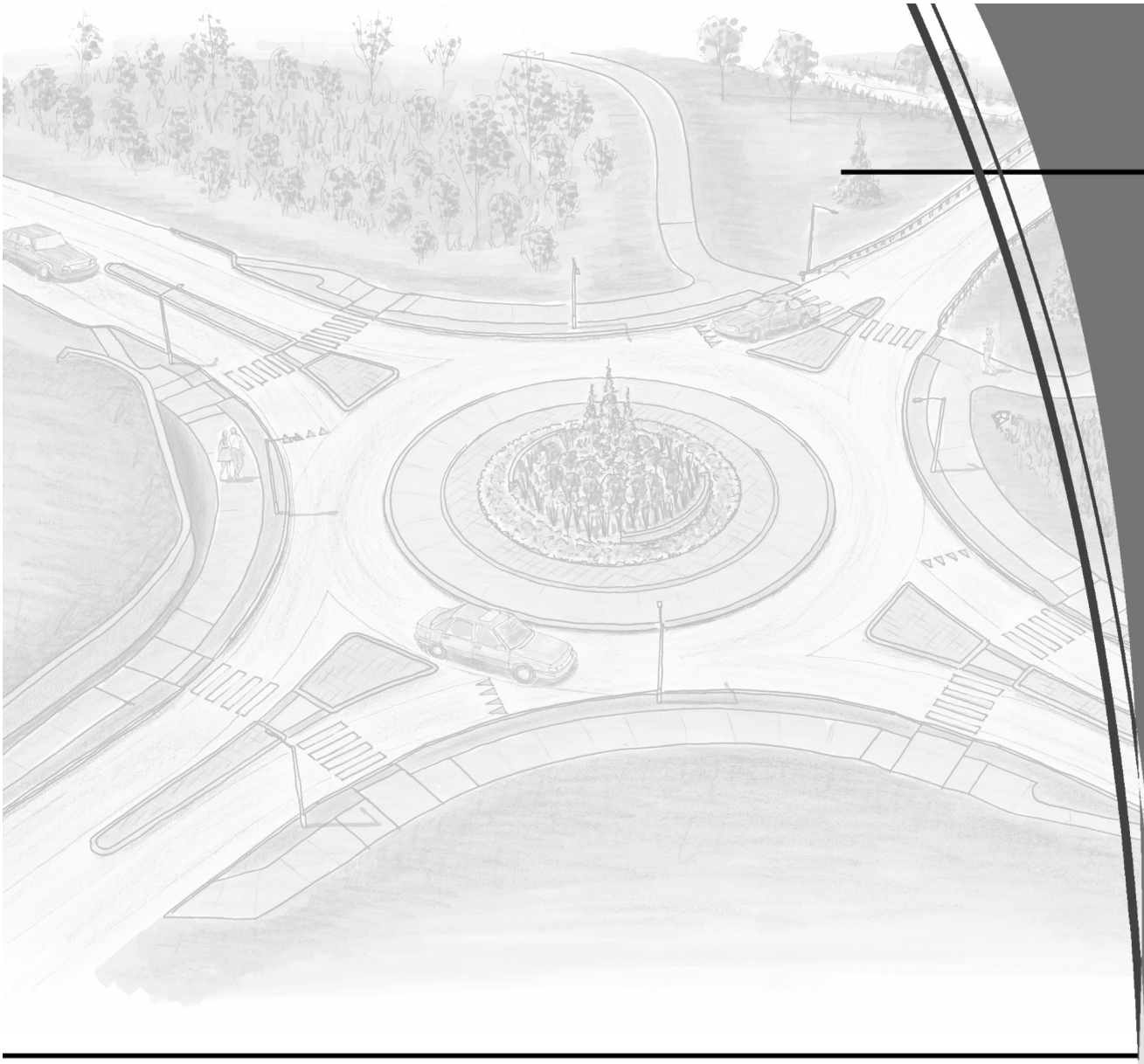

Rapho Township
Lancaster County
Pennsylvania

Transportation Impact Study

Chiques Crossing

Vistablock

Prepared by:

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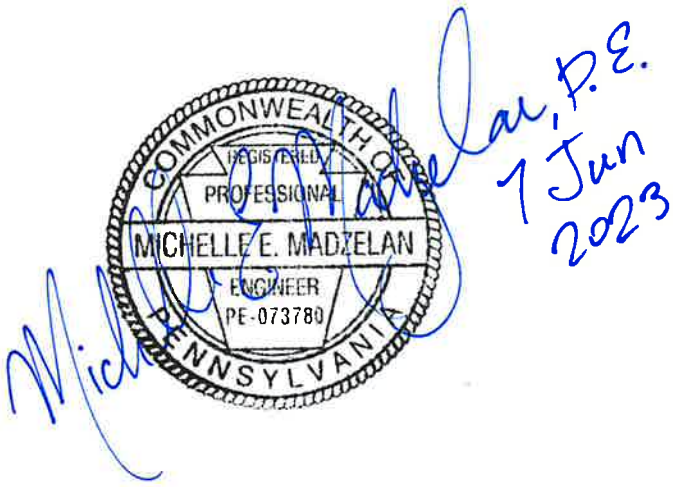
May 2023

ELA group, inc.
ENGINEERS + LANDSCAPE ARCHITECTS

TRANSPORTATION IMPACT STUDY
FOR
CHIQUES CROSSING

RAPHO TOWNSHIP
LANCASTER COUNTY

NOVEMBER 2022
(REV MAR & JUN 2023)



ELA PROJECT # 1212-002

PREPARED BY: MICHELLE MADZELAN, P.E.

REVIEWED BY: MARK L. HENISE, P.E., PTOE

TRANSPORTATION IMPACT STUDY
FOR
CHIQUES CROSSING

RAPHO TOWNSHIP
LANCASTER COUNTY

I. EXECUTIVE SUMMARY

Vistablock plans to develop a site with frontage along Mount Joy Road (SR 0772) in Rapho Township, Lancaster County into a residential community with 378 apartments. Construction is expected to be completed in 2025.

Site access will be provided at two locations along Mount Joy Road. The Full Access Drive will intersect Mount Joy Road approximately 275 feet southwest of Milton Grove Road and will provide full access. The Right-in / Right-out Access Drive will intersect Mount Joy Road approximately 300 feet southwest of the Full Access Drive and will provide limited access.

The project has the potential to generate approximately 155 new trips during the AM peak hour (36 entering and 119 exiting), 148 new trips during the PM peak hour (90 entering and 58 exiting), and 1716 total weekday daily trips.

This traffic report has been prepared as a part of a site evaluation. The objective of this study is to determine how traffic from the proposed development will impact the area road network and to provide recommendations regarding the proper management of traffic flow for the project. The following tables present a summary of the levels of service at each study intersection during the existing and projected conditions, as well as a summary of recommended improvements at each intersection.

Table 1 –Barbara Street and Mount Joy Road (SR 0772)

Lane Group (Approach Grades)	2021 (Existing) LOS: AM / PM	2025 No Build LOS: AM / PM	2025 Build LOS: AM / PM	2025 Build w/ Impr. LOS: AM/PM	2030 No Build LOS: AM / PM	2030 Build LOS: AM / PM	2030 Build w/ Impr. LOS: AM/PM
Mount Joy Road (SR 0772)							
EB Approach (-1%)	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**-/-**
Thru/Right	A/A	A/A	A/A	-/-	A/A	A/A	-/-
WB Approach (-1%)	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**-/-**
Thru/Left	A/A	A/A	A/A	-/-	A/A	A/A	-/-
Barbara Street							
NB Approach (-2%)	**B/B**	**B/C**	**B/C**	**-/-**	**B/C**	**B/C**	**-/-**
Left/Right	B/B	B/C	B/C	-/-	B/C	B/C	-/-
Overall LOS & Delay (sec/veh)	**A/A** **1.2/1.5**	**A/A** **1.3/1.6**	**A/A** **1.3/1.6**	**-/-** **-/-**	**A/A** **1.3/1.6**	**A/A** **1.4/1.6**	**-/-** **-/-**
Delay Change		**0/0**			**0.1/0**		

The intersection of **Barbara Street and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it will continue to operate at LOS A through all analysis scenarios. No improvements are required at this intersection based upon level of service.

Table 2 – Milton Grove Road (SR 4033) and Mount Joy Road (SR 0772)

Lane Group (Approach Grades)	2020 (Existing) LOS: AM / PM	2025 No Build LOS: AM / PM	2025 Build LOS: AM / PM	2025 Build w/ Impr. LOS: AM/PM	2030 No Build LOS: AM / PM	2030 Build LOS: AM / PM	2030 Build w/ Impr. LOS: AM/PM
Mount Joy Road (SR 0772)							
EB Approach (-3%)	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**-/-**
Thru/Left	A/A	A/A	A/A	-/-	A/A	A/A	-/-
WB Approach (-2%)	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**-/-**
Thru/Right	A/A	A/A	A/A	-/-	A/A	A/A	-/-
Milton Grove Road (SR 4033)							
SB Approach (5%)	**B/C**	**C/C**	**C/C**	**-/-**	**C/C**	**C/C**	**-/-**
Left/Right	B/C	C/C	C/C	-/-	C/C	C/C	-/-
Overall LOS & Delay (sec/veh)	**A/A 1.4/1.3**	**A/A 1.4/1.4**	**A/A 1.5/1.5**	**-/-**	**A/A 1.5/1.5**	**A/A 1.6/1.7**	**-/-**
Delay Change		**0.1/0.1**			**0.1/0.2**		

The intersection of **Milton Grove Road and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it is projected to operate at overall LOS A during the AM and PM peak hours under 2025 and 2030 No Build and Build conditions. No improvements are required at this intersection because of the proposed development.

Table 3 – Lefever Road and Mount Joy Road (SR 0772)

Lane Group (Approach Grades)	2023 (Existing) LOS: AM / PM	2025 No Build LOS: AM / PM	2025 Build LOS: AM / PM	2025 Build w/ Impr. LOS: AM/PM	2030 No Build LOS: AM / PM	2030 Build LOS: AM / PM	2030 Build w/ Impr. LOS: AM/PM
Mount Joy Road (SR 0772)							
EB Approach (-3%)	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**A/A**
Thru/Right	A/A	A/A	A/A	-/-	A/A	A/A	-/-
Thru	-/-	-/-	-/-	-/-	-/-	-/-	A/B
Right	-/-	-/-	-/-	-/-	-/-	-/-	A/A
WB Approach	**A/A**	**A/A**	**A/A**	**-/-**	**A/A**	**A/A**	**-/-**
Thru/Left	A/A	A/A	A/A	-/-	A/A	A/A	-/-
Lefever Road							
NB Approach	**C/E**	**C/F(63.8)**	**D/F(116.79)**	**-/-**	**D/F(103.53)**	**E/F(200.87)**	**-/-**
Left/Right	C/E	C/F	D/F	-/-	D/F	E/F	-/-
Overall LOS & Delay (sec/veh)	**A/A 3.1/4.5**	**A/A 3.3/5.8**	**A/A 3.8/9.6**	**-/-**	**A/A 3.8/9.0**	**A/B 4.5/16.1**	**-/-**
Delay Change		**0.5/3.8**			**0.7/7.1**		

The intersection of **Lefever Road and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it will continue to operate at LOS A through all analysis scenarios except for the PM Build scenarios, where it will operate at LOS B. The delays are less than a 10 second increase for the overall intersection. A gap analysis was prepared to show that the vehicles in the PM peak are able to turn from Lefever Road to Mount Joy Road. No improvements are required at this intersection.

Table 4 – Mount Joy Road (SR 0772) and Proposed Full Access Drive

Lane Group (Approach Grades)	2025 Build LOS: AM / PM	2025 Build w/ Impr. LOS: AM/PM	2030 Build LOS: AM / PM	2030 Build w/ Impr. LOS: AM/PM
Mount Joy Road (SR 0772)				
EB Approach (-2%)	**A/A**	**-/-**	**A/A**	**-/-**
Thru/Right	A/A	-/-	A/A	-/-
WB Approach (2%)	**A/A**	**-/-**	**A/A**	**-/-**
Left/Thru	A/A	-/-	A/A	-/-
Left	-/-	-/-	-/-	A/A
Thru	-/-	-/-	-/-	A/A
Full Access Drive				
NB Approach (-2%)	**C/C**	**A/A**	**A/E**	**A/A**
Left/Right	C/C	-/-	A/E	-/-
Right	-/-	A/A	-/-	A/A
Overall LOS & Delay (sec/veh)	**A/A 1.6/1.3**	**A/A 7.5/8.2**	**A/A 1.6/1.3**	**A/A 8.1/8.6**

The intersection of **Mount Joy Road and the Proposed Full Access Drive** will operate at overall LOS A during both the AM and PM peak hours under 2025 and 2030 Build scenarios. This intersection meets warrants for a westbound 75' left-turn lane on Mount Joy Road under the future 2030 Build scenario. However, it is recommended that a roundabout be installed at the new intersection; no turn lane would be required with the installation of a proposed roundabout. It is recommended to l ower the centerline profile with the proposed roundabout at the proposed full access drive location to improve the sight distance on Mount Joy Road.

Table 5 – Mount Joy Road (SR 0772) and Proposed Right-in / Right-out Access Drive

Lane Group (Approach Grades)	2025 Build LOS: AM / PM	2030 Build LOS: AM / PM
Mount Joy Road (SR 0772)		
EB Approach (-2%)	**A/A**	**A/A**
Thru/Right	A/A	A/A
WB Approach (2%)	**A/A**	**A/A**
Thru	A/A	A/A
Right-in / Right-out Drive		
NB Approach (-5%)	**B/B**	**B/B**
Right	B/B	B/B
Overall LOS & Delay (sec/veh)	**A/A 0.5/0.2**	**A/A 0.5/0.2**

The intersection of **Mount Joy Road and the Proposed Right-in / Right-out Access Drive** will operate at overall LOS A during both the AM and PM peak hours under 2025 and 2030 Build scenarios. It is recommended that a STOP sign be installed on the Proposed Right-in / Right-out Access Drive at the intersection with Mount Joy Road.

SUMMARY OF IMPROVEMENTS

- At the intersection of **Barbara Street and Mount Joy Road (SR 0772):**
    - No improvements are required at this intersection.
- At the intersection of **Milton Grove Road (SR 4033) and Mount Joy Road (SR 0772):**
    - No improvements are required at this intersection.
- At the intersection of **Lefever Road and Mount Joy Road (SR 0772):**
    - No improvements are required at this intersection.
- At the intersection of **Mount Joy Road (SR 0772) and Proposed Full Access Drive:**
    - Construct a roundabout on Mount Joy Road for the Proposed Full Access Drive.
    - Provide and maintain adequate sight distance based upon all applicable requirements.
- At the **Mount Joy Road (SR 0772) and Proposed Right-in / Right-out Access Drive** intersection**:**
    - Install a STOP sign on the Right-in / Right-out Access Drive.
    - Provide and maintain adequate sight distance based upon all applicable requirements.
- All proposed improvements shall be constructed to accommodate non-motorized access/circulation and be ADA-compliant unless otherwise approved by the applicable review agencies.

TRANSPORTATION IMPACT STUDY
FOR
CHIQUES CROSSING
RAPHO TOWNSHIP, LANCASTER COUNTY

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TRANSPORTATION IMPACT STUDY
FOR
CHIQUES CROSSING

RAPHO TOWNSHIP, LANCASTER COUNTY

II. INTRODUCTION

Vistablock plans to develop a site with frontage along Mount Joy Road (SR 0772) in Rapho Township, Lancaster County into a residential community with 378 apartments. Construction is expected to be completed in 2025.

Site access will be provided at two locations along Mount Joy Road. The Full Access Drive will intersect Mount Joy Road approximately 275 feet southwest of Milton Grove Road and will provide full access with a proposed roundabout. The Right-in / Right-out Access Drive will intersect Mount Joy Road approximately 300 feet southwest of the Full Access Drive and will provide limited access.

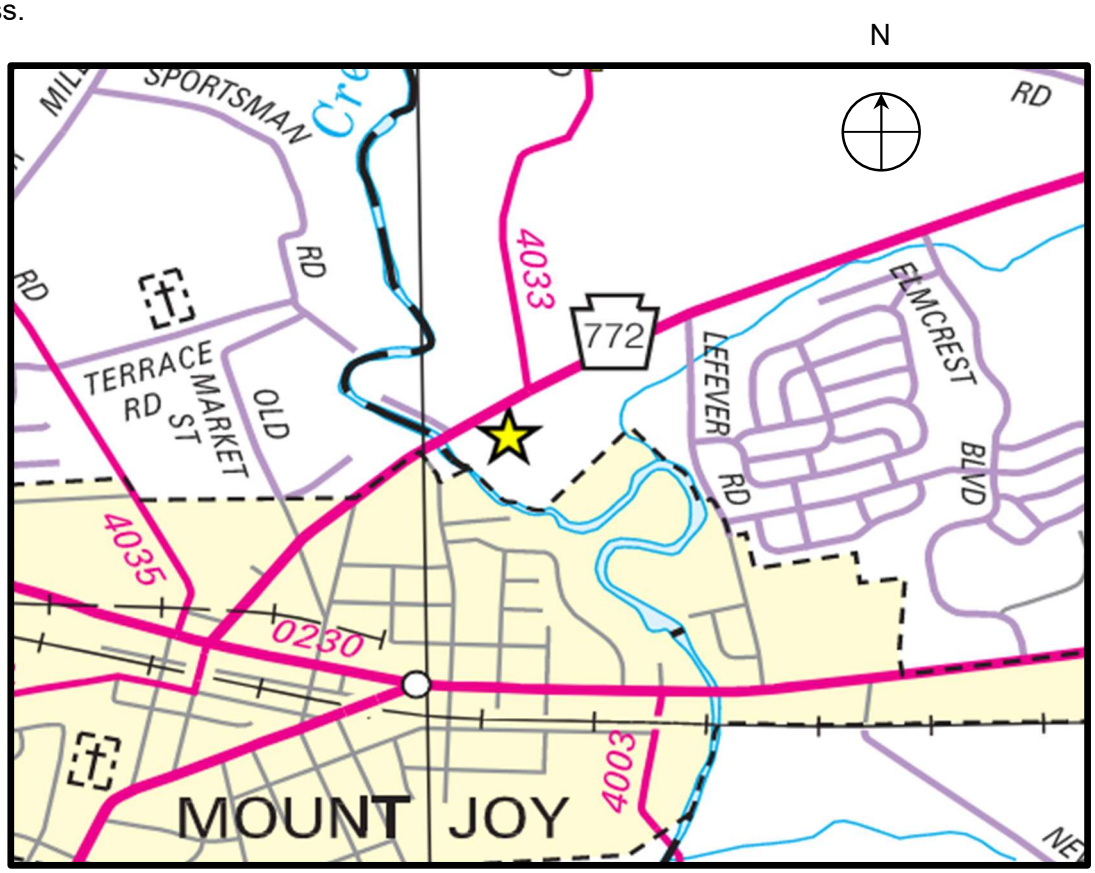

Exhibit 1 – Location Map

The project has the potential to generate approximately 155 new trips during the AM peak hour (36 entering and 119 exiting), 148 new trips during the PM peak hour (90 entering and 58 exiting), and 1716 total weekday daily trips.

This preliminary report has been prepared as a part of a site evaluation. The objective of this study is to determine how traffic from the proposed development will impact the area road network and to provide recommendations regarding the proper management of traffic flow for the project. This study was conducted in accordance with guidelines established in the *Rapho Township Traffic Impact Study Requirements Ordinance*[1], *Transportation Impact Analyses for Site Development* [2], the *Highway Capacity Manual*[3] and PennDOT's *Policies and Procedures for Transportation Impact Studies*[4].

[1] Rapho Township Traffic Impact Study Requirements Ordinance.

[2] Transportation Impact Analyses for Site Development, Institute of Transportation Engineers, Washington, DC, 2010.

[3] Highway Capacity Manual, 6th Edition, Transportation Research Board, National Research Council, Washington, DC, 2016.

[4] Policies and Procedures for Transportation Impact Studies, Commonwealth of Pennsylvania, Department of Transportation, July 2017.

III. DEVELOPMENT WITHIN THE SURROUNDING AREA

A. Off-site Development

There were three off-site developments identified during the scoping process as having a potential impact on one or more of the study intersections. Therefore, projected traffic volumes for these developments were requested.

Only the traffic impact study was available for Amazon, so trip generation were assigned to the roadway network for Chiques Crossing analysis. The Amazon AM peak were a couple hours later than the Chiques Crossing AM peak, so no AM peak trips were added to the Chiques Crossing volumes. The Amazon PM peak aligned with the Chiques Crossing PM peak, so they were added to analysis. The Amazon build year was 2021; so the trips were added to the analysis years that were 2021 or after. No road improvements were noted from that development on the study intersections from Chiques Crossing. All data and calculations related to the off-site developments are included in **Appendix E**.

B. Site Development

Vistablock plans to develop a site with frontage along Mount Joy Road (SR 0772) in Rapho Township, Lancaster County into a residential community with 378 apartments. Construction is expected to be completed in 2025.

Site access will be provided at two locations along Mount Joy Road. The Full Access Drive will intersect Mount Joy Road approximately 275 feet southwest of Milton Grove Road (SR 4033) and will provide full access with a proposed roundabout. The Right-in / Right-out Access Drive will intersect Mount Joy Road approximately 300 feet southwest of the Full Access Drive and will provide limited access.

A Site Plan of the proposed development is included in **Appendix N**.

IV. AREA CONDITIONS

A. Study Area

The study area was determined based on our experience with similar projects and with input from Rapho Township during the scoping process. It includes the following intersections.

1. Mount Joy Road (SR 0772) and Barbara Street
2. Mount Joy Road (SR 0772) and Milton Grove Road (SR 4033)
3. Mount Joy Road (SR 0772) and Lefever Road
4. Mount Joy Road (SR 0772) and Full Site Access Drive
5. Mount Joy Road (SR 0772) and Right-in / Right-out Site Access Drive

Copies of the approved Scoping Application and correspondence related to the scoping process are included in **Appendix P**.

B. Road Network Description

The table below provides information on ownership, average daily traffic (ADT) volumes, road widths, and speed limits.

Table 6 – Existing Road Network Description

Road	Road Number	ADT* (veh/day)	Approx. Lane & Shoulder Width	Posted Speed Limit
Mount Joy Road	SR 0772	1,235	11' lanes / shoulders width vary	40 mph
Barbara Street	-	4,672	10-11' lanes/shoulders vary	25 mph
Milton Grove Road	SR 4033	3,043	11' lanes/shoulders vary	40 mph
Lefever Road	T-360	not counted	12' lanes/3'shoulders	35 mph

* All ADT's shown, except for Mount Joy Rd are from PennDOT TIRe website and are pre-COVID

Throughout the study area Mount Joy Road would be classified as a rural Community Arterial per *PennDOT Design Manual 2*.

C. Existing Traffic Volumes

Tri-State Traffic Data obtained traffic data by performing weekday turning movement counts on Thursday July 15, 2021, for Mount Joy Road and Barbara Street intersection and Mount Joy Road and Lefever Road intersection. The turning movement counts were performed for the weekday AM (6-9) and PM (3-6) peak periods. The turning movement counts for Mount Joy Road and Milton Grove Road intersection from February 11, 2020, were also obtained by Tri-State Traffic Data. Tri-State Traffic Data obtained traffic data by performing weekday turning movement counts on Wednesday, January 18, 2023, for Mount Joy Road and Lefever Road intersection for the weekday AM (6-9) and PM (3-6) peak periods. The turning movement count data is included in **Appendix B**.

Additionally, automatic traffic recorders (ATR) were set along study roadways to collect traffic volume data, as well as vehicle speed and classification data. The ATRs were set on Mount Joy Road 530' north of SR 230 and collected data from Monday July 12 to Monday July 19, 2021. Also, ATRs were set on Mount Joy Road just west of Milton Grove Road and collected data from Monday, February 17-24, 2020. The ATR count data is included in **Appendix C**.

D. Traffic Volume Adjustments

The COVID-19 pandemic has had a significant impact on travel habits. The overall number of trips has declined, and time of day patterns have changed. In order to attempt to replicate pre-COVID traffic volumes, adjustments have been made to the intersection turning movement counts.

The Barbara Street adjustments consist of collecting 2021 TMC data at study intersection. Using the Lefever Road counts, the current 2023 TMC data for Lefever Road / Mount Joy Road was then compared with the 2021 data for Lefever Road / Mount Joy Road. The percent difference between the 2021 and 2023 counts was calculated and applied to the Barbara Street / Mount Joy Road intersection turning movement counts. Because these percentages differ on the different roads, there are different adjustment factors for each road. The adjustment calculations are included in **Appendix E**.

Exhibit 2 shows the count locations. The existing peak hour turning movement volumes at each study intersection. The TMC at Mount Joy Road and Milton Grove Road intersection was obtained before COVID. The TMC at Mount Joy Road and Lefever Road was obtained after COVID. Therefore, no COVID adjustments were made to traffic volumes at either intersection.

E. Transit Service

There are no fixed transit routes in the vicinity of the site.

V. PROJECTED TRAFFIC

A. Trip Generation

Trip Generation[5], 11th Edition, published by the Institute of Transportation Engineers, provides procedures for estimating new trips resulting from a wide variety of development types. Utilizing the information from the *Trip Generation* manual, the total numbers of trips projected to be generated by the proposed community were calculated using the number of residential units and the fitted curve equations.

The projected trips to be generated by this development are summarized in the table below.

Table 7 –Trip Generation

ITE Land Use (Code)	Size	Daily Trips	AM Peak Hour		PM Peak Hour	
			Enter	Exit	Enter	Exit
Multi-Family – Mid-Rise (221)	378 Units	1,761	36	119	90	58

[5] Trip Generation, Institute of Transportation Engineers, 11th Edition, Washington, DC, 2013.

TOTAL	-	1,761	36	119	90	58

B. Directional Distribution of Site Traffic

The overall distribution of trips generated by the proposed development project is based upon existing traffic volumes and expected travel patterns to and from the development. This analysis showed that most of the existing Mount Joy Road traffic is oriented to/from the east in the morning and in the afternoon. These calculations are included in **Appendix G & H**.

C. Trip Assignment

The generated trips from the proposed development were projected onto the area road network using the percentages of the projected trip distribution. The newly generated site traffic assignment is shown in **Appendix G & H**.

D. Growth of Background Traffic Volumes

The proposed facilities are projected to be completed by 2025, therefore the existing (2020 & 2021) traffic volumes are projected to 2025 (opening year) and to 2030 (Future year). The projection was made using a compounded growth factor for background traffic of 0.67% per year, obtained from PennDOT's *Growth Factors Table for August 2021 to July 2022*[6], provided by the Bureau of Planning and Research. The growth factor was computed using the following equation.

$$Factor = (1+i)^n$$

where, *Factor* is the growth factor applied to background traffic
i is the growth rate per year
n is the number of years to compound

This growth factor accounts for potential traffic generated from other land uses near the proposed project site and thereby considers the impacts of this off-site traffic. The 2025 projected traffic volumes are considered the "Opening Year Conditions" and the 2030 projected traffic volumes are considered the "Future Year Conditions".

E. Capacity Analysis

Capacity analysis, as defined by the *Highway Capacity Manual*, is a set of procedures used to estimate the traffic-carrying ability of a facility over a range of defined operational conditions. The capacity analysis uses levels of service (LOS) to describe the operational conditions. Level of service is a measure of the quality of operational conditions of a facility. A brief description of the various levels of service is presented below. Levels of service are assigned letter designations "A" to "F", with "A" being the most desirable operating conditions. A level of service "D" is generally acceptable according to the Institute of Transportation Engineers standards.

[6] Growth Factors Table for August 2021 to July 2022.

Table 8 – Level of Service Characteristics

Level of Service (LOS)	Unsignalized Intersection		Signalized Intersection	
	Control Delay, sec/veh	Expected Delay to Minor Street Traffic	Control Delay, sec/veh	Expected Problems to Intersection
A	≤ 10	little or no delay	≤ 10	very low delay
B	> 10 and ≤ 15	short traffic delays	> 10 and ≤ 20	stable flow of traffic with minimal delay
C	> 15 and ≤ 25	average traffic delays	> 20 and ≤ 35	number of vehicles stopping is significant
D	> 25 and ≤ 35	long traffic delays	> 35 and ≤ 55	influence of congestion becomes more noticeable
E	> 35 and ≤ 50	very long traffic delays	> 55 and ≤ 80	limit of acceptable delay
F	> 50	extreme delays - usually warrants improvement to the intersection	> 80	over-saturated and unacceptable

Level of Service A: A condition of free flow with low traffic density and high maneuverability within the traffic stream. No vehicle waits longer than one signal indication.

Level of Service B: Stable flow of traffic with negligible impact from other vehicles in the traffic stream. On a rare occasion, drivers wait through more than one signal indication.

Level of Service C: Still in the zone of stable flow but ability to select operating speed and maneuverability is restricted. Intermittently drivers must wait through more than one signal indication and backups may develop behind left turning vehicles.

Level of Service D: Approaching instability; drivers are restricted in their freedom to change lanes. Delay of approaching vehicles may be substantial during peak hours.

Level of Service E: Traffic volumes are near or at capacity on the arterial. Long queues of vehicles may create lengthy delays, especially for left turning vehicles.

Level of Service F: Congested conditions of forced traffic flow where travel is slowed by stop and go conditions. Queued backups from locations downstream restrict or prevent movement of vehicles out of the approach, creating a storage area during part or all of the peak hour.

At an unsignalized intersection, capacity analysis is a study of the interaction between drivers on the minor street (the stop-controlled street) and the drivers on the major street. To describe this interaction, both gap acceptance and empirical models have been developed. For each minor movement, the control delay is determined, and a level of service is assigned. The control delay is the total elapsed time from a vehicle joining the queue until its departure from its stopped position at the head of the queue. It includes the time to decelerate to a stop and accelerate to the free-flow speed.

For signalized intersections, capacity is evaluated in terms of the ratio of demand flow rate to the capacity of the intersection. The level of service is based on the control delay in seconds per vehicle. Control delay is defined as the portion of total delay attributed to traffic signal operation, and includes initial acceleration delay, queue move-up time, stopped delay, and final acceleration delay.

The capacity analyses were performed using the Federal Highway Administration's *Highway Capacity Software*[7] and/or PTV Vistro 2020[8]. Capacity analyses were performed for the AM and PM peak periods for each of the intersections within the study area.

In using the HCM 6th methodologies in Highway Capacity Software and *PTV Vistro 2020*, the Pennsylvania default values for base saturation flow rates, start-up lost time, extension of effective green time, number of left-turn sneakers, base critical headway and base follow-up headways for the Suburban Land Use Context were used per the parameters in Chapter 10 of the PennDOT *Traffic Engineering Manual*[9].

The tables presented in the Conclusions and Recommendations section of this report present the results of the capacity analyses.

The exhibits following the Conclusions and Recommendations section of this report present the traffic volumes and resultant levels of service in each of the conditions analyzed. The analysis worksheets can be found in **Appendices F-J**.

F. Turn Lane Warrant Analysis

Chapter 11 of the PennDOT *Traffic Engineering Manual* provides guidelines that are to be used for evaluating intersections for the need for turn lanes and to determine the necessary length of the turn lanes. This manual provides design charts and tables for evaluating warrants and determining storage lengths. PennDOT has provided a spreadsheet for use in evaluating these warrants. This spreadsheet was used to determine whether left or right-turn lanes are warranted at the proposed site access drive intersections.

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[7] Highway Capacity Software, Version 6.5, Federal Highway Administration, Washington DC, 2014.

[8] Vistro 2020, SP 0-3, PTV, Portland, Oregon, 2019.

[9] Traffic Engineering Manual (Publication 46), Commonwealth of Pennsylvania, Department of Transportation, 2013.

The results of the turn lane warrant analysis show that a 75-foot southbound left-turn lane is warranted on Mount Joy Road at the intersection with the Full Access Drive. However, it is recommended to create a roundabout instead for the proposed intersection. No right turn lanes are warranted for the right-in/right-out drive intersection. Turn lane warrant analysis worksheets are included in **Appendix M**.

G. Queue Analysis

A traffic model was created using *Vistro* for the 95th percentile HCM 6th Edition queues for the study intersections. The queue analysis summary can be found in **Appendix L** of this report.

H. Sight Distance at Proposed Intersections

The Pennsylvania Department of Transportation requires that the available sight distance at each new access be greater than the required sight distance. According to Publication 282, *Highway Occupancy Permit Operations Manual*[10], sight distance is checked for three conditions. In each of the three scenarios, the driver's eye height is taken at 3.5 feet above the roadway, and the height of the vehicle is also set at 3.5 feet above the roadway.

The first scenario is for a driver at an access location, 15-feet (for local roads) or 10-feet (for private drives) back from the pavement edge. The sight distance is the maximum length of roadway along which the driver can continuously see another vehicle approaching on the roadway.

The sight distance in the second scenario is the maximum distance that a driver on the roadway can continuously see a vehicle stopped in the driver's travel lane and intending to make a left turn into the access.

In the final scenario, the sight distance is the maximum length of roadway along which a driver, intending to make a left turn into an access, can continuously see vehicles approaching from the opposing direction.

The minimum safe stopping sight distance for proposed driveways is calculated from the following equation:

$$SSSD = 1.47Vt + \frac{V^2}{30(f \pm g)}$$

The following table presents the measured sight distance, and the calculated minimum sight distances, the PennDOT Desirable sight distances from *Chapter 441 – Access to*

[10] Highway Occupancy Permit Operations Manual (Publication 282), Commonwealth of Pennsylvania, Department of Transportation, 2017.

and Occupancy of Highways by Driveways and Local Roads[11], and intersection sight distances from AASHTO's *A Policy on Geometric Design of Highways and Streets*[12] The Rapho Township Street Standards Ordinance references Chapter 441 as the applicable sight distance requirements in the Township.

The sight distance measurement worksheets are included in **Appendix O**.

Table 9 – Sight Distance for Proposed Access Drives

Access	Scenario A				Scenario B	
	Measured	Minimum	PennDOT Desirable	AASHTO	Measured	Minimum
Full Access	L – 800+' R – 800+'	L – 284' R – 299'	N/A	L – 441' R – 382'	800+'	299'

Access	Scenario C			
	Measured	Minimum	PennDOT Desirable	AASHTO
Full Access	800+'	284'	N/A	441'

Access	Scenario A				Scenario B	
	Measured	Minimum	PennDOT Desirable	AASHTO	Measured	Minimum
Right-in / Right-out Access	L – 700 R – N/A	L – 338' R – N/A	N/A	L – 382' R – N/A	N/A	N/A

Access	Scenario C			
	Measured	Minimum	PennDOT Desirable	AASHTO
Right-in / Right-out Access	N/A	N/A	N/A	N/A

[11] 67 PA Code, Chapter 441, Occupancy of Highways by Driveways and Local Roads

[12] A Policy on Geometric Design of Highways and Streets, 7th Edition, AASHTO, Washington, D.C.,2018.

All available sight distances at both proposed access drives meet all applicable requirements.

VI. SUMMARY OF IMPROVEMENTS

- At the intersection of **Barbara Street and Mount Joy Road (SR 0772):**
    - No improvements for this intersection.
- At the intersection of **Milton Grove Road (SR 4033) and Mount Joy Road (SR 0772):**
    - No improvements for this intersection.
- At the intersection of **Lefever Road and Mount Joy Road (SR 0772):**
    - No improvements for this intersection.
- At the intersection of **Mount Joy Road (SR 0772) and Proposed Full Access Drive:**
    - Construct roundabout on Mount Joy Road. Lower the centerline profile with the proposed roundabout at the proposed full access drive location to improve the sight distance on Mount Joy Road.
    - Provide and maintain adequate sight distance based upon all applicable requirements.
- At the intersection of **Mount Joy Road (SR 0772) and Proposed Right-in / Right-out Access Drive:**
    - Install a STOP sign on the Right-in / Right-out Access Drive; and provide and maintain adequate sight distance based upon all applicable requirements.
- All proposed improvements shall be constructed to accommodate non-motorized access/circulation and be ADA-compliant unless otherwise approved by the applicable review agencies.

VII. CONCLUSIONS AND RECOMMENDATIONS

A. Vistablock plans to develop a site with frontage along Mount Joy Road (SR 0772) in Rapho Township, Lancaster County into a residential community with 378 apartments. Construction is expected to be completed in 2025.

B. Site access will be provided at two locations along Mount Joy Road. The Full Access Drive will intersect Mount Joy Road approximately 275 feet southwest of Milton Grove Road and will provide full access with a proposed roundabout. The Right-in / Right-out Access Drive will intersect Mount Joy Road approximately 300 feet southwest of the Full Access Drive and will provide limited access.

C. The project has the potential to generate approximately 155 new trips during the AM peak hour (36 entering and 119 exiting), 148 new trips during the PM peak hour (90 entering and 58 exiting), and 1716 total weekday daily trips.

D. The intersection of **Barbara Street and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it will continue to operate at LOS A through all analysis scenarios. No improvements are required at this intersection based upon the level of service.

E. The intersection of **Milton Grove Road and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it is projected to operate at overall LOS A during the AM and PM peak hours under 2025 and 2030 No Build and Build conditions. No improvements are required at this intersection because of the proposed development.

F. The intersection of **Lefever Road and Mount Joy Road** currently operates at an overall LOS A during both the AM and PM peak hours, and it will continue to operate at LOS A through all analysis scenarios. No improvements are required at this intersection.

G. The intersection of **Mount Joy Road and the Proposed Full Access Drive** will operate at overall LOS A during both the AM and PM peak hours under 2025 and 2030 Build scenarios. This intersection meets warrants for a northbound right-turn lane on Mount Joy Road. However, it is recommended to install a proposed roundabout on Mount Joy Road instead of a left turn lane due to the close proximity to the Milton Grove Road intersection. It is also recommended to lower the centerline profile at the new intersection to improve sight distance on Mount Joy Road.

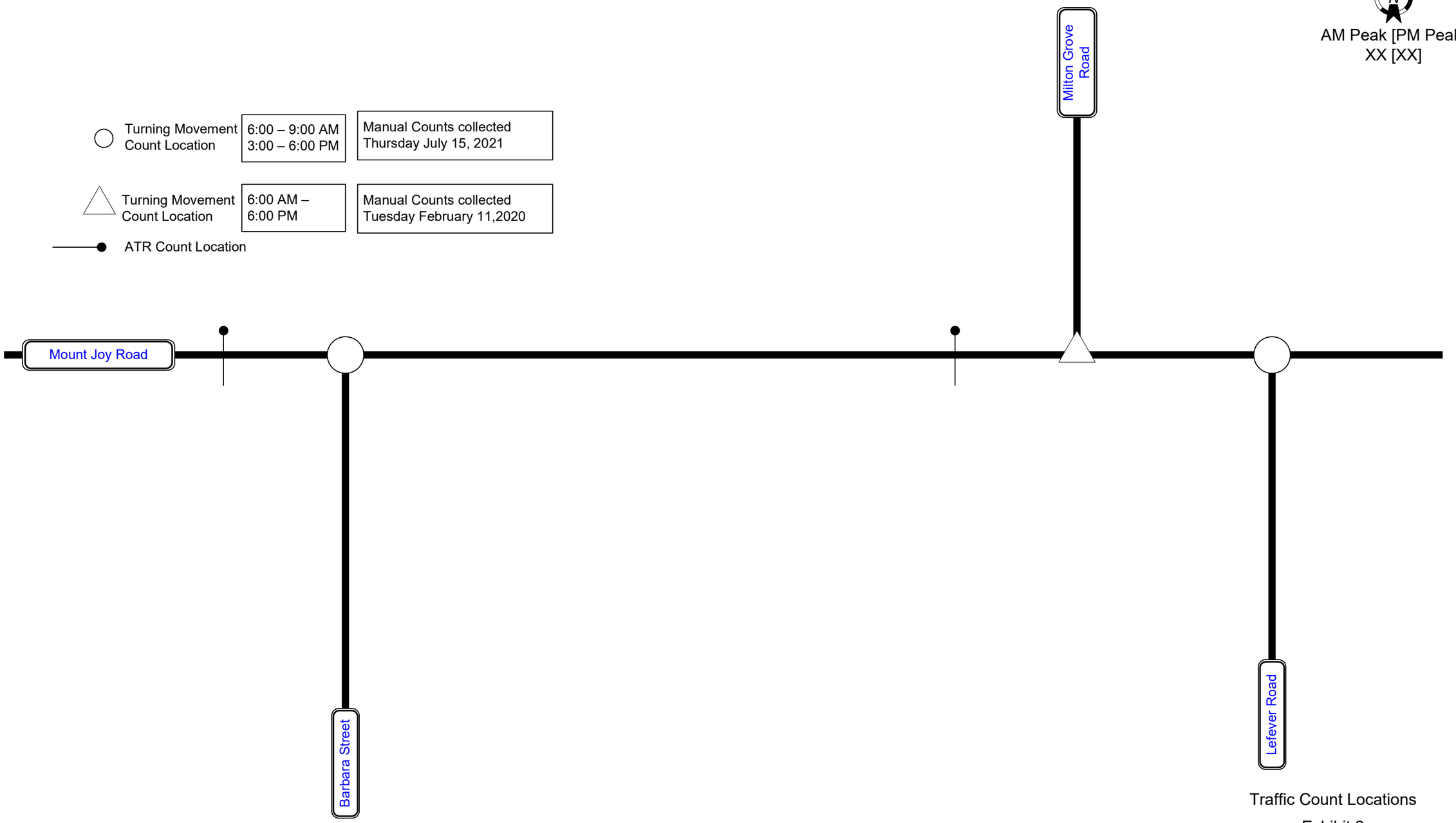
H. The intersection of **Mount Joy Road and the Proposed Right-in / Right-out Access Drive** will operate at overall LOS A during both the AM and PM peak hours under 2025 and 2030 Build scenarios. It is recommended that a STOP sign be installed on the Proposed Right-in / Right-out Access Drive at the intersection with Mount Joy Road.

I. All proposed improvements shall be constructed to accommodate non-motorized access/circulation and be ADA-compliant unless otherwise approved by the department.

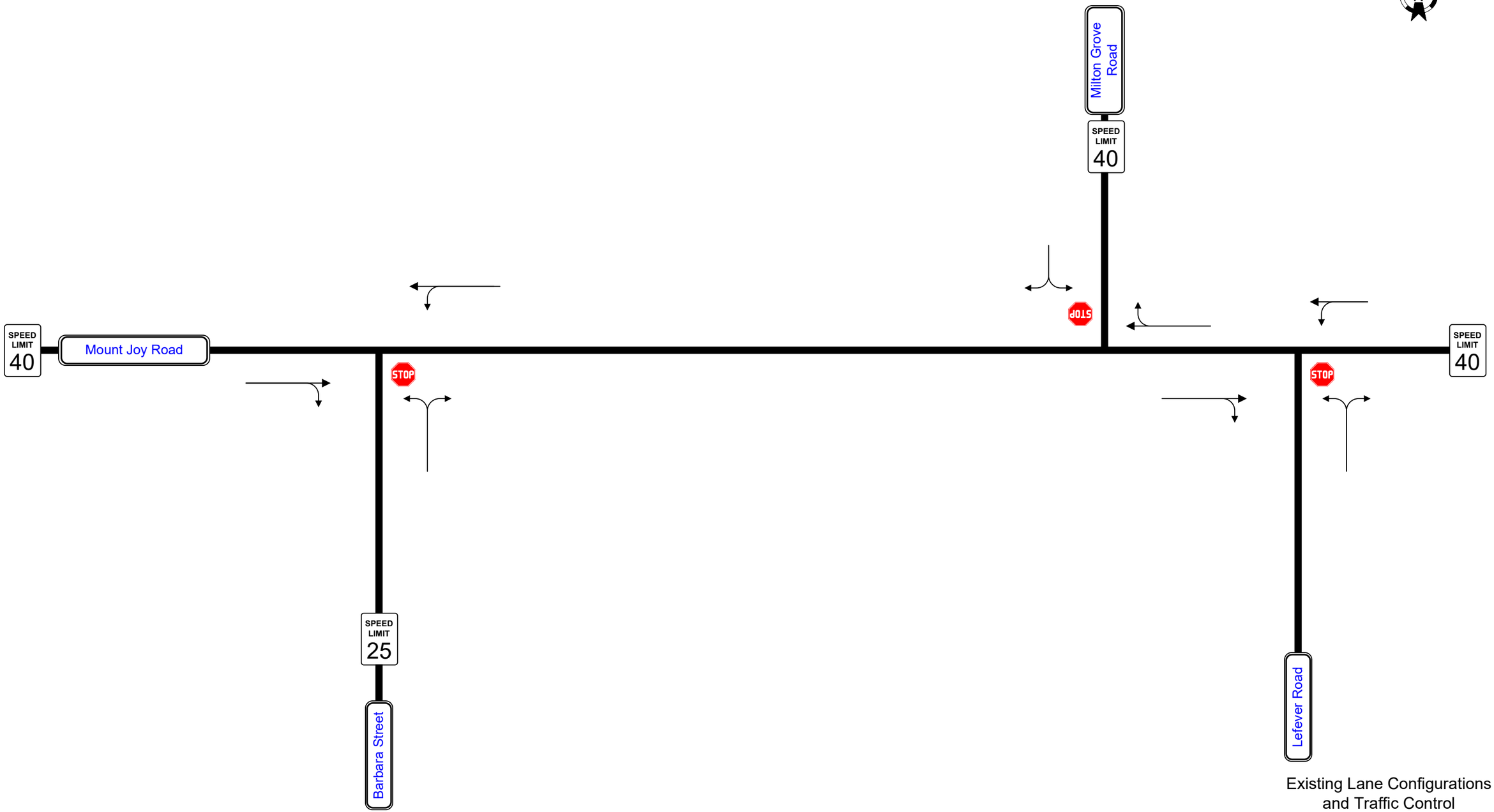
N

AM Peak [PM Peak]
XX [XX]

○ Turning Movement Count Location	6:00 – 9:00 AM 3:00 – 6:00 PM	Manual Counts collected Thursday July 15, 2021
△ Turning Movement Count Location	6:00 AM – 6:00 PM	Manual Counts collected Tuesday February 11,2020
ATR Count Location		

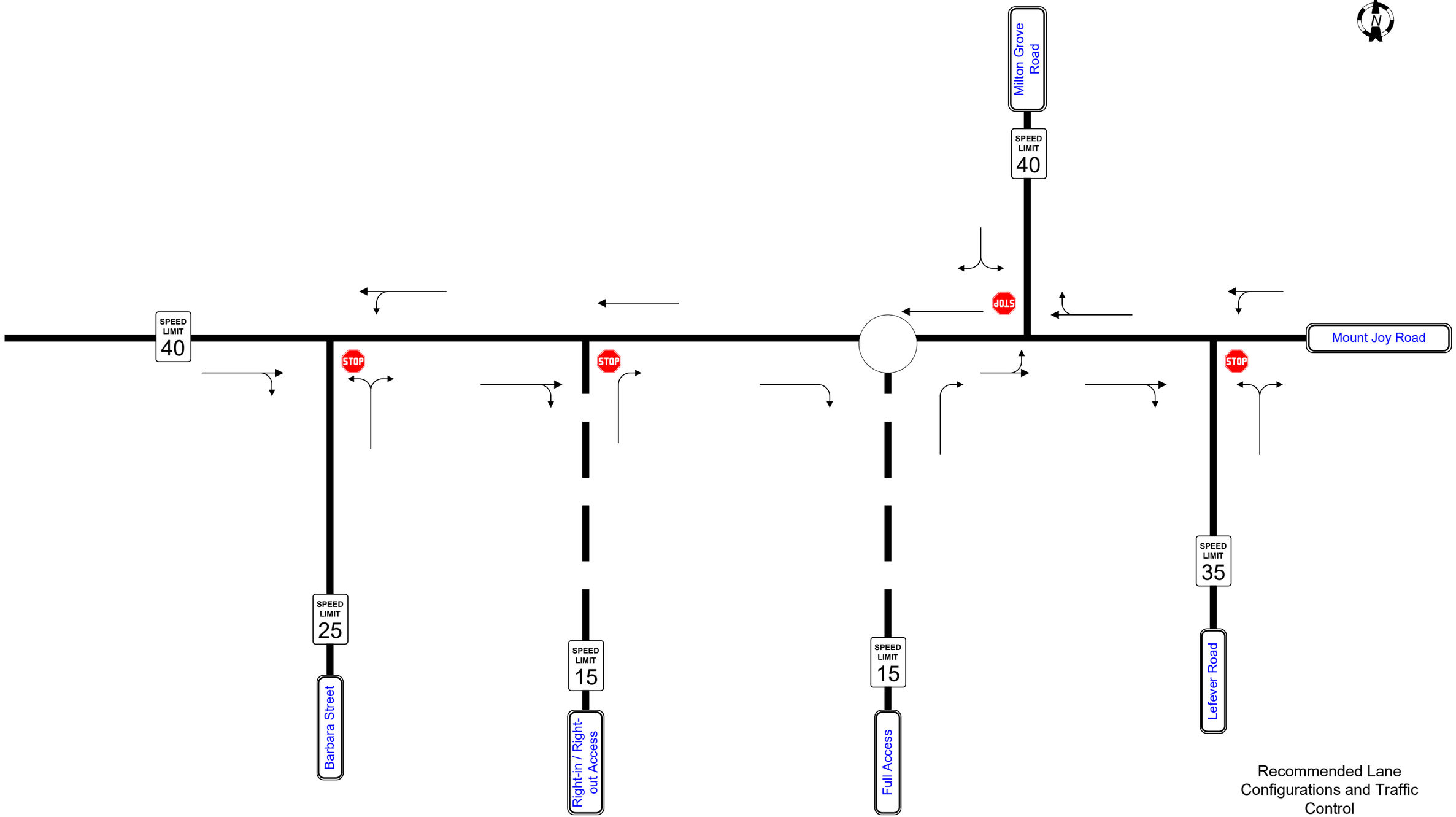


Traffic Count Locations
Exhibit 2



Existing Lane Configurations and Traffic Control

Exhibit 3



Recommended Lane Configurations and Traffic Control

Exhibit 4

Appendices

APPENDIX A - TRIP GENERATION

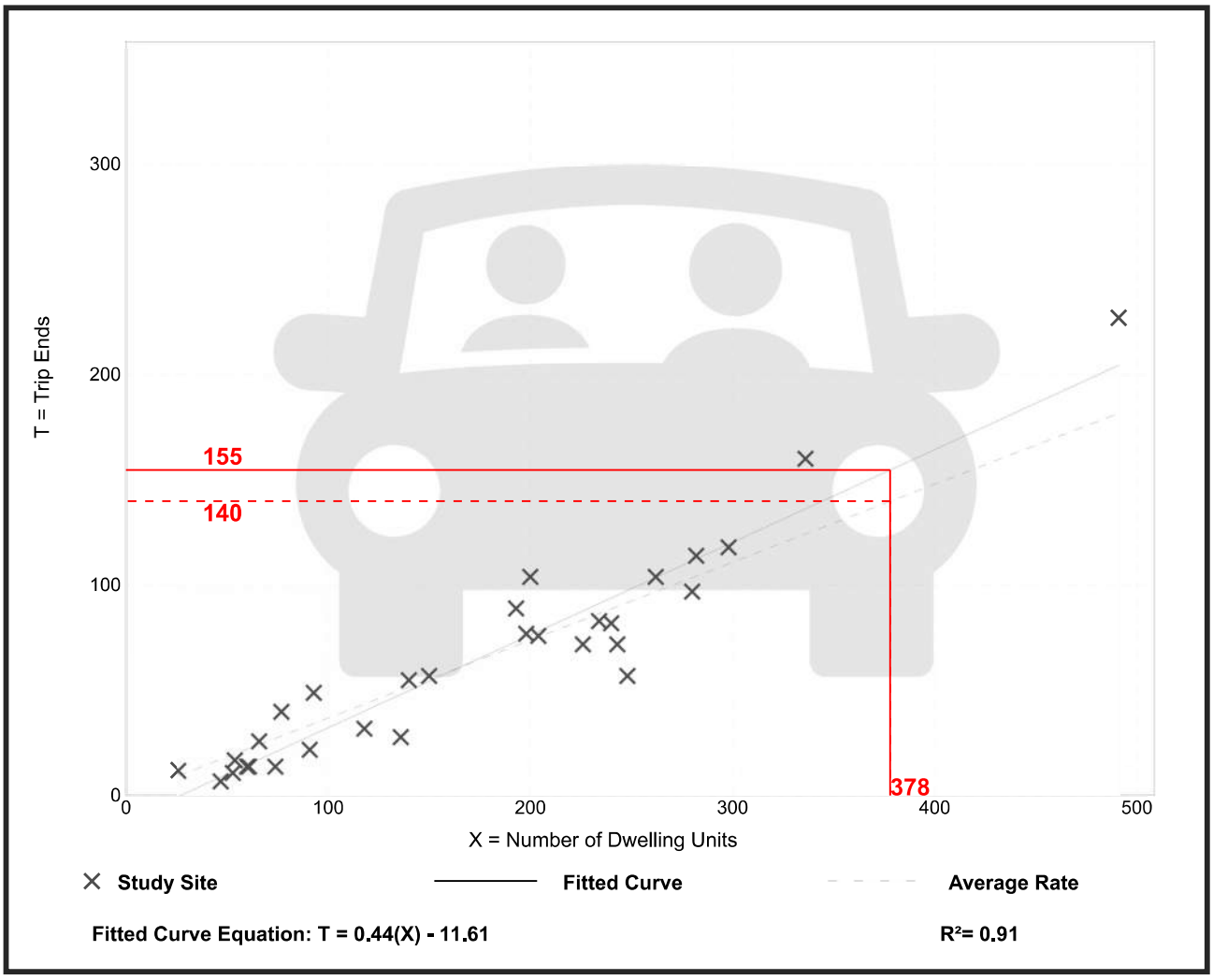
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 30
Avg. Num. of Dwelling Units: 173
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.37	0.15 - 0.53	0.09

