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TRAFFIC PLANNING AND DESIGN, INC.

Proposed Residential Development
Transportation Impact Study
Upper Providence Township, Montgomery County

For Submission To:
PennDOT District 6-0 & Upper Providence Township

TPD@TrafficPD.com

Received by UPT on 10/15/2024

PROPOSED RESIDENTIAL DEVELOPMENT
TRANSPORTATION IMPACT STUDY

FOR SUBMISSION TO:

Upper Providence Township, Montgomery County, PA

Prepared For:
Royersford Holdings, LLC
Gary Berman – Controlling Member

May 29, 2024
TPD # ROYH.00001

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EXECUTIVE SUMMARY

The purpose of this study is to examine the potential traffic impact associated with the Proposed Residential Development in Upper Providence Township, Montgomery County, Pennsylvania. Based on this evaluation, the following conclusions were reached:

- The Proposed Site is bound by Black Rock Road (S.R. 0113) to the south, Yeager Road to the east, Old State Road to the north, and Second Avenue (S.R. 4015) to the west.
- The Proposed Development will consist of the following uses:
    - 44 Single-Family Detached Homes;
    - 403 Market-Rate Townhomes;
    - 153 Age-Qualified Townhomes.
- The Proposed Site will be served by a total of six (6) full-access driveways, as follows:
    - Two (2) driveways to Black Rock Road (S.R. 0113);
    - Two (2) driveways to Old State Road – One (1) directly opposite of Hafner Road and One (1) south of Hafner Road;
    - One (1) driveway to 2nd Avenue (S.R. 4015);
    - One (1) driveway to S. Trappe Road.
- With regrading and removal/maintenance of on-site vegetation, all proposed driveway locations will exceed the PennDOT minimum sight distance criteria, except for two (2) movements at three (3) of the driveways, further described in the sight distance section of the Traffic Study. TPD has recommended providing sight line profiles to confirm the location for the northern driveway on Black Rock Road (S.R. 0113.
- The Proposed Development will generate **270 new trips** during the weekday A.M. Peak Hour and **322 new trips** during the weekday P.M. Peak Hour.
- Under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table II**, all of the study area intersections will satisfy PennDOT ILOS Standards. Additionally, all Proposed Driveway intersections will operate at **ILOS A.**
- Levels of Service (LOS) for the study area intersections have been summarized in matrix form. **Table I** details the overall intersection LOS for each study area intersection:

TABLE I
INTERSECTION LEVEL OF SERVICE DELAY (SECONDS) SUMMARY

Intersection	Peak Hour	2023 Existing	2028			2033		ILOS STANDARDS SATISFIED?
			Base	Proj. [1]	Proj. [2]	Base[3]	Proj. [1,3]	
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	AM Peak	F (93.8)	F (100.9)	F (155.4)	C (18.7)	A (6.8)	A (7.3)	Yes
	PM Peak	E (37.3)	E (41.0)	F (69.1)	C (20.3)	A (6.5)	A (6.9)	
Black Rock Road (S.R. 0113) & Black Rock Road (S.R. 4003)/Yeager Road	AM Peak	C (23.2)	C (22.0)	C (23.2)		C (23.0)	C (24.7)	Yes
	PM Peak	C (21.9)	C (21.7)	C (21.8)		C (21.5)	C (21.7)	
Trappe Road (S.R. 0113) & Mennonite Road	AM Peak	B (11.3)	B (11.3)	B (11.2)		B (11.2)	B (11.2)	Yes
	PM Peak	C (23.7)	C (20.3)	C (29.2)		C (20.9)	C (30.4)	
Trappe Road (S.R. 0113) & Hopwood Road/Bechtel Road	AM Peak	B (12.1)	B (12.0)	B (12.0)		B (12.2)	B (12.2)	Yes
	PM Peak	B (11.0)	B (11.0)	B (11.3)		B (11.0)	B (11.3)	
Old State Road & Yeager Road	AM Peak	A (9.9)	A (10.0)	B (10.7)		B (10.1)	B (10.8)	Yes
	PM Peak	A (9.2)	A (9.2)	B (10.1)		A (9.3)	B (10.2)	
Old State Road & Meadowgreen Drive	AM Peak	A (1.2)	A (1.2)	A (0.7)		A (1.1)	A (0.7)	Yes
	PM Peak	A (1.0)	A (1.0)	A (0.6)		A (1.0)	A (0.6)	
Old State Road & Hafner Road/Proposed Site Driveway	AM Peak	A (1.1)	A (1.1)	A (3.3)		A (1.1)	A (3.3)	Yes
	PM Peak	A (0.3)	A (0.3)	A (2.7)		A (0.3)	A (2.7)	
2nd Avenue (S.R. 4015) & Old State Road	AM Peak	A (1.2)	A (1.3)	A (1.6)		A (1.2)	A (1.6)	Yes
	PM Peak	A (1.0)	A (1.0)	A (1.5)		A (1.0)	A (1.5)	
Old State Road & Mennonite Road	AM Peak	A (9.1)	A (9.1)	A (9.3)		A (9.1)	A (9.3)	Yes
	PM Peak	A (9.4)	A (9.4)	A (9.6)		A (9.5)	A (9.7)	
Old State Road & Bechtel Road	AM Peak	A (2.1)	A (2.1)	A (2.4)		A (2.1)	A (2.4)	Yes
	PM Peak	A (2.6)	A (2.6)	A (2.8)		A (2.6)	A (2.8)	
2nd Avenue (S.R. 4015) & Springertown Road	AM Peak	A (0.9)	A (0.9)	A (0.8)		A (0.9)	A (0.9)	Yes
	PM Peak	A (0.8)	A (0.8)	A (0.8)		A (0.8)	A (0.8)	
2nd Avenue (S.R. 4015) & Vaughn Road	AM Peak	A (3.1)	A (3.1)	A (3.1)		A (3.1)	A (3.1)	Yes
	PM Peak	A (2.3)	A (2.4)	A (2.4)		A (2.3)	A (2.4)	
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	AM Peak	A (0.1)	A (0.1)	A (0.2)		A (0.1)	A (0.2)	Yes
	PM Peak	A (0.2)	A (0.2)	A (0.3)		A (0.2)	A (0.3)	
Collegeville Road (SR 0029) & Black Rock Road (SR 4003)	AM Peak	C (33.7)	C (33.8)	C (34.9)		C (33.9)	C (35.0)	Yes
	PM Peak	C (34.4)	C (34.6)	D (35.5)		C (34.8)	D (35.8)	
Yeager Road & S. Lewis Road	AM Peak	B (11.8)	B (13.0)	B (12.0)		B (13.9)	B (13.0)	Yes
	PM Peak	C (23.9)	D (26.5)	C (21.7)		D (29.0)	C (24.1)	
Black Rock Road (S.R. 0113) & Proposed Southern Driveway	AM Peak	--	--	A (1.5)		--	A (1.5)	Yes
	PM Peak	--	--	A (1.1)		--	A (1.1)	
Black Rock Road (S.R. 0113) & Proposed Northern Driveway	AM Peak	--	--	A (0.3)		--	A (0.3)	Yes
	PM Peak	--	--	A (0.3)		--	A (0.3)	
Old State Road & Proposed Southern Driveway	AM Peak	--	--	A (0.8)		--	A (0.8)	Yes
	PM Peak	--	--	A (0.7)		--	A (0.7)	
Trappe Road & Proposed Driveway	AM Peak	--	--	A (6.5)		--	A (6.5)	Yes
	PM Peak	--	--	A (6.3)		--	A (6.3)	
2nd Avenue (S.R. 4015) & Proposed Driveway	AM Peak	--	--	A (1.2)		--	A (1.2)	Yes
	PM Peak	--	--	A (1.1)		--	A (1.1)	

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 2 = With AWSC, 3 = With Planned Roundabout,

» Site-related recommendations are summarized in **Table II**:

TABLE II
RECOMMENDATIONS

Intersection	Recommendations
Proposed Site Driveways (6)	Provide adequate turning radii to facilitate ingress/egress
	Provide a "STOP" sign on the egress approach
	Provide regrading and removal/maintenance of on-site vegetation to optimize available sight distances
	Work with PennDOT and Upper Providence Township to provide pedestrian/ADA facilities along the Proposed Site frontage, to the extent feasible
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	As a temporary condition, and until the Planned Roundabout is built and operational, revise the existing traffic control at this intersection to All-Way Stop-Control to improve the overall operation of the intersection.
Yeager Road & S. Lewis Road	Widen Yeager Road to provide a 75' NB right-turn lane in order to improve the operation of the approach.
Black Rock Road (S.R. 0113) & Trappe Road	Investigate converting the roadway to a one-way operation (clockwise) via signage and striping, with the westernmost intersection as enter only and the easternmost intersection as exit only to improve safety and efficiency.
Signalized Study Area Intersections (4)	Optimize the signalized Study Area intersections to offset the impact of the Proposed Site
Old State Road	Widen Old State Road along the property's frontage per Township Ordinance. This widening will equate to approximately 9-10' of widening along the south side of the roadway for approximately 4,000 linear feet.
Black Rock Road (S.R. 0113) & Northern Proposed Site Driveway	Provide sight line profiles to confirm the location for this driveway

INTRODUCTION

Traffic Planning and Design, Inc. (TPD) has completed a Transportation Impact Study (TIS) for the Proposed Residential Development in Upper Providence Township, Montgomery County, Pennsylvania. The Proposed Site is bound by Black Rock Road (S.R. 0113) to the south, Yeager Road to the east, Old State Road to the north, and Second Avenue (S.R. 4015) to the west, as shown in **Figure 1**. As shown in **Figure 2**, the Proposed Development will consist of the following uses:

- 44 Single-Family Detached Homes;
- 403 Market-Rate Townhomes;
- 153 Age-Qualified Townhomes.

Access to the Proposed Site will be served by a total of six (6) full-access driveways, as follows:

- Two (2) driveways to Black Rock Road (S.R. 0113);
- Two (2) driveways to Old State Road – One (1) directly opposite of Hafner Road and One (1) south of Hafner Road;
- One (1) driveway to 2nd Avenue (S.R. 4015);
- One (1) driveway to S. Trappe Road.

TPD assumed a full build of 2028 and a design year of 2033.

This report has been prepared in accordance with PennDOT's *Policies and Procedures for Transportation Impact Studies*, found in PennDOT's Publication 282, Appendix A, dated July 2017. A PennDOT Scoping Application dated January 23, 2023 was sent to PennDOT 6-0 and Upper Providence Township Consultants. Project Correspondence is included in **Appendix A**.

EXISTING ROADWAY NETWORK

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

TABLE 1
ROADWAY CHARACTERISTICS WITHIN STUDY AREA

Roadway	State Route	Functional Classification/ Roadway Type	Predominant Directional Orientation	Average Daily Traffic[1]	Posted Speed Limit
Black Rock Road/Trappe Road	(SR 0113)	Urban Minor Arterial	North-South	10,721	40-45 mph
Black Rock Road	(SR 4003)	Urban Minor Arterial	East-West	7,360	45 mph
2nd Avenue	(SR 4015)	Urban Major Collector	East-West	5,029	40 mph
Yeager Road	N/A	Urban Collector	East-West	3,673	35 mph
Mennonite Road	N/A	Urban Collector	East-West	3.259	35 mph
Vaughn Road	N/A	Urban Collector	North-South	2,769	35 mph
Old State Road	N/A	Local Road	North-South	200	35 mph
Hopwood Road	N/A	Local Road	East-West	400	35 mph
Bechtel Road	N/A	Local Road	Varies	500	25 mph
Meadowgreen Drive	N/A	Local Road	East-West	500	25 mph
Hafner Road	N/A	Local Road	East-West	257	35 mph
Springertown Road	N/A	Local Road	North-South	500	25 mph
Trappe Road	N/A	Local Road	East-West	9,975	25 mph
Ramsgate Drive	N/A	Local Road	East-West	300	25[2] mph
Collegeville Road	(SR 0029)	Other Principle Arterial Highway	North-South	20,374	45 mph
S. Lewis Road	(SR 4048)	Urban Collector	North-South	3,854	40 mph

1 = PennDOT TIRe Website (January 2024)
2 = Speed Limit not posted, assumed 25 mph

Photographs of the study area intersections are included in **Appendix B**.

Bicycle and Pedestrian Facilities

Based on field observations, the bicycle and pedestrian facilities in the Study Area are described by intersection below:

- Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015) & Dreibelbis Road – The unsignalized intersection has no bicycle or pedestrian facilities.
- Black Rock Road (S.R. 0113/S.R. 4003) & Yeager Road – The signalized intersection has no specific bicycle facilities other than paved shoulders. No ADA ramps or sidewalks exist at the intersection. All legs have push buttons and crosswalks.
- Trappe Road (S.R. 0113) & Mennonite Road – The signalized intersection has no specific bicycle facilities other than paved shoulders. Partial sidewalks exist on all corners with associated ADA ramps. All legs have push buttons. No crosswalks exist.
- Trappe Road (S.R. 0113) & Hopwood Road/Bechtel Road – The signalized intersection has no specific bicycle facilities other than paved shoulders and paved trails that traverse three of the four corners. Crosswalks exist on the southern and eastern legs of the intersection. Push buttons exist on three of the four corners.
- Old State Road & Yeager Road – The unsignalized intersection has no bicycle or pedestrian facilities other than paved shoulders and a trail that exists on the northeastern corner.
- Old State Road & Meadowgreen Drive – The unsignalized intersection has no bicycle or pedestrian facilities other than sidewalk on the northwestern corner.
- Old State Road & Hafner Road – The unsignalized intersection has no bicycle or pedestrian facilities.

- 2nd Avenue (S.R. 4015) & Old State Road – The unsignalized intersection has no bicycle or pedestrian facilities.
- Old State Road & Mennonite Road – The unsignalized intersection has no bicycle facilities other than paved shoulders. The intersection has sidewalk and ADA ramps on the northeastern and southeastern corner. No crosswalks exist.
- Old State Road & Bechtel Road – The unsignalized intersection has no bicycle or pedestrian facilities.
- 2nd Avenue (S.R. 4015) & Springertown Road – The unsignalized intersection has no bicycle or pedestrian facilities other than paved shoulders.
- 2nd Avenue (S.R. 4015) & Vaughn Road – The unsignalized intersection has no bicycle or pedestrian facilities other than paved shoulders.
- Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive - The unsignalized intersection has sidewalk and pedestrian curb ramps on both sides of Ramsgate Drive.
- Black Rock Road (SR 0113) & Collegeville Road (SR 0029) - The signalized intersection has no specific bicycle facilities other than paved shoulders and paved trails that traverse three of the four corners. Crosswalks, pedestrian curb ramps, and pedestrian push buttons exist on all approaches.
- S. Lewis Road (SR 4048) & Yeager Road - The unsignalized intersection has no bicycle or pedestrian facilities other than paved shoulders.

Crash Data Investigation

Crash data were obtained from PennDOT for the study area intersections. PennDOT defines a reportable crash as follows, "A reportable (crash) is one in which an injury or fatality occurs or if at least one of the vehicles involved requires towing from the scene." Reportable crashes were tabulated for the six-year time period beginning 01/01/2018 and ending 12/31/2023. For a given intersection, PennDOT considers a crash occurrence of 5 reportable, correctable crashes over a continuous twelve-month period during the past five years to be a threshold value, above which the intersection design should be reviewed to examine if corrective measures can be taken to enhance safety. The number of reportable crashes at the study area intersections is shown in **Table 2.**

TABLE 2
PENNDOT REPORTABLE CRASH DATA

Study Area Intersection	Total Number of Reportable Crashes					
	2018	2019	2020	2021	2022	2023
Black Rock Road (SR 0113) & 2nd Avenue (SR 4015) & Dreibelbis Road	3	1	1	2	0	0
Black Rock Road (SR 0113) & Black Rock Road (SR 4003)/Yeager Road	3	3	2	1	6	2
Trappe Road (SR 0113) & Mennonite Road	2	4	3	0	3	1
Trappe Road (SR 0113) & Hopwood Road/Bechtel Road	0	3	0	1	0	0
Old State Road & Yeager Road	2	0	0	0	0	0
Old State Road & Meadowgreen Drive	0	0	0	0	0	0
Old State Road & Hafner Road	1	0	0	0	1	0
2nd Avenue (SR 4015) & Old State Road	0	0	0	0	0	2
Old State Road & Mennonite Road	1	0	1	1	0	0
Old State Road & Bechtel Road	2	0	0	0	0	0
2nd Avenue (SR 4015) & Springertown Road	1	0	2	0	2	1
2nd Avenue (SR 4015) & Vaughn Road	1	0	0	0	0	1
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	0	0	0	0	0	1
Black Rock Road (SR 0113) & Collegeville Road (SR 0029)	2	9	4	7	8	5
S. Lewis Road (SR 4048) & Yeager Road	2	2	1	1	1	3

Based on a review of the crash data in **Table 3**, there were no twelve-month periods during the past five years where 5 or more crashes occurred that were deemed correctable, except for the following:

- Black Rock Road (SR 0113) & Black Rock Road (SR 4003)/Yeager Road – In 2022, there were five or more crashes which were deemed correctable. The predominant type of crash was angle crashes but there was no discernable trend in direction or time of day. The primary causation of the crashes were due to driver error such as, improper/careless turn, driver was distracted, and running redlight.
- Black Rock Road (SR 0113) & Collegeville Road (SR 0029) – In 2019 and 2021, there were five or more crashes which were deemed correctable. In both 2019 and 2021, the predominant type of crash was angle crashes but there was no discernable trend in direction or time of day. The primary causation of the crashes were due to driver error such as, improper/careless turn, driver was distracted, and running redlight.

EXISTING TRAFFIC CONDITIONS

Manual Turning Movement Counts

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

TABLE 3
MANUAL TRAFFIC COUNT INFORMATION

Intersection	Date of Traffic Counts	Time Period	Intersection Peak Hour[1]
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:15 to 5:15 P.M.
Black Rock Road/ Trappe Road (S.R. 0113) & Black Rock Road (S.R. 4003)/ Yeager Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:45 to 5:45 P.M.
Trappe Road (S.R. 0113) & Mennonite Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
Trappe Road (S.R. 0113) & Hopwood Road/ Bechtel Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.
Old State Road & Yeager Road	Tuesday, January 17, 2023	Weekday A.M.	7:00 to 8:00 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:30 to 5:30 P.M.
Old State Road & Meadowgreen Drive	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:00 to 5:00 P.M.
Old State Road & Hafner Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:15 to 5:15 P.M.
2nd Avenue (S.R. 4015) & Old State Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:30 to 5:30 P.M.
Old State Road & Mennonite Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
		Weekday P.M.	4:30 to 5:30 P.M.
Old State Road & Bechtel Road	Tuesday, January 17, 2023	Weekday A.M.	7:00 to 8:00 A.M.
		Weekday P.M.	4:30 to 5:30 P.M.
2nd Avenue (S.R. 4015) & Springertown Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:15 to 5:15 P.M.
2nd Avenue (S.R. 4015) & Vaughn Road	Tuesday, January 17, 2023	Weekday A.M.	7:15 to 8:15 A.M.
	Thursday, January 26, 2023	Weekday P.M.	4:15 to 5:15 P.M.
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	Tuesday March 7, 2023	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	4:30 to 5:30 P.M.
Black Rock Road (SR 0113) & Collegeville Road (SR 0029)	Tuesday March 7, 2023	Weekday A.M.	7:30 to 8:30 A.M.
		Weekday P.M.	4:45 to 5:45 P.M.
S. Lewis Road (SR 4048) & Yeager Road	Tuesday March 7, 2023	Weekday A.M.	6:45 to 7:45 A.M.
		Weekday P.M.	4:15 to 5:15 P.M.

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

2023 Existing Condition traffic volumes are shown in **Figures 3-4**. Manual traffic count data sheets are provided in **Appendix C**.

Speed Studies

As requested by PennDOT, speed studies were conducted along Black Rock Road (S.R. 0113), in the vicinity of River Road and in the vicinity of Ramsgate Drive. These speed studies were conducted utilizing radar

gun equipment. Based on these speed studies, the following 85th Percentile Speeds were determined to be the following:

- NB Black Rock Road (S.R. 0113), near River Road = 48 mph
- SB Black Rock Road (S.R. 0113), near River Road = 49 mph
- NB Black Rock Road (S.R. 0113), near Ramsgate Drive = 50 mph
- SB Black Rock Road (S.R. 0113), near Ramsgate Drive = 51 mph

Speed Study Worksheets are included in **Appendix D**.

BASE (NO-BUILD) CONDITIONS

A background growth factor for the roadways in the study area was developed based on growth factors for August 2022 to July 2023 obtained from the PennDOT Bureau of Planning and Research (BPR). The PennDOT BPR suggests using a background growth trend factor of 0.27% per year in Montgomery County for urban non-interstate roadways. As such, the background growth factor was applied annually to yield overall growth percentages of 1.36% (0.27% per year compounded for 5 years) for the 2028 Build-Out Year and 2.73% (0.27% per year compounded for 10 years) for the 2033 Design Year.

Base (no-build) traffic conditions often also include traffic volumes from proposed developments, which, though not operating under existing conditions, may be operating by the future years of the proposed development. However, no planned nearby developments were identified during the Scoping Review or subsequent correspondence with Township Staff.

The additional traffic volumes due to the background growth were added to the 2023 Existing Conditions to produce the 2028 and 2033 Base Condition (no-build) traffic volumes as shown in **Figures 5-8**.

SCHEDULED ROADWAY IMPROVEMENTS

Based on a review of the PennDOT 12-Year Plan and the DVRPC TIP, TPD identified the following planned project in the Study Area:

- ***MPMS # 118005 - Black Rock Road over tributary of Schuylkill River*** – Rehabilitation or replacement of the bridge along Black Rock Road over the tributary of the Schuylkill River. Rehab/Replace alternatives have not yet been selected. Completion milestones have yet to be identified. Funding has been set aside in Fiscal Years 2023 and 2025. This project will be located along the Black Rock Road (S.R. 0113) site frontage, just east of the westernmost Proposed Site driveway. The information page is included in **Appendix E.**

In addition to the improvement identified above, it is TPD's understanding Upper Providence Township was awarded a MTF CFA Grant to evaluate improvement alternatives to the intersection of 2nd Avenue (S.R. 4015)/Dreibelbis Road (T-425)/Back Rock Road (S.R. 0013). These improvement alternatives include the construction of a roundabout and widening of the one-lane bridge on Black Rock Road, east of the intersection. TPD is not aware of any timeframes for approval or construction of these improvements. Therefore, these improvements were assumed under all Design Year conditions (2033 Base and 2033 Projected). Concept Plans depicting this roundabout are included in the scoping application review letter in **Appendix A** and additionally in **Appendix E**.

PROPOSED SITE ACCESS

Access to the Proposed Site will be served by a total of six (6) full-access driveways, as follows:

- Two (2) driveways to Black Rock Road (S.R. 0113);
- Two (2) driveways to Old State Road – One (1) directly opposite of Hafner Road and One (1) south of Hafner Road;
- One (1) driveway to 2nd Avenue (S.R. 4015);
- One (1) driveway to S. Trappe Road.

Sight Distance Analysis

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

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

SSSD = safe stopping sight distance (acceptable sight distance)
V = Vehicle Speed
T = Perception Reaction Time of Driver (2.5 seconds)
f = Coefficient of Friction for Wet Pavements
g = Percent of Roadway Grade Divided by 100

Table 4 shows the measured, intersection, desirable, and acceptable (SSSD) sight distances at the site driveways for vehicles entering and exiting the site.

TABLE 4
SIGHT DISTANCE ANALYSIS

	Direction	Posted Speed (mph)	Sight Distances (feet)				
			Grade[1] (%)	ISD[2]	DES[3]	SSSD[4]	EXIST[5]
Proposed Northern Driveway – Black Rock Road							
Exiting Movements	*To the left*	40[6]	-3%	500′	538′	492′	**800′**
	To the right		0%	430′	460′	476′	**465′**
Entering Left Turns	*Approaching same direction*		0%	N/A	N/A	476′	**420′**
	Approaching opposite direction		-3	365′	373′	492′	**835′**

ISD = Intersection Sight Distance
DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance

1 = Roadway Grade Approaching Driveway
2 = Based on the posted speed + 5mph
3 = Based on the posted speed
4 = Based on posted speed + 5 or Speed Study
5 = With Regrading and Vegetation Removal
6 = Speed Study = 50mph NB and 51mph SB

TABLE 4 (CONTINUED)
SIGHT DISTANCE ANALYSIS

	Direction	Posted Speed (mph)	Sight Distances (feet)				
			Grade[1] (%)	ISD[2]	DES[3]	SSSD[4]	EXIST[5]
Proposed Southern Driveway – Black Rock Road							
Exiting Movements	*To the left*	40[7]	+1%	500′	538′	424′	**675′**
	To the right		-3%	430′	460′	477′	**375′**
Entering Left Turns	*Approaching same direction*		-3%	N/A	N/A	477′	**345′**
	Approaching opposite direction		+1%	365′	373′	424′	**710′**
Proposed Driveway – Old State Road, Opposite Hafner Road							
Exiting Movements	*To the left*	35	0%	445′	440′	314′	**570′**
	To the right		-1%	385′	350′	319′	**850′**
Entering Left Turns	*Approaching same direction*		-1%	N/A	N/A	319′	**850′**
	Approaching opposite direction		0%	325′	300′	314′	**605′**
Proposed Southern Driveway – Old State Road							
Exiting Movements	*To the left*	35	+1%	445′	440′	309′	**600′**
	To the right		+1%	385′	350′	309′	**800′+**
Entering Left Turns	*Approaching same direction*		+1%	N/A	N/A	309′	**800′**
	Approaching opposite direction		+1%	325′	300′	309′	**340′**
Proposed 2nd Avenue Driveway							
Exiting Movements	*To the left*	40	+3%	500′	538′	364′	**735′**
	To the right		-3%	430′	460′	406′	**550′**
Entering Left Turns	*Approaching same direction*		-3%	N/A	N/A	406′	**645′**
	Approaching opposite direction		+3%	365′	373′	364′	**770′**
Proposed S. Trappe Road Driveway							
Exiting Movements	*To the left*	25[8]	-2%	335′	250′	201′	**350′**
	To the right		+5%	290′	195′	185′	**210′**
Entering Left Turns	*Approaching same direction*		+5%	N/A	N/A	185′	**165′**
	Approaching opposite direction		-2%	245′	190′	201′	**385′**

ISD = Intersection Sight Distance
DES = PennDOT Desirable Sight Distance
SSSD = PennDOT Acceptable Sight Distance
EXIST = Existing (measured) Sight Distance

1 = Roadway Grade Approaching Driveway
2 = Based on the posted speed + 5mph
3 = Based on the posted speed
4 = Based on posted speed + 5 or Speed Study
5 = With Regrading and Vegetation Removal
7 = Speed Study = 48mph NB and 49mph SB
8 = Speed not posted, assumed 25 mph

As shown in **Table 4** above, with removal/maintenance of on-site vegetation, the measured sight distances at the site driveways will satisfy all PennDOT Safe Stopping Sight Distance (SSSD) Criteria, and in most cases will satisfy Desirable or ISD Criteria, with the exception of the following:

- *Proposed Northern Driveway – Black Rock Road (S.R. 0113)* - Sight Distance looking to the right for an exiting vehicle and to the rear of a vehicle turning left-in do not meet all sight distance criteria, as they are limited due to vertical curvature. The movement looking to the right for an exiting vehicle does meet ISD and DES sight distance standards. However, as part of the construction of the proposed roundabout project at the intersection of 2nd Avenue (S.R. 4015)/Dreibelbis Road (T-425)/Back Rock Road (S.R. 0013), it appears the existing vertical curvature will be modified, providing for better sight lines. These improvements, in conjunction with the proposed access point, will be coordinated with the Township and PennDOT in order to achieve the required sight distance.
- *Proposed Southern Driveway – Black Rock Road (S.R. 0113)* – Sight Distance looking to the right for an exiting vehicle and to the rear of a vehicle turning left-in do not meet all sight distance criteria, as they are limited by the separation to the adjacent intersection of Black Rock Road (S.R. 0113) and 2nd Avenue

(S.R. 4015). However, sight distance is available to this intersection. All vehicles leaving this intersection, heading towards the Proposed Driveway, do so from STOP-controlled approaches. Therefore, it is TPD's opinion the sight distance is adequate. In addition, the future planned roundabout will result in modified sight lines and slower exit speeds toward the driveway.

- *Proposed Driveway – South Trappe Road* – Sight Distance looking to the right for an exiting vehicle and to the rear of a vehicle turning left-in do not meet all sight distance criteria, as they are limited by the separation to S.R. 0113. However, sight distance is available to this intersection with S.R. 0113. It is TPD's opinion that turning speeds onto South Trappe Road will be significantly lower than 25 mph (9-15mph). Therefore, it is TPD's opinion this condition is acceptable.

TRIP GENERATION

The trip generation rates for the Proposed Site were obtained from the *Trip Generation Manual*, Eleventh Edition, 2021, an institute of Transportation Engineers (ITE) Informational Report.

Table 5 shows the rates/equations and directional percentages for the analyzed time periods.

TABLE 5
ITE TRIP GENERATION DATA

Land Use	ITE #	Units	Time Period	Equations/Rates	Entering %
Single-Family Detached Housing	210	44 du	Average Weekday	Ln(T) = 0.92*Ln(X) + 2.68	50%
			Weekday A.M.	Ln(T) = 0.91*Ln(X) + 0.12	25%
			Weekday P.M.	Ln(T) = 0.94*Ln(X) + 0.27	63%
Single-Family Attached Housing	215	403 du	Average Weekday	T = 7.62*(X) - 50.48	50%
			Weekday A.M.	T = 0.52*(X) – 5.70	25%
			Weekday P.M.	T = 0.60*(X) – 3.93	59%
Senior Adult Housing – Multifamily	252	153 du	Average Weekday	T = 3.24*(X)	50%
			Weekday A.M.	T = 0.20*(X)	34%
			Weekday P.M.	T = 0.25*(X)	56%

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

In order to more accurately reflect the trip generation and distribution based on the site plan, the site was broken down into three areas:

- Age Qualified Area (AQ) is the southeastern portion of the site nearest to the intersection of South Trappe Road and Black Rock Road (SR 0113) and will consist of 153 townhomes.

- Market Rate A Area (MRA) is the northwestern portion of the site nearest to 2nd Avenue. This portion consists of 25 single family homes and 403 townhomes.

- Market Rate B Area (MRB) is the portion of the site which is north of Old State Road near Hafner Road. This portion consists of 19 single family homes.

The calculated trip generation for the Proposed Site is shown in **Table 6**.

TABLE 6
TRIP GENERATION SUMMARY

Land Use Area	Land Use (ITE Code)	Units (X)	New Trips		
			Total	Enter	Exit
Average Weekday					
Age Qualified Area (AQ)	Senior Adult Housing – Multifamily (#252)	153 DU	496	248	248
Market Rate Area A (MR A)	Single-Family Detached Housing (#210)	25 DU	282	141	141
	Single-Family Attached Housing (#215)	403 DU	3020	1510	1510
Market Rate Area B (MR B)	Single-Family Detached Housing (#210)	19 DU	220	110	110
--	***Total***	--	***4018***	***2009***	***2009***
Weekday AM					
Age Qualified Area (AQ)	Senior Adult Housing – Multifamily (#252)	153 DU	31	11	20
Market Rate Area A (MR A)	Single-Family Detached Housing (#210)	25 DU	21	5	16
	Single-Family Attached Housing (#215)	403 DU	203	51	152
Market Rate Area B (MR B)	Single-Family Detached Housing (#210)	19 DU	15	4	11
--	***Total***	--	***270***	***71***	***199***
Weekday PM					
Age Qualified Area (AQ)	Senior Adult Housing – Multifamily (#252)	153 DU	38	21	17
Market Rate Area A (MR A)	Single-Family Detached Housing (#210)	25 DU	27	17	10
	Single-Family Attached Housing (#215)	403 DU	238	140	98
Market Rate Area B (MR B)	Single-Family Detached Housing (#210)	19 DU	19	12	7
--	***Total***	--	***322***	***190***	***132***

As shown in Table 3, the Proposed Site will generate 270 new trips during the weekday A.M. peak hour and 322 new trips during the weekday P.M. peak hour.

TRIP DISTRIBUTION

The distribution and assignment of new trips generated by the proposed development was based upon existing traffic patterns in the Study Area. Based on this evaluation, the new trips for the proposed development were distributed to the local roadway network based on the percentages shown in **Table 7.**

TABLE 7
TRIP DISTRIBUTION PERCENTAGES – NEW TRIPS

Direction – To/From	Assignment – To/From	Distribution Percentage AM/PM
North	via Trappe Road	19%
South	via Black Rock Road (S.R. 0113)	14%
East	via Mennonite Road	13%
East	via Black Rock Road (S.R. 4003)	9%
North/West	via 2nd Avenue (S.R. 4015)	8%
West	via Mennonite Road	6%
North	via Bechtel Road	6%
South	via Lewis Road	6%
East	via Hopwood Road	5%
North	via Collegeville Road (S.R. 0029)	4%
South	via Collegeville Road (S.R. 0029)	4%
North	via Vaughn Road	4%
North	via Lewis Road	2%

The distribution of site-generated trips for the proposed development during the weekday A.M. and weekday P.M. peak hours are shown in **Figures 9-10**. The trip assignment percentage information is included with the Volume Development in **Appendix F**.

PROJECTED (BUILD) CONDITION TRAFFIC VOLUMES

The site-generated trips for the proposed development were added to the 2028 and 2033 Base (no-build) Conditions to develop the 2028 and 2033 Projected (build) Condition traffic volumes, as shown in **Figures 11-14**. Volume development spreadsheets are contained in **Appendix F.**

LEVELS OF SERVICE FOR AN INTERSECTION

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

TABLE 8
LEVEL OF SERVICE CRITERIA
UNSIGNALIZED AND SIGNALIZED INTERSECTIONS[1]

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

[1]Obtained from Exhibits 19-8 and 20-2 of the Transportation Research Board's Highway Capacity Manual 6th Edition

CAPACITY ANALYSIS METHODOLOGY

Capacity analyses were conducted for the weekday A.M. and P.M. peak hours at the study area intersections. These analyses were conducted according to the methodologies contained in the *6th Edition Highway Capacity Manual* (HCM) using *Synchro 11* software, a Trafficware product.

The following conditions were analyzed, as applicable:

- 2023 Existing conditions;
- 2028 Base conditions (Build-out year without development);
- 2028 Projected conditions (Build-out year with development).
- 2033 Base conditions (Design year without development) ***– With planned roundabout at Black Rock Road (S.R. 0113)/2nd Avenue (S.R. 4015)/Dreibelbis Road;***
- 2033 Projected conditions (Design year with development) ***– With planned roundabout at Black Rock Road (S.R. 0113)/2nd Avenue (S.R. 4015)/Dreibelbis Road.***

It should be noted that based on methodologies contained in Chapter 10 of PennDOT's Publication 46, TPD adjusted the following HCM default values in the *Synchro 11* capacity analysis. These adjustments were made at the signalized intersections within the study area for all time periods based on the study area location being classified as Suburban:

- Base saturation flow rates for signalized intersections. The saturation flow rate was changed from the default value of 1900 to 1800 based on Exhibit 10-9.
- Critical and Follow-Up Gap times were adjusted relative to the difference between default and PA Default values contained in Exhibits 10-11 and 10-12. As requested by PennDOT, worksheets/tables showing how these values were calculated are included in **Appendix G**.
- Per PennDOT standards, the signal timings at the study area intersections were optimized under the base and projected (build) conditions.
- The intersection of Dreibelbis Road and 2nd Avenue/Black Rock Road could not be analyzed under existing conditions since the westbound approach was the only "free" approach. For the purpose of analyzing the 2023 existing and 2028 base and projected conditions, the eastbound approach was set to "free" to generate the LOS results.
- The intersection of Old State Road and Bechtel Road could not be analyzed under existing conditions since only the Northbound approach was stop controlled. The orientation was changed in the analyses to generate results.

In addition, capacity analyses were conducted at the proposed site driveway under the projected conditions. The capacity analysis worksheets are included in **Appendix H**. The existing Traffic Signal Plans are included in **Appendix I**.

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

- Page 29 of the Guidelines state that if evaluation of the With Development Horizon Year Scenario to the Without Development Horizon Year Scenario indicates that the overall intersection level of service has dropped, the applicant will be required to mitigate the level of service if the increase in overall intersection delay is greater than 10-seconds. If the overall intersection delay increase is less than or equal to 10-seconds, mitigation of the intersection will not be required.
- Page 29 of the Guidelines state that for mitigation scenarios, applicants are expected to mitigate the overall intersection LOS to the original Without Development LOS; the 10-second delay variance is not applied to mitigation scenarios. Applicants may be required to address available storage and queue lengths at critical movements or approaches even if the overall LOS requirements are met.
- Page 31 of the Guidelines state that if signalization is the preferred alternative for mitigation, overall intersection LOS C in rural areas and LOS D in urban areas is acceptable.
- Page 31 of the Guidelines states new signalized or unsignalized intersection established to serve as access to the development shall be designed to operate at minimum LOS C for rural areas, and minimum LOS D for urban areas.

LEVELS OF SERVICE IN THE STUDY AREA

Level of service (LOS) matrices for the study area intersections are shown in **Tables 9-10**.

TABLE 9
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY AM PEAK HOUR

Intersection	Movement	Weekday AM Peak Hour					
		2023	2028			2033	
		Exist	Base	Proj. [1]	Proj. [2]	Base[3]	Proj. [1,3]
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	EBLTR	A	A	A	B	A	A
	WBLTR	A	A	A	C	A	A
	NBLTR	C	C	C	C	A	A
	SBLTR	F (260.7)	F (281.9)	F (445.1)	C	A	A
	ILOS	**F (93.8)**	**F (100.9)**	**F (155.4)**	**C (18.7)**	**A (6.8)**	**A (7.3)**
Black Rock Road (S.R. 0113) & Black Rock Road (S.R. 4003)/ Yeager Road	EBL	D	C	D		D	D
	EBTR	D	D	D		D	D
	WBL	D	D	D		D	E
	WBTR	C	C	C		C	C
	NBL	A	A	A		A	A
	NBTR	A	A	A		A	A
	SBL	B	B	C		B	C
	SBTR	A	A	A		A	A
	ILOS	**C (23.2)**	**C (22.0)**	**C (23.2)**		**C (23.0)**	**C (24.7)**
Trappe Road (S.R. 0113) & Mennonite Road	EBLTR	C	C	C		C	C
	WBLT	B	B	B		B	B
	WBR	B	B	B		B	B
	NBL	A	A	A		A	A
	NBT	A	A	A		A	A
	NBR	A	A	A		A	A
	SBL	A	A	A		A	A
	SBTR	A	A	A		A	A
	ILOS	**B (11.3)**	**B (11.3)**	**B (11.2)**		**B (11.2)**	**B (11.2)**
Trappe Road (S.R. 0113) & Hopwood Road/ Bechtel Road	EBLTR	D	D	D		D	D
	WBLT	C	C	C		C	C
	WBR	C	C	C		C	C
	NBL	A	A	A		A	A
	NBTR	A	A	A		A	A
	SBL	A	A	A		A	A
	SBTR	A	A	A		A	A
	ILOS	**B (12.1)**	**B (12.0)**	**B (12.0)**		**B (12.2)**	**B (12.2)**
Old State Road & Yeager Road	EBLTR	B	B	B		B	B
	WBLTR	A	A	B		A	B
	NBLTR	A	A	A		A	A
	SBLTR	A	A	A		A	A
	ILOS	**A (9.9)**	**A (10.0)**	**B (10.7)**		**B (10.1)**	**B (10.8)**
Old State Road & Meadowgreen Drive	EBLR	A	A	A		A	A
	NBLT	A	A	A		A	A
	ILOS	**A (1.2)**	**A (1.2)**	**A (0.7)**		**A (1.1)**	**A (0.7)**
Old State Road & Hafner Road/ Proposed Site Driveway	EBLTR	A	A	A		A	A
	WBLTR	--	--	A		--	A
	NBLTR	A	A	A		A	A
	SBLTR	--	--	A		--	A
	ILOS	**A (1.1)**	**A (1.1)**	**A (3.3)**		**A (1.1)**	**A (3.3)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 2 = With AWSC, 3 = With Planned Roundabout

TABLE 9 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY AM PEAK HOUR

Intersection	Movement	Weekday AM Peak Hour				
		2023	2028		2033	
		Exist	Base	Proj. [1]	Base[3]	Proj.[1,3]
2nd Avenue (S.R. 4015) & Old State Road	EBLT	A	A	A	A	A
	SBLR	B	B	B	B	B
	ILOS	**A (1.2)**	**A (1.3)**	**A (1.6)**	**A (1.2)**	**A (1.6)**
Old State Road & Mennonite Road	EBLTR	A	A	B	A	B
	WBLTR	A	A	A	A	A
	NBLTR	A	A	A	A	A
	SBLTR	A	A	A	A	A
	ILOS	**A (9.1)**	**A (9.1)**	**A (9.3)**	**A (9.1)**	**A (9.3)**
Old State Road & Bechtel Road	WBLT	A	A	A	A	A
	NBTR	B	B	B	B	B
	ILOS	**A (2.1)**	**A (2.1)**	**A (2.4)**	**A (2.1)**	**A (2.4)**
2nd Avenue (S.R. 4015) & Springertown Road	EBL	A	A	A	A	A
	SBL	B	B	B	B	B
	SBR	A	A	A	A	A
	ILOS	**A (0.9)**	**A (0.9)**	**A (0.8)**	**A (0.9)**	**A (0.9)**
2nd Avenue (S.R. 4015) & Vaughn Road	EBL	A	A	A	A	A
	SBLR	B	B	B	B	B
	ILOS	**A (3.1)**	**A (3.1)**	**A (3.1)**	**A (3.1)**	**A (3.1)**
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	EBLTR	A	A	B	A	B
	WBLTR	B	B	C	B	C
	NBLTR	A	A	A	A	A
	SBLTR	B	B	B	B	B
	ILOS	**A (0.1)**	**A (0.1)**	**A (0.2)**	**A (0.1)**	**A (0.2)**
Collegeville Road (SR 0029) & Black Rock Road (SR 4003)	EBL	D	D	D	D	D
	EBT	E	E	E	E	E
	EBR	D	D	D	D	D
	WBL	D	D	D	D	D
	WBT	D	D	D	D	D
	WBR	D	D	D	D	D
	NBL	B	C	C	C	C
	NBT	C	C	C	C	C
	NBR	C	C	C	C	C
	SBL	B	B	B	B	B
	SBT	C	C	C	C	C
	SBR	B	B	B	B	B
	ILOS	**C (33.7)**	**C (33.8)**	**C (34.9)**	**C (33.9)**	**C (35.0)**
Yeager Road & S. Lewis Road	WBLT	A	A	A	A	A
	NBL	F (51.4)	F (56.9)	F (58.7)	F (61.0)	F (63.8)
	NBR			B		B
	ILOS	**B (11.8)**	**B (13.0)**	**B (12.0)**	**B (13.9)**	**B (13.0)**
Black Rock Road (S.R. 0113) & Proposed Southern Driveway	EBLR	--	--	B	--	B
	NBL	--	--	A	--	A
	ILOS	**--**	**--**	**A (1.5)**	**--**	**A (1.5)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 3 = With Planned Roundabout,

TABLE 9 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY AM PEAK HOUR

Intersection	Movement	Weekday AM Peak Hour				
		2023 Exist	2028		2033	
			Base	Proj.[1]	Base[3]	Proj.[1,3]
Black Rock Road (S.R. 0113) & Proposed Northern Driveway	EBLR	--	--	B	--	B
	NBL	--	--	A	--	A
	ILOS	--	--	**A (0.3)**	--	**A (0.3)**
Old State Road & Proposed Southern Driveway	EBLR	--	--	A	--	A
	NBL	--	--	A	--	A
	ILOS	--	--	**A (0.8)**	--	**A (0.8)**
Trappe Road & Proposed Driveway	WBLT	--	--	A	--	A
	NBLR	--	--	A	--	A
	ILOS	--	--	**A (6.5)**	--	**A (6.5)**
2nd Avenue (S.R. 4015) & Proposed Driveway	EBLT	--	--	A	--	A
	SBLR	--	--	B	--	B
	ILOS	--	--	**A (1.2)**	--	**A (1.2)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 3 = With Planned Roundabout,

TABLE 10
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY PM PEAK HOUR

Intersection	Movement	Weekday PM Peak Hour					
		2023 Exist	2028			2033	
			Base	Proj. [1]	Proj. [2]	Base[3]	Proj. [1,3]
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	EBLTR	A	A	A	B	A	A
	WBLTR	A	A	A	C	A	A
	NBLTR	F (66.4)	F (72.9)	F (104.8)	C	A	A
	SBLTR	F (57.7)	F (64.9)	F (176.9)	B	A	A
	ILOS	**E (37.3)**	**E (41.0)**	**F (69.1)**	**C (20.3)**	**A (6.5)**	**A (6.9)**
Black Rock Road (S.R. 0113) & Black Rock Road (S.R. 4003)/ Yeager Road	EBL	D	D	D		D	D
	EBTR	C	C	C		C	C
	WBL	C	C	C		C	C
	WBTR	D	D	C		C	C
	NBL	B	B	B		B	B
	NBTR	A	A	B		B	B
	SBL	B	B	B		B	B
	SBTR	B	B	B		B	B
	ILOS	**C (21.9)**	**C (21.7)**	**C (21.8)**		**C (21.5)**	**C (21.7)**
Trappe Road (S.R. 0113) & Mennonite Road	EBLTR	B	B	B		B	B
	WBLT	E	C	F (69.7)		C	F (71.5)
	WBR	B	B	B		B	B
	NBL	B	B	B		B	C
	NBT	B	B	B		B	C
	NBR	A	B	B		B	B
	SBL	B	C	C		C	C
	SBTR	B	B	B		B	B
	ILOS	**C (23.7)**	**C (20.3)**	**C (29.2)**		**C (20.9)**	**C (30.4)**
Trappe Road (S.R. 0113) & Hopwood Road/ Bechtel Road	EBLTR	D	D	D		D	D
	WBLT	D	D	D		C	D
	WBR	D	C	C		C	C
	NBL	A	A	A		A	A
	NBTR	A	A	A		A	A
	SBL	A	A	A		A	A
	SBTR	A	A	A		A	A
	ILOS	**B (11.0)**	**B (11.0)**	**B (11.3)**		**B (11.0)**	**B (11.3)**
Old State Road & Yeager Road	EBLTR	A	A	A		A	A
	WBLTR	A	A	B		A	B
	NBLTR	A	A	A		A	A
	SBLTR	A	A	A		A	A
	ILOS	**A (9.2)**	**A (9.2)**	**A (10.1)**		**A (9.3)**	**B (10.2)**
Old State Road & Meadowgreen Drive	EBLR	A	A	A		A	A
	NBLT	A	A	A		A	A
	ILOS	**A (1.0)**	**A (1.0)**	**A (0.6)**		**A (1.0)**	**A (0.6)**
Old State Road & Hafner Road/ Proposed Site Driveway	EBLTR	A	A	A		A	A
	WBLTR	--	--	A		--	A
	NBLTR	A	A	A		A	A
	SBLTR	--	--	A		--	A
	ILOS	**A (0.3)**	**A (0.3)**	**A (2.7)**		**A (0.3)**	**A (2.7)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 2 = With AWSC, 3 = With Planned Roundabout,

TABLE 10 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY PM PEAK HOUR

Intersection	Movement	Weekday PM Peak Hour				
		2023 Exist	2028		2033	
			Base	Proj. [1]	Base[3]	Proj. [1,3]
2nd Avenue (S.R. 4015) & Old State Road	EBLT	A	A	A	A	A
	SBLR	B	B	B	B	B
	ILOS	**A (1.0)**	**A (1.0)**	**A (1.5)**	**A (1.0)**	**A (1.5)**
Old State Road & Mennonite Road	EBLTR	A	A	A	A	A
	WBLTR	B	B	B	B	B
	NBLTR	A	A	A	A	A
	SBLTR	A	A	A	A	A
	ILOS	**A (9.4)**	**A (9.4)**	**A (9.6)**	**A (9.5)**	**A (9.7)**
Old State Road & Bechtel Road	WBLT	A	A	A	A	A
	NBTR	B	B	B	B	B
	ILOS	**A (2.6)**	**A (2.6)**	**A (2.8)**	**A (2.6)**	**A (2.8)**
2nd Avenue (S.R. 4015) & Springertown Road	EBL	A	A	A	A	A
	SBL	B	B	B	B	B
	SBR	A	A	A	A	A
	ILOS	**A (0.8)**	**A (0.8)**	**A (0.8)**	**A (0.8)**	**A (0.8)**
2nd Avenue (S.R. 4015) & Vaughn Road	EBL	A	A	A	A	A
	SBLR	B	B	B	B	B
	ILOS	**A (2.3)**	**A (2.4)**	**A (2.4)**	**A (2.3)**	**A (2.4)**
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	EBLTR	B	B	C	B	C
	WBLTR	B	B	B	B	B
	NBLTR	A	A	A	A	A
	SBLTR	A	A	A	A	A
	ILOS	**A (0.2)**	**A (0.2)**	**A (0.3)**	**A (0.2)**	**A (0.3)**
Collegeville Road (SR 0029) & Black Rock Road (SR 4003)	EBL	D	D	D	D	D
	EBT	D	D	D	D	D
	EBR	D	D	D	D	D
	WBL	C	C	C	C	C
	WBT	E	E	E	E	E
	WBR	D	D	D	D	D
	NBL	B	C	C	C	C
	NBT	C	C	C	C	C
	NBR	C	C	C	C	C
	SBL	C	C	C	C	C
	SBT	C	C	C	C	C
	SBR	C	C	C	C	C
	ILOS	**C (34.4)**	**C (34.6)**	**D (35.5)**	**C (34.8)**	**D (35.8)**
Yeager Road & S. Lewis Road	WBLT	A	A	B	A	B
	NBL	F (79.5)	F (88.3)	F (85.4)	F (97.1)	F (95.8)
	NBR			B		B
	ILOS	**C (23.9)**	**D (26.5)**	**C (21.7)**	**D (29.0)**	**C (24.1)**
Black Rock Road (S.R. 0113) & Proposed Southern Driveway	EBLR	--	--	B	--	B
	NBL	--	--	A	--	A
	ILOS	--	--	**A (1.1)**	--	**A (1.1)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 3 = With Planned Roundabout,

TABLE 10 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY PM PEAK HOUR

Intersection	Movement	Weekday PM Peak Hour				
		2023 Exist	2028		2033	
			Base	Proj. [1]	Base[3]	Proj.[1,3]
Black Rock Road (S.R. 0113) & Proposed Northern Driveway	EBLR	--	--	B	--	B
	NBL	--	--	A	--	A
	ILOS	--	--	**A (0.3)**	--	**A (0.3)**
Old State Road & Proposed Southern Driveway	EBLR	--	--	A	--	A
	NBL	--	--	A	--	A
	ILOS	--	--	**A (0.7)**	--	**A (0.7)**
Trappe Road & Proposed Driveway	WBLT	--	--	A	--	A
	NBLR	--	--	A	--	A
	ILOS	--	--	**A (6.3)**	--	**A (6.3)**
2nd Avenue (S.R. 4015) & Proposed Driveway	EBLT	--	--	A	--	A
	SBLR	--	--	B	--	B
	ILOS	--	--	**A (1.1)**	--	**A (1.1)**

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Sight-Related Recommendations, 3 = With Planned Roundabout,

As shown in **Tables 9-10**, under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table 14**, all of the study area intersections will satisfy PennDOT ILOS Standards. Additionally, the Proposed Driveway intersections will operate at **ILOS A**.

