennDOT	PennDOT
Driver's License Center Driveway	Reduce drive radius with paint, and pavement markings arrows to re-establish one-way in/out drives and replace existing STOP sign	Low	Short-term	$10,000	Minimal	Driver's License Center	Driver's License Center
Mercer Plaza is an uncontrolled commercial driveway.	Add Stop Sign(s) to Drives	Low	Short-term	$200	Minimal	Mercer Plaza Owner	Mercer Plaza Owner
Improper Entrance/Turning	Construct Center Left Turn Lane with an exclusive left turn for Coolspring Road.	High	Long-Term	$1,315,229	Minimal	PennDOT	PennDOT/FHWA

LOCATION-SPECIFIC IMPROVEMENTS

PA 58 /SR 4014 ONIONTOWN ROAD - SEG 0330/2420

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Ponding is occurring on the radius of Oniontown Road near the stop sign and encroaching into the southbound lanes.	Installing a drainage system to address this issue will require creating a swale along SR 58 to outlet the water in an appropriate manner.	Medium	Long-Term	$69,783	$1,000	PennDOT	PennDOT

PA 58 /SR 4027 FREDONIA ROAD - SEG 0240/0807

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
A steep approach grade exists on Fredonia Road. The property owner on the opposite side of SR 58 is seeing water drainage issues are present for the property across the street.	Add inlets and drainage on SR 58 and regrade the approach to Fredonia Road	High	Long-Term	$289,631	$1,000	PennDOT	PennDOT

PA 58 /SR 4027 FREDONIA ROAD TO SR 2010 PENN AVENUE

Issue	Improvement Strategy	Level of Effort	Improvement Timeframe	Initial Construction Costs**	Maintenance Costs*	Responsible Party	Potential Funding Source
Roadway Departure crashes have occurred throughout the corridor.	Widen shoulders to meet the current design 3R criteria.	High	Long-term	$25,662,312	Minimal	PennDOT	PennDOT/FHWA/ Local Partners
Drainage swales along corridor have non-recoverable slopes.	Redesign/regrade the existing swales along the corridor to have recoverable slopes within the clear zone of the roadway.	High	Long-term		$1,000	PennDOT	PennDOT/FHWA/ Local Partners

**** Construction Costs are approximated for discussion purposes only**

*** Maintenance Costs are estimated as indicated below**

Annual Maintenance is part of existing budget = Minimal

Annual Maintenance that may not be needed = $1000

Annual Maintenance that involves labor only = $3000

Annual Maintenance that involves material /labor = $5000

Annual Maintenance that requires Maintenance Contract = $10,000