Data Plot and Equation



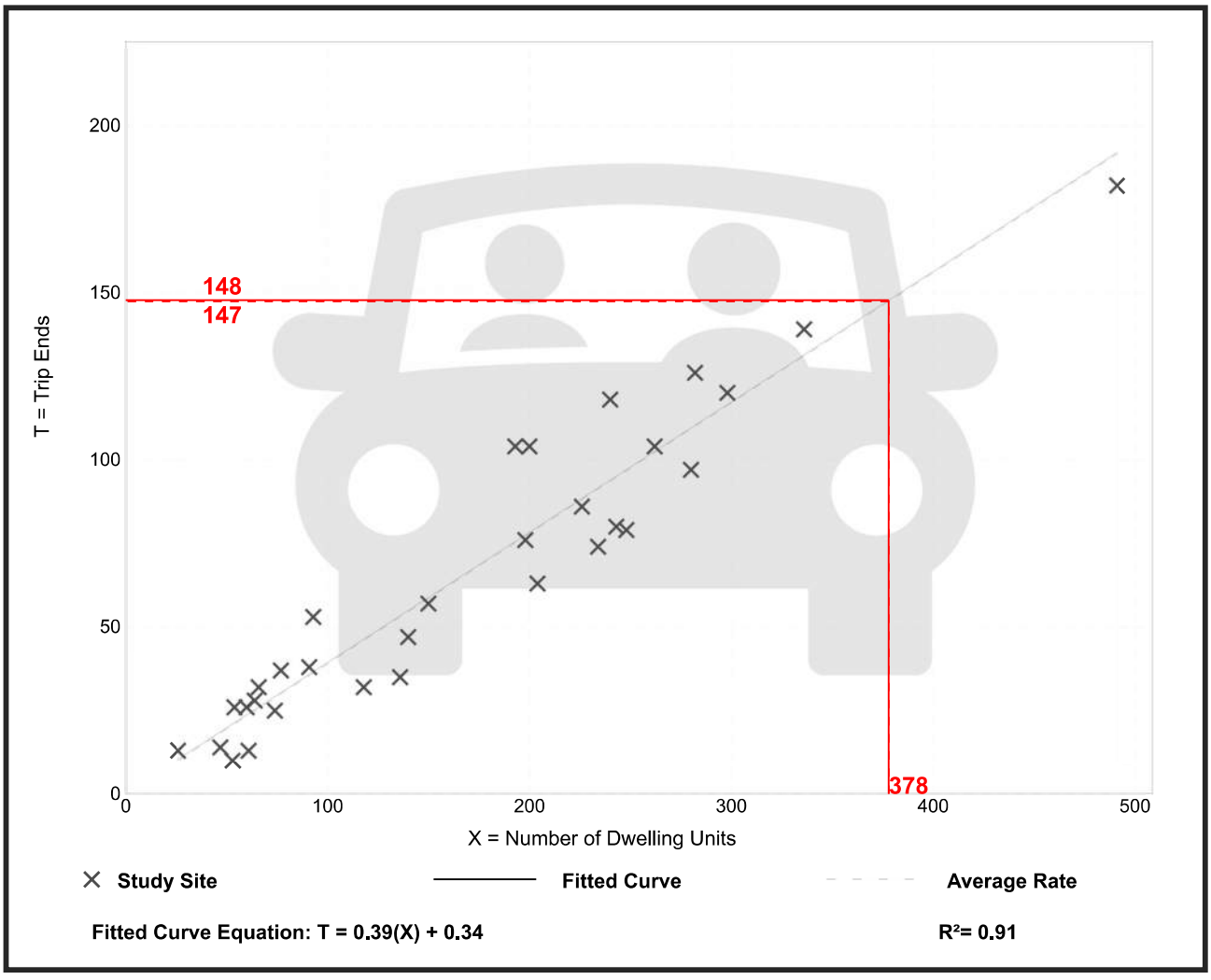
Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 31
Avg. Num. of Dwelling Units: 169
Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.19 - 0.57	0.08

Data Plot and Equation



Multifamily Housing (Mid-Rise)
Not Close to Rail Transit (221)

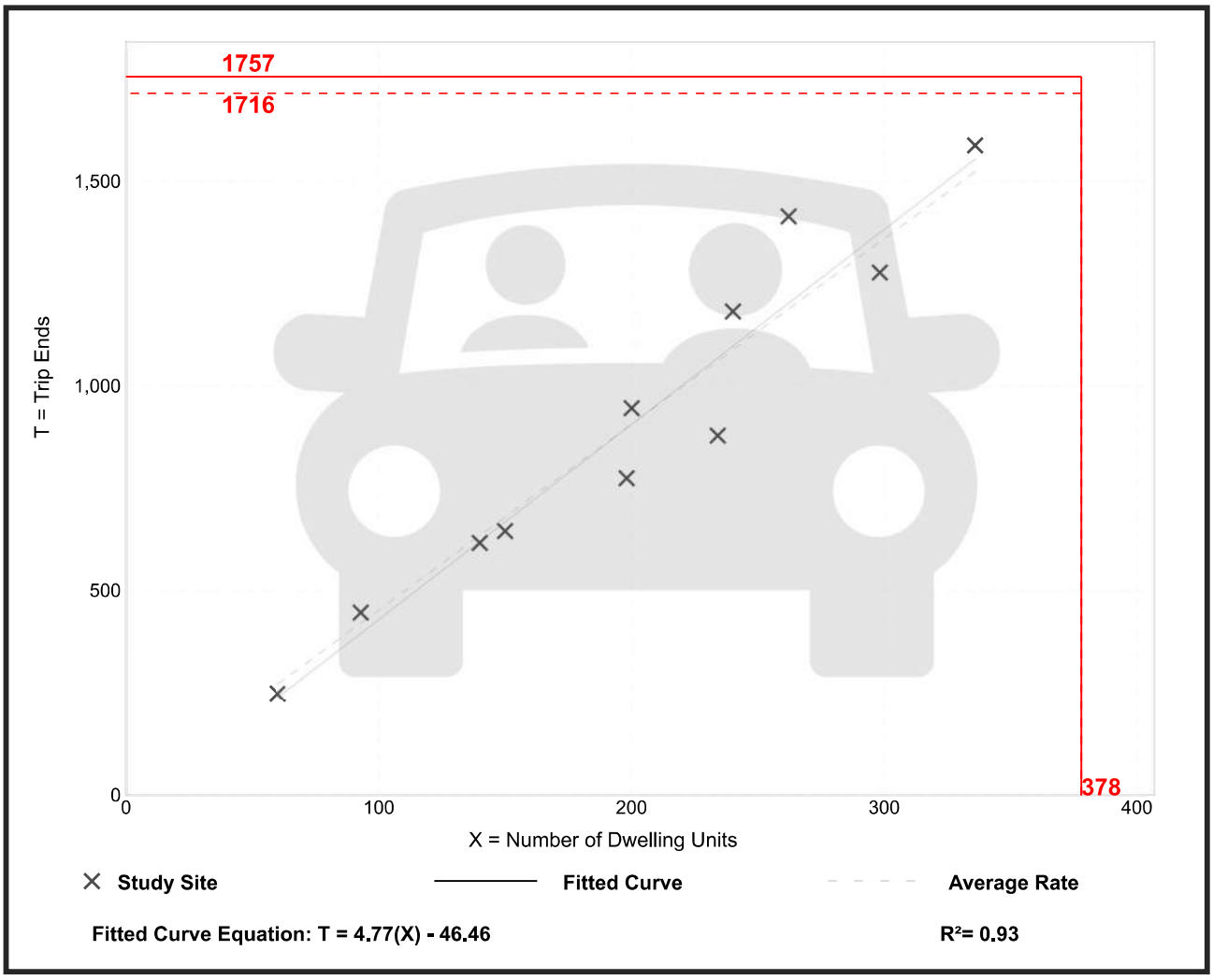
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 11
Avg. Num. of Dwelling Units: 201
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.54	3.76 - 5.40	0.51

Data Plot and Equation



APPENDIX B - TURNING MOVEMENT COUNT DATA

www.TSTData.com
184 Baker Rd

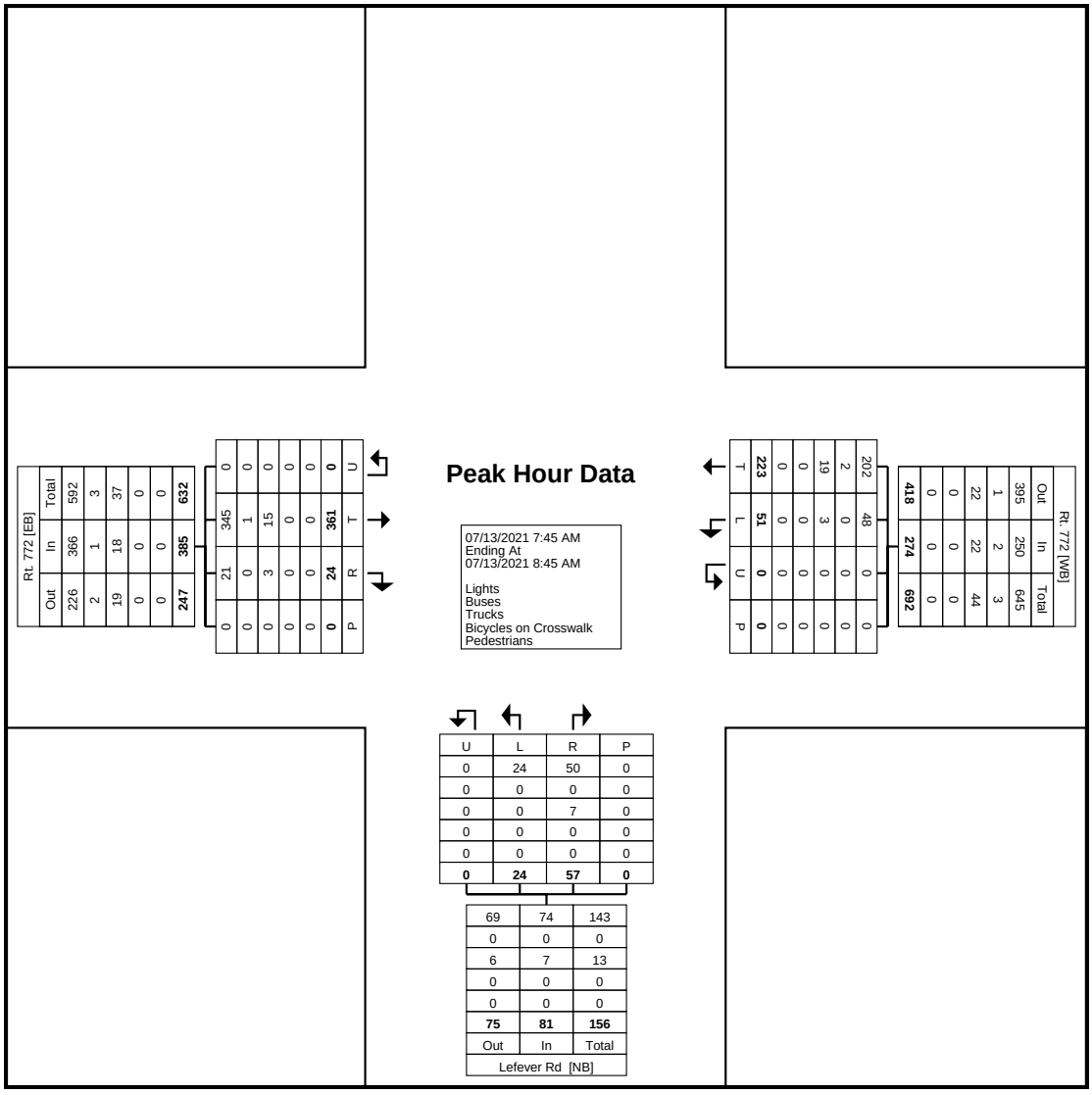
Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Lancaster County, PA
Route 722 & Lefever Rd
Tuesday, July 13, 2021
Location: 40.119574, -76.490985

Count Name: Rt. 772 & Lefever Rd
Site Code:
Start Date: 07/13/2021

Turning Movement Peak Hour Data (7:45 AM)

Start Time	Rt. 772 Eastbound					Rt. 772 Westbound					Lefever Rd Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:45 AM	111	8	0	0	119	13	56	0	0	69	3	11	0	0	14	202
8:00 AM	85	5	0	0	90	11	53	0	0	64	6	11	0	0	17	171
8:15 AM	76	6	0	0	82	19	45	0	0	64	7	19	0	0	26	172
8:30 AM	89	5	0	0	94	8	69	0	0	77	8	16	0	0	24	195
Total	361	24	0	0	385	51	223	0	0	274	24	57	0	0	81	740
Approach %	93.8	6.2	0.0	-	-	18.6	81.4	0.0	-	-	29.6	70.4	0.0	-	-	-
Total %	48.8	3.2	0.0	-	52.0	6.9	30.1	0.0	-	37.0	3.2	7.7	0.0	-	10.9	-
PHF	0.813	0.750	0.000	-	0.809	0.671	0.808	0.000	-	0.890	0.750	0.750	0.000	-	0.779	0.916
Lights	345	21	0	-	366	48	202	0	-	250	24	50	0	-	74	690
% Lights	95.6	87.5	-	-	95.1	94.1	90.6	-	-	91.2	100.0	87.7	-	-	91.4	93.2
Buses	1	0	0	-	1	0	2	0	-	2	0	0	0	-	0	3
% Buses	0.3	0.0	-	-	0.3	0.0	0.9	-	-	0.7	0.0	0.0	-	-	0.0	0.4
Trucks	15	3	0	-	18	3	19	0	-	22	0	7	0	-	7	47
% Trucks	4.2	12.5	-	-	4.7	5.9	8.5	-	-	8.0	0.0	12.3	-	-	8.6	6.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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

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184 Baker Rd

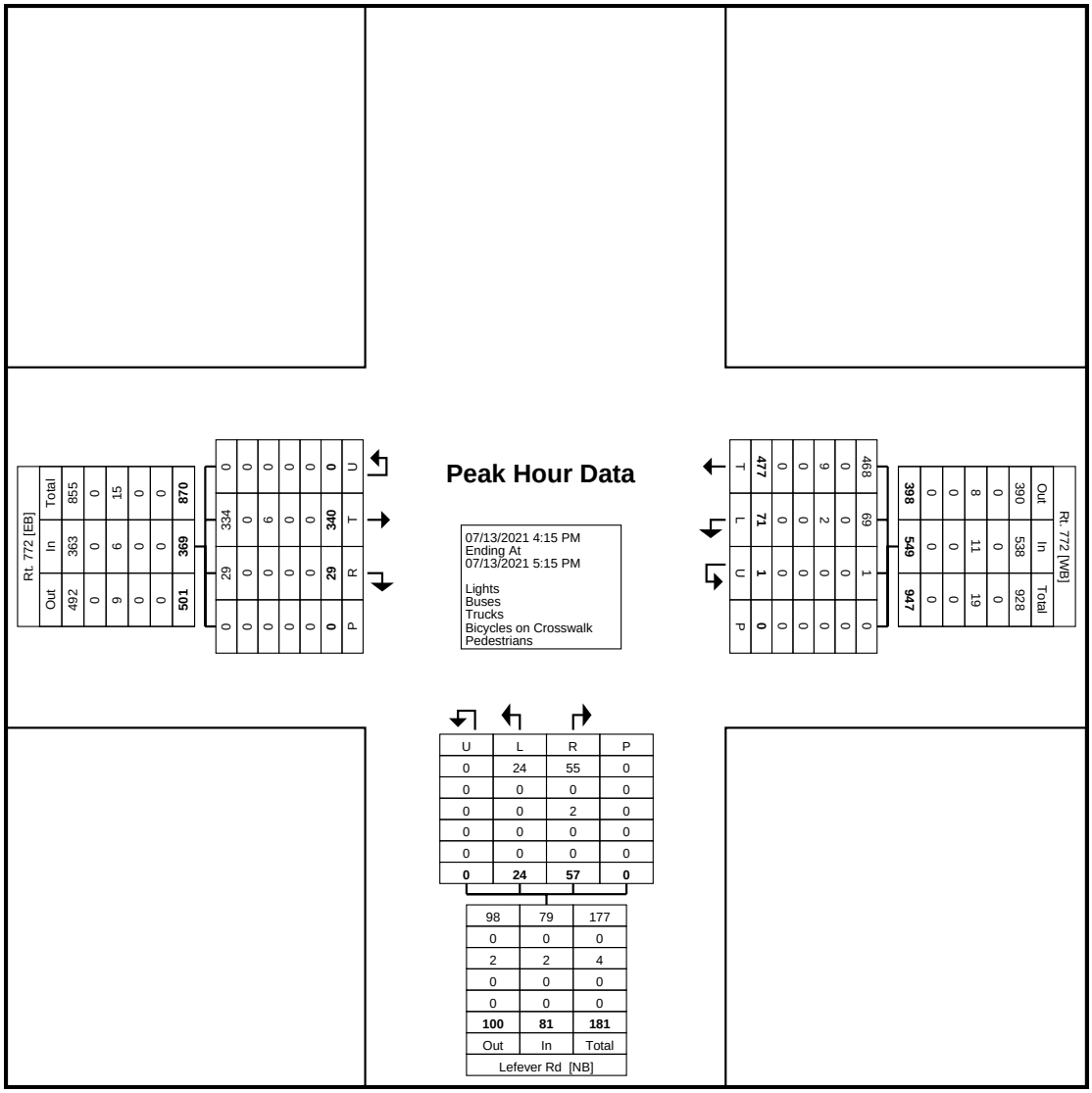
Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Lancaster County, PA
Route 722 & Lefever Rd
Tuesday, July 13, 2021
Location: 40.119574, -76.490985

Count Name: Rt. 772 & Lefever Rd
Site Code:
Start Date: 07/13/2021

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Rt. 772 Eastbound					Rt. 772 Westbound					Lefever Rd Northbound					
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	88	9	0	0	97	22	101	0	0	123	6	11	0	0	17	237
4:30 PM	85	10	0	0	95	14	141	0	0	155	6	21	0	0	27	277
4:45 PM	76	3	0	0	79	21	132	1	0	154	6	9	0	0	15	248
5:00 PM	91	7	0	0	98	14	103	0	0	117	6	16	0	0	22	237
Total	340	29	0	0	369	71	477	1	0	549	24	57	0	0	81	999
Approach %	92.1	7.9	0.0	-	-	12.9	86.9	0.2	-	-	29.6	70.4	0.0	-	-	-
Total %	34.0	2.9	0.0	-	36.9	7.1	47.7	0.1	-	55.0	2.4	5.7	0.0	-	8.1	-
PHF	0.934	0.725	0.000	-	0.941	0.807	0.846	0.250	-	0.885	1.000	0.679	0.000	-	0.750	0.902
Lights	334	29	0	-	363	69	468	1	-	538	24	55	0	-	79	980
% Lights	98.2	100.0	-	-	98.4	97.2	98.1	100.0	-	98.0	100.0	96.5	-	-	97.5	98.1
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	-	-	0.0	0.0
Trucks	6	0	0	-	6	2	9	0	-	11	0	2	0	-	2	19
% Trucks	1.8	0.0	-	-	1.6	2.8	1.9	0.0	-	2.0	0.0	3.5	-	-	2.5	1.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:15 PM)

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610-466-1469
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Lancaster County, PA
Mt Joy Rd & Milton Grove Rd
Tuesday, February 11, 2020
Location: 40.117541, -76.496161

Count Name: Mt. Joy-Manheim Rd./Milton Grove Rd.
Site Code:
Start Date: 02/11/2020

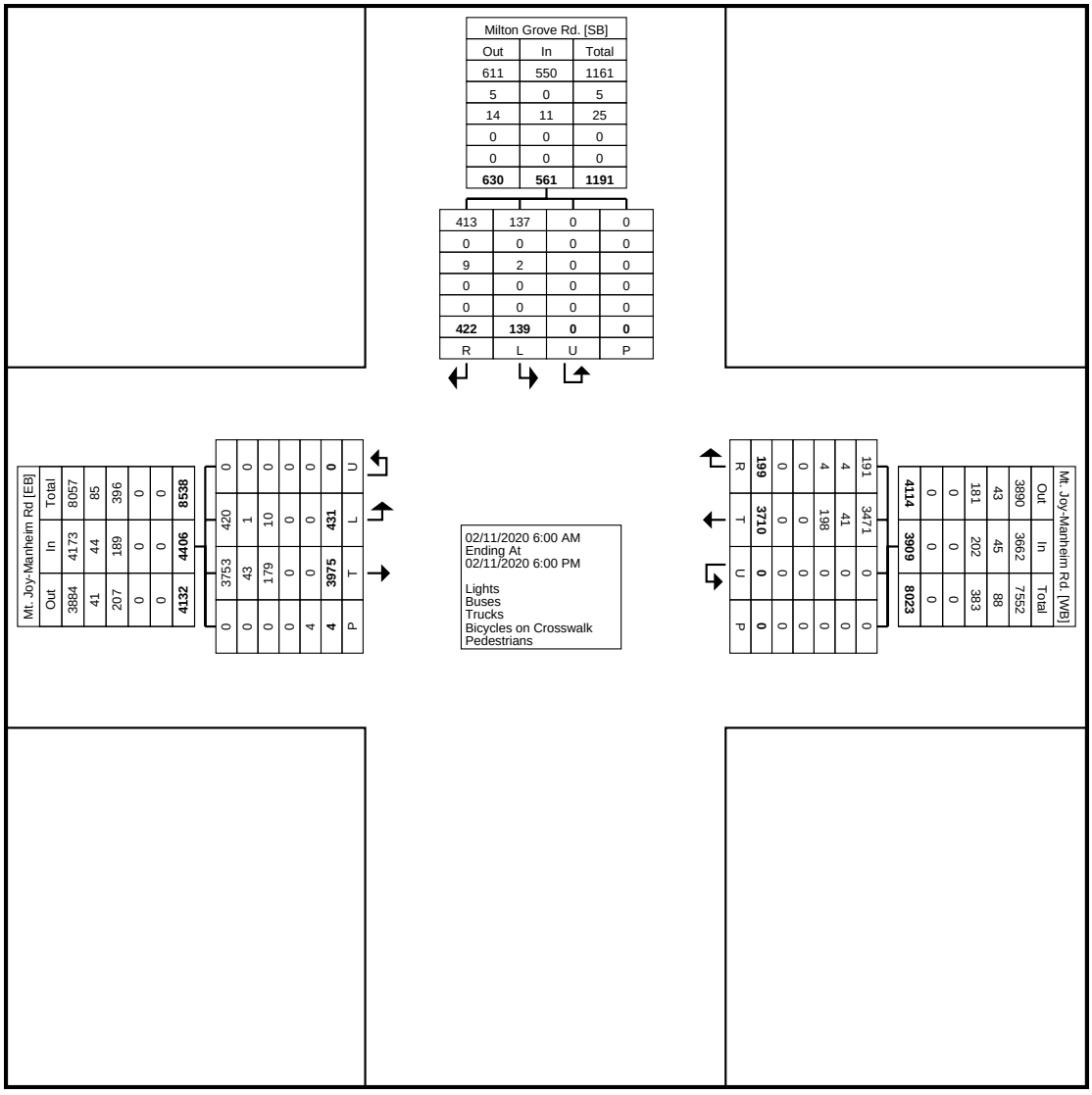
Turning Movement Data

Start Time	Mt. Joy-Manheim Rd Eastbound					Mt. Joy-Manheim Rd. Westbound					Milton Grove Rd. Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
6:00 AM	5	47	0	0	52	31	0	0	0	31	3	6	0	0	9	92
6:15 AM	6	80	0	0	86	30	1	0	0	31	1	8	0	0	9	126
6:30 AM	3	109	0	0	112	49	3	0	0	52	3	12	0	0	15	179
6:45 AM	7	115	0	0	122	58	4	0	0	62	2	19	0	0	21	205
Hourly Total	21	351	0	0	372	168	8	0	0	176	9	45	0	0	54	602
7:00 AM	9	125	0	0	134	85	2	0	0	87	2	14	0	0	16	237
7:15 AM	16	140	0	0	156	78	1	0	0	79	8	5	0	0	13	248
7:30 AM	14	134	0	0	148	78	1	0	0	79	2	15	0	0	17	244
7:45 AM	9	148	0	0	157	90	3	0	0	93	4	18	0	0	22	272
Hourly Total	48	547	0	0	595	331	7	0	0	338	16	52	0	0	68	1001
8:00 AM	13	113	0	0	126	72	2	0	0	74	3	6	0	0	9	209
8:15 AM	10	106	0	0	116	64	3	0	0	67	3	8	0	0	11	194
8:30 AM	19	87	0	0	106	60	3	0	0	63	3	7	0	0	10	179
8:45 AM	8	75	0	0	83	78	4	0	0	82	2	11	0	0	13	178
Hourly Total	50	381	0	0	431	274	12	0	0	286	11	32	0	0	43	760
9:00 AM	6	74	0	0	80	72	5	0	0	77	5	3	0	0	8	165
9:15 AM	10	64	0	0	74	44	1	0	0	45	6	7	0	0	13	132
9:30 AM	4	57	0	0	61	51	3	0	0	54	1	5	0	0	6	121
9:45 AM	4	56	0	0	60	66	6	0	0	72	0	7	0	0	7	139
Hourly Total	24	251	0	0	275	233	15	0	0	248	12	22	0	0	34	557
10:00 AM	5	77	0	0	82	49	5	0	0	54	2	3	0	0	5	141
10:15 AM	5	51	0	0	56	56	2	0	0	58	3	4	0	0	7	121
10:30 AM	4	70	0	0	74	50	4	0	0	54	0	7	0	0	7	135
10:45 AM	4	61	0	0	65	76	3	0	0	79	1	9	0	0	10	154
Hourly Total	18	259	0	0	277	231	14	0	0	245	6	23	0	0	29	551
11:00 AM	4	79	0	0	83	52	2	0	0	54	3	5	0	0	8	145
11:15 AM	4	63	0	0	67	69	4	0	0	73	5	11	0	0	16	156
11:30 AM	5	76	0	0	81	54	3	0	0	57	4	6	0	0	10	148
11:45 AM	5	53	0	0	58	63	11	0	0	74	2	10	0	0	12	144
Hourly Total	18	271	0	0	289	238	20	0	0	258	14	32	0	0	46	593
12:00 PM	5	84	0	0	89	59	3	0	0	62	0	2	0	0	2	153
12:15 PM	8	52	0	0	60	66	5	0	0	71	4	5	0	0	9	140
12:30 PM	7	68	0	0	75	85	4	0	0	89	3	8	0	0	11	175
12:45 PM	4	55	0	0	59	54	3	0	0	57	4	9	0	0	13	129
Hourly Total	24	259	0	0	283	264	15	0	0	279	11	24	0	0	35	597
1:00 PM	8	64	0	1	72	66	6	0	0	72	2	7	0	0	9	153
1:15 PM	11	72	0	2	83	43	2	0	0	45	4	4	0	0	8	136
1:30 PM	3	62	0	0	65	75	3	0	0	78	2	9	0	0	11	154
1:45 PM	5	76	0	0	81	70	5	0	0	75	1	8	0	0	9	165
Hourly Total	27	274	0	3	301	254	16	0	0	270	9	28	0	0	37	608
2:00 PM	7	80	0	1	87	71	3	0	0	74	1	9	0	0	10	171
2:15 PM	14	66	0	0	80	72	6	0	0	78	2	11	0	0	13	171
2:30 PM	12	89	0	0	101	78	3	0	0	81	6	10	0	0	16	198
2:45 PM	18	90	0	0	108	88	10	0	0	98	3	14	0	0	17	223
Hourly Total	51	325	0	1	376	309	22	0	0	331	12	44	0	0	56	763
3:00 PM	10	70	0	0	80	84	2	0	0	86	3	7	0	0	10	176
3:15 PM	12	73	0	0	85	109	7	0	0	116	2	7	0	0	9	210
3:30 PM	13	90	0	0	103	94	11	0	0	105	2	11	0	0	13	221
3:45 PM	15	93	0	0	108	135	6	0	0	141	3	16	0	0	19	268
Hourly Total	50	326	0	0	376	422	26	0	0	448	10	41	0	0	51	875
4:00 PM	14	88	0	0	102	130	3	0	0	133	3	13	0	0	16	251
4:15 PM	8	87	0	0	95	118	6	0	0	124	3	6	0	0	9	228
4:30 PM	13	102	0	0	115	144	8	0	0	152	2	9	0	0	11	278
4:45 PM	14	118	0	0	132	134	2	0	0	136	2	10	0	0	12	280
Hourly Total	49	395	0	0	444	526	19	0	0	545	10	38	0	0	48	1037
5:00 PM	13	94	0	0	107	114	8	0	0	122	6	15	0	0	21	250
5:15 PM	11	92	0	0	103	128	7	0	0	135	5	5	0	0	10	248
5:30 PM	15	86	0	0	101	128	5	0	0	133	5	13	0	0	18	252
5:45 PM	12	64	0	0	76	90	5	0	0	95	3	8	0	0	11	182

Hourly Total	51	336	0	0	387	460	25	0	0	485	19	41	0	0	60	932
Grand Total	431	3975	0	4	4406	3710	199	0	0	3909	139	422	0	0	561	8876
Approach %	9.8	90.2	0.0	-	-	94.9	5.1	0.0	-	-	24.8	75.2	0.0	-	-	-
Total %	4.9	44.8	0.0	-	49.6	41.8	2.2	0.0	-	44.0	1.6	4.8	0.0	-	6.3	-
Lights	420	3753	0	-	4173	3471	191	0	-	3662	137	413	0	-	550	8385
% Lights	97.4	94.4	-	-	94.7	93.6	96.0	-	-	93.7	98.6	97.9	-	-	98.0	94.5
Buses	1	43	0	-	44	41	4	0	-	45	0	0	0	-	0	89
% Buses	0.2	1.1	-	-	1.0	1.1	2.0	-	-	1.2	0.0	0.0	-	-	0.0	1.0
Trucks	10	179	0	-	189	198	4	0	-	202	2	9	0	-	11	402
% Trucks	2.3	4.5	-	-	4.3	5.3	2.0	-	-	5.2	1.4	2.1	-	-	2.0	4.5
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Lancaster County, PA
Mt Joy Rd & Milton Grove Rd
Tuesday, February 11, 2020
Location: 40.117541, -76.496161

Count Name: Mt. Joy-Manheim Rd./Milton Grove Rd.
Site Code:
Start Date: 02/11/2020



Turning Movement Data Plot

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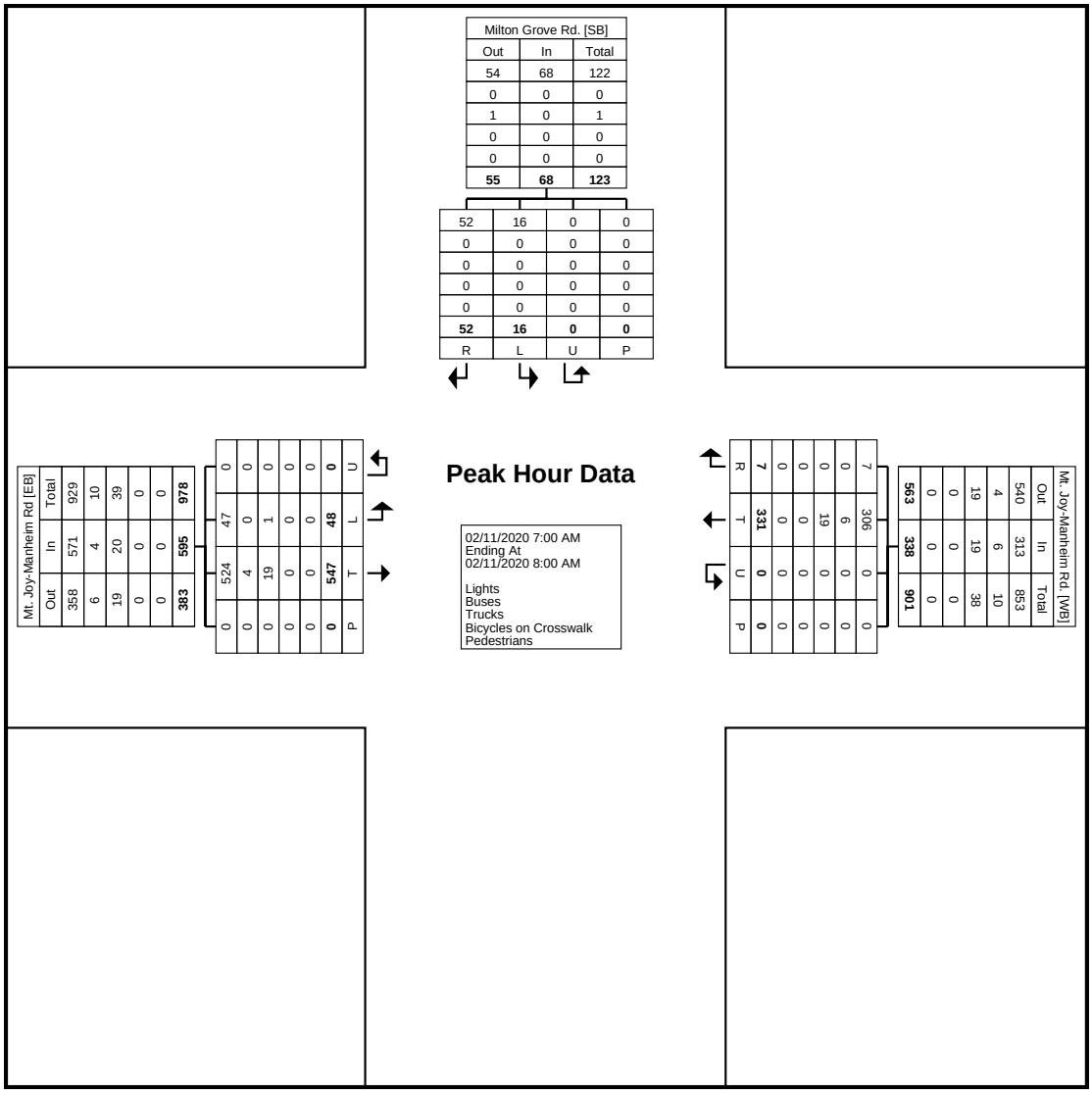
Count Name: Mt. Joy-Manheim Rd./Milton Grove Rd.
Site Code:
Start Date: 02/11/2020

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Mt. Joy-Manheim Rd Eastbound					Mt. Joy-Manheim Rd. Westbound					Milton Grove Rd. Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
7:00 AM	9	125	0	0	134	85	2	0	0	87	2	14	0	0	16	237
7:15 AM	16	140	0	0	156	78	1	0	0	79	8	5	0	0	13	248
7:30 AM	14	134	0	0	148	78	1	0	0	79	2	15	0	0	17	244
7:45 AM	9	148	0	0	157	90	3	0	0	93	4	18	0	0	22	272
Total	48	547	0	0	595	331	7	0	0	338	16	52	0	0	68	1001
Approach %	8.1	91.9	0.0	-	-	97.9	2.1	0.0	-	-	23.5	76.5	0.0	-	-	-
Total %	4.8	54.6	0.0	-	59.4	33.1	0.7	0.0	-	33.8	1.6	5.2	0.0	-	6.8	-
PHF	0.750	0.924	0.000	-	0.947	0.919	0.583	0.000	-	0.909	0.500	0.722	0.000	-	0.773	0.920
Lights	47	524	0	-	571	306	7	0	-	313	16	52	0	-	68	952
% Lights	97.9	95.8	-	-	96.0	92.4	100.0	-	-	92.6	100.0	100.0	-	-	100.0	95.1
Buses	0	4	0	-	4	6	0	0	-	6	0	0	0	-	0	10
% Buses	0.0	0.7	-	-	0.7	1.8	0.0	-	-	1.8	0.0	0.0	-	-	0.0	1.0
Trucks	1	19	0	-	20	19	0	0	-	19	0	0	0	-	0	39
% Trucks	2.1	3.5	-	-	3.4	5.7	0.0	-	-	5.6	0.0	0.0	-	-	0.0	3.9
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (7:00 AM)

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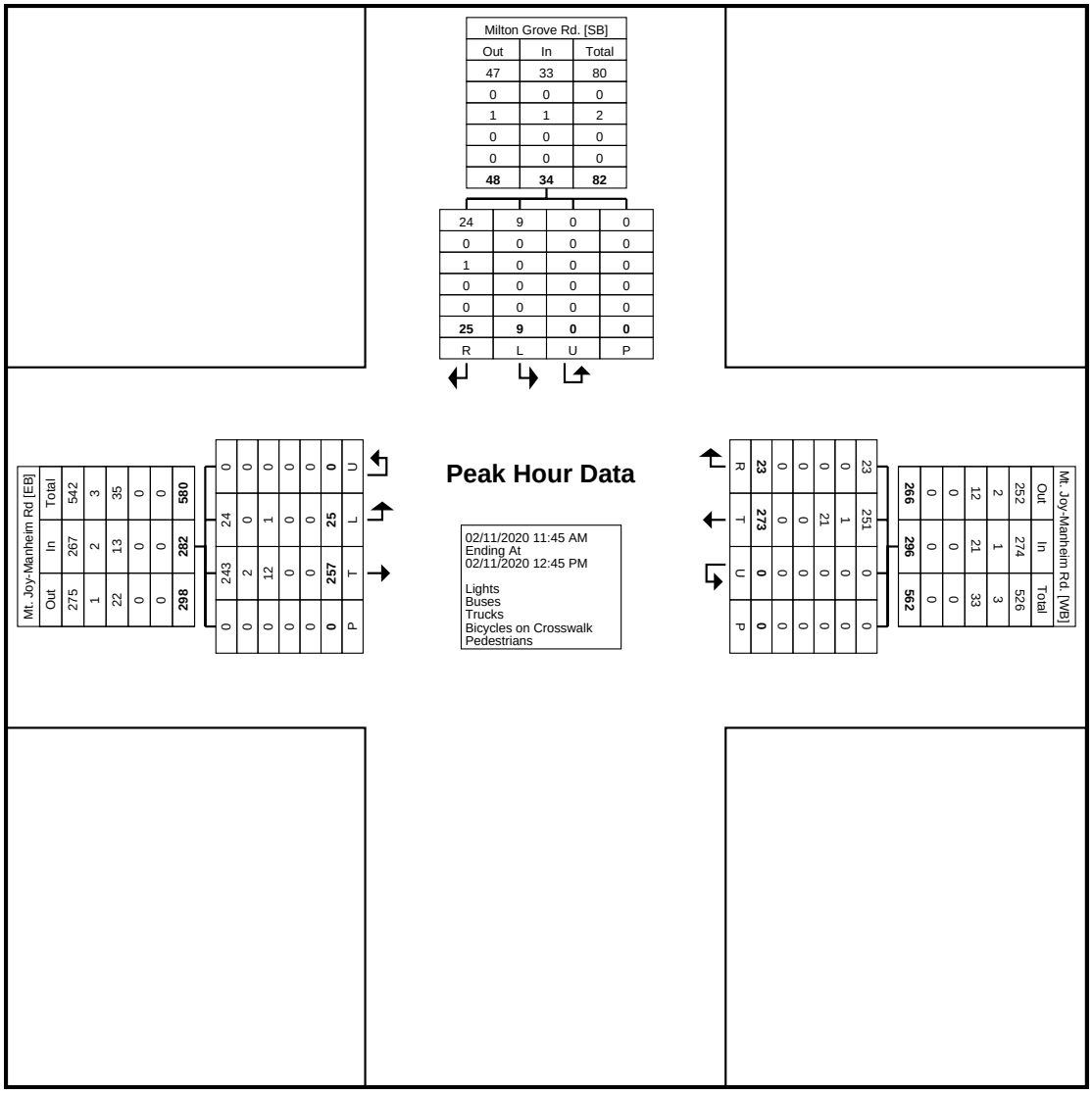
Lancaster County, PA
Mt Joy Rd & Milton Grove Rd
Tuesday, February 11, 2020
Location: 40.117541, -76.496161

Count Name: Mt. Joy-Manheim Rd./Milton Grove Rd.
Site Code:
Start Date: 02/11/2020

Turning Movement Peak Hour Data (11:45 AM)

Start Time	Mt. Joy-Manheim Rd Eastbound					Mt. Joy-Manheim Rd. Westbound					Milton Grove Rd. Southbound					
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	Int. Total
11:45 AM	5	53	0	0	58	63	11	0	0	74	2	10	0	0	12	144
12:00 PM	5	84	0	0	89	59	3	0	0	62	0	2	0	0	2	153
12:15 PM	8	52	0	0	60	66	5	0	0	71	4	5	0	0	9	140
12:30 PM	7	68	0	0	75	85	4	0	0	89	3	8	0	0	11	175
Total	25	257	0	0	282	273	23	0	0	296	9	25	0	0	34	612
Approach %	8.9	91.1	0.0	-	-	92.2	7.8	0.0	-	-	26.5	73.5	0.0	-	-	-
Total %	4.1	42.0	0.0	-	46.1	44.6	3.8	0.0	-	48.4	1.5	4.1	0.0	-	5.6	-
PHF	0.781	0.765	0.000	-	0.792	0.803	0.523	0.000	-	0.831	0.563	0.625	0.000	-	0.708	0.874
Lights	24	243	0	-	267	251	23	0	-	274	9	24	0	-	33	574
% Lights	96.0	94.6	-	-	94.7	91.9	100.0	-	-	92.6	100.0	96.0	-	-	97.1	93.8
Buses	0	2	0	-	2	1	0	0	-	1	0	0	0	-	0	3
% Buses	0.0	0.8	-	-	0.7	0.4	0.0	-	-	0.3	0.0	0.0	-	-	0.0	0.5
Trucks	1	12	0	-	13	21	0	0	-	21	0	1	0	-	1	35
% Trucks	4.0	4.7	-	-	4.6	7.7	0.0	-	-	7.1	0.0	4.0	-	-	2.9	5.7
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (11:45 AM)

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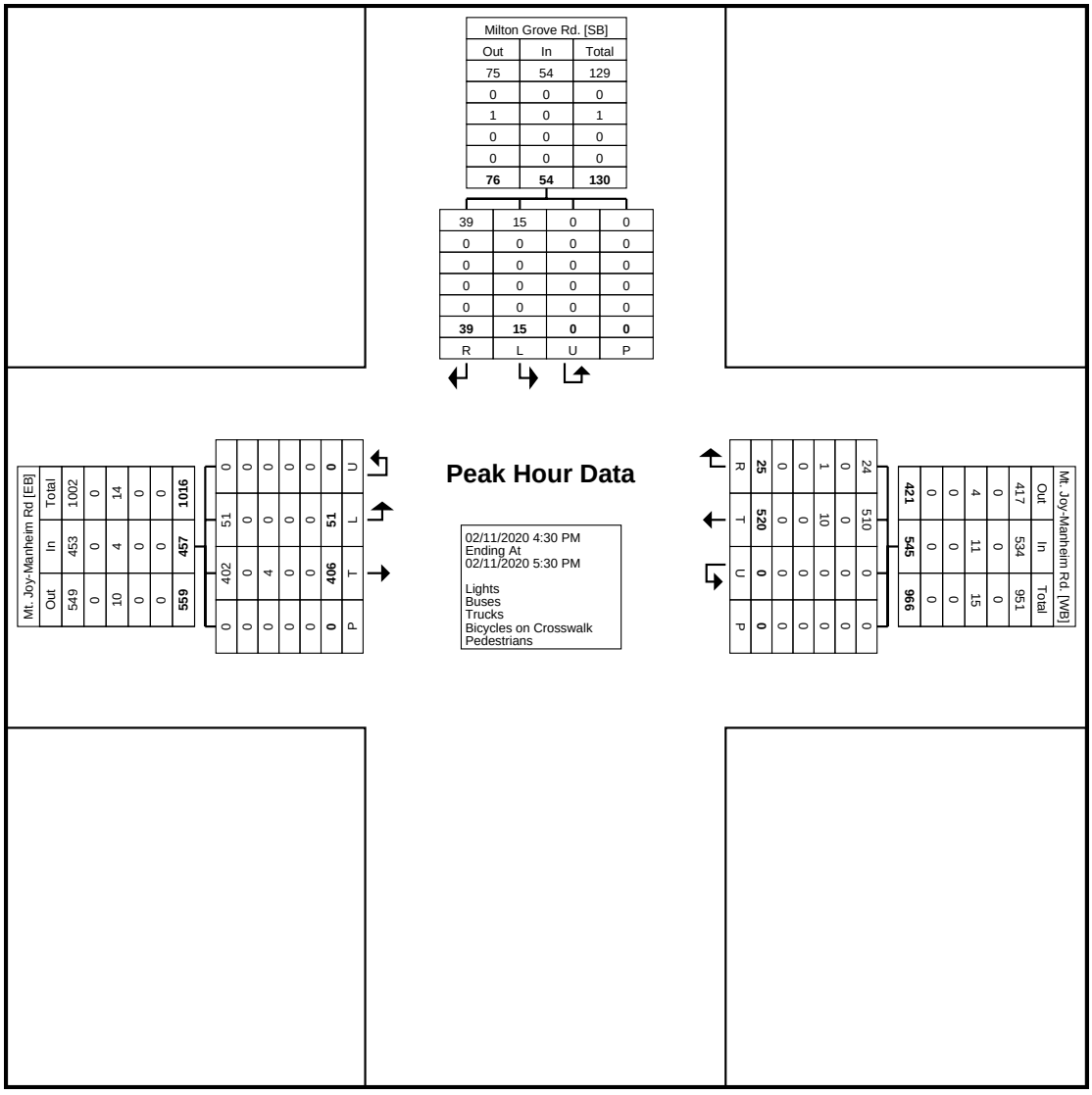
Lancaster County, PA
Mt Joy Rd & Milton Grove Rd
Tuesday, February 11, 2020
Location: 40.117541, -76.496161

Count Name: Mt. Joy-Manheim Rd./Milton Grove Rd.
Site Code:
Start Date: 02/11/2020

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Mt. Joy-Manheim Rd Eastbound					Mt. Joy-Manheim Rd. Westbound					Milton Grove Rd. Southbound					Int. Total
	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:30 PM	13	102	0	0	115	144	8	0	0	152	2	9	0	0	11	278
4:45 PM	14	118	0	0	132	134	2	0	0	136	2	10	0	0	12	280
5:00 PM	13	94	0	0	107	114	8	0	0	122	6	15	0	0	21	250
5:15 PM	11	92	0	0	103	128	7	0	0	135	5	5	0	0	10	248
Total	51	406	0	0	457	520	25	0	0	545	15	39	0	0	54	1056
Approach %	11.2	88.8	0.0	-	-	95.4	4.6	0.0	-	-	27.8	72.2	0.0	-	-	-
Total %	4.8	38.4	0.0	-	43.3	49.2	2.4	0.0	-	51.6	1.4	3.7	0.0	-	5.1	-
PHF	0.911	0.860	0.000	-	0.866	0.903	0.781	0.000	-	0.896	0.625	0.650	0.000	-	0.643	0.943
Lights	51	402	0	-	453	510	24	0	-	534	15	39	0	-	54	1041
% Lights	100.0	99.0	-	-	99.1	98.1	96.0	-	-	98.0	100.0	100.0	-	-	100.0	98.6
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Trucks	0	4	0	-	4	10	1	0	-	11	0	0	0	-	0	15
% Trucks	0.0	1.0	-	-	0.9	1.9	4.0	-	-	2.0	0.0	0.0	-	-	0.0	1.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (4:30 PM)

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Lancaster County, PA
Route 772 & N Barbara St
Tuesday, July 13, 2021
Location: 40.115832, -76.499799

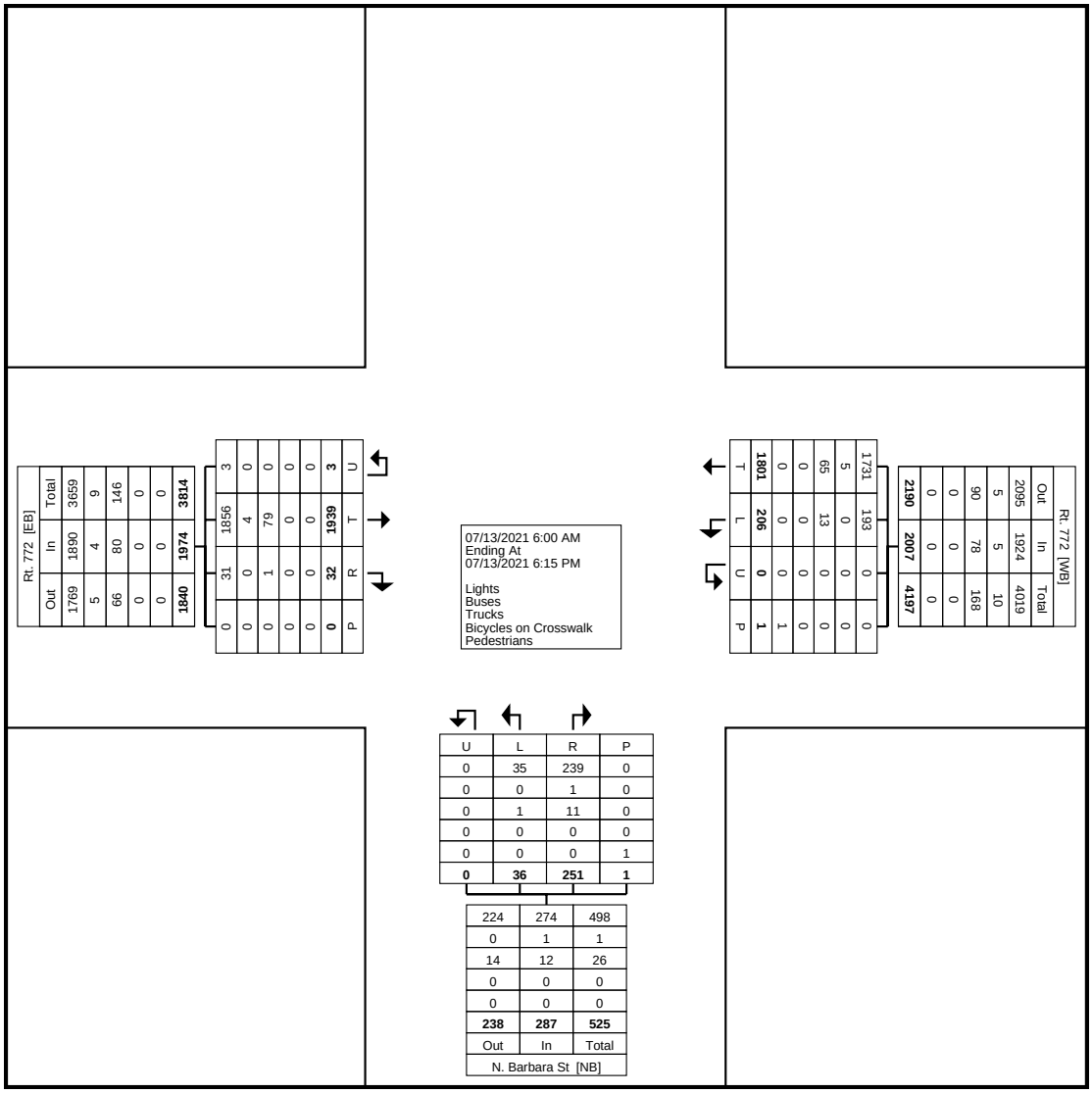
Count Name: Rt. 772 & N. Barbara St
Site Code:
Start Date: 07/13/2021