95TH PERCENTILE QUEUE ANALYSIS

Queue analyses were conducted at the study area intersections using *Synchro 11* software. For this analysis, the 95th percentile queue is defined as the queue length that is exceeded in 5% of the signal cycles. As an example, for a signal with a 90-second cycle, this means that the 95th percentile queue length will be exceeded during 2 of the 40 signal cycles that occur during the peak hour. The queue analysis results are summarized in **Tables 11-12.**

TABLE 11
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY AM PEAK HOUR

Intersection	Movement	Available Storage	Weekday AM Peak Hour					
			2023 Exist	2028			2033	
				Base	Proj.	Proj.[4]	Base[1]	Proj.[1]
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	EBLTR	225'[3]	0'	0'	3'	18'	0'	25'
	WBLTR	1000'+	23'	23'	23'	108'	25'	25'
	NBLTR	650'[2]	95'	98'	118'	93'	50'	50'
	SBLTR	600'[3]	513'	538'	695'	125'	50'	50'
Black Rock Road (S.R. 0113) & Black Rock Road (S.R. 4003)/ Yeager Road	EBL	85'	33'	33'	55'		35'	58'
	EBTR	420'[2]	300'	285'	305'		300'	323'
	WBL	180'	115'	105'	130'		115'	148'
	WBTR	1000'+[2]	208'	203'	205'		213'	213'
	NBL	60'	3'	3'	10'		3'	10'
	NBTR	290'[2]	128'	143'	190'		140'	185'
	SBL	190'	153'	173'	195'		170'	195'
	SBTR	1000'+[2]	75'	83'	98'		80'	93'
Trappe Road (S.R. 0113) & Mennonite Road	EBLTR	500'[2]	158'	158'	158'		155'	155'
	WBLT	1000'+[2]	38'	35'	43'		35'	43'
	WBR	160'	5'	5'	5'		5'	5'
	NBL	75'	5'	5'	5'		5'	5'
	NBT	1000'+[2]	50'	50'	63'		53'	65'
	NBR	195'	10'	10'	15'		10'	18'
	SBL	325'	38'	38'	40'		38'	43'
	SBTR	950'[2]	88'	90'	98'		93'	98'
Trappe Road (S.R. 0113) & Hopwood Road/ Bechtel Road	EBLTR	600'[2]	143'	140'	143'		145'	145'
	WBLT	750'[2]	83'	80'	85'		83'	88'
	WBR	120'	18'	18'	18'		18'	18'
	NBL	140'	5'	5'	5'		5'	5'
	NBTR	1000'+[2]	70'	70'	88'		73'	90'
	SBL	195'	18'	20'	20'		20'	23'
	SBTR	460'[2]	110'	113'	120'		118'	128'
Old State Road & Yeager Road	EBLTR	850'[2]	48'	50'	55'		50'	58'
	WBLTR	1000'+[3]	28'	30'	38'		30'	38'
	NBLTR	1000'+[2]	10'	10'	18'		10'	20'
	SBLTR	1000'+[2]	5'	5'	8'		8'	8'
Old State Road & Meadowgreen Drive	EBLR	575'[2]	0'	0'	0'		0'	0'
	NBLT	1000'+[2]	0'	0'	0'		0'	0'
Old State Road & Hafner Road/ Proposed Site Driveway	EBLTR	520'[2]	0'	0'	0'		0'	0'
	WBLTR	--	--	--	5'		--	5'
	NBLTR	1000'+[3]	0'	0'	0'		0'	0'
	SBLTR	1000'+[2]	--	--	0'		--	0'
2nd Avenue (S.R. 4015) & Old State Road	EBLT	1000'+[2]	3'	3'	3'		3'	3'
	SBLR	700'+[3]	3'	3'	8'		5'	8'
Old State Road & Mennonite Road	EBLTR	1000'+[2]	30'	33'	33'		33'	33'
	WBLTR	875'[2]	13'	13'	13'		13'	13'
	NBLTR	580'[2]	8'	8'	10'		8'	10'
	SBLTR	485'[2]	13'	15'	15'		15'	15'

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario

1 = With Planned Roundabout, 2 = Distance to next intersection, 3 = Distance to Proposed Driveway; 4 = With AWSC

TABLE 11 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY AM PEAK HOUR

Intersection	Movement	Available Storage	Weekday AM Peak Hour				
			2023 Exist	2028		2033	
				Base	Proj.	Base[1]	Proj.[1]
Old State Road & Bechtel Road	WBLR	1000'+[2]	0'	0'	0'	0'	0'
	NBTR	870'[2]	10'	10'	13'	10'	13'
2nd Avenue (S.R. 4015) & Springertown Road	EBL	1000'+[2]	0'	0'	0'	0'	0'
	SBL	1000'+[2]	5'	5'	5'	5'	5'
	SBR	95'[2]	0'	0'	0'	0'	0'
2nd Avenue (S.R. 4015) & Vaughn Road	EBL	600'[2]	3'	3'	5'	3'	5'
	SBLR	430'[2]	18'	18'	20'	18'	20'
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	EBLTR	600'+[2]	0'	0'	0'	0'	0'
	WBLTR	225'[2]	3'	3'	3'	3'	3'
	NBLTR	305'[3]	0'	0'	0'	0'	0'
	SBLTR	845'[2]	0'	0'	0'	0'	0'
Collegeville Road (SR 0029) & Black Rock Road (SR 4003)	EBL	215'	55'	58'	73'	38'	50'
	EBT	1000'+[2]	558'	560'	590'	563'	593'
	EBR	250'	83'	85'	95'	88'	98'
	WBL	250'[2]	15'	15'	15'	15'	15'
	WBT	250'[2]	155'	155'	163'	158'	165'
	WBR	260'	45'	45'	45'	48'	48'
	NBL	245'	68'	70'	73'	73'	75'
	NBT	500'[2]	233'	240'	245'	245'	250'
	NBR	500'[2]	240'	245'	250'	250'	255'
	SBL	525'	200'	203'	208'	208'	213'
	SBT	900'+[2]	228'	235'	240'	240'	245'
	SBR	180'	43'	43'	45'	45'	50'
Yeager Road & S. Lewis Road	WBLT	400'+[2]	5'	5'	5'	5'	5'
	NBL	1000'+[2]	178'	193'	178'	203'	188'
	NBR	75'[4]			8'		8'
Black Rock Road (S.R. 0113) & Proposed Southern Driveway	EBLR	--	--	--	13'	--	13'
	NBL	600'[3]	--	--	0'	--	0'
Black Rock Road (S.R. 0113) & Proposed Northern Driveway	EBLR	--	--	--	3'	--	3'
	NBL	600'+[3]	--	--	0'	--	0'
Old State Road & Proposed Southern Driveway	WBLR	--	--	--	0'	--	0'
	SBL	1000'+[3]	--	--	0'	--	0'
Trappe Road & Proposed Driveway	WBLT	520'[2]	--	--	0'	--	0'
	NBLR	--	--	--	0'	--	0'
2nd Avenue (S.R. 4015) & Proposed Driveway	EBLT	980'[3]	--	--	0'	--	0'
	SBLR	--	--	--	8'	--	8'

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Planned Roundabout, 2 = Distance to next intersection, 3 = Distance to Proposed Driveway, 4 = Proposed

TABLE 12
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY PM PEAK HOUR

Intersection	Movement	Available Storage	Weekday PM Peak Hour					
			2023 Exist	2028			2033	
				Base	Proj.	Proj.[4]	Base[1]	Proj.[1]
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	EBLTR	225'[3]	0'	0'	3'	13'	0'	0'
	WBLTR	1000'+	23'	23'	23'	173'	50'	50'
	NBLTR	650'[2]	298'	318'	383'	135'	50'	50'
	SBLTR	600'[3]	118'	128'	245'	35'	25'	25'
Black Rock Road (S.R. 0113) & Black Rock Road (S.R. 4003)/ Yeager Road	EBL	85'	13'	13'	28'		13'	28'
	EBTR	420'[2]	78'	78'	93'		78'	93'
	WBL	180'	110'	110'	133'		110'	133'
	WBTR	1000'+[2]	378'	378'	383'		375'	383'
	NBL	60'	10'	10'	20'		13'	20'
	NBTR	290'[2]	108'	110'	145'		115'	148'
	SBL	190'	68'	68'	75'		70'	78'
	SBTR	1000'+[2]	133'	135'	188'		140'	190'
Trappe Road (S.R. 0113) & Mennonite Road	EBLTR	500'[2]	83'	70'	70'		70'	70'
	WBLT	1000'+[2]	368'	273'	435'		273'	450'
	WBR	160'	65'	55'	55'		55'	55'
	NBL	75'	20'	28'	30'		28'	30'
	NBT	1000'+[2]	168'	215'	235'		225'	245'
	NBR	195'	18'	23'	30'		25'	33'
	SBL	325'	65'	85'	90'		90'	95'
	SBTR	950'[2]	123'	163'	193'		173'	200'
Trappe Road (S.R. 0113) & Hopwood Road/ Bechtel Road	EBLTR	600'[2]	98'	98'	100'		100'	100'
	WBLT	750'[2]	98'	98'	108'		98'	108'
	WBR	120'	63'	65'	65'		65'	63'
	NBL	140'	15'	18'	18'		18'	20'
	NBTR	1000'+[2]	113'	115'	133'		118'	135'
	SBL	195'	13'	15'	15'		15'	15'
	SBTR	460'[2]	83'	83'	98'		85'	100'
Old State Road & Yeager Road	EBLTR	850'[2]	15'	15'	18'		15'	18'
	WBLTR	1000'+[3]	43'	43'	58'		45'	60'
	NBLTR	1000'+[2]	5'	5'	10'		5'	10'
	SBLTR	1000'+[2]	5'	5'	10'		5'	10'
Old State Road & Meadowgreen Drive	EBLR	575'[2]	0'	0'	0'		0'	0'
	NBLT	1000'+[2]	0'	0'	0'		0'	0'
Old State Road & Hafner Road/ Proposed Site Driveway	EBLTR	520'[2]	0'	0'	0'		0'	0'
	WBLTR	--	--	--	3'		--	3'
	NBLTR	1000'+[3]	0'	0'	0'		0'	0'
	SBLTR	1000'+[2]	--	--	3'		--	3'
2nd Avenue (S.R. 4015) & Old State Road	EBLT	1000'+[2]	0'	0'	3'		0'	3'
	SBLR	700'+[3]	5'	5'	8'		5'	8'
Old State Road & Mennonite Road	EBLTR	1000'+[2]	15'	15'	15'		15'	15'
	WBLTR	875'[2]	48'	50'	53'		53'	53'
	NBLTR	580'[2]	5'	5'	8'		5'	8'
	SBLTR	485'[2]	8'	8'	10'		10'	10'

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario

1 = With Planned Roundabout, 2 = Distance to next intersection, 3 = Distance to Proposed Driveway; 4 = With AWSC

TABLE 12 (CONTINUED)
LEVEL OF SERVICE DELAY (SECONDS) SUMMARY - WEEKDAY PM PEAK HOUR

Intersection	Movement	Available Storage	Weekday PM Peak Hour				
			2023 Exist	2028		2033	
				Base	Proj.	Base[1]	Proj.[1]
Old State Road & Bechtel Road	WBLT	1000'+[2]	0'	0'	0'	0'	0'
	NBTR	870'[2]	10'	10'	13'	10'	13'
2nd Avenue (S.R. 4015) & Springertown Road	EBL	1000'+[2]	0'	0'	0'	0'	0'
	SBL	1000'+[2]	3'	3'	3'	3'	3'
	SBR	95'[2]	3'	3'	3'	3'	3'
2nd Avenue (S.R. 4015) & Vaughn Road	EBL	600'[2]	3'	3'	3'	3'	3'
	SBLR	430'[2]	10'	13'	13'	13'	13'
Black Rock Road (SR 0113) & Trappe Road/Ramsgate Drive	EBLTR	600'+[2]	0'	0'	3'	0'	3'
	WBLTR	225'[2]	0'	0'	3'	0'	3'
	NBLTR	305'[3]	0'	0'	0'	0'	0'
	SBLTR	845'[2]	0'	0'	0'	0'	0'
Collegeville Road (SR 0029) & Black Rock Road (SR 4003)	EBL	215'	150'	155'	163'	155'	163'
	EBT	1000'+[2]	208'	210'	220'	213'	223'
	EBR	250'	60'	60'	65'	63'	68'
	WBL	250'[2]	88'	90'	88'	90'	88'
	WBT	250'[2]	515'	520'	545'	525'	553'
	WBR	260'	95'	100'	98'	103'	100'
	NBL	245'	125'	130'	140'	133'	143'
	NBT	500'[2]	260'	265'	270'	270'	275'
	NBR	500'[2]	268'	273'	280'	280'	285'
	SBL	525'	110'	113'	118'	115'	120'
	SBT	900'+[2]	215'	220'	225'	225'	230'
	SBR	180'	100'	105'	5'	108'	118'
Yeager Road & S. Lewis Road	WBLT	400'+[2]	10'	10'	10'	10'	10'
	NBL	1000'+[2]	278'	298'	255'	315'	273'
	NBR	75'[4]			8'		8'
Black Rock Road (S.R. 0113) & Proposed Southern Driveway	EBLR	--	--	--	8'	--	8'
	NBL	600'[3]	--	--	0'	--	0'
Black Rock Road (S.R. 0113) & Proposed Northern Driveway	EBLR	--	--	--	3'	--	3'
	NBL	600'+[3]	--	--	0'	--	0'
Old State Road & Proposed Southern Driveway	WBLR	--	--	--	0'	--	0'
	SBL	1000'+[3]	--	--	0'	--	0'
Trappe Road & Proposed Driveway	WBLT	520'[2]	--	--	0'	--	0'
	NBLR	--	--	--	0'	--	0'
2nd Avenue (S.R. 4015) & Proposed Driveway	EBLT	980'[3]	--	--	3'	--	3'
	SBLR	--	--	--	5'	--	5'

Exist. = Existing Condition, Base = No-Build scenario, Proj. = Build scenario
1 = With Planned Roundabout, 2 = Distance to next intersection, 3 = Distance to Proposed Driveway, 4 = Proposed

Queue analysis worksheets are included with the capacity analysis worksheets provided in the **Appendix H**.

AUXILIARY TURN LANE ANALYSIS

Methodology

TPD evaluated auxiliary turn lane warrants at the Proposed Site Driveways. The warrant analysis methodology contained within Chapter 11 of PennDOT's *Publication 46*, Section 11.17 and Strike-Off Letter 470-08-07 was utilized for this evaluation.

Findings

Table 13 summarizes the results of the auxiliary turn lane analysis at the site access intersections.

TABLE 13
AUXILIARY TURN LANE ANALYSIS SUMMARY

Intersection	Auxiliary Lane	Warrant Satisfied?
Old State Road & Hafner Road/Proposed Driveway	SB Left-Turn Lane	No
	NB Right-Turn Lane	No
Black Rock Road (SR 0113) & Proposed Southern Driveway	NB Left-Turn Lane	No
	SB Right-Turn Lane	No
Black Rock Road (SR 0113) & Proposed Northern Driveway	NB Left-Turn Lane	No
	SB Right-Turn Lane	No
Old State Road & Proposed Southern Driveway	NB Left-Turn Lane	No
	SB Right-Turn Lane	No
Trappe Road & Proposed Site Driveway	WB Left-Turn Lane	No
	EB Right-Turn Lane	No
2nd Avenue (SR 4015) & Proposed Site Driveway	EB Left-Turn Lane	No
	WB Right-Turn Lane	No

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

RECOMMENDATIONS

TPD has made the following recommendations in relation to the Proposed Residential Development, as outlined in **Table 14**:

TABLE 14
RECOMMENDATIONS

Intersection	Recommendations
Proposed Site Driveways (6)	Provide adequate turning radii to facilitate ingress/egress
	Provide a "STOP" sign on the egress approach
	Provide regrading and removal/maintenance of on-site vegetation to optimize available sight distances
	Work with PennDOT and Upper Providence Township to provide pedestrian/ADA facilities along the Proposed Site frontage, to the extent feasible
Black Rock Road (S.R. 0113) & 2nd Avenue (S.R. 4015)/ Dreibelbis Road	As a temporary condition, and until the Planned Roundabout is built and operational, revise the existing traffic control at this intersection to All-Way Stop-Control to improve the overall operation of the intersection.
Yeager Road & S. Lewis Road	Widen Yeager Road to provide a 75' NB right-turn lane in order to improve the operation of the approach.
Black Rock Road (S.R. 0113) & Trappe Road	Investigate converting the roadway to a one-way operation (clockwise) via signage and striping, with the westernmost intersection as enter only and the easternmost intersection as exit only to improve safety and efficiency.
Signalized Study Area Intersections (4)	Optimize the signalized Study Area intersections to offset the impact of the Proposed Site
Old State Road	Widen Old State Road along the property's frontage per Township Ordinance. This widening will equate to approximately 9-10' of widening along the south side of the roadway for approximately 4,000 linear feet.
Black Rock Road (S.R. 0113) & Northern Proposed Site Driveway	Provide sight line profiles to confirm the location for this driveway

CONCLUSIONS

Based on the results of the Transportation Impact Study, TPD offers the following conclusions:

- The Proposed Site is bound by Black Rock Road (S.R. 0113) to the south, Yeager Road to the east, Old State Road to the north, and Second Avenue (S.R. 4015) to the west.
- The Proposed Development will consist of the following uses:
  - 44 Single-Family Detached Homes;
  - 403 Market-Rate Townhomes;
  - 153 Age-Qualified Townhomes.
- The Proposed Site will be served by a total of six (6) full-access driveways, as follows:
  - Two (2) driveways to Black Rock Road (S.R. 0113);
  - Two (2) driveways to Old State Road – One (1) directly opposite of Hafner Road and One (1) west of Hafner Road;
  - One (1) driveway to 2nd Avenue (S.R. 4015);

- One (1) driveway to S. Trappe Road.

» With regrading and removal/maintenance of on-site vegetation, all proposed driveway locations will exceed the PennDOT minimum sight distance criteria, except for two (2) movements at three (3) of the driveways, further described in the sight distance section of the Traffic Study. TPD has recommended providing sight line profiles to confirm the location for the northern driveway on Black Rock Road (S.R. 0113.

» The Proposed Development will generate **270 new trips** during the weekday A.M. Peak Hour and **322 new trips** during the weekday P.M. Peak Hour.

» Under all projected (build) conditions with the development of the proposed site and with site-related recommendations outlined in **Table 14**, all of the study area intersections will satisfy PennDOT ILOS Standards. Additionally, all Proposed Driveway intersections will operate at **ILOS A**.

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FIGURE 1

PROJECT SITE LOCATION

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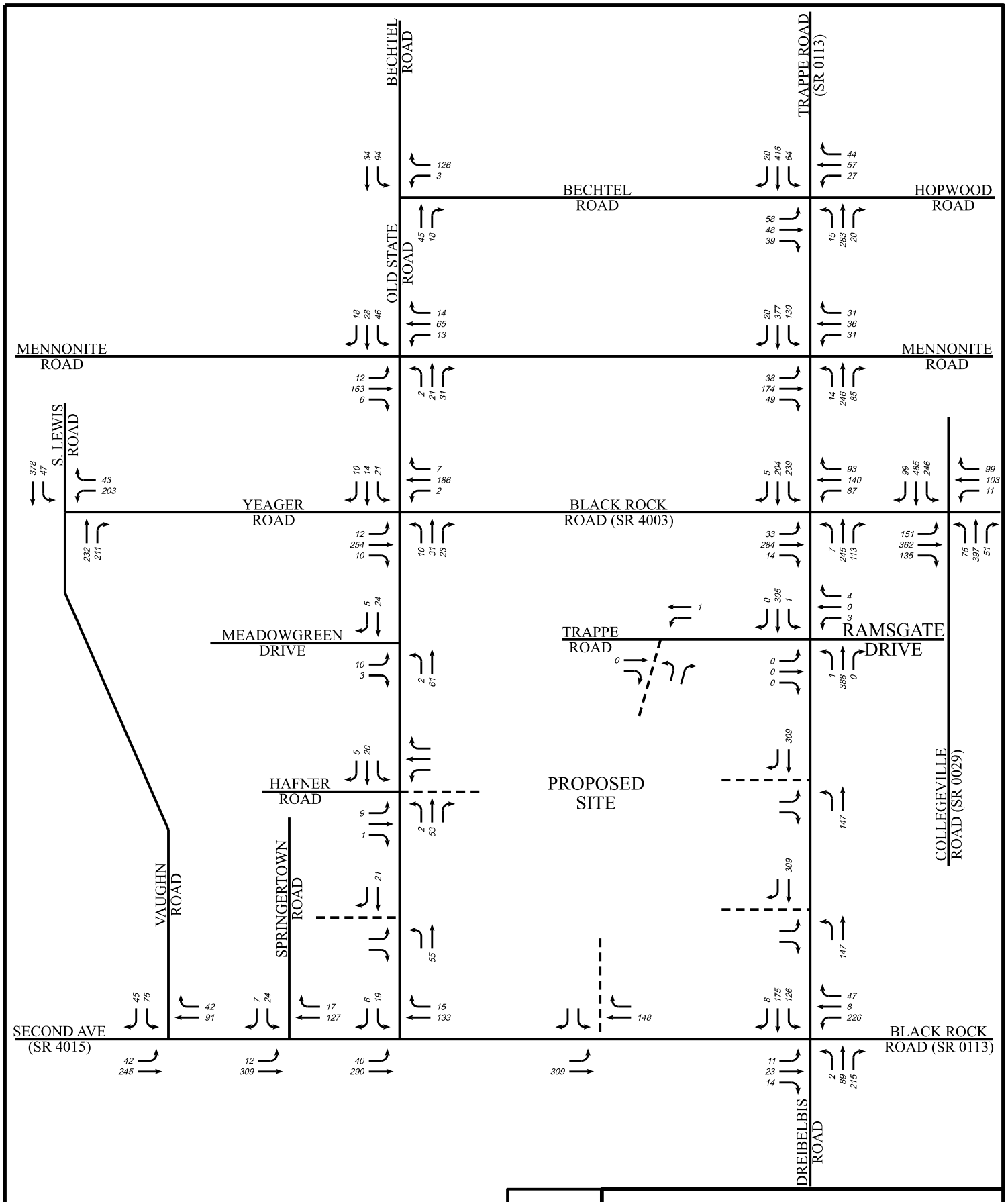
FIGURE 2

PROJECT SITE PLAN



KEY:

- - - - - PROPOSED DRIVEWAY

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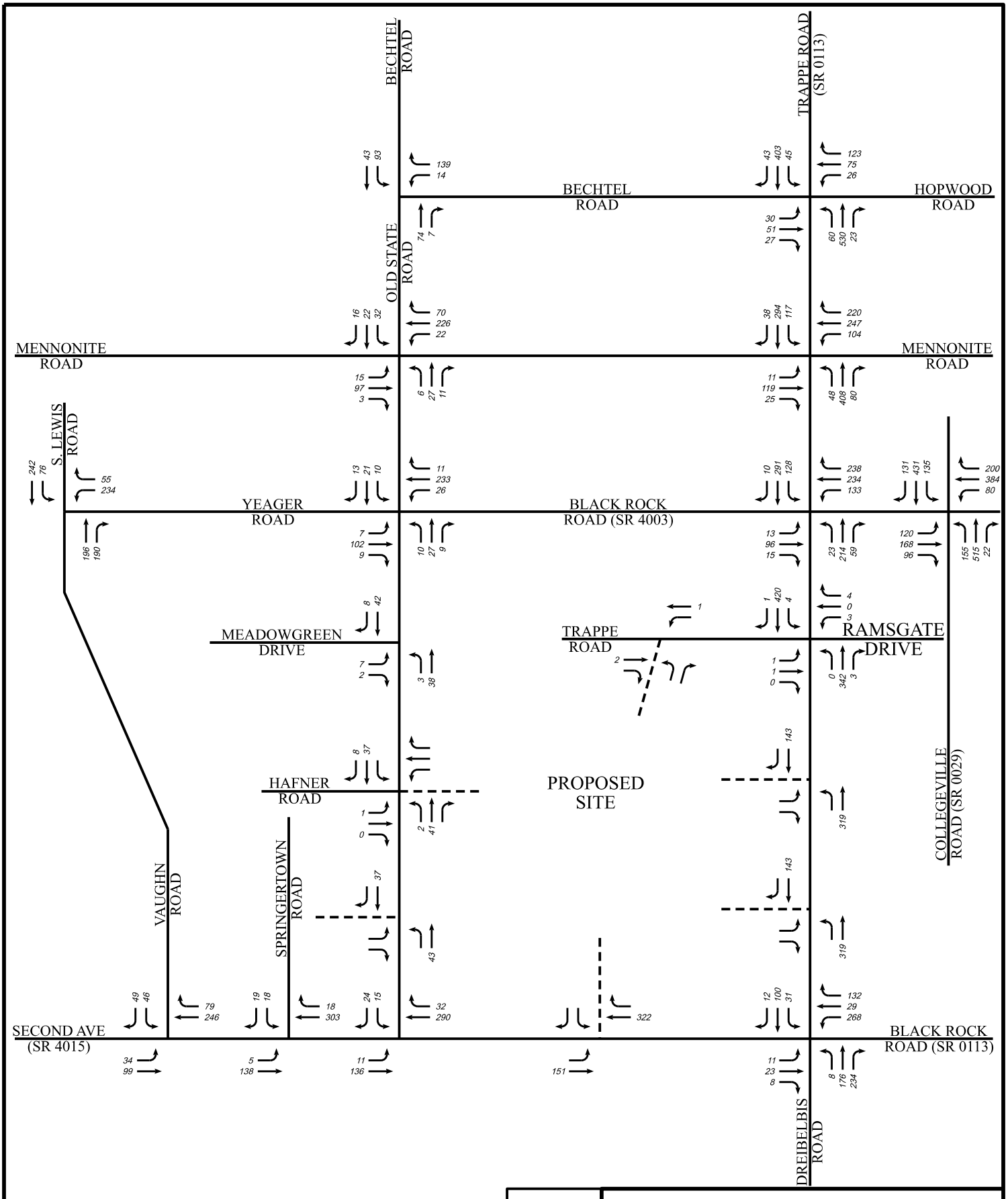
FIGURE 3

2023 EXISTING CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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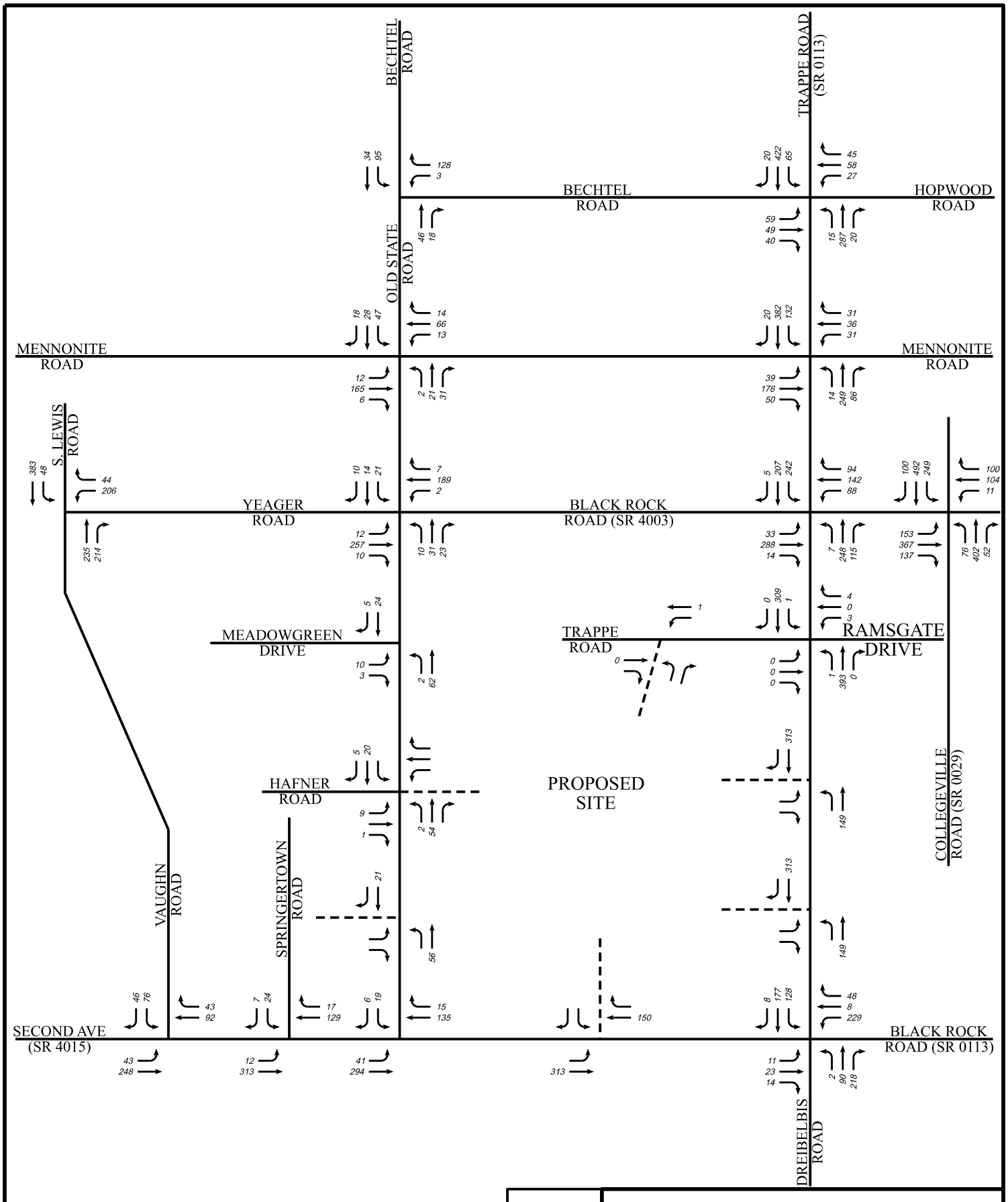
FIGURE 4

2023 EXISTING CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

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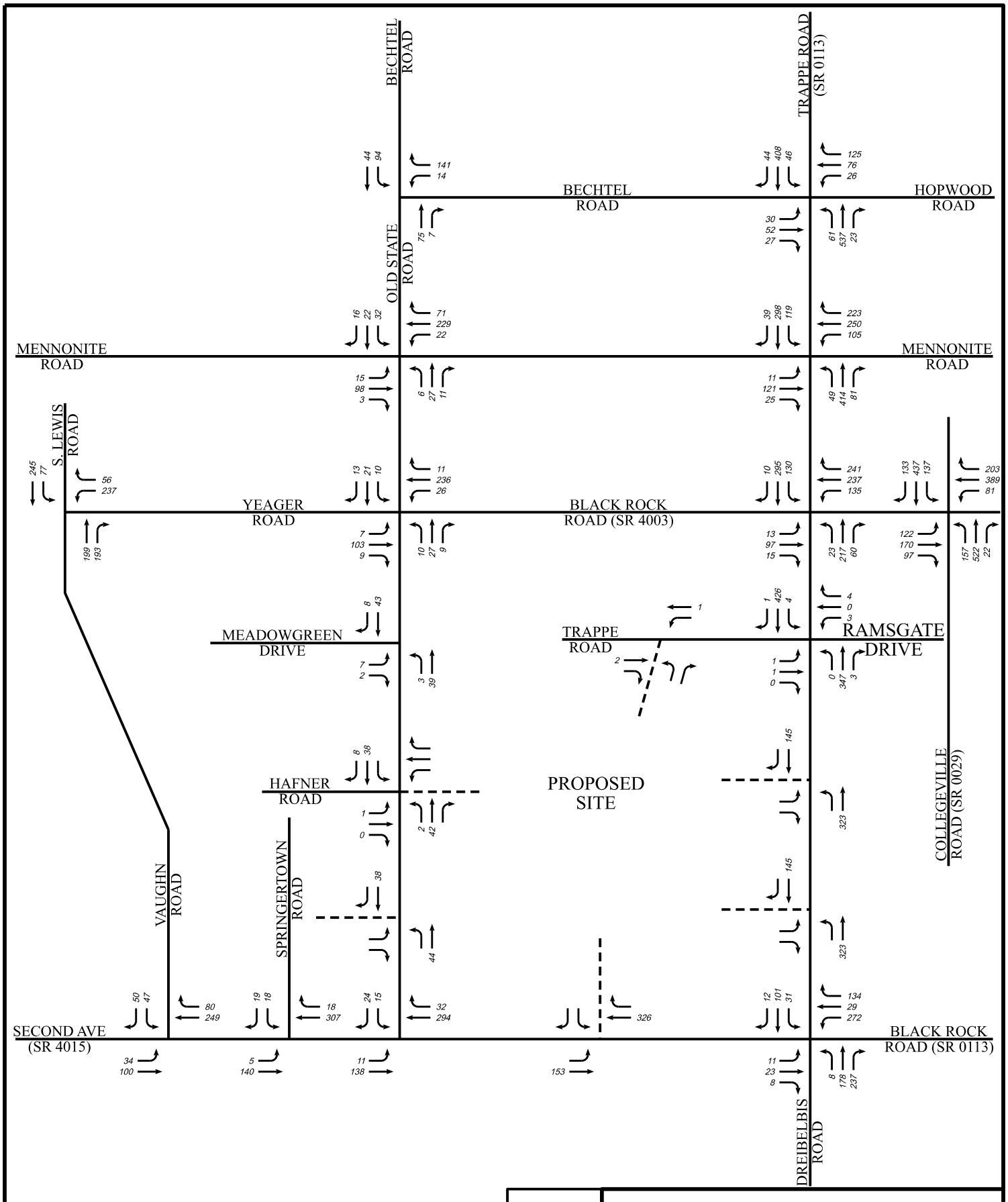
FIGURE 5

2028 BASE CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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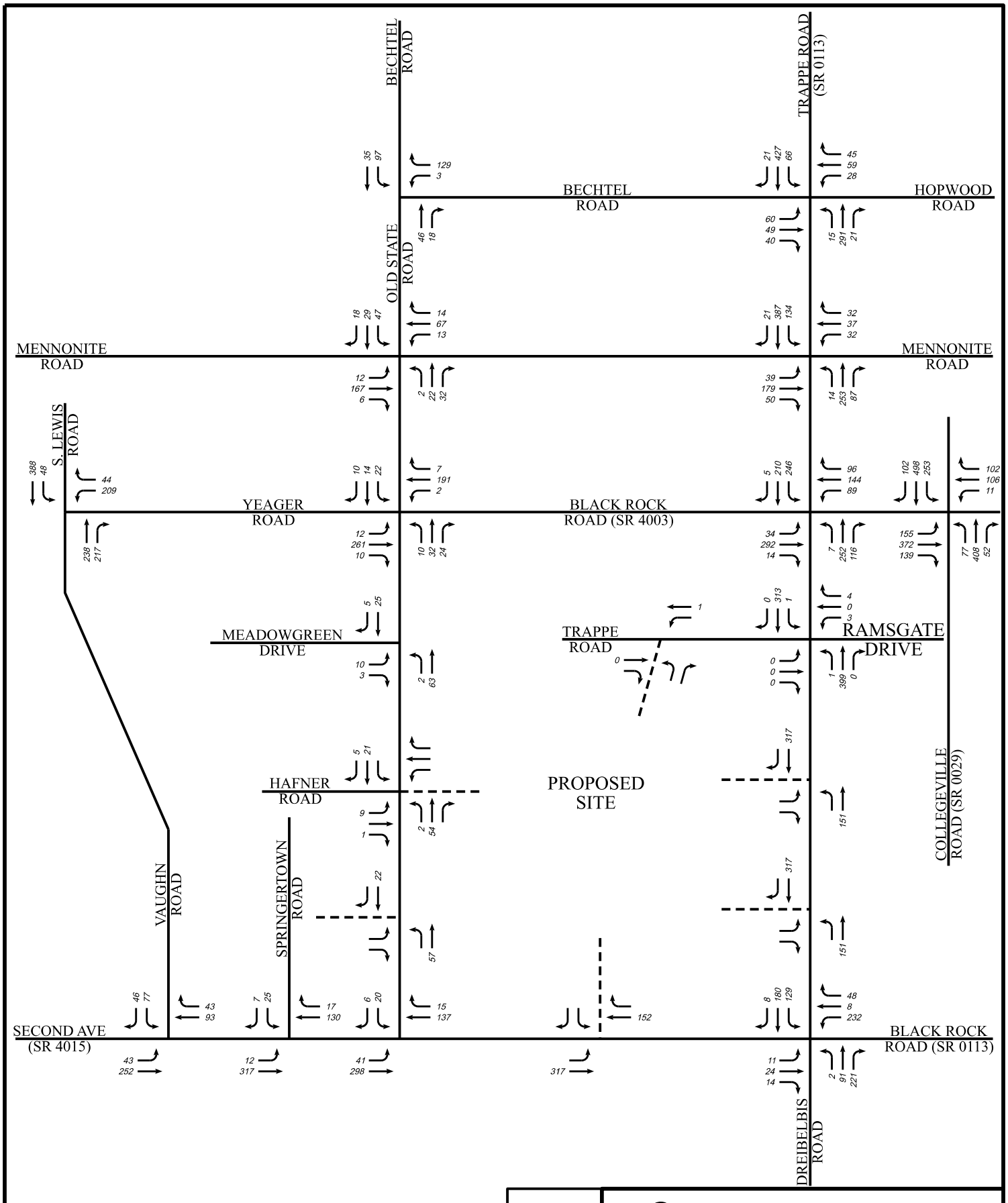
FIGURE 6

2028 BASE CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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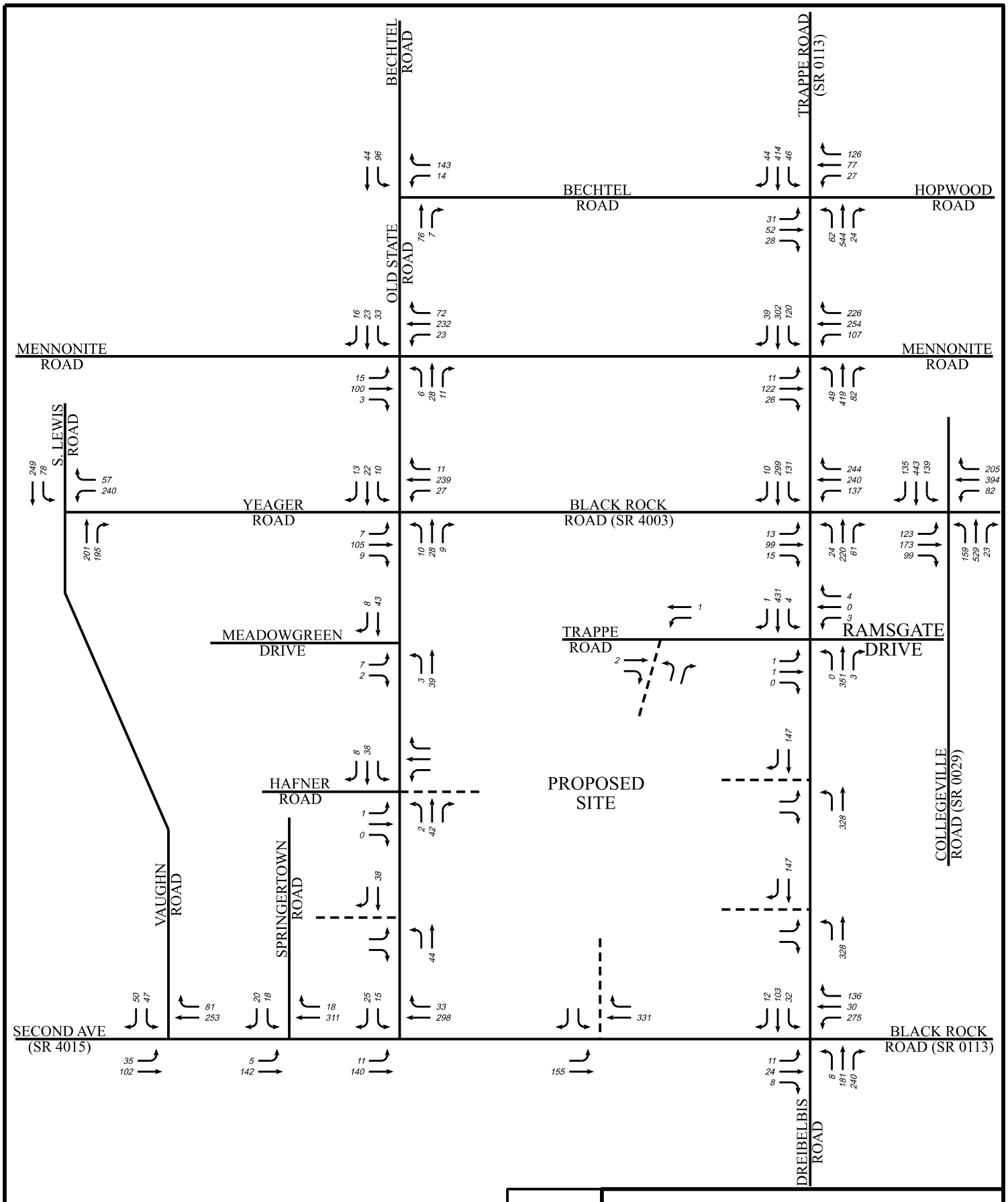
FIGURE 7

2033 BASE CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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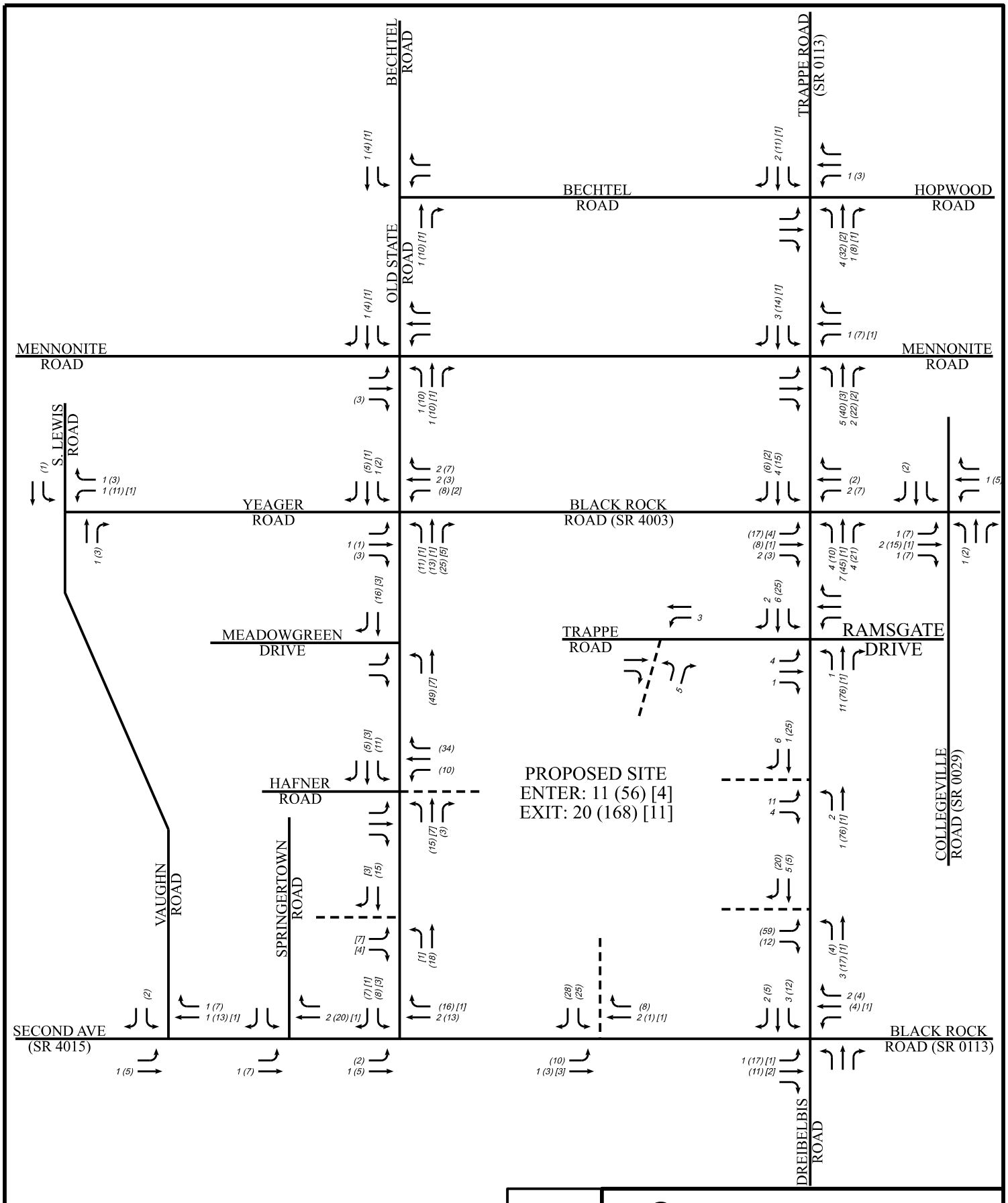
FIGURE 8

2033 BASE CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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FIGURE 9

RESIDENTIAL DEVELOPMENT
WEEKDAY A.M. PEAK HOUR
TRIP DISTRIBUTION
AGE QUALIFIED (MARKET RATE SOUTH) [MARKET RATE NORTH]