Turning Movement Data

Start Time	Rt. 772 Eastbound					Rt. 772 Westbound					N. Barbara St Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
6:00 AM	71	0	0	0	71	1	41	0	0	42	1	7	0	0	8	121
6:15 AM	66	0	0	0	66	6	37	0	0	43	0	7	0	0	7	116
6:30 AM	85	0	0	0	85	4	34	0	0	38	0	10	0	0	10	133
6:45 AM	69	0	0	0	69	5	48	0	0	53	0	9	0	0	9	131
Hourly Total	291	0	0	0	291	16	160	0	0	176	1	33	0	0	34	501
7:00 AM	99	0	0	0	99	9	33	0	0	42	3	11	0	0	14	155
7:15 AM	90	0	0	0	90	6	49	0	0	55	0	5	0	0	5	150
7:30 AM	106	2	0	0	108	5	48	0	0	53	1	13	0	0	14	175
7:45 AM	104	1	0	0	105	6	62	0	1	68	1	12	0	0	13	186
Hourly Total	399	3	0	0	402	26	192	0	1	218	5	41	0	0	46	666
8:00 AM	72	0	0	0	72	8	44	0	0	52	0	15	0	0	15	139
8:15 AM	86	1	0	0	87	7	50	0	0	57	0	8	0	0	8	152
8:30 AM	83	0	2	0	85	9	64	0	0	73	2	13	0	0	15	173
8:45 AM	70	1	0	0	71	10	81	0	0	91	1	10	0	0	11	173
Hourly Total	311	2	2	0	315	34	239	0	0	273	3	46	0	0	49	637
9:00 AM	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
3:00 PM	89	5	0	0	94	5	83	0	0	88	1	7	0	0	8	190
3:15 PM	72	0	0	0	72	9	69	0	0	78	0	12	0	0	12	162
3:30 PM	67	1	0	0	68	7	77	0	0	84	1	5	0	0	6	158
3:45 PM	69	2	1	0	72	9	89	0	0	98	1	10	0	0	11	181
Hourly Total	297	8	1	0	306	30	318	0	0	348	3	34	0	0	37	691
4:00 PM	73	4	0	0	77	11	102	0	0	113	0	12	0	0	12	202
4:15 PM	89	2	0	0	91	16	103	0	0	119	0	15	0	0	15	225
4:30 PM	88	3	0	0	91	14	135	0	0	149	2	7	0	0	9	249
4:45 PM	79	2	0	0	81	10	121	0	0	131	1	11	0	0	12	224
Hourly Total	329	11	0	0	340	51	461	0	0	512	3	45	0	0	48	900
5:00 PM	96	2	0	0	98	14	114	0	0	128	10	7	0	1	17	243
5:15 PM	76	2	0	0	78	18	111	0	0	129	5	13	0	0	18	225
5:30 PM	80	1	0	0	81	7	106	0	0	113	3	16	0	0	19	213
5:45 PM	60	3	0	0	63	10	100	0	0	110	3	16	0	0	19	192
Hourly Total	312	8	0	0	320	49	431	0	0	480	21	52	0	1	73	873
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1939	32	3	0	1974	206	1801	0	1	2007	36	251	0	1	287	4268
Approach %	98.2	1.6	0.2	-	-	10.3	89.7	0.0	-	-	12.5	87.5	0.0	-	-	-
Total %	45.4	0.7	0.1	-	46.3	4.8	42.2	0.0	-	47.0	0.8	5.9	0.0	-	6.7	-
Lights	1856	31	3	-	1890	193	1731	0	-	1924	35	239	0	-	274	4088
% Lights	95.7	96.9	100.0	-	95.7	93.7	96.1	-	-	95.9	97.2	95.2	-	-	95.5	95.8
Buses	4	0	0	-	4	0	5	0	-	5	0	1	0	-	1	10
% Buses	0.2	0.0	0.0	-	0.2	0.0	0.3	-	-	0.2	0.0	0.4	-	-	0.3	0.2
Trucks	79	1	0	-	80	13	65	0	-	78	1	11	0	-	12	170
% Trucks	4.1	3.1	0.0	-	4.1	6.3	3.6	-	-	3.9	2.8	4.4	-	-	4.2	4.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Lancaster County, PA
Route 772 & N Barbara St
Tuesday, July 13, 2021
Location: 40.115832, -76.499799

Count Name: Rt. 772 & N. Barbara St
Site Code:
Start Date: 07/13/2021



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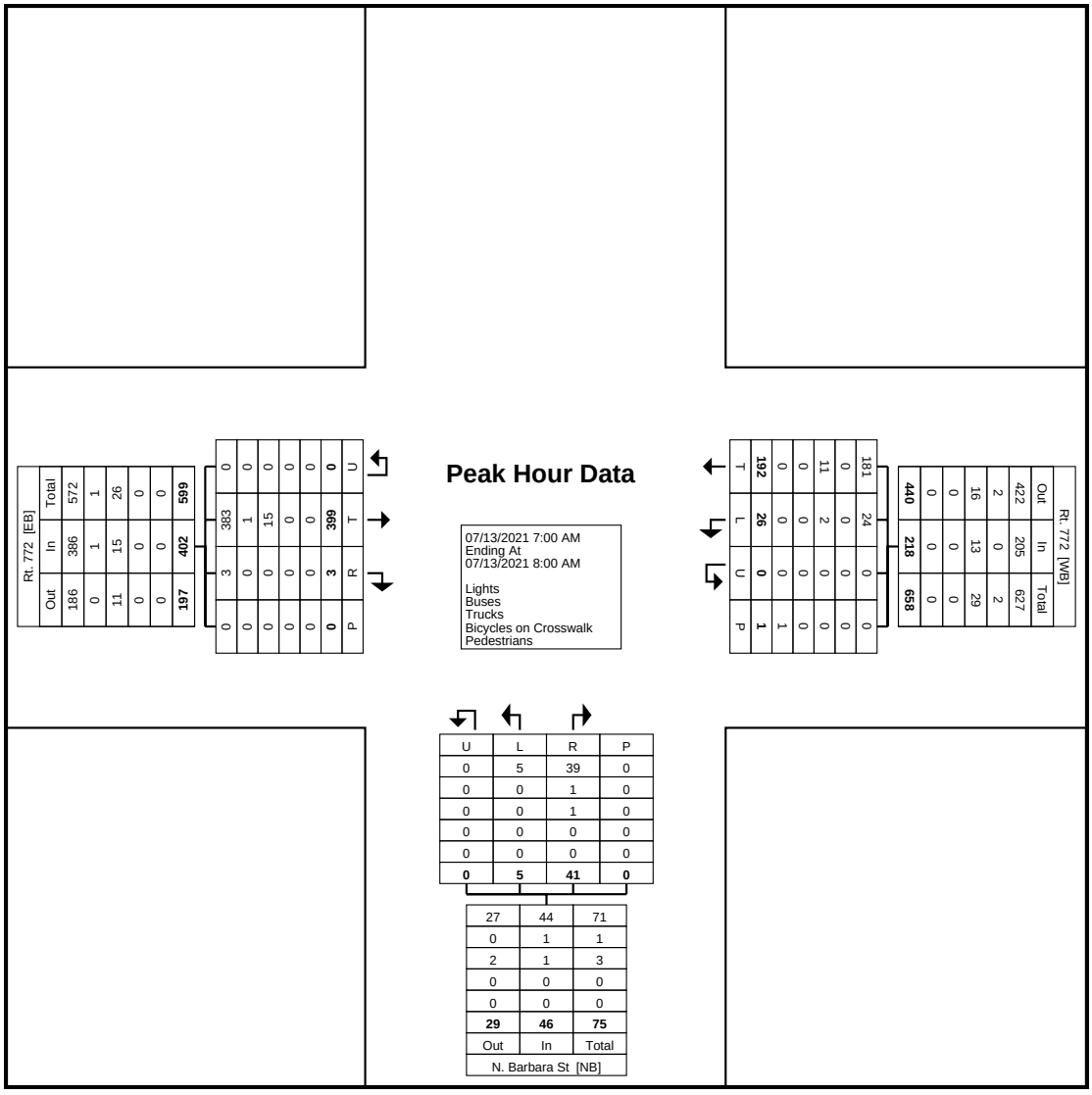
Lancaster County, PA
Route 772 & N Barbara St
Tuesday, July 13, 2021
Location: 40.115832, -76.499799

Count Name: Rt. 772 & N. Barbara St
Site Code:
Start Date: 07/13/2021

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Rt. 772 Eastbound					Rt. 772 Westbound					N. Barbara St Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
7:00 AM	99	0	0	0	99	9	33	0	0	42	3	11	0	0	14	155
7:15 AM	90	0	0	0	90	6	49	0	0	55	0	5	0	0	5	150
7:30 AM	106	2	0	0	108	5	48	0	0	53	1	13	0	0	14	175
7:45 AM	104	1	0	0	105	6	62	0	1	68	1	12	0	0	13	186
Total	399	3	0	0	402	26	192	0	1	218	5	41	0	0	46	666
Approach %	99.3	0.7	0.0	-	-	11.9	88.1	0.0	-	-	10.9	89.1	0.0	-	-	-
Total %	59.9	0.5	0.0	-	60.4	3.9	28.8	0.0	-	32.7	0.8	6.2	0.0	-	6.9	-
PHF	0.941	0.375	0.000	-	0.931	0.722	0.774	0.000	-	0.801	0.417	0.788	0.000	-	0.821	0.895
Lights	383	3	0	-	386	24	181	0	-	205	5	39	0	-	44	635
% Lights	96.0	100.0	-	-	96.0	92.3	94.3	-	-	94.0	100.0	95.1	-	-	95.7	95.3
Buses	1	0	0	-	1	0	0	0	-	0	0	1	0	-	1	2
% Buses	0.3	0.0	-	-	0.2	0.0	0.0	-	-	0.0	0.0	2.4	-	-	2.2	0.3
Trucks	15	0	0	-	15	2	11	0	-	13	0	1	0	-	1	29
% Trucks	3.8	0.0	-	-	3.7	7.7	5.7	-	-	6.0	0.0	2.4	-	-	2.2	4.4
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-



Turning Movement Peak Hour Data Plot (7:00 AM)

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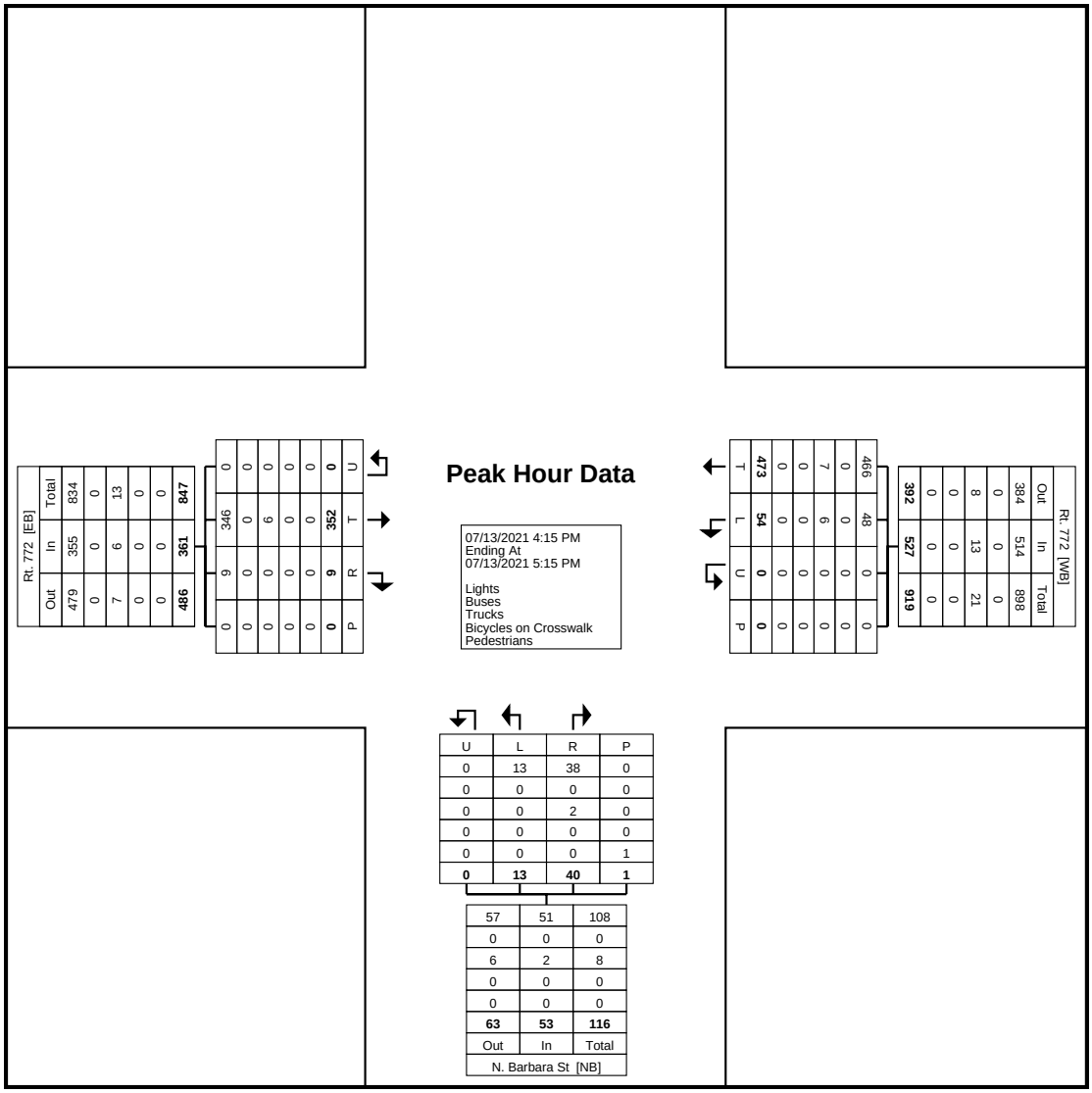
Lancaster County, PA
Route 772 & N Barbara St
Tuesday, July 13, 2021
Location: 40.115832, -76.499799

Count Name: Rt. 772 & N. Barbara St
Site Code:
Start Date: 07/13/2021

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Rt. 772 Eastbound					Rt. 772 Westbound					N. Barbara St Northbound					Int. Total
	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	U-Turn	Peds	App. Total	
4:15 PM	89	2	0	0	91	16	103	0	0	119	0	15	0	0	15	225
4:30 PM	88	3	0	0	91	14	135	0	0	149	2	7	0	0	9	249
4:45 PM	79	2	0	0	81	10	121	0	0	131	1	11	0	0	12	224
5:00 PM	96	2	0	0	98	14	114	0	0	128	10	7	0	1	17	243
Total	352	9	0	0	361	54	473	0	0	527	13	40	0	1	53	941
Approach %	97.5	2.5	0.0	-	-	10.2	89.8	0.0	-	-	24.5	75.5	0.0	-	-	-
Total %	37.4	1.0	0.0	-	38.4	5.7	50.3	0.0	-	56.0	1.4	4.3	0.0	-	5.6	-
PHF	0.917	0.750	0.000	-	0.921	0.844	0.876	0.000	-	0.884	0.325	0.667	0.000	-	0.779	0.945
Lights	346	9	0	-	355	48	466	0	-	514	13	38	0	-	51	920
% Lights	98.3	100.0	-	-	98.3	88.9	98.5	-	-	97.5	100.0	95.0	-	-	96.2	97.8
Buses	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Buses	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Trucks	6	0	0	-	6	6	7	0	-	13	0	2	0	-	2	21
% Trucks	1.7	0.0	-	-	1.7	11.1	1.5	-	-	2.5	0.0	5.0	-	-	3.8	2.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Turning Movement Peak Hour Data Plot (4:15 PM)

APPENDIX C - AUTOMATIC TRAFFIC RECORDER DATA

Tri-State Traffic Data, Inc.

610-466-1469
TSTData.com

Road: Rt. 772
Location: 530 ft N of Rt. 230
Counter: 35310 & 37027

Site Code: 1
Station ID:

Latitude: 40' 11172.0000 North
Longitude: 76' 50564.0000 West

Start	Monday, July 12, 2021		Tuesday, July 13, 2021		Wednesday, July 14, 2021		Thursday, July 15, 2021		Friday, July 16, 2021		Saturday, July 17, 2021		Sunday, July 18, 2021		Week Average	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	12	19	11	17	17	17	13	22	20	31	22	31	16	23
01:00	*	*	13	12	9	7	16	17	11	13	13	14	10	11	12	12
02:00	*	*	18	13	10	10	19	14	15	16	12	17	13	14	14	14
03:00	*	*	19	23	23	19	21	18	16	18	13	3	13	10	18	15
04:00	*	*	28	20	32	27	38	27	24	17	20	12	13	14	26	20
05:00	*	*	121	80	103	71	121	70	91	63	39	42	18	17	82	57
06:00	*	*	216	122	239	116	218	130	193	113	75	62	38	39	163	97
07:00	*	*	**322**	166	**334**	201	**330**	173	**281**	155	131	85	66	63	**244**	140
08:00	*	*	240	210	233	195	269	209	237	184	177	161	162	122	220	180
09:00	*	*	197	207	227	194	204	183	235	208	231	212	155	140	208	191
10:00	*	*	182	197	256	187	225	213	189	224	248	240	207	**210**	218	212
11:00	*	*	228	**230**	257	**249**	237	**224**	247	**240**	**273**	**261**	**215**	172	243	**229**
12:00 PM	222	244	243	244	201	206	235	232	211	263	**255**	**267**	**210**	**227**	225	240
01:00	226	195	228	235	200	238	247	249	217	223	197	233	190	195	215	224
02:00	215	225	222	240	212	246	203	260	234	255	200	225	164	195	207	235
03:00	198	222	216	252	**266**	313	240	298	250	261	191	183	176	176	220	244
04:00	**242**	309	259	**338**	240	336	258	318	**279**	**330**	162	219	159	177	**228**	**290**
05:00	188	**321**	**260**	300	264	**344**	**261**	**350**	249	290	158	206	155	192	219	286
06:00	154	193	204	212	210	223	260	250	222	219	162	156	118	169	190	203
07:00	126	137	156	200	178	196	140	197	153	190	129	140	99	116	140	168
08:00	103	125	111	157	158	162	139	199	118	207	82	103	91	118	115	153
09:00	56	80	67	110	100	129	100	118	112	125	67	90	71	77	82	104
10:00	33	40	40	86	41	77	40	63	59	67	46	65	32	44	42	63
11:00	15	32	20	29	33	43	26	40	29	58	39	36	14	18	25	37
Total	1778	2123	3622	3702	3837	3806	3864	3869	3685	3761	2940	3063	2411	2547	3372	3437
Day	3901		7324		7643		7733		7446		6003		4958		6809	
AM Peak	-	-	07:00	11:00	07:00	11:00	07:00	11:00	07:00	11:00	11:00	11:00	11:00	10:00	07:00	11:00
Vol.	-	-	322	230	334	249	330	224	281	240	273	261	215	210	244	229
PM Peak	16:00	17:00	17:00	16:00	15:00	17:00	17:00	17:00	16:00	16:00	12:00	12:00	12:00	12:00	16:00	16:00
Vol.	242	321	260	338	266	344	261	350	279	330	255	267	210	227	228	290

Tri-State Traffic Data, Inc.

610-466-1469

TSTData.com

Road: Rt. 772
Location: 530 ft N of Rt. 230
Counter: 35310 & 37027

Site Code: 1
Station ID:

Latitude: 40' 11172.0000 North
Longitude: 76' 50564.0000 West

Start	Monday, July 19, 2021		Tuesday, July 20, 2021		Wednesday, July 21, 2021		Thursday, July 22, 2021		Friday, July 23, 2021		Saturday, July 24, 2021		Sunday, July 25, 2021		Week Average	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	10	13	*	*	*	*	*	*	*	*	*	*	*	*	10	13
01:00	13	5	*	*	*	*	*	*	*	*	*	*	*	*	13	5
02:00	16	17	*	*	*	*	*	*	*	*	*	*	*	*	16	17
03:00	13	9	*	*	*	*	*	*	*	*	*	*	*	*	13	9
04:00	30	29	*	*	*	*	*	*	*	*	*	*	*	*	30	29
05:00	112	60	*	*	*	*	*	*	*	*	*	*	*	*	112	60
06:00	240	132	*	*	*	*	*	*	*	*	*	*	*	*	240	132
07:00	**294**	178	*	*	*	*	*	*	*	*	*	*	*	*	**294**	178
08:00	204	182	*	*	*	*	*	*	*	*	*	*	*	*	204	182
09:00	208	200	*	*	*	*	*	*	*	*	*	*	*	*	208	200
10:00	180	211	*	*	*	*	*	*	*	*	*	*	*	*	180	211
11:00	233	**225**	*	*	*	*	*	*	*	*	*	*	*	*	233	**225**
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	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	1553	1261	0	0	0	0	0	0	0	0	0	0	0	0	1553	1261
Day	2814		0		0		0		0		0		0		2814	
AM Peak	07:00	11:00	-	-	-	-	-	-	-	-	-	-	-	-	07:00	11:00
Vol.	294	225	-	-	-	-	-	-	-	-	-	-	-	-	294	225
PM Peak	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Comb. Total	6715	7324	7643	7733	7446	6003	4958	9623
ADT	ADT 6,833	AADT 6,833						

TMS Site 2848: Traffic Monitoring Report

Location Description: 0.1 mile north of PA 230.

Details

Type of Count	MACHINE CLASS
Type of Site	Portable
Schedule	1 TIME/YR
Duration	24 HRS
Frequency Cycle	03
Cycle Year	01

Location

County	LANCASTER (36)
Route	0772
Segment	0110
Offset	0950
Latitude	40.11256
Longitude	-76.50468

Map

Traffic Data

Hour	Volume	Trucks	Truck %	Volume Graph
12:00 AM	36	7	19.4	
01:00 AM	39	5	12.8	
02:00 AM	35	4	11.4	
03:00 AM	44	8	18.2	
04:00 AM	81	15	18.5	
05:00 AM	252	38	15.1	
06:00 AM	527	59	11.2	
07:00 AM	767	90	11.7	
08:00 AM	522	67	12.8	
09:00 AM	457	70	15.3	
10:00 AM	478	82	17.2	
11:00 AM	509	74	14.5	
12:00 PM	460	60	13	
01:00 PM	510	63	12.4	
02:00 PM	571	71	12.4	
03:00 PM	735	77	10.5	
04:00 PM	852	86	10.1	
05:00 PM	863	71	8.2	
06:00 PM	701	45	6.4	
07:00 PM	467	33	7.1	
08:00 PM	363	21	5.8	
09:00 PM	267	11	4.1	
10:00 PM	153	13	8.5	
11:00 PM	93	12	12.9	

APPENDIX D - INTERSECTION PHOTOGRAPHS

Mt. Joy Road (SR 0772) & Barbara Street - EB 50

Mt. Joy Road (SR 0772) & Barbara Street - EB 200

Mt. Joy Road (SR 0772) & Barbara Street - NB 50

Mt. Joy Road (SR 0772) & Barbara Street - NB 200

Mt. Joy Road (SR 0772) & Barbara Street - WB 50

Mt. Joy Road (SR 0772) & Barbara Street - WB 200

Mt. Joy Road (SR 0772) & Milton Grove Road - EB 50

Mt. Joy Road (SR 0772) & Milton Grove Road - EB 200

Mt. Joy Road (SR 0772) & Milton Grove Road - SB 50

Mt. Joy Road (SR 0772) & Milton Grove Road - SB 200

Mt. Joy Road (SR 0772) & Milton Grove Road - WB 50

Mt. Joy Road (SR 0772) & Milton Grove Road - WB 200

Mt. Joy Road (SR 0772) & Lefever Road - EB 50

Mt. Joy Road (SR 0772) & Lefever Road - EB 200

Mt. Joy Road (SR 0772) & Lefever Road - NB 50

Mt. Joy Road (SR 0772) & Lefever Road - NB 200

Mt. Joy Road (SR 0772) & Lefever Road - WB 50

Mt. Joy Road (SR 0772) & Lefever Road - WB 200

Mt. Joy Road (SR 0772) & Proposed Roundabout - EB 50

Mt. Joy Road (SR 0772) & Proposed Roundabout - EB 200

Mt. Joy Road (SR 0772) & Proposed Roundabout - WB 50

Mt. Joy Road (SR 0772) & Proposed Roundabout - EB 200

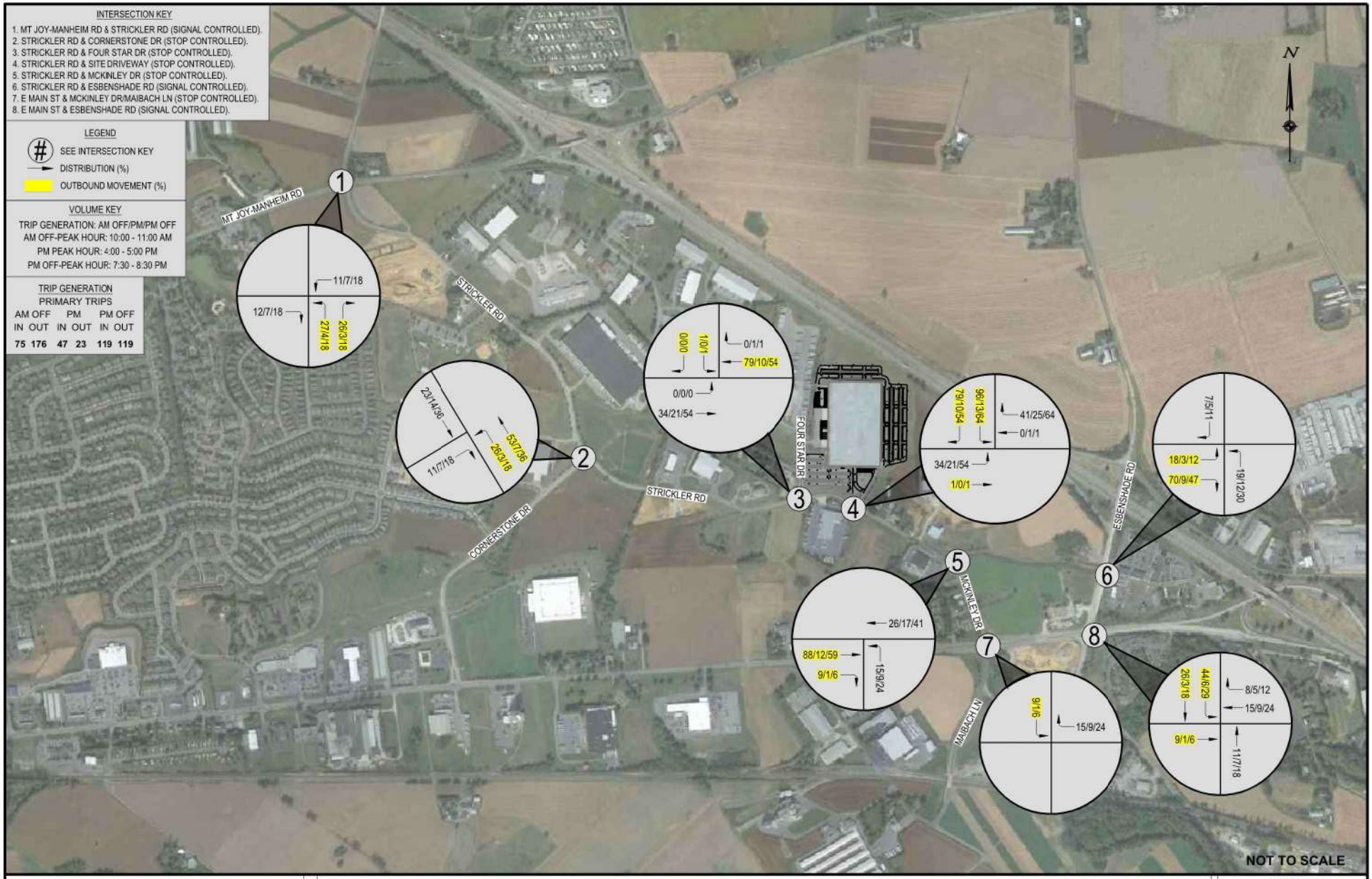
Mt. Joy Road (SR 0772) & Proposed Right-in/Right-out - EB 50

Mt. Joy Road (SR 0772) & Proposed Right-in/Right-out - EB 200

Mt. Joy Road (SR 0772) & Proposed Right-in/Right-out - WB 50

Mt. Joy Road (SR 0772) & Proposed Right-in/Right-out - WB 200

APPENDIX E - TRAFFIC VOLUME DEVELOPMENT CALCULATIONS



CESO
WWW.CESOINC.COM

DELIVERY STATION WEEKDAY PEAK HOUR GENERATED TRAFFIC VOLUMES (PRIMARY)

DPL7 - DELIVERY STATION DEVELOPMENT

RAPHO TOWNSHIP — LANCASTER COUNTY, PENNSYLVANIA

FIGURE	7.A
DATE:	03/23/2021
JOB NO.:	758253
DESIGN:	SKG
DRAWN:	SKG
CHECKED:	REM
PAGE:	34

SR 772 (Mount Joy Road)
Mount Joy Borough, Lancaster County

New Count Vol.

Day: Thursday | Total Vol.: 7733
Date: 7/15/2021 | Year: 2021

Hour	Direction 1	Direction 2	Hour Total
12:00 AM	17	17	34
01:00 AM	16	17	33
02:00 AM	19	14	33
03:00 AM	21	18	39
04:00 AM	38	27	65
05:00 AM	121	70	191
06:00 AM	218	130	348
07:00 AM	330	173	503
08:00 AM	269	209	478
09:00 AM	204	183	387
10:00 AM	225	213	438
11:00 AM	237	224	461
12:00 PM	235	232	467
01:00 PM	247	249	496
02:00 PM	203	260	463
03:00 PM	240	298	538
04:00 PM	258	318	576
05:00 PM	261	350	611
06:00 PM	260	250	510
07:00 PM	140	197	337
08:00 PM	139	199	338
09:00 PM	100	118	218
10:00 PM	40	63	103
11:00 PM	26	40	66

Old Count Vol.

Day : Thursday | Total Vol.: 9782
Date: 5/31/2018 | Year: 2018

Volume	Truck Vol.	Truck %	New Total
36	7	19.4	37
39	5	12.8	40
35	4	11.4	36
44	8	18.2	45
81	15	18.5	84
252	38	15.1	260
527	59	11.2	544
767	90	11.7	791
522	67	12.8	538
457	70	15.3	471
478	82	17.2	493
509	74	14.5	525
460	60	13	475
510	63	12.4	526
571	71	12.4	589
735	77	10.5	758
852	86	10.1	879
863	71	8.2	890
701	45	6.4	723
467	33	7.1	482
363	21	5.8	374
267	11	4.1	275
153	13	8.5	158
93	12	12.9	96

Growth Rate: 1.04 %

Vol. Diff.	% Diff.	
3	8.8	
7	19.7	
3	9.0	
6	15.1	
19	25.0	
69	30.6	
196	43.9	
288	44.5	AM Peak Hour: 7:00-8:00
60	11.9	% Diff. = 44.5
84	19.7	or 44.5%
55	11.8	
64	13.0	
8	1.6	
30	5.9	
126	24.0	
220	34.0	PM Peak Hour: 4:15-5:15
303	41.6	% Diff. = 40.52508
279	37.2	or 40.5%
213	34.6	
145	35.4	
36	10.2	
57	23.3	
55	42.0	
30	37.0	

Total New Vol. After Growth Rate: 10090

Avg. % Difference: 24.2 %

= Input

= Output

TMC COVID ADJUSTMENTS

MOUNT JOY ROAD AND BARBARA STREET

ALL AM VOLUMES INCREASED BY 44.5% (Mount Joy Road ATR)
ALL PM VOLUMES INCREASED BY 40.5% (Mount Joy Road ATR)

		EBT	EBR	WBL	WBT	NBL	NBR
EXISTING	7:00	99	0	9	33	3	11
	7:15	90	0	6	49	0	5
	7:30	106	2	5	48	1	13
	7:45	104	1	6	62	1	12
	TOTAL	399	3	26	192	5	41
ADJUSTED	7:00	143	0	13	48	4	16
	7:15	130	0	9	71	0	7
	7:30	153	3	7	69	1	19
	7:45	150	1	9	90	1	17
	TOTAL	**576**	**4**	**38**	**278**	**6**	**59**

		EBT	EBR	WBL	WBT	NBL	NBR
EXISTING	4:15	89	2	16	103	0	15
	4:30	88	3	14	135	2	7
	4:45	79	2	10	121	1	11
	5:00	96	2	14	114	10	7
	TOTAL	352	9	54	473	13	40
ADJUSTED	4:15	125	3	22	145	0	21
	4:30	124	4	20	190	3	10
	4:45	111	3	14	170	1	15
	5:00	135	3	20	160	14	10
	TOTAL	**495**	**13**	**76**	**665**	**18**	**56**

Turning Manual Counts collected Thursday August 17, 2021 at Elmcrest Blvd and Mount Joy Road

AM%/PM%

13.2% AM / 17.8% PM
Left Turns from TMC

86.8% AM / 81.4% PM
Right Turns from TMC

Milton Grove Road

5% In AM
9% In PM

9% Out AM
18% Out PM

4% Out AM
2% Out PM

13% Out AM
20% Out PM

80% In AM
68% In PM

Mount Joy Road

13% In AM
18% In PM

2% In AM
13% In PM

11.1% In AM
5.2% In PM

3.9% In AM
14.8% In PM

36.5% Out AM
33.6% Out PM

11.1% In AM
5.2% In PM

13% Out AM
20% Out PM

50.5% Out AM
46.4% Out PM

7% Out AM
8% Out PM

75% Out AM
67% Out PM

5% Out AM
5% Out PM

0% In AM
3% In PM

Barbara Street

Right-in / Right-out Access

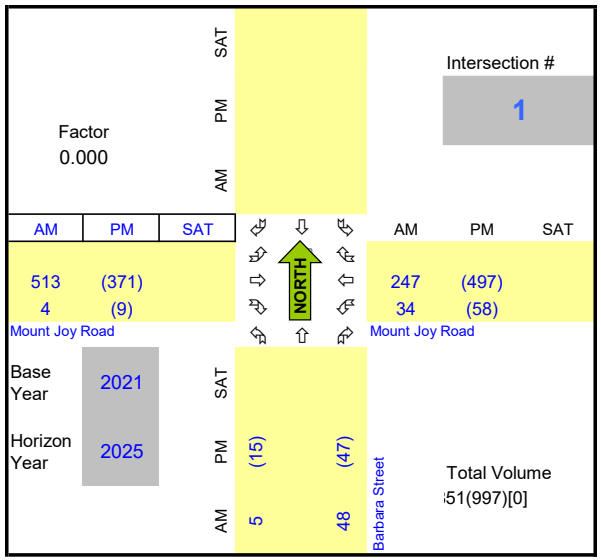
Full Access

Lefever Road

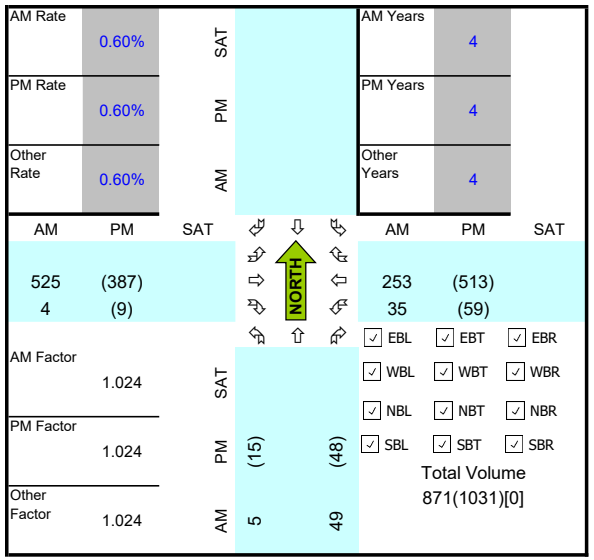
All trip distribution was based on existing TMC % and adjusted for project site.

Trip Distribution

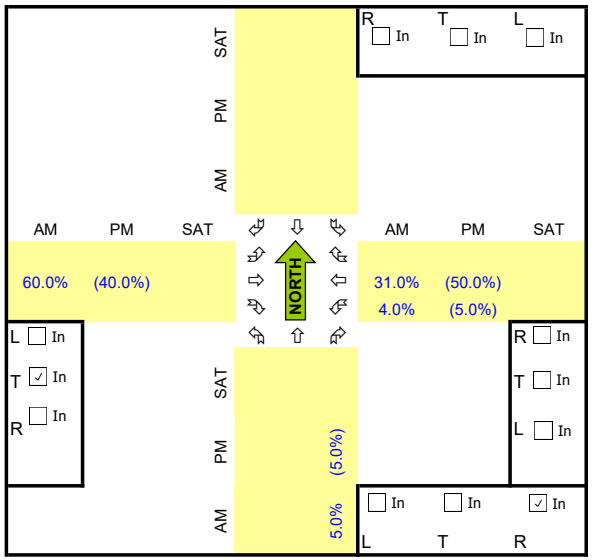
	AM	PM	Other
Enter	36	90	0
Exit	119	58	0



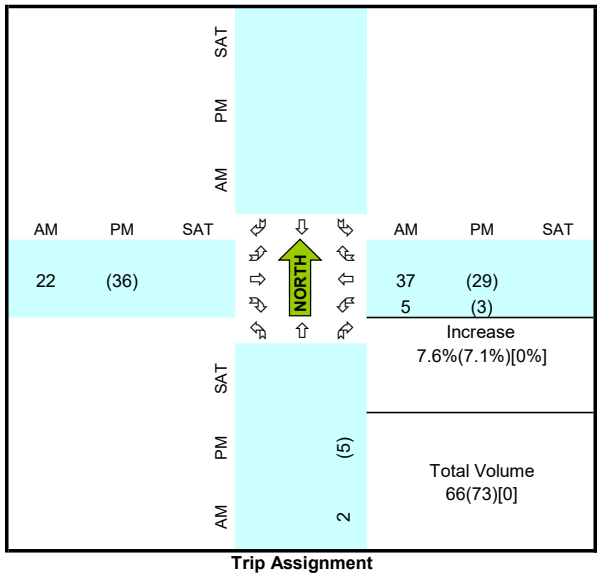
Existing 2021 Volumes



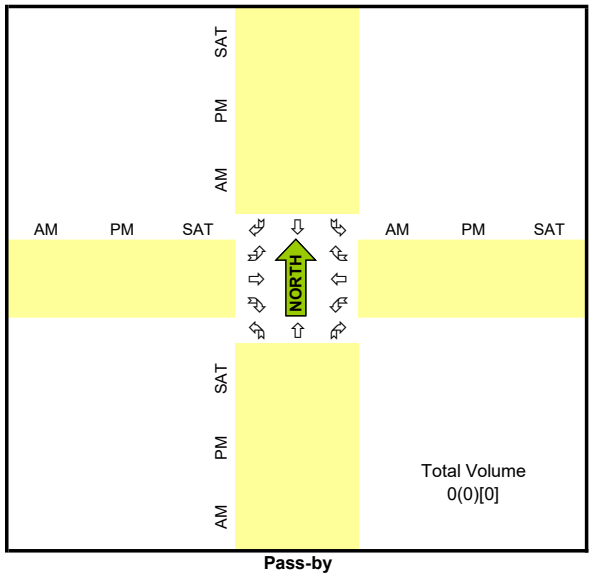
Projected 2025 Volumes without Development



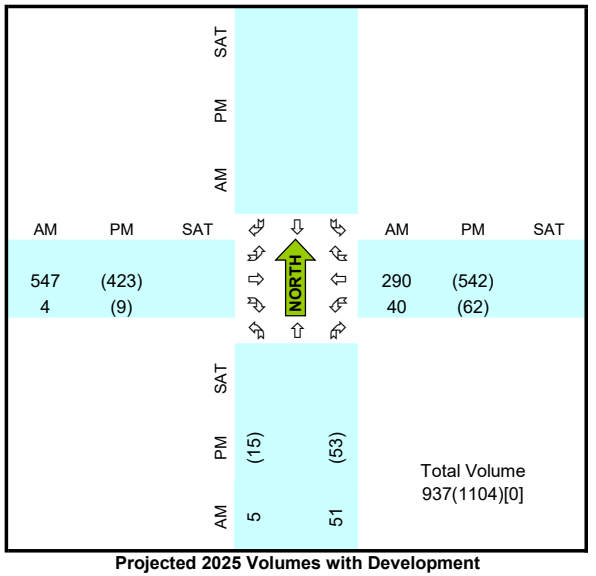
Trip Distribution



Trip Assignment

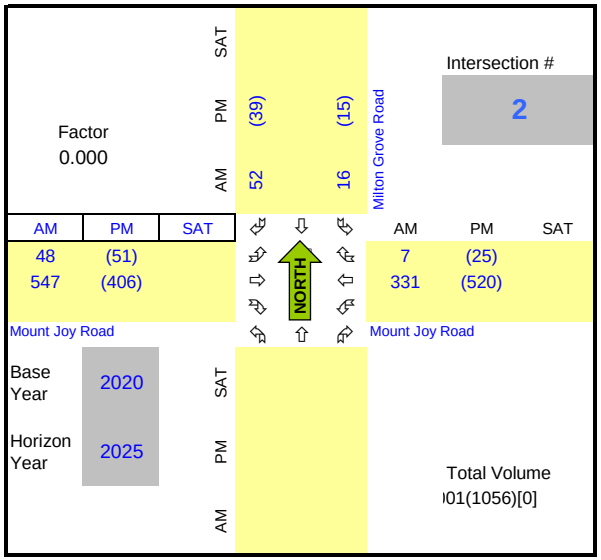


Pass-by

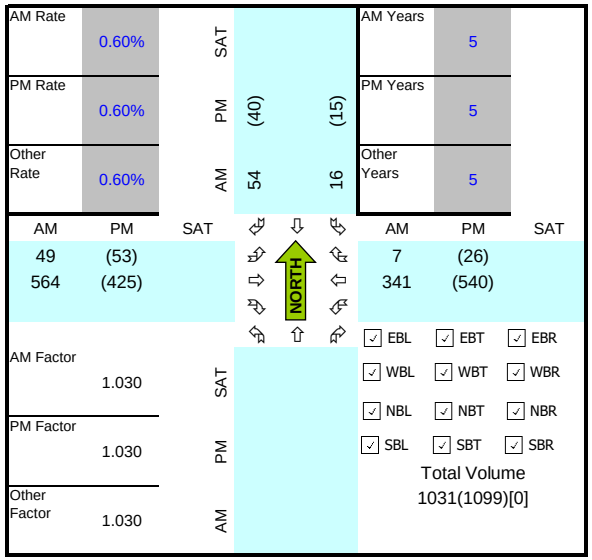


Projected 2025 Volumes with Development

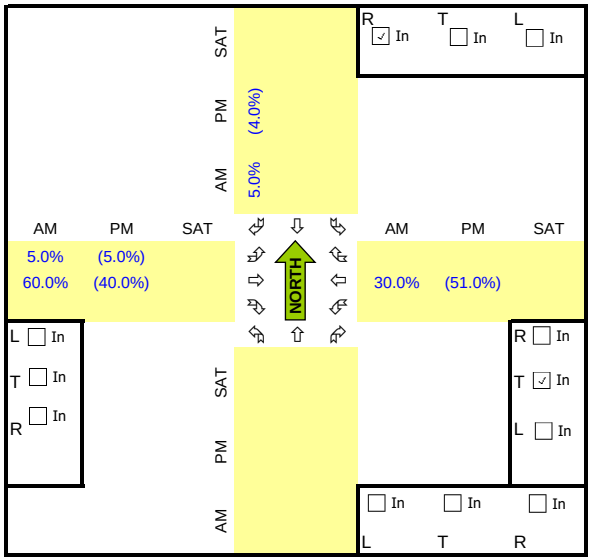
Mount Joy Road and /Barbara Street



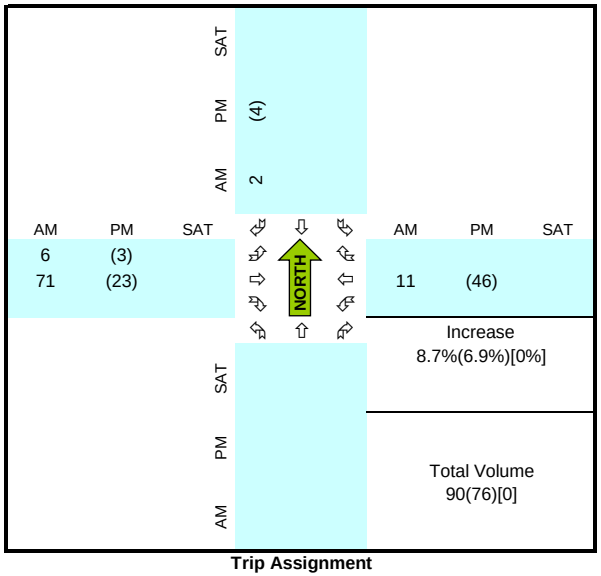
Existing 2020 Volumes



Projected 2025 Volumes without Development



Trip Distribution



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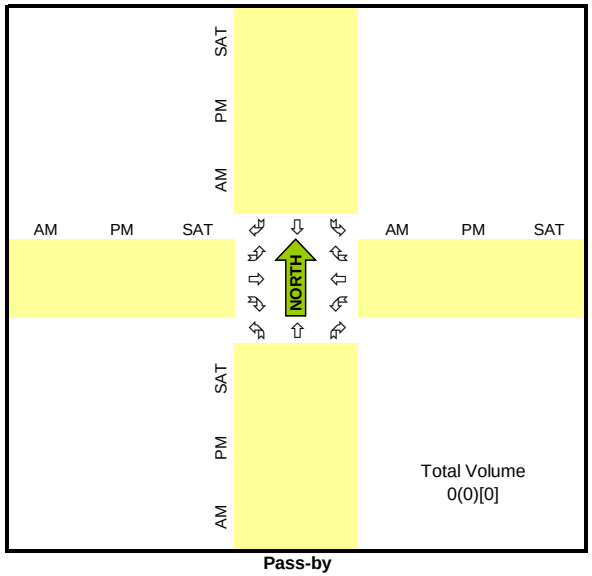
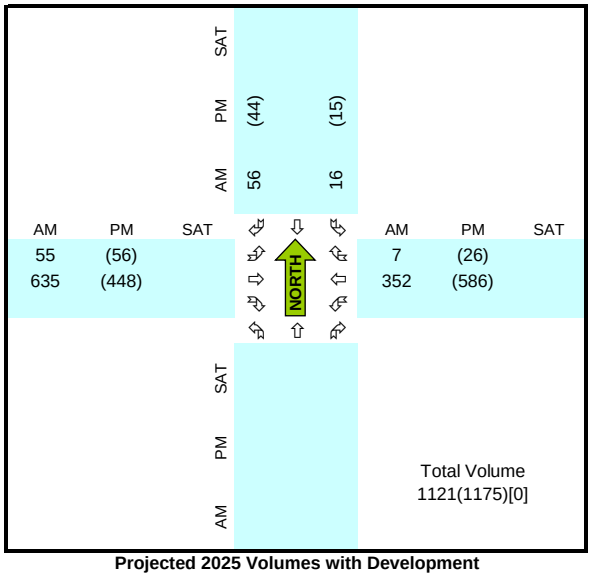
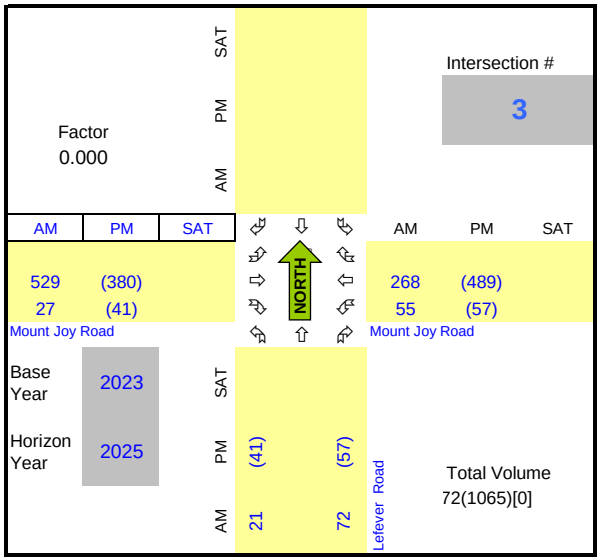


Pass-by

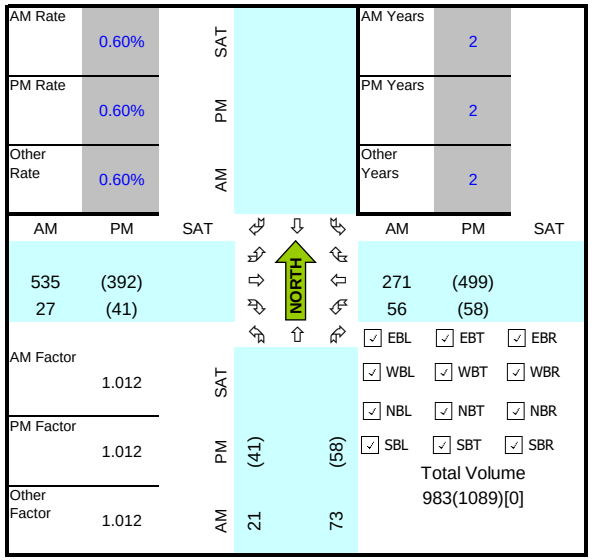


Projected 2025 Volumes with Development

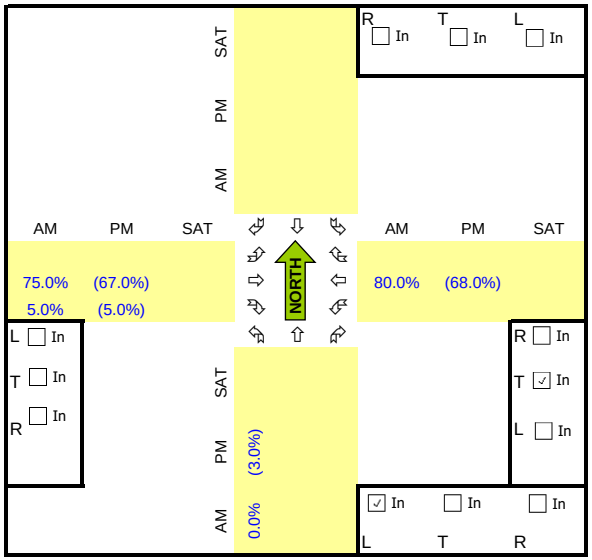
Mount Joy Road and Milton Grove Road/



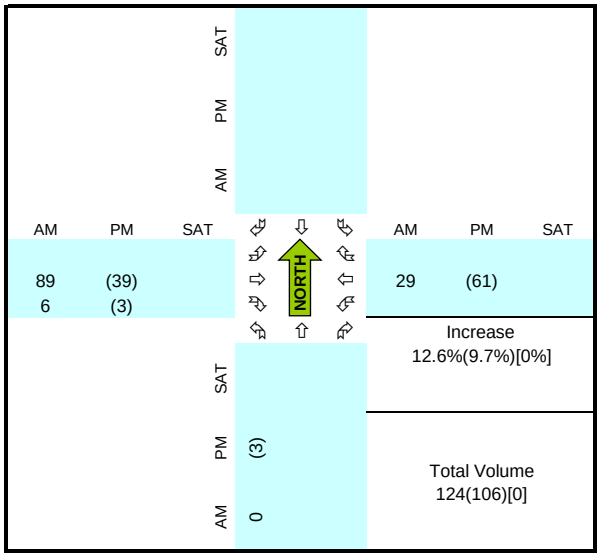
Existing 2023 Volumes



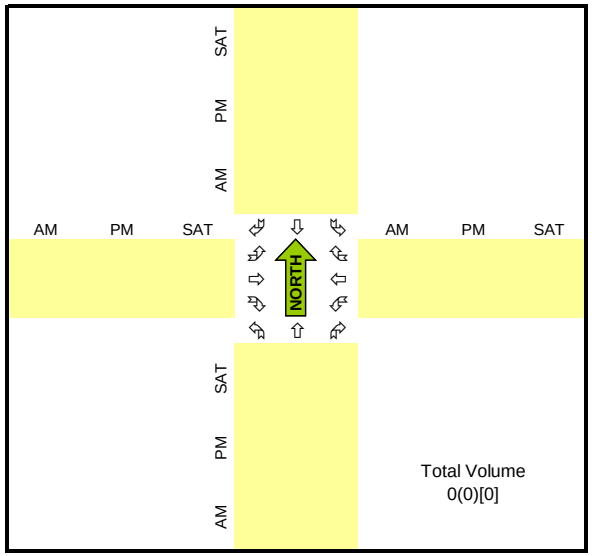
Projected 2025 Volumes without Development



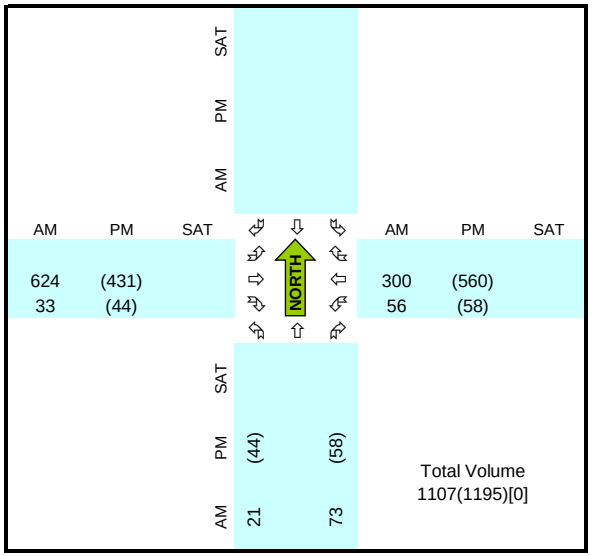
Trip Distribution



Trip Assignment

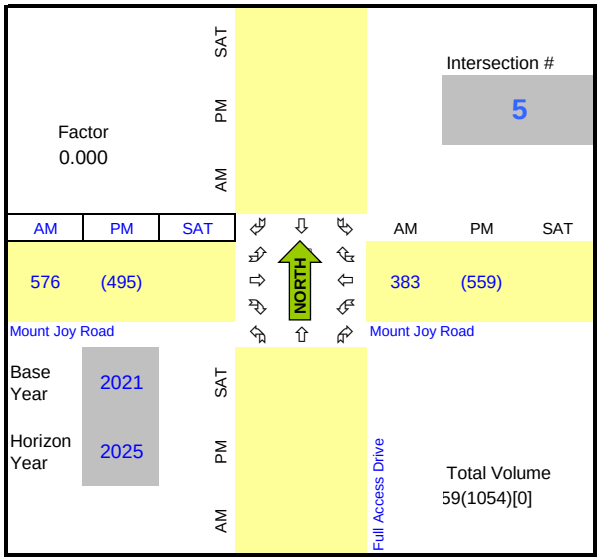


Pass-by

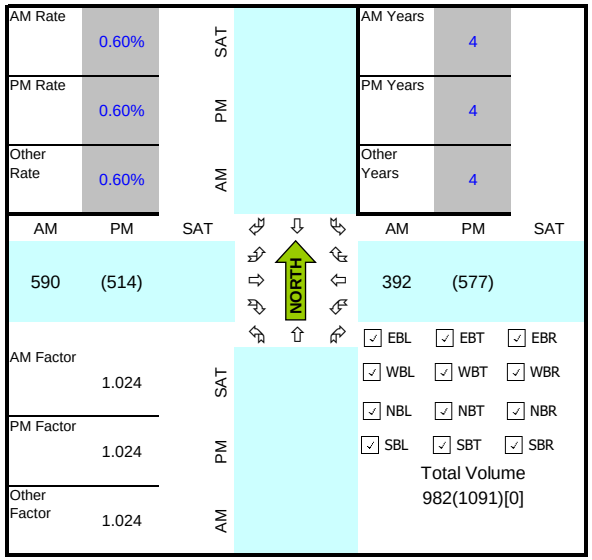


Projected 2025 Volumes with Development

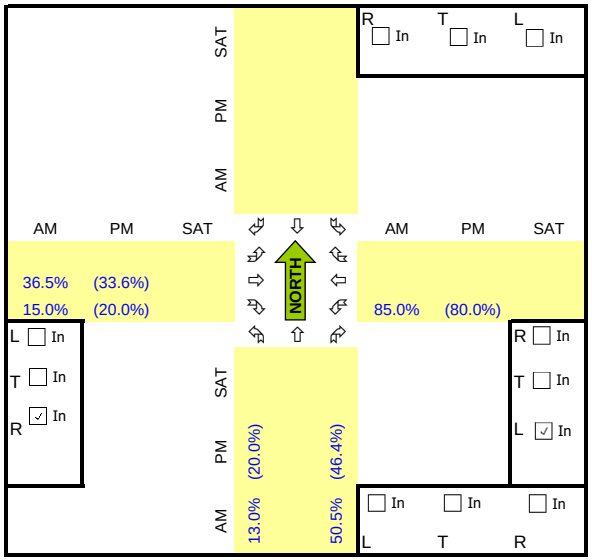
Mount Joy Road and /Lefever Road



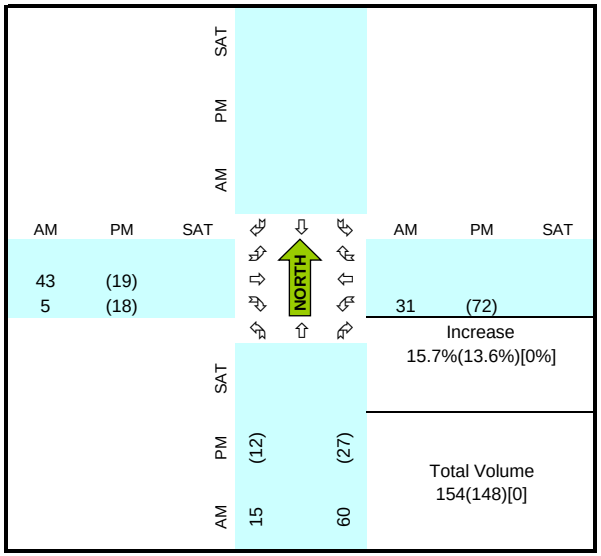
Existing 2021 Volumes



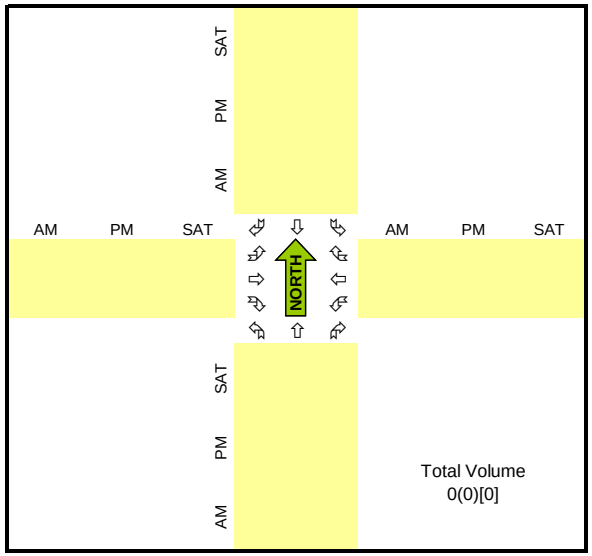
Projected 2025 Volumes without Development



Trip Distribution



Trip Assignment



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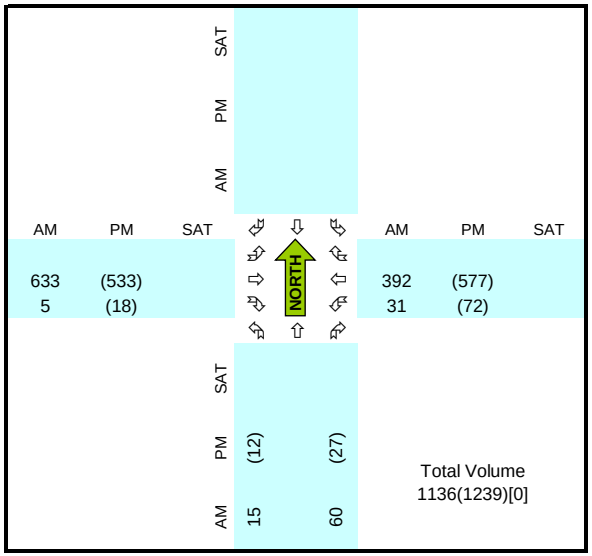
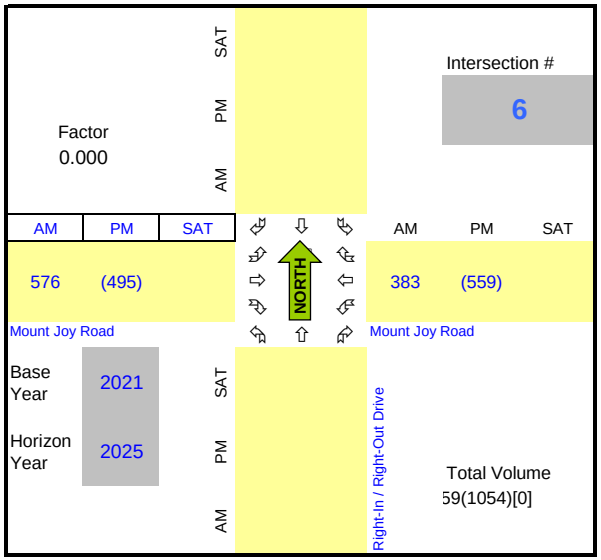
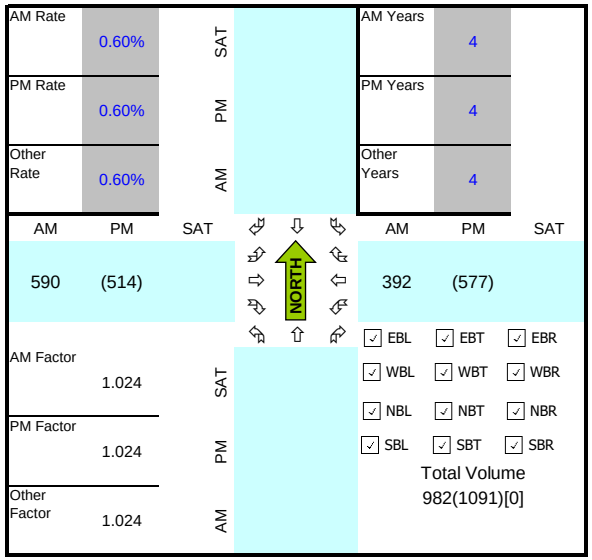


Projected 2025 Volumes with Development

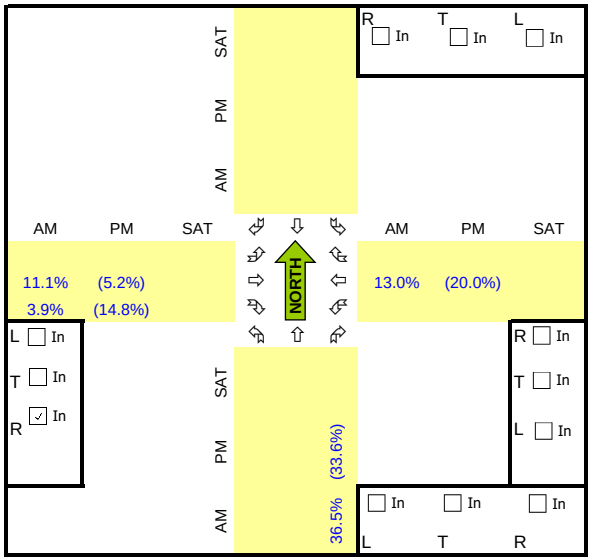
Mount Joy Road and /Full Access Drive



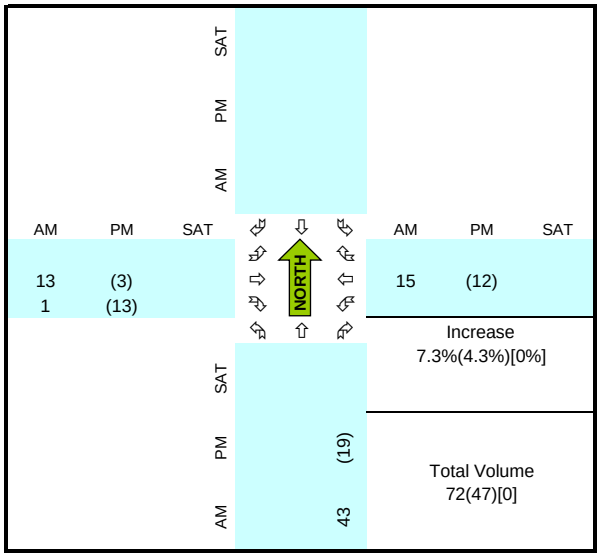
Existing 2021 Volumes



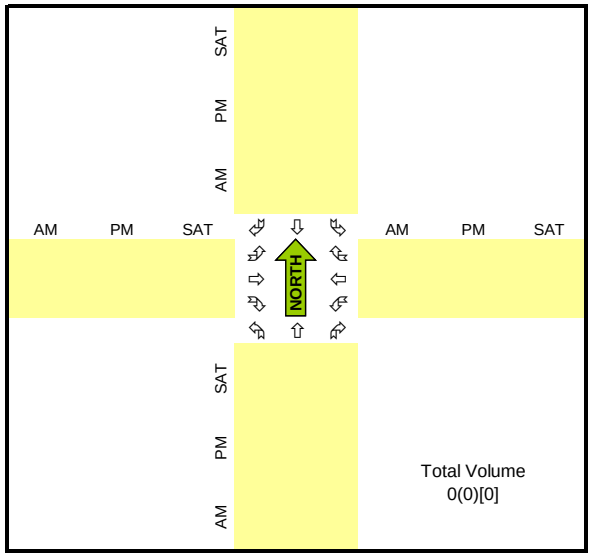
Projected 2025 Volumes without Development



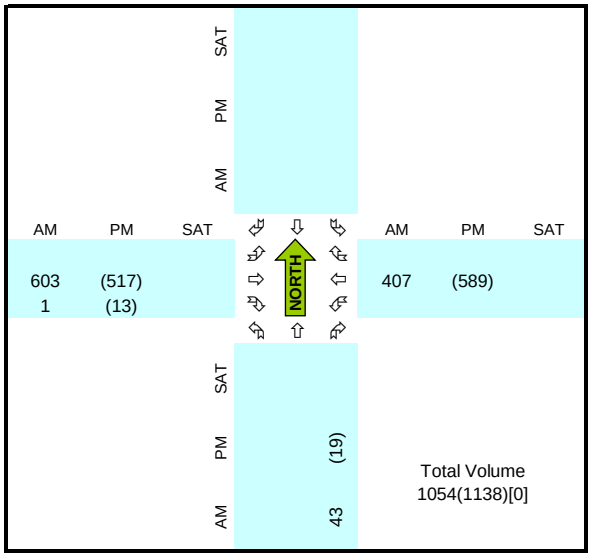
Trip Distribution



Trip Assignment



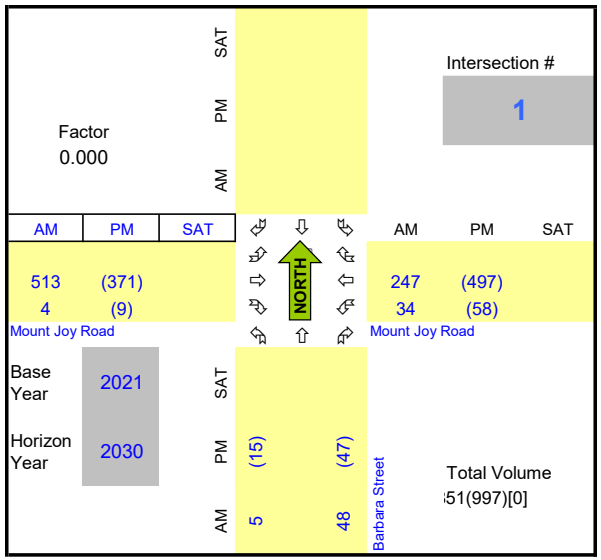
Pass-by



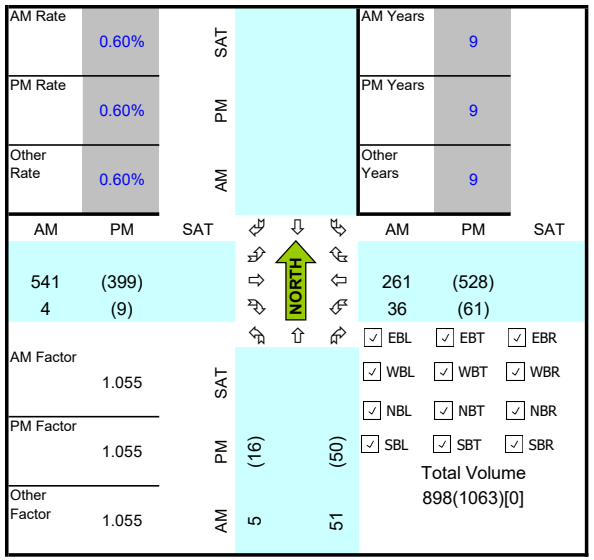
Projected 2025 Volumes with Development

Mount Joy Road and /Right-In / Right-Out Drive

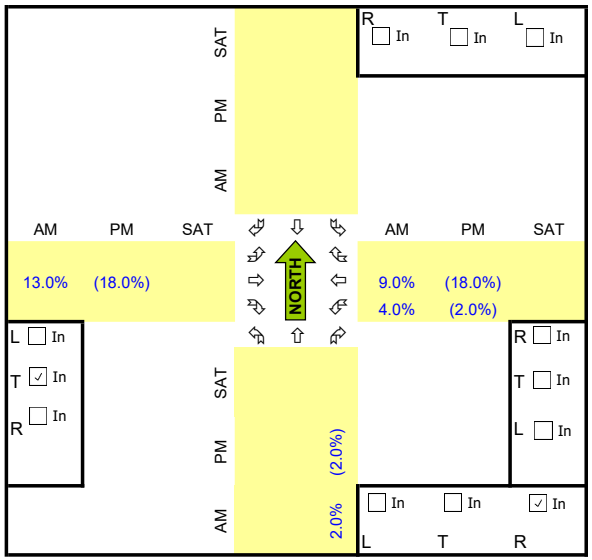
	AM	PM	Other
Enter	36	90	0
Exit	119	58	0



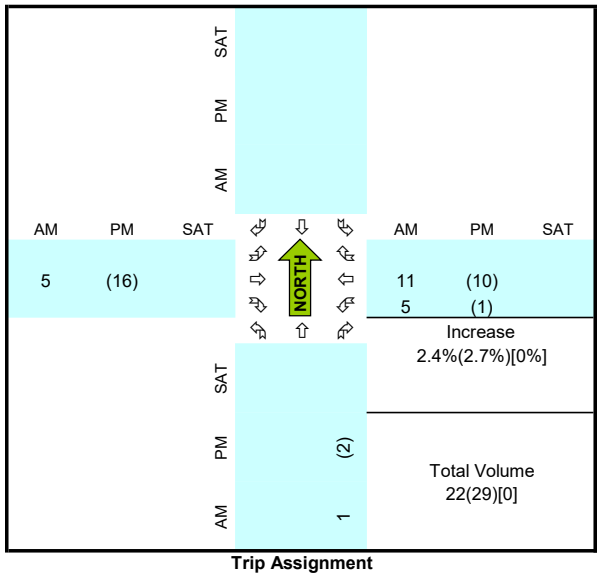
Existing 2021 Volumes



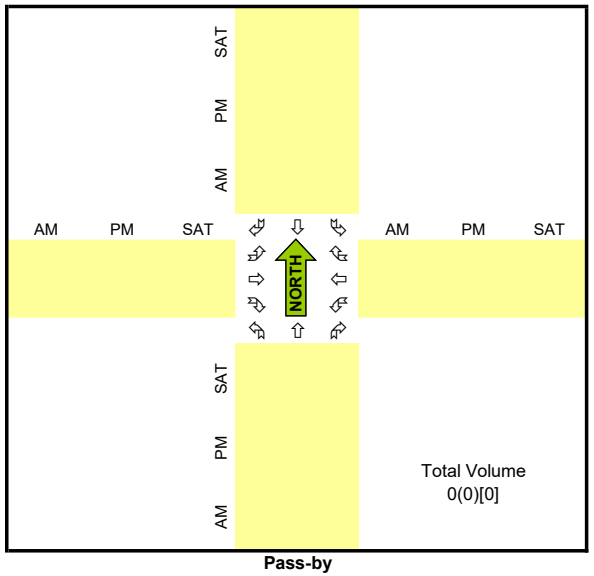
Projected 2030 Volumes without Development



Trip Distribution



Trip Assignment



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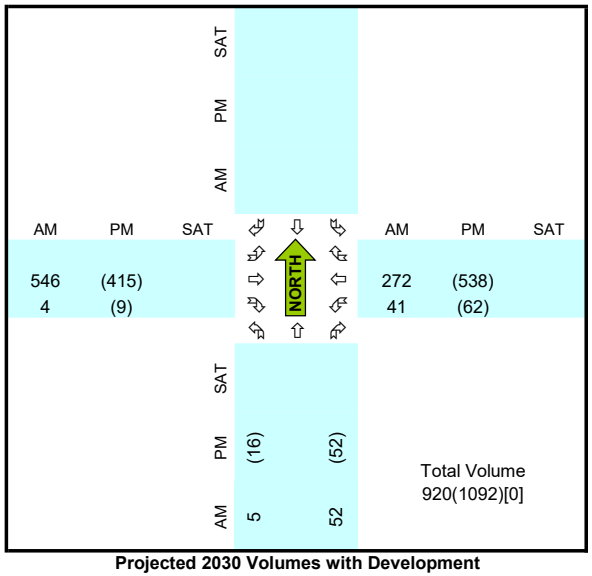
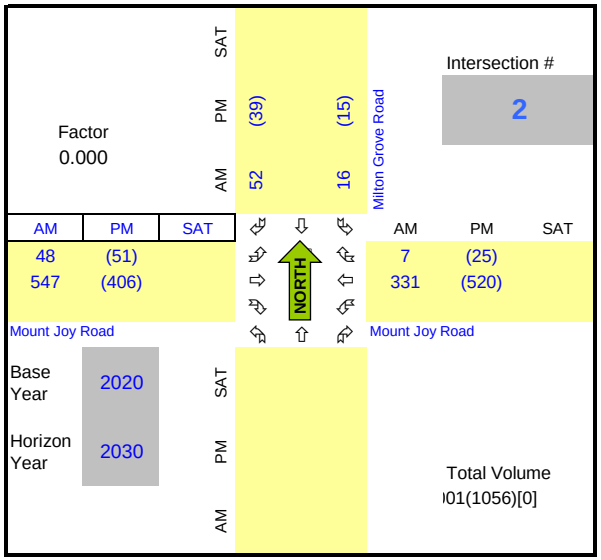
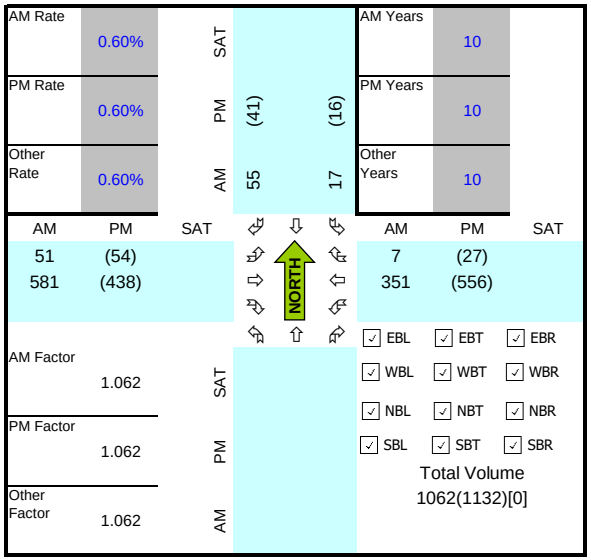


Projected 2030 Volumes with Development

Mount Joy Road and /Barbara Street



Existing 2020 Volumes



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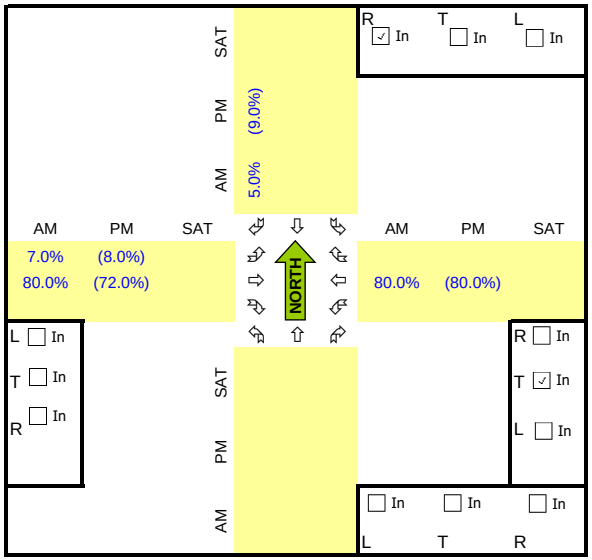
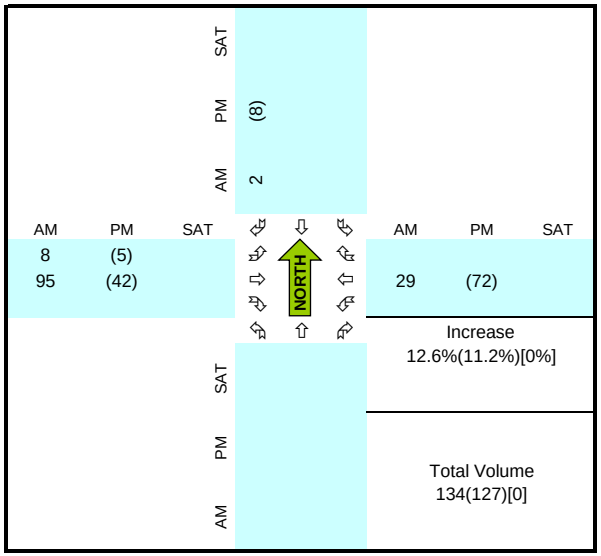


Trip Distribution



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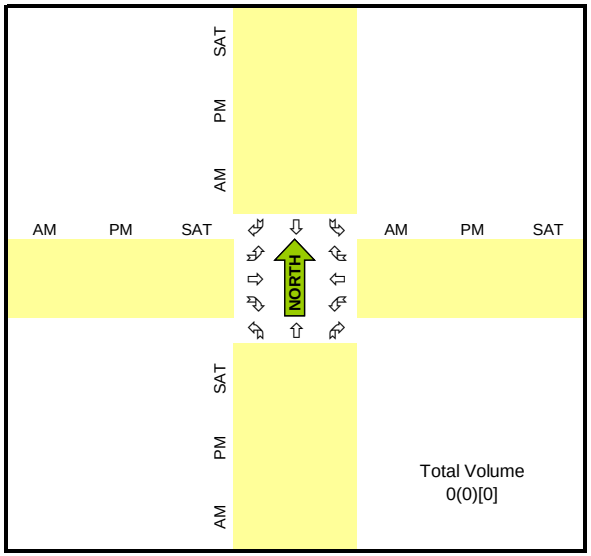
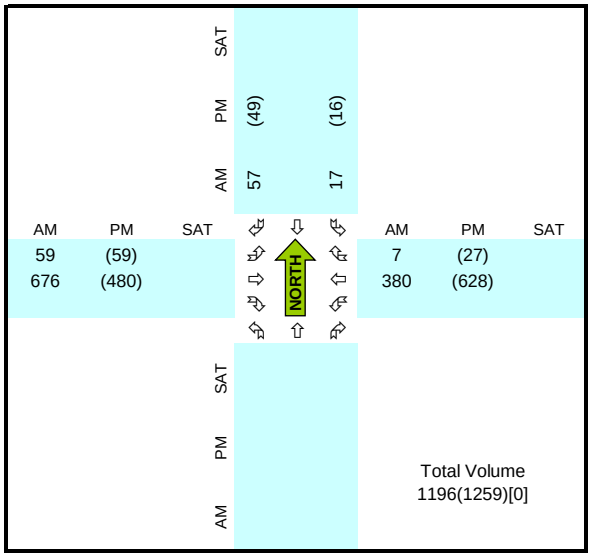
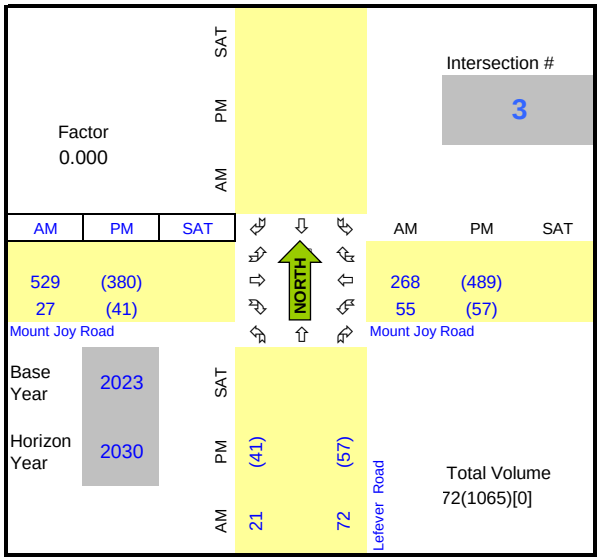


Pass-by

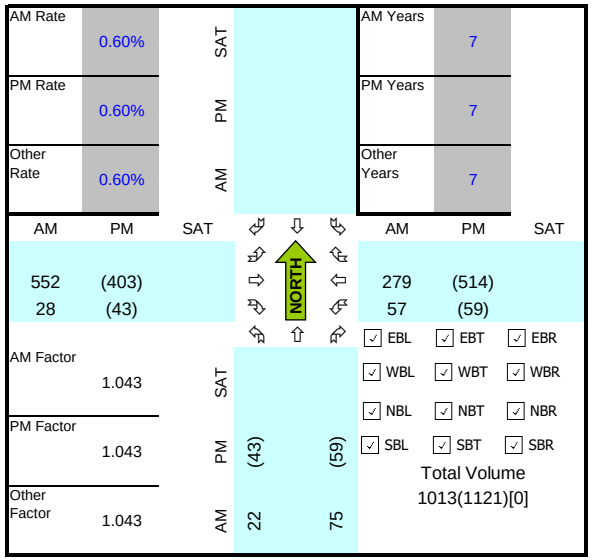


Projected 2030 Volumes with Development

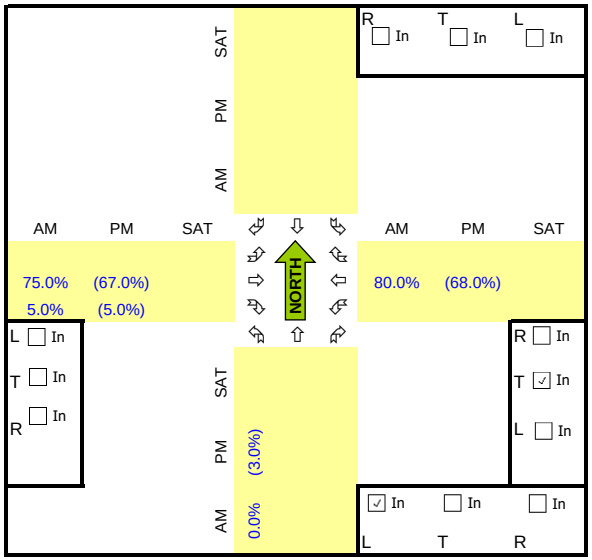
Mount Joy Road and Milton Grove Road/



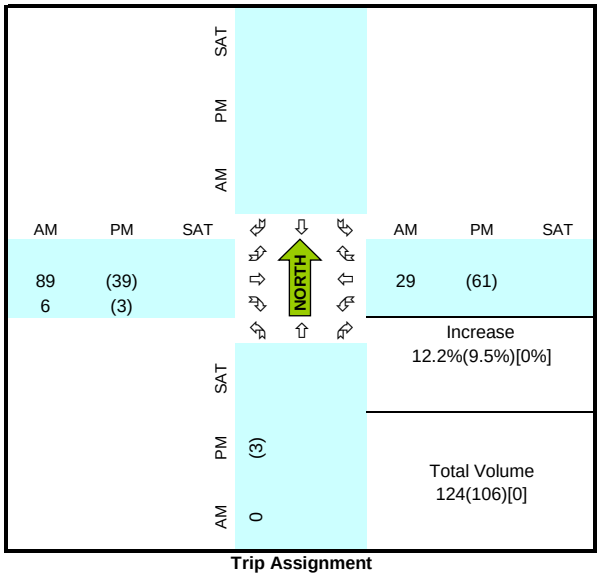
Existing 2023 Volumes



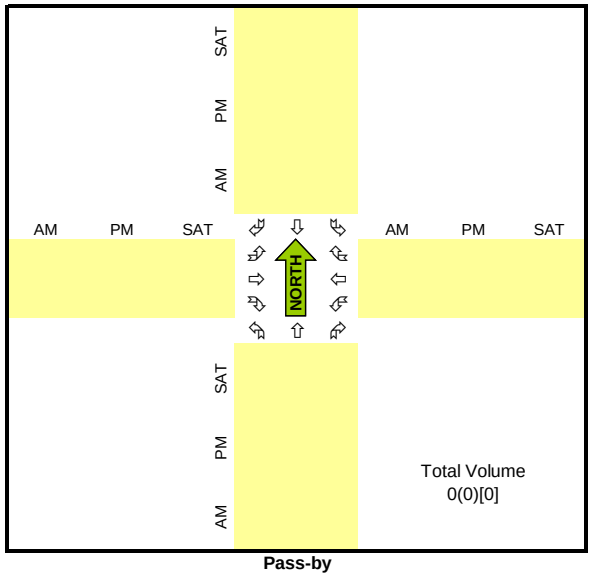
Projected 2030 Volumes without Development



Trip Distribution



Trip Assignment



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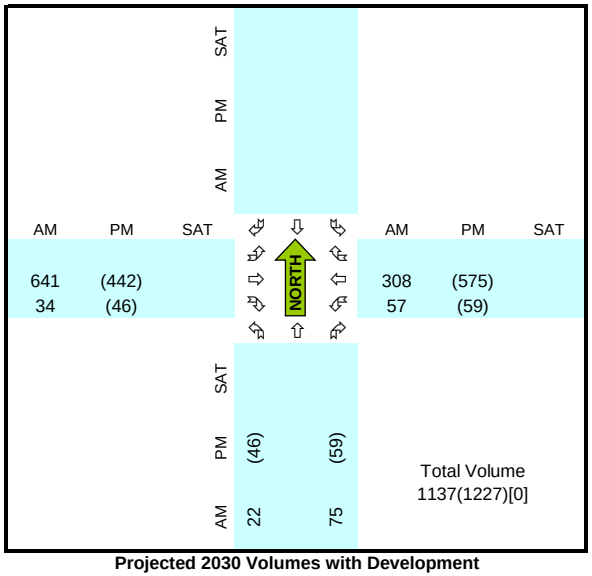
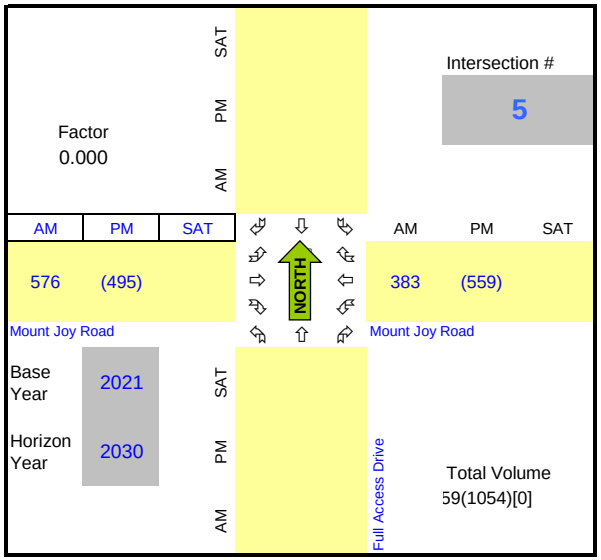
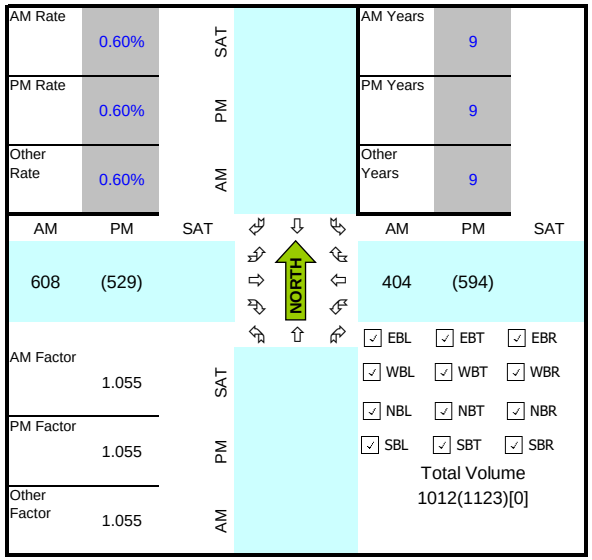


Projected 2030 Volumes with Development

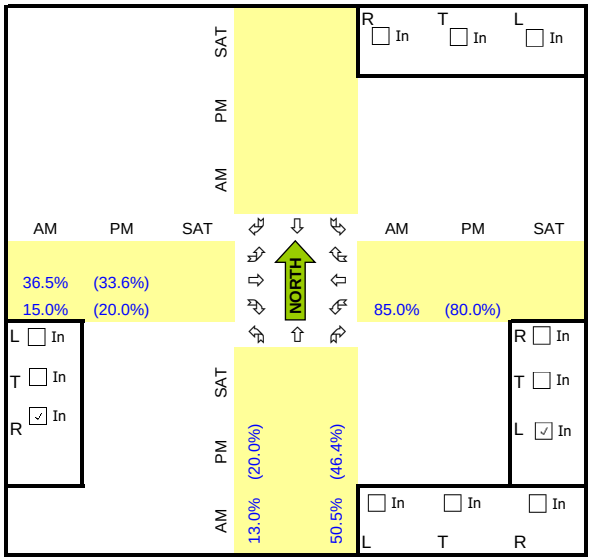
Mount Joy Road and /Lefever Road



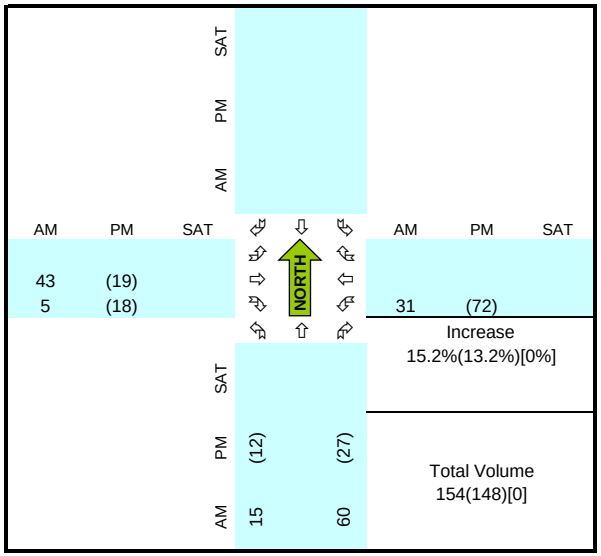
Existing 2021 Volumes



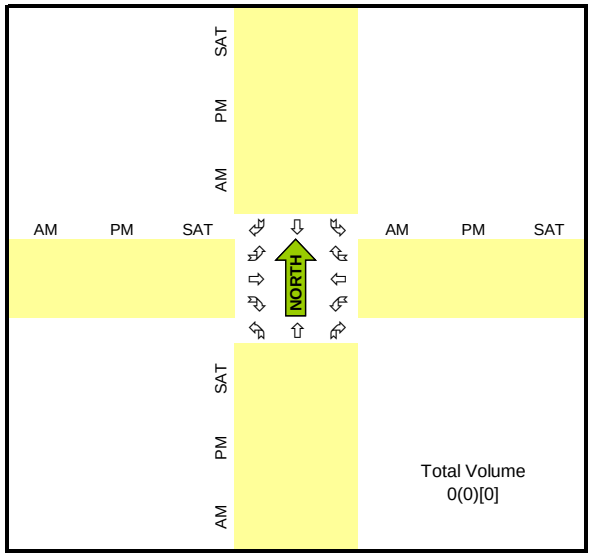
Projected 2030 Volumes without Development



Trip Distribution



Trip Assignment



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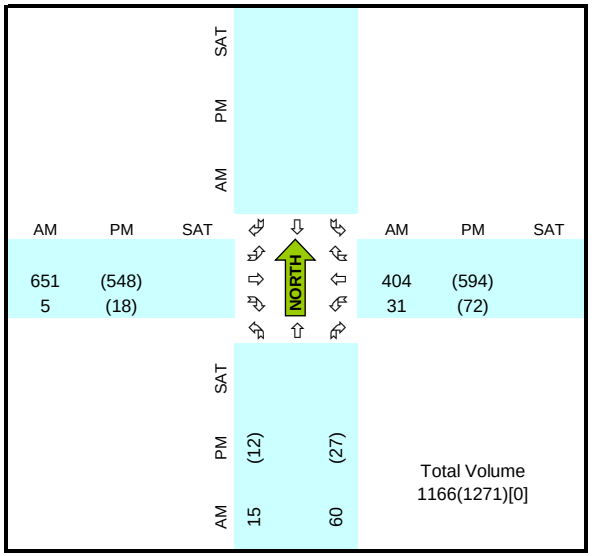
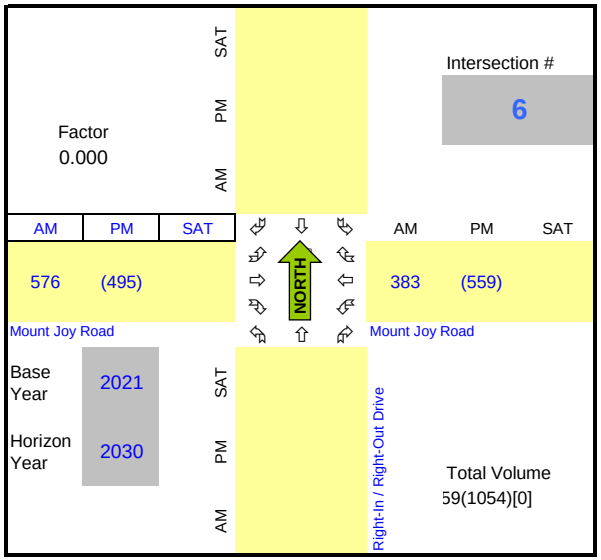
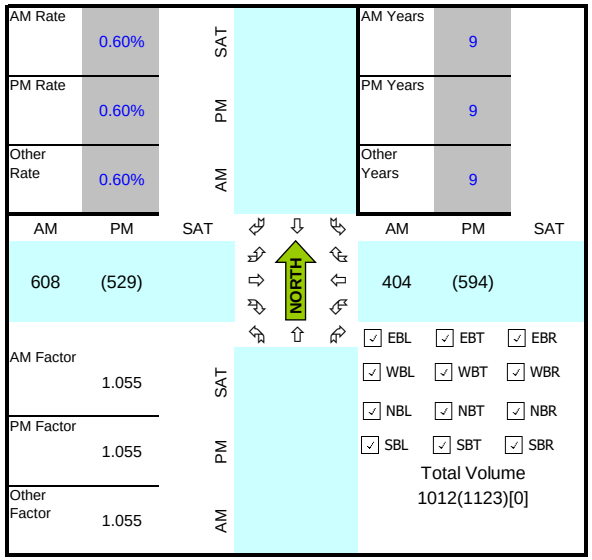


Projected 2030 Volumes with Development

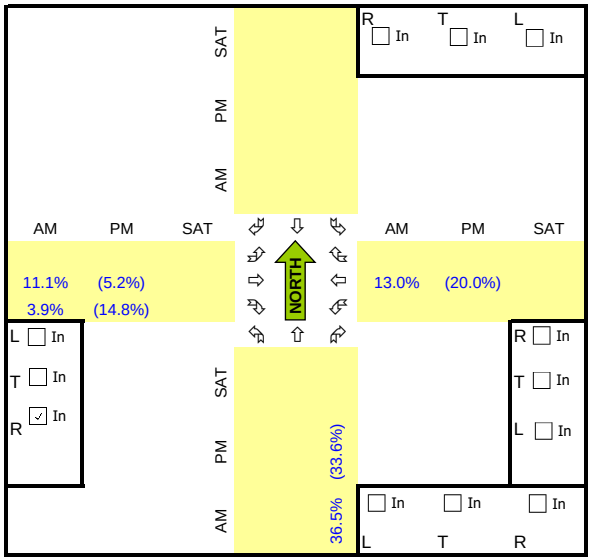
Mount Joy Road and /Full Access Drive



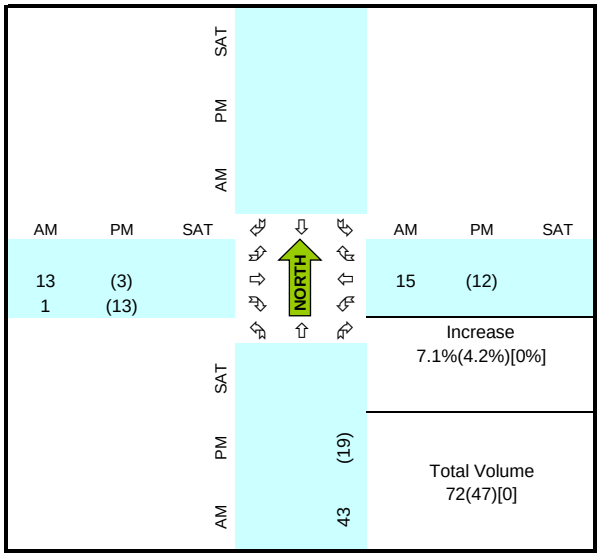
Existing 2021 Volumes



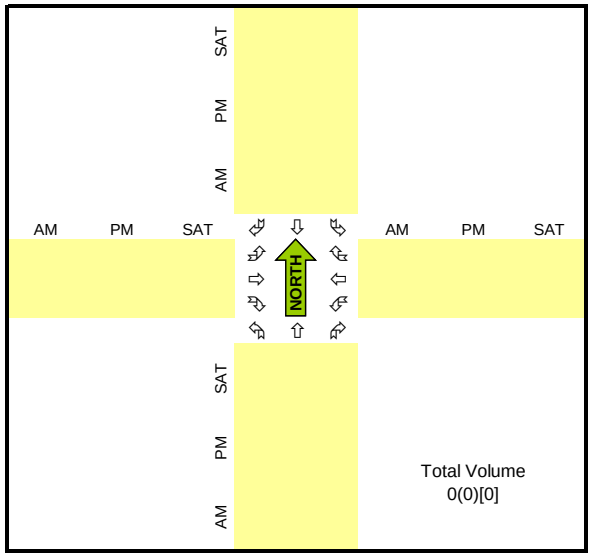
Projected 2030 Volumes without Development



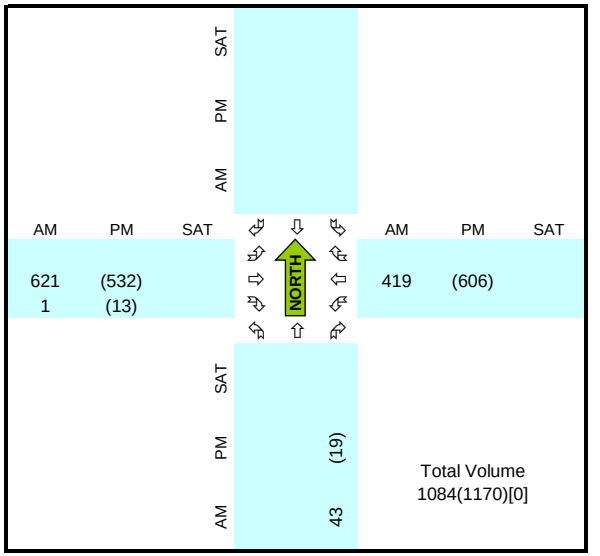
Trip Distribution



Trip Assignment



Pass-by



Projected 2030 Volumes with Development

Mount Joy Road and /Right-In / Right-Out Drive

APPENDIX F - EXISTING (2021) LOS CONDITIONS

Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	19.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.023

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	5	48	513	4	34	247
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.80	4.10	0.00	7.70	5.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	48	513	4	34	247
Peak Hour Factor	0.8950	0.8950	0.8950	0.8950	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	13	143	1	9	69
Total Analysis Volume [veh/h]	6	54	573	4	38	276
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.10	0.01	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	19.83	12.59	0.00	0.00	9.99	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.41	0.41	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	10.32	10.32	0.00	0.00	3.95	3.95
d_A, Approach Delay [s/veh]	13.32		0.00		1.21	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.24					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	23.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.080

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	16	52	48	547	331	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	52	48	547	331	7
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	14	13	145	88	2
Total Analysis Volume [veh/h]	17	55	51	580	351	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.08	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.34	11.34	9.22	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.54	0.54	0.18	0.18	0.00	0.00
95th-Percentile Queue Length [ft/ln]	13.61	13.61	4.47	4.47	0.00	0.00
d_A, Approach Delay [s/veh]	14.17		0.74		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.40					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	26.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.119

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	21	72	529	27	55	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.20	4.30	0.00	5.40	9.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	21	72	529	27	55	268
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	21	151	8	16	77
Total Analysis Volume [veh/h]	24	82	605	31	63	307
Pedestrian Volume [ped/h]	0		0		0	