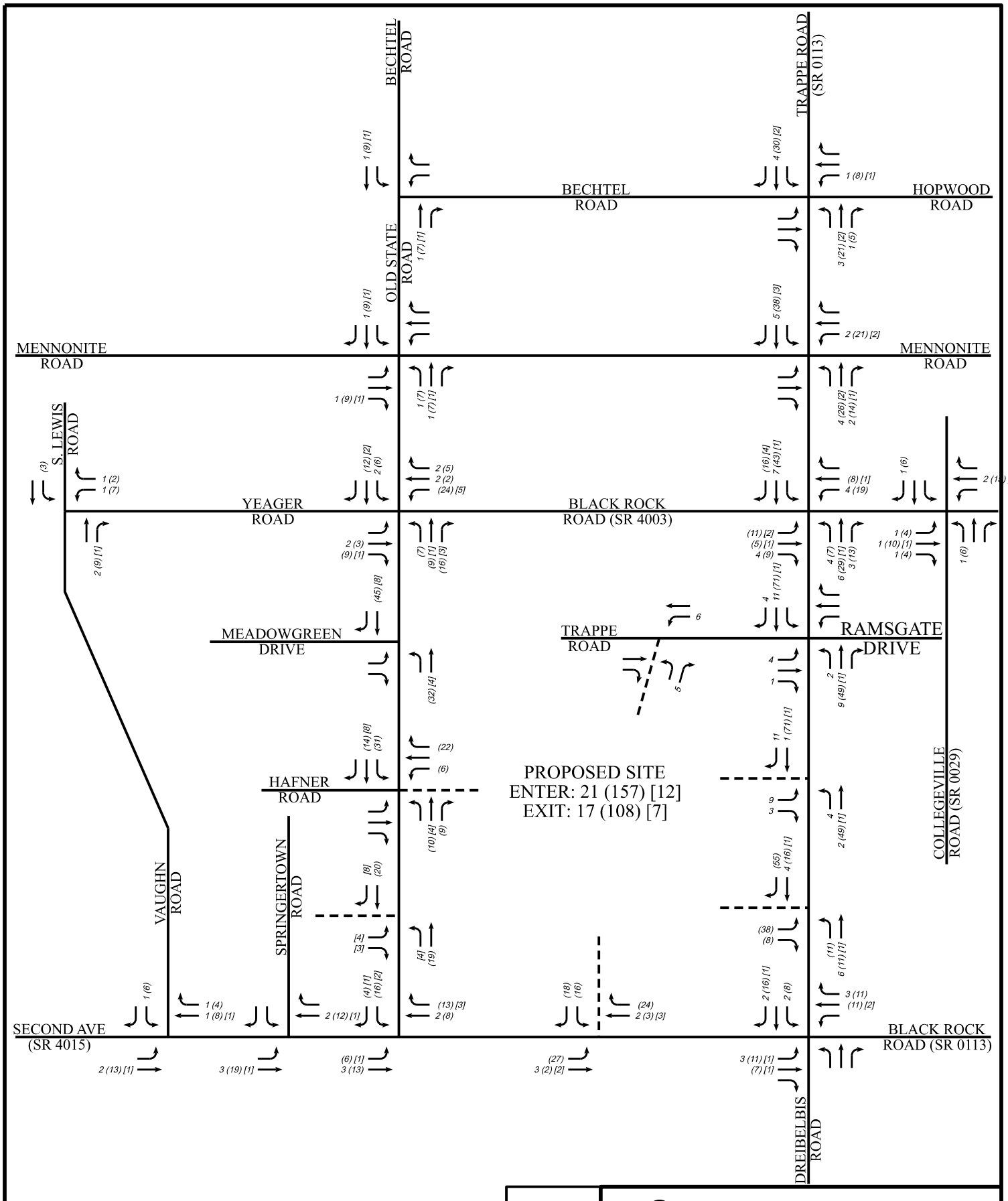
BECHTEL ROAD
TRAPPE ROAD (SR 0113)
HOPWOOD ROAD
OLD STATE ROAD
MENNONITE ROAD
S. LEWIS ROAD
YEAGER ROAD
BLACK ROCK ROAD (SR 4003)
MEADOWGREEN DRIVE
TRAPPE ROAD
RAMSGATE DRIVE
HAFNER ROAD
PROPOSED SITE
ENTER: 21 (157) [12]
EXIT: 17 (108) [7]
VAUGHN ROAD
SPRINGERTOWN ROAD
COLLEGEVILLE ROAD (SR 0029)
SECOND AVE (SR 4015)
BLACK ROCK ROAD (SR 0113)
DREIBELBIS ROAD
KEY:
PROPOSED DRIVEWAY
SCHEMATIC DRAWING:NOT TO SCALE
N
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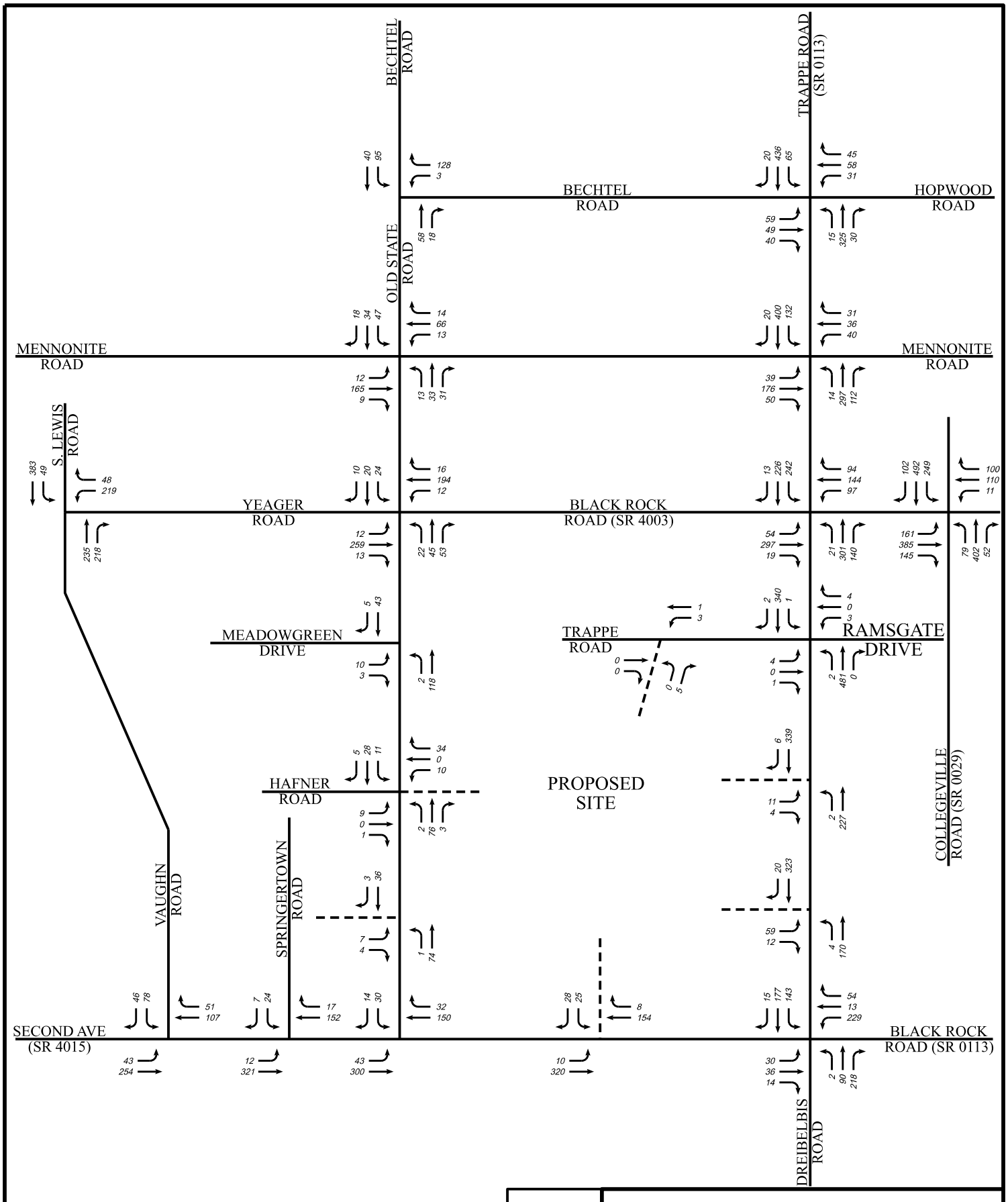
FIGURE 10
RESIDENTIAL CARE FACILITY
WEEKDAY P.M. PEAK HOUR
TRIP DISTRIBUTION
AGE QUALIFIED (MARKET RATE SOUTH) [MARKET RATE NORTH]



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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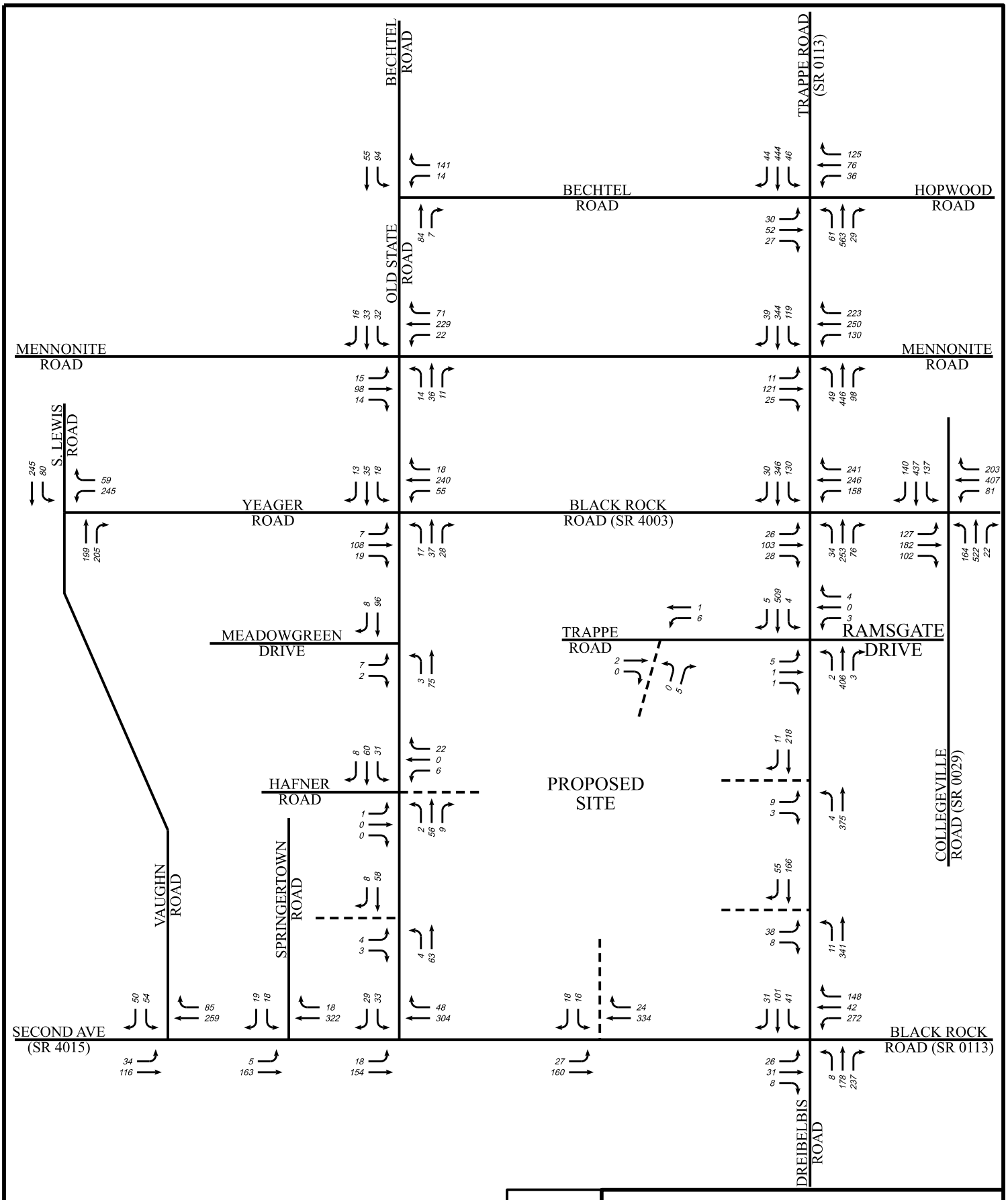
FIGURE 11

2028 PROJECTED CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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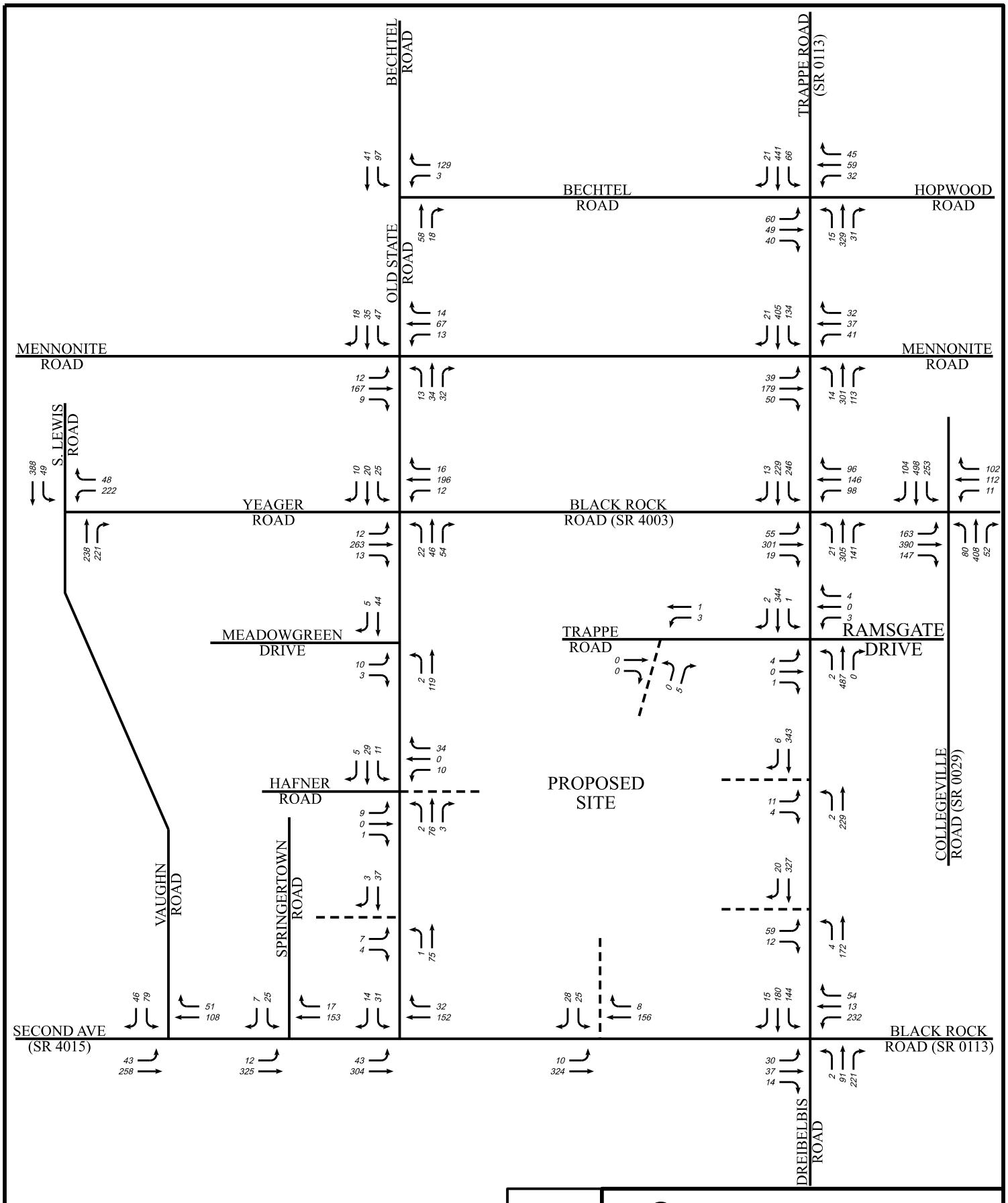
FIGURE 12

2028 PROJECTED CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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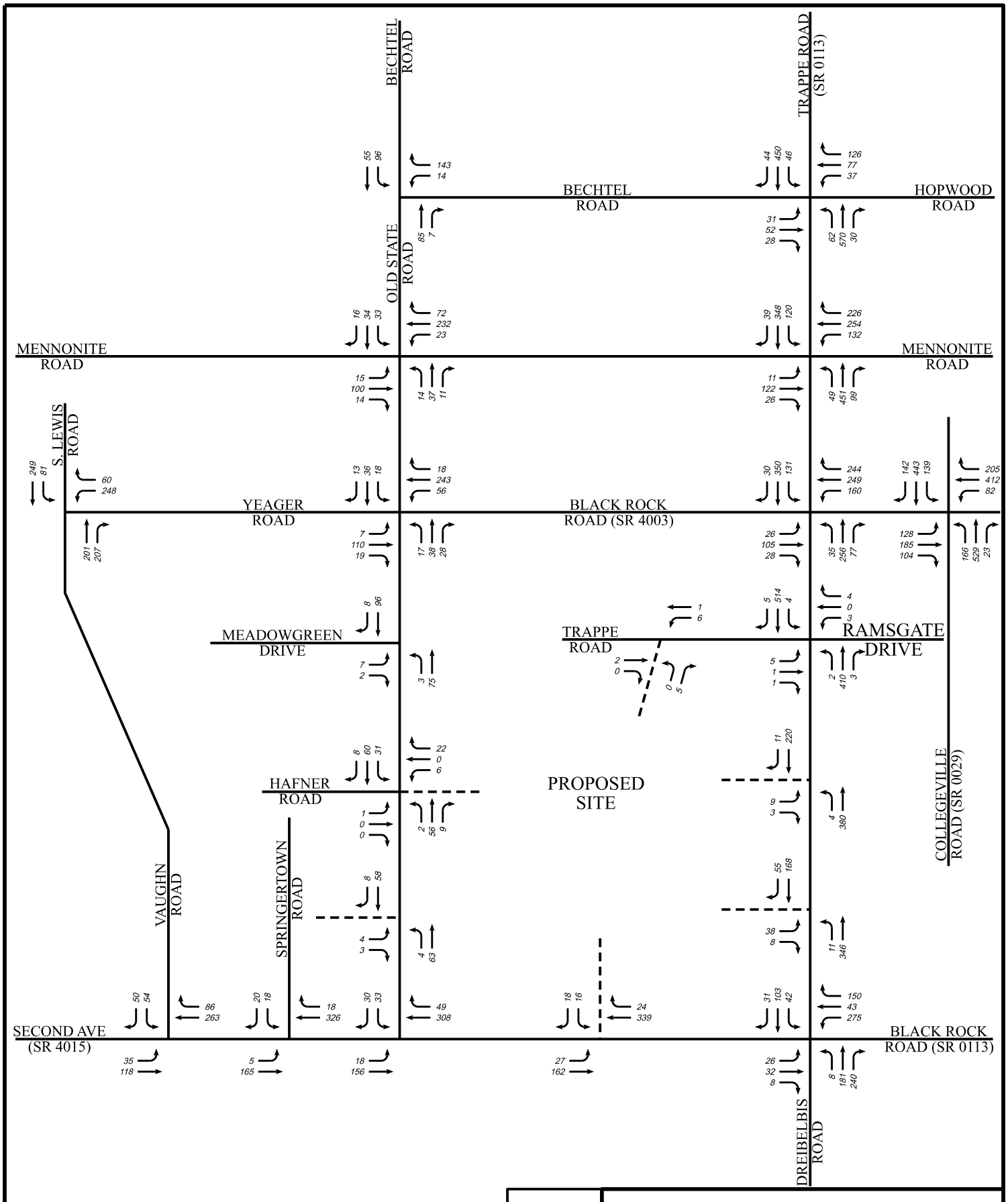
FIGURE 13

2033 PROJECTED CONDITIONS
WEEKDAY A.M. PEAK HOUR
TRAFFIC VOLUMES



KEY:

- - - - - PROPOSED DRIVEWAY

SCHEMATIC DRAWING:NOT TO SCALE

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FIGURE 14

2033 PROJECTED CONDITIONS
WEEKDAY P.M. PEAK HOUR
TRAFFIC VOLUMES

APPENDIX A

Project Correspondence

From: ePermitting Help <penndotepermittinghelp@pa.gov>
Sent: Friday, March 10, 2023 8:47 AM
To: midaro5@aol.com; Bressler, Matt; Hammond, Matt; Haesler, Brian; fhanney@pa.gov; jotten@pa.gov; slapenta@pa.gov; c-smccutch@pa.gov; scburton@pa.gov; ajparker@mccormicktaylor.com; planning@montcopa.org; lsendelgrant@montcopa.org; avalencia@mcmahonassociates.com; bbortnichak@uprov-montco.org; cmoore@mcmahonassociates.com; ggrace@uprov-montco.org; jgutshall@gilmore-assoc.com; mcoyne@gilmore-assoc.com; ttieperman@uprov-montco.org; wdingman@gilmore-assoc.com; avalencia@mcmahonassociates.com; bbortnichak@uprov-montco.org; cmoore@mcmahonassociates.com; ggrace@uprov-montco.org; jgutshall@gilmore-assoc.com; mcoyne@gilmore-assoc.com; ttieperman@uprov-montco.org; wdingman@gilmore-assoc.com
Cc: RA-PDEPSPROD@pa.gov
Subject: :: Scoping Meeting Application - Returned - Application Number is : S0620230005 (Sent on: 03/10/2023 08:46:33 AM)

CAUTION: External email - do not click links or open attachments unless you recognize the sender and know the content is safe.

PennDOT has completed its review of the TIS Determination and Scoping Meeting Application.

Please address the following comments below, and resubmit the application to PennDOT for review.

PennDOT Review Comments :

1. This is a preliminary review. The Department reserves the right to make additional comments when the application includes detailed plans and a Transportation Impact Study (TIS). The Department has determined that a scoping meeting is not necessary. If you have any questions about the technical aspects of this review, please contact the Department's representative, Andrew Parker, PE, PTOE at ajparker@mccormicktaylor.com or 484-873-2408.
2. The Department is now requiring a cost estimate be entered into EPS prior to HOP issuance. This cost estimate must include all work proposed within Department Right-of-Way including signal equipment, roadway work, pavement markings, and signage plus a 15% contingency to be entered into the Fee information & Estimate Construction Cost section in the Application setup box. Further, this section requires the cost estimate to be broken down into site frontage costs and off-site improvements costs. Please enter this information in the manner required. This cost estimate will be the basis for the value of the Letter of Credit the Department will require as security prior to the start of actual construction.
3. In future submissions, include all relevant correspondence as an appendix to the TIS. This includes but is not limited to previous review letters, responses to comments, municipal reviews, and any relevant emails. In addition, the applicant's engineer must put together a letter that describes how each comment in this review has been addressed. PennDOT and Upper Providence Township must be copied on all submissions related to this development. The Department recommends that the nearby municipalities of Phoenixville Borough and Royersford Borough also be given the opportunity to review project materials such as the TIS and proposed off-site improvements and to provide input regarding any impacts to their municipalities.
4. The latest review comments from Upper Providence Township must be addressed to their satisfaction. In particular this includes but is not limited to the Traffic Engineering Review #2 letter dated February 17, 2023 from McMahon (on behalf of Upper Providence Township).
5. As stated in the Scoping Application and the Traffic Engineering Review #2 comments prepared by McMahon (dated February 17, 2023), Upper Providence Township is actively progressing the design of a single-lane roundabout at SR 0013 (Black Rock Road) & SR 4015 (2nd Avenue). This project also includes the replacement of the narrow SR 0113 bridge just east of the intersection. Based on the conceptual plans for both the roundabout and the proposed

development, ongoing and close coordination between the two project teams will be critical. In subsequent submissions, provide updates on coordination between the two projects. In particular, the applicant should clarify the expected timelines of both projects and provide updates in each future submission.
6. Add the following intersections to the study area: (a) SR 0113 (Black Rock Road) & Ramsgate Drive/Trappe Road; (b) SR 0029 (Collegeville Road) & SR 4003 (Black Rock Road); (c) SR 4048 (S. Lewis Road) & Yeager Road; (d) existing driveways on SR 0113 for Parkhouse Nursing & Rehabilitation Center and the Play & Learn daycare center at 1600 Black Rock Road.
7. The trip generation as shown in the scoping application assumes that all proposed dwelling units (i.e., single-family detached homes, townhomes, and apartments) will be restricted to senior adults only. If there is any change to the proposed land uses, types of facilities, or age restrictions, bring this to the Department?s attention immediately. Revised trip generation and analyses will be required, potentially resulting in different mitigation measures.
8. This application proposes 1,005 dwelling units of multifamily senior adult housing (ITE land use code 252). This development size is several times larger than the largest sites included in the ITE database. However, since the ITE data points are generally well-correlated with the number of dwelling units and the trip generation uses the more conservative results (average rate vs. fitted curve) where appropriate, the Department is agreeable with the trip calculations.
9. Based on the site plan, there are three distinct sections of the proposed development, with no interconnections between them. The Department strongly recommends interconnections if possible. Either way, the applicant must determine the trip generation and trip assignment in such a manner to accurately reflect the number of trips specific to each section of the development along with the corresponding trip assignments to each site access and onto the roadway network.
10. Clarify the relationship between the proposed development and the existing Parkhouse Nursing & Rehabilitation Center and the Play & Learn daycare center at 1600 Black Rock Road. The sketch plan does not appear to show any internal connections between the existing and proposed developments. If any interactions between the sites are expected (e.g., shared staff, shared amenities, etc.), the Department would strongly recommend internal connections. If the existing facility will not be in use after redevelopment of the larger site, the TIS needs to state that. Also discuss any plans for potential reuse or redevelopment of that part of the property.
11. Based on a review of PennDOT TIRe data in the study area, collect the weekday turning movement counts from 6am-9am and 3pm-6pm to help ensure that peak traffic is captured.
12. The scoping application states that three driveways are proposed on Old State Road, but four driveways are shown on the sketch plan. Clarify and revise for consistency in the TIS.
13. Confirm with Upper Providence Township if there are any other roadway or development projects that need to be accounted for in the TIS.
14. Please be advised that pursuant to and in accordance with Title 67, Chapter 441.8(h)(2)(iv) of the code, the Safe Stopping Sight Distance is the absolute minimum acceptable sight distance for all driveways. Sight distance values obtained from the use of reduction factors which fall below the Safe Stopping Sight Distance will not be accepted by the Department. It is the designer?s responsibility to ensure that this minimum requirement is satisfied.
15. In conjunction with the preceding sight distance comment, while the TIS must evaluate sight distance at all proposed driveways, the Department is especially concerned with sight distance at the driveways proposed along SR 0113 (Black Rock Road) due to existing vertical grade/curves. The applicant must conduct two speed studies on SR 0113 to determine the existing operating speeds: the first between Ramsgate Drive and River Road (entrance to Upper Schuylkill Valley Park) and the second between SR 4015 (2nd Avenue) and River Road. As per Title 67, Chapter 441.8(h)(2)(ii), when determining desirable sight distance from the tables in Chapter 441 operating speed should be used in lieu of posted speed if it is more than 10 MPH over the posted speed.
16. Truck turning templates must be provided for the largest vehicle anticipated to access the site (all movements) to ensure that the driveways can safely accommodate the design vehicle. Additionally, the templates must show how these vehicles will circulate within the site. For each site access, if the largest permitted vehicle type to utilize that access is smaller than a WB-67, then a note must be included on the plans, turning templates for that vehicle size provided, appropriate signage provided, and that vehicle size will become a condition of the permit and be recorded.
17. ADA compliance within the limits of work must be evaluated in the final design (i.e. new/modified facilities, impact to SEPTA bus stops, etc.). Coordinate with Upper Providence Township regarding the need for frontage sidewalks and potential connections to future multimodal facilities. The roundabout concept plans show sidewalks that extend to the site?s frontages.
18. The connection to, or the installation of, a new closed drainage system within the Department Right-of-Way requires a separate permit application in the name of the municipality for the maintenance of this system. Please submit the application as Permit Type: Miscellaneous, Permit Subtype: Curb, sidewalk, drainage or other application, Permit Use: Drainage for maintenance of the drainage system.
19. Based on information available to the consultant reviewer, it does not appear that the proposed work will impact PennDOT fiber optic facilities; however, the applicant is responsible for verification of the utilities impacted by the relocation of any existing utility pole within the limits of work. If PennDOT fiber optic cables are present, the applicant is responsible for all costs associated with relocation. A condition will be placed on the permit stating: "If the proposed

improvements require the relocation of PennDOT fiber optic cable(s), the permittee is responsible for the full expense of relocating these facilities." Any fiber optic cable that requires relocation must be moved by a contractor certified by PennDOT to perform this type of work. Provide a note on the plans indicating this requirement.
20. Consistent with current Department Policy, applicants for Highway Occupancy Permits must apply for an EPS Business Partner ID (BPID). The EPS BPID is used in the establishment of a billing account for the invoicing of inspection costs. After an EPS BPID is obtained and activated by the applicant's system administrator, a user ID will then need to be created to ensure that the EPS BPID is integrated into EPS and searchable through the "looking glass" feature. Once this has been established, please provide the following information in the applicant contact information tab under "Applicant Team": a. BPID b. Contact information (name/title/phone/email) for a general contact person (person that typically deals with the Highway Occupancy Permit application process) c. Contact information (name/title/phone/email) for a billing contact person (person that typically deals with the Highway Occupancy Permit invoicing process) For information on obtaining an EPS BPID, you may visit: https://www.dot14.state.pa.us/EPS/home/manageBPRegistration.jsp (follow the instructions that are in the PINK area) or contact the ECMS Help Desk. Please be aware that having an ECMS BPID does not guarantee the establishment of an EPS BPID as they are not reciprocal to one another.

Click here to access the Scoping Application

PENNDOT EPERMIT - PLEASE DO NOT REPLY TO THIS EMAIL

February 17, 2023

Mr. Geoffrey Grace
Director of Planning and Zoning
Upper Providence Township
P.O. Box 406
Oaks, PA 19456

RE: Traffic Engineering Review #2 – Transportation Impact Study Scoping Meeting Application
Parkhouse Senior Citizen Care Community – Black Rock Road (S.R. 0113) / 2nd Avenue (S.R. 4015) / Old State Road / Yeager Road
Upper Providence Township, Montgomery County, PA
McMahon Project No. 822575.11
Township Escrow No. 313

Dear Geoff:

As requested, on behalf of Upper Providence Township, McMahon, a Bowman company, (McMahon) has completed our second (2nd) traffic engineering review of the proposed senior residential development (first review of the PennDOT scoping application) to be located along the northern side of Black Rock Road (S.R. 0113) between 2nd Avenue (S.R. 4015) and Yeager Road in Upper Providence Township, Montgomery County, PA. According to the submission, the proposed residential development at this time totals 1,203 residential units for qualified residents who are 62 years of age and older, and will consist of 153 single-family homes, 177 townhomes, 828 apartment units, and 45 assisted living units. Access to the overall site is currently proposed via several driveways located along Black Rock Road (S.R. 0113) having three (3) access points, Old State Road having three (3) access point, 2nd Avenue (S.R. 4015) having one (1) access point, and Yeager Road having one (1) access point.

The following document was provided to us for our review in preparation of this letter:

- Transportation Impact Study Scoping Meeting Application (S0620230005) – Parkhouse Residential Care Facility for Senior Citizens, prepared by Traffic Planning & Design, Inc. (received for review on January 23, 2023).

The comments in this letter pertain solely to the transportation impact study scoping meeting application. The applicant must still address our comments pertaining to the conditional use/tentative land development plan in our June 24, 2022 review letter.

Based on our review of the submitted document noted above, McMahon offers the following comments for consideration by the Township and action by the applicant:

1. The transportation impact study (TIS) is being scoped concurrently with PennDOT to obtain their guidance and concurrence on the scope of the study proposed in the TIS scoping meeting application. Any comments from PennDOT should be coordinated with our office and the Township and addressed accordingly in the TIS submission. **The scoping application and any correspondence with PennDOT and other agencies requiring approvals for the project must be coordinated with the Township, the Township Engineer and our office going forward.**

2. We generally concur with the scoping items and methodologies to be used by the applicant's traffic engineer as contained in the scoping application. This includes several other items to be completed in the study evaluation that are identified in the scope, such as sight distance, auxiliary turn lane needs, and queuing observations. However, we do have additional items that are noted below, and that we request of the applicant to be included in the scope.

3. First, the intersection and timeframes for evaluation that are listed in the scoping application include the following locations and hours of study, to which we concur,along with a few others we ask to be evaluated given the size of the development, travel routes to/from this area, concerns raised to the Township boards, and potential impacts:

    a. Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road
    b. Black Rock Road (S.R. 0113) and Ramsgate Drive/Trappe Road
    c. Black Rock Road (S.R. 0113)/South Trappe Road (S.R. 0113) and Yeager Road/Black Rock Road
    d. Black Rock Road and Collegeville Road (S.R. 0029)
    e. South Trappe Road (S.R. 0113) and Mennonite Road
    f. South Trappe Road (S.R. 0113) and Bechtel Road/Hopwood Road
    g. Yeager Road and South Lewis Road
    h. Old State Road and Yeager Road
    i. Old State Road and Hafner Road
    j. Old State Road and Mennonite Road
    k. Old State Road and Bechtel Road
    l. Old State Road and Meadowgreen Drive
    m. 2nd Avenue (S.R. 4015) and Springertown Road
    n. 2nd Avenue (S.R. 4015) and Vaughn Road
    o. 2nd Avenue (S.R. 4015) and Old State Road
        i. Close attention should be given to sight distance at this location as residents have identified visibility concerns that could potentially be exacerbated by the increased traffic anticipated as part of this development

4. The phasing of the development of the project must be clearly described in the study, and if the mitigation improvements are being proposed for the full build-out of the site or phased with construction.

5. The Black Rock Road (S.R. 0113)/2nd Avenue (S.R. 4015)/Dreibelbis Road intersection is located along only one of two direct routes that connects Phoenixville with Montgomery County and is a significant commuter route/intersection to the surrounding area. As such, we continue to recommend that the neighboring municipalities of Phoenixville Borough and Royersford Borough should be copied on future scoping application correspondence as a courtesy and to provide them with appropriate notification of the planned improvements and study intersections.

6. The proposed development will have impact on the intersection of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road. Currently, given the existing configuration of the intersection including a 90-degree bend of Black Rock Road (S.R. 0113), which forms two of its four approach legs, and then 2nd Avenue (S.R. 4015) and Drebeilbis Road, which form the other two approach legs, the intersection has been a major focus of the Township given that the existing configuration creates driver confusion as they navigate through the intersection. The anticipated impact to the area only increases safety and efficient capacity concerns at this intersection with the increase in traffic that would be generated by this development, in addition to it being developed as an age-restricted community. The Township's Act 209 Study reflects the need to improve this intersection by providing a controlled intersection reconfiguration, and a roundabout design has been identified at this location as the preferred intersection design to remedy the operational issues, safety concerns and enhance the movement of all vehicular and non-vehicular modes through this intersection. In addition to the Act 209 recommendations, the Township recently partnered with PennDOT to provide low-cost safety improvements in the form of pavement markings and updated signage that is planned to be installed by PennDOT in the near future while the roundabout and associated approach improvements are being designed. The Township received grant funding to advance the preliminary engineering associated with the roundabout and has completed field survey and is in the early stages of the engineering process. Copies of two alternative layouts being considered for the intersection have been shared with the applicant's engineers. The project will include the installation of a single-lane roundabout, replacement of the PennDOT bridge structure along Route 113 to the immediate north of the intersection over a Schuylkill River tributary, and the provision of other associated roadway and pedestrian facilities for the intersection and limits of work.

   The applicant must recognize the Act 209 capital improvement plan and aforementioned planned improvements at the intersection of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road and ensure that these improvements are incorporated into the traffic study evaluations for the project, as well as the site design and layout, including the impact to the proposed building locations, access location, ultimate right-of-way locations, etc. Any future traffic analysis and site & access layouts must include the planned improvements. The applicant's engineer and project team will be required to implement any additional improvements along its frontage, to this intersection, and nearby access points that are necessary to mitigate any impacts and accommodate the traffic and multimodal elements necessary with the development of the property. The applicant's engineers must consider the proposed site driveway locations and allow for the safe and efficient operation of each of the site driveways with the committed intersection improvement project. Furthermore, General Note #15 on the "Parkhouse Providence" Preliminary/Final Minor Subdivision Plan, prepared by McCarthy Engineering Associates, Inc., Revision 5, dated September

20, 2017, specifies that at the time of future development of either Lot 1 or Lot 2 (e.g., the subject parcel), the roadway frontages abutting the lots shall be addressed by the developing property in accordance with the requirements of Upper Providence Township. All of these items must be taken into consideration accordingly.

7. The area within the ultimate right-of-way along the Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, and Yeager Road site frontages should be dedicated to the authority having jurisdiction over the roadway for the installation of any future roadway improvements, that are not being completed by the development.

8. The applicant must include the electronic Synchro files with the TIS submission for review.

9. We recommend that the applicant prepare a visual traffic simulation to show at public meetings on how the area will function and flow with traffic with the proposed development.

10. According to the Township's Roadway Sufficiency Analysis, the proposed development is located in Transportation Service Area Two, which has a corresponding impact fee of $2,766.02 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact Fee in accordance with the Township's Transportation Impact Fee Ordinance. Based on information provided in section 4 of the TIS scoping meeting application, the proposed development will generate approximately 335 total "new" trips during the weekday afternoon peak hour, **resulting in a transportation impact fee of $926,616.70.** The applicant should provide information on the existing buildings located on the property, such as if they were in operation at the time of the traffic count program (February and March 2018) for the Roadway Sufficiency Analysis, to help us determine if a trip credit towards the transportation impact fee may be appropriate for these buildings. Upon receipt of this information, our office will determine if a credit towards the transportation impact fee calculated is appropriate.

11. Be advised that a PennDOT Highway Occupancy Permit is required for any modifications located within the Legal Right-of-Way of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015), since they are State Roadways. The Township and our office must be copied on all correspondence and submissions to PennDOT, as well as invited to any meetings between the applicant and PennDOT.

12. Upon resubmission, our office will evaluate the information in concert with PennDOT and will provide additional reviews of engineering and supplemental submission details as we receive them. Additionally, a more detailed review of the site will be conducted upon resubmission of the materials, which address the Township consultant comments on the tentative plan, and as the project should move forward through a detailed land development process. Additional comments should be anticipated to be raised at that point, including design and stormwater items, relative to the road and pedestrian network, etc.

13. A response letter **must be provided** with the resubmission detailing how each comment below has been addressed, and where each can be found in the resubmission materials (i.e., page number(s)) to assist in the re-review process. Additional comments may follow upon review of any resubmitted and more detailed plans during the land development process should the project receive conditional use approvals.

We trust that this review letter responds to your request and satisfactorily addresses the traffic issues that are related to the proposed development apparent to us at this time. If you or the Township have any questions, or require clarification, please contact me or Anthony Valencia, Project Manager.

Sincerely,

Casey A. Moore, P.E.
Executive Vice President – Corporate Operations

BMJ/AV/CAM

cc: Tim Tieperman – Township Manager
Bryan Bortnichak – Assistant Township Manager
Bill Dingman, P.E. – Township Engineer, Gilmore Associates, Inc.
Jennifer W. Gutshall, P.E. – Gilmore & Associates, Inc.
Joe Bresnan, Esquire – Township Solicitor
Board of Supervisors (internally distributed)
Planning Commission (internally distributed)
Laureen Sendel-Grant – Montgomery County Planning Commission
Fran Hanney – PennDOT District 6-0
Scott Burton – PennDOT District 6-0
Ed Mullin, Esquire – Hamburg, Rubin, Mullin, Maxwell & Lupin (Applicant's Attorney)
Matt Hammond, P.E. – Traffic Planning and Design, Inc. (Applicant's Traffic Engineer)

\\extfs\mcm\eng\UPPERPR1\822575 - Parkhouse Senior Living Community\2023-01-23 - PennDOT Scoping Submission 1\Review\2023-02-17 - Parkhouse Scoping Application McM Traffic Review 2.docx

pennsylvania
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION IMPACT STUDY (TIS) DETERMINATION & SCOPING MEETING APPLICATION

Scoping Meeting Application: Submitted

Scoping Meeting Date: _____ Scoping Number: S0620230005

Tax Parcel Number: _____

Project/Development Name: Residential Care Facility for Senior Citizens

Applicant Information:

Business Partner ID: _____

Applicant Name: Royersford Holdings LLC

Phone: 4105270160 Email 1: midaro5@aol.com

Primary Contact: Gary Berman Member Email 2: _____

Additional Engineering Firm Information:

Business Partner ID: 000094

Engineering Firm: Hammond, Matthew

Phone: 6103263100 Email 1: mbressler@trafficpd.com

Primary Contact: Matthew Bressler Email 2: Mhammond@trafficpd.com

Creator Information:

Business Partner ID: 000094 Firm Name: Traffic Planning and Design, Inc.

Phone: 610-326-3100 Email 1: bhaesler@trafficpd.com

(1) LOCATION OF PROPOSED DEVELOPMENT:

PennDOT Engineering District: 06 Email: _____

County: Montgomery Email: planning@montcopa.org; lsendelgrant@montcopa.org

Municipality: UPPER PROVIDENCE Email: avalencia@mcmahonassociates.com

Municipality: UPPER PROVIDENCE Email: ggrace@uprov-montco.org

NO.	SR	Segment	Offset	Average Daily Trips	Driveway Classification	Local Road
1	0113	0020	3700	543	Low Volume	Yes
2	0113	0020	3000	543	Low Volume	Yes

3	0113	0020	0650	543	Low Volume	Yes
4	4015	0010	0400	543	Low Volume	Yes

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:
The site will be served by 8 driveways: Three (3) Driveways to Black Rock Road(SR 113); Three (3) Driveways to Old State Road; One (1) Driveway to 2nd Avenue (SR 4015); One (1) Driveway to Yeager Road

Proposed land uses:
The Proposed Site will be a Residential Care Facility for Senior Citizens. Uses will include the following: 153 Single-Family Detached Homes (Senior Citizen); 177 Townhomes (Senior Citizen); 828 Apartments (Senior Citizen); A 45 unit/90 bed Assisted Living Facility

Community linkages *(access to neighboring properties, cross easements, pedestrian and transit accommodations):*
None

(3) DEVELOPMENT SCHEDULE AND STAGING:

Anticipated Opening Date: 06-01-2028
Full Buildout Date: 06-01-2033

Describe Proposed Development Schedule/Staging:
N/A - Dates above are estimates

(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
Assisted Living/45 units,90 beds	254	Yes	234	10	6	8	14		
Single Family Housing/ 153 DU	251	Yes	852	18	36	38	24		
Multifamily Housing/ 1005 DU	252	Yes	3256	68	133	140	111		
		TOTAL:	4342	96	175	186	149	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 additional vehicle trips entering or exiting an existing development. During any one-hour time period, 100 or more vehicle trips entering or exiting a development. 3,000 or more vehicle trips/day generated

Other considerations as described below:
None

(6) TRANSPORTATION IMPACT ASSESSMENT REQUIRED?

Transportation Impact Assessment Required? No

(7) STUDY AREA:

Roadway and Study Intersections:
Black Rock Road (SR 113) & 2nd Avenue (SR 4015)/Dreibelbis Road; Black Rock Road (SR 113) & Yeager Road; S. Trappe Road (SR 113) & Mennonite Road; S. Trappe Road (SR 113) & Bechtel Road/Hopwood Road; Old State Road & Yeager Road; Old State Road & Mennonite Road; Old State Road & Bechtel Road; Old State Road & Meadowgreen Drive; Old State Road & Hafner Road; 2nd Avenue (SR 4015) & Old State Road; 2nd Avenue (SR 4015)and Springertown Road; 2nd Avenue (SR 4015) & Vaughn Road.

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

Known Congestion Areas:
To be determined

Known Safety Concerns:
To be determined

Known Environmental Constraints:
To be determined

Pedestrian/Bike Review (Community Centers, Parks, Schools, etc.):
To be addressed in TIS

Transit Review (Current routes/stops):
To be addressed in TIS

(8) STUDY AREA TYPE:

Study Area Type: Urban

(9) TIS ANALYSIS PERIODS AND TIMES:

Analysis period and times notes:
2023 Existing Conditions; 2028 Base Conditions; 2033 Base Conditions; 2028 Projected Conditions; 2033 Projected Conditions; Weekday AM Peak Hour (7-9 AM); Weekday PM Peak Hour (4-6 PM).

(10) TRAFFIC ADJUSTMENT FACTORS:

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

(b) Annual Base Traffic Growth: 0.27 %/yr. **Source:** PennDOT BPR

(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:
To be determined through scoping process

(12) TRIP DISTRIBUTION AND ASSIGNMENT:

Trip Distribution Notes:
To be based on existing traffic patterns

(13) APPROVAL OF DATA COLLECTION ELEMENTS AND METHODOLOGIES:

NO.	Location	Period	Type
1	See Section 7 for Intersections	See Section 9 for Time Periods	Turning Movement Counts

(14) CAPACITY/LOS ANALYSIS:

NO.	Location	Period	Type
1	See section 7 for Ints + Proposed Driveways	See Section 9 for Time Periods	HCM 6th Edition/SYNCHRO 11

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

Roadway Improvements:
To be determined through Scoping App Roundabout project at Black Rock Road (SR 113) and 2nd Avenue (SR 4015)

(16) OTHER NEEDED ANALYSES:

(a) Sight Distance Analysis:
To be addressed in TIS

(b) Signal Warrant Analysis (Identify locations):
As needed

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

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

(e) Analysis of the Need for Turning Lanes (Identify locations/methodology):
To be addressed in TIS

(f) Turning Lane Lengths (Identify methodology to be used):
Length will be based on Pub 46

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

(h) Queuing Analysis (Identify locations/methodology):
To be addressed in TIS

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

(j) Crash Analysis (Identify locations):
To be addressed in TIS

(k) Weaving Analysis (Identify locations):
As needed

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

None

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

Additional Comments:
None

PennDOT Review Comments: (Current Cycle Comments)

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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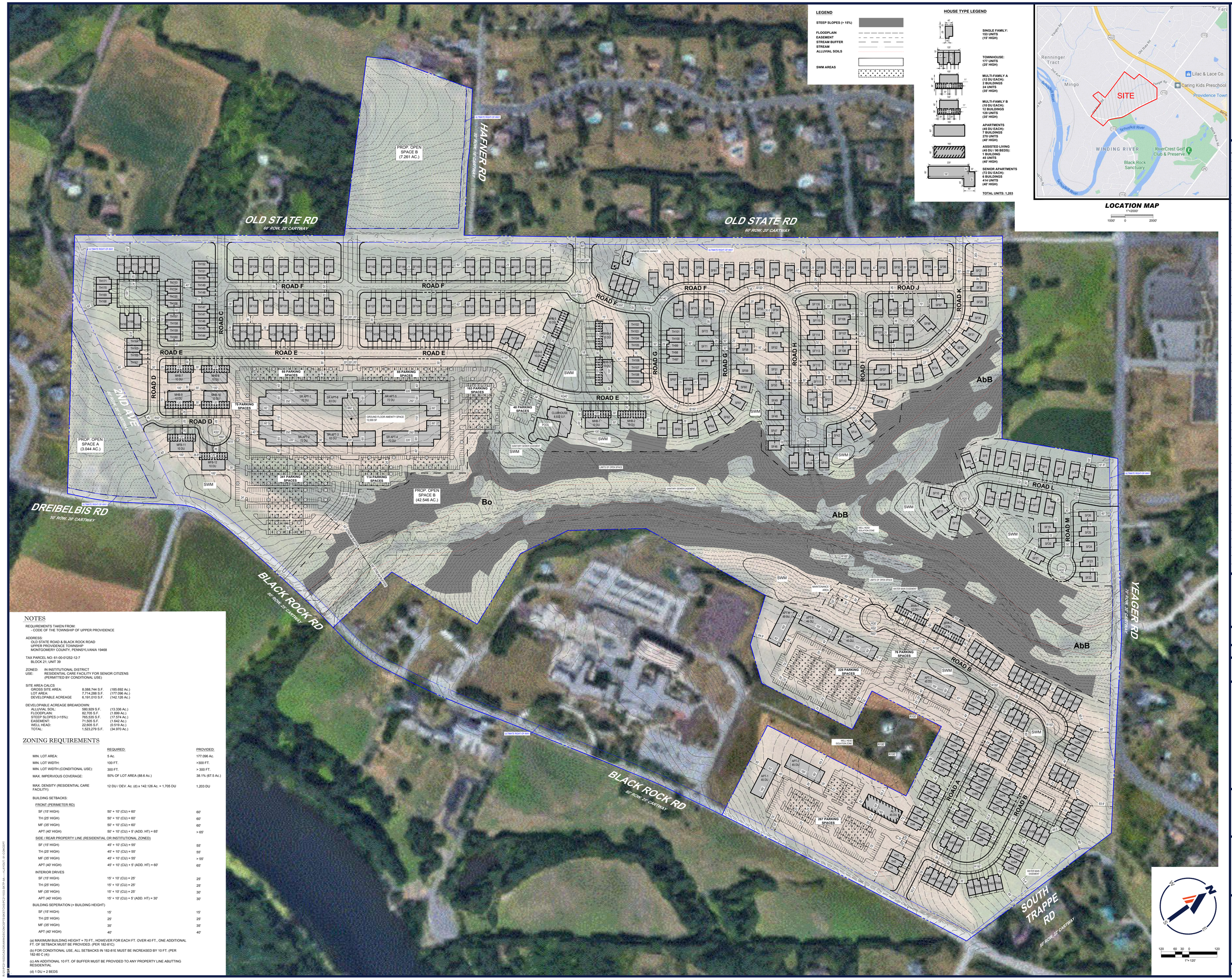
Est. 1989

TRAFFIC PLANNING AND DESIGN, INC.

www.TrafficPD.com | 1.877.873.9739 | TPD@TrafficPD.com

FIGURE 1

PROJECT SITE LOCATION



LEGEND

- STEEP SLOPES (> 15%)
- FLOODPLAIN
- EASEMENT
- STREAM BUFFER
- STREAM
- ALLUVIAL SOILS
- SWM AREAS

HOUSE TYPE LEGEND

- SINGLE FAMILY: 163 UNITS (15' HIGH)
- TOWNHOUSE: 177 UNITS (28' HIGH)
- MULTI-FAMILY A (12 DU EACH): 2 BUILDINGS 24 UNITS (35' HIGH)
- MULTI-FAMILY B (10 DU EACH): 12 BUILDINGS 120 UNITS (35' HIGH)
- APARTMENTS (45 DU EACH): 7 BUILDINGS 270 UNITS (40' HIGH)
- ASSISTED LIVING (45 DU / 90 BEDS): 1 BUILDING 45 UNITS (40' HIGH)
- SENIOR APARTMENTS (72 DU EACH): 6 BUILDINGS 414 UNITS (40' HIGH)

TOTAL UNITS: 1,203

LOCATION MAP

1"=2000'

1000' 0 2000'

NOTES

REQUIREMENTS TAKEN FROM:
- CODE OF THE TOWNSHIP OF UPPER PROVIDENCE

ADDRESS:
OLD STATE ROAD & BLACK ROCK ROAD
UPPER PROVIDENCE TOWNSHIP
MONTGOMERY COUNTY, PENNSYLVANIA 19468

TAX PARCEL NO: 61-00-01252-12-7
BLOCK 21; UNIT 39

ZONED: IN INSTITUTIONAL DISTRICT
USE: RESIDENTIAL CARE FACILITY FOR SENIOR CITIZENS (PERMITTED BY CONDITIONAL USE)

SITE AREA CALCS

GROSS SITE AREA:	8,088,744 S.F.	(185.692 Ac.)
LOT AREA:	7,714,288 S.F.	(177.096 Ac.)
DEVELOPABLE ACREAGE	6,191,010 S.F.	(142.126 Ac.)