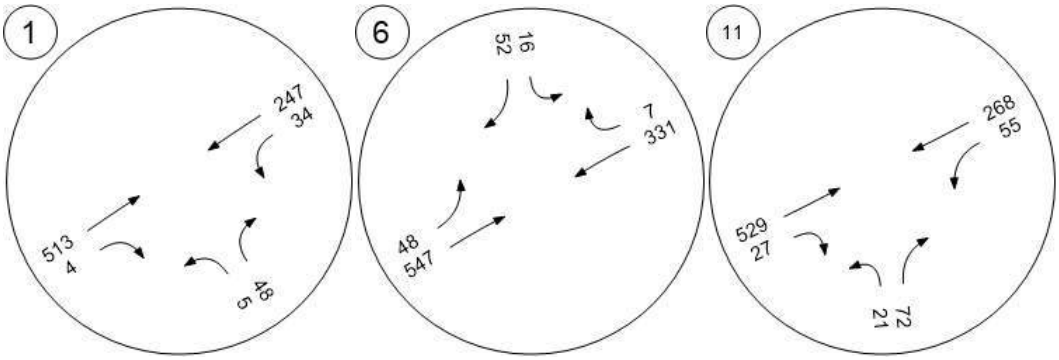
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

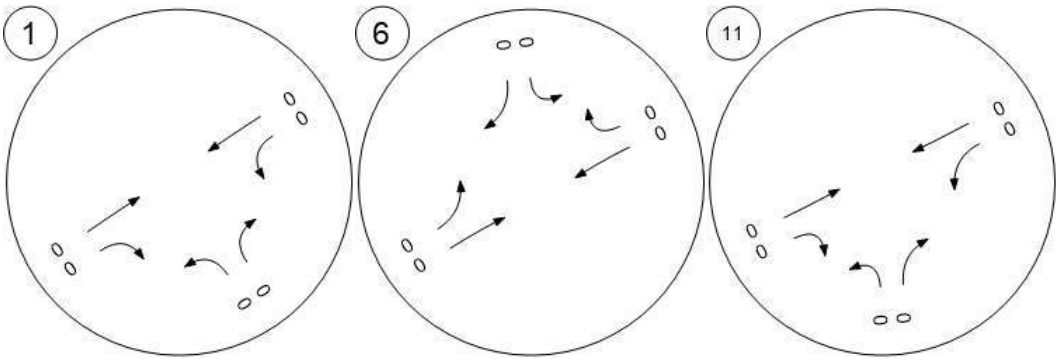
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.16	0.01	0.00	0.09	0.00
d_M, Delay for Movement [s/veh]	26.42	15.59	0.00	0.00	10.45	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.12	1.12	0.00	0.00	0.29	0.29
95th-Percentile Queue Length [ft/ln]	27.98	27.98	0.00	0.00	7.13	7.13
d_A, Approach Delay [s/veh]	18.04		0.00		1.78	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.31					
Intersection LOS	D					

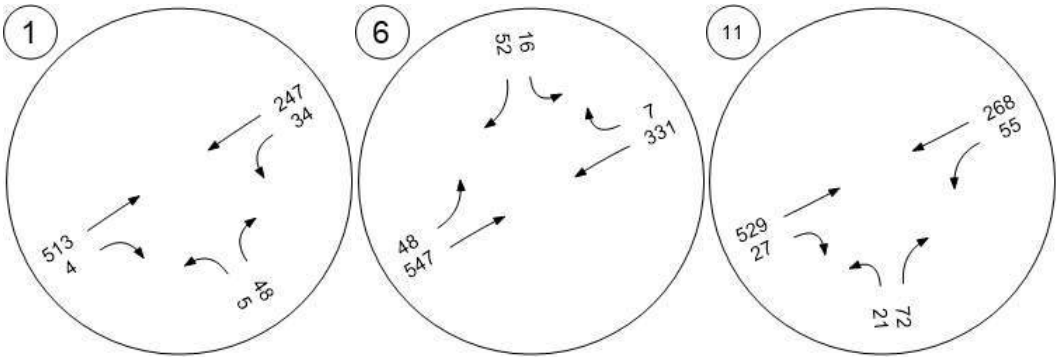
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	24.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.081

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	47	371	9	58	497
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	1.70	0.00	11.10	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	4	0
Total Hourly Volume [veh/h]	15	47	378	9	62	497
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	12	100	2	16	131
Total Analysis Volume [veh/h]	16	50	400	10	66	526
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.07	0.00	0.00	0.08	0.01
d_M, Delay for Movement [s/veh]	24.66	11.77	0.00	0.00	9.49	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.54	0.54	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	13.46	13.46	0.00	0.00	6.16	6.16
d_A, Approach Delay [s/veh]	14.90		0.00		1.06	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.51					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.085

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	39	51	406	520	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	15	39	51	406	520	25
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	10	14	108	138	7
Total Analysis Volume [veh/h]	16	41	54	431	551	27
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.07	0.07	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	25.96	13.37	10.11	0.00	0.00	0.00
Movement LOS	D	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.56	0.56	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft/ln]	13.94	13.94	5.74	5.74	0.00	0.00
d_A, Approach Delay [s/veh]	16.91		1.13		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.35					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	76.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.452

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	32	80	478	41	101	670
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.50	1.80	0.00	2.80	1.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	0	4
Total Hourly Volume [veh/h]	32	80	485	41	101	674
Peak Hour Factor	0.9020	0.9020	0.9020	0.9020	0.9020	0.9020
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	22	134	11	28	187
Total Analysis Volume [veh/h]	35	89	538	45	112	747
Pedestrian Volume [ped/h]	0		0		0	

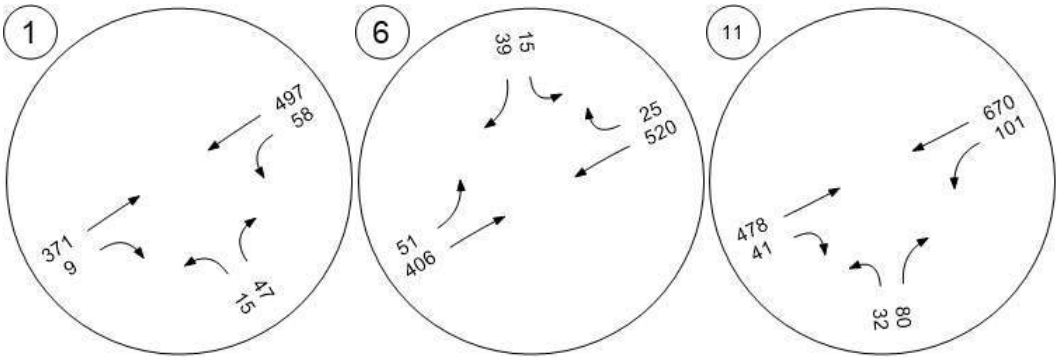
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

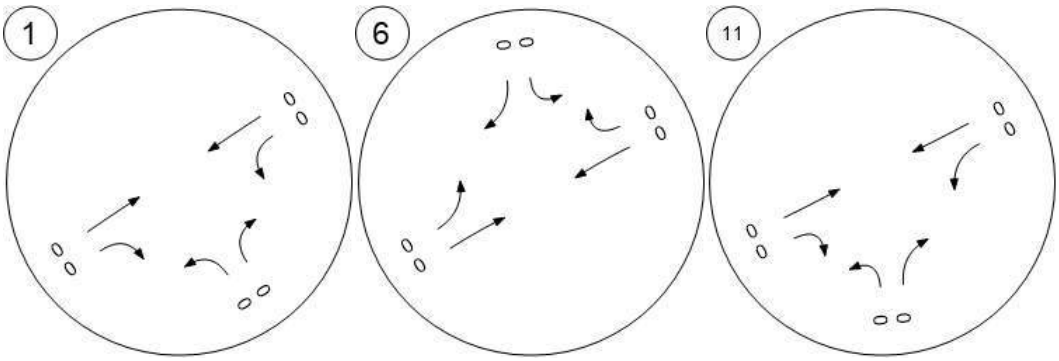
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.45	0.16	0.01	0.00	0.15	0.01
d_M, Delay for Movement [s/veh]	76.12	36.04	0.00	0.00	10.60	0.00
Movement LOS	F	E	A	A	B	A
95th-Percentile Queue Length [veh/ln]	3.49	3.49	0.00	0.00	0.52	0.52
95th-Percentile Queue Length [ft/ln]	87.31	87.31	0.00	0.00	12.98	12.98
d_A, Approach Delay [s/veh]	47.35		0.00		1.38	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	4.51					
Intersection LOS	F					

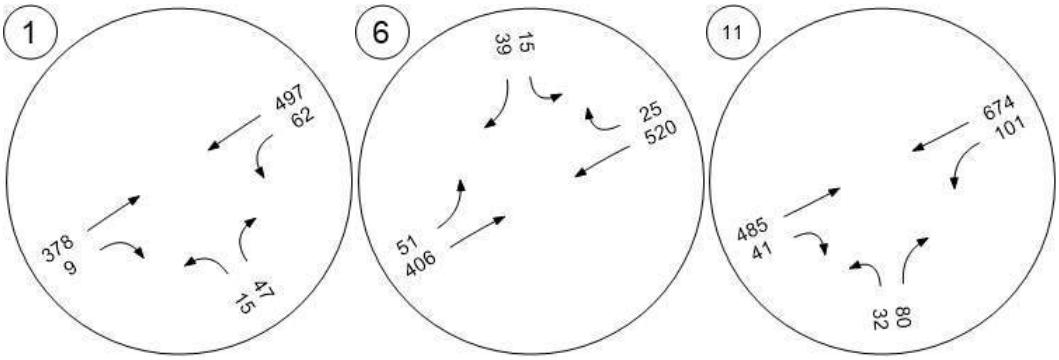
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



APPENDIX G - PROJECTED (2025) NO BUILD & BUILD CONDITIONS

Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	25.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	6	59	576	4	38	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.80	4.10	0.00	7.70	5.70
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	61	600	4	40	290
Peak Hour Factor	0.8950	0.8950	0.8950	0.8950	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	17	168	1	11	81
Total Analysis Volume [veh/h]	7	68	670	4	45	324
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.14	0.01	0.00	0.06	0.00
d_M, Delay for Movement [s/veh]	25.05	14.30	0.00	0.00	10.49	0.00
Movement LOS	D	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.64	0.64	0.00	0.00	0.21	0.21
95th-Percentile Queue Length [ft/ln]	15.89	15.89	0.00	0.00	5.13	5.13
d_A, Approach Delay [s/veh]	15.31		0.00		1.28	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.45					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.094

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	16	52	48	547	331	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0530	1.0530	1.0530	1.0530	1.0530	1.0530
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	55	51	576	349	7
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	14	153	93	2
Total Analysis Volume [veh/h]	18	58	54	611	370	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.08	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	25.45	11.79	9.30	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.63	0.63	0.19	0.19	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.66	15.66	4.83	4.83	0.00	0.00
d_A, Approach Delay [s/veh]	15.02		0.76		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.47					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	28.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.133

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	21	72	529	27	55	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.20	4.30	0.00	5.40	9.30
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	75	551	28	57	279
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	21	158	8	16	80
Total Analysis Volume [veh/h]	25	86	630	32	65	319
Pedestrian Volume [ped/h]	0		0		0	

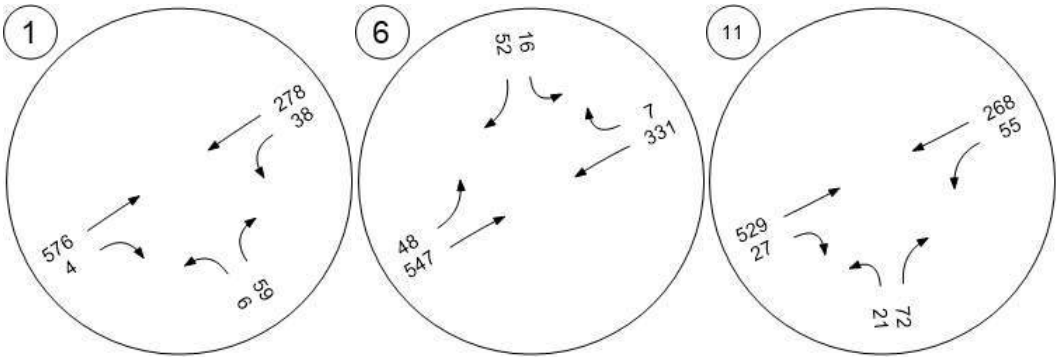
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

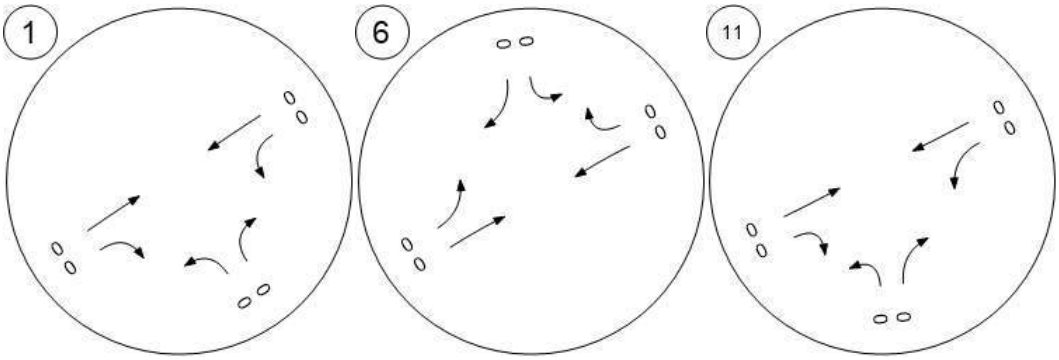
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.17	0.01	0.00	0.09	0.00
d_M, Delay for Movement [s/veh]	28.52	16.55	0.00	0.00	10.60	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.27	1.27	0.00	0.00	0.30	0.30
95th-Percentile Queue Length [ft/ln]	31.80	31.80	0.00	0.00	7.55	7.55
d_A, Approach Delay [s/veh]	19.25		0.00		1.79	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.44					
Intersection LOS	D					

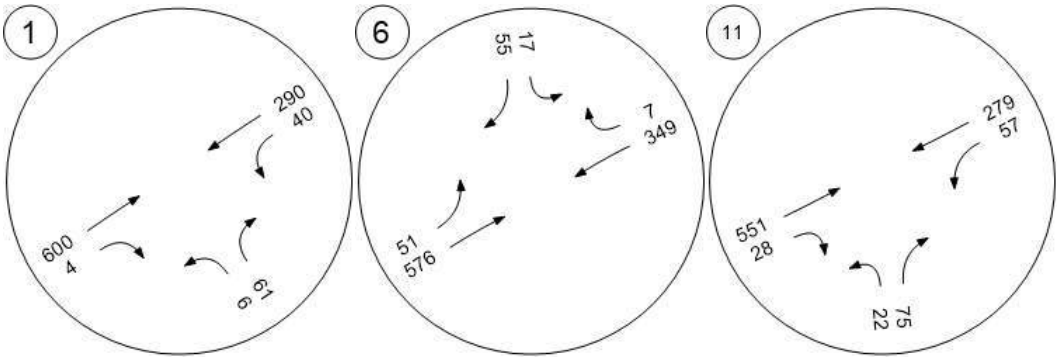
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	50.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.216

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	18	56	495	13	76	665
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	1.70	0.00	11.10	1.50
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	4	0
Total Hourly Volume [veh/h]	19	58	523	14	83	693
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	138	4	22	183
Total Analysis Volume [veh/h]	20	61	553	15	88	733
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.11	0.01	0.00	0.12	0.01
d_M, Delay for Movement [s/veh]	50.79	18.30	0.00	0.00	10.32	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.36	1.36	0.00	0.00	0.39	0.39
95th-Percentile Queue Length [ft/ln]	34.03	34.03	0.00	0.00	9.71	9.71
d_A, Approach Delay [s/veh]	26.32		0.00		1.11	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.07					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	29.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.102

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	39	51	406	520	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0530	1.0530	1.0530	1.0530	1.0530	1.0530
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	7	4	0
Total Hourly Volume [veh/h]	16	41	54	435	552	26
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	11	14	115	146	7
Total Analysis Volume [veh/h]	17	43	57	461	585	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.08	0.08	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	29.08	14.25	10.29	0.00	0.00	0.00
Movement LOS	D	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.66	0.66	0.25	0.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	16.51	16.51	6.27	6.27	0.00	0.00
d_A, Approach Delay [s/veh]	18.45		1.13		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.42					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	97.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	32	80	478	41	101	670
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.50	1.80	0.00	2.80	1.90
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	0	4
Total Hourly Volume [veh/h]	33	83	505	43	105	702
Peak Hour Factor	0.9020	0.9020	0.9020	0.9020	0.9020	0.9020
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	23	140	12	29	195
Total Analysis Volume [veh/h]	37	92	560	48	116	778
Pedestrian Volume [ped/h]	0		0		0	

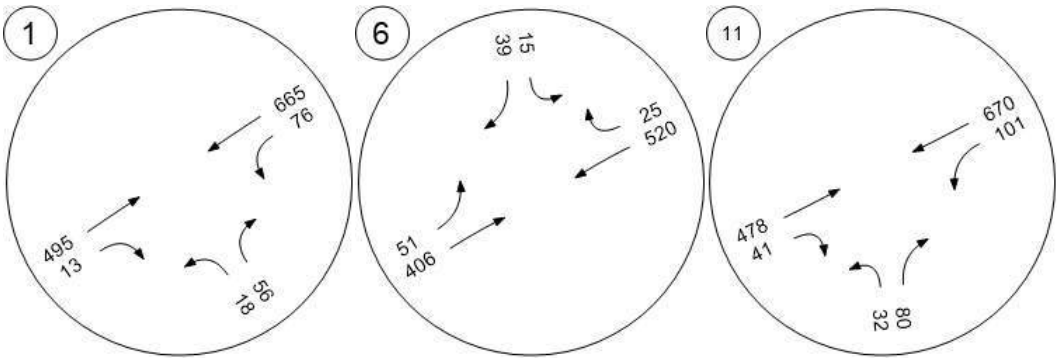
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

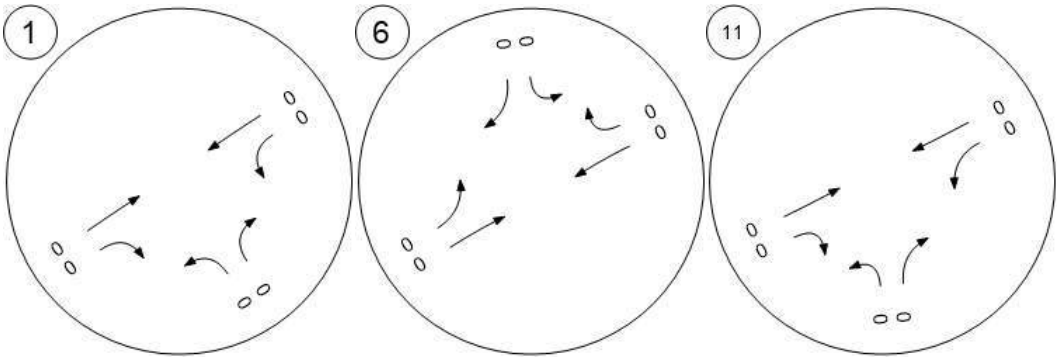
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.55	0.17	0.01	0.00	0.16	0.01
d_M, Delay for Movement [s/veh]	97.00	50.48	0.00	0.00	10.77	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	4.46	4.46	0.00	0.00	0.55	0.55
95th-Percentile Queue Length [ft/ln]	111.62	111.62	0.00	0.00	13.85	13.85
d_A, Approach Delay [s/veh]	63.82		0.00		1.40	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	5.81					
Intersection LOS	F					

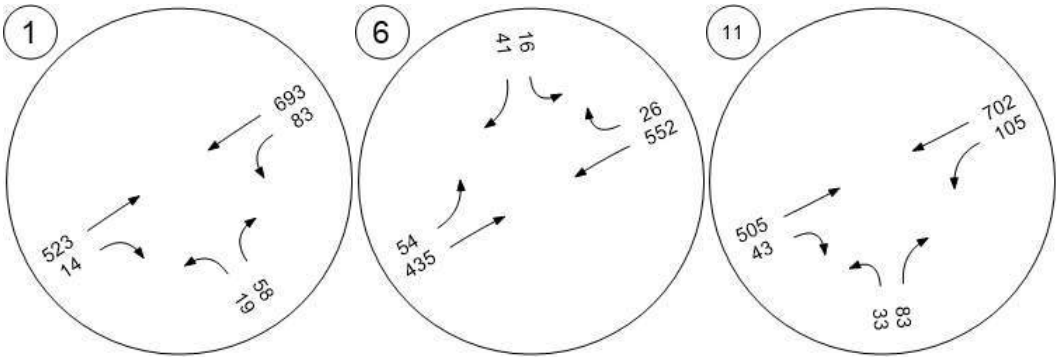
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	26.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.038

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	6	59	576	4	38	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.80	4.10	0.00	7.70	5.70
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	5	0	5	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	62	605	4	45	301
Peak Hour Factor	0.8950	0.8950	0.8950	0.8950	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	17	169	1	13	84
Total Analysis Volume [veh/h]	7	69	676	4	50	336
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.14	0.01	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	26.20	14.46	0.00	0.00	10.56	0.00
Movement LOS	D	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.66	0.66	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	16.45	16.45	0.00	0.00	5.77	5.77
d_A, Approach Delay [s/veh]	15.54		0.00		1.37	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.50					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	32.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.123

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	16	52	48	547	331	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0530	1.0530	1.0530	1.0530	1.0530	1.0530
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	8	95	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	57	59	671	378	7
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	16	178	100	2
Total Analysis Volume [veh/h]	18	60	63	712	401	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.09	0.07	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	32.19	12.83	9.46	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.78	0.78	0.23	0.23	0.00	0.00
95th-Percentile Queue Length [ft/ln]	19.59	19.59	5.85	5.85	0.00	0.00
d_A, Approach Delay [s/veh]	17.30		0.77		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	36.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.169

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	21	72	529	27	55	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.20	4.30	0.00	5.40	9.30
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	89	6	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	75	640	34	57	308
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	21	183	10	16	88
Total Analysis Volume [veh/h]	25	86	732	39	65	352
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.20	0.01	0.00	0.10	0.00
d_M, Delay for Movement [s/veh]	36.20	20.13	0.00	0.00	11.18	0.00
Movement LOS	E	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.64	1.64	0.00	0.00	0.33	0.33
95th-Percentile Queue Length [ft/ln]	40.92	40.92	0.00	0.00	8.33	8.33
d_A, Approach Delay [s/veh]	23.75		0.00		1.74	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.59					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 12: Right-in / Right-out Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.100

Intersection Setup

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	12.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	1.00		4.00		-3.50	
Crosswalk	No		No		No	

Volumes

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	576	0	0	383
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.10	0.00	0.00	1.90
Growth Factor	1.0000	1.0420	1.0420	1.0420	1.0000	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	43	2	4	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	43	602	4	0	415
Peak Hour Factor	1.0000	0.9000	0.9000	0.9000	1.0000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	167	1	0	115
Total Analysis Volume [veh/h]	0	48	669	4	0	461
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.10	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	13.30	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.33	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.26	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.30		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Full Access Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	31.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.113

Intersection Setup

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	1.00		7.00		3.00	
Crosswalk	Yes		No		No	

Volumes

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	576	0	0	383
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.10	0.00	0.00	1.90
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	60	43	2	31	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	60	643	2	31	399
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	17	179	1	9	111
Total Analysis Volume [veh/h]	18	67	714	2	34	443
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.15	0.01	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	31.44	16.77	0.00	0.00	10.59	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.02	1.02	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	25.56	25.56	0.00	0.00	3.95	3.95
d_A, Approach Delay [s/veh]	19.88		0.00		0.76	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.60					
Intersection LOS	D					

Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2025 AM Build Scenario.pdf

Scenario 5 2025 AM Build
6/7/2023

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	155.000	23.00	77.00	36	119	155	100.00
					Added Trips Total			**36**	**119**	**155**	**100.00**

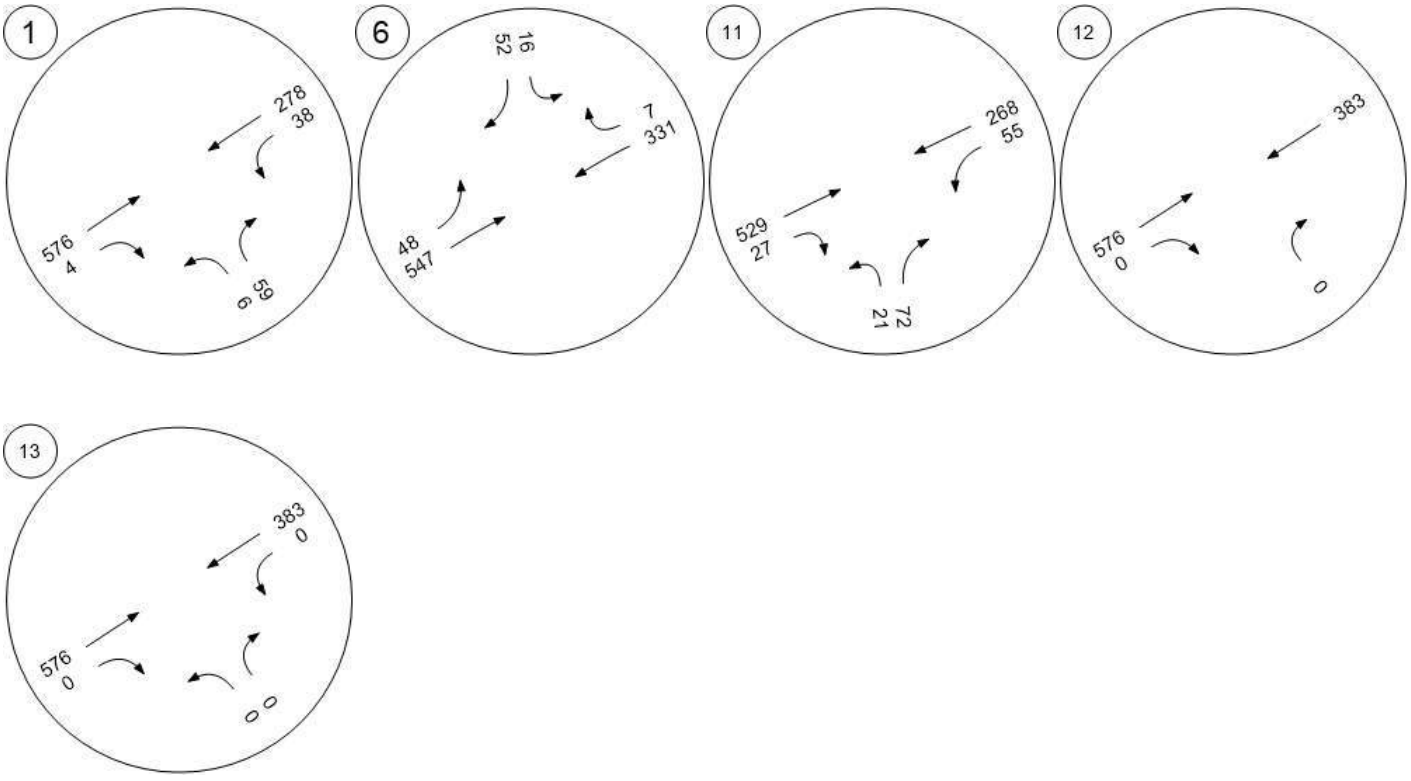
Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2025 AM Build Scenario.pdf

Scenario 5 2025 AM Build
6/7/2023

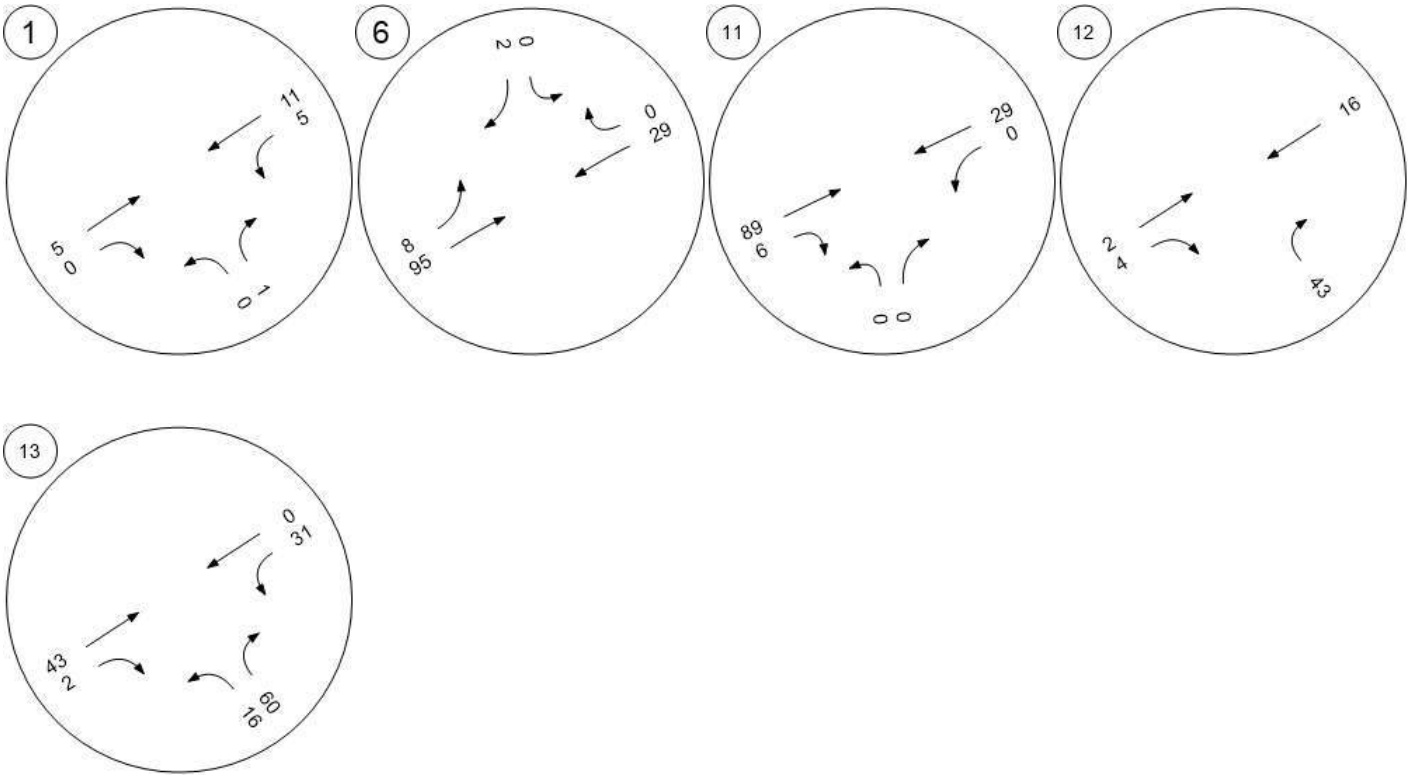
Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	13.00	5	9.00	11
3: Gate	2.00	1	4.00	5
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	5.00	2	7.00	8
7: Gate	0.00	0	5.00	6
8: Gate	80.00	29	75.00	89
Total	**100.00**	**37**	**100.00**	**119**

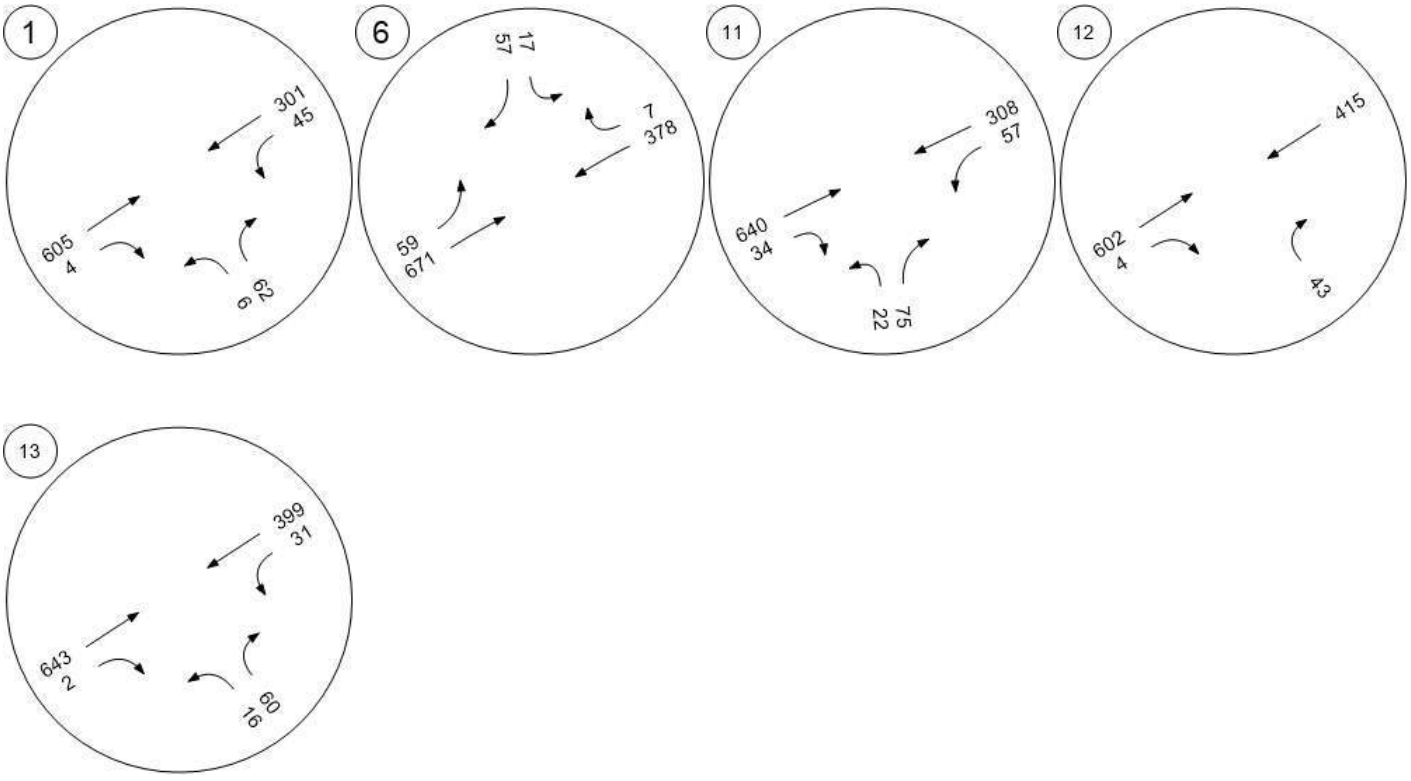
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	53.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	18	56	495	13	76	665
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	1.70	0.00	11.10	1.50
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	16	0	1	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	4	0
Total Hourly Volume [veh/h]	19	60	539	14	84	703
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	143	4	22	186
Total Analysis Volume [veh/h]	20	63	570	15	89	744
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.12	0.01	0.00	0.12	0.01
d_M, Delay for Movement [s/veh]	53.94	19.28	0.00	0.00	10.41	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.47	1.47	0.00	0.00	0.40	0.40
95th-Percentile Queue Length [ft/ln]	36.74	36.74	0.00	0.00	9.99	9.99
d_A, Approach Delay [s/veh]	27.63		0.00		1.11	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.15					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	35.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	39	51	406	520	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.0530	1.0530	1.0530	1.0530	1.0530	1.0530
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	5	42	64	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	7	4	0
Total Hourly Volume [veh/h]	16	49	59	477	616	26
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	13	16	126	163	7
Total Analysis Volume [veh/h]	17	52	63	506	653	28
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.11	0.09	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	35.92	16.19	10.68	0.00	0.00	0.00
Movement LOS	E	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.90	0.90	0.30	0.30	0.00	0.00
95th-Percentile Queue Length [ft/ln]	22.41	22.41	7.42	7.42	0.00	0.00
d_A, Approach Delay [s/veh]	21.05		1.18		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	158.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	32	80	478	41	101	670
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.50	1.80	0.00	2.80	1.90
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	39	3	0	61
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	0	4
Total Hourly Volume [veh/h]	36	83	544	46	105	763
Peak Hour Factor	0.9020	0.9020	0.9020	0.9020	0.9020	0.9020
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	23	151	13	29	211
Total Analysis Volume [veh/h]	40	92	603	51	116	846
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.74	0.18	0.01	0.00	0.16	0.01
d_M, Delay for Movement [s/veh]	158.48	98.66	0.00	0.00	11.03	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	6.39	6.39	0.00	0.00	0.58	0.58
95th-Percentile Queue Length [ft/ln]	159.68	159.68	0.00	0.00	14.47	14.47
d_A, Approach Delay [s/veh]	116.79		0.00		1.33	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.55					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Right-in / Right-out Drive & Mt Joy Rd

Control Type:	Two-way stop	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.041

Intersection Setup

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	0.00		1.00		-1.50	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	495	0	0	559
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.70	0.00	0.00	1.90
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	5	13	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	20	521	13	0	593
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	145	4	0	165
Total Analysis Volume [veh/h]	0	22	579	14	0	659
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	11.96	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.13	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	3.18	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.96		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.21					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Full Access Drive & Mt Joy Rd

Control Type:	Two-way stop	Delay (sec / veh):	42.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.113

Intersection Setup

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	0.00		1.00		-1.50	
Crosswalk	Yes		No		No	

Volumes

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	495	0	0	559
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.70	0.00	0.00	1.90
Growth Factor	1.0420	1.0420	1.0420	1.0420	1.0420	1.0420
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	27	20	5	72	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	27	536	5	72	582
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	8	149	1	20	162
Total Analysis Volume [veh/h]	12	30	596	6	80	647
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.06	0.01	0.00	0.11	0.01
d_M, Delay for Movement [s/veh]	41.95	14.75	0.00	0.00	10.42	0.00
Movement LOS	E	B	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.60	0.60	0.00	0.00	0.36	0.36
95th-Percentile Queue Length [ft/ln]	15.00	15.00	0.00	0.00	9.00	9.00
d_A, Approach Delay [s/veh]	22.52		0.00		1.15	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.30					
Intersection LOS	E					

Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2025 PM Build Scenario.pdf

Scenario 6 2025 PM Build
6/7/2023

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
10: Zone				1.000	148.000	61.00	39.00	90	58	148	100.00
					Added Trips Total			**90**	**58**	**148**	**100.00**

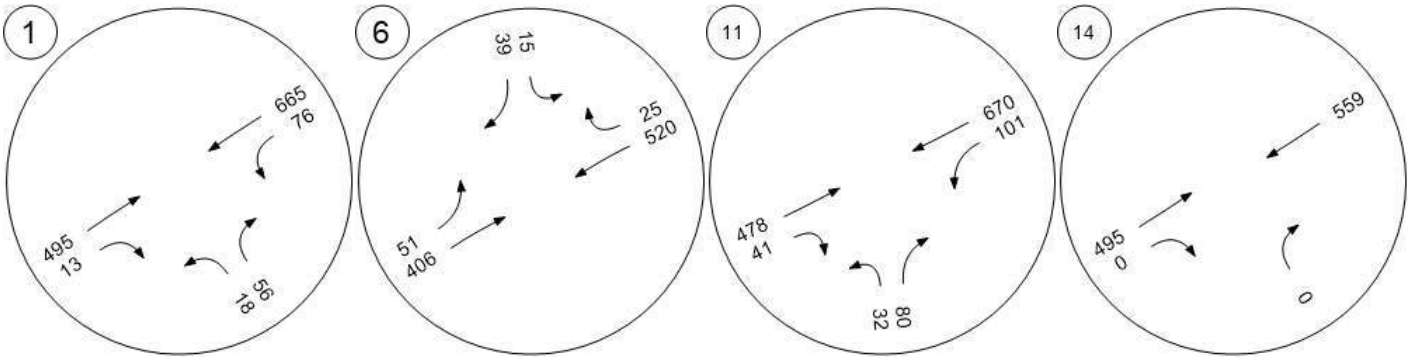
Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2025 PM Build Scenario.pdf

Scenario 6 2025 PM Build
6/7/2023

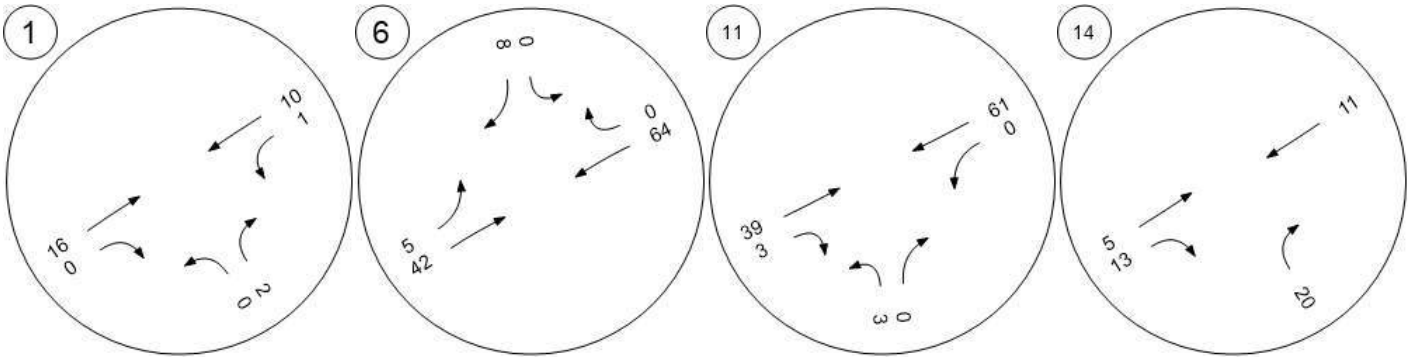
Trip Distribution summary

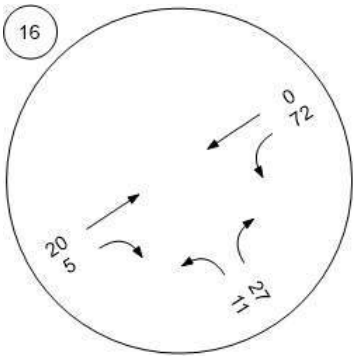
Zone / Gate	Zone 10: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
11: Gate	18.00	16	18.00	10
12: Gate	2.00	2	2.00	1
13: Gate	0.00	0	0.00	0
14: Gate	0.00	0	0.00	0
15: Gate	9.00	8	8.00	5
16: Gate	3.00	3	5.00	3
17: Gate	68.00	61	67.00	39
Total	**100.00**	**90**	**100.00**	**58**

Traffic Volume - Base Volume

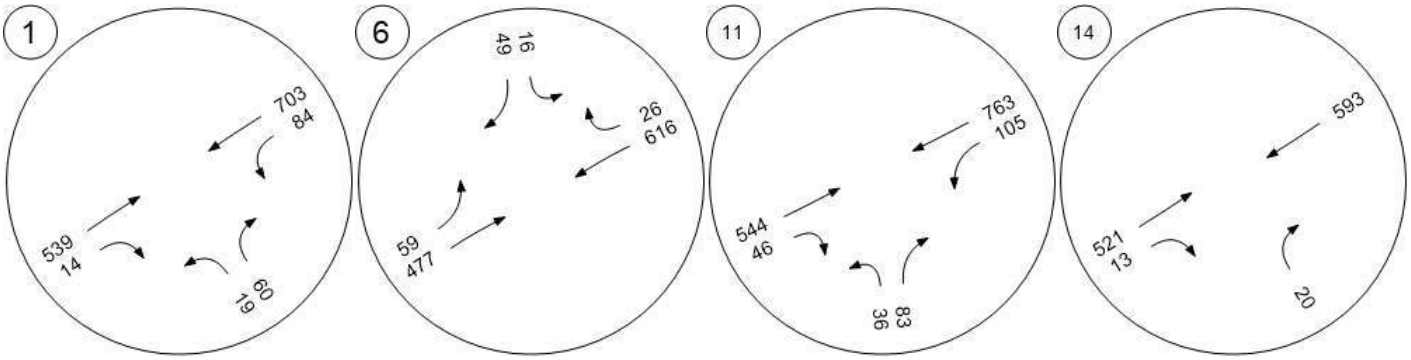


Traffic Volume - Net New Site Trips





Traffic Volume - Future Total Volume



APPENDIX H - PROJECTED (2025) BUILD CONDITIONS WITH IMPROVEMENTS

Option 1: Roundabout

Number	13					
Intersection	Full Access Drive & Mt Joy Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Base Volume Input [veh/h]	0	0	576	0	0	383
Total Analysis Volume [veh/h]	17	56	707	9	6	443

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	736		6		17	
Exiting Flow Rate [veh/h]	15		468		792	
Demand Flow Rate [veh/h]	15	50	636	8	5	399
Adjusted Demand Flow Rate [veh/h]	17	56	707	9	6	443

Lanes

Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.96	0.98
Entry Flow Rate [veh/h]	73	745	458
Capacity of Entry and Bypass Lanes [veh/h]	652	1372	1357
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	652	1319	1332
X, volume / capacity	0.11	0.54	0.34

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	6.78	8.64	5.76
Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.38	3.41	1.51
95th-Percentile Queue Length [ft]	9.42	85.30	37.65
Approach Delay [s/veh]	6.78	8.64	5.76
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.49		
Intersection LOS	A		

Option 1: Roundabout at Full Access Drive & Mt Joy Rd

Number	16					
Intersection	Full Access Drive & Mt Joy Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Base Volume Input [veh/h]	0	0	495	0	0	559
Total Analysis Volume [veh/h]	12	30	596	6	80	647

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	606		80		12	
Exiting Flow Rate [veh/h]	86		671		636	
Demand Flow Rate [veh/h]	11	27	536	5	72	582
Adjusted Demand Flow Rate [veh/h]	12	30	596	6	80	647

Lanes

Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.98	0.98
Entry Flow Rate [veh/h]	42	613	740
Capacity of Entry and Bypass Lanes [veh/h]	744	1272	1364
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	744	1251	1341
X, volume / capacity	0.06	0.48	0.54

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	5.41	7.93	8.53
Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.18	2.69	3.40
95th-Percentile Queue Length [ft]	4.48	67.35	85.09
Approach Delay [s/veh]	5.41	7.93	8.53
Approach LOS	A	A	A
Intersection Delay [s/veh]	8.17		
Intersection LOS	A		

APPENDIX I - PROJECTED (2030) NO BUILD & BUILD CONDITIONS

Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	6	59	576	4	38	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.80	4.10	0.00	7.70	5.70
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	65	632	4	42	305
Peak Hour Factor	0.8950	0.8950	0.8950	0.8950	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	18	177	1	12	85
Total Analysis Volume [veh/h]	8	73	706	4	47	341
Pedestrian Volume [ped/h]	0		0		0	

Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	60.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.265

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	18	56	495	13	76	665
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	1.70	0.00	11.10	1.50
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	4	0
Total Hourly Volume [veh/h]	20	61	551	14	87	730
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	146	4	23	193
Total Analysis Volume [veh/h]	21	65	583	15	92	772
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.26	0.12	0.01	0.00	0.12	0.01
d_M, Delay for Movement [s/veh]	60.24	21.54	0.00	0.00	10.50	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.72	1.72	0.00	0.00	0.42	0.42
95th-Percentile Queue Length [ft/ln]	42.89	42.89	0.00	0.00	10.50	10.50
d_A, Approach Delay [s/veh]	30.99		0.00		1.12	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.35					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	32.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.121

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	39	51	406	520	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.1090	1.1090	1.1090	1.1090	1.1090	1.1090
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	7	4	0
Total Hourly Volume [veh/h]	17	43	57	457	581	28
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	11	15	121	154	7
Total Analysis Volume [veh/h]	18	46	60	485	616	30
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.09	0.08	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	32.38	15.26	10.48	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.78	0.78	0.27	0.27	0.00	0.00
95th-Percentile Queue Length [ft/ln]	19.62	19.62	6.82	6.82	0.00	0.00
d_A, Approach Delay [s/veh]	20.07		1.15		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.52					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	144.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	32	80	478	41	101	670
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.50	1.80	0.00	2.80	1.90
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	0	4
Total Hourly Volume [veh/h]	35	88	532	45	111	740
Peak Hour Factor	0.9020	0.9020	0.9020	0.9020	0.9020	0.9020
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	24	147	12	31	205
Total Analysis Volume [veh/h]	39	98	590	50	123	820
Pedestrian Volume [ped/h]	0		0		0	

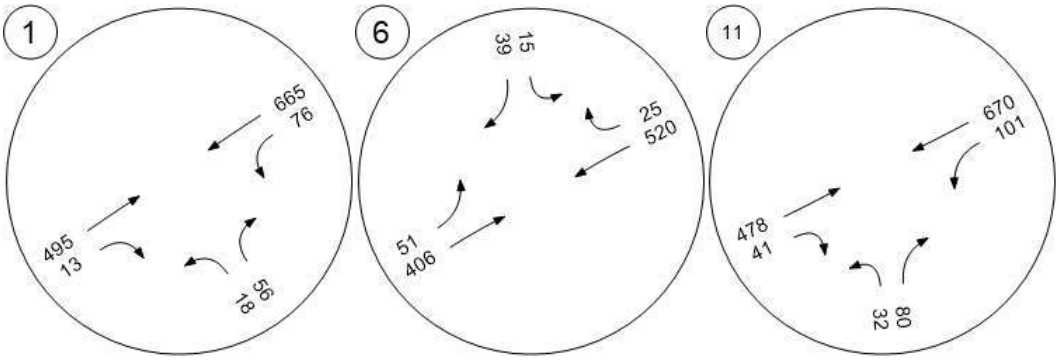
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

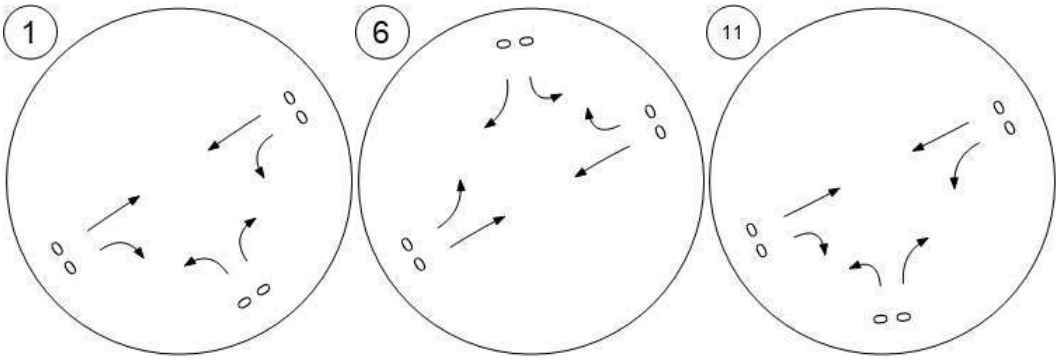
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.70	0.19	0.01	0.00	0.17	0.01
d_M, Delay for Movement [s/veh]	144.86	87.09	0.00	0.00	11.02	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	6.19	6.19	0.00	0.00	0.61	0.61
95th-Percentile Queue Length [ft/ln]	154.68	154.68	0.00	0.00	15.30	15.30
d_A, Approach Delay [s/veh]	103.53		0.00		1.44	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	9.03					
Intersection LOS	F					

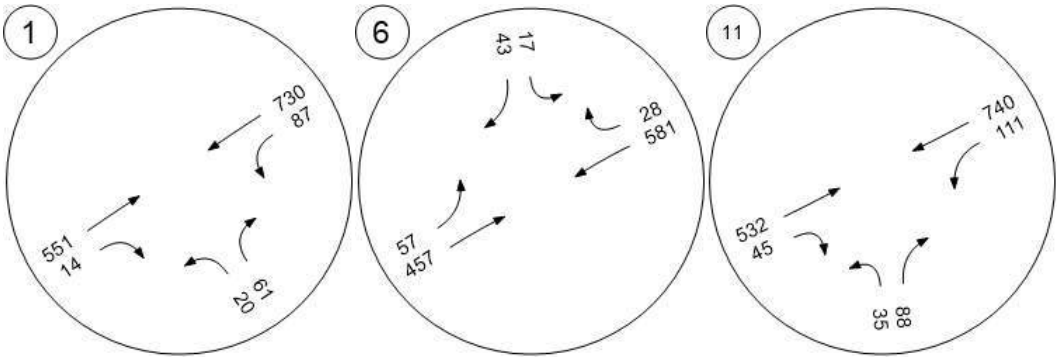
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	28.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.048

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	6	59	576	4	38	278
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	4.80	4.10	0.00	7.70	5.70
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	1	5	0	5	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	66	637	4	47	316
Peak Hour Factor	0.8950	0.8950	0.8950	0.8950	0.8950	0.8950
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	18	178	1	13	88
Total Analysis Volume [veh/h]	8	74	712	4	53	353
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.16	0.01	0.00	0.08	0.00
d_M, Delay for Movement [s/veh]	28.88	15.37	0.00	0.00	10.76	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.78	0.78	0.00	0.00	0.25	0.25
95th-Percentile Queue Length [ft/ln]	19.59	19.59	0.00	0.00	6.34	6.34
d_A, Approach Delay [s/veh]	16.68		0.00		1.41	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.61					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	35.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.144

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	16	52	48	547	331	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.1090	1.1090	1.1090	1.1090	1.1090	1.1090
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	8	95	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	60	61	702	396	8
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	16	16	186	105	2
Total Analysis Volume [veh/h]	19	64	65	744	420	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.10	0.08	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	35.48	13.63	9.55	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.92	0.92	0.25	0.25	0.00	0.00
95th-Percentile Queue Length [ft/ln]	22.99	22.99	6.15	6.15	0.00	0.00
d_A, Approach Delay [s/veh]	18.64		0.77		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.64					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	41.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.198

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	21	72	529	27	55	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.20	4.30	0.00	5.40	9.30
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	89	6	0	29
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	79	670	36	60	323
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	23	192	10	17	92
Total Analysis Volume [veh/h]	26	90	767	41	69	370
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.22	0.01	0.00	0.11	0.00
d_M, Delay for Movement [s/veh]	41.32	22.65	0.00	0.00	11.44	0.00
Movement LOS	E	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.95	1.95	0.00	0.00	0.37	0.37
95th-Percentile Queue Length [ft/ln]	48.82	48.82	0.00	0.00	9.21	9.21
d_A, Approach Delay [s/veh]	26.84		0.00		1.80	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.86					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 12: Right-in / Right-out Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.104

Intersection Setup

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	12.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	1.00		4.00		-3.50	
Crosswalk	No		No		No	

Volumes

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	576	0	0	383
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.10	0.00	0.00	1.90
Growth Factor	1.0000	1.0980	1.0980	1.0980	1.0000	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	43	2	4	0	16
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	43	634	4	0	437
Peak Hour Factor	1.0000	0.9000	0.9000	0.9000	1.0000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	12	176	1	0	121
Total Analysis Volume [veh/h]	0	48	704	4	0	486
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.10	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	13.75	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.35	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	8.69	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.75		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.53					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 13: Full Access Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.125

Intersection Setup

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	1.00		7.00		3.00	
Crosswalk	Yes		No		No	

Volumes

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	576	0	0	383
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	4.10	0.00	0.00	1.90
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	60	43	2	31	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	60	675	2	31	421
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	17	188	1	9	117
Total Analysis Volume [veh/h]	18	67	750	2	34	468
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.15	0.01	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	34.59	17.87	0.00	0.00	10.77	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.12	1.12	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	28.03	28.03	0.00	0.00	4.08	4.08
d_A, Approach Delay [s/veh]	21.41		0.00		0.73	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.63					
Intersection LOS	D					

Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2030 AM Build Scenario.pdf

Scenario 9 2030 AM Build
6/7/2023

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	155.000	23.00	77.00	36	119	155	100.00
					Added Trips Total			**36**	**119**	**155**	**100.00**

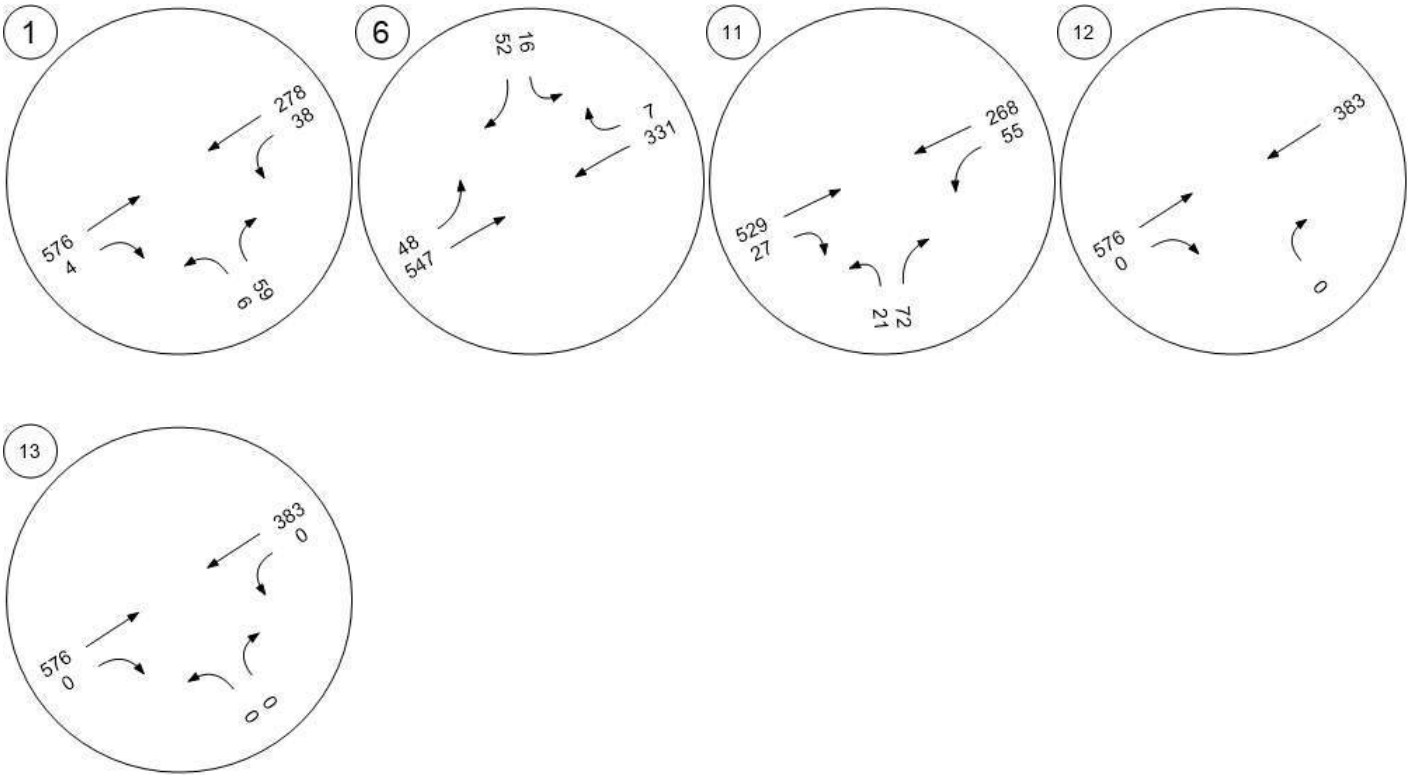
Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2030 AM Build Scenario.pdf

Scenario 9 2030 AM Build
6/7/2023

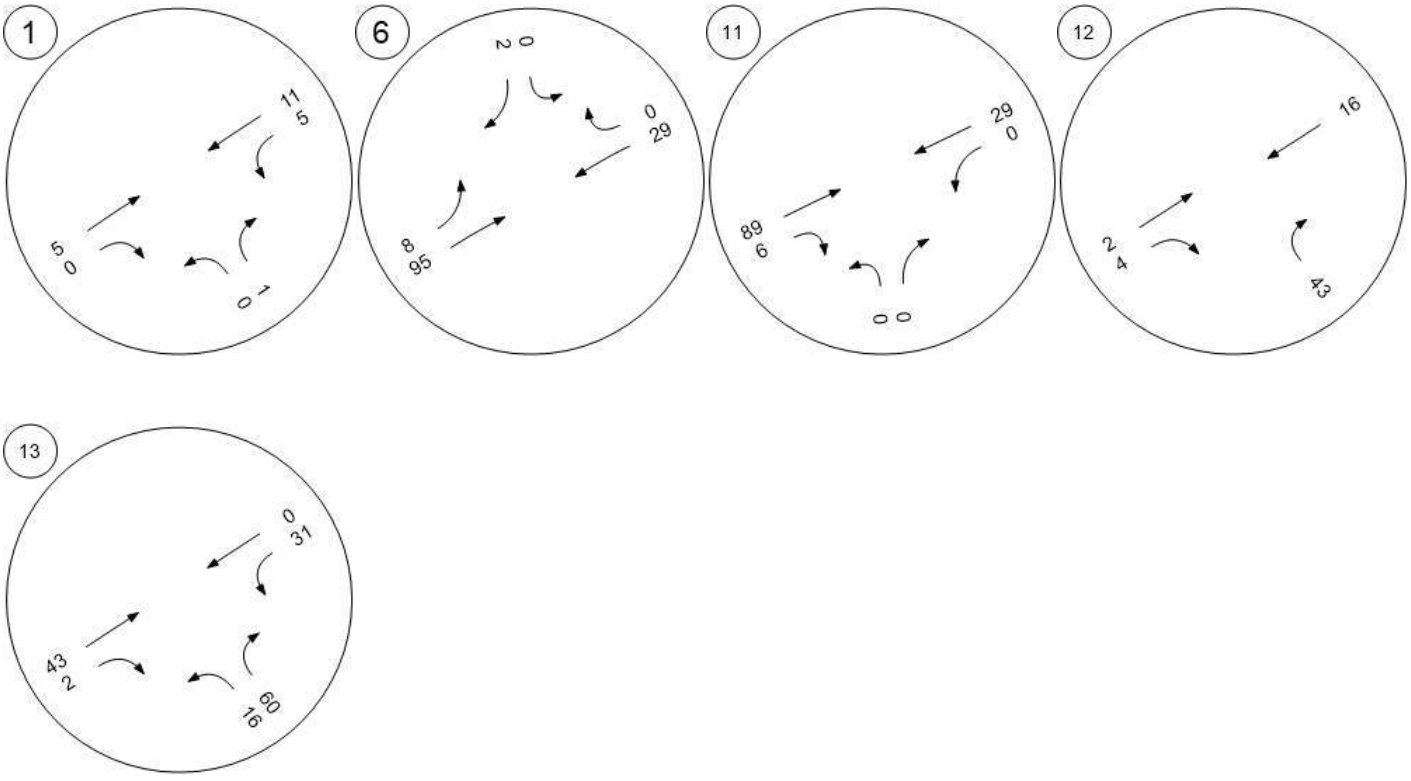
Trip Distribution summary

Zone / Gate	Zone 1: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
2: Gate	13.00	5	9.00	11
3: Gate	2.00	1	4.00	5
4: Gate	0.00	0	0.00	0
5: Gate	0.00	0	0.00	0
6: Gate	5.00	2	7.00	8
7: Gate	0.00	0	5.00	6
8: Gate	80.00	29	75.00	89
Total	**100.00**	**37**	**100.00**	**119**

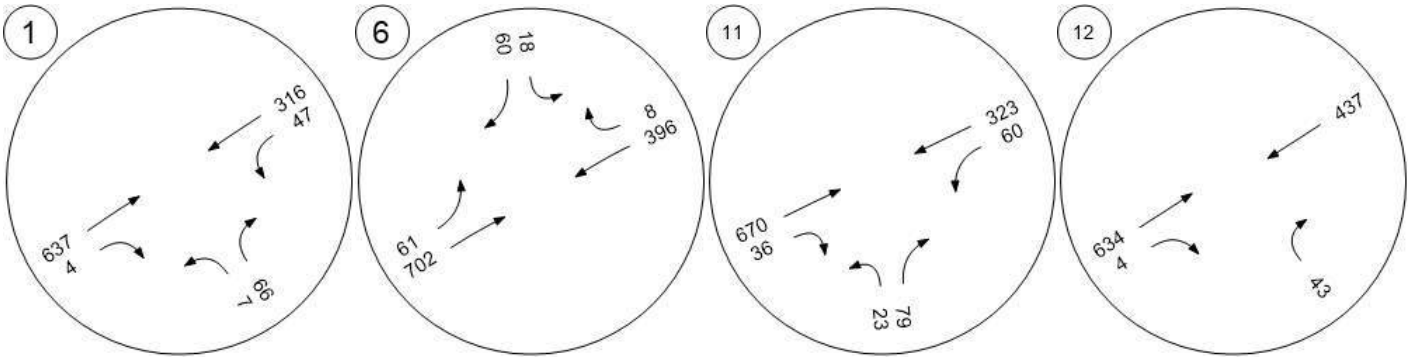
Traffic Volume - Base Volume

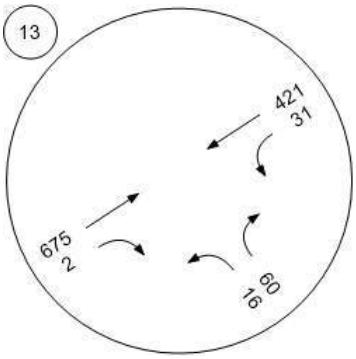


Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume





Intersection Level Of Service Report
Intersection 1: Barbara St & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	64.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.281

Intersection Setup

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	15.00	15.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		40.00		40.00	
Grade [%]	4.50		-3.50		-1.50	
Crosswalk	No		No		No	

Volumes

Name	Barbara Street		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	18	56	495	13	76	665
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	5.00	1.70	0.00	11.10	1.50
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	16	0	1	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	4	0
Total Hourly Volume [veh/h]	20	63	567	14	88	740
Peak Hour Factor	0.9450	0.9450	0.9450	0.9450	0.9450	0.9450
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	17	150	4	23	196
Total Analysis Volume [veh/h]	21	67	600	15	93	783
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.13	0.01	0.00	0.13	0.01
d_M, Delay for Movement [s/veh]	64.30	22.99	0.00	0.00	10.60	0.00
Movement LOS	F	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.86	1.86	0.00	0.00	0.43	0.43
95th-Percentile Queue Length [ft/ln]	46.47	46.47	0.00	0.00	10.79	10.79
d_A, Approach Delay [s/veh]	32.85		0.00		1.13	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	2.45					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	40.3
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.152

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	15	39	51	406	520	25
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.1090	1.1090	1.1090	1.1090	1.1090	1.1090
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	8	5	42	64	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	7	4	0
Total Hourly Volume [veh/h]	17	51	62	499	645	28
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	14	16	132	171	7
Total Analysis Volume [veh/h]	18	54	66	529	684	30
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.12	0.10	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	40.29	17.62	10.88	0.00	0.00	0.00
Movement LOS	E	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.06	1.06	0.32	0.32	0.00	0.00
95th-Percentile Queue Length [ft/ln]	26.40	26.40	8.05	8.05	0.00	0.00
d_A, Approach Delay [s/veh]	23.29		1.21		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.73					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	253.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.960

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	32	80	478	41	101	670
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.50	1.80	0.00	2.80	1.90
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	39	3	0	61
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	7	0	0	4
Total Hourly Volume [veh/h]	38	88	571	48	111	801
Peak Hour Factor	0.9020	0.9020	0.9020	0.9020	0.9020	0.9020
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	24	158	13	31	222
Total Analysis Volume [veh/h]	42	98	633	53	123	888
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.96	0.20	0.01	0.00	0.18	0.01
d_M, Delay for Movement [s/veh]	253.31	178.40	0.00	0.00	11.30	0.00
Movement LOS	F	F	A	A	B	A
95th-Percentile Queue Length [veh/ln]	8.56	8.56	0.00	0.00	0.64	0.64
95th-Percentile Queue Length [ft/ln]	213.89	213.89	0.00	0.00	16.00	16.00
d_A, Approach Delay [s/veh]	200.87		0.00		1.37	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	16.07					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 14: Right-in / Right-out Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	12.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.043

Intersection Setup

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	0.00		1.00		-1.50	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Right-in / Right-out Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	495	0	0	559
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.70	0.00	0.00	1.90
Growth Factor	1.0420	1.0980	1.0980	1.0980	1.0420	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	20	5	13	0	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	20	549	13	0	625
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	153	4	0	174
Total Analysis Volume [veh/h]	0	22	610	14	0	694
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.27	0.00	0.00	0.00	0.00
Movement LOS		B	A	A		A
95th-Percentile Queue Length [veh/ln]	0.00	0.13	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	3.32	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.27		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.20					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 16: Full Access Drive & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	47.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	15.00		40.00		40.00	
Grade [%]	0.00		1.00		-1.50	
Crosswalk	Yes		No		No	

Volumes

Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	0	0	495	0	0	559
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	1.70	0.00	0.00	1.90
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	27	20	5	72	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	27	564	5	72	614
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	8	157	1	20	171
Total Analysis Volume [veh/h]	12	30	627	6	80	682
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.06	0.01	0.00	0.11	0.01
d_M, Delay for Movement [s/veh]	46.96	15.72	0.00	0.00	10.58	0.00
Movement LOS	E	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.67	0.67	0.00	0.00	0.37	0.37
95th-Percentile Queue Length [ft/ln]	16.73	16.73	0.00	0.00	9.26	9.26
d_A, Approach Delay [s/veh]	24.64		0.00		1.11	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.31					
Intersection LOS	E					

Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2030 PM Build Scenario.pdf

Scenario 10 2030 PM Build
6/7/2023

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
10: Zone				1.000	148.000	61.00	39.00	90	58	148	100.00
					Added Trips Total			**90**	**58**	**148**	**100.00**

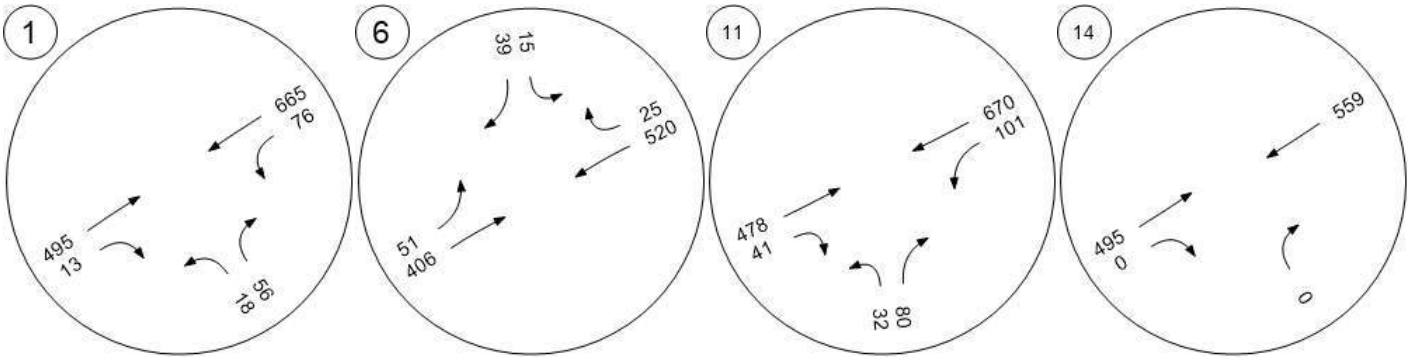
Vistro File: C:\...\Chiques Crossing.vistro
Report File: C:\...\2030 PM Build Scenario.pdf

Scenario 10 2030 PM Build
6/7/2023

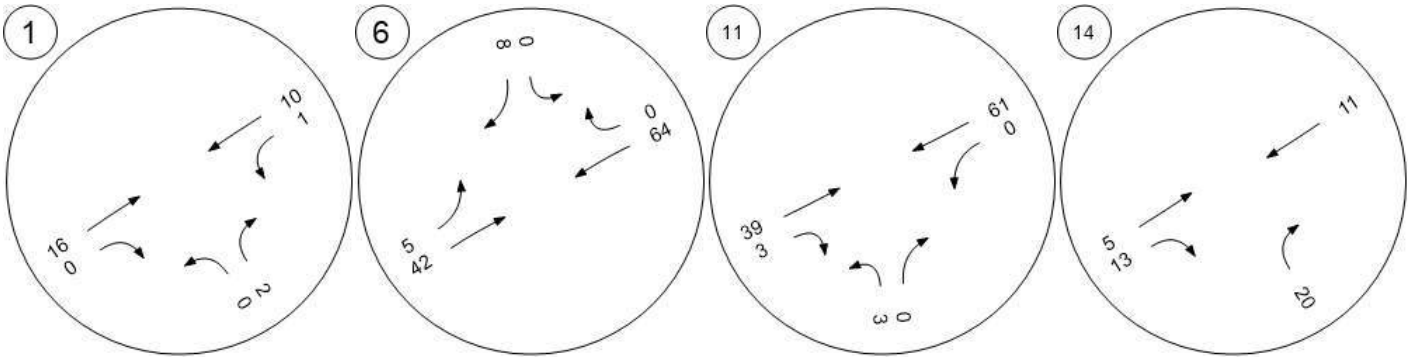
Trip Distribution summary

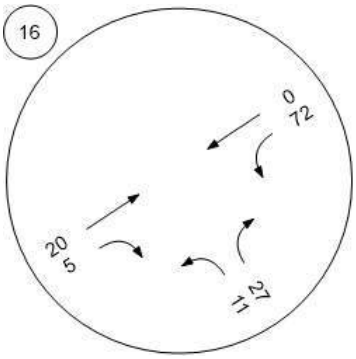
Zone / Gate	Zone 10: Zone			
	To Zone:		From Zone:	
	Share %	Trips	Share %	Trips
11: Gate	18.00	16	18.00	10
12: Gate	2.00	2	2.00	1
13: Gate	0.00	0	0.00	0
14: Gate	0.00	0	0.00	0
15: Gate	9.00	8	8.00	5
16: Gate	3.00	3	5.00	3
17: Gate	68.00	61	67.00	39
Total	**100.00**	**90**	**100.00**	**58**

Traffic Volume - Base Volume

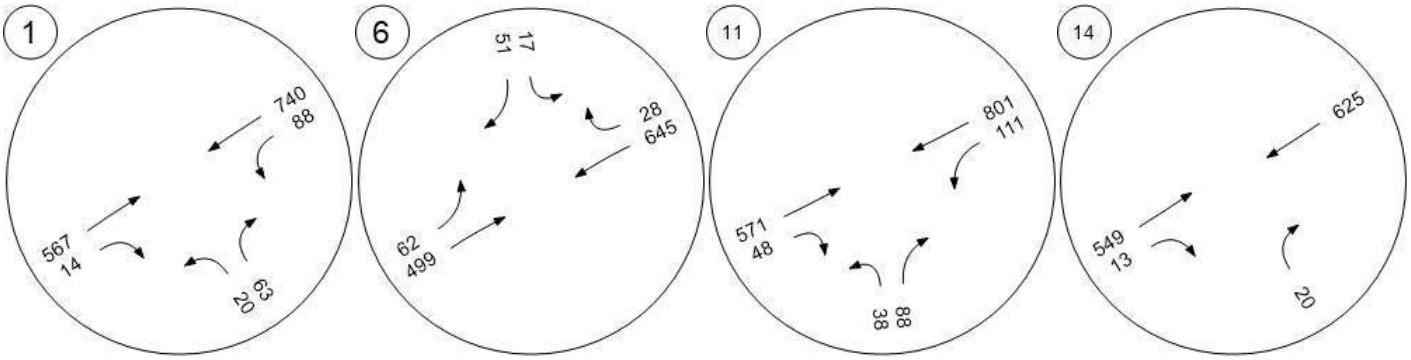


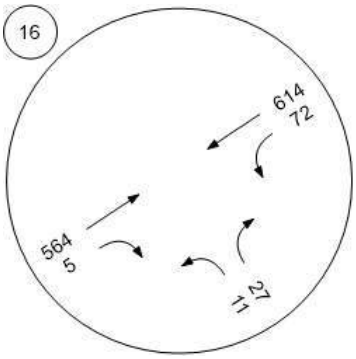
Traffic Volume - Net New Site Trips





Traffic Volume - Future Total Volume





Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.16	0.01	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	27.46	15.17	0.00	0.00	10.68	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.75	0.75	0.00	0.00	0.22	0.22
95th-Percentile Queue Length [ft/ln]	18.87	18.87	0.00	0.00	5.55	5.55
d_A, Approach Delay [s/veh]	16.38		0.00		1.29	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.55					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 6: SR 4033 & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	27.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.109

Intersection Setup

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	10.00	10.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00		40.00		40.00	
Grade [%]	1.00		1.00		-0.60	
Crosswalk	No		No		No	

Volumes

Name	Milton Grove Road (SR 4033)		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	16	52	48	547	331	7
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	1.00	1.90	4.00
Growth Factor	1.1090	1.1090	1.1090	1.1090	1.1090	1.1090
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	18	58	53	607	367	8
Peak Hour Factor	0.9430	0.9430	0.9430	0.9430	0.9430	0.9430
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	15	14	161	97	2
Total Analysis Volume [veh/h]	19	62	56	644	389	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.09	0.06	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	27.83	12.34	9.38	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.73	0.73	0.20	0.20	0.00	0.00
95th-Percentile Queue Length [ft/ln]	18.22	18.22	5.10	5.10	0.00	0.00
d_A, Approach Delay [s/veh]	15.97		0.75		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.54					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 11: Lefever Rd & SR 772

Control Type:	Two-way stop	Delay (sec / veh):	32.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.155

Intersection Setup

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	11.00	11.00	11.00	11.00	11.00	11.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		40.00		40.00	
Grade [%]	1.00		-4.00		-4.00	
Crosswalk	No		No		No	

Volumes

Name	Lefever Road		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Base Volume Input [veh/h]	21	72	529	27	55	268
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.80	4.20	4.30	0.00	5.40	9.30
Growth Factor	1.0980	1.0980	1.0980	1.0980	1.0980	1.0980
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	79	581	30	60	294
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	23	166	9	17	84
Total Analysis Volume [veh/h]	26	90	665	34	69	336
Pedestrian Volume [ped/h]	0		0		0	

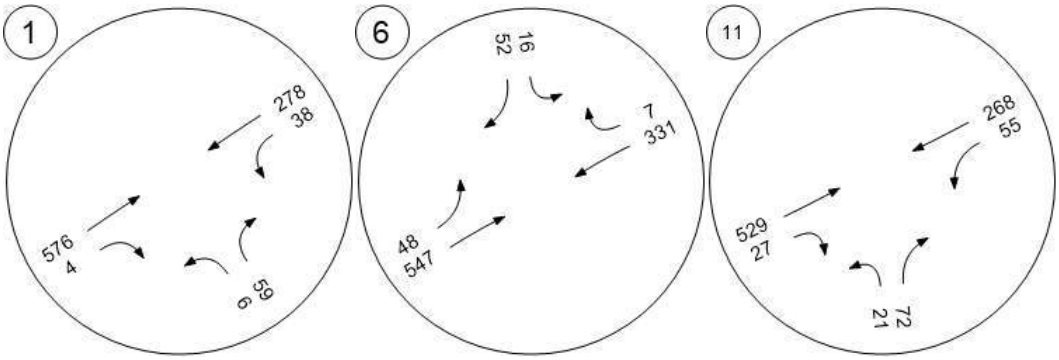
Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

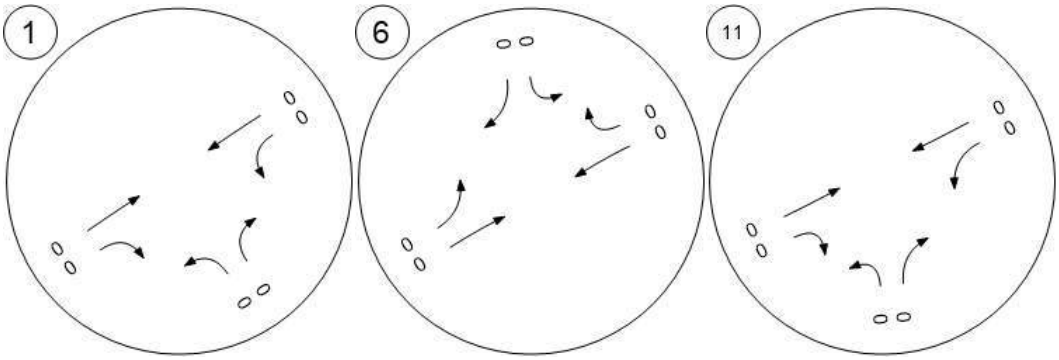
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.19	0.01	0.00	0.10	0.00
d_M, Delay for Movement [s/veh]	32.01	18.12	0.00	0.00	10.82	0.00
Movement LOS	D	C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	1.50	1.50	0.00	0.00	0.33	0.33
95th-Percentile Queue Length [ft/ln]	37.44	37.44	0.00	0.00	8.34	8.34
d_A, Approach Delay [s/veh]	21.23		0.00		1.84	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	2.63					
Intersection LOS	D					

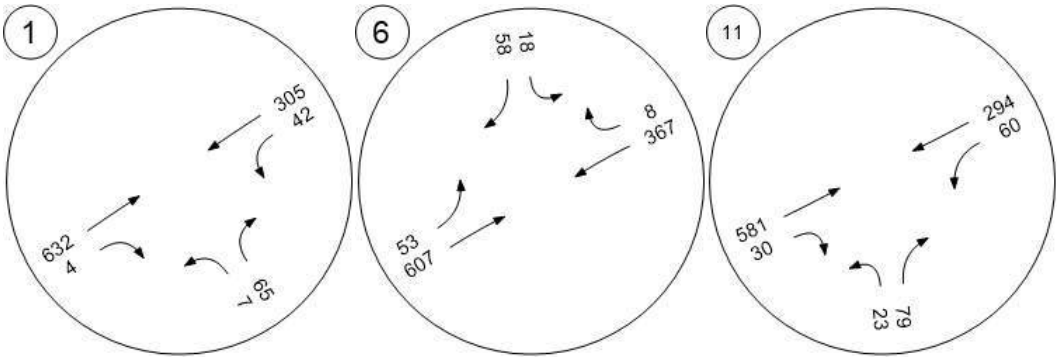
Traffic Volume - Base Volume



Traffic Volume - Net New Site Trips



Traffic Volume - Future Total Volume



Chiques Crossing Development
Lefever Road / Mount Joy Road Intersection Gap Study
Rapho Township, Lancaster County

Mount Joy Road (SR 0772) Eastbound Direction

		1s-6s	7s-9s	10s-13s	14s-17s	18s-21s	22s-9999s
1/18/2023	04:15 PM	70	8	13	3	5	8
1/18/2023	04:30 PM	66	7	8	8	5	10
1/18/2023	04:45 PM	49	9	12	12	4	7
1/18/2023	05:00 PM	70	12	3	4	4	9

Mount Joy Road (SR 0772) Westbound Direction

		1s-6s	7s-9s	10s-13s	14s-17s	18s-21s	22s-9999s
1/18/2023	04:15 PM	77	12	8	6	5	8
1/18/2023	04:30 PM	90	13	9	7	6	6
1/18/2023	04:45 PM	100	10	16	6	4	6
1/18/2023	05:00 PM	96	12	6	6	2	10

Mount Joy Road (SR 0772) Combined

		1s-6s	7s-9s	10s-13s	14s-17s	18s-21s	22s-9999s
1/18/2023	04:15 PM	183	19	14	4	2	1
1/18/2023	04:30 PM	197	15	13	6	1	3
1/18/2023	04:45 PM	199	12	17	5	1	1
1/18/2023	05:00 PM	194	20	9	7	3	1
	Totals	-	66	53	22	7	6

Available Gaps

Gaps	No./ Gap	Total Gaps
66	1	66
53	2	106
22	4	88
7	5	35
6	6	36
	Total	331

APPENDIX J - PROJECTED (2030) BUILD CONDITIONS WITH IMPROVEMENTS

Unmitigated

Number	13					
Intersection	Full Access Drive & Mt Joy Rd					
Control Type	Roundabout					
Analysis Method	HCM 6th Edition					
Name	Full Access Drive		Mount Joy Road (SR 772)		Mount Joy Road (SR 772)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Base Volume Input [veh/h]	0	0	576	0	0	383
Total Analysis Volume [veh/h]	18	67	750	2	34	468

Intersection Settings

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	781		34		18	
Exiting Flow Rate [veh/h]	36		495		848	
Demand Flow Rate [veh/h]	16	60	675	2	31	421
Adjusted Demand Flow Rate [veh/h]	18	67	750	2	34	468

Lanes

Overwrite Calculated Critical Headway	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102
HV Adjustment Factor	1.00	0.96	0.98
Entry Flow Rate [veh/h]	85	783	511
Capacity of Entry and Bypass Lanes [veh/h]	623	1333	1355
Pedestrian Impedance	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	623	1281	1332
X, volume / capacity	0.14	0.59	0.38

Movement, Approach, & Intersection Results

Average Lane Delay [s/veh]	7.38	9.66	6.22
Lane LOS	A	A	A
95th-Percentile Queue Length [veh]	0.47	4.02	1.79
95th-Percentile Queue Length [ft]	11.78	100.57	44.63
Approach Delay [s/veh]	7.38	9.66	6.22
Approach LOS	A	A	A
Intersection Delay [s/veh]	8.23		
Intersection LOS	A		

APPENDIX K - INTERSECTION CONTROL EVALUATION

Pennsylvania Department of Transportation
Intersection Control Evaluation (ICE) Form
Stage I: Screening

pennsylvania DEPARTMENT OF TRANSPORTATION

To fulfill the requirements of Stage 1 (Screening) of PennDOT's ICE procedures, complete the following form and append all supporting documentation. Completed forms can be submitted to the District Traffic Engineer (DTE) for the project's location.

Project Information

Project Name	Chiques Crossing	Project Setting	Suburban	Project ICE Reference Number	
Submitted By	MEM	Agency/Company	ELA Group, Inc.	Email	

Project Purpose and Goals (*What is the catalyst for this project and what are the intended outcomes?*)	Vistablock plans to develop a site with frontage along Mount Joy Road (SR 0772) in Rapho Township, Lancaster County into a residential community with 379 apartments. Site access will be provided at two locations along Mount Joy Road. The Full Access Drive will intersect Mount Joy Road approximately 275 feet southwest of Milton Grove Road. The Right-in / Right-out Access Drive will intersect Mount Joy Road approximately 300 feet southwest of the Full Access Drive and will provide limited access.
Project Setting Description (*Describe the area surrounding the intersection*)	The land use context is classified as mix of Rural Corridor per PennDOT's PennDOT Design Manual 10X, Appendix B. Mount Joy Road would be classified as a Community Arterial.

County	Lancaster	Project Locality (Township/Borough/City)	Rapho Township
PennDOT District	District 8	Project Type (select most appropriate)	Highway Occupancy Permit (HOP) Application

Multimodal Context (*Describe pedestrian, bicycle, and transit activity in the area and the potential for activity based on surrounding land uses and development pattern*)	There are no existing sidewalks, fixed transit routes or marked bicycle routes in the vicinity of the site. Borough Park is located about 0.25 miles east of the project site with a potential pedestrian connection to the site.

Basic Intersection Information

Major Street

Major Street Route Number(s)	772	Major Street Route Name(s)	772			SR Segment #	130	SR Offset	1,632
Primary Functional Classification	Minor Arterial	Secondary Functional Class. (if app.)	Minor Arterial			Existing AADT	11,259	Existing Control Type	None/New Intersection
Major Street Ownership	PennDOT			Sidewalks are present along:		Neither side of the roadway			
Crosswalks? ☐	On-Street Bike Facilities? ☐	Multi-Use Path? ☐		Scheduled Bus Service? ☐		Bus stop at intersection? ☐			

Approach #1	Number of Lanes (Count Shared Lanes as Through):	Left-Turn	0	Through	1	Right-Turn	0
	AM Peak Hour Traffic Volumes:	Left-Turn		Through	675	Right-Turn	2
	PM Peak Hour Traffic Volumes:	Left-Turn		Through	564	Right-Turn	5
Approach #2	Number of Lanes (Count Shared Lanes as Through):	Left-Turn	0	Through	1	Right-Turn	0
	AM Peak Hour Traffic Volumes:	Left-Turn	31	Through	421	Right-Turn	
	PM Peak Hour Traffic Volumes:	Left-Turn	72	Through	614	Right-Turn	

Minor Street

Existing ☐ New ☑

Minor Street Route Number(s)	N/A	Minor Street Route Name(s)	Proposed Full Access Drive			SR Segment #	N/A	SR Offset	N/A
Primary Functional Classification	Local Road	Secondary Functional Class. (if app.)						Existing AADT (if available)	0
Minor Street Ownership				Sidewalks are present along:		Neither side of the roadway			
Crosswalks? ☑	On-Street Bike Facilities? ☐	Multi-Use Path? ☐		Scheduled Bus Service? ☐		Bus stop at intersection? ☐			

Approach #1	Number of Lanes (Count Shared Lanes as Through):	Left-Turn	0	Through	1	Right-Turn	0
	AM Peak Hour Traffic Volumes:	Left-Turn	18	Through		Right-Turn	67
	PM Peak Hour Traffic Volumes:	Left-Turn	12	Through		Right-Turn	30
Approach #2	Number of Lanes (Count Shared Lanes as Through):	Left-Turn	N/A	Through	N/A	Right-Turn	N/A
	AM Peak Hour Traffic Volumes:	Left-Turn		Through		Right-Turn	
	PM Peak Hour Traffic Volumes:	Left-Turn		Through		Right-Turn	
Approach #3	Number of Lanes (Count Shared Lanes as Through):	Left-Turn	N/A	Through	N/A	Right-Turn	N/A
	AM Peak Hour Traffic Volumes:	Left-Turn		Through		Right-Turn	
	PM Peak Hour Traffic Volumes:	Left-Turn		Through		Right-Turn	

Crash History (Existing Intersections Only)

Append the most recent five-years of crash data for the intersection from the CDART. If the crash data evidences any issues relating to safety performance, discuss briefly here:

N/A

Screening Evaluation

Provide a brief justification as to why each of the following control strategies should be advanced or not. Justification should consider potential environmental impacts.

Note: FHWA's CAP-X tool is helpful for assessing the viability of alternative intersection forms.

Control Strategy	Strategy Viable?	Justification	Strategy to be Advanced?
Two-way Stop-Controlled	Yes	The proposed full access drive could function as a stop control with SR 772 remaining uncontrolled. However, the trips generated would warrant a left turn lane. With the close proximity of devlopment to the Milton Grove Road intersection, the development left turn lane would interfere with the left turns onto Milton Grove Road.	No
All-way Stop-Controlled	Yes	SR 772 has signficant volume compared to the propsed driveway. The delays that would occur on SR 772 would be significant. Therefore, this is not an appropriate control strategy.	No
Signalized Control	Yes	The proposed full access drive and SR 772 could function as a signalized interesection. However, the same left turn to the site requires a left turn lane. The same problem identified in the two-way stop controlled control strategy would be a problem with this strategy. Therefore, this is not appropriate for this project.	No
Roundabout	Yes	A roundabout would offer a full movement to and from the site, while slowing down vehicles speeds on SR 772.	Yes
Median U-Turn	No	SR 772 is a two lane road. Median U-turn would not be an appropriate control strategy for this project.	No
Restricted Crossing U-Turn (RCUT) Signalized	No	SR 772 is a two lane road. No signal is being proposed. Therefore, this control strategy would not be feasible for this project.	No
Restricted Crossing U-Turn (RCUT) Unsignalized	No	SR 772 is a two lane road. Restricted crossing U-turn would not be an appropriate control strategy for this project.	No
Jughandle	No	Existing right-of-way in the vacinity of the project is limited. The site does not align with any of the nearby cross streets. Due to those reasons, this control strategy is not appropriate for this project.	No
Displaced Left-Turn	No	the project drive is located near the top of a vertical grade on SR 772. This allows the best sight distance for the proposed drive. Shifting the drive for a displaced left would decrease the available sight distance. Therefore, this control strategy is not appropriate for this project.	No
Continuous Green Tee	Yes	Traffic entering and exiting the site will not be continious. Therefore, a continuous movement to or from the site is not appropriate for this project.	No
Quadrant Roadway	No	Existing right-of-way in the vacinity of the project is limited. The quadrant roadway concept requires signficant right-of-way. Due to the limited right-of-way, this control strategy is not appropriate for this project.	No
Other	No	N/A	No

Resolution

To be filled out by PennDOT District Traffic Engineer or designee only.

Project Determination				
Comments				
DTE or Designee Name *(Type)*		Signature		Date

APPENDIX L - QUEUE SUMMARY TABLES

Queue Summary – Mount Joy Road (SR 0772) and Barbara Street

Movement	Available Storage	Proposed Storage	Existing (2021) AM/PM	2030 No Build AM/PM	2030 Build AM/PM	2030 Build AM/PM w/ Improvements
Mount Joy Road (SR 0772)						
EB Thru/Right	775’	775’	0/0	0/0	0/0	-/-
WB Left/Thru	300’	300’	4.7/9.2	5.6/10.5	6.3/10.8	-/-
Barbara Street						
NB Left/Right	750’	750’	14.7/28.7	18.9/42.9	19.6/46.5	-/-

All Queue values are given in units of Vehicles (ft)

Queue Summary – Mount Joy Road (SR 0772) and Milton Grove Road

Movement	Available Storage	Proposed Storage	Existing (2020) AM/PM	2030 No Build AM/PM	2030 Build AM/PM	2030 Build AM/PM w/ Improvements
Mount Joy Road (SR 0772)						
EB Left/Thru	900’	900’	4.5/5.8	5.1/6.8	6.2/8.1	-/-
WB Thru/Right	1580’	1580’	0/0	0/0	0/0	-/-
Milton Grove Road						
SB Left/Right	1800’	1800’	13.6/14.2	18.2/19.6	23.0/26.4	-/-

Queue Summary – Mount Joy Road (SR 0772) and Lefever Road

Movement	Available Storage	Proposed Storage	Existing (2021) AM/PM	2030 No Build AM/PM	2030 Build AM/PM	2030 Build AM/PM w/ Improvements
Mount Joy Road (SR 0772)						
EB Thru/Right	1615’	1615’	0/0	0/0	0/0	-/-
WB Left/Thru	2340’	2340’	9.2/13.0	10.6/15.3	11.7/0.6	-/-
Lefever Road						
NB Left/Right	1265’	1265’	43.0/87.3	60.4/154.7	81.7/213.9	-/-

Queue Summary – Mount Joy Road (SR 0772) and Full Access Driveway

Movement	Available Storage	Proposed Storage	2030 Build AM/PM	2030 Build AM/PM w/ Improvements
Mount Joy Road (SR 0772)				
EB Thru/Right	-	600’	0/0	97.6/74.0
WB Left/Thru	-	300’	4.1/9.3	44.2/93.9
Full Access Driveway				
NB Left/Right	-		28.0/16.7	9.8/4.6

Queue Summary – Mount Joy Road (SR 0772) and Right-in / Right-out Driveway

Movement	Available Storage	Proposed Storage	2030 Build AM/PM	2030 Build AM/PM w/ Improvements
Mount Joy Road (SR 0772)				
EB Thru/Right	-	325’	0/0	-/-
WB Thru	-	575’	0/0	-/-
Right-in / Right-out Driveway				
NB Right	-		8.7/3.3	-/-

APPENDIX M - TURN LANE WARRANT ANALYSIS

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Rapho Township	**Analysis Date:**	3/29/2023
County:	Lancaster County	**Conducted By:**	MEM
PennDOT Engineering District:	8	**Checked By:**	MLH
		Agency/Company Name:	ELA Group Inc.

Intersection & Approach Description: Intersection of Mount Joy Road and Proposed Right-in/Right-out Drive (NEB right)

Analysis Period:	2030 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	40		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

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

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-	621	4.1%	634
	Right	-	1	0.0%	1

Advancing Volume:	635
Right Turn Volume:	1

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	1
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

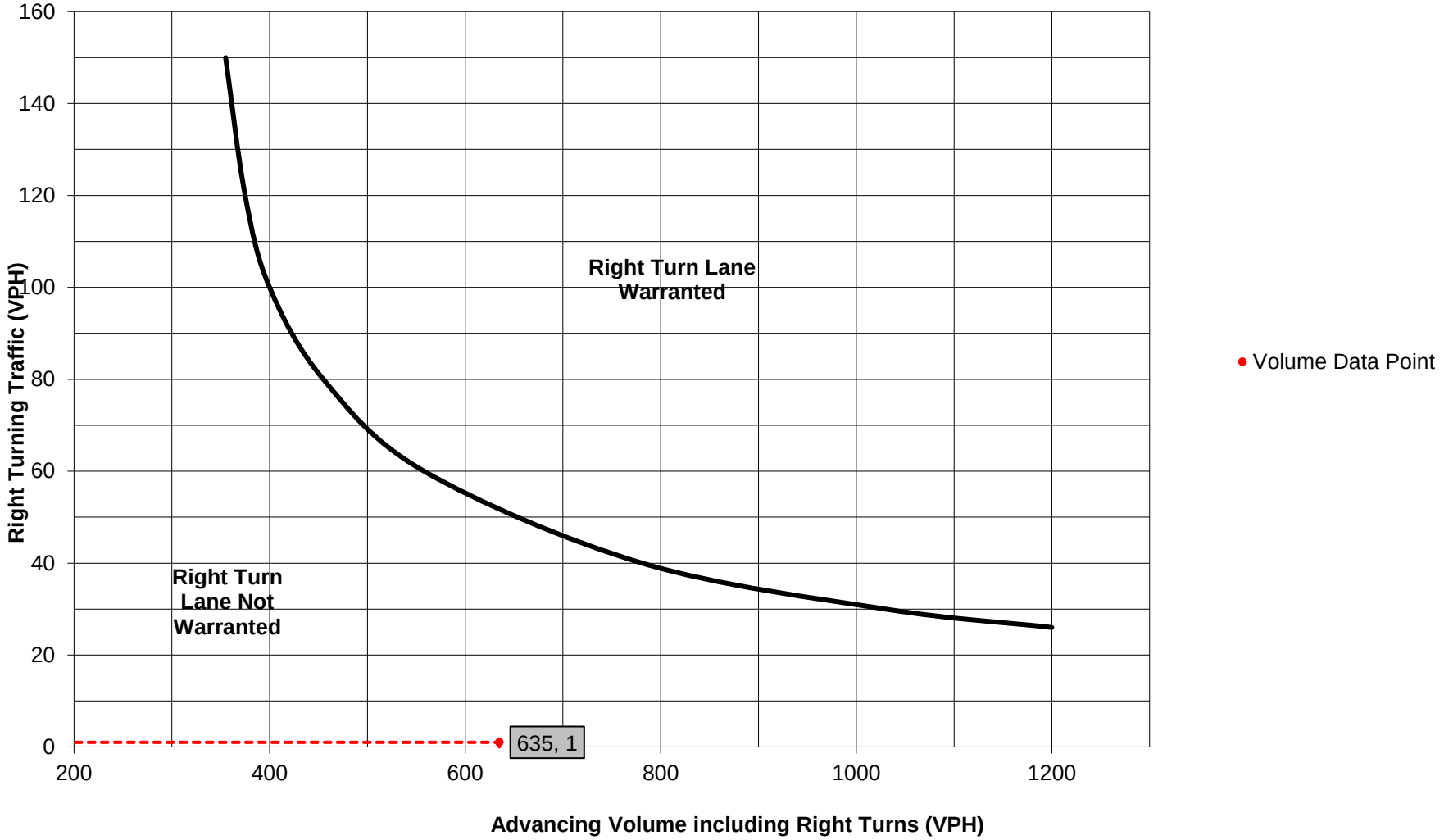
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings: N/A

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Rapho Township	**Analysis Date:**	3/29/2023
County:	Lancaster County	**Conducted By:**	MEM
PennDOT Engineering District:	8	**Checked By:**	MLH
		Agency/Company Name:	ELA Group Inc.

Intersection & Approach Description: Intersection of Mount Joy Road and Proposed Right-in/Right-out Drive (NEB right)

Analysis Period:	2030 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	40		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

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

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	No			N/A
	Through	-	532	1.7%	537
	Right	-	13	0.0%	13

Advancing Volume:	550
Right Turn Volume:	13

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	13
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

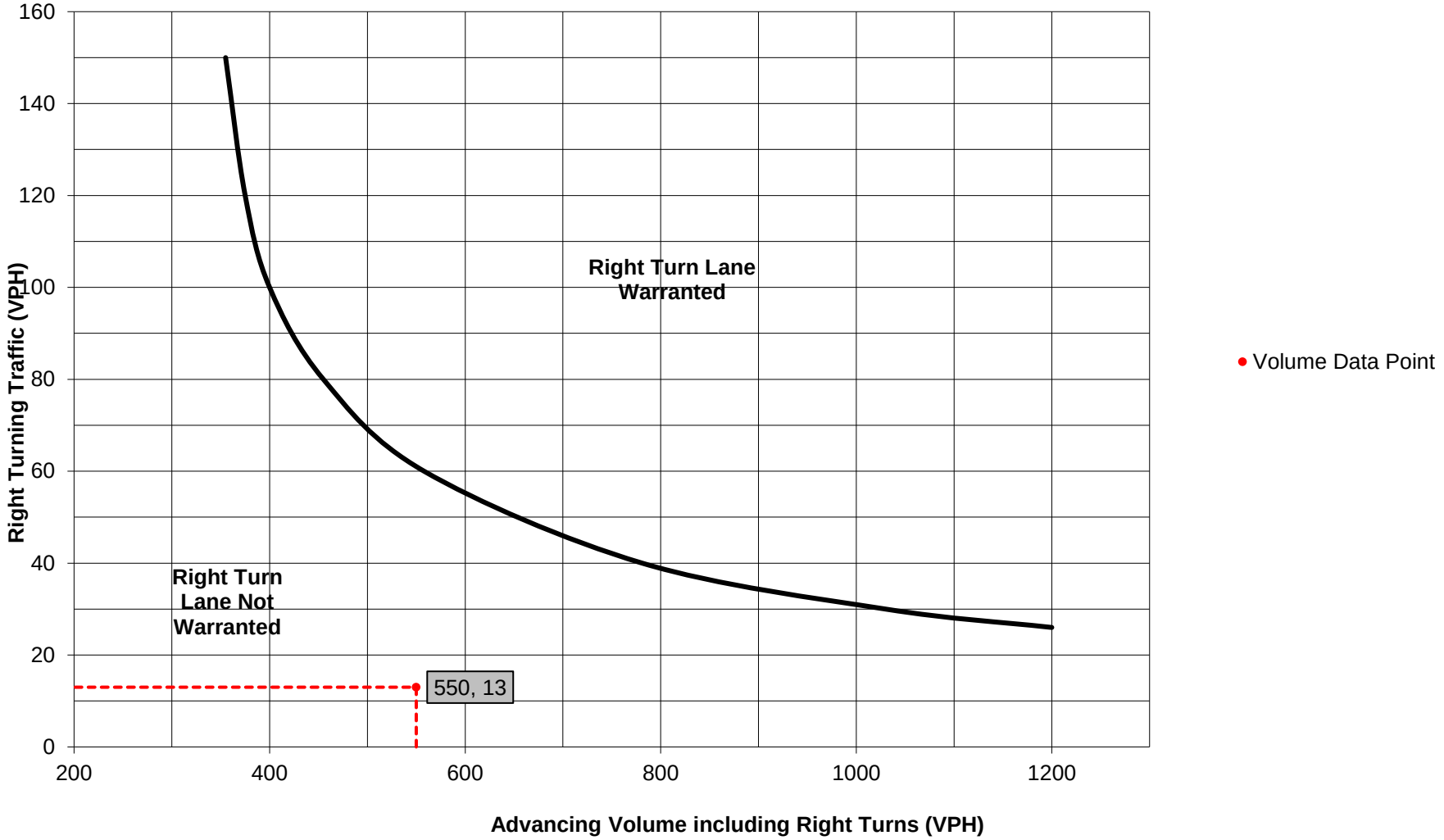
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings: N/A

Additional Comments / Justifications:

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



APPENDIX N - CONCEPT PLANS

DISTRICT	COUNTY	STATE ROUTE	SECTION	SHEET
8-0	LANCASTER	0772	–	?
RAPHO TOWNSHIP				

REVISION NUMBER	REVISION	DATE	BY

CONSTRUCTION NOTES:

UTILITY POLES IMPACTED BY THE IMPROVEMENTS SHALL BE RELOCATED A MINIMUM OF 2' BEHIND THE PROPOSED CURB OR 2' BEHIND THE PROPOSED BACK OF SHOULDER.