DEVELOPABLE ACREAGE BREAKDOWN:

ALLUVIAL SOIL:	580,929 S.F.	(13.336 Ac.)
FLOODPLAIN:	82,705 S.F.	(1.899 Ac.)
STEEP SLOPES (<15%):	765,535 S.F.	(17.574 Ac.)
EASEMENT:	71,505 S.F.	(1.642 Ac.)
WELL HEAD:	22,605 S.F.	(0.519 Ac.)
TOTAL:	1,523,279 S.F.	(34.970 Ac.)

ZONING REQUIREMENTS

	REQUIRED:	PROVIDED:
MIN. LOT AREA:	5 Ac.	177.096 Ac.
MIN. LOT WIDTH:	100 FT.	>300 FT.
MIN. LOT WIDTH (CONDITIONAL USE):	300 FT.	> 300 FT.
MAX. IMPERVIOUS COVERAGE:	50% OF LOT AREA (88.6 Ac.)	38.1% (67.5 Ac.)
MAX. DENSITY (RESIDENTIAL CARE FACILITY):	12 DU / DEV. Ac. (d) x 142.126 Ac. = 1,705 DU	1,203 DU
BUILDING SETBACKS:		
FRONT (PERIMETER RD)		
SF (15' HIGH)	50' + 10' (CU) = 60'	60'
TH (25' HIGH)	50' + 10' (CU) = 60'	60'
MF (35' HIGH)	50' + 10' (CU) = 60'	60'
APT (40' HIGH)	50' + 10' (CU) + 5' (ADD. HT) = 65'	> 65'
SIDE / REAR PROPERTY LINE (RESIDENTIAL OR INSTITUTIONAL ZONED)		
SF (15' HIGH)	45' + 10' (CU) = 55'	55'
TH (25' HIGH)	45' + 10' (CU) = 55'	55'
MF (35' HIGH)	45' + 10' (CU) = 55'	> 55'
APT (40' HIGH)	45' + 10' (CU) + 5' (ADD. HT) = 60'	65'
INTERIOR DRIVES		
SF (15' HIGH)	15' + 10' (CU) = 25'	25'
TH (25' HIGH)	15' + 10' (CU) = 25'	25'
MF (35' HIGH)	15' + 10' (CU) = 25'	30'
APT (40' HIGH)	15' + 10' (CU) + 5' (ADD. HT) = 30'	30'
BUILDING SEPERATION (= BUILDING HEIGHT)		
SF (15' HIGH)	15'	15'
TH (25' HIGH)	25'	25'
MF (35' HIGH)	35'	35'
APT (40' HIGH)	40'	40'

(a) MAXIMUM BUILDING HEIGHT = 70 FT., HOWEVER FOR EACH FT. OVER 40 FT., ONE ADDITIONAL FT. OF SETBACK MUST BE PROVIDED. (PER 182-81C)

(b) FOR CONDITIONAL USE, ALL SETBACKS IN 182-81E MUST BE INCREASED BY 10 FT. (PER 182-80 C (4))

(c) AN ADDITIONAL 10 FT. OF BUFFER MUST BE PROVIDED TO ANY PROPERTY LINE ABUTTING RESIDENTIAL

(d) 1 DU = 2 BEDS

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REVISIONS

REV	DATE	COMMENT	DRAWN BY / CHECKED BY

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PROJECT No.:	PC211033
DRAWN BY:	SRR
CHECKED BY:	REK
DATE:	04/25/2022
CAD I.D.:	PC211033-SKTP-GA

PROJECT:

ROYERSFORD HOLDINGS, LLC.

PROPOSED RESIDENTIAL CARE COMMUNITY FOR SENIOR CITIZENS

OLD STATE ROAD
UPPER PROVIDENCE TOWNSHIP
MONTGOMERY COUNTY
PENNSYLVANIA
19468

BOHLER

1600 MANOR DRIVE, SUITE 200
CHALFONT, PA 18914
Phone: (215) 996-9100
Fax: (215) 996-9102
www.BohlerEngineering.com

R.E. KLOS, JR.
PROFESSIONAL ENGINEER
PENNSYLVANIA LICENSE No. PE045479E
NEW JERSEY LICENSE No. 24GE04007500

SHEET TITLE:

TENTATIVE SKETCH PLAN

SHEET NUMBER:

1

ORG. DATE - 04/25/2022

P:\PC\PC211033\CAD\DRAWINGS\CONCEPTS\SKETCH\PC211033-SKTP-GA.dwg — LAYOUT: BY CONCEPT

June 24, 2022

Mr. Geoffrey Grace
Director of Planning and Zoning
Upper Providence Township
P.O. Box 406
Oaks, PA 19456

RE: Traffic Engineering Review #1 – Conditional Use and Tentative Land Development Plans
Parkhouse Senior Citizen Care Community – Black Rock Road (S.R. 0113) / 2nd Avenue (S.R. 4015) / Old State Road / Yaeger Road
Upper Providence Township, Montgomery County, PA
McMahon Project No. 822575.11
Township Escrow No. 313

Dear Geoff:

As requested, on behalf of Upper Providence Township, McMahon Associates, Inc., a Bowman company, (McMahon) has completed an initial traffic engineering review of the proposed senior residential development to be located along the northern side of Black Rock Road (S.R. 0113) between 2nd Avenue (S.R. 4015) and Yeager Road in Upper Providence Township, Montgomery County, PA. According to the submission, the proposed residential development totals 1,203 residential units and will consist of 153 single-family homes, 177 townhomes, 144 multi-family units, 270 apartment units, 45 assisted living units, and 414 senior apartment units. Access to the overall site is currently proposed via several driveways located along Black Rock Road (S.R. 0113) having two (2) access points, 2nd Avenue (S.R. 4015) having one (1) access point, Old State Road having four (4) access points, and Yeager Road having one (1) access point.

The following document was provided to us for our review in preparation of this letter:

- Tentative Sketch Plan – Royersford Holdings, LLC, prepared by Bohler Engineering, dated April 25, 2022.

Based on our review of the submitted document noted above, McMahon offers the following comments for consideration by the Township, and action by the applicant:

1. Please be advised, that since no transportation impact study identifying the proposed development's impact has been included in this submission, a full assessment of the development impact, operations, access locations, etc., could not be completed at this time. Additional comments should be expected to follow upon submission of the traffic information.

425 Commerce Drive, Suite 200, Fort Washington, PA 19034
P: 215.283.9444
mcmahonassociates.com | bowman.com

2. The proposed development is expected to attract numerous daily and peak hour trips to the present undeveloped land, that will traverse along nearby roadways and through key intersections and areas that will need to be addressed and appropriately mitigated with improvements. Therefore, a transportation impact study (TIS) must be completed for the proposed development. The applicant's traffic engineer must scope the TIS with our office, and since there is access to the site is provided via two state roadways, the TIS be scoped jointly with PennDOT for their concurrence and direction. The study must, at a minimum, include an analysis of opening year conditions and five years after opening year conditions with the proposed development during the weekday morning and weekday afternoon commuter peak hours. It shall include but may not be limited to the following intersections upon receiving the details and information to be submitted with a formal Transportation Impact Study Scoping Meeting Form:

   - Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road
   - Black Rock Road (S.R. 0113) and Yeager Road
   - Black Rock Road (S.R. 0113) and Mennonite Road
   - Black Rock Road (S.R. 0113) and Bechtel Road/Hopwood Road
   - Old State Road and Yeager Road
   - Old State Rod and Hafner Road
   - Old State Road and Mennonite Road
   - Old State Road and Bechtel Road
   - 2nd Avenue (S.R. 4015) and Springertown Road
   - 2nd Avenue (S.R. 4015) and Vaughn Road
   - 2nd Avenue (S.R. 4015) and Old State Road

   Note: While not in the Upper Providence Township boundaries, the applicant may expect that upon PennDOT's review of the scoping area that they may extend some study intersections into Royersford Borough and/or Phoenixville Borough based on the location of the proposed development site and the key state roadways of S.R. 0113 and 2nd Avenue leading to/from it.

   Levels-of-service, queuing, and auxiliary lane evaluation at the study intersections and proposed site accesses must be addressed in the TIS. Furthermore, a gap study for some access points may also be necessary.

3. The Black Rock Road (S.R. 0113)/2nd Avenue (S.R. 4015)/Dreibelbis Road intersection is located along only one of two (2) direct routes that connects Phoenixville with Montgomery County and is a significant commuter route/intersection to the surrounding area. As such, we recommend that the neighboring municipalities of Phoenixville Borough and Limerick Township should be included in future scoping application correspondence as a courtesy and to provide them with appropriate notification of the planned improvements and study intersections.

4. The proposed development will have impact on the intersection of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road. Currently, given the existing configuration of the intersection including a 90-degree bend of Black Rock Road (S.R. 0113), which forms two of its four approach legs, and then 2nd Avenue (S.R. 4015) and Drebeilbis Road, which form the other two approach legs, the intersection has been a major focus of the Township given that the existing configuration creates driver confusion as they navigate through the intersection. The anticipated impact to the area only increases safety and efficient capacity concerns at this intersection with the increase in traffic that would be generated by this development, in addition to it being an age-restricted community. The Township's Act 209 Study reflects the need to improve this intersection by providing a controlled intersection reconfiguration, and a roundabout design has been identified at this location to remedy the operational issues, safety concerns and enhance the movement of all vehicular and non-vehicular modes through this intersection. In addition to the Act 209 recommendations, the Township recently partnered with PennDOT to provide low-cost safety improvements in the form of pavement markings and updated signage that is planned to be installed by PennDOT in the near future while the roundabout and associated approach improvements are being designed. The Township recently received grant funding to advance the preliminary engineering associated with the roundabout and has recently begun field survey and the engineering process. The project will include the installation of a single-lane roundabout, replacement of the PennDOT bridge structure along Route 113 to the immediate north of the intersection, and the provision of other associated roadway and pedestrian facilities for the intersection.

   The applicant must consider the Act 209 capital improvement plan and aforementioned planned improvements at the intersection of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015)/Dreibelbis Road and ensure that these improvements are incorporated into the traffic study evaluations for the project, as well as the site design and layout, including the impact to the proposed building locations, access location, ultimate right-of-way locations, etc. Any future traffic analysis must include the planned improvements. The applicant's engineer and project team will be required to implement any additional improvements along its frontage, to this intersection, and nearby access points that are necessary to mitigate any impacts and accommodate the traffic and multimodal elements necessary with the development of the property. The applicant's engineers must consider the proposed site driveway locations and allow for the safe and efficient operation of each of the site driveways with the committed intersection improvement project. Furthermore, General Note #15 on the "Parkhouse Providence" Preliminary/Final Minor Subdivision Plan, prepared by McCarthy Engineering Associates, Inc., Revision 5, dated September 20, 2017, specifies that at the time of future development of either Lot 1 or Lot 2 (e.g., the subject parcel), the roadway frontages abutting the lots shall be addressed by the developing property in accordance with the requirements of Upper Providence Township. All of these items must be taken into consideration accordingly.

5. Future submissions of any sketch plan or conceptual plan should be sure to include the following information and be presented at a size legible to view these details:
    a. Proposed pavement markings and signage for all roadways throughout the site.
    b. Lane, shoulder, cartway, and trail/sidewalk widths and corner radii dimensions at intersections.
    c. Baselines and baseline stationing.
    d. As applicable, auxiliary lane storage lane lengths and taper transitions.
    e. Property owner information and tax map parcel identification for all parcels identified on the plan(s).
    f. Legal and Proposed Right-of-Way dimensions.
    g. Above ground utilities, and underground if known by survey.
    h. Vehicle turning templates for the largest vehicle anticipated to utilize the site. Turning templates should be provided at all external and internal intersections, around curves, and access aisles as appropriate in order to ensure the geometry is sufficient and that vehicles can negotiate the site without improper encroachment into opposing lanes.
    i. Existing and proposed contours and any conceptual grading.

    A more detailed review of the proposed geometry of the site accesses and any roadway improvements will be reviewed in more detail when this information has been provided and a more formal design plans are submitted should this project advance to the land development process.

There are many items that will need to be refined and added to the plans in more detail should the Conditional Use and Tentative plan move to the preliminary/final land development plan stage that will include, but not necessarily be limited to the following items:

6. The ultimate right-of-way lines must be clearly labeled on the plan along the site frontages of Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, Yeager Road, and South Trappe Road and be in accordance with **Section 154-18** of the **Subdivision and Land Development Ordinance.**

7. A note must be added to any future land development plan submission stating that the area between the existing right-of-way and ultimate right-of-way should be offered for future taking and dedication to the authority having jurisdiction over the road as required in **Section 154-18.E(3)** of the **Subdivision and Land Development Ordinance.**

8. Sight distance measurements at the site access intersections along Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, and Yeager Road must be shown on the plan and be in accordance with **Section 154-18.G(5)(c)** of the **Subdivision and Land Development Ordinance.**

9. All cul-de-sacs internal to the site must be designed in accordance with **Section 154-18.D(2)** of the **Subdivision and Land Development Ordinance.**

10. According to **Section 154-19.A(2)** of the **Subdivision and Land Development Ordinance,** driveways should be located a minimum of 40 feet from street intersections. The plans currently show several driveways throughout the site that are located less than 40 feet from a street intersection.

11. According to **Section 154-21.A(1)** of the **Subdivision and Land Development Ordinance,** sidewalk should be provided along both sides all streets. Therefore, the plan must be revised to show sidewalk along the Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, Yeager Road, and South Trappe Road site frontages. In addition, sidewalk should be provided along both sides of all internal roadways.

12. According to **Section 154-22** of the **Subdivision and Land Development Ordinance,** curbing should be provided along both sides all streets. Therefore, the plan must be revised to show curbing along the Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, Yeager Road, and South Trappe Road site frontages. In addition, curbing should be provided along all internal roadways.

13. The plan should include a parking summary table so that it can be verified that the proposed number of parking spaces for the site meets requirements in **Section 182-179** of the **Zoning Ordinance.** Furthermore, based on the age restriction of the subdivision and that there is a community pool, the amount of parking at the pool/clubhouse building on Road 'E' should be assessed based upon the likelihood that more people may drive from their residence to that area rather than walk.

14. The plans do not indicate for many of the streets if on-street parking is proposed, or if there is a need to provide guest parking areas. On-street parking and proposed parking/road widths must meet the requirements of **Section 154-20** of the **Subdivision and Land Development Ordinance** and Section **182-179** of the **Zoning Ordinance**.

15. All proposed signs must be clearly labeled on the plan, including size and nomenclature (e.g., R1-1, 30" x 30", etc.).

16. Truck turning templates should be provided in future submissions showing the ability of the largest expected delivery vehicle, trash truck, and emergency vehicle to maneuver through the site and through all new site access intersections along Black Rock Road (S.R. 0113), 2nd Avenue (S.R. 4015), Old State Road, and Yeager Road.

17. The Township Fire Marshal should review the emergency vehicle turning templates for accessibility and circulation needs of emergency apparatus. Ensure that any correspondence, including any review comments and/or approvals, is included in subsequent submissions.

18. According to the Township's Roadway Sufficiency Analysis, the proposed development is located in Transportation Service Area Two, which has a corresponding impact fee of $2,766.02 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact Fee in accordance with the Township's Transportation Impact Fee Ordinance. Based on information provided in ITE's publication, *Trip Generation, 11th Edition*, the proposed development will generate approximately 539 total "new" trips during the weekday afternoon peak hour. **The Transportation Service Area Two impact fee of $2,766.02 per new weekday afternoon peak hour trip will be to the proposed development**. The applicant should provide information on the existing buildings located on the property, such as if they were in operation at the time of the traffic count program (February and March 2018) for the Roadway Sufficiency Analysis, to help us determine if a trip credit towards the transportation impact fee may be appropriate for these buildings. In addition, the number of units in the proposed development that are proposed to be age-restricted in nature and any number of units that will not be age-restricted in nature is unclear based on review of the submitted materials. The applicant must provide clarification on this in subsequent submissions. Upon receipt of this information, our office will confirm the transportation impact fee calculated in this comment.

19. Upon resubmission, our office will evaluate the information and will provide additional reviews of engineering and supplemental submission details as we receive them. Additionally, a more detailed review of the site will be conducted upon resubmission of the materials, which address the Township consultant comments on the tentative plan, and as the project should move forward through a detailed land development process. Additional comments should be anticipated to be raised at that point, including design and stormwater items, relative to the road and pedestrian network, etc.

20. Be advised that a PennDOT Highway Occupancy Permit is required for any modifications located within the legal right-of-way of Black Rock Road (S.R. 0113) and 2nd Avenue (S.R. 4015), since they are State Roadways. The Township and our office must be copied on all correspondence and submissions to PennDOT, as well as invited to any meetings between the applicant and PennDOT.

21. A response letter **must be provided** with the resubmission detailing how each comment below has been addressed, and where each can be found in the resubmission materials (i.e., page number(s)) to assist in the re-review process. Additional comments may follow upon review of any resubmitted and more detailed plans during the land development process should the project receive conditional use approvals.

We trust that this review letter responds to your request and satisfactorily addresses the traffic issues that are related to the proposed development apparent to us at this time. If you or the Township have any questions, or require clarification, please contact me or Anthony Valencia, Project Manager.

Sincerely,

Casey A. Moore, P.E.
Executive Vice President – Corporate Operations

BMJ/AV/CAM

cc: Bryan Bortnichak – Assistant Township Manager
Bill Dingman, P.E. – Township Engineer, Gilmore Associates, Inc.
Joe Bresnan, Esquire – Township Solicitor
Board of Supervisors (internally distributed)
Planning Commission (internally distributed)
Laureen Sendel-Grant – Montgomery County Planning Commission
Ed Mullin, Esquire – Hamburg, Rubin, Mullin, Maxwell & Lupin (Applicant's Attorney)
Ron Klos, Jr., P.E. – Bohler Engineering (Applicant's Engineer)
Matt Hammond, P.E. – Traffic Planning and Design, Inc. (Applicant's Traffic Engineer)

\\extfs\mcm\eng\UPPERPR1\822575 - Parkhouse Senior Living Community\2022-05-23 - Cond Use_Tentative LD Submission\Review\2022-06-24- Parkhouse Cond Use_Tentative LD McM Traffic Review 1.docx

425 Commerce Drive, Suite 200, Fort Washington, PA 19034
P: 215.283.9444
mcmahonassociates.com | bowman.com

NOTES:

1. THIS PLAN IS FOR CONCEPTUAL PURPOSES ONLY AND WAS PREPARED AT THE REQUEST OF THE TOWNSHIP.

2. EXISTING CONDITIONS DEPICTED ON THE CONCEPTUAL DESIGN EXHIBIT ARE BASED ON AERIAL PHOTOGRAPHY (DATA OBTAINED FROM THE PENNSYLVANIA SPATIAL DATA ACCESS) AND TOPOGRAPHIC SURVEY COMPLETED BY MCMAHON ASSOCIATES, INC., A BOWMAN COMPANY. ALSO SHOWN IS THE SITE PLAN FOR THE PROPOSED RESIDENTIAL CARE COMMUNITY FOR SENIOR CITIZENS (APRIL 25, 2022) COMPLETED BY BOHLER ENGINEERING.

3. NO EXISTING OR PROPOSED EASEMENTS ARE SHOWN. EASEMENTS WILL BE REQUIRED AND WILL BE DETERMINED DURING THE DESIGN PROCESS.

4. THIS PROJECT WILL REQUIRE THE RELOCATION OF UTILITY POLES. EXISTING AND PROPOSED UTILITY POLE LOCATIONS ARE NOT SHOWN AND WILL BE DETERMINED DURING DESIGN.

5. THE PROPOSED IMPROVEMENTS SHOWN ARE BASED ON DESIRABLE STANDARDS AND REQUIREMENTS, BUT ARE PRELIMINARY AND SUBJECT TO CHANGE. THIS MAY REQUIRE UPGRADING CERTAIN ELEMENTS OF THE DESIGN THROUGHOUT THE PERMITTING PROCESS. THE DESIGN SHOWN IS SUBJECT TO CHANGE DURING THE PERMITTING PROCESS.

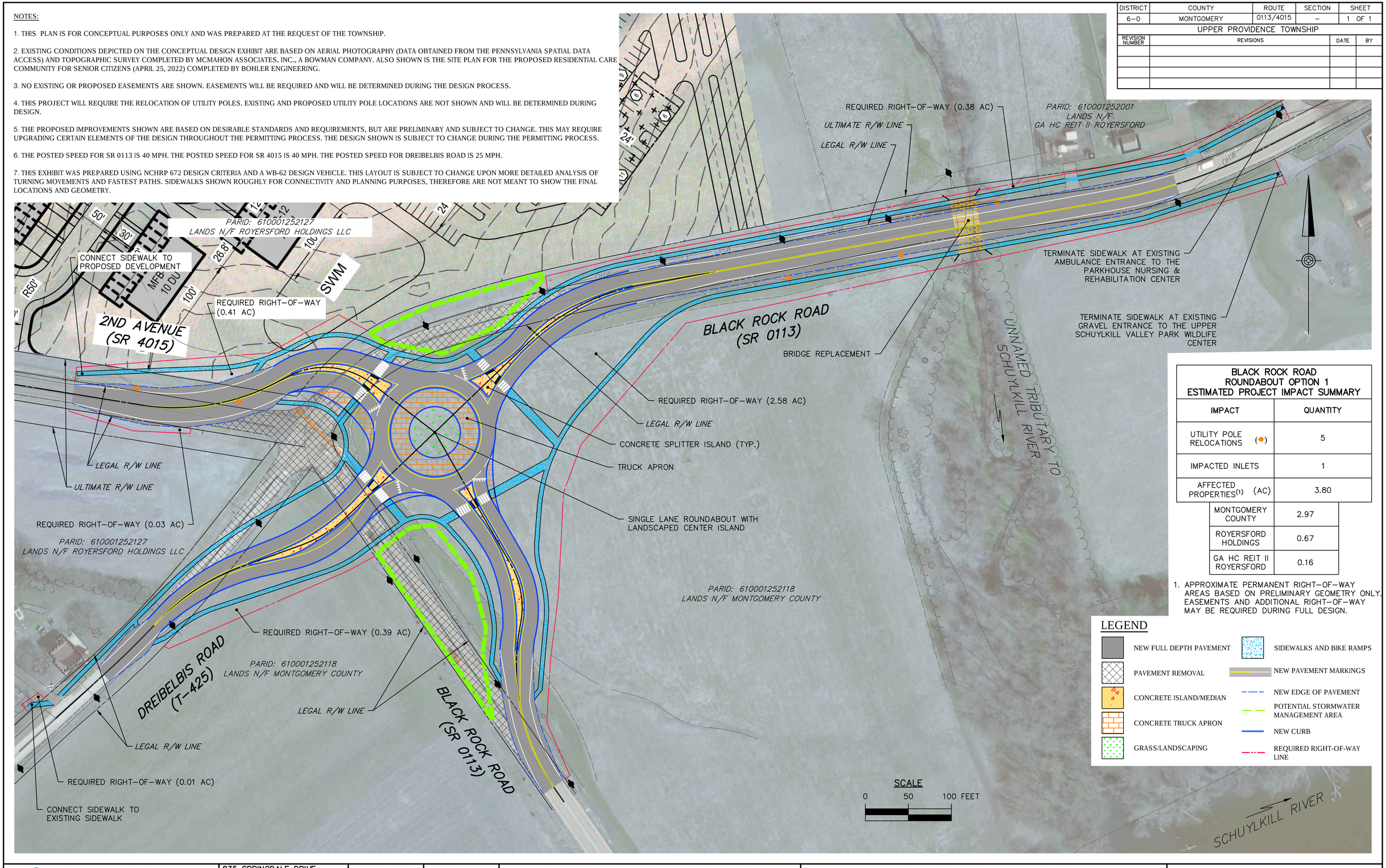
6. THE POSTED SPEED FOR SR 0113 IS 40 MPH. THE POSTED SPEED FOR SR 4015 IS 40 MPH. THE POSTED SPEED FOR DREIBELBIS ROAD IS 25 MPH.

7. THIS EXHIBIT WAS PREPARED USING NCHRP 672 DESIGN CRITERIA AND A WB-62 DESIGN VEHICLE. THIS LAYOUT IS SUBJECT TO CHANGE UPON MORE DETAILED ANALYSIS OF TURNING MOVEMENTS AND FASTEST PATHS. SIDEWALKS SHOWN ROUGHLY FOR CONNECTIVITY AND PLANNING PURPOSES, THEREFORE ARE NOT MEANT TO SHOW THE FINAL LOCATIONS AND GEOMETRY.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	MONTGOMERY	0113/4015	–	1 OF 1

UPPER PROVIDENCE TOWNSHIP

REVISION NUMBER	REVISIONS	DATE	BY



BLACK ROCK ROAD ROUNDABOUT OPTION 1 ESTIMATED PROJECT IMPACT SUMMARY

IMPACT	QUANTITY
UTILITY POLE RELOCATIONS (●)	5
IMPACTED INLETS	1
AFFECTED PROPERTIES(1) (AC)	3.80
MONTGOMERY COUNTY	2.97
ROYERSFORD HOLDINGS	0.67
GA HC REIT II ROYERSFORD	0.16

1. APPROXIMATE PERMANENT RIGHT-OF-WAY AREAS BASED ON PRELIMINARY GEOMETRY ONLY. EASEMENTS AND ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED DURING FULL DESIGN.

LEGEND

- NEW FULL DEPTH PAVEMENT
- PAVEMENT REMOVAL
- CONCRETE ISLAND/MEDIAN
- CONCRETE TRUCK APRON
- GRASS/LANDSCAPING
- SIDEWALKS AND BIKE RAMPS
- NEW PAVEMENT MARKINGS
- NEW EDGE OF PAVEMENT
- POTENTIAL STORMWATER MANAGEMENT AREA
- NEW CURB
- REQUIRED RIGHT-OF-WAY LINE

McMAHON a Bowman company
835 SPRINGDALE DRIVE
SUITE 200
EXTON, PA 19341
PH: (610) 594-9995
FAX: (610) 594-9565

DESIGN BY: JCT
DRAWN BY: NAR
CHECKED BY: KDK
JOB NO: 821578
DWG: 578CPT01_OPT_1
DATE: 11-29-22

UPPER PROVIDENCE TOWNSHIP
1286 BLACK ROCK ROAD
OAKS, PA 19456
(610) 933-9179

BLACK ROCK ROAD ROUNDABOUT
SR 0113 BLACK ROCK ROAD AND SR 4015 2ND AVENUE
UPPER PROVIDENCE TOWNSHIP MONTGOMERY COUNTY

ROUNDABOUT CONCEPT 1
EXHIBIT

NOTES:

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2. EXISTING CONDITIONS DEPICTED ON THE CONCEPTUAL DESIGN EXHIBIT ARE BASED ON AERIAL PHOTOGRAPHY (DATA OBTAINED FROM THE PENNSYLVANIA SPATIAL DATA ACCESS) AND TOPOGRAPHIC SURVEY COMPLETED BY MCMAHON ASSOCIATES, INC., A BOWMAN COMPANY. ALSO SHOWN IS THE SITE PLAN FOR THE PROPOSED RESIDENTIAL CARE COMMUNITY FOR SENIOR CITIZENS (APRIL 25, 2022) COMPLETED BY BOHLER ENGINEERING.

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5. THE PROPOSED IMPROVEMENTS SHOWN ARE BASED ON DESIRABLE STANDARDS AND REQUIREMENTS, BUT ARE PRELIMINARY AND SUBJECT TO CHANGE. THIS MAY REQUIRE UPGRADING CERTAIN ELEMENTS OF THE DESIGN THROUGHOUT THE PERMITTING PROCESS. THE DESIGN SHOWN IS SUBJECT TO CHANGE DURING THE PERMITTING PROCESS.

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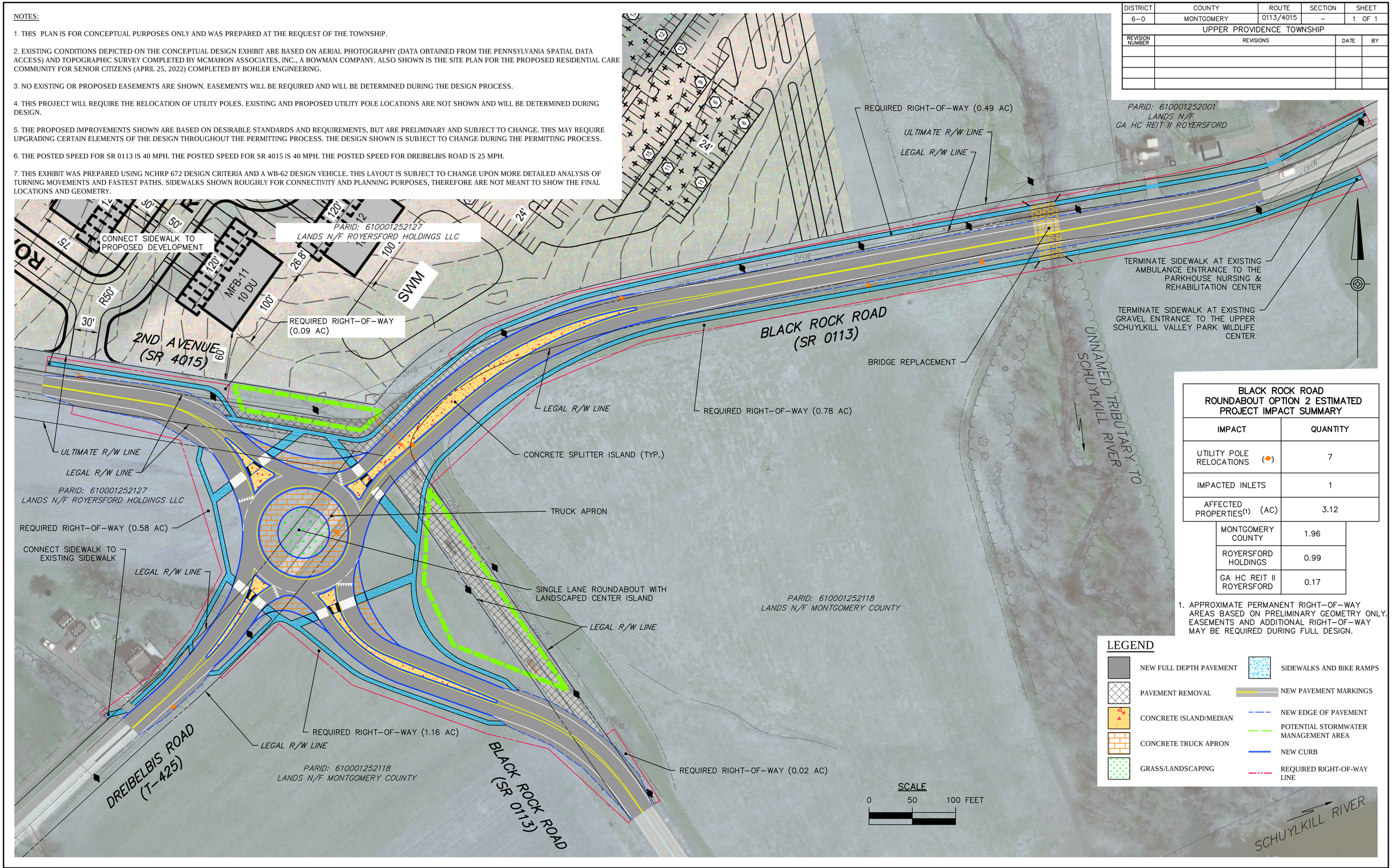
DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	MONTGOMERY	0113/4015	–	1 OF 1
UPPER PROVIDENCE TOWNSHIP				

REVISION NUMBER	REVISIONS	DATE	BY



BLACK ROCK ROAD ROUNDABOUT OPTION 2 ESTIMATED PROJECT IMPACT SUMMARY

IMPACT	QUANTITY
UTILITY POLE RELOCATIONS	7
IMPACTED INLETS	1
AFFECTED PROPERTIES[1] (AC)	3.12
MONTGOMERY COUNTY	1.96
ROYERSFORD HOLDINGS	0.99
GA HC REIT II ROYERSFORD	0.17

1. APPROXIMATE PERMANENT RIGHT-OF-WAY AREAS BASED ON PRELIMINARY GEOMETRY ONLY. EASEMENTS AND ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED DURING FULL DESIGN.

LEGEND

- NEW FULL DEPTH PAVEMENT
- PAVEMENT REMOVAL
- CONCRETE ISLAND/MEDIAN
- CONCRETE TRUCK APRON
- GRASS/LANDSCAPING
- SIDEWALKS AND BIKE RAMPS
- NEW PAVEMENT MARKINGS
- NEW EDGE OF PAVEMENT
- POTENTIAL STORMWATER MANAGEMENT AREA
- NEW CURB
- REQUIRED RIGHT-OF-WAY LINE

McMAHON a Bowman company
835 SPRINGDALE DRIVE
SUITE 200
EXTON, PA 19341
PH: (610) 594-9995
FAX: (610) 594-9565

DESIGN BY: JCT
DRAWN BY: NAR
CHECKED BY: KDK
JOB NO: 821578
DWG: 578CPT01_OPT_2
DATE: 11-29-22

UPPER PROVIDENCE TOWNSHIP
1286 BLACK ROCK ROAD
OAKS, PA 19456
(610) 933-9179

BLACK ROCK ROAD ROUNDABOUT
SR 0113 BLACK ROCK ROAD AND SR 4015 2ND AVENUE
UPPER PROVIDENCE TOWNSHIP MONTGOMERY COUNTY

ROUNDABOUT CONCEPT 2 EXHIBIT

APPENDIX B

Study Area Photographs

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road 2nd Avenue

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Black Rock Road & 2nd Avenue*

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* NB Black Rock Road & 2nd Avenue

Direction / Road: NB Black Rock Road Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & 2nd Avenue

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Yeager Road

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *NB Black Rock Road & Yeager Road*

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Yeager Road

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Yeager Road

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Mennonite Road

Direction / Road: EB Mennonite Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Mennonite Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Mennonite Road

Direction / Road: WB Mennonite Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Mennonite Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Mennonite Road

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Mennonite Road

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Hopwood Road-Bechtel Road

Direction / Road: EB Hopwood Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Hopwood Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Black Rock Road & Hopwood Road-Bechtel Road*

Direction / Road: WB Hopwood Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Hopwood Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Hopwood Road-Bechtel Road

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Black Rock Road & Hopwood Road-Bechtel Road

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Yeager Road

Direction / Road: EB Yeager Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Yeager Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Yeager Road

Direction / Road: WB Yeager Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Yeager Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Yeager Road

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Yeager Road

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Meadowgreen Drive

Direction / Road: EB Meadowgreen Drive
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Meadowgreen Drive
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Meadowgreen Drive

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Meadowgreen Drive

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Old State Road & Hafner Road*

Direction / Road: EB Hafner Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Hafner Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Old State Road & Hafner Road*

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Hafner Road

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & 2nd Avenue

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & 2nd Avenue

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & 2nd Avenue

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Old State Road & Mennonite Road*

Direction / Road: EB Mennonite Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Mennonite Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Mennonite Road

Direction / Road: WB Mennonite Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Mennonite Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Mennonite Road

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Mennonite Road

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Bechtel Road

Direction / Road: WB Bechtel Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Bechtel Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Bechtel Road

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Old State Road & Bechtel Road

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Old State Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Springertown Road & 2nd Avenue

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Springertown Road & 2nd Avenue

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Springertown Road & 2nd Avenue

Direction / Road: SB Springertown Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Springertown Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: *ROYH.00001* *Date Taken:* *01-17-2023* *Intersection Of:* *Veughn Road & 2nd Avenue*

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Veughn Road & 2nd Avenue

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB 2nd Avenue
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 *Date Taken:* 01-17-2023 *Intersection Of:* Veughn Road & 2nd Avenue

Direction / Road: SB Veughn
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Veughn
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Black Rock Road & Trappe Road / Ramsgate Drive

Direction / Road: EB Ramsgate Drive
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Ramsgate Drive
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Black Rock Road & Trappe Road / Ramsgate Drive

Direction / Road: WB Trappe Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Trappe Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Black Rock Road & Trappe Road / Ramsgate Drive

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Black Rock Road & Trappe Road / Ramsgate Drive

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Route 29 & Black Rock Road

Direction / Road: EB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Route 29 & Black Rock Road

Direction / Road: WB Black Rock Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: WB Black Rock Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Route 29 & Black Rock Road

Direction / Road: NB Route 29
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Route 29
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Route 29 & Black Rock Road

Direction / Road: SB Route 29
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Route 29
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Yeager Road & South Lewis Road

Direction / Road: WB South Lewis Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: EB South Lewis Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Yeager Road & South Lewis Road

Direction / Road: NB Yeager Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: NB Yeager Road
Approach / Departure: Approach
Distance: 200 Feet

Job #: ROYH.00001 Date Taken: 03-06-2023 Intersection Of: Yeager Road & South Lewis Road

Direction / Road: SB Yeager Road
Approach / Departure: Approach
Distance: 50 feet

Direction / Road: SB Yeager Road
Approach / Departure: Approach
Distance: 200 Feet

APPENDIX C

Traffic Count Printouts

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023

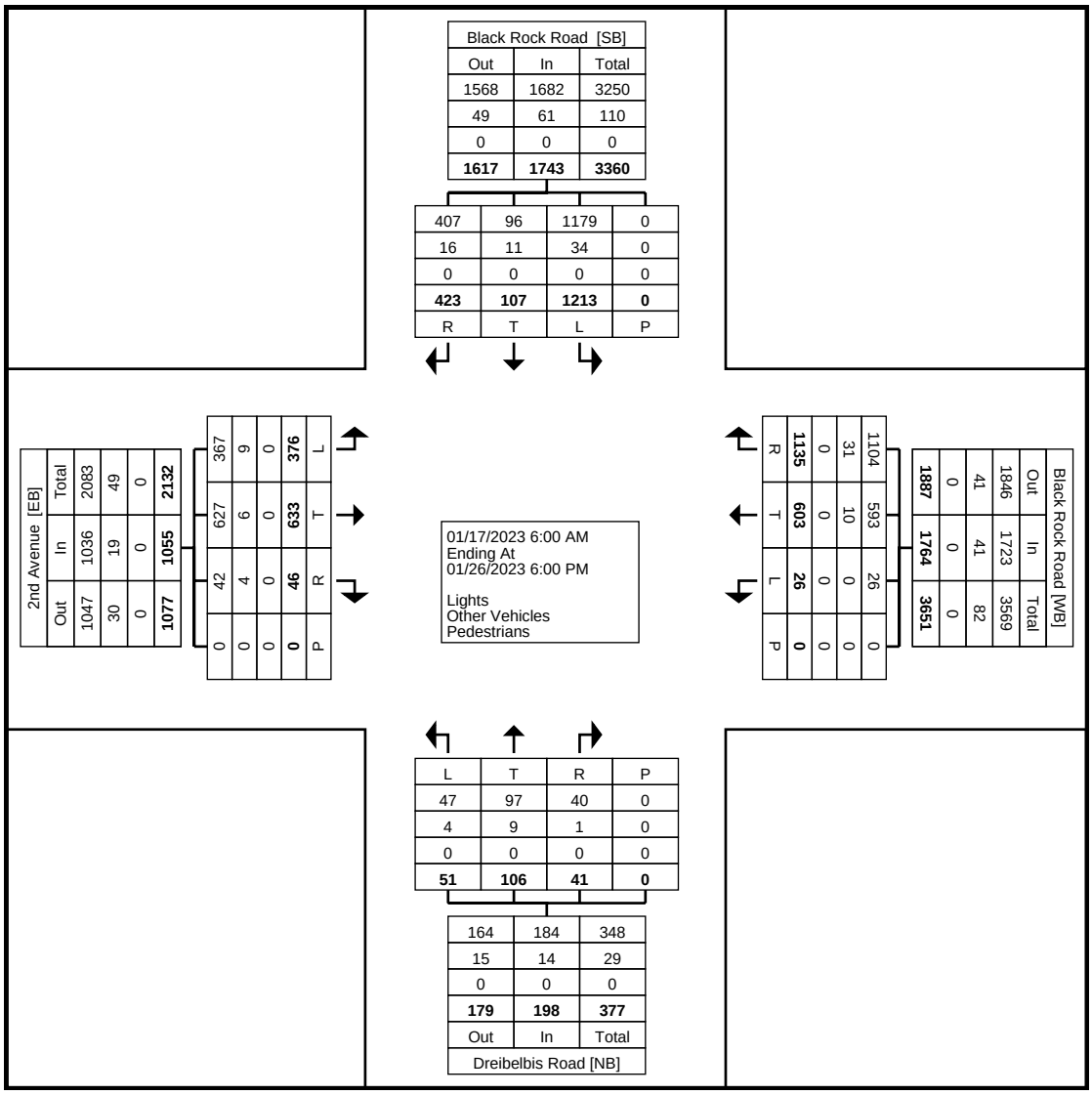
Turning Movement Data

Start Time	2nd Avenue Eastbound					Black Rock Road Westbound					Dreibelbis Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	5	7	0	0	12	0	2	11	0	13	0	3	1	0	4	12	1	1	0	14	43
6:15 AM	10	10	0	0	20	0	6	26	0	32	0	5	2	0	7	15	0	3	0	18	77
6:30 AM	22	22	0	0	44	1	6	23	0	30	0	4	0	0	4	24	3	2	0	29	107
6:45 AM	26	29	1	0	56	0	10	33	0	43	2	2	3	0	7	40	0	4	0	44	150
Hourly Total	63	68	1	0	132	1	24	93	0	118	2	14	6	0	22	91	4	10	0	105	377
7:00 AM	14	31	2	0	47	1	14	49	0	64	2	2	1	0	5	34	0	10	0	44	160
7:15 AM	31	26	2	0	59	0	23	47	0	70	5	4	3	0	12	45	2	15	0	62	203
7:30 AM	37	67	4	0	108	2	23	41	0	66	3	6	4	0	13	56	2	5	0	63	250
7:45 AM	33	44	2	0	79	0	26	71	0	97	0	7	5	0	12	65	3	19	0	87	275
Hourly Total	115	168	10	0	293	3	86	208	0	297	10	19	13	0	42	200	7	49	0	256	888
8:00 AM	25	38	0	0	63	0	17	56	0	73	3	6	2	0	11	60	1	8	0	69	216
8:15 AM	21	21	1	0	43	1	13	45	0	59	1	7	2	0	10	41	4	11	0	56	168
8:30 AM	17	26	2	0	45	0	17	39	0	56	5	9	0	0	14	36	2	7	0	45	160
8:45 AM	20	29	2	0	51	1	17	36	0	54	3	2	3	0	8	34	9	10	0	53	166
Hourly Total	83	114	5	0	202	2	64	176	0	242	12	24	7	0	43	171	16	36	0	223	710
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	7	18	2	0	27	1	24	34	0	59	3	3	0	0	6	54	6	26	0	86	178
3:15 PM	12	24	2	0	38	2	34	45	0	81	1	4	1	0	6	64	5	22	0	91	216
3:30 PM	10	23	2	0	35	0	29	63	0	92	2	2	1	0	5	52	4	14	0	70	202
3:45 PM	4	19	3	0	26	1	34	71	0	106	1	5	1	0	7	45	6	26	0	77	216
Hourly Total	33	84	9	0	126	4	121	213	0	338	7	14	3	0	24	215	21	88	0	324	812
4:00 PM	13	20	2	0	35	1	21	42	0	64	1	3	0	0	4	71	11	21	0	103	206
4:15 PM	8	26	1	0	35	2	45	68	0	115	2	2	1	0	5	63	8	37	0	108	263
4:30 PM	11	23	3	0	37	2	38	55	0	95	3	9	5	0	17	74	8	35	0	117	266
4:45 PM	6	21	5	0	32	1	49	54	0	104	3	8	2	0	13	61	2	29	0	92	241
Hourly Total	38	90	11	0	139	6	153	219	0	378	9	22	8	0	39	269	29	122	0	420	976
5:00 PM	6	30	3	0	39	3	44	57	0	104	3	4	0	0	7	70	11	31	0	112	262
5:15 PM	12	25	2	0	39	2	45	61	0	108	1	3	1	0	5	61	6	40	0	107	259
5:30 PM	14	29	1	0	44	1	41	56	0	98	2	1	1	0	4	85	7	27	0	119	265
5:45 PM	12	25	4	0	41	4	25	52	0	81	5	5	2	0	12	51	6	20	0	77	211
Hourly Total	44	109	10	0	163	10	155	226	0	391	11	13	4	0	28	267	30	118	0	415	997
Grand Total	376	633	46	0	1055	26	603	1135	0	1764	51	106	41	0	198	1213	107	423	0	1743	4760
Approach %	35.6	60.0	4.4	-	-	1.5	34.2	64.3	-	-	25.8	53.5	20.7	-	-	69.6	6.1	24.3	-	-	-
Total %	7.9	13.3	1.0	-	22.2	0.5	12.7	23.8	-	37.1	1.1	2.2	0.9	-	4.2	25.5	2.2	8.9	-	36.6	-
Lights	367	627	42	-	1036	26	593	1104	-	1723	47	97	40	-	184	1179	96	407	-	1682	4625
% Lights	97.6	99.1	91.3	-	98.2	100.0	98.3	97.3	-	97.7	92.2	91.5	97.6	-	92.9	97.2	89.7	96.2	-	96.5	97.2
Other Vehicles	9	6	4	-	19	0	10	31	-	41	4	9	1	-	14	34	11	16	-	61	135
% Other Vehicles	2.4	0.9	8.7	-	1.8	0.0	1.7	2.7	-	2.3	7.8	8.5	2.4	-	7.1	2.8	10.3	3.8	-	3.5	2.8
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	2nd Avenue Eastbound					Black Rock Road Westbound					Dreibelbis Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	31	26	2	0	59	0	23	47	0	70	5	4	3	0	12	45	2	15	0	62	203
7:30 AM	37	67	4	0	108	2	23	41	0	66	3	6	4	0	13	56	2	5	0	63	250
7:45 AM	33	44	2	0	79	0	26	71	0	97	0	7	5	0	12	65	3	19	0	87	275
8:00 AM	25	38	0	0	63	0	17	56	0	73	3	6	2	0	11	60	1	8	0	69	216
Total	126	175	8	0	309	2	89	215	0	306	11	23	14	0	48	226	8	47	0	281	944
Approach %	40.8	56.6	2.6	-	-	0.7	29.1	70.3	-	-	22.9	47.9	29.2	-	-	80.4	2.8	16.7	-	-	-
Total %	13.3	18.5	0.8	-	32.7	0.2	9.4	22.8	-	32.4	1.2	2.4	1.5	-	5.1	23.9	0.8	5.0	-	29.8	-
PHF	0.851	0.653	0.500	-	0.715	0.250	0.856	0.757	-	0.789	0.550	0.821	0.700	-	0.923	0.869	0.667	0.618	-	0.807	0.858
Lights	124	171	6	-	301	2	86	204	-	292	10	21	13	-	44	210	5	41	-	256	893
% Lights	98.4	97.7	75.0	-	97.4	100.0	96.6	94.9	-	95.4	90.9	91.3	92.9	-	91.7	92.9	62.5	87.2	-	91.1	94.6
Other Vehicles	2	4	2	-	8	0	3	11	-	14	1	2	1	-	4	16	3	6	-	25	51
% Other Vehicles	1.6	2.3	25.0	-	2.6	0.0	3.4	5.1	-	4.6	9.1	8.7	7.1	-	8.3	7.1	37.5	12.8	-	8.9	5.4
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
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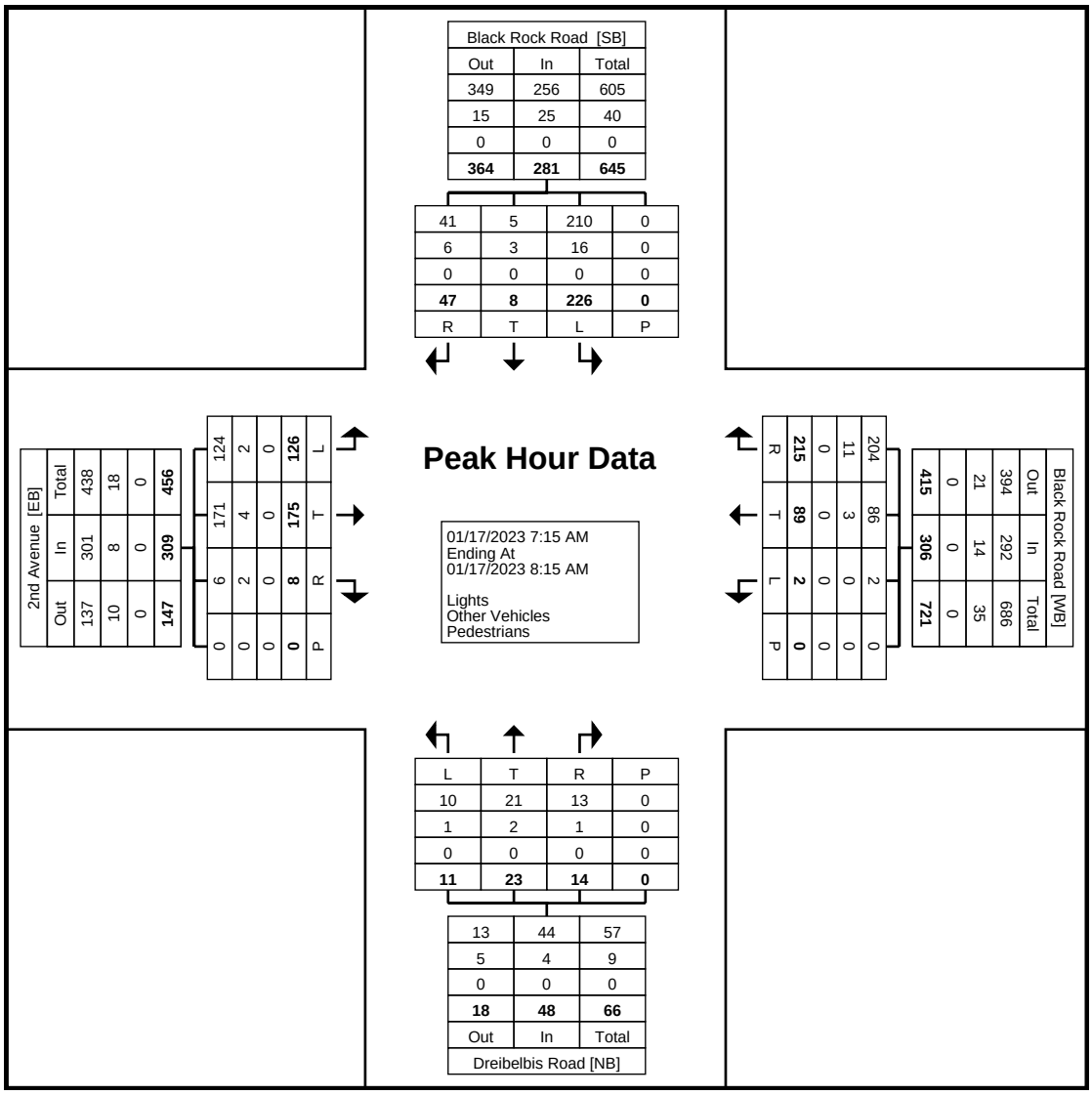
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023