ALL MANHOLE RIMS SHALL BE ADJUSTED TO MATCH THE PROPOSED CROSS-SLOPE OF THE ROAD.

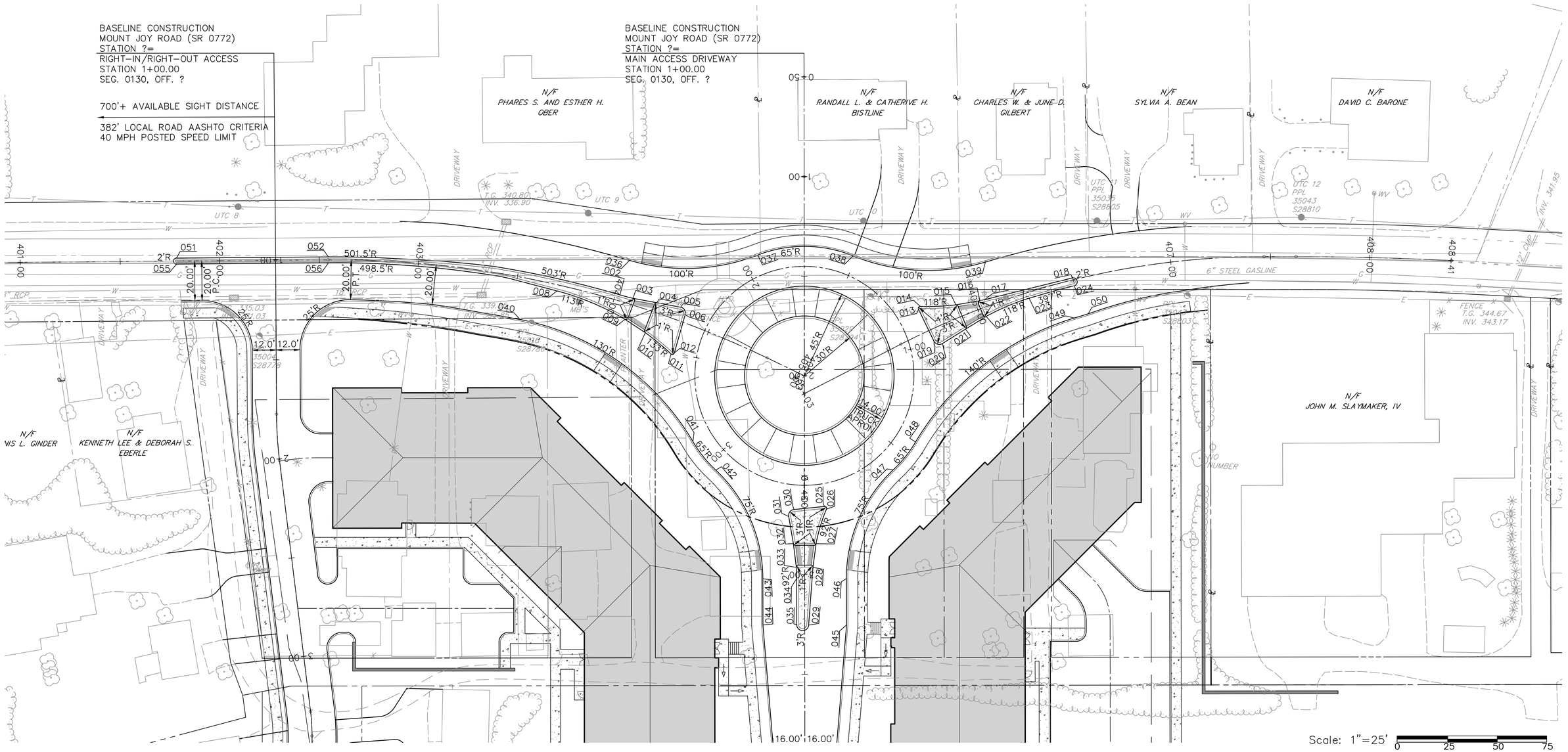
ALL MAILBOXES IMPACTED BY THE IMPROVEMENTS SHALL BE RELOCATED.

SEED ALL SLOPES AND OTHER DISTURBED AREAS, REFER TO COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS 2016, SECTION 804.3 FOR THE APPROPRIATE SEEDING FORMULA.

IT IS THE RESPONSIBILITY OF THE PERMITTEE TO MAKE ADJUSTMENTS TO THE AFFECTED DRIVEWAYS.

THE CONSTRUCTION OF INLETS WILL BE IN ACCORDANCE WITH THE LATEST VERSION OF RC-45M & RC-46M AND PUBLICATION 408/2016.

THE PERMITTEE SHALL ENSURE THAT THE SIGHT DISTANCE AT THE DRIVEWAYS SERVICING OTHER PROPERTIES OR AT OTHER INTERSECTIONS IS NOT REDUCED [UNLESS EXISTING AND PROPOSED VALUES EXCEED THE ACCEPTABLE VALUES SPECIFIED IN PENNSYLVANIA CODE {67 PA CODE 441.8(h)(2)(iv)}] AS A RESULT OF THE WORK PERFORMED IN ACCORDANCE WITH THE STATE HIGHWAY OCCUPANCY PERMIT.
IT IS THE PERMITTEE'S RESPONSIBILITY TO KEEP VEGETATION TRIMMED IN ORDER TO MAINTAIN MINIMUM SIGHT DISTANCE. NO OBJECTS MAY BE PLACED WITHIN THE LINE OF SIGHT.



NO.	REVISION	DATE	BY	APP.
–	–	–	–	–

SEAL

SEAL

MANAGER: M. HENISE
DESIGN: S. LOOSE
DRAFT: SHL
CHKD. BY: M. MADZELAN
NOTES

CIVIL/MUNICIPAL ENGINEERING
LAND PLANNING
LANDSCAPE ARCHITECTURE
LAND DEVELOPMENT
TRANSPORTATION ENGINEERING

EA group, inc.
ENGINEERING & LANDSCAPE ARCHITECTURE
743 S. BROAD STREET
LITITZ, PA 17543
(717) 626-7271
FAX (717) 626-7040
www.eagroup.com

CLIENT
VISTABLOCK
c/o BRANDON CONRAD, CEO
150 FARMINGTON LANE
LANCASTER, PA 17601
717-682-8775

SUBJECT
CONSTRUCTION PLAN
FOR
ROADWAY IMPROVEMENTS ALONG
MOUNT JOY ROAD (SR 0772)
RAPHO TOWNSHIP LANCASTER COUNTY, PA

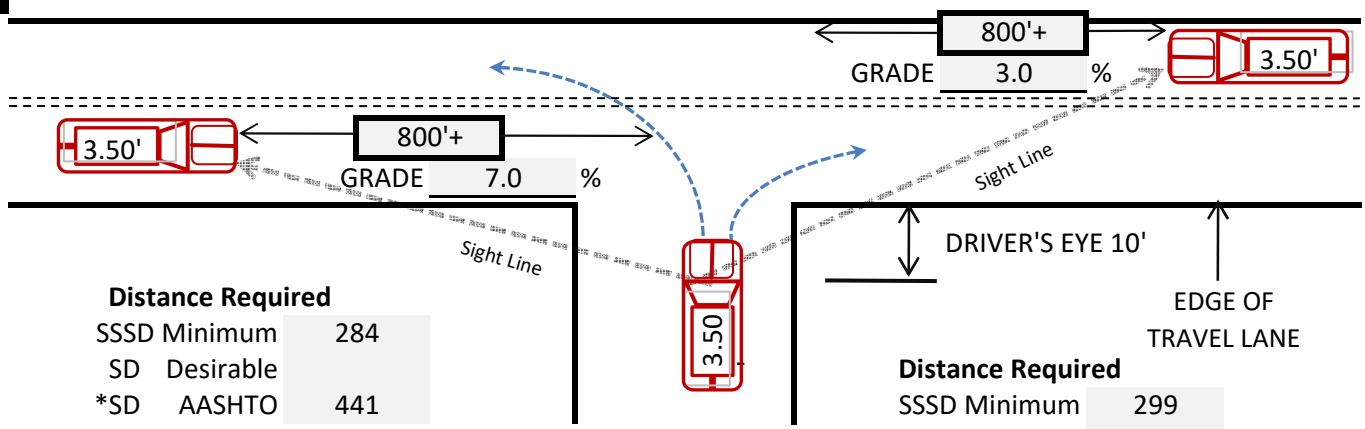
DATE: AUGUST 2022
SCALE: 1"=25'
PROJECT NO.: 1212-002
SHEET NO.: ?

APPENDIX O - SIGHT DISTANCE FORMS

DRIVEWAY SIGHT DISTANCE MEASUREMENTS

APPLICANT	Keller Tract - Full Access (Middle Driveway)			APPLICATION NO.	
S.R. 0772	SEG. 0130	OFFSET 1679		LEGAL SPEED LIMIT	40 mph
MEASURED BY	MAC/SHL			DATE	3/6/21
FOR DEPARTMENT USE ONLY:	Safe-Running Speed			85th Percentile Speed	

A



Distance Required

SSSD Minimum	284
SD Desirable	
*SD AASHTO	441

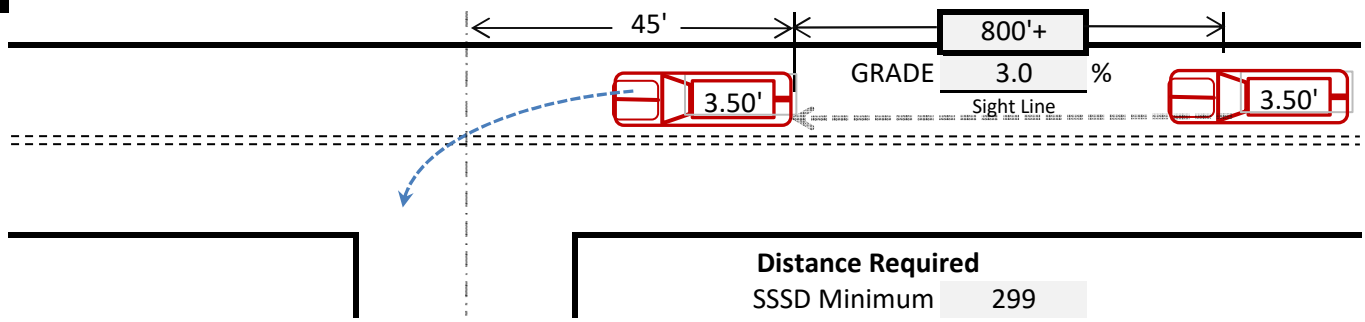
Distance Required

SSSD Minimum	299
SD Desirable	
*SD AASHTO	382

* provide AASHTO sight distances if Local Road

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

B

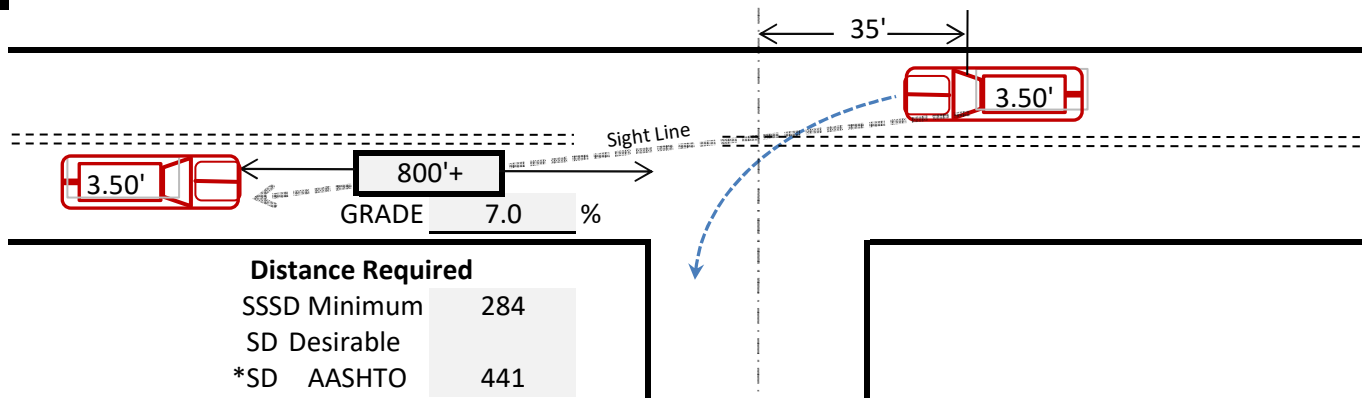


Distance Required

SSSD Minimum	299

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

C



Distance Required

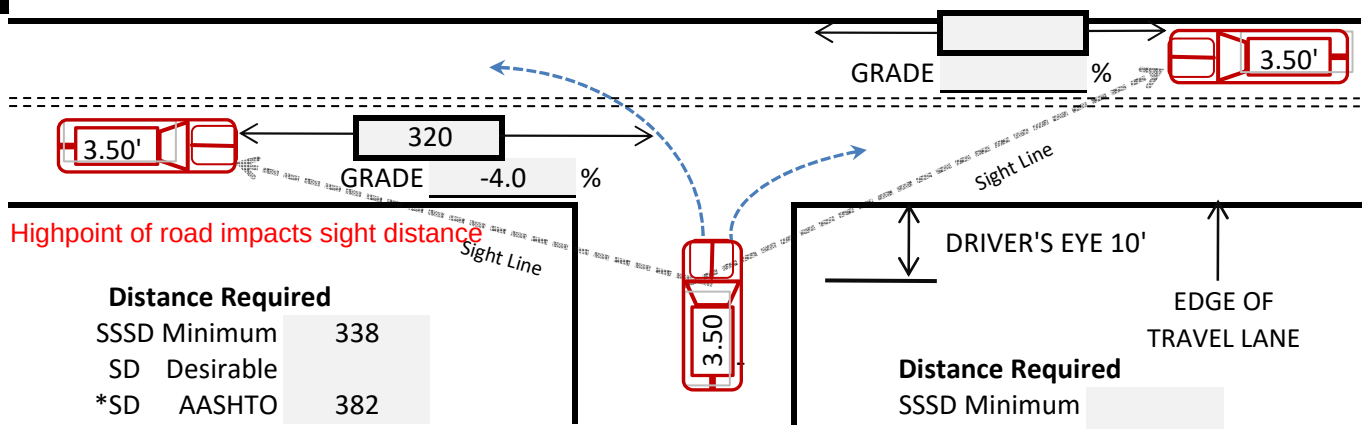
SSSD Minimum	284
SD Desirable	
*SD AASHTO	441

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

DRIVEWAY SIGHT DISTANCE MEASUREMENTS

APPLICANT	Keller Tract - Right-in/Right-out			APPLICATION NO.	
S.R. 0772	SEG. 0130	OFFSET 1953		LEGAL SPEED LIMIT	40 mph
MEASURED BY	MAC/SHL			DATE	3/6/21
FOR DEPARTMENT USE ONLY:	Safe-Running Speed			85th Percentile Speed	

A



Distance Required

SSSD Minimum	338
SD Desirable	
*SD AASHTO	382

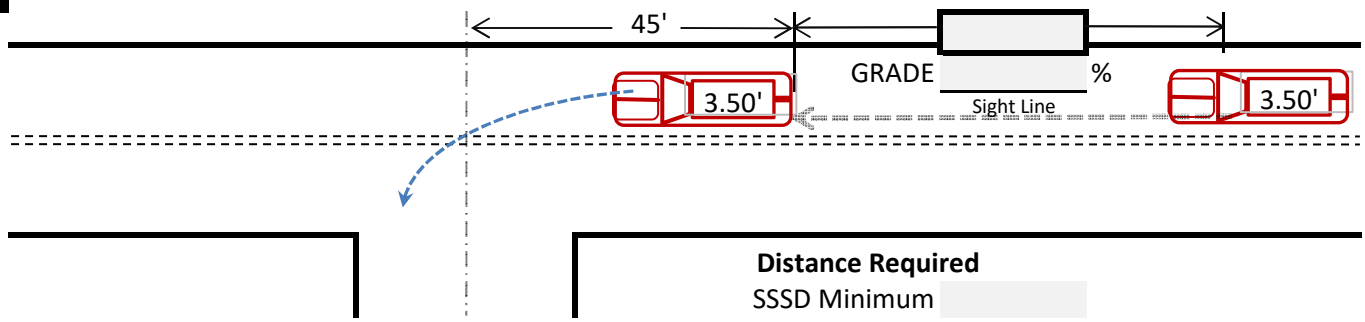
Distance Required

SSSD Minimum	
SD Desirable	
*SD AASHTO	

* provide AASHTO sight distances if Local Road

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE ANOTHER VEHICLE APPROACHING ON THE ROADWAY.

B

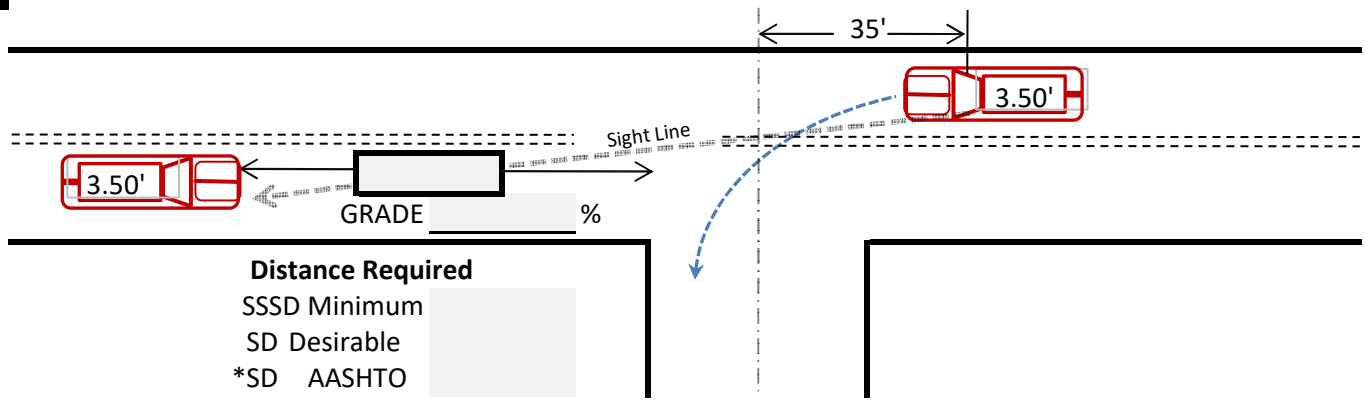


Distance Required

SSSD Minimum

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER AT A DRIVEWAY LOCATION CAN CONTINUOUSLY SEE THE REAR OF A VEHICLE WHICH IS LOCATED IN THE DRIVER'S TRAVEL LANE AND WHICH IS POSITIONED TO MAKE A LEFT TURN INTO A DRIVEWAY.

C



Distance Required

SSSD Minimum	
SD Desirable	
*SD AASHTO	

THE MAXIMUM LENGTH OF ROADWAY ALONG WHICH A DRIVER OF A VEHICLE INTENDING TO MAKE A LEFT TURN INTO A DRIVEWAY CAN CONTINUOUSLY SEE A VEHICLE APPROACHING FROM THE OPPOSITE DIRECTION.

APPENDIX P - SCOPING APPLICATION

pennsylvania
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION IMPACT STUDY (TIS) DETERMINATION & SCOPING MEETING APPLICATION

Scoping Meeting Application: Returned to Applicant

Scoping Meeting Date: 06-14-2021 Scoping Number: S0820210058

Tax Parcel Number: _____

Project/Development Name: Keller Tract

Applicant Information:

Business Partner ID: _____

Applicant Name: Sam Stoltzfus

Phone: 7173519250 Email 1: sam@gazebo.com

Primary Contact: Sam Stoltzfus Email 2: _____

Additional Engineering Firm Information:

Business Partner ID: 000323

Engineering Firm: ELA Group Inc

Phone: 17176267271 Email 1: memadzelan@elagroup.com

Primary Contact: Michelle Madzelan Email 2: _____

Creator Information:

Business Partner ID: 000323 Firm Name: ELA Group, Inc.

Phone: 717-626-7271 Email 1: crweaver@elagroup.com

(1) LOCATION OF PROPOSED DEVELOPMENT:

PennDOT Engineering District: 08 Email: _____

County: Lancaster Email: JonesG@co.lancaster.pa.us

Municipality1: RAPHO Email: Manager@RaphoTownship.com

Municipality2: _____ Email: _____

Municipality3: _____ Email: _____

NO.	SR	Segment	Offset	Average Daily Trips	Driveway Classification	Local Road
1	0772	0130	1332	632	Low Volume	No
2	0772	0130	1580	1128	Low Volume	No

Are there any vehicle weight or size restrictions along the SR in accordance with 75 PA C.S. ss 4902? : No

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

Proposed site access:

Two driveways will provide access both on SR 0772: the first is about 240 feet East of Cove Road and the second is about 250 feet east of the first proposed access drive. The first driveway is proposed as a right-in/right-out drive to serve as the secondary access that is required by the Rapho Township Subdivision and Land Development Ordinance Section 603.3. The second proposed access drive is close to the location as an existing field driveway and is proposed as a full access drive.

Proposed land uses:

Housing development of 6 buildings with 379 multi-family apartment units total

Community linkages *(access to neighboring properties, cross easements, pedestrian and transit accommodations):*
South of the site, a proposed 5' wide pedestrian path will connect the site with the Little Chiques Park. This is shown on the revised site plan.

(3) DEVELOPMENT SCHEDULE AND STAGING:

Anticipated Opening Date: 12-31-2023

Full Buildout Date: 12-31-2025

Describe Proposed Development Schedule/Staging:
2 phases are proposed: the first is the two front buildings of 72 and 60 units for a total of 135 units and the second phase is the remaining four buildings of 60, 60, 64, and 60 units for a total of 244 units.

(4) TRIP Generation:

Land Use & Size	Land Use Code	Were ITE results used?	Daily Trips	AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
				Enter	Exit	Enter	Exit	Enter	Exit
379 units of multi-family development	221	Yes	1761	36	119	90	58		
		TOTAL:	1761	36	119	90	58	0	0

(5) TRANSPORTATION IMPACT STUDY REQUIRED?

Transportation Impact Study Required? Yes

If Yes, based on:
During any one-hour time period, 100 or more vehicle trips entering or exiting a development.

Other considerations as described below:
Rapho Township SLDO Criteria

(6) TRANSPORTATION IMPACT ASSESSMENT REQUIRED?

Transportation Impact Assessment Required? No

(7) STUDY AREA:

Roadway and Study Intersections:
1. Mount Joy Road (SR 0772) and Milton Grove Road (SR 4033) 2. Mount Joy Road (SR 0772) and Lefever Road 3. Mount Joy Road (SR 0772) and N Barbara Street 4. Mount Joy Road (SR 0772) and 1st Proposed Access Drive 5. Mount Joy Road (SR 0772) and 2nd Proposed Access Drive

Land use context (Refer to PennDOT Design Manual, Part 1X, Appendix B):
Suburban Corridor

Known Congestion Areas:
None that are known

Known Safety Concerns:
None that are known

Known Environmental Constraints:
None that are known

Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.):
Borough Park is located about 0.25 miles east of the project site. There are no other community centers, parks, or schools near the site.

Transit Review (Current routes/stops):
There are no Transit Routes or Stops in the vicinity of the project.

(8) STUDY AREA TYPE:

Study Area Type: Urban

(9) TIS ANALYSIS PERIODS AND TIMES:

Analysis period and times notes:
AM and PM peak hours during existing (2021), full build-out year (2025), and design year (2030) conditions.

(10) TRAFFIC ADJUSTMENT FACTORS:

(a) Seasonal Adjustment (Identify counts requiring adjustment and methodology):
None

(b) Annual Base Traffic Growth: 0.67 %/yr. **Source:** PennDOT Growth Factors August

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

NO.	Land Use	%	Source

(d) Captured Trips for Multi-Use Sites:
None

(e) Modal Split Reductions:
None

(f) Other Reductions:
None

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

Notes:
We are not aware of any nearby projects and we request to be notified if any do exist.

(12) TRIP DISTRIBUTION AND ASSIGNMENT:

Trip Distribution Notes:
The trip distribution will be based upon existing traffic patterns and logical routes to and from the site.

(13) APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:

NO.	Location	Period	Type
2	Study Intersections #1-3	AM Peak: 6-9AM, PM Peak: 3-6PM	Turning Movement Count
1	SR 0772	7-Day	ATR (vol/speed/class)

(14) CAPACITY/LOS ANALYSIS:

NO.	Location	Period	Type
1	Study Intersections #1-5	AM & PM Peak for Existing, No Build & Build	Vistro 2020 (HCM 6th edition)

(15) ROADWAY IMPROVEMENTS/MODIFICATIONS BY OTHERS TO BE INCLUDED:

Roadway Improvements:

We are not aware of any nearby roadway improvement projects and we request to be notified if any exist.

(16) OTHER NEEDED ANALYSES:

(a) Sight Distance Analysis:

Site Access Drives

(b) Signal Warrant Analysis (Identify locations):

At site access drives and if needed for mitigation

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

N/A

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

N/A

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

Site Access Drive intersections using PennDOT spreadsheets.

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

Site Access Drive intersections using PennDOT spreadsheets.

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

N/A

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

Queuing analysis will be provided for each intersection within the study area using HCM 6th 95th percentile methodology.

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

As applicable

(j) Crash Analysis (Identify locations):

Crash data at study intersections along state routes and along the roadways between the study intersections will be obtained from PennDOT and analyzed for evident crash trends. Crash data will be summarized and analyzed in a document separate from the TIS.

(k) Weaving Analysis (Identify locations):

N/A

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

N/A

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

Additional Comments:

No comments or recommendations at this time

PennDOT Review Comments: (Current Cycle Comments)

1). The District Traffic Unit has reviewed the submitted Cycle 4 TIS scope application and has found it to be acceptable. Please proceed with the TIS submission and clearly note that the proposed roundabout will be designed with an elongated median along S.R. 0772 to physically restrict left turns from the proposed secondary RIRO access. However, please note that if property owner sign offs due to the elongated median are unobtainable during the HOP process, then the proposed RIRO access must be eliminated if the elongated roundabout median is deemed infeasible.

After review of the scoping meeting application, the Department will contact the applicant regarding the need for a scoping meeting prior to applying for a highway occupancy permit.

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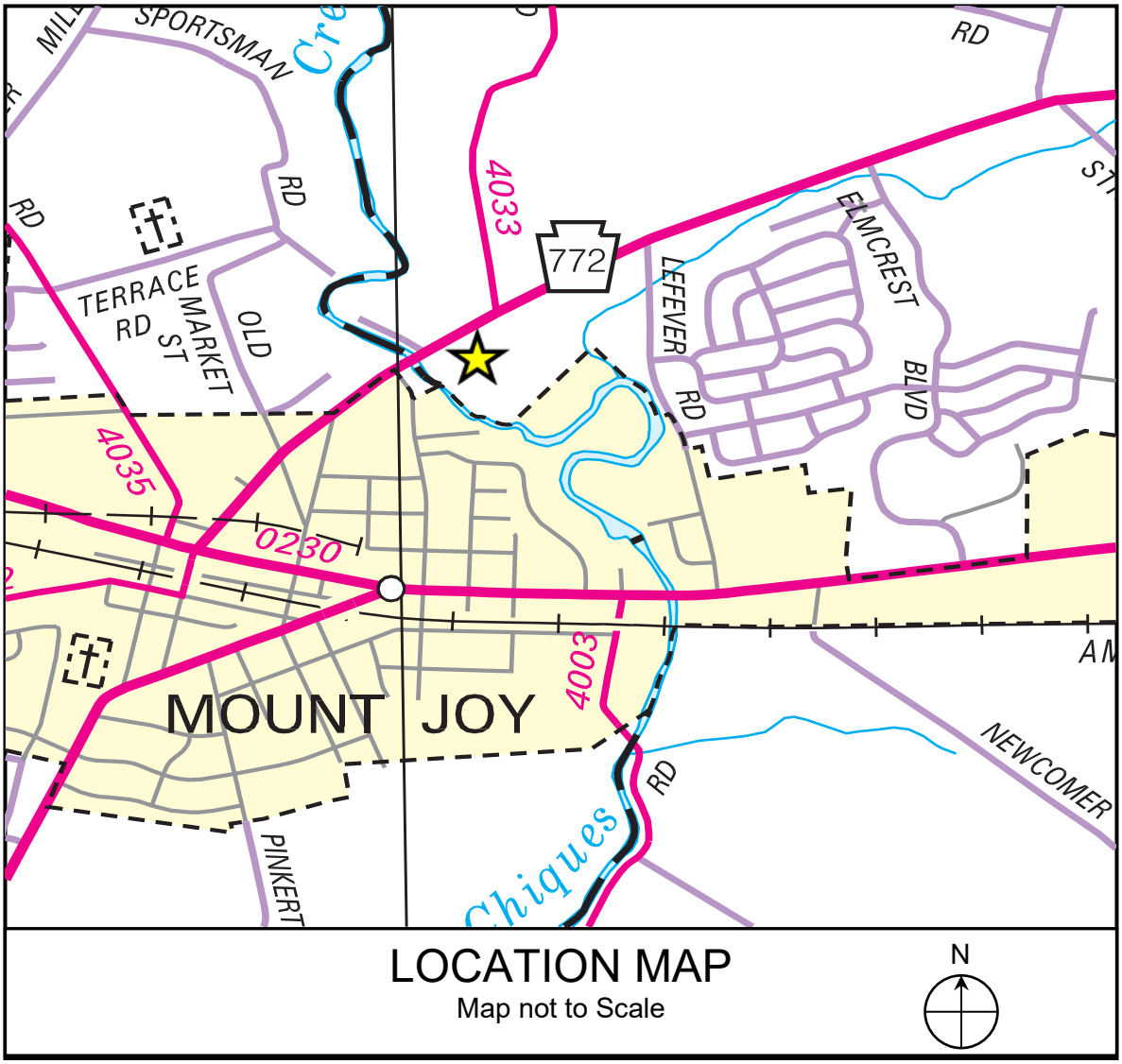

Source: PennDOT General Highway Map – Lancaster County

KELLER TRACT

Rapho Township
Lancaster County

Exhibit 1 – Location Map

Keller Tract on Mount Joy Rd – Data Collection Plan

April 2021

Previous Traffic Count Data

TIRe data – TMS Site 2848 is along Manheim Street/Mt Joy Road (SR 0772) about 0.1 miles north of the intersection of SR 0772 and SR 0230. The count at this location was conducted on May 31, 2018. This information can be compared to new traffic data that will be collected at this intersection.

New Traffic Data to be Collected

TMC at Intersection of Mt Joy Road (SR 0772) and Milton Grove Road (SR 4033) – ELA Group will conduct a TMC at this intersection during the weekday AM (6-9) and PM (3-6) peak hours. The proposed adjustment to normal 2021 conditions is described below.

TMC at Intersection of Mt Joy Road (SR 0772) and Lefever Road – ELA Group will conduct a TMC at this intersection during the weekday AM (6-9) and PM (3-6) peak hours. The proposed adjustment to normal 2021 conditions is described below.

TMC at Intersection of Mt Joy Road (SR 0772) and n Barbara Street – ELA Group will conduct a TMC at this intersection during the weekday AM (6-9) and PM (3-6) peak hours. The proposed adjustment to normal 2021 conditions is described below.

ATR count at TMS Site 2848 – an ATR count will be conducted along the site frontage for use in comparing current conditions to the previous counts.

Adjusting Available Count Data to Normal 2021 Conditions

The adjustment process consists of transferring the TIRe data from both TMS sites that was collected in a previous year to an estimated 2021 amount using the county growth rate provided by PennDOT. The growth factor for Lancaster County, in this case, is 1.04% per year. Next, the current 2021 traffic counts are taken at the same TMS sites. Then, the difference between the actual 2021 value and the projected 2021 value is evaluated. This difference will then be applied to the turning movement counts at the study intersections.

Scoping Meeting Minutes

To: Meeting Attendees

From: Michelle Madzelan, PE

CC:

Date: June 14, 2021

Re: Keller Tract in Rapho Township, Lancaster County

Scoping Application #S0820210058

Comments:

Meeting Attendees

Eric Kinard	PennDOT District 8-0 Traffic
Dean Noles	PennDOT District 8-0 Traffic
William Warden	PennDOT District 8-0
Chris Flad	PennDOT District 8-0
Mazhar Malik	PennDOT District 8-0
Ryan Shoemaker	PennDOT District 8-0
Taylor Lukens	PennDOT District 8-0
John Schick	Rapho Township Traffic Engineer
Michelle Madzelan	ELA Group, Inc.
Cheryl Love	ELA Group, Inc.
Brent Good	ELA Group, Inc.
Thomas Nehilla	Barley Snyder
Brandon Conrad	Vistablock
Tom Kile	Property Owner
Greg Kile	Property Owner
Kevin Lath	Property Owner

Discussions

Meeting started with introductions.

Existing site, proposed use and proposed layout was discussed.

PennDOT Scoping Application Comments were discussed.

- Proposed drive throat length for full access drive is currently proposed with parking spots near Mount Joy Road. This may be acceptable depending on the proposed queue lengths and driveway classification.
- Much discussion regarding the 2 drives off Mount Joy Road occurred. PennDOT indicated that the right-in / right-out drive should be gated. The design team will verify the requirements from the Township.

  Post meeting note: Dean Noles of PennDOT indicated that the site will be allowed one drive if the 650' separation between two drives cannot be met. If a second drive is required by the Township, consideration should be given to make the second drive as a gated emergency access.
- Discussions on the possible two-way left turn on Mount Joy Road was discussed. Overall, the concept was well received, but will need designed based on actual traffic data.
- PennDOT requested to review and approve the trip distribution and trip assignment prior to the TIS submission.

Michelle Madzelan, PE

From: Jones, Gary <JonesG@co.lancaster.pa.us>
Sent: Monday, March 21, 2022 11:33 AM
To: Michelle Madzelan, PE
Cc: Newell, Gwendolyn; Rohrbaugh, Alex
Subject: RE: Keller Tract Scoping Application Acceptance?

Hi Michelle,

Sorry to be so long about getting back to you. The traffic analysis is acceptable.

We do have questions about the pedestrian path to the "proposed 5' wide pedestrian path will connect the site with the Little Chiques Park" shown on the map as "public trail to park". That portion of the park is not currently developed as a park, but that part of the plan will be looked at later in the land development review.

Thank you,

Gary Jones
Planner
Land Use & Transportation Team
Lancaster County Planning Department
150 North Queen Street, Suite 320
Lancaster, Pennsylvania 17603
jonesg@co.lancaster.pa.us
717-299-8333

From: Michelle Madzelan, PE <memadzelan@elagroup.com>
Sent: Friday, March 18, 2022 1:43 PM
To: Jones, Gary <JonesG@co.lancaster.pa.us>
Subject: [EXTERNAL] RE: Keller Tract Scoping Application Acceptance?

Good afternoon Gary,
I was following up with you on the Keller Tract scoping application. Is the proposed analysis acceptable to the County? Please let me know.

Thank you,
Michelle Madzelan, PE

MICHELLE MADZELAN, PE
Senior Transportation Manager
T: (717) 625-7677
M: (717) 919-0638
LITITZ | STATE COLLEGE | BUTLER

From: Michelle Madzelan, PE
Sent: Tuesday, March 8, 2022 8:03 AM
To: jonesg@co.lancaster.pa.us
Subject: Keller Tract Scoping Application Acceptance?

Good morning Gary,
Attached is the traffic scoping application for the Keller Tract in Rapho Township, Lancaster County. Please let me know if the proposed analysis is acceptable to the County.

Thank you,
Michelle Madzelan, PE

Michelle Madzelan, PE

From: Jim Caldwell <jcaldwell@rettew.com>
Sent: Monday, April 4, 2022 4:29 PM
To: Michelle Madzelan, PE
Cc: John Schick
Subject: RE: Keller Tract Scoping Application - Township Acceptance?

Hi Michelle,

We no additional comments.

Thank you,

Jim Caldwell
Team Lead, Municipal
Office: 800-738-8395
Direct: 717-431-3740
Mobile: 717-808-9343
jcaldwell@rettew.com

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http://www.rettew.com/

From: Michelle Madzelan, PE <memadzelan@elagroup.com>
Sent: Monday, April 4, 2022 9:02 AM
To: John Schick <jschick@rettew.com>; Jim Caldwell <jcaldwell@rettew.com>
Subject: RE: Keller Tract Scoping Application - Township Acceptance?

Good morning,
I wanted to touch base with you on the traffic application for the Keller Tract. Did you have any comments on the traffic scoping application or is it acceptable as presented?

Please let me know.
Thank you,
Michelle Madzelan, PE

ELA group, inc.
ENGINEERS • LANDSCAPE ARCHITECTS

MICHELLE MADZELAN, PE
Senior Transportation Manager
T: (717) 625-7677
M: (717) 919-0638
LITITZ | STATE COLLEGE | BUTLER

From: Michelle Madzelan, PE
Sent: Friday, March 18, 2022 1:44 PM
To: John M. Schick (jschick@rettew.com) <jschick@rettew.com>; Jim Caldwell <jcaldwell@rettew.com>
Subject: RE: Keller Tract Scoping Application - Township Acceptance?

Good afternoon,
I was following up with you on the Keller Tract scoping application. Is the proposed analysis acceptable to the Township? Please let me know.

Thank you,
Michelle Madzelan, PE

From: Michelle Madzelan, PE
Sent: Tuesday, March 8, 2022 8:19 AM
To: John M. Schick (jschick@rettew.com) <jschick@rettew.com>; Jim Caldwell <jcaldwell@rettew.com>
Subject: Keller Tract Scoping Application - Township Acceptance?

Good morning,
Attached is the traffic scoping application for the Keller Tract in Rapho Township, Lancaster County. Please let me know if the proposed analysis is acceptable to the Township.

Thank you,
Michelle Madzelan, PE

APPENDIX Q - CORRESPONDENCE

Michelle Madzelan, PE

From: Randall Wenger <Manager@RaphoTownship.com>
Sent: Wednesday, May 4, 2022 2:46 PM
To: Brent Good, RLA; John Schick; Jim Caldwell
Cc: Michelle Madzelan, PE; Shawn Loose; Cheryl Love, RLA; Kyle Grinestaff, CPSI
Subject: RE: Keller Tract - Updated Right-in Right-out Concept

Follow Up Flag: Follow up
Flag Status: Flagged

Brent,

Good afternoon,

Rapho Township prefers that this secondary access should remain right in, right out for all vehicles. If you're looking for something more than that, please fee free to send me a proposed draft.

Best regards,

Randall O. Wenger, Manager
Rapho Township
971 N. Colebrook Road
Manheim, PA 17545-9680
Phone: 717-665-3827
Fax: 717-665-7685
www.raphotownship.com

Township Office hours are: 8:00 a.m. – 3:30 p.m. Monday - Friday

Michelle Madzelan, PE

From: Jim Caldwell <jcaldwell@rettew.com>
Sent: Tuesday, March 7, 2023 4:21 PM
To: Randall Wenger
Cc: Brandon Conrad; Brent Good, RLA; Michelle Madzelan, PE; John Schick
Subject: RE: Chiques Crossing - Lefever Rd Summary Report

Randall,

We have reviewed the Lefever Road Summary Report. The report provided the alternatives and gap analysis requested by the Township at the January 4, 2023 staff meeting.

The applicant's consultant has demonstrated that there are more acceptable gaps in traffic than there are left turns out of Lefever Road. Therefore, PennDOT will most likely accept that, even with the unsatisfactory level of service on that approach. In addition, they have concluded that there are no other "feasible" improvements that can be implemented at the intersection.

Thank you,

Jim Caldwell
Team Lead, Municipal
Office: 800-738-8395
Direct: 717-431-3740
Mobile: 717-808-9343
jcaldwell@rettew.com

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http://www.rettew.com/

From: Michelle Madzelan, PE <memadzelan@elagroup.com>
Sent: Wednesday, February 22, 2023 11:57 AM
To: Jim Caldwell <jcaldwell@rettew.com>; John Schick <jschick@rettew.com>; Randall Wenger <manager@raphotownship.com>
Cc: Brandon Conrad <brandon@vistablock.com>; Brent Good, RLA <bdgood@elagroup.com>
Subject: Chiques Crossing - Lefever Rd Summary Report

Good morning all,
The attached summary report is for the Lefever Road / Mount Joy Road intersection that was analyzed as part of the Chiques Crossing development. This report includes the gap analysis and results.

Please let me know if you have any questions.
Michelle Madzelan, PE

MICHELLE MADZELAN, PE
Senior Transportation Manager
T: (717) 625-7677
M: (717) 919-0638
LITITZ | STATE COLLEGE | BUTLER

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Michelle Madzelan, PE

From: Michelle Madzelan, PE
Sent: Thursday, November 10, 2022 3:00 PM
To: Noles, Dean T
Subject: Chiques Crossing - Trip Distribution
Attachments: Mt_Joy_Rd_&_Elmcrest_Blvd_864142_08-17-2021.pdf; Chiques Crossing Trip Dist.pdf

Good afternoon Dean,
Attached is the Chiques Crossing (formerly Keller Tract) proposed distribution. Scope number is S0820210058.

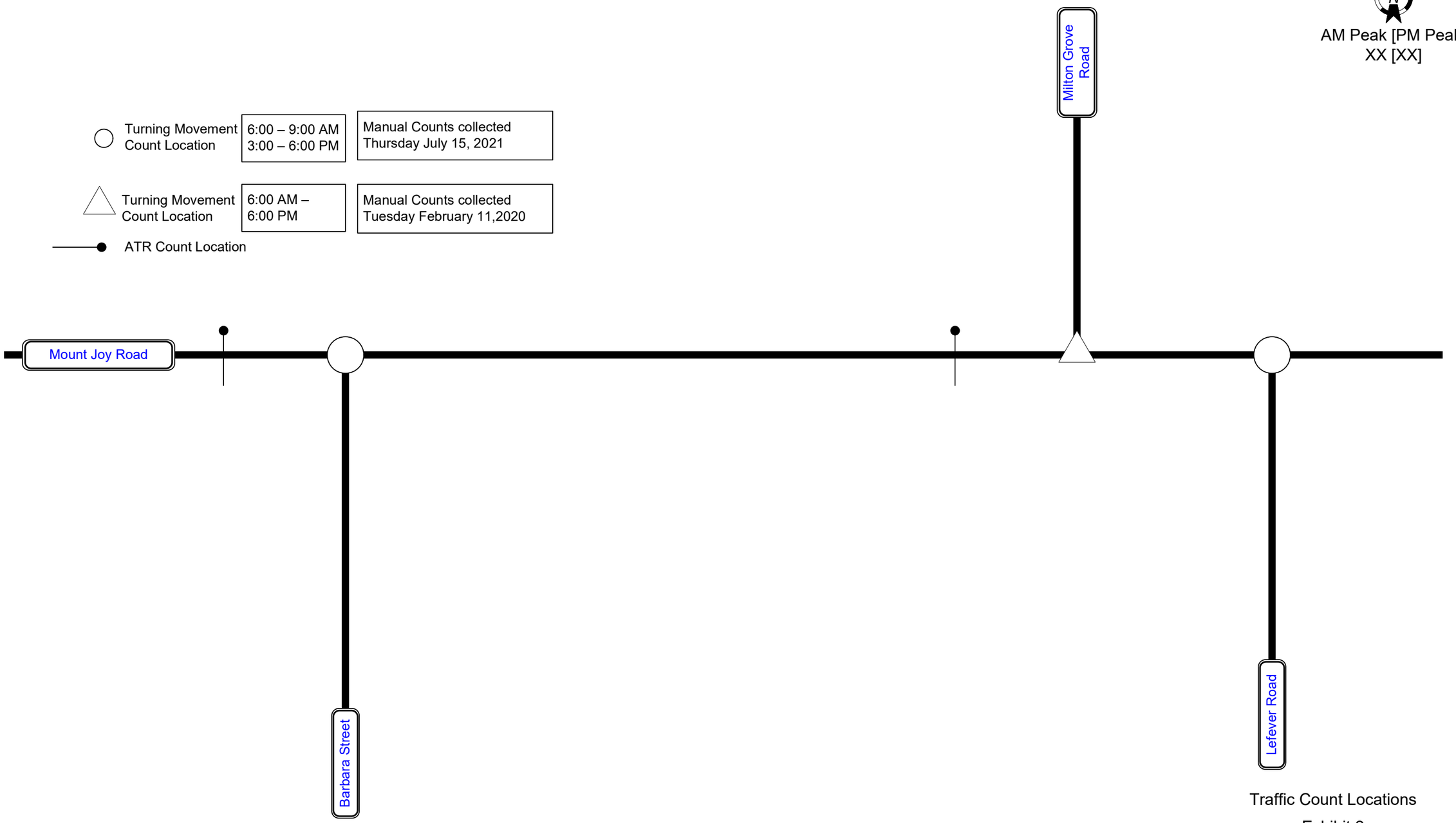
The distribution was based on the traffic counts performed for the adjacent subdivision. The percentages of exiting/entering vehicles from those counts were applied to this project with actual volumes on the study intersections. Also, I attached the TMC from the adjacent neighborhood.

Please let me know if it is acceptable.

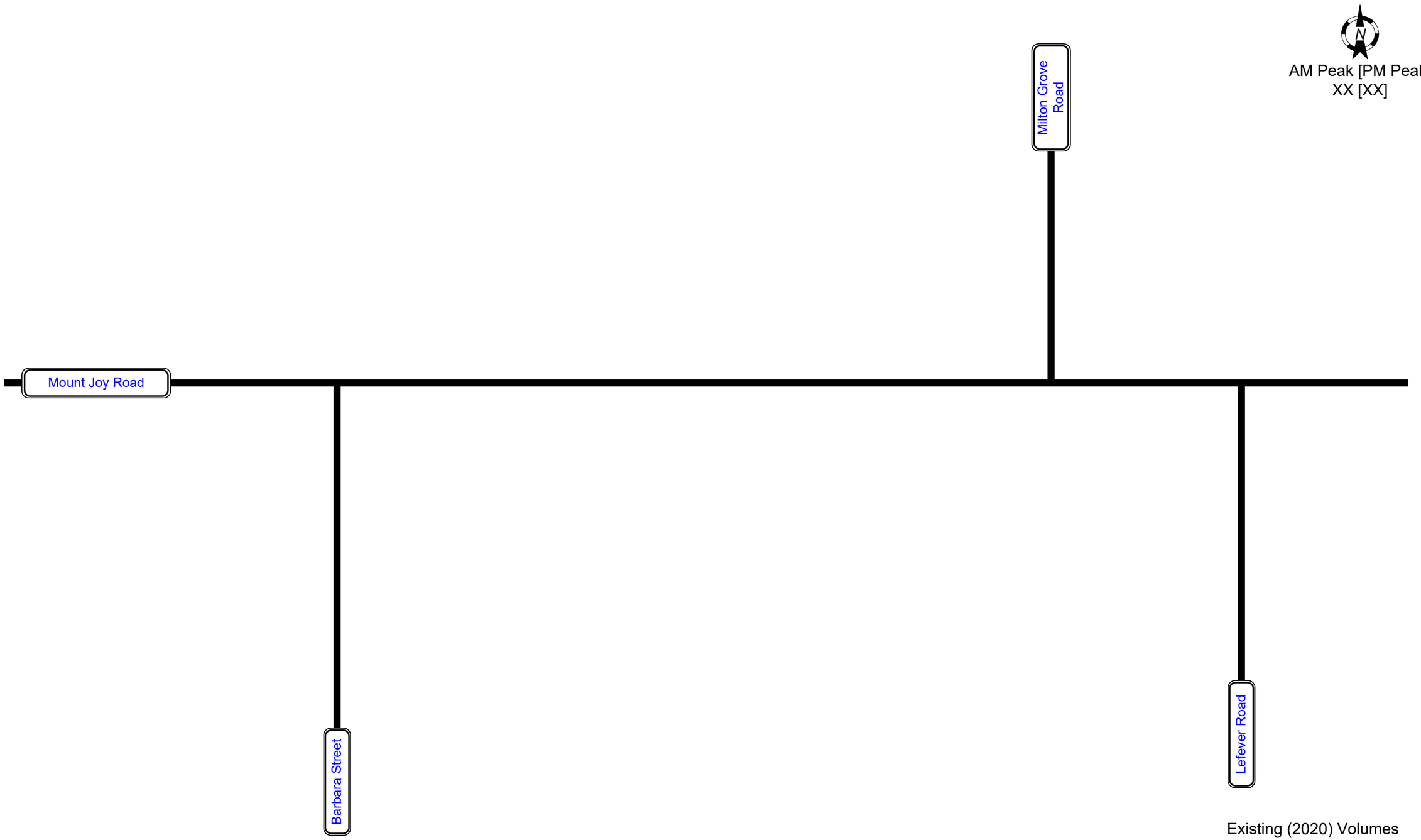
Let me know if you have any questions.
Thanks,
Michelle

AM Peak [PM Peak]
XX [XX]

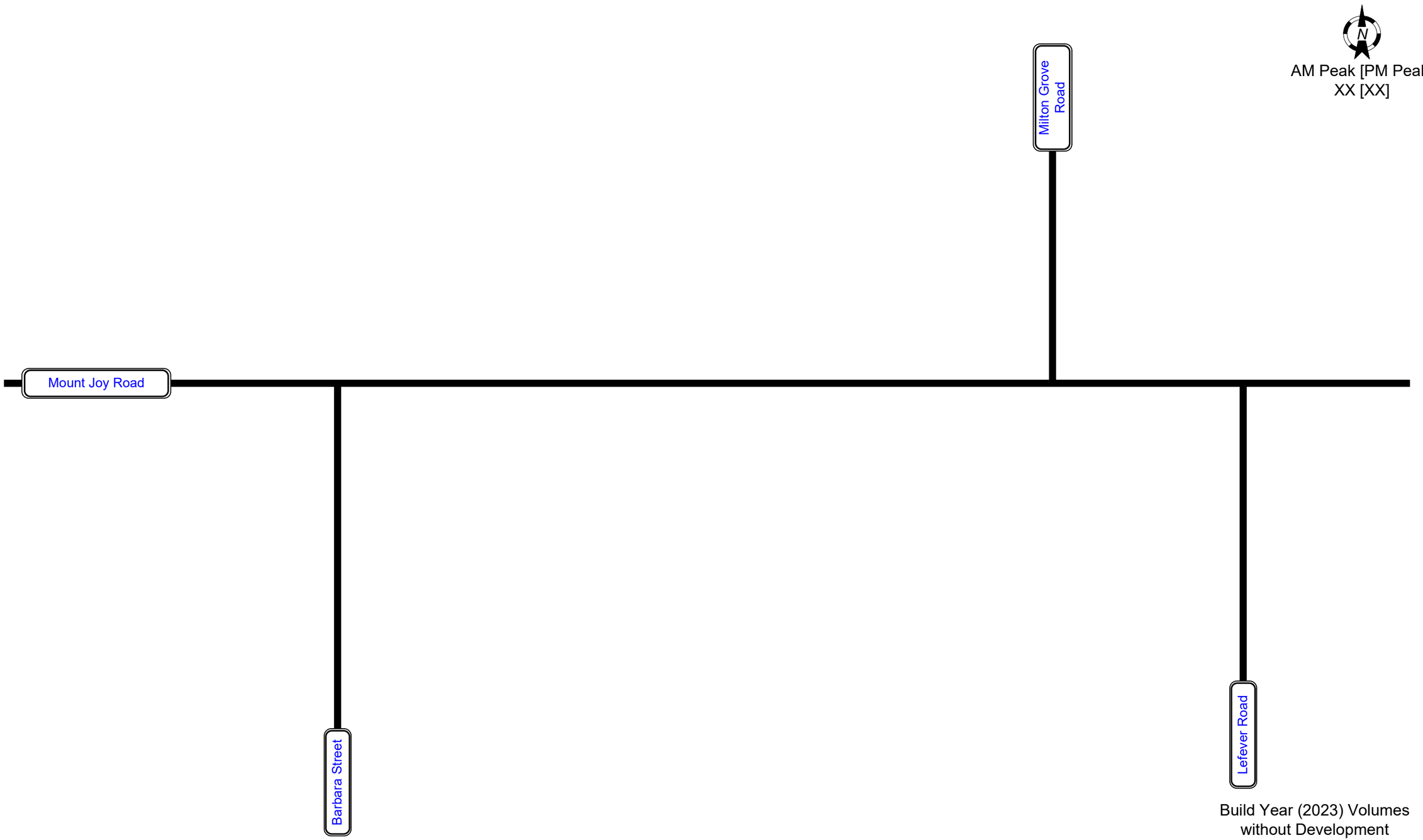
○ Turning Movement Count Location	6:00 – 9:00 AM 3:00 – 6:00 PM	Manual Counts collected Thursday July 15, 2021
△ Turning Movement Count Location	6:00 AM – 6:00 PM	Manual Counts collected Tuesday February 11,2020
ATR Count Location		



Traffic Count Locations
Exhibit 2

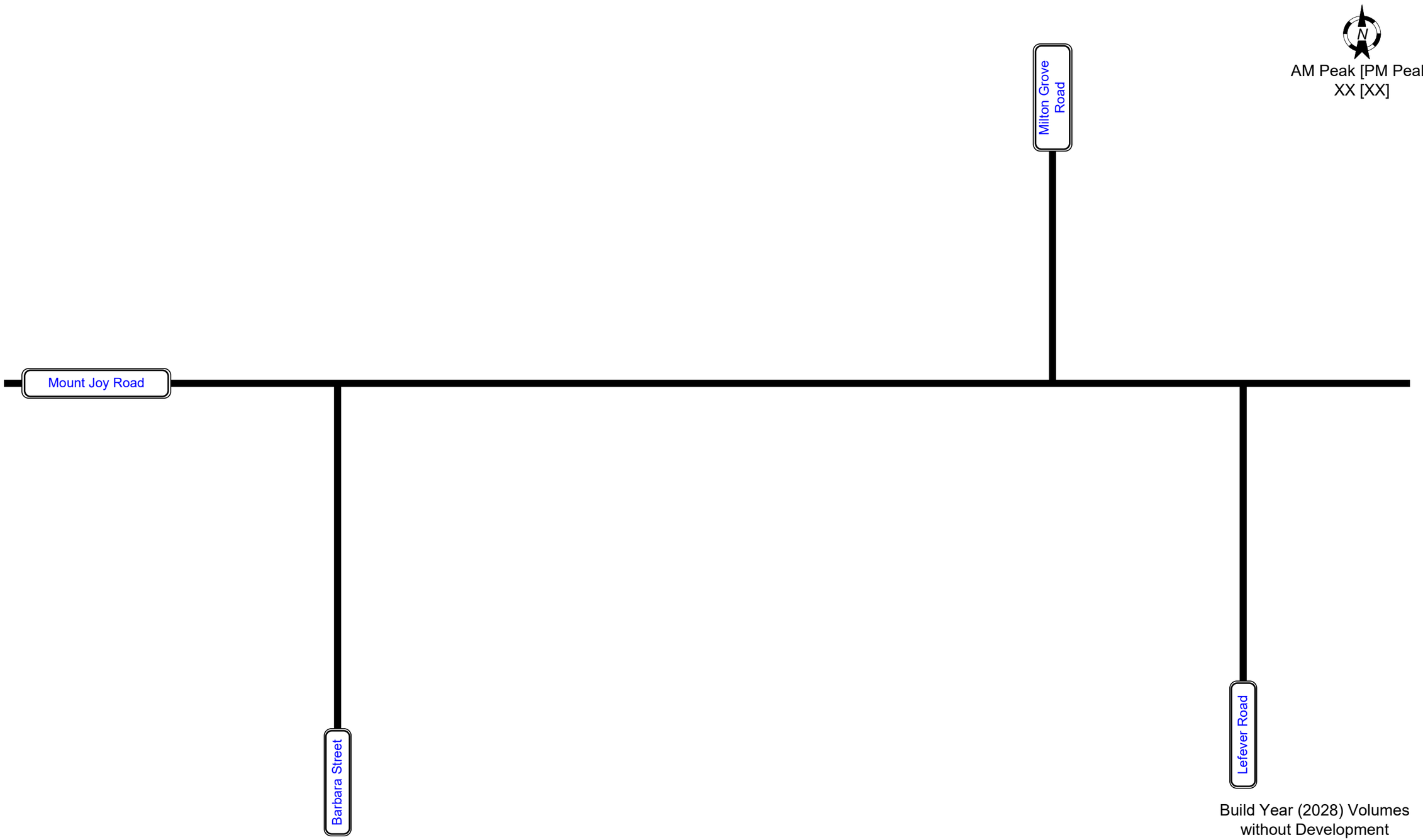


Existing (2020) Volumes
Exhibit 3



Build Year (2023) Volumes without Development

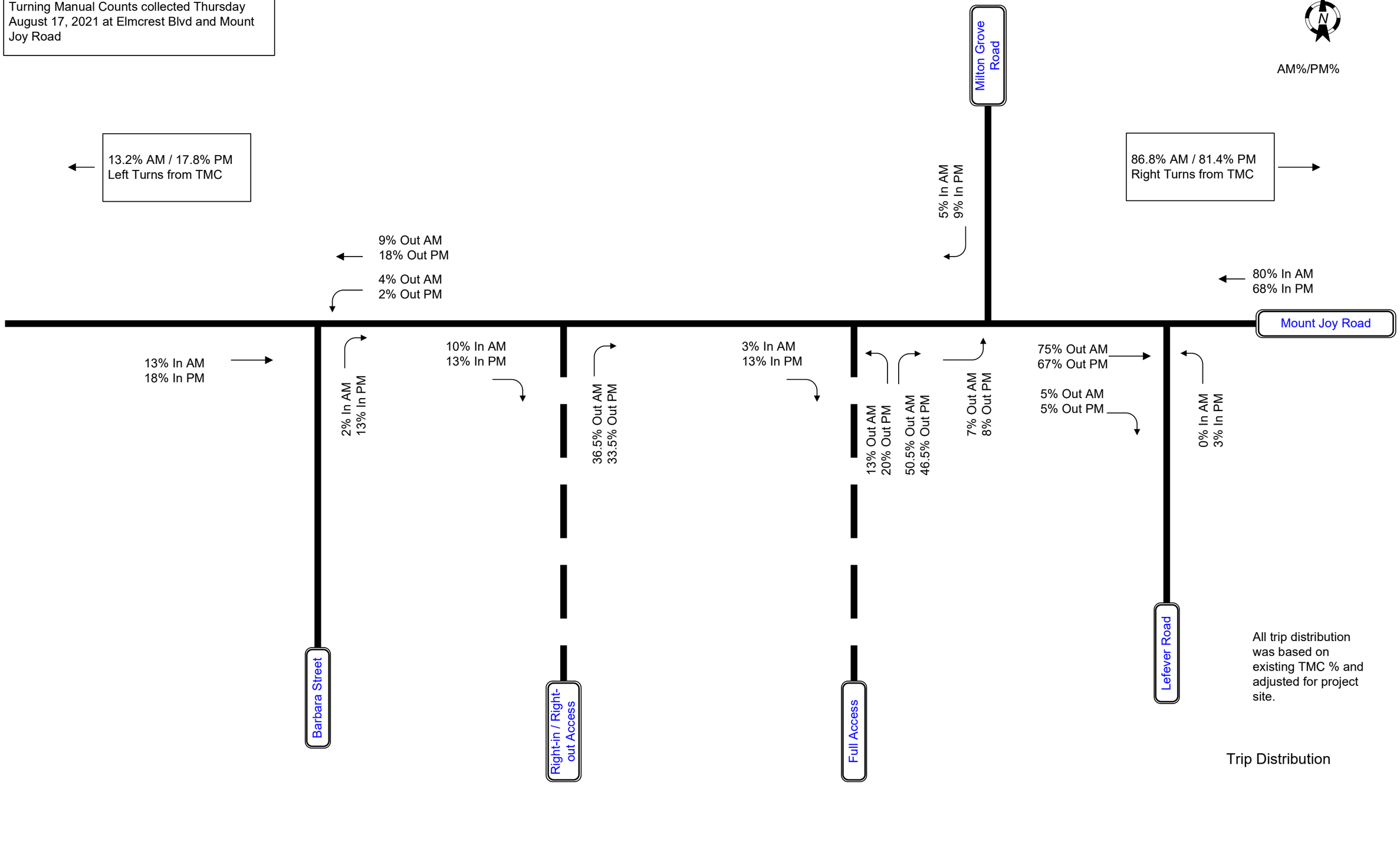
Exhibit 4



Build Year (2028) Volumes without Development

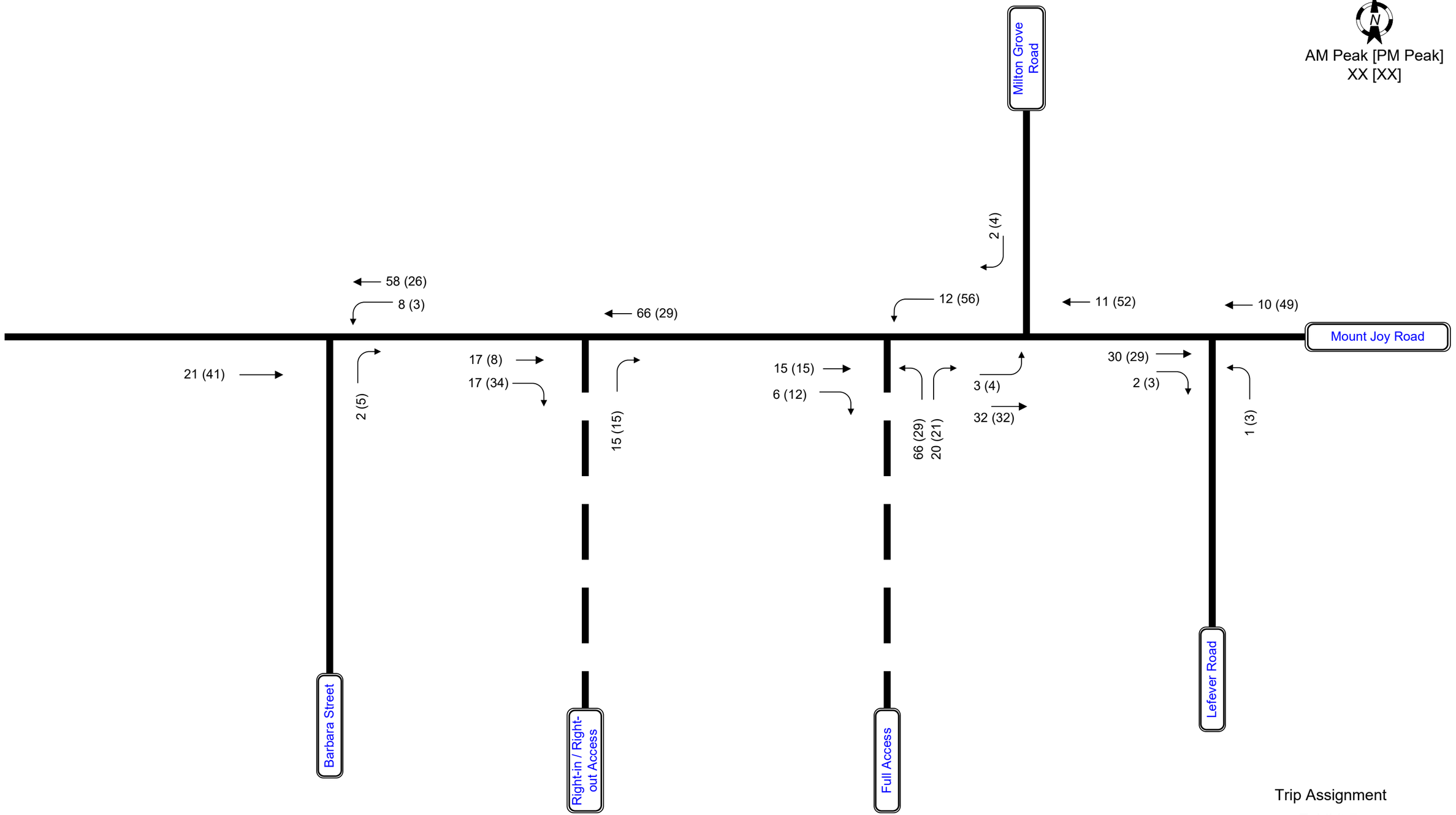
Exhibit 5

Turning Manual Counts collected Thursday August 17, 2021 at Elmcrest Blvd and Mount Joy Road

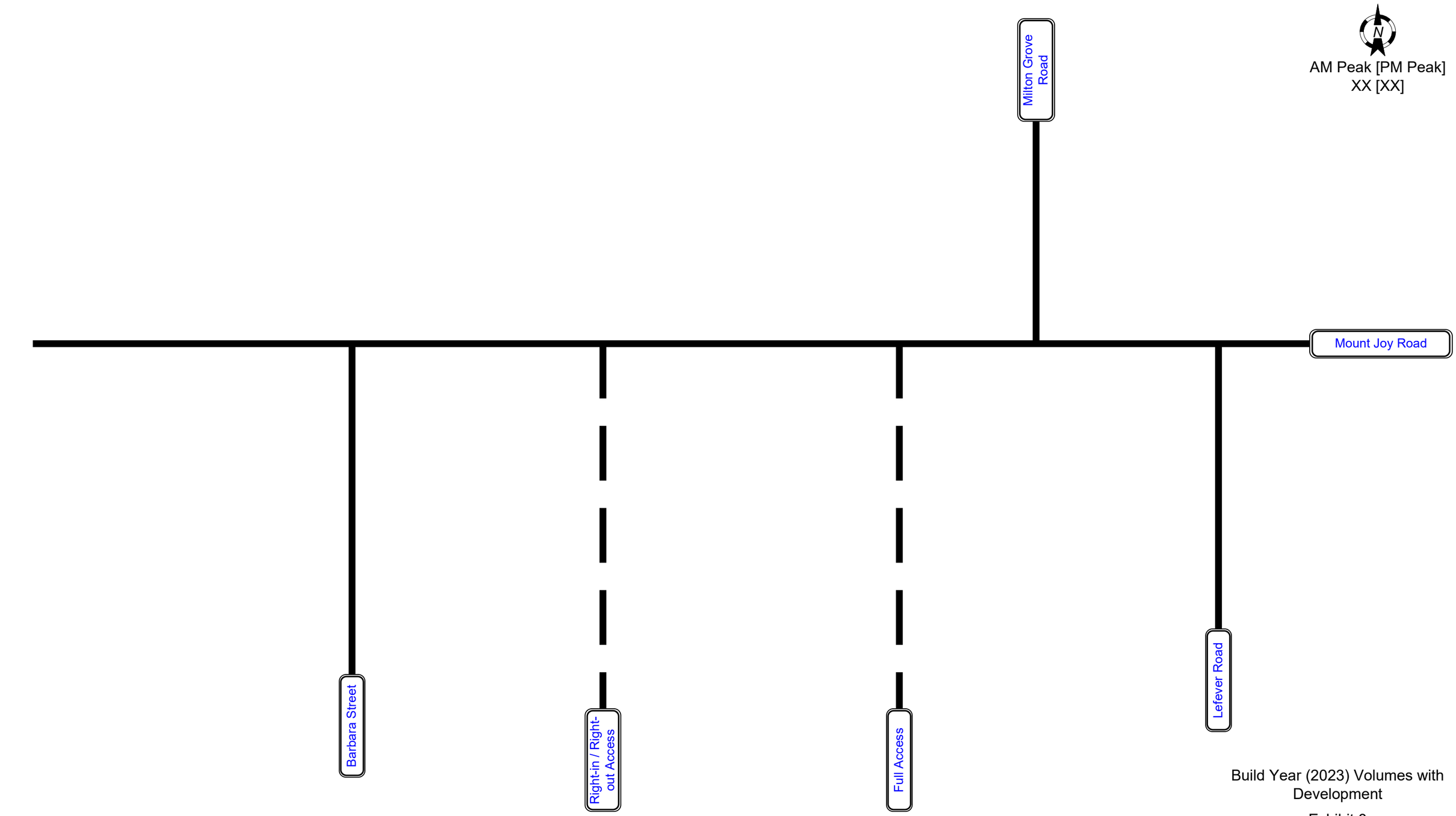


All trip distribution was based on existing TMC % and adjusted for project site.

Trip Distribution

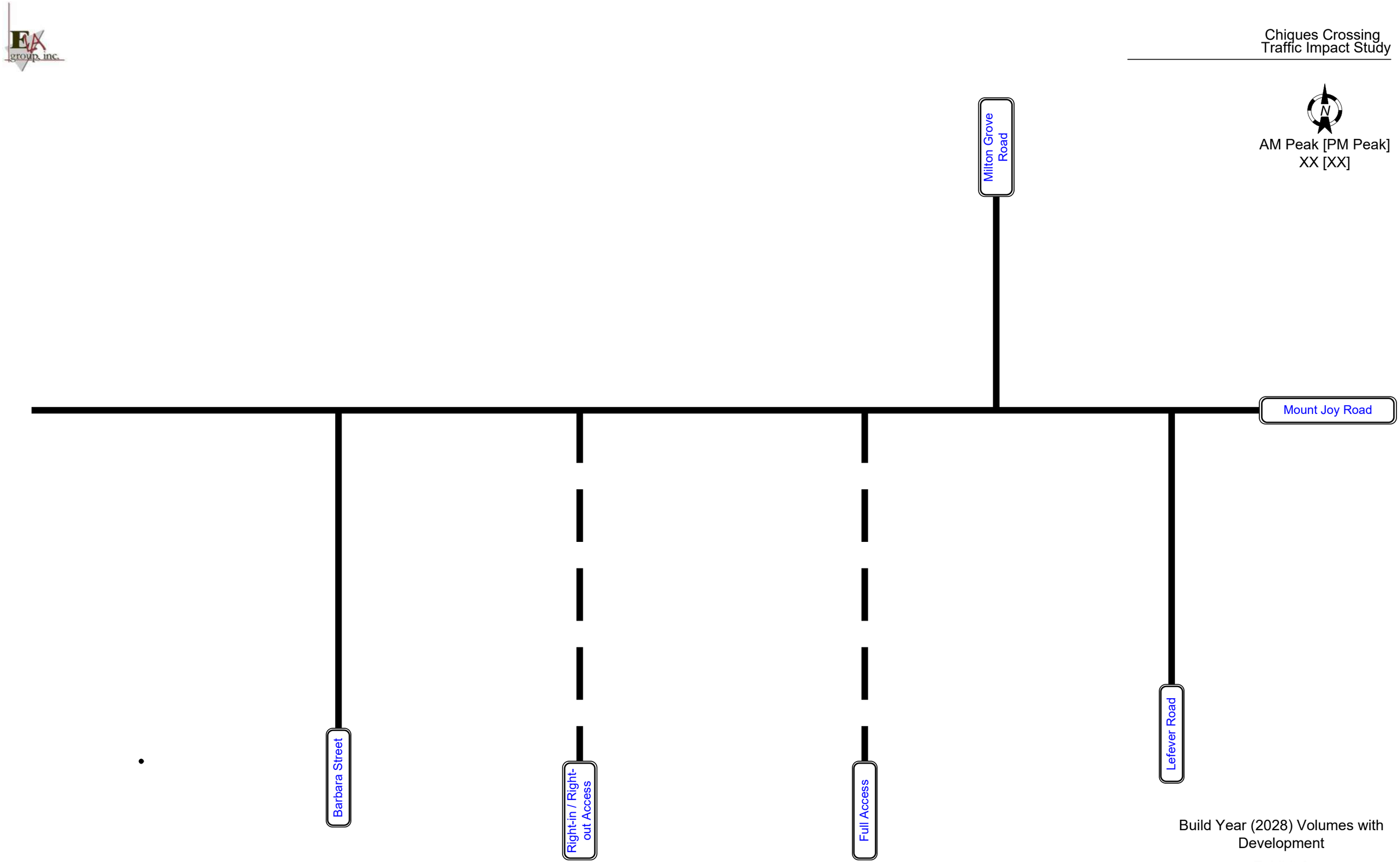


Trip Assignment
Exhibit 7



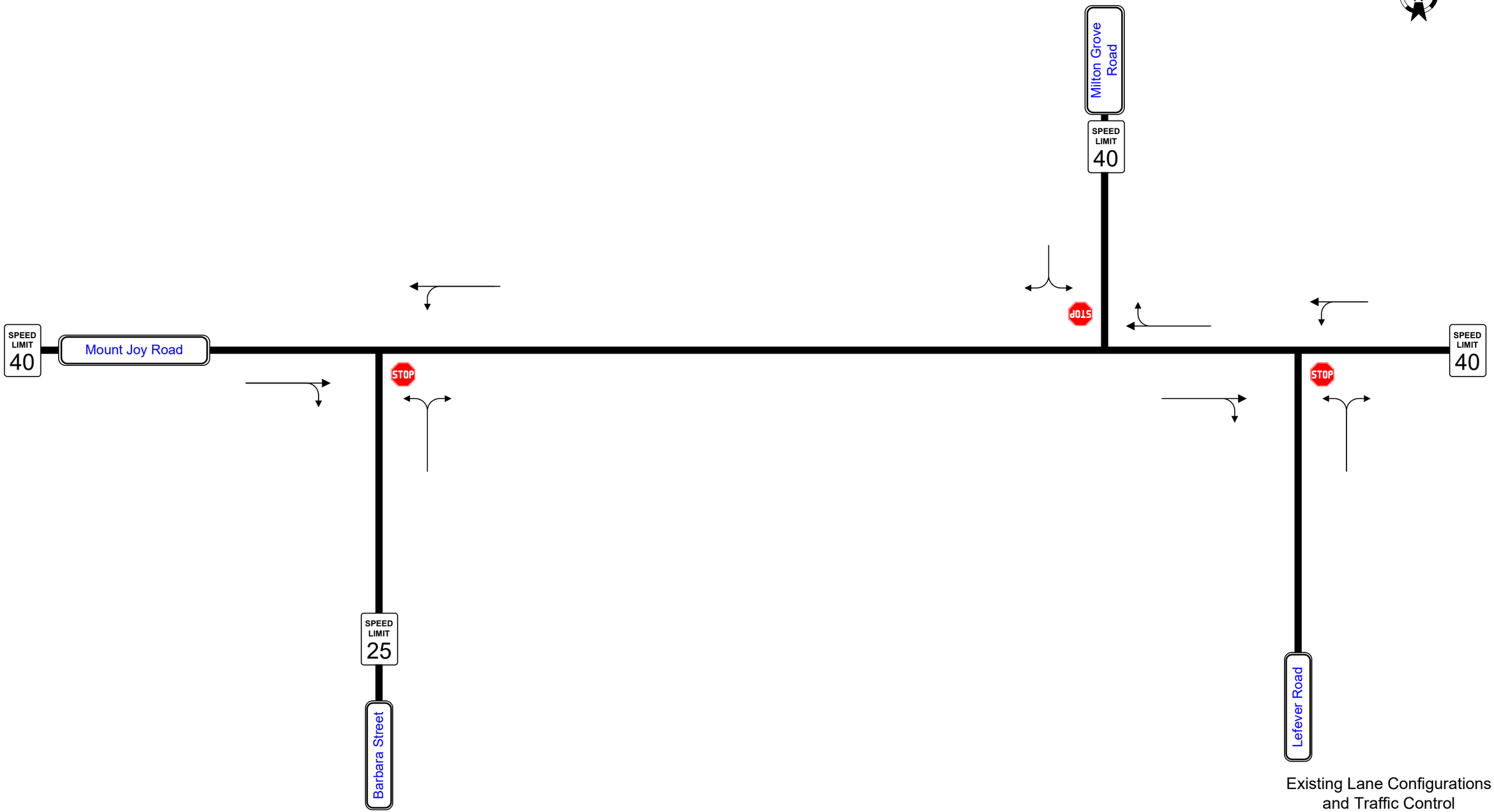
Build Year (2023) Volumes with Development

Exhibit 8



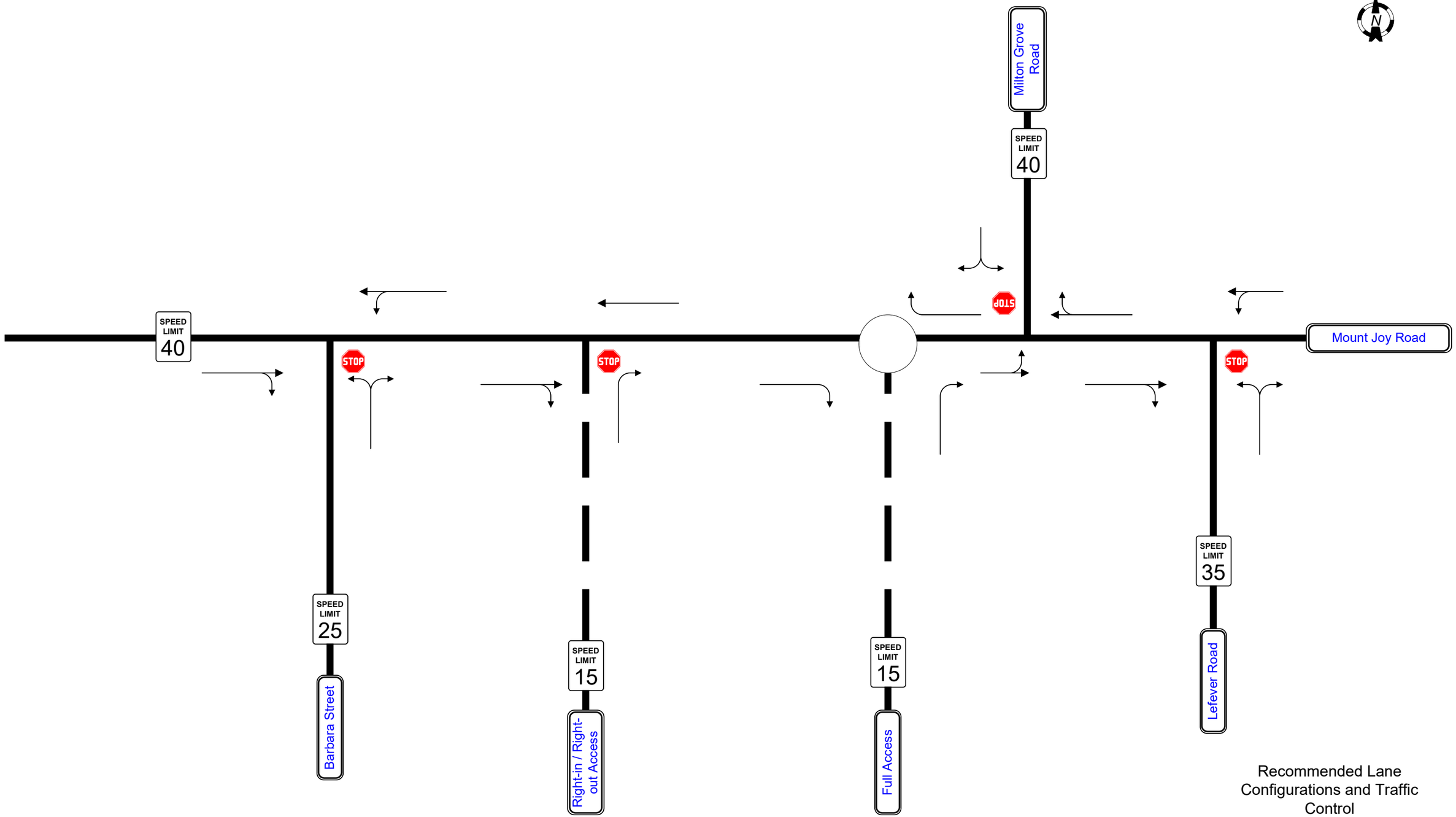
Build Year (2028) Volumes with Development

Exhibit 9



Existing Lane Configurations and Traffic Control

Exhibit 3



Recommended Lane Configurations and Traffic Control

Exhibit 4

www.TSTData.com
184 Baker Rd

Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Lancaster County, PA
Mt Joy Rd & Elmcrest Blvd
Tuesday, August 17, 2021
Location: 40.121831, -76.483063

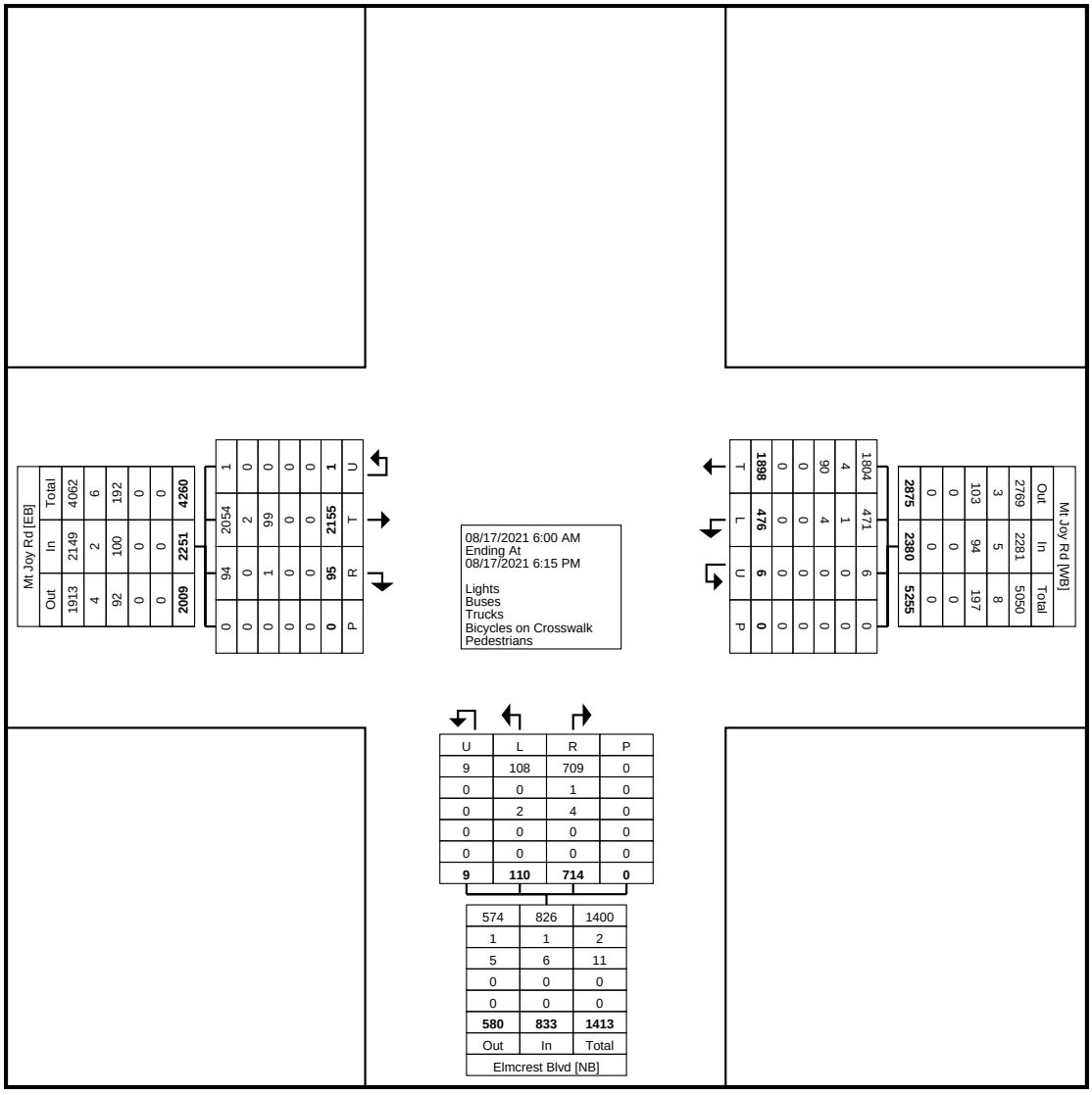
Count Name: Mt Joy Rd & Elmcrest Blvd
Site Code:
Start Date: 08/17/2021

Turning Movement Data

Start Time	Mt Joy Rd Eastbound						Mt Joy Rd Westbound					Elmcrest Blvd Northbound						
	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
6:00 AM	61	1	0	0	0	62	2	20	0	0	22	3	6	9	0	0	18	102
6:15 AM	73	1	0	0	0	74	4	40	0	0	44	1	3	23	0	0	27	145
6:30 AM	101	0	0	0	0	101	6	42	0	0	48	2	17	22	0	0	41	190
6:45 AM	87	1	1	0	0	89	9	41	1	0	51	2	14	21	0	0	37	177
Hourly Total	322	3	1	0	0	326	21	143	1	0	165	8	40	75	0	0	123	614
7:00 AM	115	3	0	0	0	118	7	43	0	0	50	0	8	20	1	0	29	197
7:15 AM	116	1	0	0	0	117	3	45	0	0	48	5	11	22	0	0	38	203
7:30 AM	110	0	0	0	0	110	9	59	0	0	68	8	23	41	0	0	72	250
7:45 AM	130	3	0	0	0	133	10	59	0	0	69	4	10	24	0	0	38	240
Hourly Total	471	7	0	0	0	478	29	206	0	0	235	17	52	107	1	0	177	890
8:00 AM	90	2	2	0	0	94	14	54	1	0	69	8	14	20	0	0	42	205
8:15 AM	73	4	0	0	0	77	17	66	0	0	83	3	8	13	0	0	24	184
8:30 AM	93	1	1	0	0	95	14	59	0	0	73	7	13	23	0	0	43	211
8:45 AM	76	2	1	0	0	79	18	58	0	0	76	7	8	21	0	0	36	191
Hourly Total	332	9	4	0	0	345	63	237	1	0	301	25	43	77	0	0	145	791
9:00 AM	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
3:00 PM	76	3	0	0	0	79	22	83	0	0	105	6	11	14	0	0	31	215
3:15 PM	75	6	0	0	0	81	30	95	0	0	125	3	7	23	2	0	35	241
3:30 PM	86	5	0	0	0	91	24	115	0	0	139	4	12	13	0	0	29	259
3:45 PM	89	3	2	0	0	94	33	96	0	0	129	4	10	16	2	0	32	255
Hourly Total	326	17	2	0	0	345	109	389	0	0	498	17	40	66	4	0	127	970
4:00 PM	96	3	0	0	0	99	26	120	1	0	147	4	4	16	0	0	24	270
4:15 PM	98	5	2	0	0	105	37	100	0	0	137	7	4	19	0	0	30	272
4:30 PM	96	5	0	0	0	101	34	113	1	0	148	4	11	18	0	0	33	282
4:45 PM	75	5	1	0	0	81	34	121	0	0	155	7	4	16	1	0	28	264
Hourly Total	365	18	3	0	0	386	131	454	2	0	587	22	23	69	1	0	115	1088
5:00 PM	100	10	1	0	0	111	42	126	1	0	169	11	7	26	0	0	44	324
5:15 PM	98	5	0	1	0	104	34	134	0	0	168	1	5	18	0	0	24	296
5:30 PM	83	5	0	0	0	88	25	118	1	0	144	2	6	34	1	0	43	275
5:45 PM	58	7	3	0	0	68	22	91	0	0	113	7	5	21	2	0	35	216
Hourly Total	339	27	4	1	0	371	123	469	2	0	594	21	23	99	3	0	146	1111
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	2155	81	14	1	0	2251	476	1898	6	0	2380	110	221	493	9	0	833	5464
Approach %	95.7	3.6	0.6	0.0	-	-	20.0	79.7	0.3	-	-	13.2	26.5	59.2	1.1	-	-	-
Total %	39.4	1.5	0.3	0.0	-	41.2	8.7	34.7	0.1	-	43.6	2.0	4.0	9.0	0.2	-	15.2	-
Lights	2054	80	14	1	-	2149	471	1804	6	-	2281	108	218	491	9	-	826	5256
% Lights	95.3	98.8	100.0	100.0	-	95.5	98.9	95.0	100.0	-	95.8	98.2	98.6	99.6	100.0	-	99.2	96.2
Buses	2	0	0	0	-	2	1	4	0	-	5	0	0	1	0	-	1	8
% Buses	0.1	0.0	0.0	0.0	-	0.1	0.2	0.2	0.0	-	0.2	0.0	0.0	0.2	0.0	-	0.1	0.1
Trucks	99	1	0	0	-	100	4	90	0	-	94	2	3	1	0	-	6	200
% Trucks	4.6	1.2	0.0	0.0	-	4.4	0.8	4.7	0.0	-	3.9	1.8	1.4	0.2	0.0	-	0.7	3.7
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lancaster County, PA
Mt Joy Rd & Elmcrest Blvd
Tuesday, August 17, 2021
Location: 40.121831, -76.483063

Count Name: Mt Joy Rd & Elmcrest Blvd
Site Code:
Start Date: 08/17/2021



Turning Movement Data Plot

www.TSTData.com
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Coatesville, Pennsylvania, United States 19320
610-466-1469
Serving Transportation Professionals Since 1995

Lancaster County, PA
Mt Joy Rd & Elmcrest Blvd
Tuesday, August 17, 2021
Location: 40.121831, -76.483063

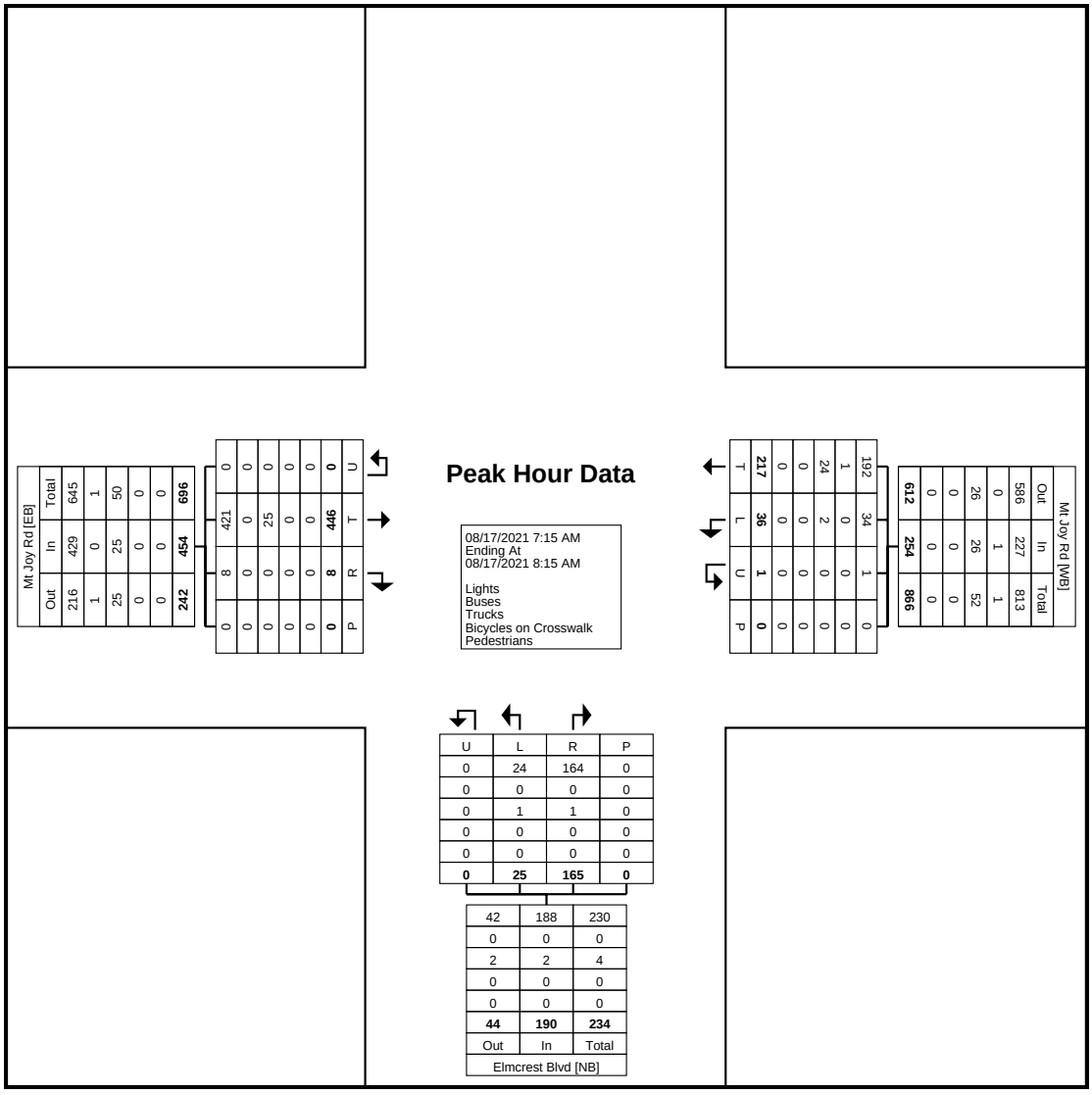
Count Name: Mt Joy Rd & Elmcrest Blvd
Site Code:
Start Date: 08/17/2021

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Mt Joy Rd Eastbound						Mt Joy Rd Westbound					Elmcrest Blvd Northbound						
	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
7:15 AM	116	1	0	0	0	117	3	45	0	0	48	5	11	22	0	0	38	203
7:30 AM	110	0	0	0	0	110	9	59	0	0	68	8	23	41	0	0	72	250
7:45 AM	130	3	0	0	0	133	10	59	0	0	69	4	10	24	0	0	38	240
8:00 AM	90	2	2	0	0	94	14	54	1	0	69	8	14	20	0	0	42	205
Total	446	6	2	0	0	454	36	217	1	0	254	25	58	107	0	0	190	898
Approach %	98.2	1.3	0.4	0.0	-	-	14.2	85.4	0.4	-	-	13.2	30.5	56.3	0.0	-	-	-
Total %	49.7	0.7	0.2	0.0	-	50.6	4.0	24.2	0.1	-	28.3	2.8	6.5	11.9	0.0	-	21.2	-
PHF	0.858	0.500	0.250	0.000	-	0.853	0.643	0.919	0.250	-	0.920	0.781	0.630	0.652	0.000	-	0.660	0.898
Lights	421	6	2	0	-	429	34	192	1	-	227	24	57	107	0	-	188	844
% Lights	94.4	100.0	100.0	-	-	94.5	94.4	88.5	100.0	-	89.4	96.0	98.3	100.0	-	-	98.9	94.0
Buses	0	0	0	0	-	0	0	1	0	-	1	0	0	0	0	-	0	1
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.5	0.0	-	0.4	0.0	0.0	0.0	-	-	0.0	0.1
Trucks	25	0	0	0	-	25	2	24	0	-	26	1	1	0	0	-	2	53
% Trucks	5.6	0.0	0.0	-	-	5.5	5.6	11.1	0.0	-	10.2	4.0	1.7	0.0	-	-	1.1	5.9
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Lancaster County, PA
Mt Joy Rd & Elmcrest Blvd
Tuesday, August 17, 2021
Location: 40.121831, -76.483063

Count Name: Mt Joy Rd & Elmcrest Blvd
Site Code:
Start Date: 08/17/2021



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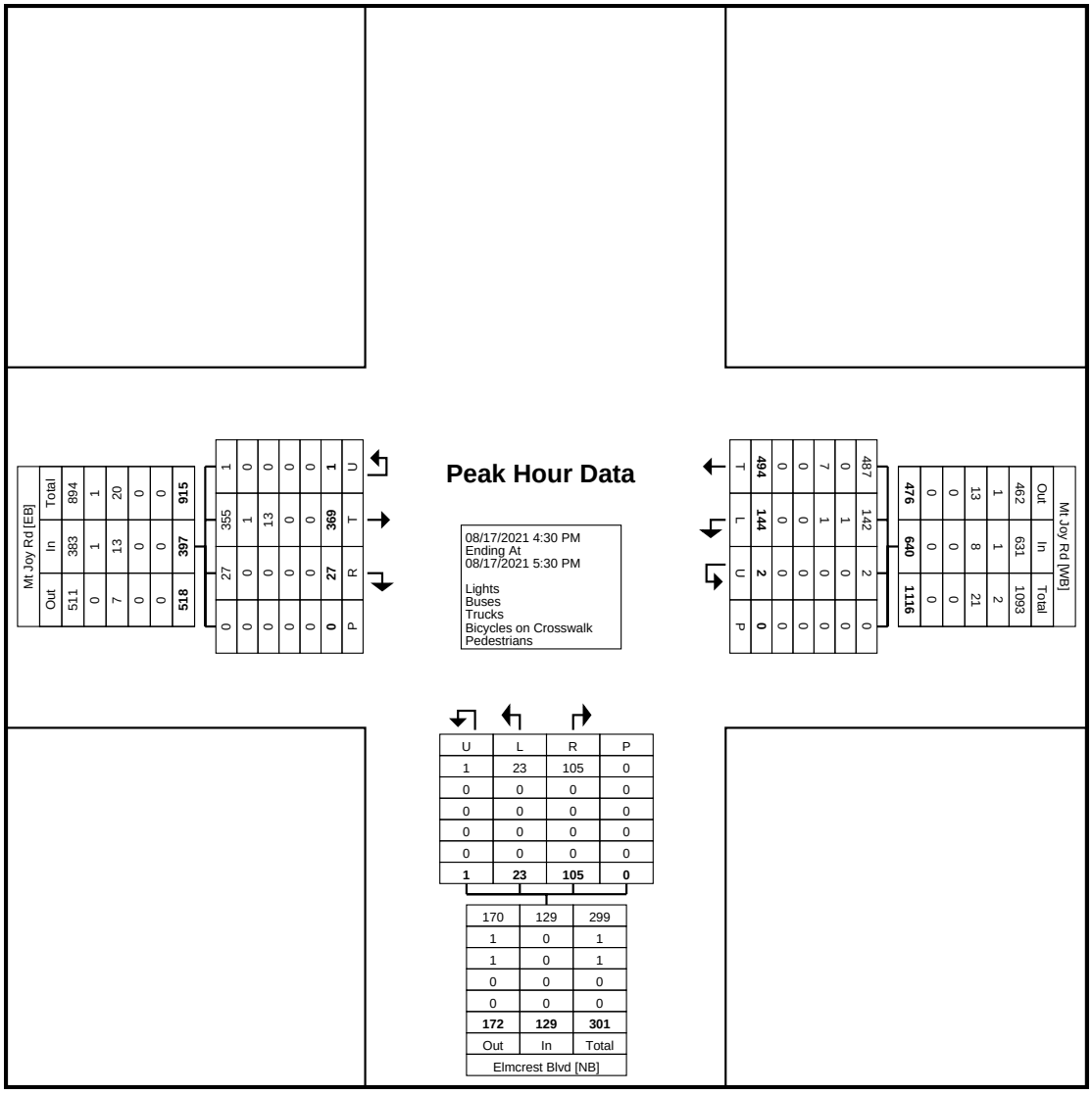
Mt Joy Rd & Elmcrest Blvd
Tuesday, August 17, 2021
Location: 40.121831, -76.483063

Count Name: Mt Joy Rd & Elmcrest Blvd
Site Code:
Start Date: 08/17/2021

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Mt Joy Rd Eastbound						Mt Joy Rd Westbound					Elmcrest Blvd Northbound						
	Thru	Right	Right on Red	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Left	Right	Right on Red	U-Turn	Peds	App. Total	Int. Total
4:30 PM	96	5	0	0	0	101	34	113	1	0	148	4	11	18	0	0	33	282
4:45 PM	75	5	1	0	0	81	34	121	0	0	155	7	4	16	1	0	28	264
5:00 PM	100	10	1	0	0	111	42	126	1	0	169	11	7	26	0	0	44	324
5:15 PM	98	5	0	1	0	104	34	134	0	0	168	1	5	18	0	0	24	296
Total	369	25	2	1	0	397	144	494	2	0	640	23	27	78	1	0	129	1166
Approach %	92.9	6.3	0.5	0.3	-	-	22.5	77.2	0.3	-	-	17.8	20.9	60.5	0.8	-	-	-
Total %	31.6	2.1	0.2	0.1	-	34.0	12.3	42.4	0.2	-	54.9	2.0	2.3	6.7	0.1	-	11.1	-
PHF	0.923	0.625	0.500	0.250	-	0.894	0.857	0.922	0.500	-	0.947	0.523	0.614	0.750	0.250	-	0.733	0.900
Lights	355	25	2	1	-	383	142	487	2	-	631	23	27	78	1	-	129	1143
% Lights	96.2	100.0	100.0	100.0	-	96.5	98.6	98.6	100.0	-	98.6	100.0	100.0	100.0	100.0	-	100.0	98.0
Buses	1	0	0	0	-	1	1	0	0	-	1	0	0	0	0	-	0	2
% Buses	0.3	0.0	0.0	0.0	-	0.3	0.7	0.0	0.0	-	0.2	0.0	0.0	0.0	0.0	-	0.0	0.2
Trucks	13	0	0	0	-	13	1	7	0	-	8	0	0	0	0	-	0	21
% Trucks	3.5	0.0	0.0	0.0	-	3.3	0.7	1.4	0.0	-	1.3	0.0	0.0	0.0	0.0	-	0.0	1.8
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Mt Joy Rd [EB]							
	Out	In	Total				
U	1	0	1				
L	0	1	1				
T	7	13	20				
R	0	0	0				
P	0	0	0				
	518	397	915				

Mt Joy Rd [WB]			
	Out	In	Total
T	462	631	1093
L	1	1	2
U	13	8	21
P	0	0	0
	476	640	1116

Elmcrest Blvd [NB]			
U	L	R	P
1	23	105	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
1	23	105	0

170	129	299
1	0	1
1	0	1
0	0	0
0	0	0
172	129	301
Out	In	Total

Turning Movement Peak Hour Data Plot (4:30 PM)

Michelle Madzelan, PE

From: Jim Caldwell <jcaldwell@rettew.com>
Sent: Tuesday, March 7, 2023 4:21 PM
To: Randall Wenger
Cc: Brandon Conrad; Brent Good, RLA; Michelle Madzelan, PE; John Schick
Subject: RE: Chiques Crossing - Lefever Rd Summary Report

Randall,

We have reviewed the Lefever Road Summary Report. The report provided the alternatives and gap analysis requested by the Township at the January 4, 2023 staff meeting.

The applicant's consultant has demonstrated that there are more acceptable gaps in traffic than there are left turns out of Lefever Road. Therefore, PennDOT will most likely accept that, even with the unsatisfactory level of service on that approach. In addition, they have concluded that there are no other "feasible" improvements that can be implemented at the intersection.

Thank you,

Jim Caldwell
Team Lead, Municipal
Office: 800-738-8395
Direct: 717-431-3740
Mobile: 717-808-9343
jcaldwell@rettew.com

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From: Michelle Madzelan, PE <memadzelan@elagroup.com>
Sent: Wednesday, February 22, 2023 11:57 AM
To: Jim Caldwell <jcaldwell@rettew.com>; John Schick <jschick@rettew.com>; Randall Wenger <manager@raphotownship.com>
Cc: Brandon Conrad <brandon@vistablock.com>; Brent Good, RLA <bdgood@elagroup.com>
Subject: Chiques Crossing - Lefever Rd Summary Report

Good morning all,
The attached summary report is for the Lefever Road / Mount Joy Road intersection that was analyzed as part of the Chiques Crossing development. This report includes the gap analysis and results.

Please let me know if you have any questions.
Michelle Madzelan, PE

MICHELLE MADZELAN, PE
Senior Transportation Manager
T: (717) 625-7677
M: (717) 919-0638
LITITZ | STATE COLLEGE | BUTLER

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