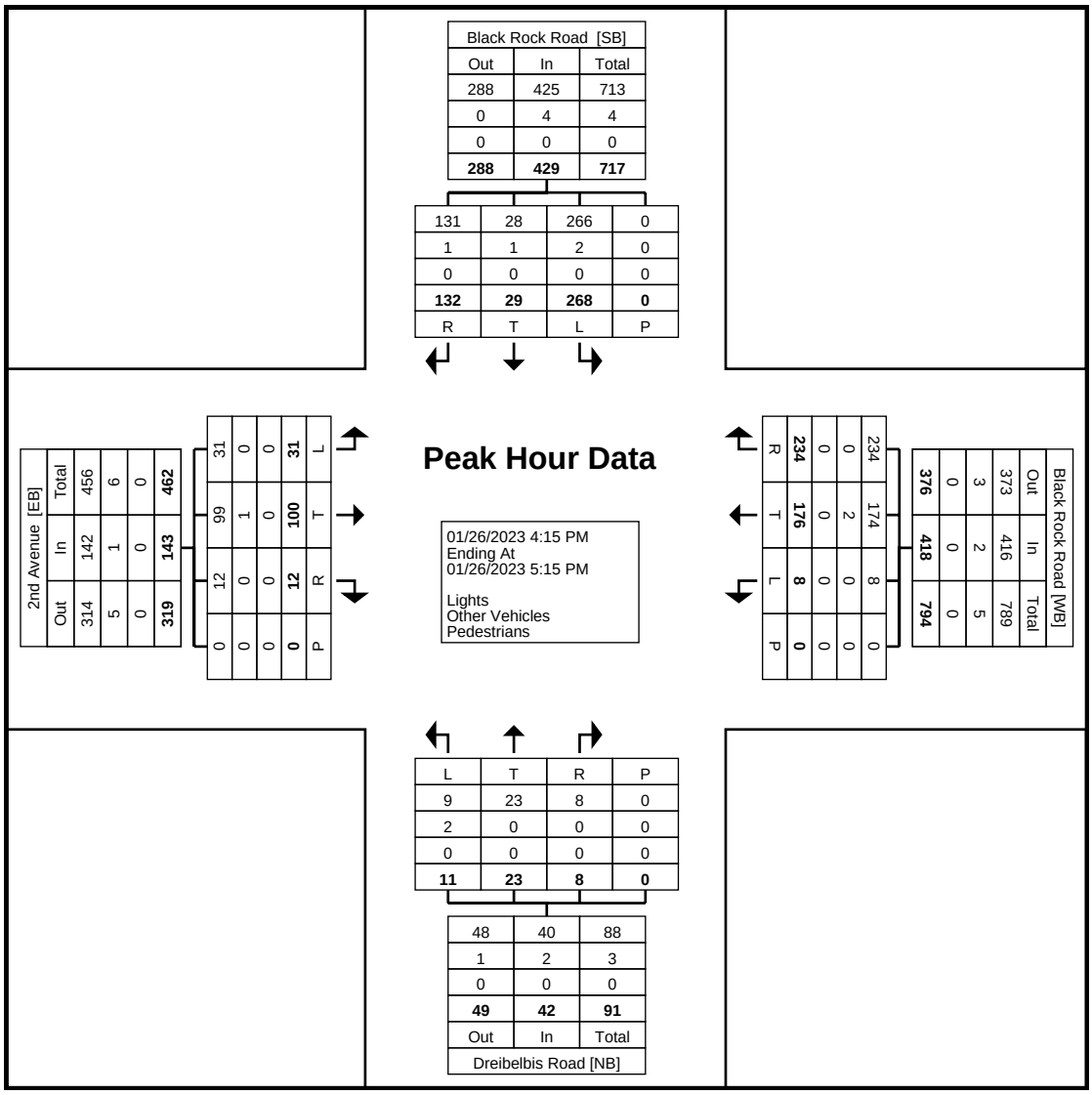
Turning Movement Peak Hour Data (4:15 PM)

Start Time	2nd Avenue Eastbound					Black Rock Road Westbound					Dreibelbis Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	8	26	1	0	35	2	45	68	0	115	2	2	1	0	5	63	8	37	0	108	263
4:30 PM	11	23	3	0	37	2	38	55	0	95	3	9	5	0	17	74	8	35	0	117	266
4:45 PM	6	21	5	0	32	1	49	54	0	104	3	8	2	0	13	61	2	29	0	92	241
5:00 PM	6	30	3	0	39	3	44	57	0	104	3	4	0	0	7	70	11	31	0	112	262
Total	31	100	12	0	143	8	176	234	0	418	11	23	8	0	42	268	29	132	0	429	1032
Approach %	21.7	69.9	8.4	-	-	1.9	42.1	56.0	-	-	26.2	54.8	19.0	-	-	62.5	6.8	30.8	-	-	-
Total %	3.0	9.7	1.2	-	13.9	0.8	17.1	22.7	-	40.5	1.1	2.2	0.8	-	4.1	26.0	2.8	12.8	-	41.6	-
PHF	0.705	0.833	0.600	-	0.917	0.667	0.898	0.860	-	0.909	0.917	0.639	0.400	-	0.618	0.905	0.659	0.892	-	0.917	0.970
Lights	31	99	12	-	142	8	174	234	-	416	9	23	8	-	40	266	28	131	-	425	1023
% Lights	100.0	99.0	100.0	-	99.3	100.0	98.9	100.0	-	99.5	81.8	100.0	100.0	-	95.2	99.3	96.6	99.2	-	99.1	99.1
Other Vehicles	0	1	0	-	1	0	2	0	-	2	2	0	0	-	2	2	1	1	-	4	9
% Other Vehicles	0.0	1.0	0.0	-	0.7	0.0	1.1	0.0	-	0.5	18.2	0.0	0.0	-	4.8	0.7	3.4	0.8	-	0.9	0.9
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road and Dreibelbis Road- 2nd Avenue
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road-S. Trappe Road and Yeager Road
Site Code:
Start Date: 01/17/2023

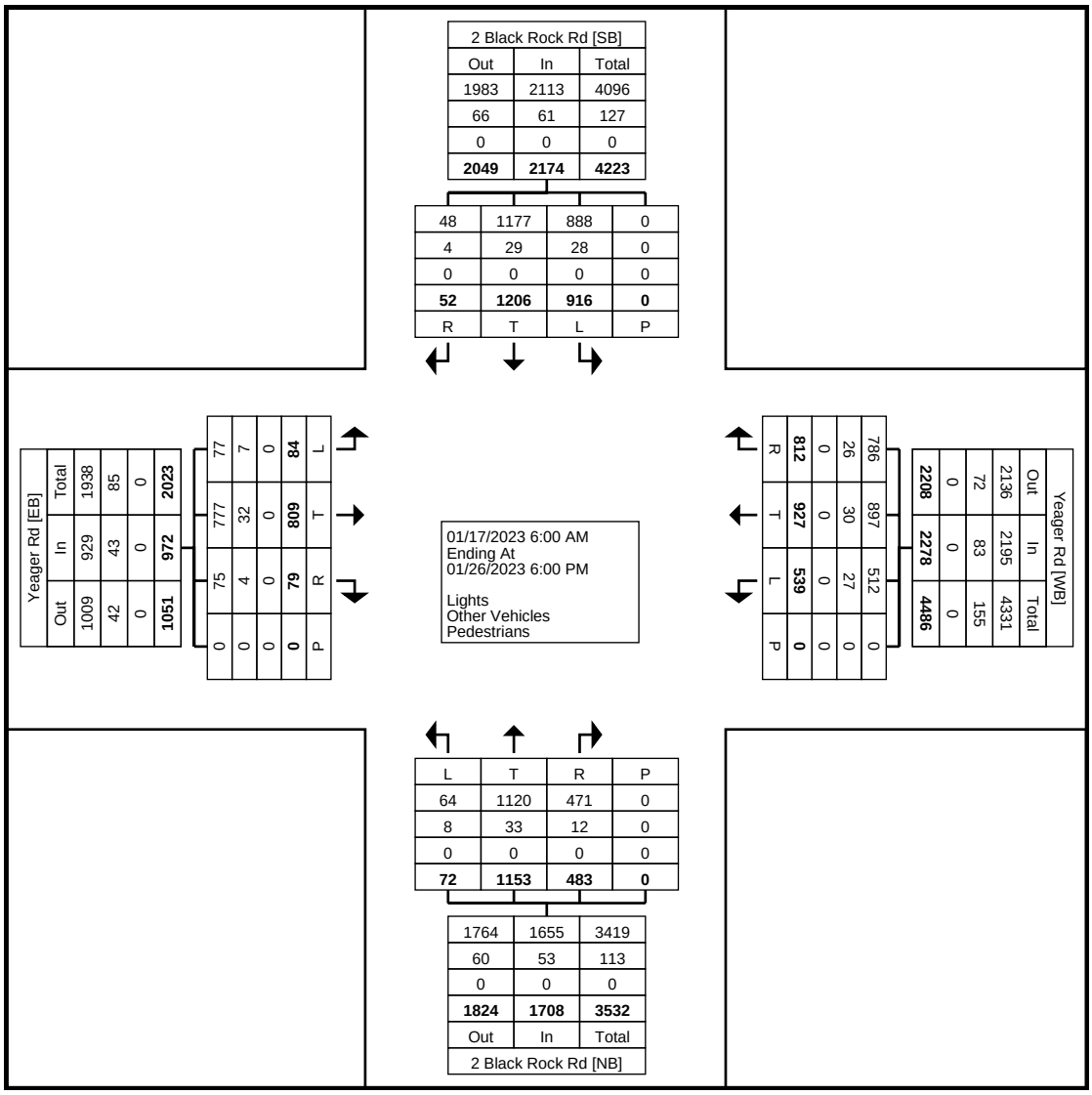
Turning Movement Data

Start Time	Yeager Rd Eastbound						Yeager Rd Westbound						2 Black Rock Rd Northbound						2 Black Rock Rd Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
6:00 AM	0	17	2	1	0	20	1	4	6	0	0	11	0	17	7	1	0	25	16	12	0	0	0	28	84
6:15 AM	1	15	1	0	0	17	3	3	5	2	0	13	1	17	15	1	0	34	22	15	0	0	0	37	101
6:30 AM	1	28	4	0	0	33	5	3	3	0	0	11	2	28	14	3	0	47	41	33	0	0	0	74	165
6:45 AM	2	32	7	1	0	42	16	27	11	3	0	57	2	32	11	7	0	52	36	34	0	0	0	70	221
Hourly Total	4	92	14	2	0	112	25	37	25	5	0	92	5	94	47	12	0	158	115	94	0	0	0	209	571
7:00 AM	3	33	1	0	0	37	15	65	9	3	0	92	6	41	13	14	0	74	48	39	0	0	0	87	290
7:15 AM	2	69	1	1	0	73	11	64	19	0	0	94	1	54	13	1	0	69	63	52	0	0	0	115	351
7:30 AM	6	78	2	0	0	86	30	26	22	3	0	81	1	61	26	12	0	100	60	37	0	0	0	97	364
7:45 AM	16	77	5	0	0	98	29	36	26	3	0	94	3	66	22	7	0	98	62	57	1	1	0	121	411
Hourly Total	27	257	9	1	0	294	85	191	76	9	0	361	11	222	74	34	0	341	233	185	1	1	0	420	1416
8:00 AM	9	60	2	3	0	74	17	14	16	4	0	51	2	64	26	6	0	98	54	58	3	0	0	115	338
8:15 AM	5	31	5	0	0	41	9	30	8	2	0	49	0	49	22	4	0	75	49	44	0	0	0	93	258
8:30 AM	2	44	2	0	0	48	11	31	18	4	0	64	2	48	22	2	0	74	54	37	4	1	0	96	282
8:45 AM	6	41	5	0	0	52	14	25	14	4	0	57	4	39	8	5	0	56	41	44	4	2	0	91	256
Hourly Total	22	176	14	3	0	215	51	100	56	14	0	221	8	200	78	17	0	303	198	183	11	3	0	395	1134
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	21	1	0	0	25	30	34	32	8	0	104	3	42	6	3	0	54	36	48	3	1	0	88	271
3:15 PM	1	24	4	1	0	30	30	37	36	5	0	108	3	53	16	6	0	78	30	63	5	1	0	99	315
3:30 PM	3	27	1	1	0	32	24	45	34	5	0	108	1	51	22	8	0	82	24	38	3	1	0	66	288
3:45 PM	5	24	4	1	0	34	28	25	37	8	0	98	1	66	17	8	0	92	22	56	0	0	0	78	302
Hourly Total	12	96	10	3	0	121	112	141	139	26	0	418	8	212	61	25	0	306	112	205	11	3	0	331	1176
4:00 PM	2	23	1	0	0	26	41	45	61	10	0	157	6	42	13	5	0	66	25	61	2	2	0	90	339
4:15 PM	1	30	3	1	0	35	27	54	41	11	0	133	4	62	13	5	0	84	39	80	3	0	0	122	374
4:30 PM	2	17	1	0	0	20	36	64	44	4	0	148	5	57	16	7	0	85	24	61	2	0	0	87	340
4:45 PM	3	32	3	0	0	38	32	66	51	3	0	152	2	58	8	5	0	73	28	68	3	0	0	99	362
Hourly Total	8	102	8	1	0	119	136	229	197	28	0	590	17	219	50	22	0	308	116	270	10	2	0	398	1415
5:00 PM	5	21	1	2	0	29	37	50	54	3	0	144	6	50	11	3	0	70	44	75	1	0	0	120	363
5:15 PM	2	27	1	3	0	33	34	62	51	5	0	152	7	51	11	5	0	74	22	81	1	2	0	106	365
5:30 PM	3	16	2	3	0	24	30	56	66	5	0	157	8	55	13	3	0	79	34	67	3	0	0	104	364
5:45 PM	1	22	0	2	0	25	29	61	47	6	0	143	2	50	8	9	0	69	42	46	1	2	0	91	328
Hourly Total	11	86	4	10	0	111	130	229	218	19	0	596	23	206	43	20	0	292	142	269	6	4	0	421	1420
Grand Total	84	809	59	20	0	972	539	927	711	101	0	2278	72	1153	353	130	0	1708	916	1206	39	13	0	2174	7132
Approach %	8.6	83.2	6.1	2.1	-	-	23.7	40.7	31.2	4.4	-	-	4.2	67.5	20.7	7.6	-	-	42.1	55.5	1.8	0.6	-	-	-
Total %	1.2	11.3	0.8	0.3	-	13.6	7.6	13.0	10.0	1.4	-	31.9	1.0	16.2	4.9	1.8	-	23.9	12.8	16.9	0.5	0.2	-	30.5	-
Lights	77	777	56	19	-	929	512	897	687	99	-	2195	64	1120	342	129	-	1655	888	1177	35	13	-	2113	6892
% Lights	91.7	96.0	94.9	95.0	-	95.6	95.0	96.8	96.6	98.0	-	96.4	88.9	97.1	96.9	99.2	-	96.9	96.9	97.6	89.7	100.0	-	97.2	96.6
Other Vehicles	7	32	3	1	-	43	27	30	24	2	-	83	8	33	11	1	-	53	28	29	4	0	-	61	240
% Other Vehicles	8.3	4.0	5.1	5.0	-	4.4	5.0	3.2	3.4	2.0	-	3.6	11.1	2.9	3.1	0.8	-	3.1	3.1	2.4	10.3	0.0	-	2.8	3.4
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road-S. Trappe Road and Yeager Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road-S. Trappe Road and Yeager Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Yeager Rd Eastbound						Yeager Rd Westbound						2 Black Rock Rd Northbound						2 Black Rock Rd Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
7:15 AM	2	69	1	1	0	73	11	64	19	0	0	94	1	54	13	1	0	69	63	52	0	0	0	115	351
7:30 AM	6	78	2	0	0	86	30	26	22	3	0	81	1	61	26	12	0	100	60	37	0	0	0	97	364
7:45 AM	16	77	5	0	0	98	29	36	26	3	0	94	3	66	22	7	0	98	62	57	1	1	0	121	411
8:00 AM	9	60	2	3	0	74	17	14	16	4	0	51	2	64	26	6	0	98	54	58	3	0	0	115	338
Total	33	284	10	4	0	331	87	140	83	10	0	320	7	245	87	26	0	365	239	204	4	1	0	448	1464
Approach %	10.0	85.8	3.0	1.2	-	-	27.2	43.8	25.9	3.1	-	-	1.9	67.1	23.8	7.1	-	-	53.3	45.5	0.9	0.2	-	-	-
Total %	2.3	19.4	0.7	0.3	-	22.6	5.9	9.6	5.7	0.7	-	21.9	0.5	16.7	5.9	1.8	-	24.9	16.3	13.9	0.3	0.1	-	30.6	-
PHF	0.516	0.910	0.500	0.333	-	0.844	0.725	0.547	0.798	0.625	-	0.851	0.583	0.928	0.837	0.542	-	0.913	0.948	0.879	0.333	0.250	-	0.926	0.891
Lights	31	271	10	4	-	316	75	134	77	9	-	295	4	235	86	25	-	350	229	191	4	1	-	425	1386
% Lights	93.9	95.4	100.0	100.0	-	95.5	86.2	95.7	92.8	90.0	-	92.2	57.1	95.9	98.9	96.2	-	95.9	95.8	93.6	100.0	100.0	-	94.9	94.7
Other Vehicles	2	13	0	0	-	15	12	6	6	1	-	25	3	10	1	1	-	15	10	13	0	0	-	23	78
% Other Vehicles	6.1	4.6	0.0	0.0	-	4.5	13.8	4.3	7.2	10.0	-	7.8	42.9	4.1	1.1	3.8	-	4.1	4.2	6.4	0.0	0.0	-	5.1	5.3
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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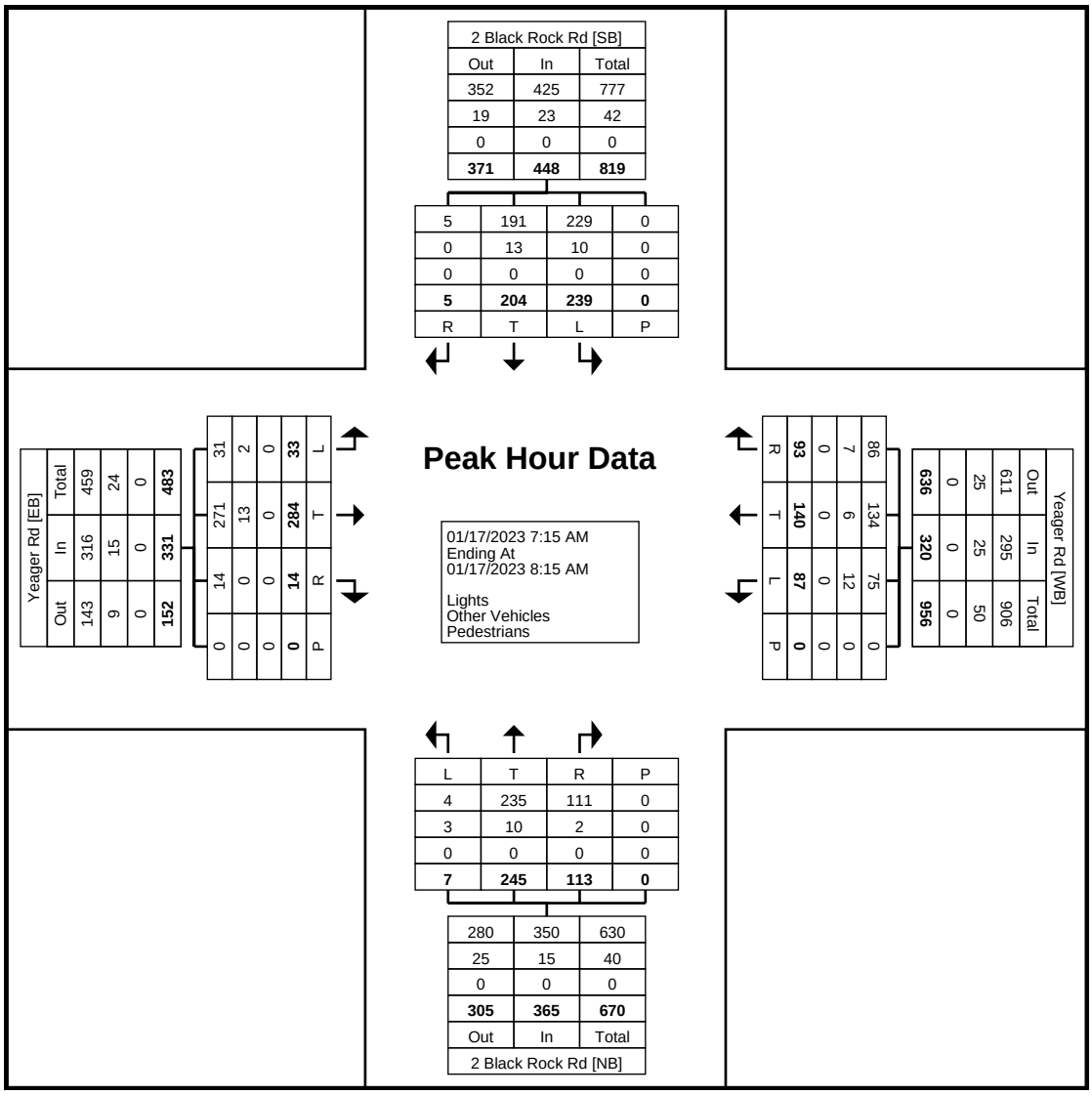
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road-S. Trappe Road and Yeager Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Yeager Rd Eastbound						Yeager Rd Westbound						2 Black Rock Rd Northbound						2 Black Rock Rd Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
4:45 PM	3	32	3	0	0	38	32	66	51	3	0	152	2	58	8	5	0	73	28	68	3	0	0	99	362
5:00 PM	5	21	1	2	0	29	37	50	54	3	0	144	6	50	11	3	0	70	44	75	1	0	0	120	363
5:15 PM	2	27	1	3	0	33	34	62	51	5	0	152	7	51	11	5	0	74	22	81	1	2	0	106	365
5:30 PM	3	16	2	3	0	24	30	56	66	5	0	157	8	55	13	3	0	79	34	67	3	0	0	104	364
Total	13	96	7	8	0	124	133	234	222	16	0	605	23	214	43	16	0	296	128	291	8	2	0	429	1454
Approach %	10.5	77.4	5.6	6.5	-	-	22.0	38.7	36.7	2.6	-	-	7.8	72.3	14.5	5.4	-	-	29.8	67.8	1.9	0.5	-	-	-
Total %	0.9	6.6	0.5	0.6	-	8.5	9.1	16.1	15.3	1.1	-	41.6	1.6	14.7	3.0	1.1	-	20.4	8.8	20.0	0.6	0.1	-	29.5	-
PHF	0.650	0.750	0.583	0.667	-	0.816	0.899	0.886	0.841	0.800	-	0.963	0.719	0.922	0.827	0.800	-	0.937	0.727	0.898	0.667	0.250	-	0.894	0.996
Lights	12	94	6	8	-	120	132	233	219	16	-	600	22	214	43	16	-	295	125	291	8	2	-	426	1441
% Lights	92.3	97.9	85.7	100.0	-	96.8	99.2	99.6	98.6	100.0	-	99.2	95.7	100.0	100.0	100.0	-	99.7	97.7	100.0	100.0	100.0	-	99.3	99.1
Other Vehicles	1	2	1	0	-	4	1	1	3	0	-	5	1	0	0	0	-	1	3	0	0	0	-	3	13
% Other Vehicles	7.7	2.1	14.3	0.0	-	3.2	0.8	0.4	1.4	0.0	-	0.8	4.3	0.0	0.0	0.0	-	0.3	2.3	0.0	0.0	0.0	-	0.7	0.9
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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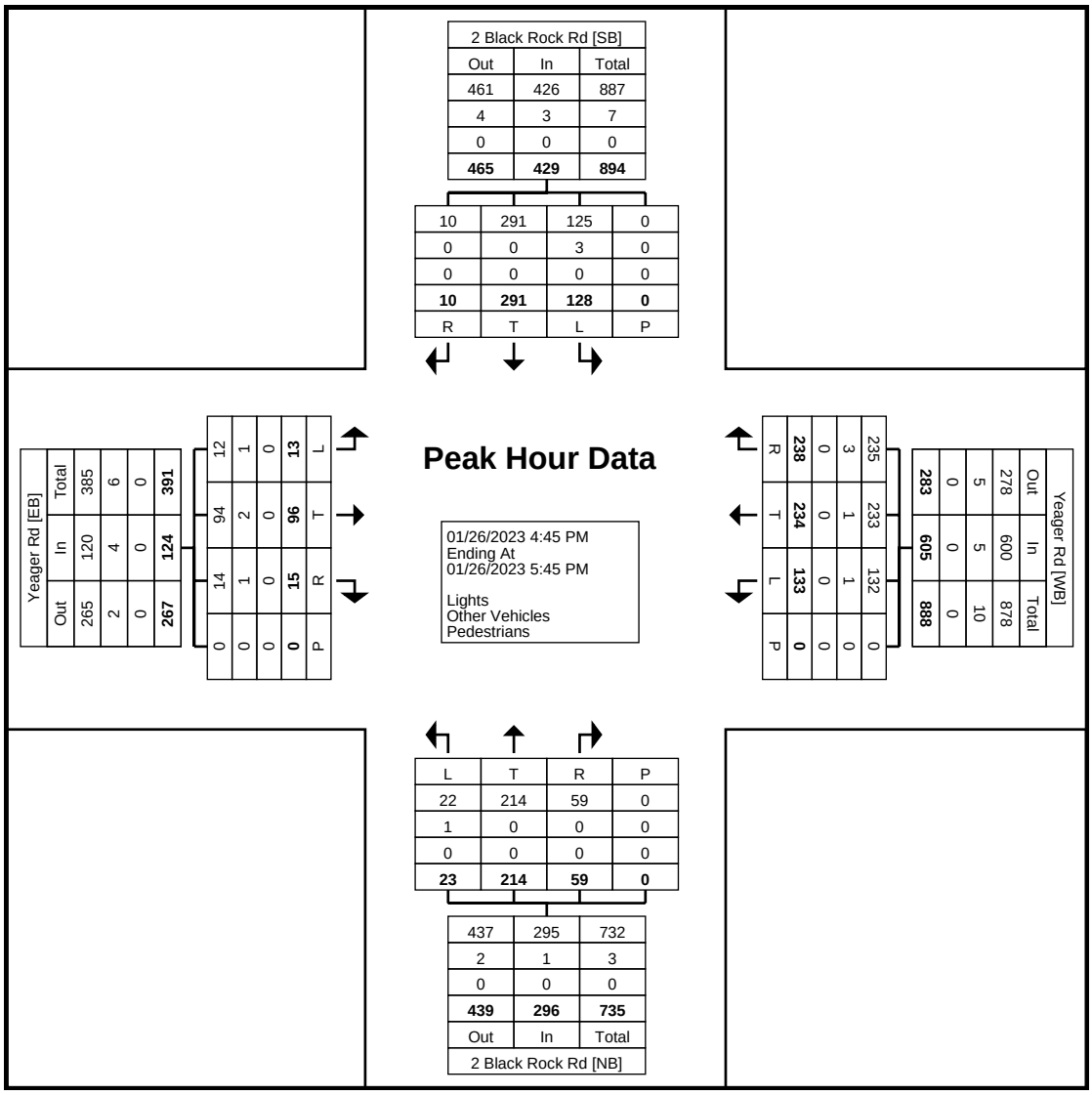
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (4:45 PM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Trappe Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	Mennonite Road Eastbound						Mennonite Road Westbound						S.Trappe Road Northbound						S.Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
6:00 AM	4	10	3	1	0	18	0	2	3	2	0	7	0	19	0	0	0	19	8	20	0	0	0	28	72
6:15 AM	3	18	6	2	0	29	1	2	0	2	0	5	1	19	7	0	0	27	12	31	0	0	0	43	104
6:30 AM	8	18	8	5	0	39	5	7	0	3	0	15	0	24	6	1	0	31	9	54	2	0	0	65	150
6:45 AM	9	16	4	6	0	35	1	6	1	2	0	10	1	37	7	1	0	46	25	65	2	0	0	92	183
Hourly Total	24	62	21	14	0	121	7	17	4	9	0	37	2	99	20	2	0	123	54	170	4	0	0	228	509
7:00 AM	8	25	8	2	0	43	5	14	4	5	0	28	1	40	9	1	0	51	16	71	2	0	0	89	211
7:15 AM	5	33	7	1	0	46	5	14	1	5	0	25	1	53	12	4	0	70	24	101	4	0	0	129	270
7:30 AM	16	62	13	3	0	94	9	8	3	3	0	23	5	55	16	5	0	81	29	87	1	2	0	119	317
7:45 AM	11	38	9	4	0	62	11	9	2	7	0	29	5	72	17	6	0	100	42	97	7	0	0	146	337
Hourly Total	40	158	37	10	0	245	30	45	10	20	0	105	12	220	54	16	0	302	111	356	14	2	0	483	1135
8:00 AM	6	41	7	5	0	59	6	5	5	5	0	21	3	66	15	10	0	94	35	92	5	1	0	133	307
8:15 AM	4	35	11	2	0	52	10	15	5	5	0	35	1	48	14	4	0	67	27	81	4	0	0	112	266
8:30 AM	5	35	13	3	0	56	3	13	9	10	0	35	4	44	13	6	1	67	17	78	1	0	0	96	254
8:45 AM	9	34	5	2	0	50	12	12	9	8	0	41	6	46	15	2	4	69	28	75	2	1	0	106	266
Hourly Total	24	145	36	12	0	217	31	45	28	28	0	132	14	204	57	22	5	297	107	326	12	2	0	447	1093
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	32	2	1	0	38	17	24	27	21	0	89	7	72	13	1	0	93	25	64	5	2	0	96	316
3:15 PM	9	15	1	1	0	26	16	26	20	29	0	91	9	63	12	6	0	90	38	54	7	3	0	102	309
3:30 PM	6	15	0	5	0	26	21	38	20	25	0	104	5	84	19	5	0	113	32	68	10	0	0	110	353
3:45 PM	4	37	2	1	0	44	17	49	20	24	0	110	7	76	23	10	0	116	37	66	7	3	0	113	383
Hourly Total	22	99	5	8	0	134	71	137	87	99	0	394	28	295	67	22	0	412	132	252	29	8	0	421	1361
4:00 PM	9	27	2	2	0	40	23	54	22	26	0	125	8	78	17	6	3	109	26	59	9	0	0	94	368
4:15 PM	3	31	3	0	0	37	31	61	29	28	0	149	15	94	15	1	0	125	30	67	9	0	0	106	417
4:30 PM	3	31	5	1	0	40	25	65	23	21	0	134	13	105	15	9	1	142	28	57	5	0	0	90	406
4:45 PM	1	29	9	1	0	40	29	52	30	23	0	134	6	111	13	5	3	135	35	87	8	1	0	131	440
Hourly Total	16	118	19	4	0	157	108	232	104	98	0	542	42	388	60	21	7	511	119	270	31	1	0	421	1631
5:00 PM	4	28	6	0	0	38	19	69	43	23	0	154	14	98	14	8	0	134	24	83	12	3	0	122	448
5:15 PM	2	29	2	1	0	34	33	62	23	23	0	141	16	90	12	7	2	125	33	65	15	2	0	115	415
5:30 PM	5	19	5	0	0	29	24	60	34	15	0	133	12	75	10	7	0	104	36	56	9	0	0	101	367
5:45 PM	4	18	2	1	0	25	21	46	34	18	0	119	11	76	22	14	0	123	25	63	8	1	0	97	364
Hourly Total	15	94	15	2	0	126	97	237	134	79	0	547	53	339	58	36	2	486	118	267	44	6	0	435	1594
Grand Total	141	676	133	50	0	1000	344	713	367	333	0	1757	151	1545	316	119	14	2131	641	1641	134	19	0	2435	7323
Approach %	14.1	67.6	13.3	5.0	-	-	19.6	40.6	20.9	19.0	-	-	7.1	72.5	14.8	5.6	-	-	26.3	67.4	5.5	0.8	-	-	-
Total %	1.9	9.2	1.8	0.7	-	13.7	4.7	9.7	5.0	4.5	-	24.0	2.1	21.1	4.3	1.6	-	29.1	8.8	22.4	1.8	0.3	-	33.3	-
Lights	134	668	123	48	-	973	339	691	362	327	-	1719	141	1498	305	115	-	2059	636	1598	129	19	-	2382	7133
% Lights	95.0	98.8	92.5	96.0	-	97.3	98.5	96.9	98.6	98.2	-	97.8	93.4	97.0	96.5	96.6	-	96.6	99.2	97.4	96.3	100.0	-	97.8	97.4
Other Vehicles	7	8	10	2	-	27	5	22	5	6	-	38	10	47	11	4	-	72	5	43	5	0	-	53	190
% Other Vehicles	5.0	1.2	7.5	4.0	-	2.7	1.5	3.1	1.4	1.8	-	2.2	6.6	3.0	3.5	3.4	-	3.4	0.8	2.6	3.7	0.0	-	2.2	2.6
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	14	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
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610.326.3100

Counter:: Mio
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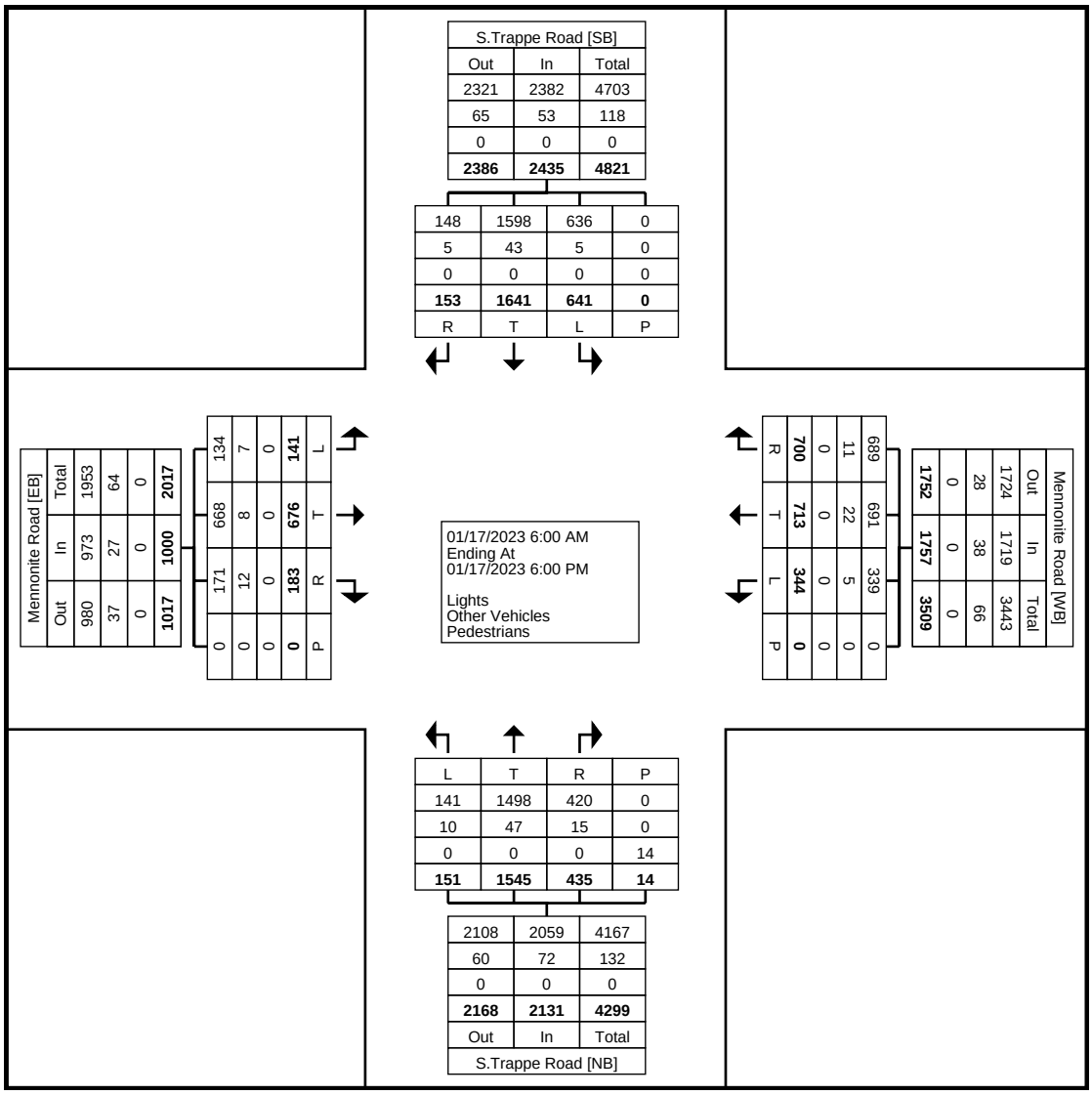
Weather:: Clear

Count Name: S. Trappe Road and Mennonite Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

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Weather:: Clear

Count Name: S. Trappe Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Mennonite Road Eastbound						Mennonite Road Westbound						S.Trappe Road Northbound						S.Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
7:15 AM	5	33	7	1	0	46	5	14	1	5	0	25	1	53	12	4	0	70	24	101	4	0	0	129	270
7:30 AM	16	62	13	3	0	94	9	8	3	3	0	23	5	55	16	5	0	81	29	87	1	2	0	119	317
7:45 AM	11	38	9	4	0	62	11	9	2	7	0	29	5	72	17	6	0	100	42	97	7	0	0	146	337
8:00 AM	6	41	7	5	0	59	6	5	5	5	0	21	3	66	15	10	0	94	35	92	5	1	0	133	307
Total	38	174	36	13	0	261	31	36	11	20	0	98	14	246	60	25	0	345	130	377	17	3	0	527	1231
Approach %	14.6	66.7	13.8	5.0	-	-	31.6	36.7	11.2	20.4	-	-	4.1	71.3	17.4	7.2	-	-	24.7	71.5	3.2	0.6	-	-	-
Total %	3.1	14.1	2.9	1.1	-	21.2	2.5	2.9	0.9	1.6	-	8.0	1.1	20.0	4.9	2.0	-	28.0	10.6	30.6	1.4	0.2	-	42.8	-
PHF	0.594	0.702	0.692	0.650	-	0.694	0.705	0.643	0.550	0.714	-	0.845	0.700	0.854	0.882	0.625	-	0.863	0.774	0.933	0.607	0.375	-	0.902	0.913
Lights	36	173	32	13	-	254	29	33	10	17	-	89	12	235	57	24	-	328	128	361	17	3	-	509	1180
% Lights	94.7	99.4	88.9	100.0	-	97.3	93.5	91.7	90.9	85.0	-	90.8	85.7	95.5	95.0	96.0	-	95.1	98.5	95.8	100.0	100.0	-	96.6	95.9
Other Vehicles	2	1	4	0	-	7	2	3	1	3	-	9	2	11	3	1	-	17	2	16	0	0	-	18	51
% Other Vehicles	5.3	0.6	11.1	0.0	-	2.7	6.5	8.3	9.1	15.0	-	9.2	14.3	4.5	5.0	4.0	-	4.9	1.5	4.2	0.0	0.0	-	3.4	4.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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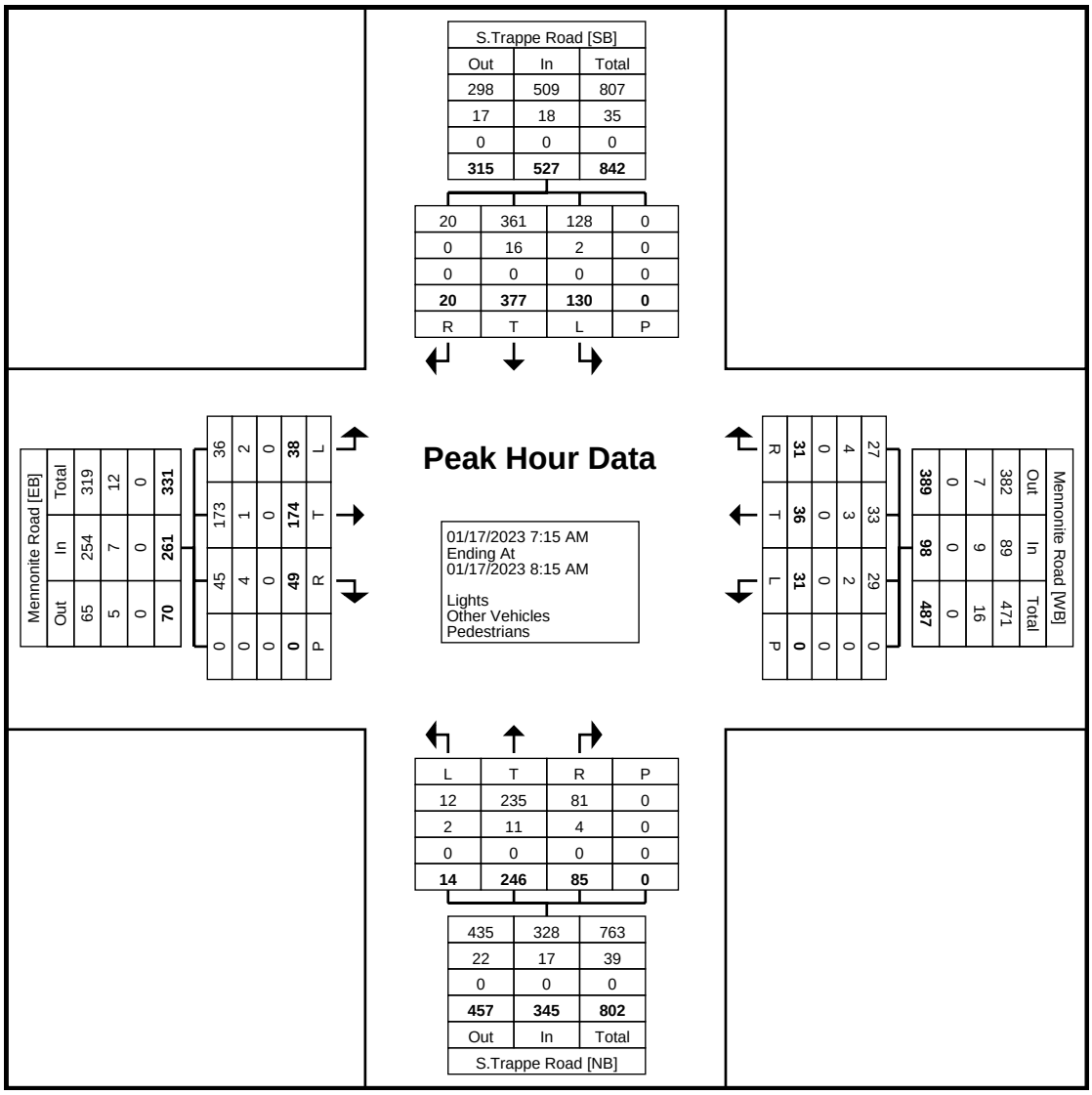

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Count Name: S. Trappe Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

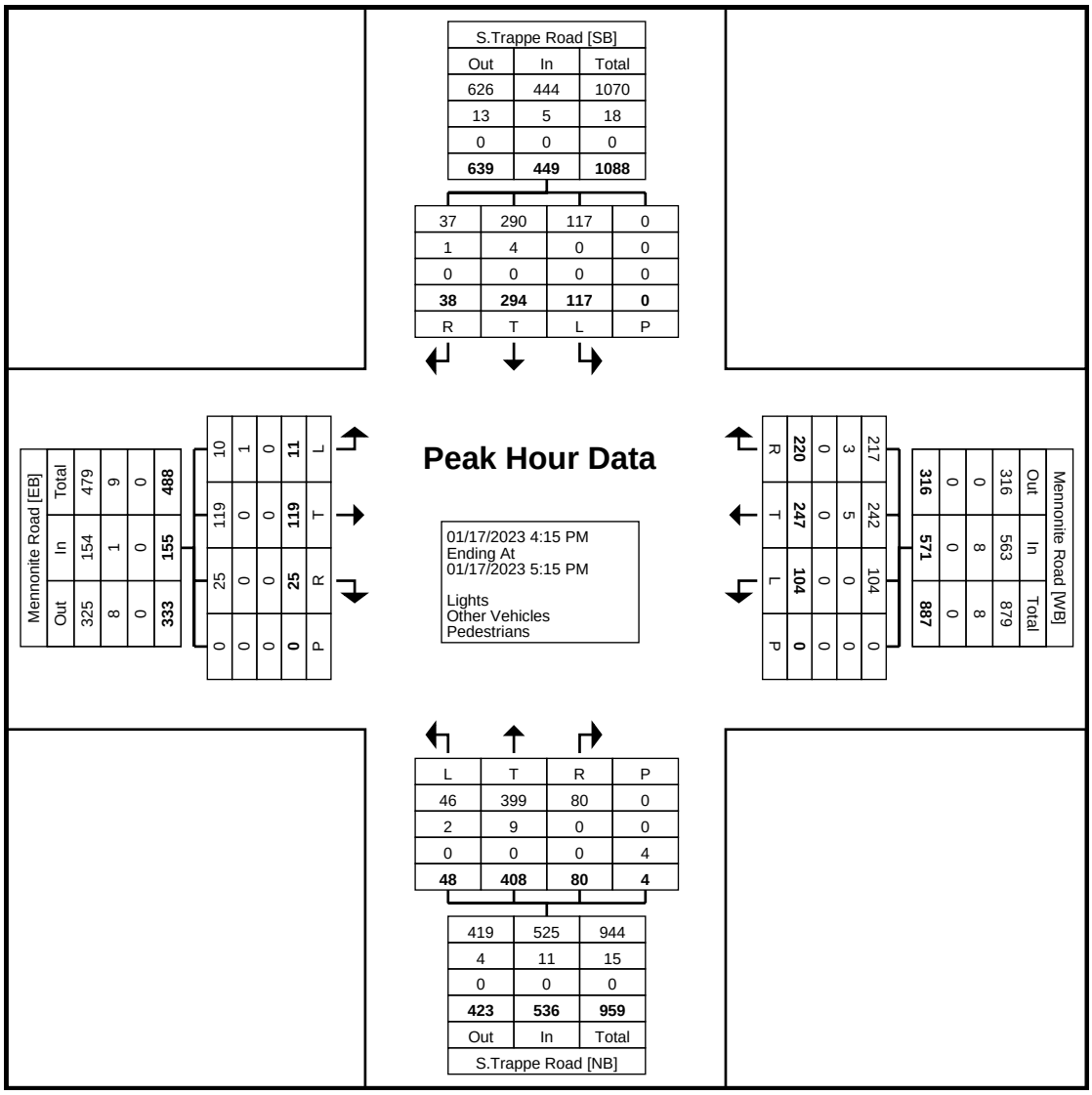
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Mennonite Road Eastbound						Mennonite Road Westbound						S.Trappe Road Northbound						S.Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
4:15 PM	3	31	3	0	0	37	31	61	29	28	0	149	15	94	15	1	0	125	30	67	9	0	0	106	417
4:30 PM	3	31	5	1	0	40	25	65	23	21	0	134	13	105	15	9	1	142	28	57	5	0	0	90	406
4:45 PM	1	29	9	1	0	40	29	52	30	23	0	134	6	111	13	5	3	135	35	87	8	1	0	131	440
5:00 PM	4	28	6	0	0	38	19	69	43	23	0	154	14	98	14	8	0	134	24	83	12	3	0	122	448
Total	11	119	23	2	0	155	104	247	125	95	0	571	48	408	57	23	4	536	117	294	34	4	0	449	1711
Approach %	7.1	76.8	14.8	1.3	-	-	18.2	43.3	21.9	16.6	-	-	9.0	76.1	10.6	4.3	-	-	26.1	65.5	7.6	0.9	-	-	-
Total %	0.6	7.0	1.3	0.1	-	9.1	6.1	14.4	7.3	5.6	-	33.4	2.8	23.8	3.3	1.3	-	31.3	6.8	17.2	2.0	0.2	-	26.2	-
PHF	0.688	0.960	0.639	0.500	-	0.969	0.839	0.895	0.727	0.848	-	0.927	0.800	0.919	0.950	0.639	-	0.944	0.836	0.845	0.708	0.333	-	0.857	0.955
Lights	10	119	23	2	-	154	104	242	123	94	-	563	46	399	57	23	-	525	117	290	33	4	-	444	1686
% Lights	90.9	100.0	100.0	100.0	-	99.4	100.0	98.0	98.4	98.9	-	98.6	95.8	97.8	100.0	100.0	-	97.9	100.0	98.6	97.1	100.0	-	98.9	98.5
Other Vehicles	1	0	0	0	-	1	0	5	2	1	-	8	2	9	0	0	-	11	0	4	1	0	-	5	25
% Other Vehicles	9.1	0.0	0.0	0.0	-	0.6	0.0	2.0	1.6	1.1	-	1.4	4.2	2.2	0.0	0.0	-	2.1	0.0	1.4	2.9	0.0	-	1.1	1.5
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Trappe Road and Mennonite Road
Site Code:
Start Date: 01/17/2023



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

Counter: MIO:
Set up By JB:

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023

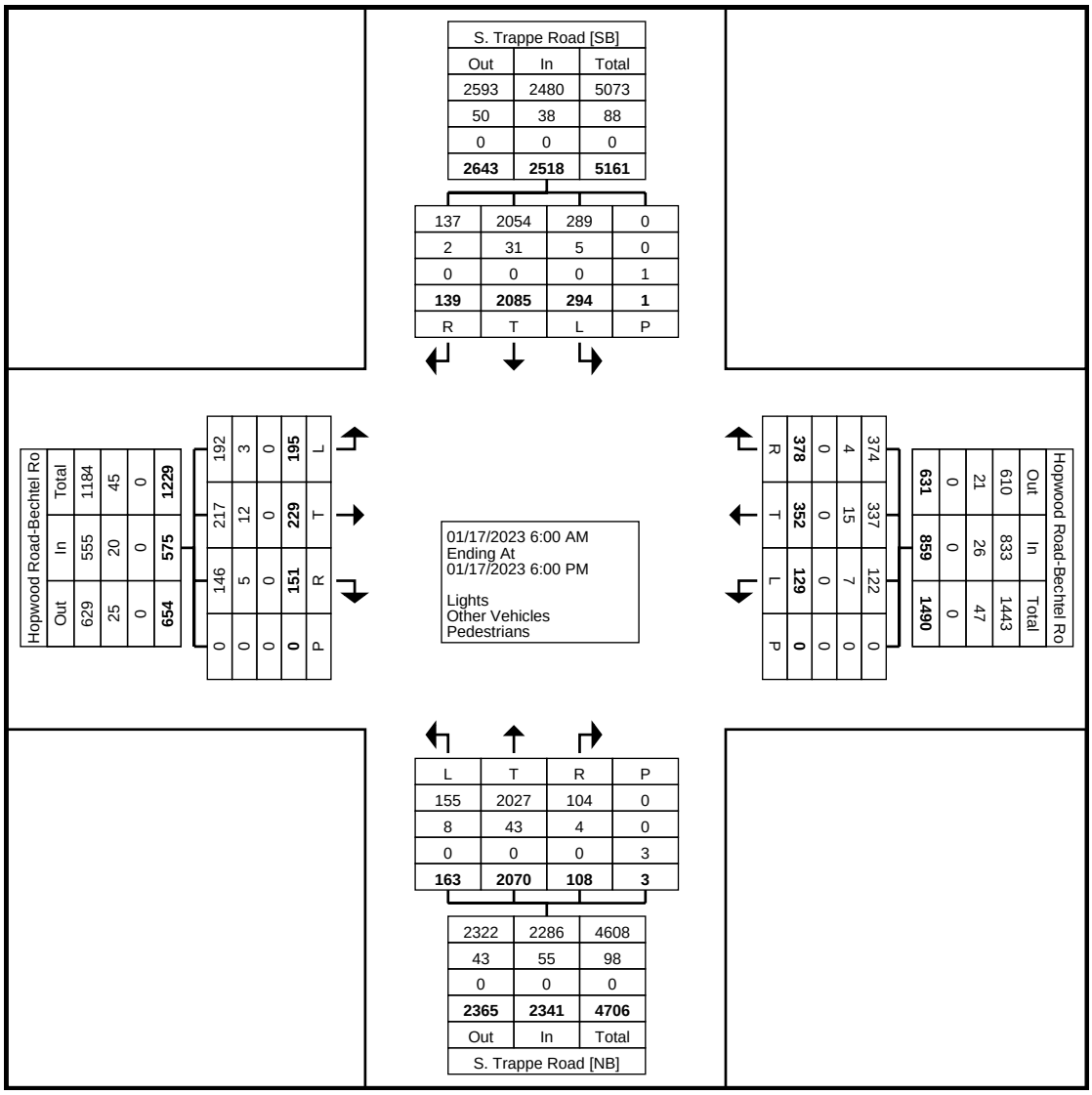
Turning Movement Data

Start Time	Hopwood Road-Bechtel Road Eastbound						Hopwood Road-Bechtel Road Westbound						S. Trappe Road Northbound						S. Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
6:00 AM	1	3	0	1	0	5	0	1	0	1	0	2	0	30	0	0	0	30	7	32	1	0	0	40	77
6:15 AM	1	6	2	2	0	11	0	0	0	2	0	2	0	28	0	0	0	28	11	38	0	0	0	49	90
6:30 AM	2	3	0	1	0	6	3	2	2	0	0	7	0	34	1	0	0	35	6	60	0	0	0	66	114
6:45 AM	7	6	4	3	0	20	2	8	3	3	0	16	1	47	2	0	0	50	5	70	3	0	0	78	164
Hourly Total	11	18	6	7	0	42	5	11	5	6	0	27	1	139	3	0	0	143	29	200	4	0	0	233	445
7:00 AM	8	6	1	6	0	21	3	37	4	6	0	50	6	54	3	1	0	64	13	91	4	0	0	108	243
7:15 AM	12	8	0	5	0	25	5	20	3	6	0	34	3	57	2	0	0	62	11	109	5	0	0	125	246
7:30 AM	23	13	9	7	0	52	10	15	4	5	0	34	5	69	6	0	0	80	12	94	3	1	0	110	276
7:45 AM	17	17	7	3	0	44	7	13	7	5	0	32	1	88	2	1	0	92	22	113	5	0	0	140	308
Hourly Total	60	44	17	21	0	142	25	85	18	22	0	150	15	268	13	2	0	298	58	407	17	1	0	483	1073
8:00 AM	6	10	5	3	0	24	5	9	4	10	0	28	6	69	9	0	0	84	19	100	4	2	1	125	261
8:15 AM	6	9	4	1	0	20	4	7	3	8	0	22	3	57	5	0	1	65	18	104	2	0	0	124	231
8:30 AM	10	10	4	2	0	26	5	16	5	9	0	35	3	61	3	0	0	67	14	76	5	1	0	96	224
8:45 AM	15	9	1	2	0	27	7	13	7	10	0	37	3	65	4	1	2	73	15	75	1	2	0	93	230
Hourly Total	37	38	14	8	0	97	21	45	19	37	0	122	15	252	21	1	3	289	66	355	12	5	1	438	946
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	10	4	3	1	0	18	3	16	8	7	0	34	11	100	8	1	0	120	14	96	6	2	0	118	290
3:15 PM	4	4	3	2	0	13	4	6	10	8	0	28	7	104	4	0	0	115	8	84	8	0	0	100	256
3:30 PM	7	12	7	1	0	27	6	15	11	2	0	34	6	125	2	0	0	133	13	103	3	0	0	119	313
3:45 PM	8	13	7	2	0	30	7	19	9	9	0	44	4	115	4	1	0	124	14	88	7	2	0	111	309
Hourly Total	29	33	20	6	0	88	20	56	38	26	0	140	28	444	18	2	0	492	49	371	24	4	0	448	1168
4:00 PM	6	13	6	3	0	28	6	15	12	11	0	44	10	114	7	0	0	131	11	88	9	1	0	109	312
4:15 PM	8	11	4	4	0	27	7	16	18	16	0	57	16	125	4	0	0	145	11	85	5	5	0	106	335
4:30 PM	6	13	4	1	0	24	5	20	26	13	0	64	15	131	3	3	0	152	13	92	15	0	0	120	360
4:45 PM	10	15	3	3	0	31	8	18	16	16	0	58	17	137	5	0	0	159	15	117	5	1	0	138	386
Hourly Total	30	52	17	11	0	110	26	69	72	56	0	223	58	507	19	3	0	587	50	382	34	7	0	473	1393
5:00 PM	6	12	4	4	0	26	6	21	8	10	0	45	12	137	8	0	0	157	6	109	11	1	0	127	355
5:15 PM	10	13	7	4	0	34	10	18	11	11	0	50	9	119	6	0	0	134	17	86	5	1	0	109	327
5:30 PM	4	9	0	1	0	14	9	23	7	13	0	52	13	101	8	1	0	123	11	98	8	0	0	117	306
5:45 PM	8	10	4	0	0	22	7	24	14	5	0	50	12	103	3	0	0	118	8	77	5	0	0	90	280
Hourly Total	28	44	15	9	0	96	32	86	40	39	0	197	46	460	25	1	0	532	42	370	29	2	0	443	1268
Grand Total	195	229	89	62	0	575	129	352	192	186	0	859	163	2070	99	9	3	2341	294	2085	120	19	1	2518	6293
Approach %	33.9	39.8	15.5	10.8	-	-	15.0	41.0	22.4	21.7	-	-	7.0	88.4	4.2	0.4	-	-	11.7	82.8	4.8	0.8	-	-	-
Total %	3.1	3.6	1.4	1.0	-	9.1	2.0	5.6	3.1	3.0	-	13.7	2.6	32.9	1.6	0.1	-	37.2	4.7	33.1	1.9	0.3	-	40.0	-
Lights	192	217	84	62	-	555	122	337	189	185	-	833	155	2027	95	9	-	2286	289	2054	118	19	-	2480	6154
% Lights	98.5	94.8	94.4	100.0	-	96.5	94.6	95.7	98.4	99.5	-	97.0	95.1	97.9	96.0	100.0	-	97.7	98.3	98.5	98.3	100.0	-	98.5	97.8
Other Vehicles	3	12	5	0	-	20	7	15	3	1	-	26	8	43	4	0	-	55	5	31	2	0	-	38	139
% Other Vehicles	1.5	5.2	5.6	0.0	-	3.5	5.4	4.3	1.6	0.5	-	3.0	4.9	2.1	4.0	0.0	-	2.3	1.7	1.5	1.7	0.0	-	1.5	2.2
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	3	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JB:

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Counter: MIO:
Set up By JB:

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023

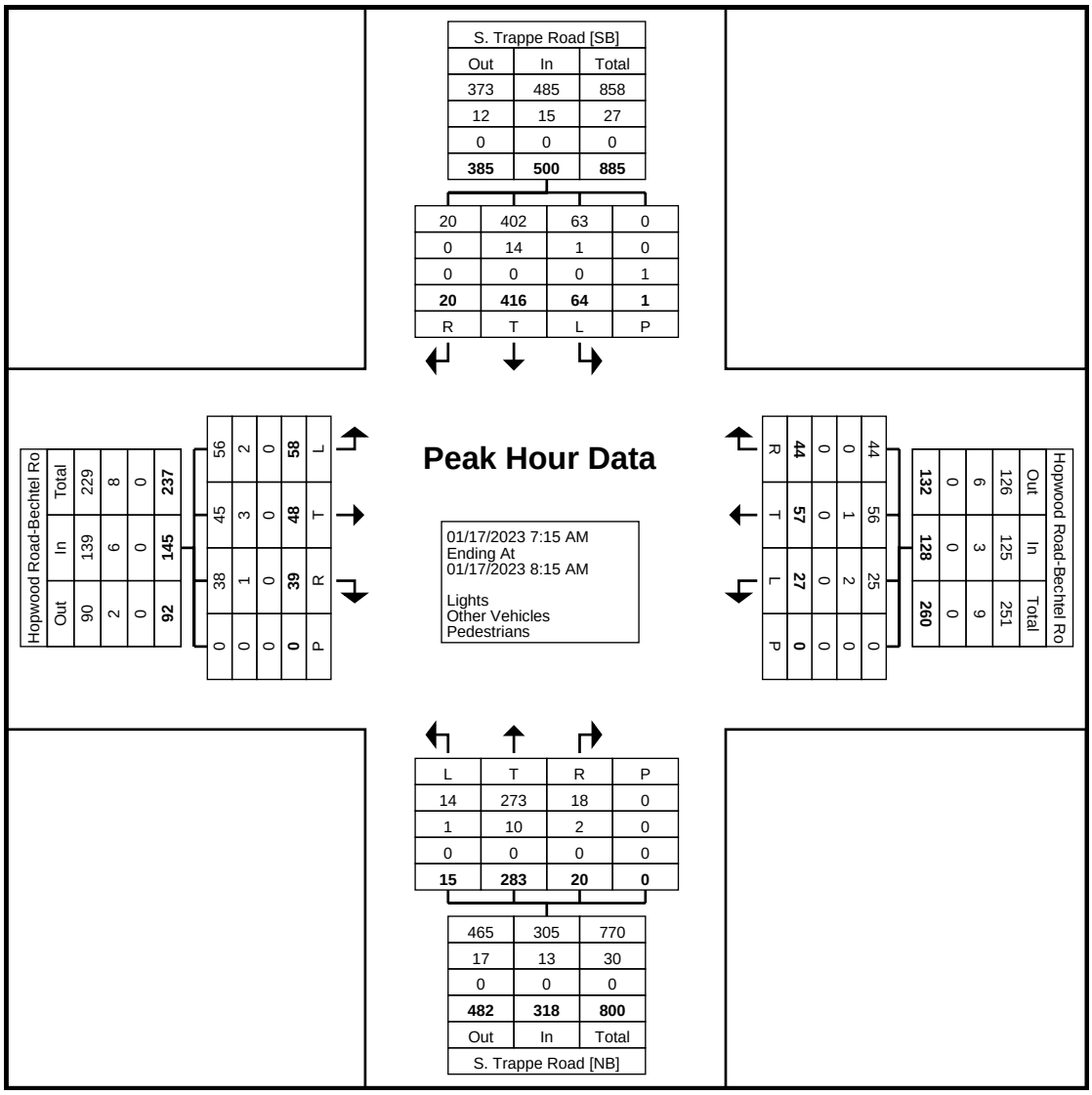
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hopwood Road-Bechtel Road Eastbound						Hopwood Road-Bechtel Road Westbound						S. Trappe Road Northbound						S. Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
7:15 AM	12	8	0	5	0	25	5	20	3	6	0	34	3	57	2	0	0	62	11	109	5	0	0	125	246
7:30 AM	23	13	9	7	0	52	10	15	4	5	0	34	5	69	6	0	0	80	12	94	3	1	0	110	276
7:45 AM	17	17	7	3	0	44	7	13	7	5	0	32	1	88	2	1	0	92	22	113	5	0	0	140	308
8:00 AM	6	10	5	3	0	24	5	9	4	10	0	28	6	69	9	0	0	84	19	100	4	2	1	125	261
Total	58	48	21	18	0	145	27	57	18	26	0	128	15	283	19	1	0	318	64	416	17	3	1	500	1091
Approach %	40.0	33.1	14.5	12.4	-	-	21.1	44.5	14.1	20.3	-	-	4.7	89.0	6.0	0.3	-	-	12.8	83.2	3.4	0.6	-	-	-
Total %	5.3	4.4	1.9	1.6	-	13.3	2.5	5.2	1.6	2.4	-	11.7	1.4	25.9	1.7	0.1	-	29.1	5.9	38.1	1.6	0.3	-	45.8	-
PHF	0.630	0.706	0.583	0.643	-	0.697	0.675	0.713	0.643	0.650	-	0.941	0.625	0.804	0.528	0.250	-	0.864	0.727	0.920	0.850	0.375	-	0.893	0.886
Lights	56	45	20	18	-	139	25	56	18	26	-	125	14	273	17	1	-	305	63	402	17	3	-	485	1054
% Lights	96.6	93.8	95.2	100.0	-	95.9	92.6	98.2	100.0	100.0	-	97.7	93.3	96.5	89.5	100.0	-	95.9	98.4	96.6	100.0	100.0	-	97.0	96.6
Other Vehicles	2	3	1	0	-	6	2	1	0	0	-	3	1	10	2	0	-	13	1	14	0	0	-	15	37
% Other Vehicles	3.4	6.3	4.8	0.0	-	4.1	7.4	1.8	0.0	0.0	-	2.3	6.7	3.5	10.5	0.0	-	4.1	1.6	3.4	0.0	0.0	-	3.0	3.4
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JB:

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JB:

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023

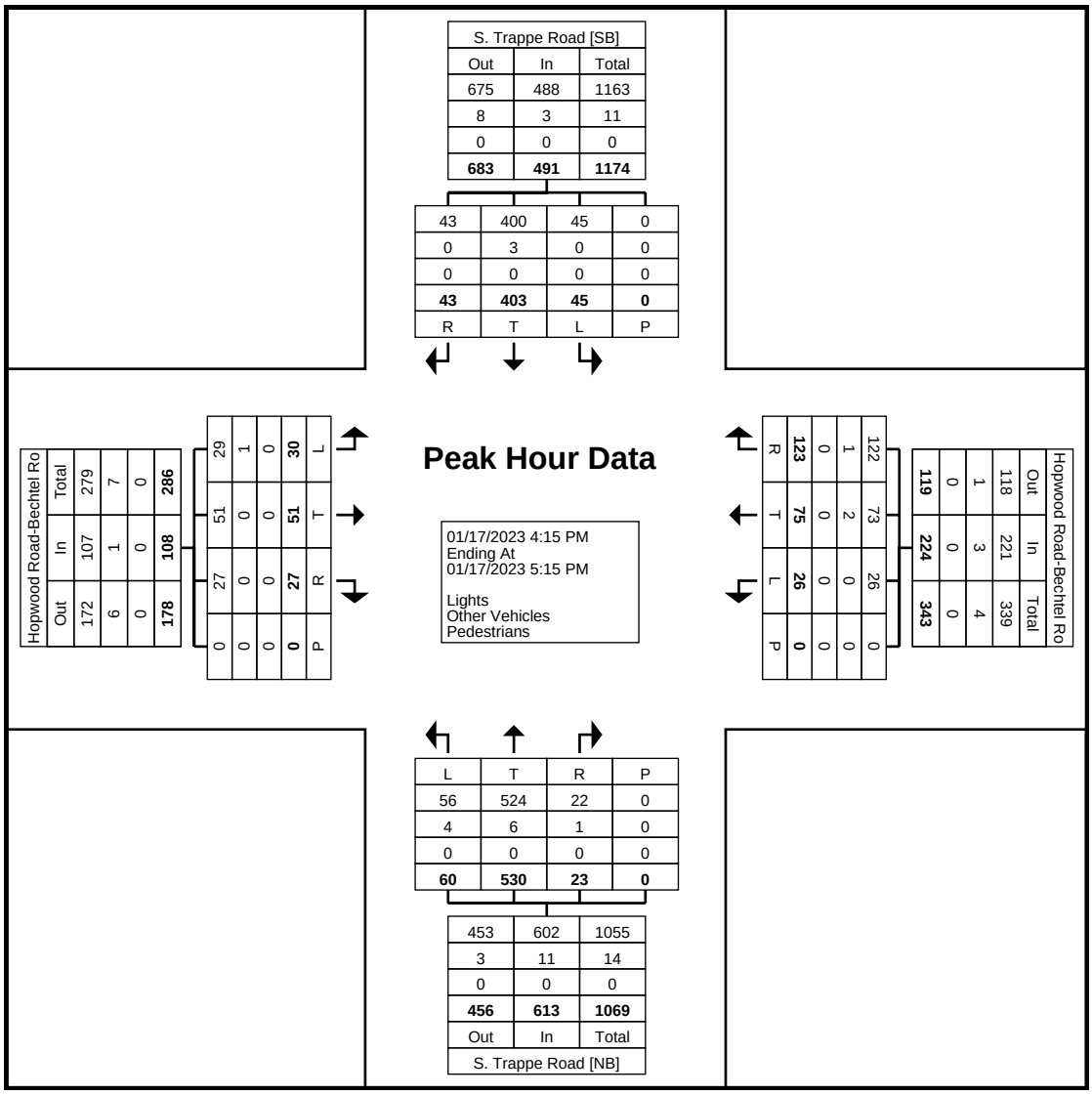
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Hopwood Road-Bechtel Road Eastbound						Hopwood Road-Bechtel Road Westbound						S. Trappe Road Northbound						S. Trappe Road Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
4:15 PM	8	11	4	4	0	27	7	16	18	16	0	57	16	125	4	0	0	145	11	85	5	5	0	106	335
4:30 PM	6	13	4	1	0	24	5	20	26	13	0	64	15	131	3	3	0	152	13	92	15	0	0	120	360
4:45 PM	10	15	3	3	0	31	8	18	16	16	0	58	17	137	5	0	0	159	15	117	5	1	0	138	386
5:00 PM	6	12	4	4	0	26	6	21	8	10	0	45	12	137	8	0	0	157	6	109	11	1	0	127	355
Total	30	51	15	12	0	108	26	75	68	55	0	224	60	530	20	3	0	613	45	403	36	7	0	491	1436
Approach %	27.8	47.2	13.9	11.1	-	-	11.6	33.5	30.4	24.6	-	-	9.8	86.5	3.3	0.5	-	-	9.2	82.1	7.3	1.4	-	-	-
Total %	2.1	3.6	1.0	0.8	-	7.5	1.8	5.2	4.7	3.8	-	15.6	4.2	36.9	1.4	0.2	-	42.7	3.1	28.1	2.5	0.5	-	34.2	-
PHF	0.750	0.850	0.938	0.750	-	0.871	0.813	0.893	0.654	0.859	-	0.875	0.882	0.967	0.625	0.250	-	0.964	0.750	0.861	0.600	0.350	-	0.889	0.930
Lights	29	51	15	12	-	107	26	73	68	54	-	221	56	524	19	3	-	602	45	400	36	7	-	488	1418
% Lights	96.7	100.0	100.0	100.0	-	99.1	100.0	97.3	100.0	98.2	-	98.7	93.3	98.9	95.0	100.0	-	98.2	100.0	99.3	100.0	100.0	-	99.4	98.7
Other Vehicles	1	0	0	0	-	1	0	2	0	1	-	3	4	6	1	0	-	11	0	3	0	0	-	3	18
% Other Vehicles	3.3	0.0	0.0	0.0	-	0.9	0.0	2.7	0.0	1.8	-	1.3	6.7	1.1	5.0	0.0	-	1.8	0.0	0.7	0.0	0.0	-	0.6	1.3
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter: MIO:
Set up By JB:

Count Name: S. Trappe Road and Hopwood Road
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023

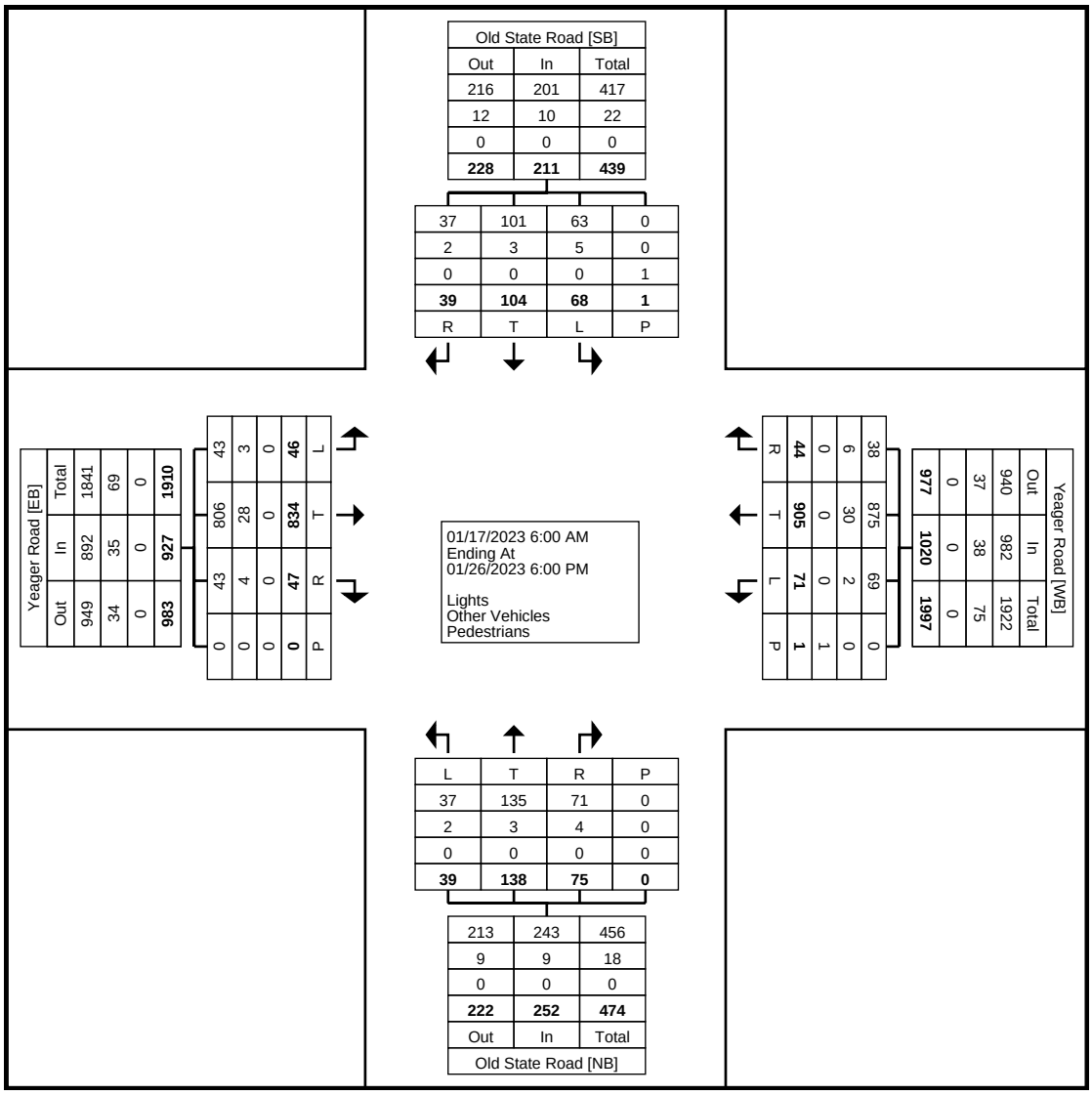
Turning Movement Data

Start Time	Yeager Road Eastbound					Yeager Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	1	19	0	0	20	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	23
6:15 AM	3	15	0	0	18	1	4	1	0	6	0	1	3	0	4	2	2	0	0	4	32
6:30 AM	2	22	1	0	25	0	4	1	0	5	0	1	3	0	4	3	2	0	0	5	39
6:45 AM	0	39	0	0	39	2	21	0	0	23	2	3	3	0	8	3	4	1	0	8	78
Hourly Total	6	95	1	0	102	3	29	3	0	35	2	5	10	0	17	8	9	1	0	18	172
7:00 AM	1	34	1	0	36	0	60	3	0	63	3	4	1	0	8	4	3	2	0	9	116
7:15 AM	3	59	2	0	64	0	70	1	0	71	3	5	10	0	18	5	4	3	0	12	165
7:30 AM	4	86	2	0	92	1	21	2	0	24	2	13	5	0	20	6	3	3	0	12	148
7:45 AM	4	75	5	0	84	1	35	1	0	37	2	9	7	0	18	6	4	2	0	12	151
Hourly Total	12	254	10	0	276	2	186	7	0	195	10	31	23	0	64	21	14	10	0	45	580
8:00 AM	3	59	1	0	63	2	14	0	0	16	1	13	6	0	20	4	5	1	0	10	109
8:15 AM	3	26	1	0	30	2	27	1	0	30	0	3	10	0	13	4	1	1	0	6	79
8:30 AM	1	41	1	0	43	1	23	3	0	27	2	8	4	0	14	6	3	0	0	9	93
8:45 AM	3	44	3	0	50	4	29	1	0	34	2	3	6	0	11	1	5	0	0	6	101
Hourly Total	10	170	6	0	186	9	93	5	0	107	5	27	26	0	58	15	14	2	0	31	382
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	26	2	0	29	1	43	2	0	46	1	4	0	0	5	2	6	1	0	9	89
3:15 PM	1	26	3	0	30	2	43	1	0	46	0	4	0	0	4	1	9	1	0	11	91
3:30 PM	0	26	5	0	31	6	40	1	0	47	2	8	3	0	13	2	5	0	0	7	98
3:45 PM	2	36	1	0	39	4	26	2	0	32	4	4	1	0	9	2	3	3	0	8	88
Hourly Total	4	114	11	0	129	13	152	6	0	171	7	20	4	0	31	7	23	5	0	35	366
4:00 PM	2	25	3	0	30	6	41	3	0	50	0	3	1	0	4	1	3	1	0	5	89
4:15 PM	1	30	2	0	33	6	50	4	0	60	4	9	2	0	15	0	5	3	0	8	116
4:30 PM	3	21	2	0	26	4	61	3	0	68	3	9	1	0	13	3	5	4	1	12	119
4:45 PM	1	31	2	0	34	13	56	5	0	74	4	6	3	0	13	2	3	1	0	6	127
Hourly Total	7	107	9	0	123	29	208	15	0	252	11	27	7	0	45	6	16	9	1	31	451
5:00 PM	0	19	4	0	23	3	49	2	1	54	2	4	1	0	7	3	6	4	0	13	97
5:15 PM	3	31	1	0	35	6	67	1	0	74	1	8	4	0	13	2	7	4	0	13	135
5:30 PM	1	24	4	0	29	3	52	2	0	57	0	8	0	0	8	2	11	2	0	15	109
5:45 PM	3	20	1	0	24	3	69	3	0	75	1	8	0	0	9	4	4	2	0	10	118
Hourly Total	7	94	10	0	111	15	237	8	1	260	4	28	5	0	37	11	28	12	0	51	459
Grand Total	46	834	47	0	927	71	905	44	1	1020	39	138	75	0	252	68	104	39	1	211	2410
Approach %	5.0	90.0	5.1	-	-	7.0	88.7	4.3	-	-	15.5	54.8	29.8	-	-	32.2	49.3	18.5	-	-	-
Total %	1.9	34.6	2.0	-	38.5	2.9	37.6	1.8	-	42.3	1.6	5.7	3.1	-	10.5	2.8	4.3	1.6	-	8.8	-
Lights	43	806	43	-	892	69	875	38	-	982	37	135	71	-	243	63	101	37	-	201	2318
% Lights	93.5	96.6	91.5	-	96.2	97.2	96.7	86.4	-	96.3	94.9	97.8	94.7	-	96.4	92.6	97.1	94.9	-	95.3	96.2
Other Vehicles	3	28	4	-	35	2	30	6	-	38	2	3	4	-	9	5	3	2	-	10	92
% Other Vehicles	6.5	3.4	8.5	-	3.8	2.8	3.3	13.6	-	3.7	5.1	2.2	5.3	-	3.6	7.4	2.9	5.1	-	4.7	3.8
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Yeager Road Eastbound					Yeager Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:00 AM	1	34	1	0	36	0	60	3	0	63	3	4	1	0	8	4	3	2	0	9	116
7:15 AM	3	59	2	0	64	0	70	1	0	71	3	5	10	0	18	5	4	3	0	12	165
7:30 AM	4	86	2	0	92	1	21	2	0	24	2	13	5	0	20	6	3	3	0	12	148
7:45 AM	4	75	5	0	84	1	35	1	0	37	2	9	7	0	18	6	4	2	0	12	151
Total	12	254	10	0	276	2	186	7	0	195	10	31	23	0	64	21	14	10	0	45	580
Approach %	4.3	92.0	3.6	-	-	1.0	95.4	3.6	-	-	15.6	48.4	35.9	-	-	46.7	31.1	22.2	-	-	-
Total %	2.1	43.8	1.7	-	47.6	0.3	32.1	1.2	-	33.6	1.7	5.3	4.0	-	11.0	3.6	2.4	1.7	-	7.8	-
PHF	0.750	0.738	0.500	-	0.750	0.500	0.664	0.583	-	0.687	0.833	0.596	0.575	-	0.800	0.875	0.875	0.833	-	0.938	0.879
Lights	11	246	9	-	266	2	176	6	-	184	9	31	22	-	62	19	14	8	-	41	553
% Lights	91.7	96.9	90.0	-	96.4	100.0	94.6	85.7	-	94.4	90.0	100.0	95.7	-	96.9	90.5	100.0	80.0	-	91.1	95.3
Other Vehicles	1	8	1	-	10	0	10	1	-	11	1	0	1	-	2	2	0	2	-	4	27
% Other Vehicles	8.3	3.1	10.0	-	3.6	0.0	5.4	14.3	-	5.6	10.0	0.0	4.3	-	3.1	9.5	0.0	20.0	-	8.9	4.7
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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610.326.3100

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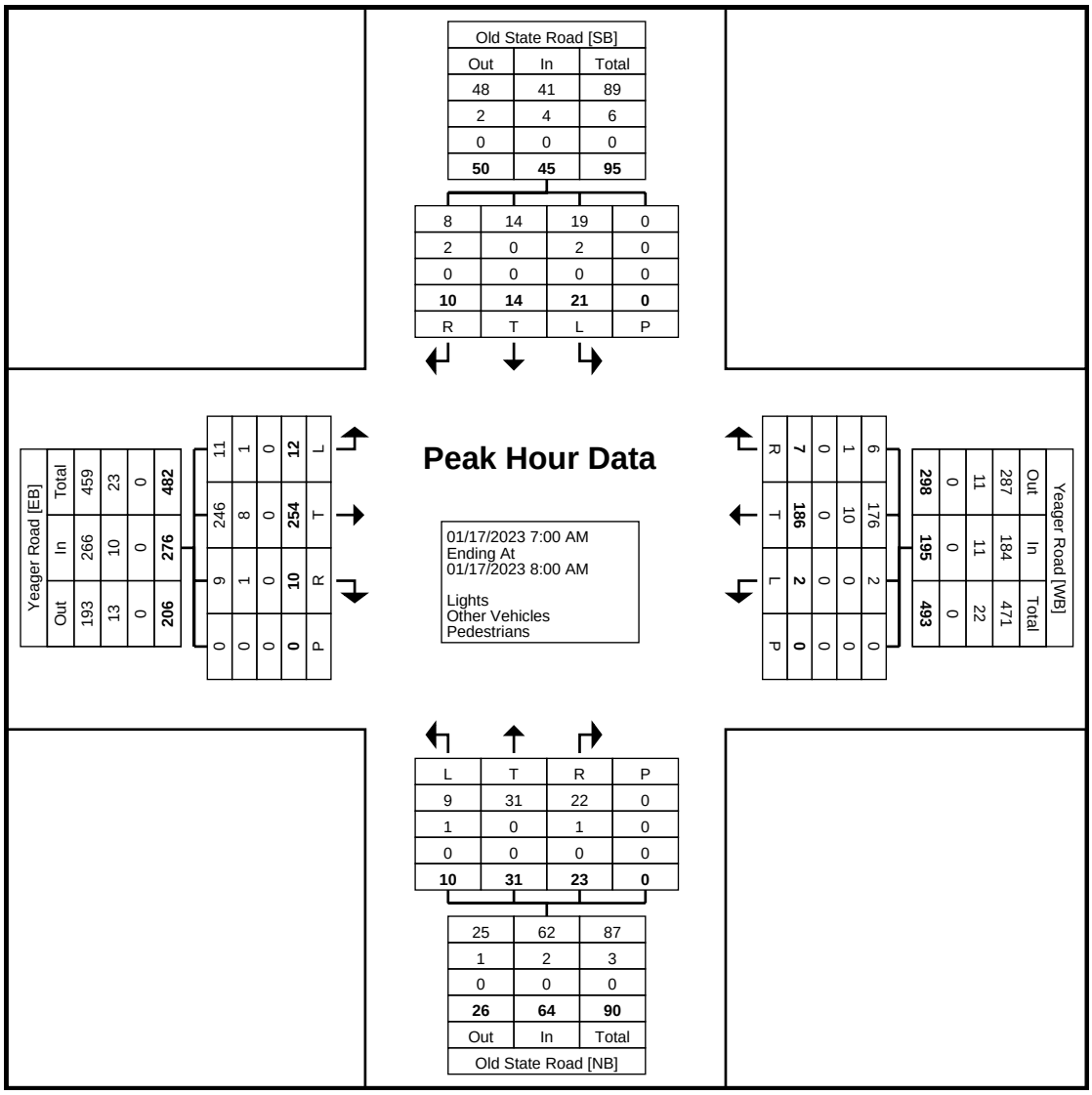
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
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610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Yeager Road Eastbound					Yeager Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	3	21	2	0	26	4	61	3	0	68	3	9	1	0	13	3	5	4	1	12	119
4:45 PM	1	31	2	0	34	13	56	5	0	74	4	6	3	0	13	2	3	1	0	6	127
5:00 PM	0	19	4	0	23	3	49	2	1	54	2	4	1	0	7	3	6	4	0	13	97
5:15 PM	3	31	1	0	35	6	67	1	0	74	1	8	4	0	13	2	7	4	0	13	135
Total	7	102	9	0	118	26	233	11	1	270	10	27	9	0	46	10	21	13	1	44	478
Approach %	5.9	86.4	7.6	-	-	9.6	86.3	4.1	-	-	21.7	58.7	19.6	-	-	22.7	47.7	29.5	-	-	-
Total %	1.5	21.3	1.9	-	24.7	5.4	48.7	2.3	-	56.5	2.1	5.6	1.9	-	9.6	2.1	4.4	2.7	-	9.2	-
PHF	0.583	0.823	0.563	-	0.843	0.500	0.869	0.550	-	0.912	0.625	0.750	0.563	-	0.885	0.833	0.750	0.813	-	0.846	0.885
Lights	7	101	9	-	117	25	233	11	-	269	10	27	8	-	45	9	21	13	-	43	474
% Lights	100.0	99.0	100.0	-	99.2	96.2	100.0	100.0	-	99.6	100.0	100.0	88.9	-	97.8	90.0	100.0	100.0	-	97.7	99.2
Other Vehicles	0	1	0	-	1	1	0	0	-	1	0	0	1	-	1	1	0	0	-	1	4
% Other Vehicles	0.0	1.0	0.0	-	0.8	3.8	0.0	0.0	-	0.4	0.0	0.0	11.1	-	2.2	10.0	0.0	0.0	-	2.3	0.8
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
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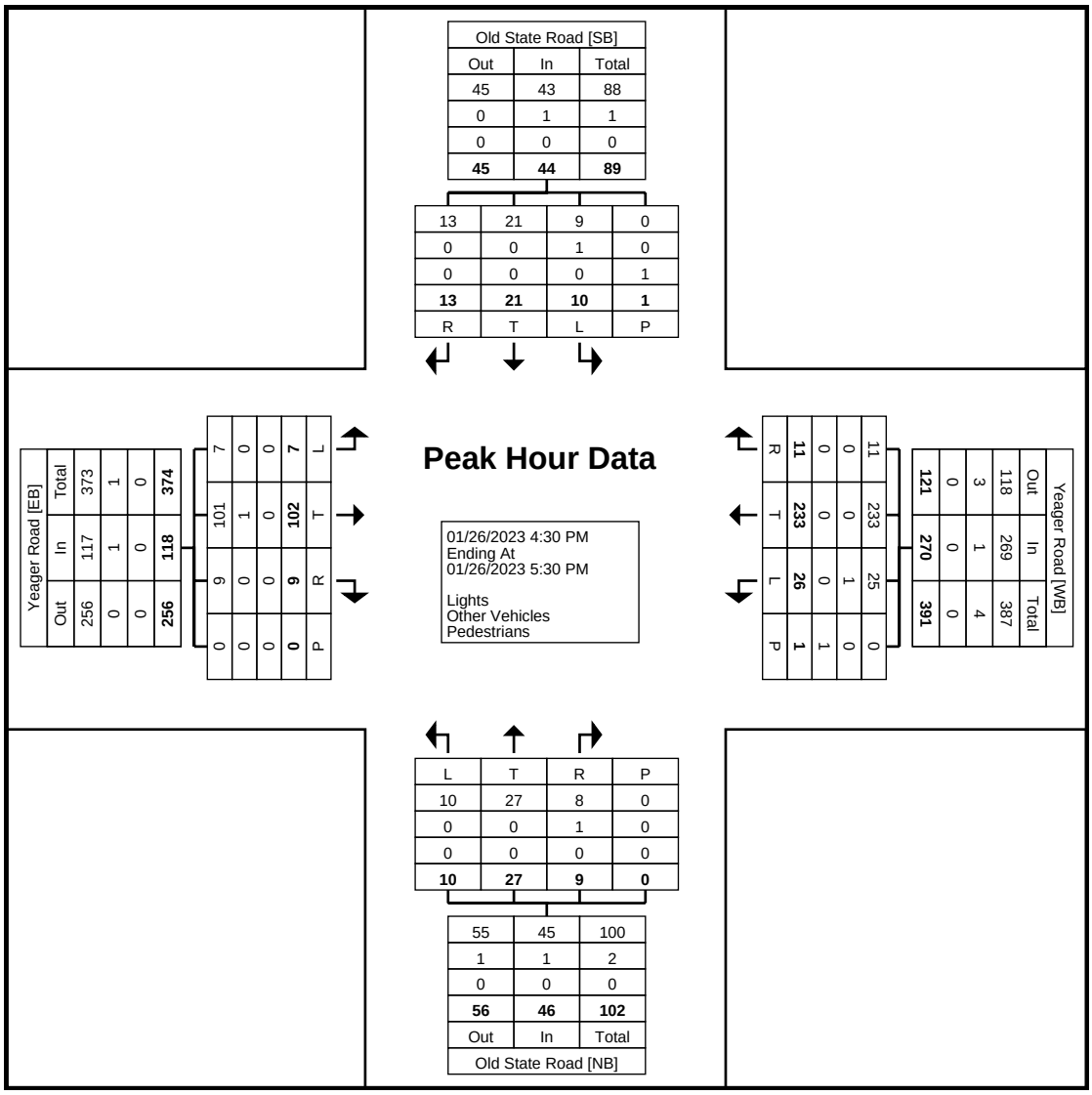
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Yeager Road
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
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Weather:: Clear

Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	Meadowgreen Drive Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	1	0	0	1	0	0	0	0	2	0	0	2	3
6:15 AM	2	2	0	4	0	2	0	2	2	0	0	2	8
6:30 AM	1	0	0	1	0	3	0	3	3	0	0	3	7
6:45 AM	4	0	0	4	1	5	0	6	5	1	0	6	16
Hourly Total	8	2	0	10	1	10	0	11	12	1	0	13	34
7:00 AM	2	0	0	2	0	6	0	6	4	0	0	4	12
7:15 AM	2	1	0	3	1	15	0	16	5	1	0	6	25
7:30 AM	5	2	1	7	0	16	0	16	4	1	3	5	28
7:45 AM	0	0	0	0	1	17	0	18	9	1	0	10	28
Hourly Total	9	3	1	12	2	54	0	56	22	3	3	25	93
8:00 AM	3	0	0	3	0	13	0	13	6	2	0	8	24
8:15 AM	3	2	0	5	0	10	0	10	4	0	1	4	19
8:30 AM	2	2	0	4	0	12	0	12	5	0	0	5	21
8:45 AM	2	1	0	3	0	7	0	7	9	3	0	12	22
Hourly Total	10	5	0	15	0	42	0	42	24	5	1	29	86
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	0	3	1	0	4	0	4	6	2	0	8	13
3:15 PM	1	0	0	1	0	3	0	3	10	3	0	13	17
3:30 PM	1	0	0	1	1	12	0	13	15	1	0	16	30
3:45 PM	0	0	0	0	1	7	0	8	7	0	0	7	15
Hourly Total	3	0	3	3	2	26	0	28	38	6	0	44	75
4:00 PM	3	1	1	4	1	3	0	4	7	3	1	10	18
4:15 PM	1	0	0	1	1	13	0	14	10	3	0	13	28
4:30 PM	2	1	0	3	0	10	0	10	10	1	0	11	24
4:45 PM	1	0	0	1	1	12	0	13	15	1	0	16	30
Hourly Total	7	2	1	9	3	38	0	41	42	8	1	50	100
5:00 PM	0	0	0	0	0	6	0	6	10	2	0	12	18
5:15 PM	0	0	0	0	2	10	0	12	8	3	0	11	23
5:30 PM	2	1	0	3	0	6	0	6	16	2	0	18	27
5:45 PM	1	0	0	1	2	8	0	10	7	2	0	9	20
Hourly Total	3	1	0	4	4	30	0	34	41	9	0	50	88
Grand Total	40	13	5	53	12	200	0	212	179	32	5	211	476
Approach %	75.5	24.5	-	-	5.7	94.3	-	-	84.8	15.2	-	-	-
Total %	8.4	2.7	-	11.1	2.5	42.0	-	44.5	37.6	6.7	-	44.3	-
Lights	38	11	-	49	11	194	-	205	173	31	-	204	458
% Lights	95.0	84.6	-	92.5	91.7	97.0	-	96.7	96.6	96.9	-	96.7	96.2
Other Vehicles	2	2	-	4	1	6	-	7	6	1	-	7	18
% Other Vehicles	5.0	15.4	-	7.5	8.3	3.0	-	3.3	3.4	3.1	-	3.3	3.8
Pedestrians	-	-	5	-	-	-	0	-	-	-	5	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
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Counter:: Mio
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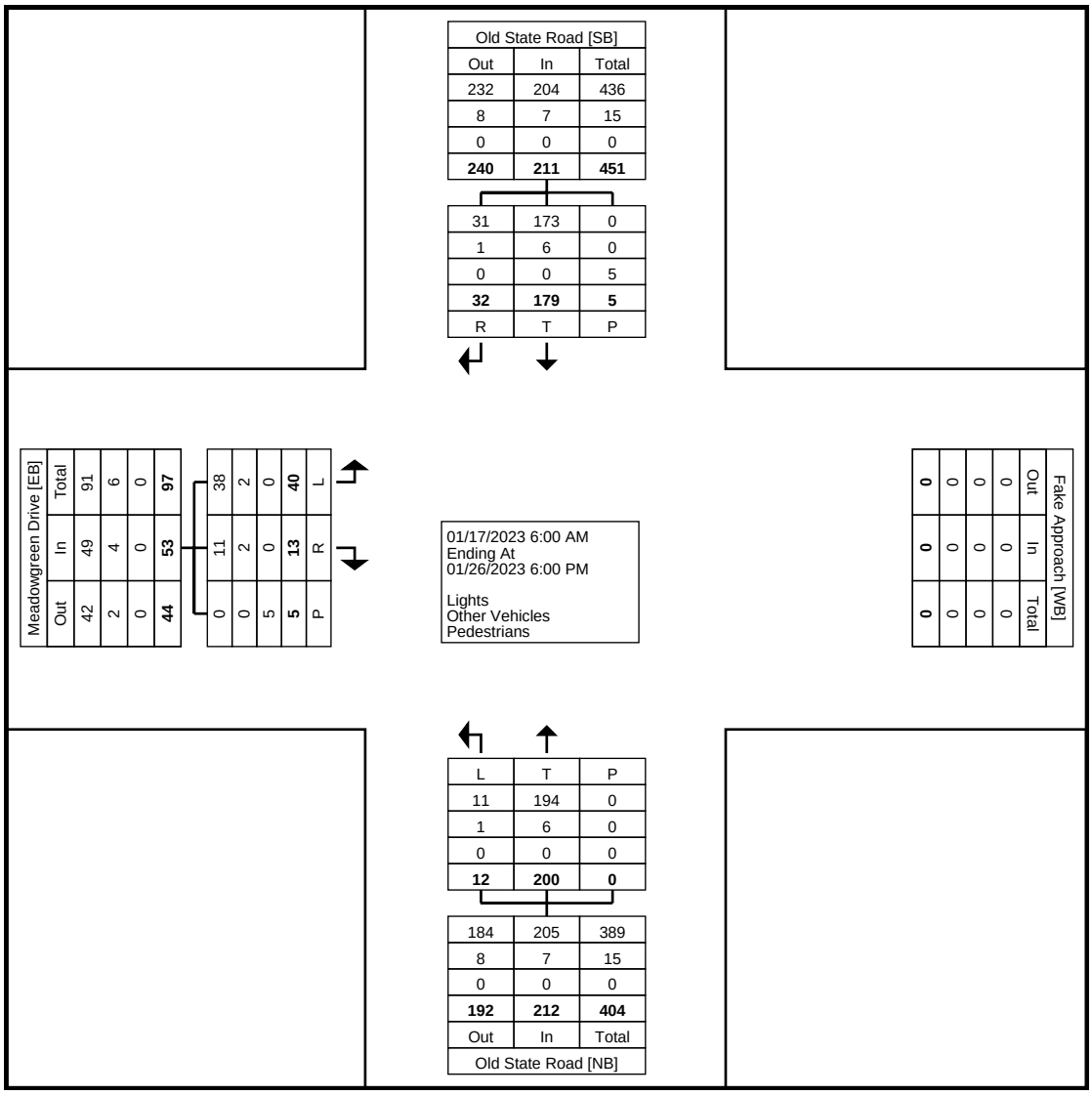
Weather:: Clear

Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

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2500 East High Street
Suite 650
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Meadowgreen Drive Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	2	1	0	3	1	15	0	16	5	1	0	6	25
7:30 AM	5	2	1	7	0	16	0	16	4	1	3	5	28
7:45 AM	0	0	0	0	1	17	0	18	9	1	0	10	28
8:00 AM	3	0	0	3	0	13	0	13	6	2	0	8	24
Total	10	3	1	13	2	61	0	63	24	5	3	29	105
Approach %	76.9	23.1	-	-	3.2	96.8	-	-	82.8	17.2	-	-	-
Total %	9.5	2.9	-	12.4	1.9	58.1	-	60.0	22.9	4.8	-	27.6	-
PHF	0.500	0.375	-	0.464	0.500	0.897	-	0.875	0.667	0.625	-	0.725	0.938
Lights	10	2	-	12	2	59	-	61	24	5	-	29	102
% Lights	100.0	66.7	-	92.3	100.0	96.7	-	96.8	100.0	100.0	-	100.0	97.1
Other Vehicles	0	1	-	1	0	2	-	2	0	0	-	0	3
% Other Vehicles	0.0	33.3	-	7.7	0.0	3.3	-	3.2	0.0	0.0	-	0.0	2.9
Pedestrians	-	-	1	-	-	-	0	-	-	-	3	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-

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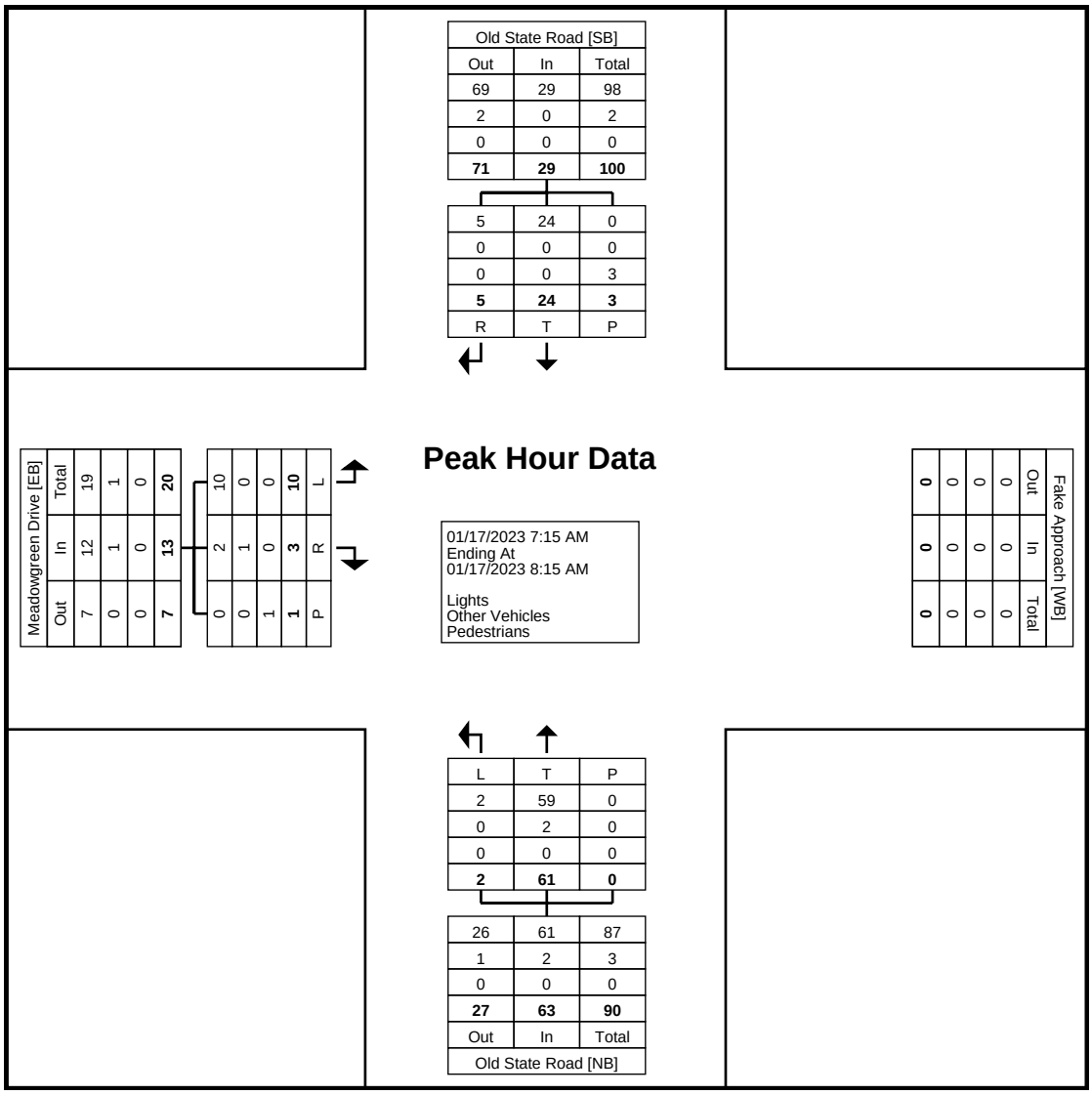
Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

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Suite 650
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:00 PM)

Start Time	Meadowgreen Drive Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:00 PM	3	1	1	4	1	3	0	4	7	3	1	10	18
4:15 PM	1	0	0	1	1	13	0	14	10	3	0	13	28
4:30 PM	2	1	0	3	0	10	0	10	10	1	0	11	24
4:45 PM	1	0	0	1	1	12	0	13	15	1	0	16	30
Total	7	2	1	9	3	38	0	41	42	8	1	50	100
Approach %	77.8	22.2	-	-	7.3	92.7	-	-	84.0	16.0	-	-	-
Total %	7.0	2.0	-	9.0	3.0	38.0	-	41.0	42.0	8.0	-	50.0	-
PHF	0.583	0.500	-	0.563	0.750	0.731	-	0.732	0.700	0.667	-	0.781	0.833
Lights	6	2	-	8	3	37	-	40	41	8	-	49	97
% Lights	85.7	100.0	-	88.9	100.0	97.4	-	97.6	97.6	100.0	-	98.0	97.0
Other Vehicles	1	0	-	1	0	1	-	1	1	0	-	1	3
% Other Vehicles	14.3	0.0	-	11.1	0.0	2.6	-	2.4	2.4	0.0	-	2.0	3.0
Pedestrians	-	-	1	-	-	-	0	-	-	-	1	-	-
% Pedestrians	-	-	100.0	-	-	-	-	-	-	-	100.0	-	-

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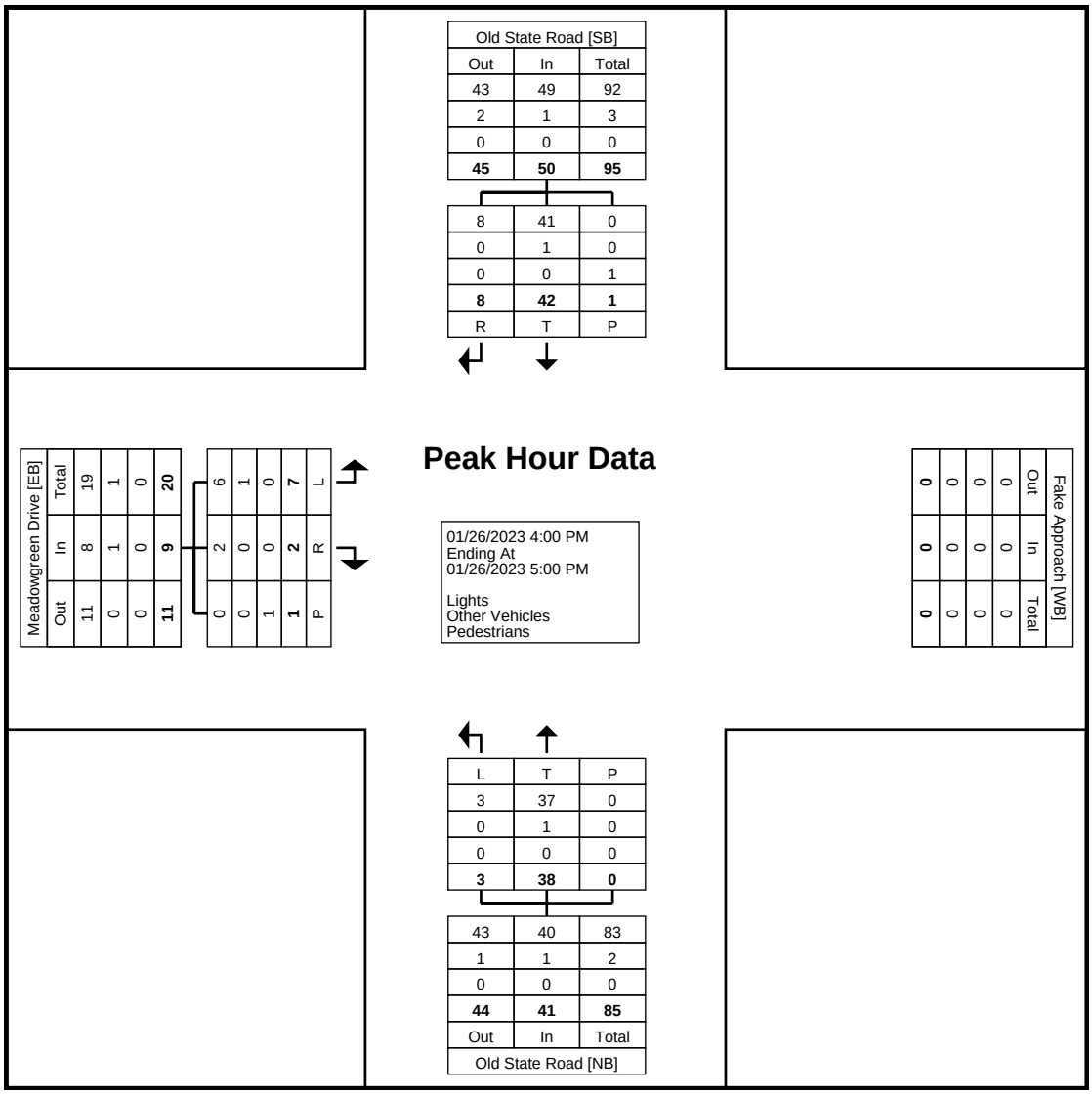
Count Name: Old State Road and Meadowgreen Drive
Site Code:
Start Date: 01/17/2023



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

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2500 East High Street
Suite 650
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	Hafner Road Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	1
6:15 AM	0	0	0	0	0	1	0	1	2	2	0	4	5
6:30 AM	1	1	0	2	0	2	0	2	3	0	0	3	7
6:45 AM	1	0	0	1	0	3	0	3	4	1	0	5	9
Hourly Total	2	1	0	3	0	6	0	6	10	3	0	13	22
7:00 AM	3	1	0	4	1	3	0	4	3	1	0	4	12
7:15 AM	1	0	0	1	2	13	0	15	3	0	0	3	19
7:30 AM	3	1	0	4	0	13	0	13	6	1	0	7	24
7:45 AM	2	0	0	2	0	17	0	17	6	2	0	8	27
Hourly Total	9	2	0	11	3	46	0	49	18	4	0	22	82
8:00 AM	3	0	0	3	0	10	0	10	5	2	0	7	20
8:15 AM	4	1	0	5	0	5	0	5	1	1	0	2	12
8:30 AM	1	0	0	1	0	11	1	11	6	2	0	8	20
8:45 AM	2	0	0	2	0	2	0	2	9	3	0	12	16
Hourly Total	10	1	0	11	0	28	1	28	21	8	0	29	68
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	0	0	1	1	3	0	4	5	1	0	6	11
3:15 PM	0	0	0	0	1	5	0	6	6	2	0	8	14
3:30 PM	1	0	0	1	0	11	0	11	12	2	0	14	26
3:45 PM	1	0	0	1	0	7	0	7	8	0	0	8	16
Hourly Total	3	0	0	3	2	26	0	28	31	5	0	36	67
4:00 PM	0	0	0	0	0	4	0	4	5	2	0	7	11
4:15 PM	0	0	0	0	2	12	0	14	9	1	0	10	24
4:30 PM	0	0	0	0	0	11	0	11	11	1	0	12	23
4:45 PM	0	0	0	0	0	13	0	13	11	4	0	15	28
Hourly Total	0	0	0	0	2	40	0	42	36	8	0	44	86
5:00 PM	1	0	0	1	0	5	0	5	6	2	0	8	14
5:15 PM	1	1	0	2	0	11	0	11	9	2	1	11	24
5:30 PM	0	0	0	0	1	6	0	7	11	2	0	13	20
5:45 PM	2	1	0	3	0	8	0	8	11	0	0	11	22
Hourly Total	4	2	0	6	1	30	0	31	37	6	1	43	80
Grand Total	28	6	0	34	8	176	1	184	153	34	1	187	405
Approach %	82.4	17.6	-	-	4.3	95.7	-	-	81.8	18.2	-	-	-
Total %	6.9	1.5	-	8.4	2.0	43.5	-	45.4	37.8	8.4	-	46.2	-
Lights	25	5	-	30	8	172	-	180	151	27	-	178	388
% Lights	89.3	83.3	-	88.2	100.0	97.7	-	97.8	98.7	79.4	-	95.2	95.8
Other Vehicles	3	1	-	4	0	4	-	4	2	7	-	9	17
% Other Vehicles	10.7	16.7	-	11.8	0.0	2.3	-	2.2	1.3	20.6	-	4.8	4.2
Pedestrians	-	-	0	-	-	-	1	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	100.0	-	-	-	100.0	-	-

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

Counter:: Mio
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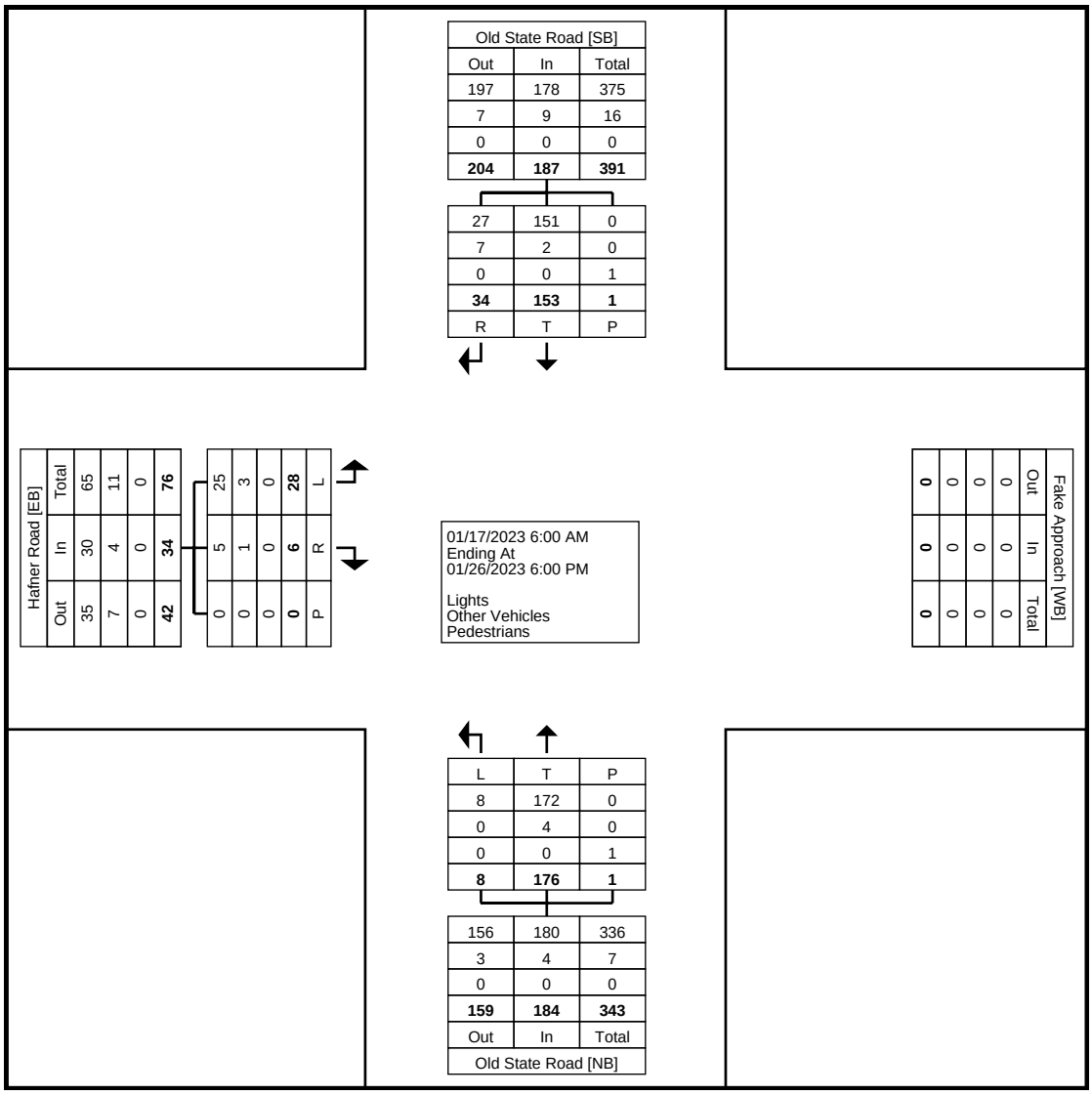
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

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2500 East High Street
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Pottstown, Pennsylvania, United States 19464
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hafner Road Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	1	0	0	1	2	13	0	15	3	0	0	3	19
7:30 AM	3	1	0	4	0	13	0	13	6	1	0	7	24
7:45 AM	2	0	0	2	0	17	0	17	6	2	0	8	27
8:00 AM	3	0	0	3	0	10	0	10	5	2	0	7	20
Total	9	1	0	10	2	53	0	55	20	5	0	25	90
Approach %	90.0	10.0	-	-	3.6	96.4	-	-	80.0	20.0	-	-	-
Total %	10.0	1.1	-	11.1	2.2	58.9	-	61.1	22.2	5.6	-	27.8	-
PHF	0.750	0.250	-	0.625	0.250	0.779	-	0.809	0.833	0.625	-	0.781	0.833
Lights	8	1	-	9	2	52	-	54	20	4	-	24	87
% Lights	88.9	100.0	-	90.0	100.0	98.1	-	98.2	100.0	80.0	-	96.0	96.7
Other Vehicles	1	0	-	1	0	1	-	1	0	1	-	1	3
% Other Vehicles	11.1	0.0	-	10.0	0.0	1.9	-	1.8	0.0	20.0	-	4.0	3.3
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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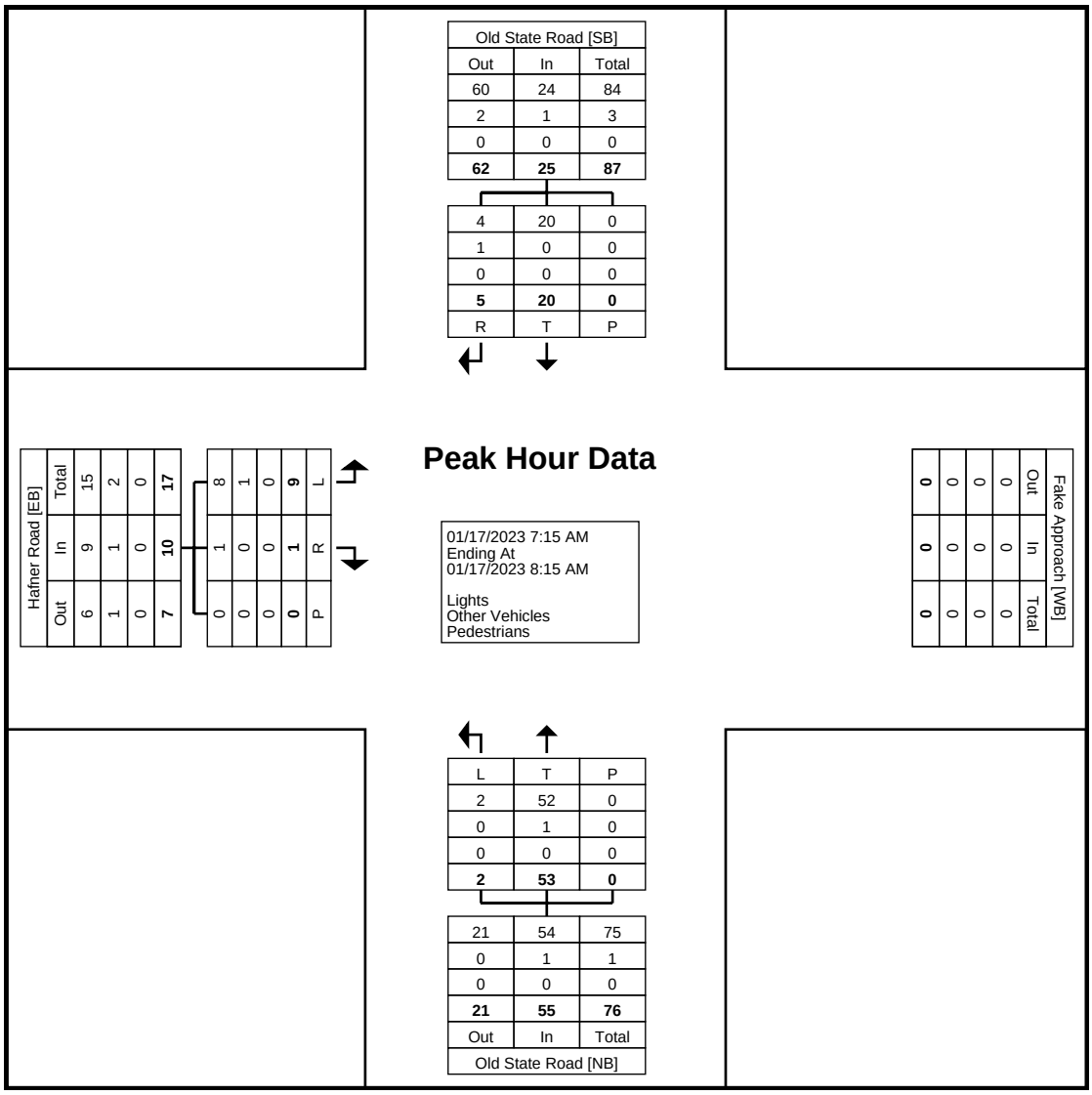
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
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Suite 650
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Hafner Road Eastbound				Old State Road Northbound				Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Int. Total
4:15 PM	0	0	0	0	2	12	0	14	9	1	0	10	24
4:30 PM	0	0	0	0	0	11	0	11	11	1	0	12	23
4:45 PM	0	0	0	0	0	13	0	13	11	4	0	15	28
5:00 PM	1	0	0	1	0	5	0	5	6	2	0	8	14
Total	1	0	0	1	2	41	0	43	37	8	0	45	89
Approach %	100.0	0.0	-	-	4.7	95.3	-	-	82.2	17.8	-	-	-
Total %	1.1	0.0	-	1.1	2.2	46.1	-	48.3	41.6	9.0	-	50.6	-
PHF	0.250	0.000	-	0.250	0.250	0.788	-	0.768	0.841	0.500	-	0.750	0.795
Lights	1	0	-	1	2	41	-	43	37	7	-	44	88
% Lights	100.0	-	-	100.0	100.0	100.0	-	100.0	100.0	87.5	-	97.8	98.9
Other Vehicles	0	0	-	0	0	0	-	0	0	1	-	1	1
% Other Vehicles	0.0	-	-	0.0	0.0	0.0	-	0.0	0.0	12.5	-	2.2	1.1
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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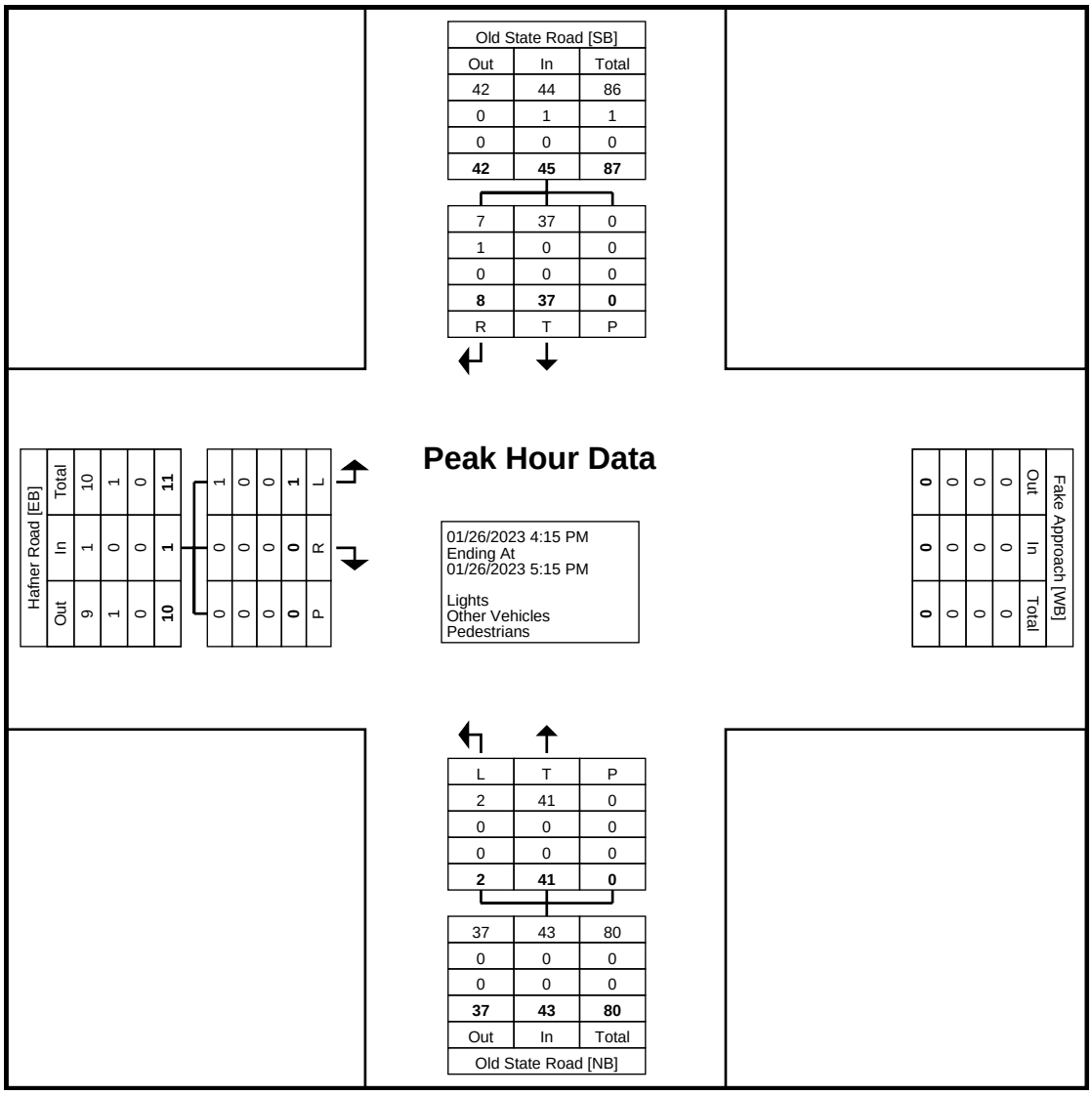
Weather:: Clear

Count Name: Old State Road and Hafner Road
Site Code:
Start Date: 01/17/2023



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

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023

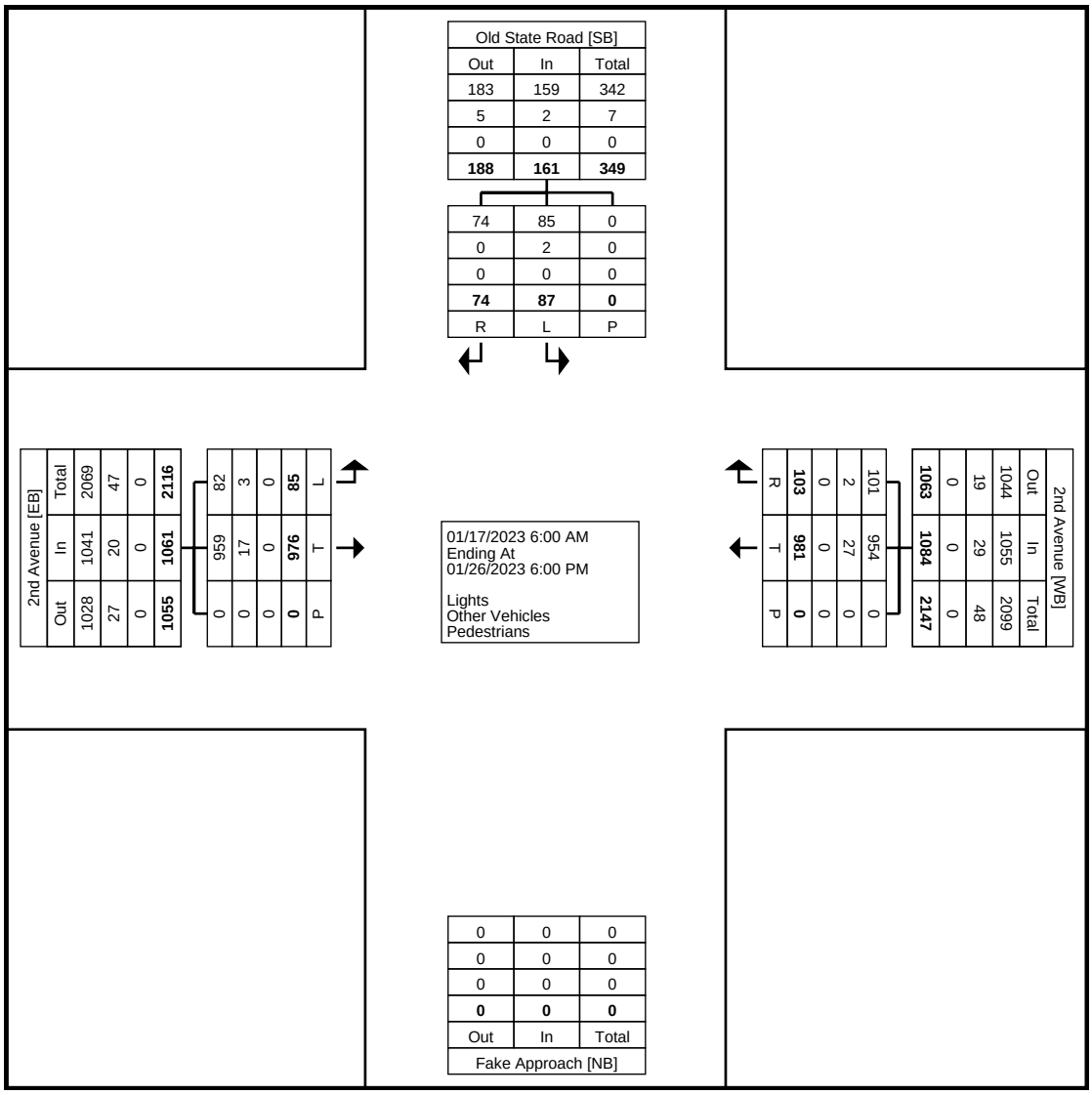
Turning Movement Data

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Old State Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
6:00 AM	0	10	0	10	2	0	0	2	0	0	0	0	12
6:15 AM	1	18	0	19	6	0	0	6	3	0	0	3	28
6:30 AM	1	36	0	37	10	1	0	11	4	0	0	4	52
6:45 AM	2	54	0	56	15	1	0	16	1	3	0	4	76
Hourly Total	4	118	0	122	33	2	0	35	8	3	0	11	168
7:00 AM	2	46	0	48	16	2	0	18	3	1	0	4	70
7:15 AM	12	52	0	64	46	3	0	49	2	2	0	4	117
7:30 AM	6	99	0	105	21	7	0	28	6	1	0	7	140
7:45 AM	14	81	0	95	35	3	0	38	6	3	0	9	142
Hourly Total	34	278	0	312	118	15	0	133	17	7	0	24	469
8:00 AM	8	58	0	66	31	2	0	33	5	0	0	5	104
8:15 AM	4	42	0	46	29	1	0	30	2	0	0	2	78
8:30 AM	6	40	0	46	27	5	0	32	2	0	0	2	80
8:45 AM	1	47	0	48	24	1	0	25	9	3	0	12	85
Hourly Total	19	187	0	206	111	9	0	120	18	3	0	21	347
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	34	0	34	53	4	0	57	1	4	0	5	96
3:15 PM	1	30	0	31	53	5	0	58	5	1	0	6	95
3:30 PM	7	31	0	38	43	5	0	48	5	7	0	12	98
3:45 PM	1	23	0	24	54	5	0	59	5	3	0	8	91
Hourly Total	9	118	0	127	203	19	0	222	16	15	0	31	380
4:00 PM	2	32	0	34	43	2	0	45	1	3	0	4	83
4:15 PM	5	35	0	40	72	10	0	82	2	7	0	9	131
4:30 PM	3	29	0	32	71	7	0	78	6	7	0	13	123
4:45 PM	4	31	0	35	70	10	0	80	1	8	0	9	124
Hourly Total	14	127	0	141	256	29	0	285	10	25	0	35	461
5:00 PM	1	44	0	45	74	4	0	78	1	5	0	6	129
5:15 PM	3	32	0	35	75	11	0	86	7	4	0	11	132
5:30 PM	1	41	0	42	65	6	0	71	4	6	0	10	123
5:45 PM	0	31	0	31	46	8	0	54	6	6	0	12	97
Hourly Total	5	148	0	153	260	29	0	289	18	21	0	39	481
Grand Total	85	976	0	1061	981	103	0	1084	87	74	0	161	2306
Approach %	8.0	92.0	-	-	90.5	9.5	-	-	54.0	46.0	-	-	-
Total %	3.7	42.3	-	46.0	42.5	4.5	-	47.0	3.8	3.2	-	7.0	-
Lights	82	959	-	1041	954	101	-	1055	85	74	-	159	2255
% Lights	96.5	98.3	-	98.1	97.2	98.1	-	97.3	97.7	100.0	-	98.8	97.8
Other Vehicles	3	17	-	20	27	2	-	29	2	0	-	2	51
% Other Vehicles	3.5	1.7	-	1.9	2.8	1.9	-	2.7	2.3	0.0	-	1.2	2.2
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Old State Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:15 AM	12	52	0	64	46	3	0	49	2	2	0	4	117
7:30 AM	6	99	0	105	21	7	0	28	6	1	0	7	140
7:45 AM	14	81	0	95	35	3	0	38	6	3	0	9	142
8:00 AM	8	58	0	66	31	2	0	33	5	0	0	5	104
Total	40	290	0	330	133	15	0	148	19	6	0	25	503
Approach %	12.1	87.9	-	-	89.9	10.1	-	-	76.0	24.0	-	-	-
Total %	8.0	57.7	-	65.6	26.4	3.0	-	29.4	3.8	1.2	-	5.0	-
PHF	0.714	0.732	-	0.786	0.723	0.536	-	0.755	0.792	0.500	-	0.694	0.886
Lights	39	282	-	321	124	15	-	139	19	6	-	25	485
% Lights	97.5	97.2	-	97.3	93.2	100.0	-	93.9	100.0	100.0	-	100.0	96.4
Other Vehicles	1	8	-	9	9	0	-	9	0	0	-	0	18
% Other Vehicles	2.5	2.8	-	2.7	6.8	0.0	-	6.1	0.0	0.0	-	0.0	3.6
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
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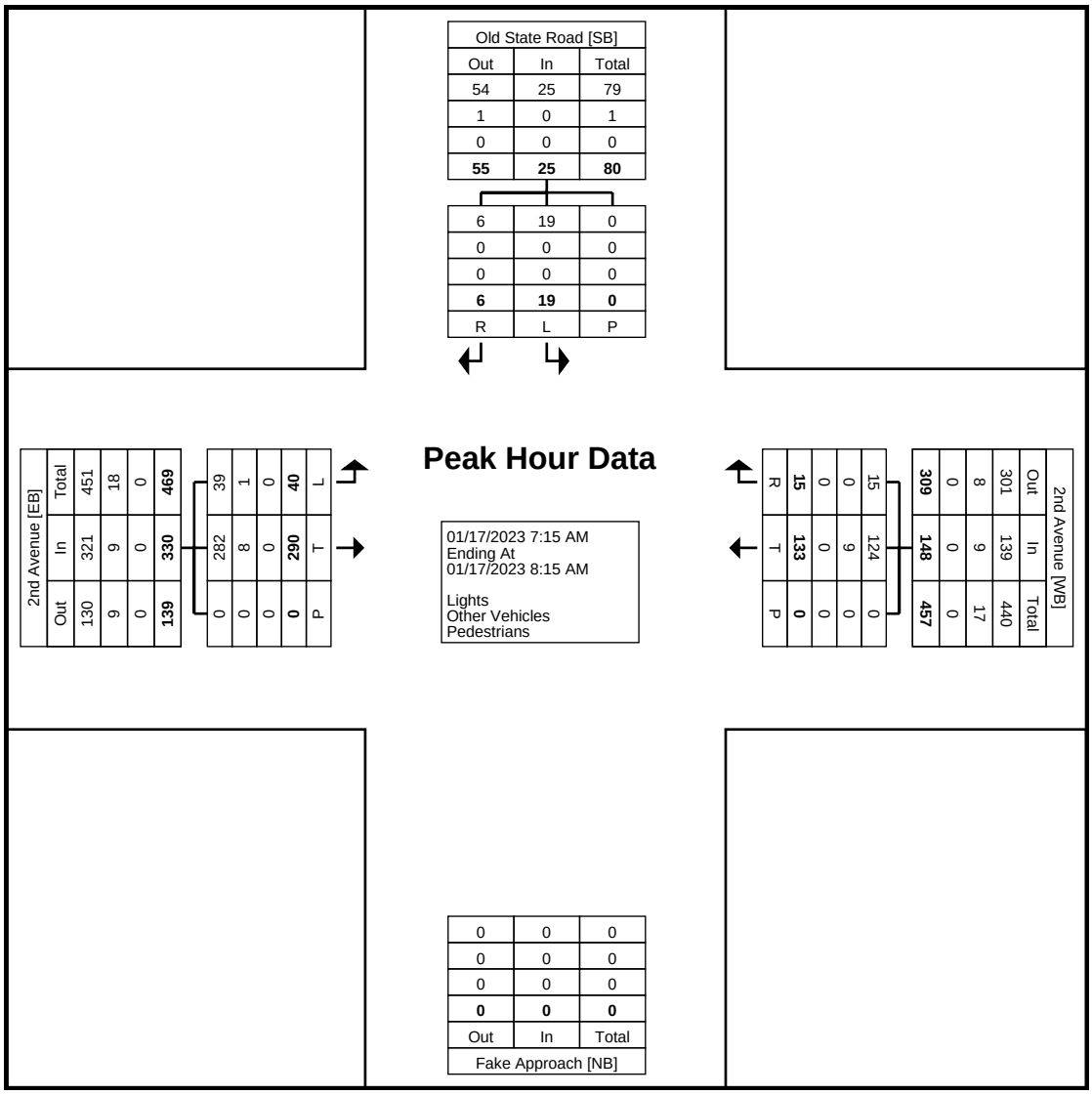
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Old State Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:30 PM	3	29	0	32	71	7	0	78	6	7	0	13	123
4:45 PM	4	31	0	35	70	10	0	80	1	8	0	9	124
5:00 PM	1	44	0	45	74	4	0	78	1	5	0	6	129
5:15 PM	3	32	0	35	75	11	0	86	7	4	0	11	132
Total	11	136	0	147	290	32	0	322	15	24	0	39	508
Approach %	7.5	92.5	-	-	90.1	9.9	-	-	38.5	61.5	-	-	-
Total %	2.2	26.8	-	28.9	57.1	6.3	-	63.4	3.0	4.7	-	7.7	-
PHF	0.688	0.773	-	0.817	0.967	0.727	-	0.936	0.536	0.750	-	0.750	0.962
Lights	11	135	-	146	286	32	-	318	15	24	-	39	503
% Lights	100.0	99.3	-	99.3	98.6	100.0	-	98.8	100.0	100.0	-	100.0	99.0
Other Vehicles	0	1	-	1	4	0	-	4	0	0	-	0	5
% Other Vehicles	0.0	0.7	-	0.7	1.4	0.0	-	1.2	0.0	0.0	-	0.0	1.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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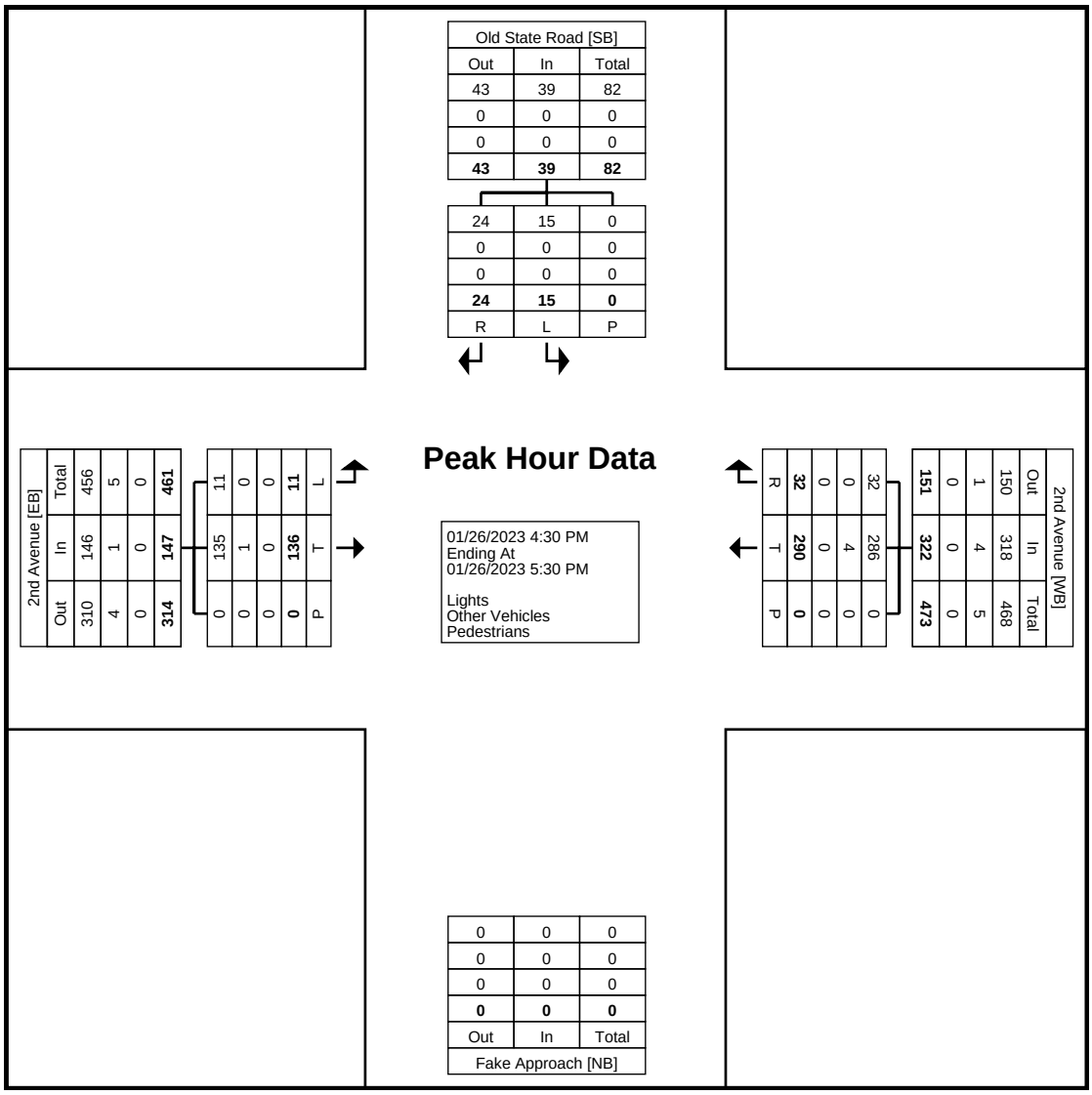
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and 2nd Avenue
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	Mennonite Road Eastbound					Mennonite Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	0	9	0	0	9	0	1	0	0	1	0	0	1	0	1	2	2	1	0	5	16
6:15 AM	0	17	2	0	19	0	4	0	0	4	0	2	3	0	5	5	2	0	0	7	35
6:30 AM	0	26	3	0	29	4	6	2	1	12	0	2	2	0	4	4	2	1	0	7	52
6:45 AM	1	17	1	0	19	2	8	1	0	11	1	1	2	1	4	7	2	2	0	11	45
Hourly Total	1	69	6	0	76	6	19	3	1	28	1	5	8	1	14	18	8	4	0	30	148
7:00 AM	3	20	2	0	25	1	23	1	0	25	2	2	3	0	7	8	2	1	0	11	68
7:15 AM	3	36	3	0	42	3	29	3	0	35	1	4	3	0	8	9	6	8	0	23	108
7:30 AM	4	62	1	0	67	2	10	6	0	18	1	9	8	0	18	16	7	4	0	27	130
7:45 AM	3	41	0	0	44	7	18	1	1	26	0	4	10	0	14	11	9	4	0	24	108
Hourly Total	13	159	6	0	178	13	80	11	1	104	4	19	24	0	47	44	24	17	0	85	414
8:00 AM	2	24	2	1	28	1	8	4	0	13	0	4	10	0	14	10	6	2	0	18	73
8:15 AM	4	26	1	0	31	3	18	3	1	24	0	1	6	0	7	19	3	1	0	23	85
8:30 AM	2	32	1	0	35	0	17	5	0	22	1	5	8	0	14	3	13	7	0	23	94
8:45 AM	3	33	0	0	36	2	16	5	0	23	1	10	6	0	17	5	15	4	0	24	100
Hourly Total	11	115	4	1	130	6	59	17	1	82	2	20	30	0	52	37	37	14	0	88	352
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	3	22	0	0	25	1	20	9	0	30	1	4	2	0	7	5	2	1	0	8	70
3:15 PM	4	19	0	0	23	4	32	10	0	46	1	3	3	0	7	9	2	5	0	16	92
3:30 PM	6	22	2	0	30	3	44	10	1	57	1	3	2	0	6	5	2	2	0	9	102
3:45 PM	1	27	0	0	28	2	47	5	0	54	0	5	8	0	13	6	6	3	0	15	110
Hourly Total	14	90	2	0	106	10	143	34	1	187	3	15	15	0	33	25	12	11	0	48	374
4:00 PM	6	33	2	0	41	8	49	13	0	70	1	9	6	0	16	7	1	2	0	10	137
4:15 PM	6	29	0	0	35	4	57	20	0	81	0	10	3	0	13	7	3	3	0	13	142
4:30 PM	3	23	1	0	27	5	57	13	3	75	1	8	5	0	14	11	6	4	0	21	137
4:45 PM	3	25	1	0	29	8	39	14	3	61	1	8	1	0	10	9	5	3	0	17	117
Hourly Total	18	110	4	0	132	25	202	60	6	287	3	35	15	0	53	34	15	12	0	61	533
5:00 PM	4	30	0	0	34	6	67	15	0	88	3	7	3	0	13	5	2	4	0	11	146
5:15 PM	5	19	1	0	25	3	63	28	2	94	1	4	2	1	7	7	9	5	0	21	147
5:30 PM	2	24	0	0	26	9	54	6	0	69	1	11	2	0	14	5	3	3	0	11	120
5:45 PM	2	15	1	0	18	2	52	12	0	66	4	4	5	0	13	6	5	4	0	15	112
Hourly Total	13	88	2	0	103	20	236	61	2	317	9	26	12	1	47	23	19	16	0	58	525
Grand Total	70	631	24	1	725	80	739	186	12	1005	22	120	104	2	246	181	115	74	0	370	2346
Approach %	9.7	87.0	3.3	-	-	8.0	73.5	18.5	-	-	8.9	48.8	42.3	-	-	48.9	31.1	20.0	-	-	-
Total %	3.0	26.9	1.0	-	30.9	3.4	31.5	7.9	-	42.8	0.9	5.1	4.4	-	10.5	7.7	4.9	3.2	-	15.8	-
Lights	65	617	22	-	704	77	714	178	-	969	22	116	97	-	235	175	111	65	-	351	2259
% Lights	92.9	97.8	91.7	-	97.1	96.3	96.6	95.7	-	96.4	100.0	96.7	93.3	-	95.5	96.7	96.5	87.8	-	94.9	96.3
Other Vehicles	5	14	2	-	21	3	25	8	-	36	0	4	7	-	11	6	4	9	-	19	87
% Other Vehicles	7.1	2.2	8.3	-	2.9	3.8	3.4	4.3	-	3.6	0.0	3.3	6.7	-	4.5	3.3	3.5	12.2	-	5.1	3.7
Pedestrians	-	-	-	1	-	-	-	-	12	-	-	-	-	2	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
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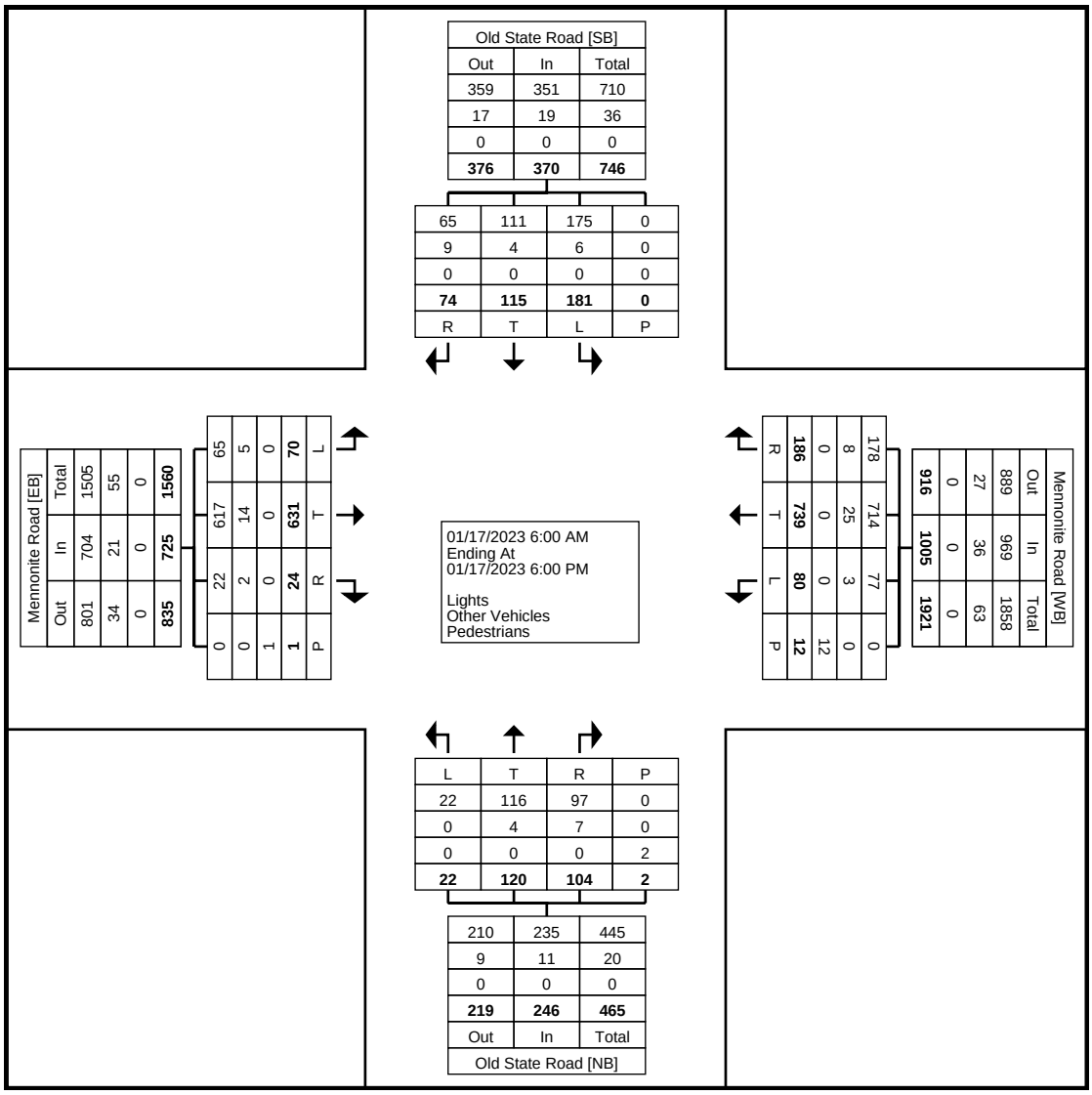
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	Mennonite Road Eastbound					Mennonite Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:15 AM	3	36	3	0	42	3	29	3	0	35	1	4	3	0	8	9	6	8	0	23	108
7:30 AM	4	62	1	0	67	2	10	6	0	18	1	9	8	0	18	16	7	4	0	27	130
7:45 AM	3	41	0	0	44	7	18	1	1	26	0	4	10	0	14	11	9	4	0	24	108
8:00 AM	2	24	2	1	28	1	8	4	0	13	0	4	10	0	14	10	6	2	0	18	73
Total	12	163	6	1	181	13	65	14	1	92	2	21	31	0	54	46	28	18	0	92	419
Approach %	6.6	90.1	3.3	-	-	14.1	70.7	15.2	-	-	3.7	38.9	57.4	-	-	50.0	30.4	19.6	-	-	-
Total %	2.9	38.9	1.4	-	43.2	3.1	15.5	3.3	-	22.0	0.5	5.0	7.4	-	12.9	11.0	6.7	4.3	-	22.0	-
PHF	0.750	0.657	0.500	-	0.675	0.464	0.560	0.583	-	0.657	0.500	0.583	0.775	-	0.750	0.719	0.778	0.563	-	0.852	0.806
Lights	10	161	4	-	175	12	61	13	-	86	2	20	30	-	52	42	26	17	-	85	398
% Lights	83.3	98.8	66.7	-	96.7	92.3	93.8	92.9	-	93.5	100.0	95.2	96.8	-	96.3	91.3	92.9	94.4	-	92.4	95.0
Other Vehicles	2	2	2	-	6	1	4	1	-	6	0	1	1	-	2	4	2	1	-	7	21
% Other Vehicles	16.7	1.2	33.3	-	3.3	7.7	6.2	7.1	-	6.5	0.0	4.8	3.2	-	3.7	8.7	7.1	5.6	-	7.6	5.0
Pedestrians	-	-	-	1	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
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610.326.3100

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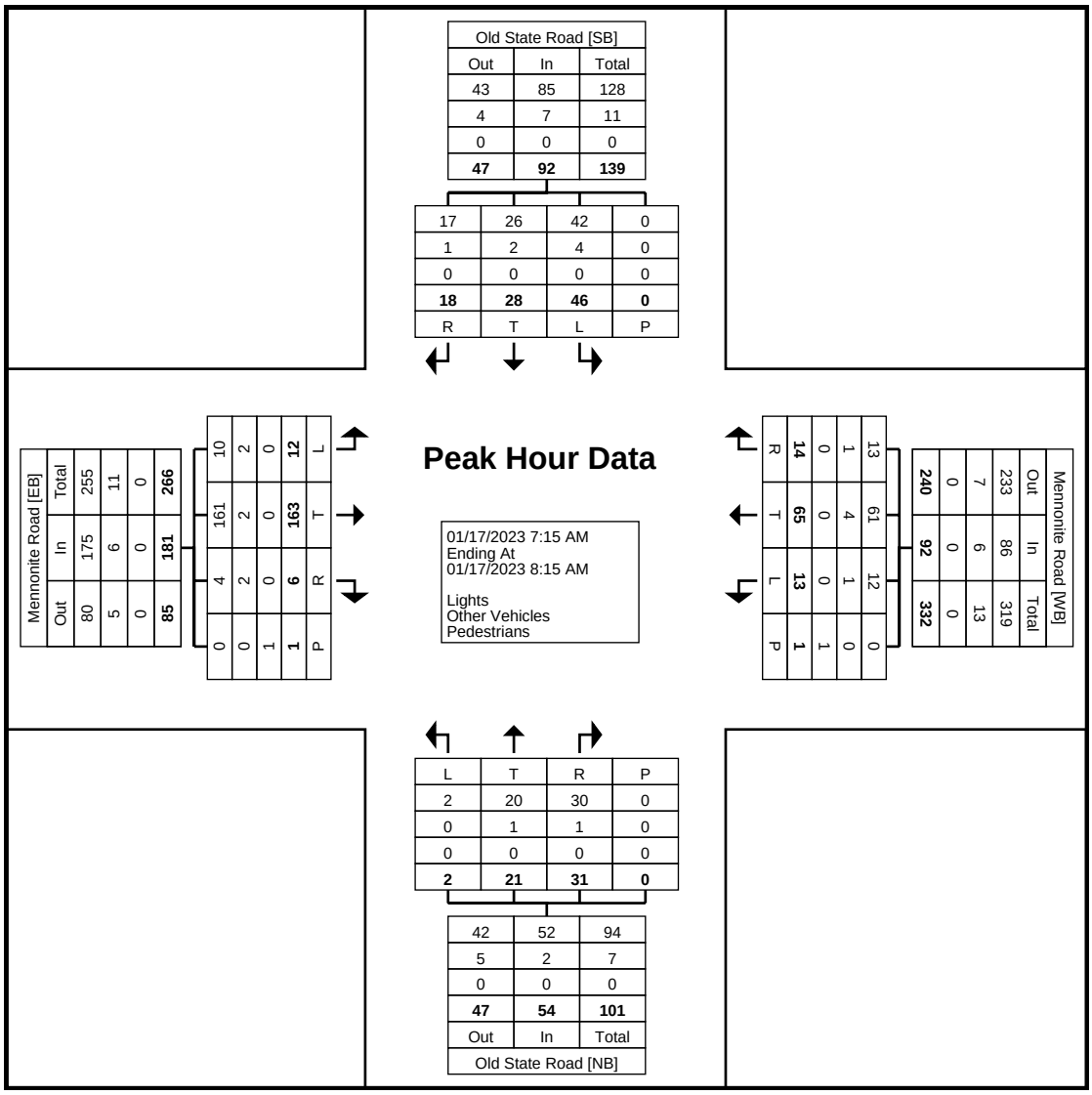
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Mennonite Road Eastbound					Mennonite Road Westbound					Old State Road Northbound					Old State Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	3	23	1	0	27	5	57	13	3	75	1	8	5	0	14	11	6	4	0	21	137
4:45 PM	3	25	1	0	29	8	39	14	3	61	1	8	1	0	10	9	5	3	0	17	117
5:00 PM	4	30	0	0	34	6	67	15	0	88	3	7	3	0	13	5	2	4	0	11	146
5:15 PM	5	19	1	0	25	3	63	28	2	94	1	4	2	1	7	7	9	5	0	21	147
Total	15	97	3	0	115	22	226	70	8	318	6	27	11	1	44	32	22	16	0	70	547
Approach %	13.0	84.3	2.6	-	-	6.9	71.1	22.0	-	-	13.6	61.4	25.0	-	-	45.7	31.4	22.9	-	-	-
Total %	2.7	17.7	0.5	-	21.0	4.0	41.3	12.8	-	58.1	1.1	4.9	2.0	-	8.0	5.9	4.0	2.9	-	12.8	-
PHF	0.750	0.808	0.750	-	0.846	0.688	0.843	0.625	-	0.846	0.500	0.844	0.550	-	0.786	0.727	0.611	0.800	-	0.833	0.930
Lights	15	97	3	-	115	22	225	69	-	316	6	27	11	-	44	32	22	16	-	70	545
% Lights	100.0	100.0	100.0	-	100.0	100.0	99.6	98.6	-	99.4	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	-	100.0	99.6
Other Vehicles	0	0	0	-	0	0	1	1	-	2	0	0	0	-	0	0	0	0	-	0	2
% Other Vehicles	0.0	0.0	0.0	-	0.0	0.0	0.4	1.4	-	0.6	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.4
Pedestrians	-	-	-	0	-	-	-	-	8	-	-	-	-	1	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

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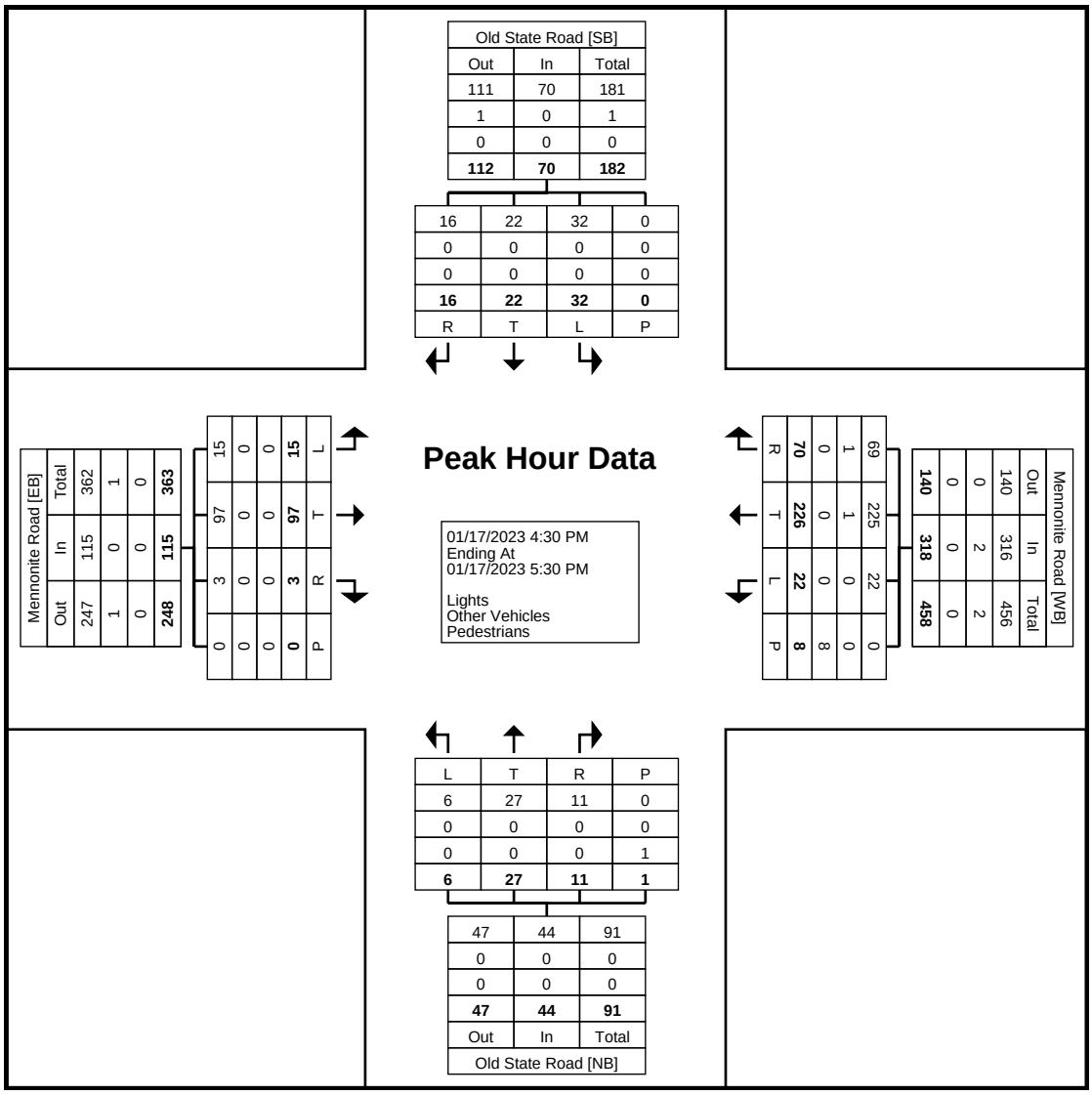
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Mennonite Road
Site Code:
Start Date: 01/17/2023



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

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	Bechtel Road Westbound				Old State Road Northbound					Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
6:00 AM	0	2	0	2	0	0	0	0	0	3	2	0	5	7
6:15 AM	0	0	0	0	0	1	1	0	2	7	3	0	10	12
6:30 AM	0	1	0	1	0	2	1	0	3	1	2	0	3	7
6:45 AM	2	9	0	11	0	6	0	0	6	10	2	0	12	29
Hourly Total	2	12	0	14	0	9	2	0	11	21	9	0	30	55
7:00 AM	1	46	0	47	0	9	1	0	10	17	2	0	19	76
7:15 AM	0	29	0	29	0	8	3	0	11	13	8	0	21	61
7:30 AM	0	31	0	31	0	19	6	0	25	34	14	0	48	104
7:45 AM	2	20	0	22	0	9	8	0	17	30	10	0	40	79
Hourly Total	3	126	0	129	0	45	18	0	63	94	34	0	128	320
8:00 AM	1	14	0	15	0	13	6	0	19	16	8	0	24	58
8:15 AM	0	12	0	12	0	6	3	0	9	15	17	0	32	53
8:30 AM	0	23	0	23	1	12	3	0	16	15	13	0	28	67
8:45 AM	4	18	0	22	0	15	4	0	19	14	16	0	30	71
Hourly Total	5	67	0	72	1	46	16	0	63	60	54	0	114	249
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	25	1	26	0	6	3	1	9	13	6	0	19	54
3:15 PM	2	21	0	23	0	10	1	0	11	9	10	0	19	53
3:30 PM	5	18	1	23	0	10	3	0	13	18	9	1	27	63
3:45 PM	7	25	0	32	0	4	2	1	6	31	8	0	39	77
Hourly Total	15	89	2	104	0	30	9	2	39	71	33	1	104	247
4:00 PM	3	28	0	31	0	12	0	0	12	25	4	0	29	72
4:15 PM	4	36	0	40	0	27	2	0	29	20	8	0	28	97
4:30 PM	2	43	0	45	0	15	5	0	20	18	10	0	28	93
4:45 PM	3	37	0	40	0	16	0	0	16	29	8	0	37	93
Hourly Total	12	144	0	156	0	70	7	0	77	92	30	0	122	355
5:00 PM	4	24	0	28	0	21	1	0	22	23	12	0	35	85
5:15 PM	5	35	0	40	0	22	1	0	23	23	13	0	36	99
5:30 PM	2	22	0	24	0	12	2	0	14	22	10	0	32	70
5:45 PM	4	49	0	53	0	14	0	0	14	14	6	0	20	87
Hourly Total	15	130	0	145	0	69	4	0	73	82	41	0	123	341
Grand Total	52	568	2	620	1	269	56	2	326	420	201	1	621	1567
Approach %	8.4	91.6	-	-	0.3	82.5	17.2	-	-	67.6	32.4	-	-	-
Total %	3.3	36.2	-	39.6	0.1	17.2	3.6	-	20.8	26.8	12.8	-	39.6	-
Lights	48	548	-	596	1	256	55	-	312	406	191	-	597	1505
% Lights	92.3	96.5	-	96.1	100.0	95.2	98.2	-	95.7	96.7	95.0	-	96.1	96.0
Other Vehicles	4	20	-	24	0	13	1	-	14	14	10	-	24	62
% Other Vehicles	7.7	3.5	-	3.9	0.0	4.8	1.8	-	4.3	3.3	5.0	-	3.9	4.0
Pedestrians	-	-	2	-	-	-	-	2	-	-	-	1	-	-
% Pedestrians	-	-	100.0	-	-	-	-	100.0	-	-	-	100.0	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
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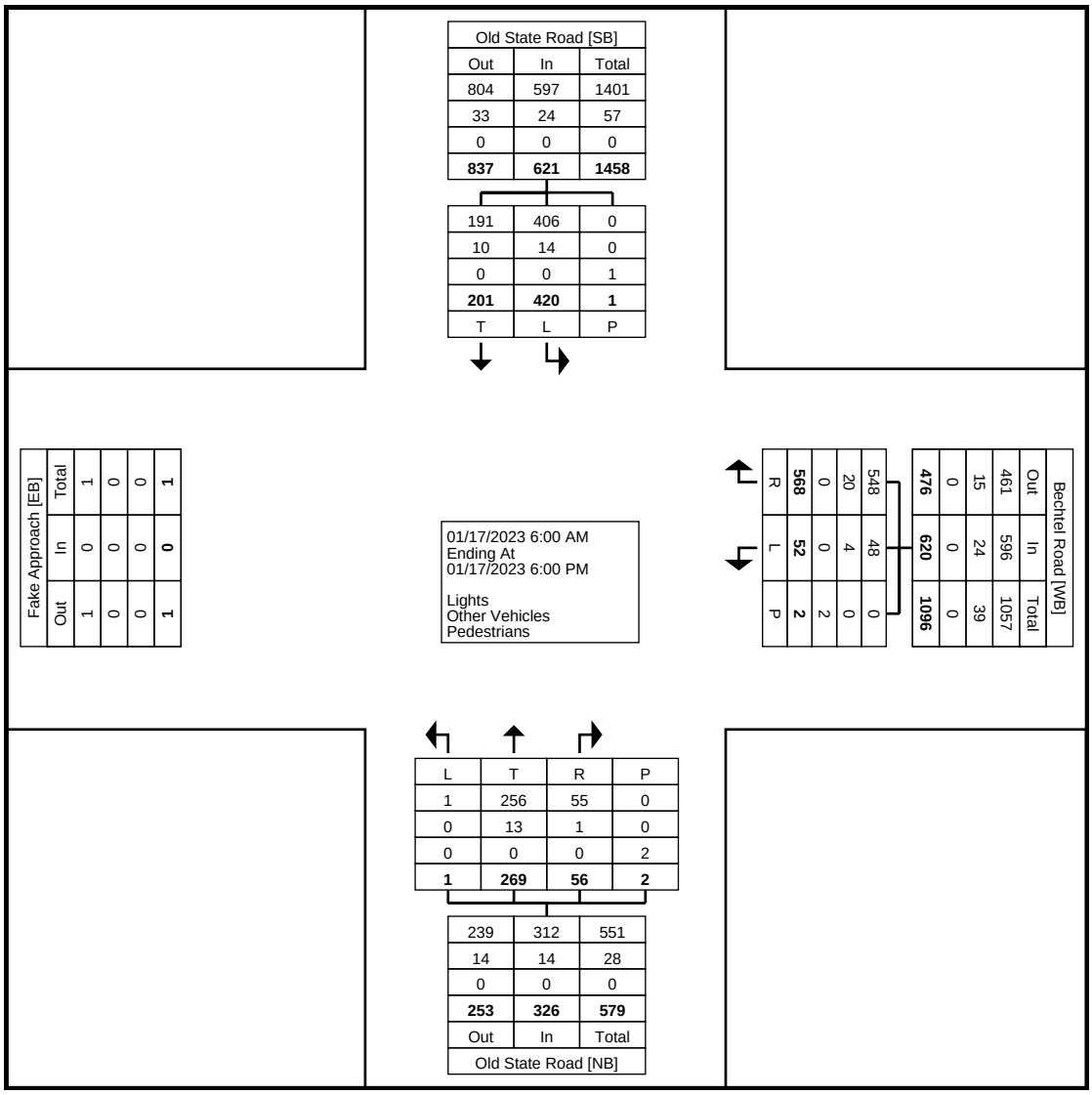
Weather:: Clear

Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:00 AM)

Start Time	Bechtel Road Westbound				Old State Road Northbound					Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
7:00 AM	1	46	0	47	0	9	1	0	10	17	2	0	19	76
7:15 AM	0	29	0	29	0	8	3	0	11	13	8	0	21	61
7:30 AM	0	31	0	31	0	19	6	0	25	34	14	0	48	104
7:45 AM	2	20	0	22	0	9	8	0	17	30	10	0	40	79
Total	3	126	0	129	0	45	18	0	63	94	34	0	128	320
Approach %	2.3	97.7	-	-	0.0	71.4	28.6	-	-	73.4	26.6	-	-	-
Total %	0.9	39.4	-	40.3	0.0	14.1	5.6	-	19.7	29.4	10.6	-	40.0	-
PHF	0.375	0.685	-	0.686	0.000	0.592	0.563	-	0.630	0.691	0.607	-	0.667	0.769
Lights	3	124	-	127	0	42	18	-	60	92	29	-	121	308
% Lights	100.0	98.4	-	98.4	-	93.3	100.0	-	95.2	97.9	85.3	-	94.5	96.3
Other Vehicles	0	2	-	2	0	3	0	-	3	2	5	-	7	12
% Other Vehicles	0.0	1.6	-	1.6	-	6.7	0.0	-	4.8	2.1	14.7	-	5.5	3.8
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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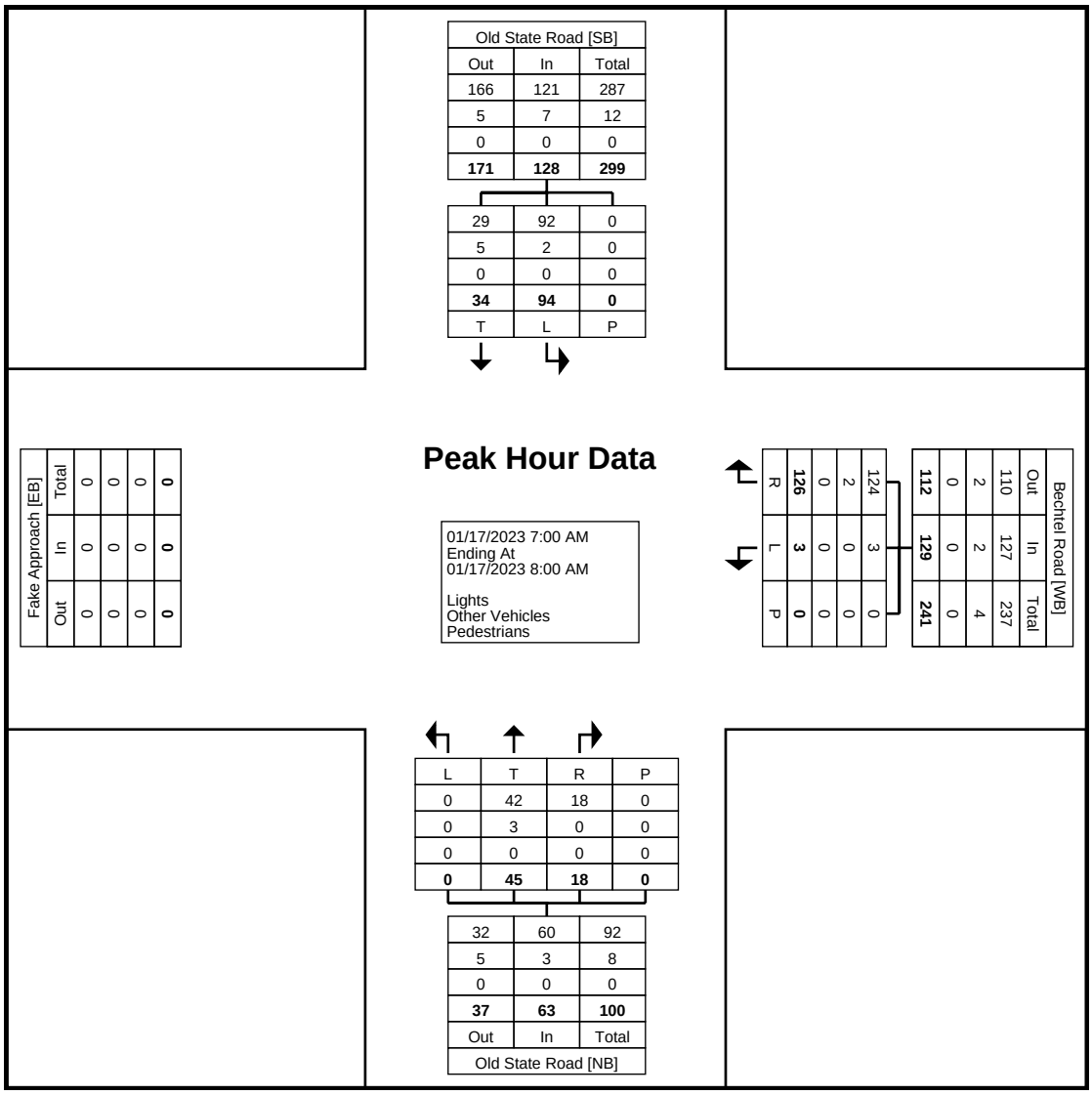
Weather:: Clear

Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023



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

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2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Bechtel Road Westbound				Old State Road Northbound					Old State Road Southbound				
	Left	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Int. Total
4:30 PM	2	43	0	45	0	15	5	0	20	18	10	0	28	93
4:45 PM	3	37	0	40	0	16	0	0	16	29	8	0	37	93
5:00 PM	4	24	0	28	0	21	1	0	22	23	12	0	35	85
5:15 PM	5	35	0	40	0	22	1	0	23	23	13	0	36	99
Total	14	139	0	153	0	74	7	0	81	93	43	0	136	370
Approach %	9.2	90.8	-	-	0.0	91.4	8.6	-	-	68.4	31.6	-	-	-
Total %	3.8	37.6	-	41.4	0.0	20.0	1.9	-	21.9	25.1	11.6	-	36.8	-
PHF	0.700	0.808	-	0.850	0.000	0.841	0.350	-	0.880	0.802	0.827	-	0.919	0.934
Lights	14	136	-	150	0	73	7	-	80	93	43	-	136	366
% Lights	100.0	97.8	-	98.0	-	98.6	100.0	-	98.8	100.0	100.0	-	100.0	98.9
Other Vehicles	0	3	-	3	0	1	0	-	1	0	0	-	0	4
% Other Vehicles	0.0	2.2	-	2.0	-	1.4	0.0	-	1.2	0.0	0.0	-	0.0	1.1
Pedestrians	-	-	0	-	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Counted By:: Mio
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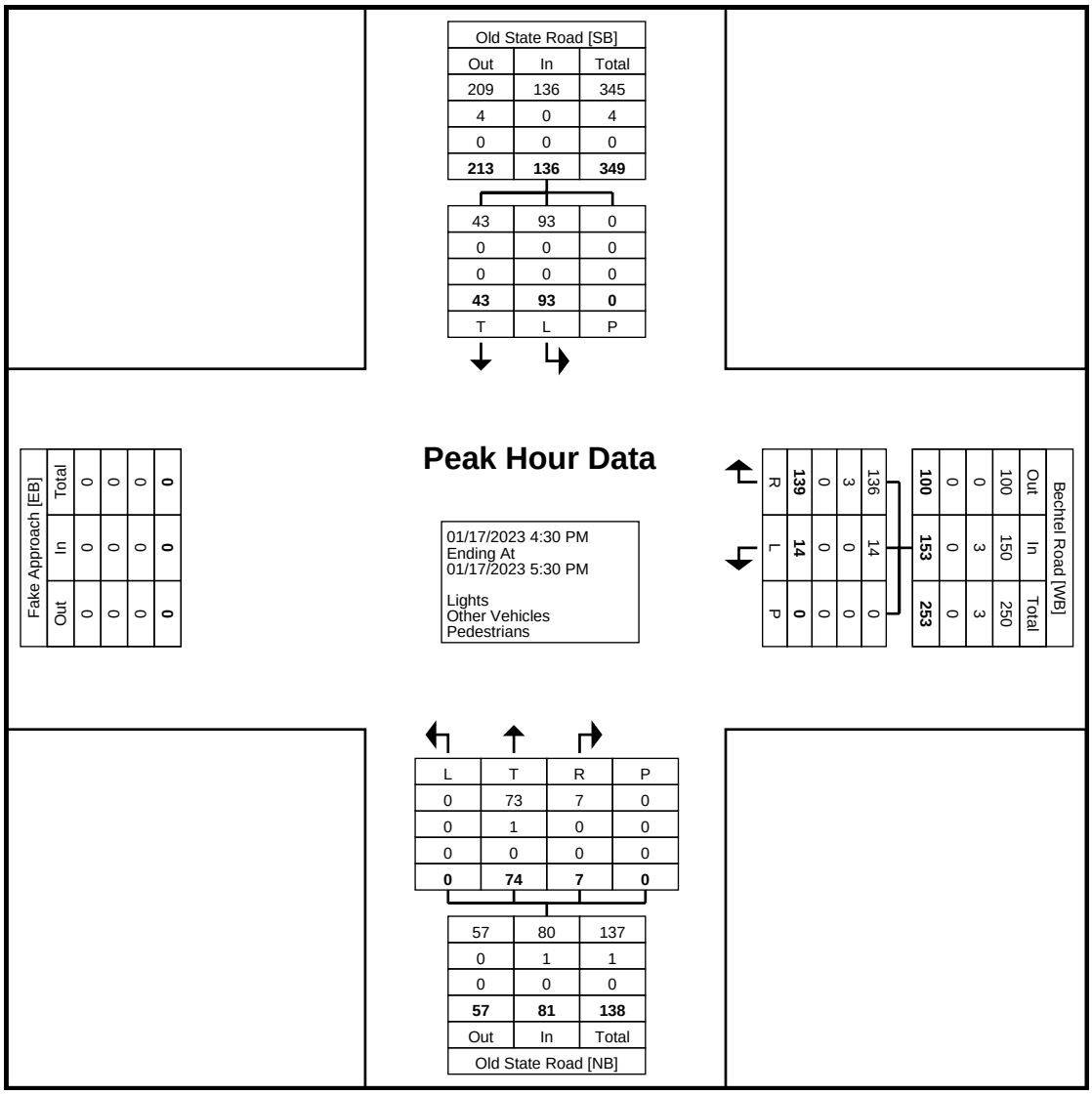
Count Name: Old State Road and Bechtel Road
Site Code:
Start Date: 01/17/2023



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

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

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Springertown Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
6:00 AM	0	10	0	10	3	0	0	3	2	0	0	2	15
6:15 AM	2	17	0	19	6	1	0	7	2	1	0	3	29
6:30 AM	0	35	0	35	11	0	0	11	5	1	0	6	52
6:45 AM	0	50	0	50	17	4	0	21	7	0	0	7	78
Hourly Total	2	112	0	114	37	5	0	42	16	2	0	18	174
7:00 AM	2	45	0	47	15	3	0	18	4	4	0	8	73
7:15 AM	2	65	0	67	45	5	0	50	5	2	0	7	124
7:30 AM	5	109	0	114	22	2	0	24	3	5	0	8	146
7:45 AM	4	80	0	84	34	4	0	38	6	0	0	6	128
Hourly Total	13	299	0	312	116	14	0	130	18	11	0	29	471
8:00 AM	1	55	0	56	26	6	0	32	10	0	0	10	98
8:15 AM	3	38	0	41	27	4	0	31	7	2	0	9	81
8:30 AM	1	44	0	45	24	3	0	27	4	2	0	6	78
8:45 AM	1	44	0	45	23	4	0	27	4	2	0	6	78
Hourly Total	6	181	0	187	100	17	0	117	25	6	0	31	335
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	1	30	0	31	52	5	0	57	4	6	0	10	98
3:15 PM	2	28	0	30	49	6	0	55	5	5	0	10	95
3:30 PM	3	39	0	42	45	4	0	49	2	1	0	3	94
3:45 PM	1	19	0	20	53	7	0	60	2	3	0	5	85
Hourly Total	7	116	0	123	199	22	0	221	13	15	0	28	372
4:00 PM	3	34	0	37	40	4	0	44	4	4	0	8	89
4:15 PM	0	38	0	38	78	6	0	84	5	4	0	9	131
4:30 PM	0	31	0	31	75	2	0	77	2	6	0	8	116
4:45 PM	1	30	0	31	75	7	0	82	6	7	0	13	126
Hourly Total	4	133	0	137	268	19	0	287	17	21	0	38	462
5:00 PM	4	39	0	43	75	3	0	78	5	2	0	7	128
5:15 PM	1	29	0	30	66	14	0	80	6	6	0	12	122
5:30 PM	0	36	0	36	68	7	0	75	6	6	0	12	123
5:45 PM	2	24	0	26	49	3	0	52	2	3	0	5	83
Hourly Total	7	128	0	135	258	27	0	285	19	17	0	36	456
Grand Total	39	969	0	1008	978	104	0	1082	108	72	0	180	2270
Approach %	3.9	96.1	-	-	90.4	9.6	-	-	60.0	40.0	-	-	-
Total %	1.7	42.7	-	44.4	43.1	4.6	-	47.7	4.8	3.2	-	7.9	-
Lights	36	954	-	990	953	101	-	1054	104	68	-	172	2216
% Lights	92.3	98.5	-	98.2	97.4	97.1	-	97.4	96.3	94.4	-	95.6	97.6
Other Vehicles	3	15	-	18	25	3	-	28	4	4	-	8	54
% Other Vehicles	7.7	1.5	-	1.8	2.6	2.9	-	2.6	3.7	5.6	-	4.4	2.4
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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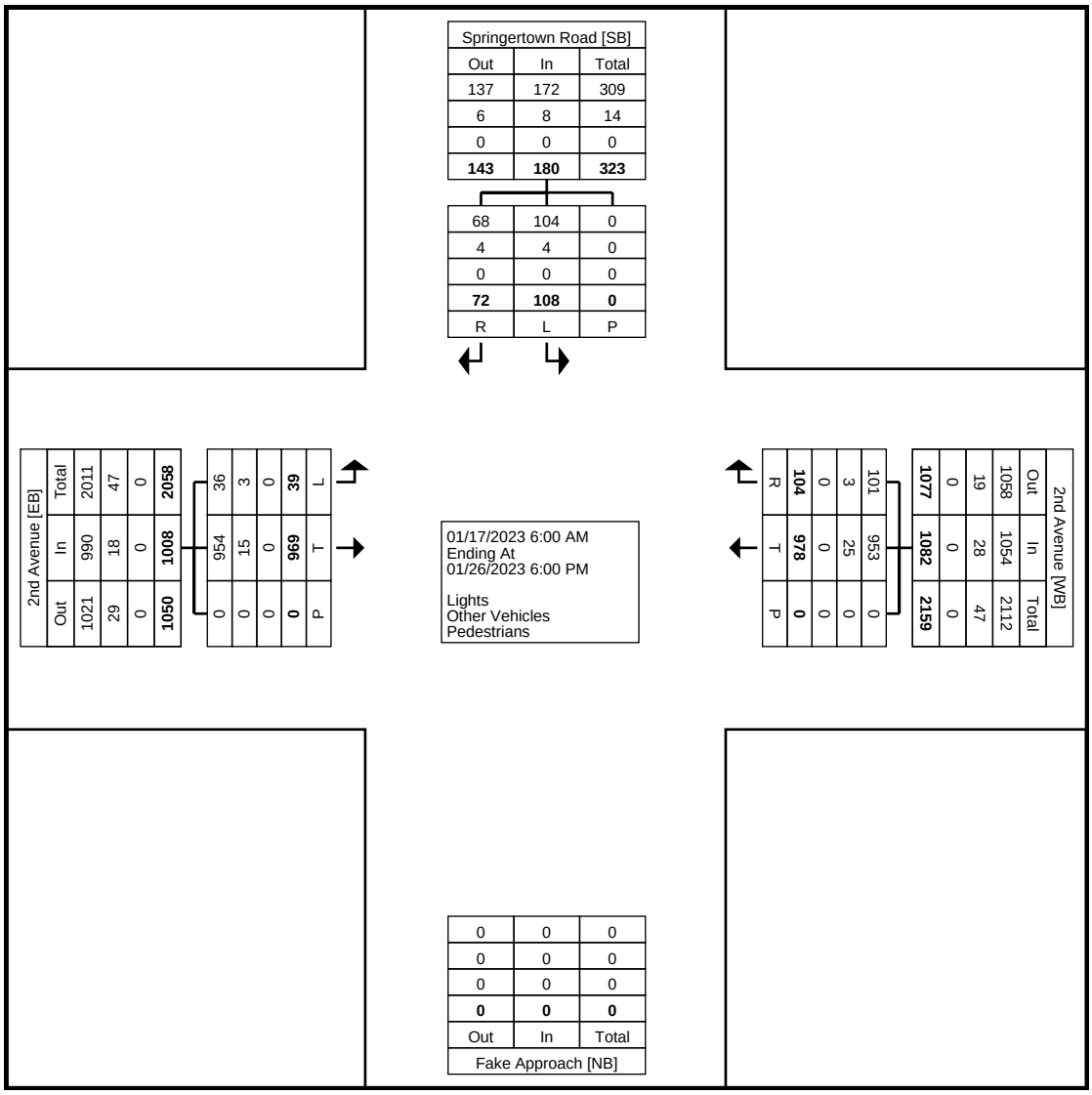
Pottstown, Pennsylvania, United States 19464
610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023



Turning Movement Data Plot

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2500 East High Street
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Springertown Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:15 AM	2	65	0	67	45	5	0	50	5	2	0	7	124
7:30 AM	5	109	0	114	22	2	0	24	3	5	0	8	146
7:45 AM	4	80	0	84	34	4	0	38	6	0	0	6	128
8:00 AM	1	55	0	56	26	6	0	32	10	0	0	10	98
Total	12	309	0	321	127	17	0	144	24	7	0	31	496
Approach %	3.7	96.3	-	-	88.2	11.8	-	-	77.4	22.6	-	-	-
Total %	2.4	62.3	-	64.7	25.6	3.4	-	29.0	4.8	1.4	-	6.3	-
PHF	0.600	0.709	-	0.704	0.706	0.708	-	0.720	0.600	0.350	-	0.775	0.849
Lights	10	302	-	312	119	16	-	135	23	7	-	30	477
% Lights	83.3	97.7	-	97.2	93.7	94.1	-	93.8	95.8	100.0	-	96.8	96.2
Other Vehicles	2	7	-	9	8	1	-	9	1	0	-	1	19
% Other Vehicles	16.7	2.3	-	2.8	6.3	5.9	-	6.3	4.2	0.0	-	3.2	3.8
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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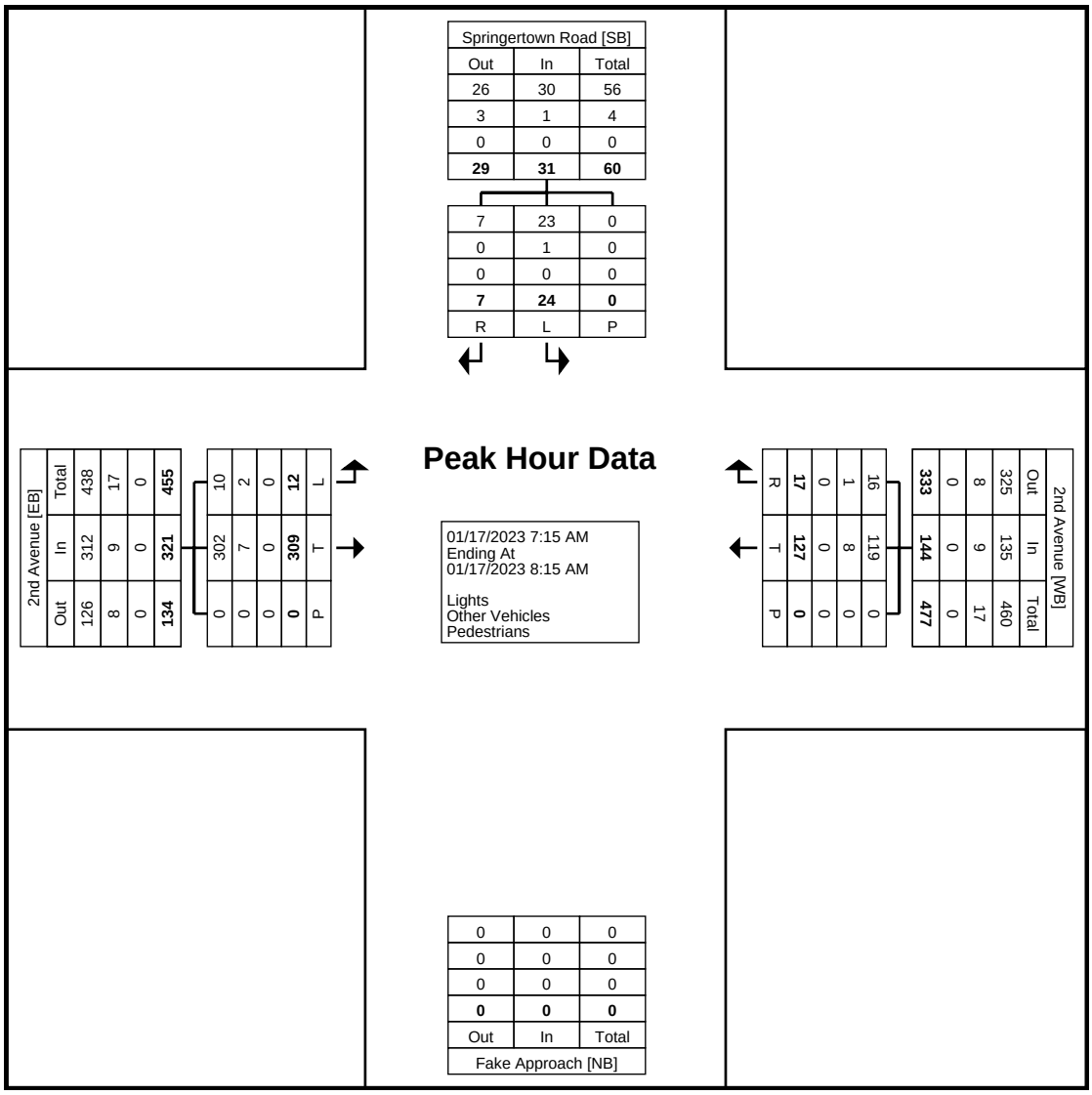
Weather:: Clear

Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

Traffic Planning and Design, Inc
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Springertown Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:15 PM	0	38	0	38	78	6	0	84	5	4	0	9	131
4:30 PM	0	31	0	31	75	2	0	77	2	6	0	8	116
4:45 PM	1	30	0	31	75	7	0	82	6	7	0	13	126
5:00 PM	4	39	0	43	75	3	0	78	5	2	0	7	128
Total	5	138	0	143	303	18	0	321	18	19	0	37	501
Approach %	3.5	96.5	-	-	94.4	5.6	-	-	48.6	51.4	-	-	-
Total %	1.0	27.5	-	28.5	60.5	3.6	-	64.1	3.6	3.8	-	7.4	-
PHF	0.313	0.885	-	0.831	0.971	0.643	-	0.955	0.750	0.679	-	0.712	0.956
Lights	5	137	-	142	301	18	-	319	18	19	-	37	498
% Lights	100.0	99.3	-	99.3	99.3	100.0	-	99.4	100.0	100.0	-	100.0	99.4
Other Vehicles	0	1	-	1	2	0	-	2	0	0	-	0	3
% Other Vehicles	0.0	0.7	-	0.7	0.7	0.0	-	0.6	0.0	0.0	-	0.0	0.6
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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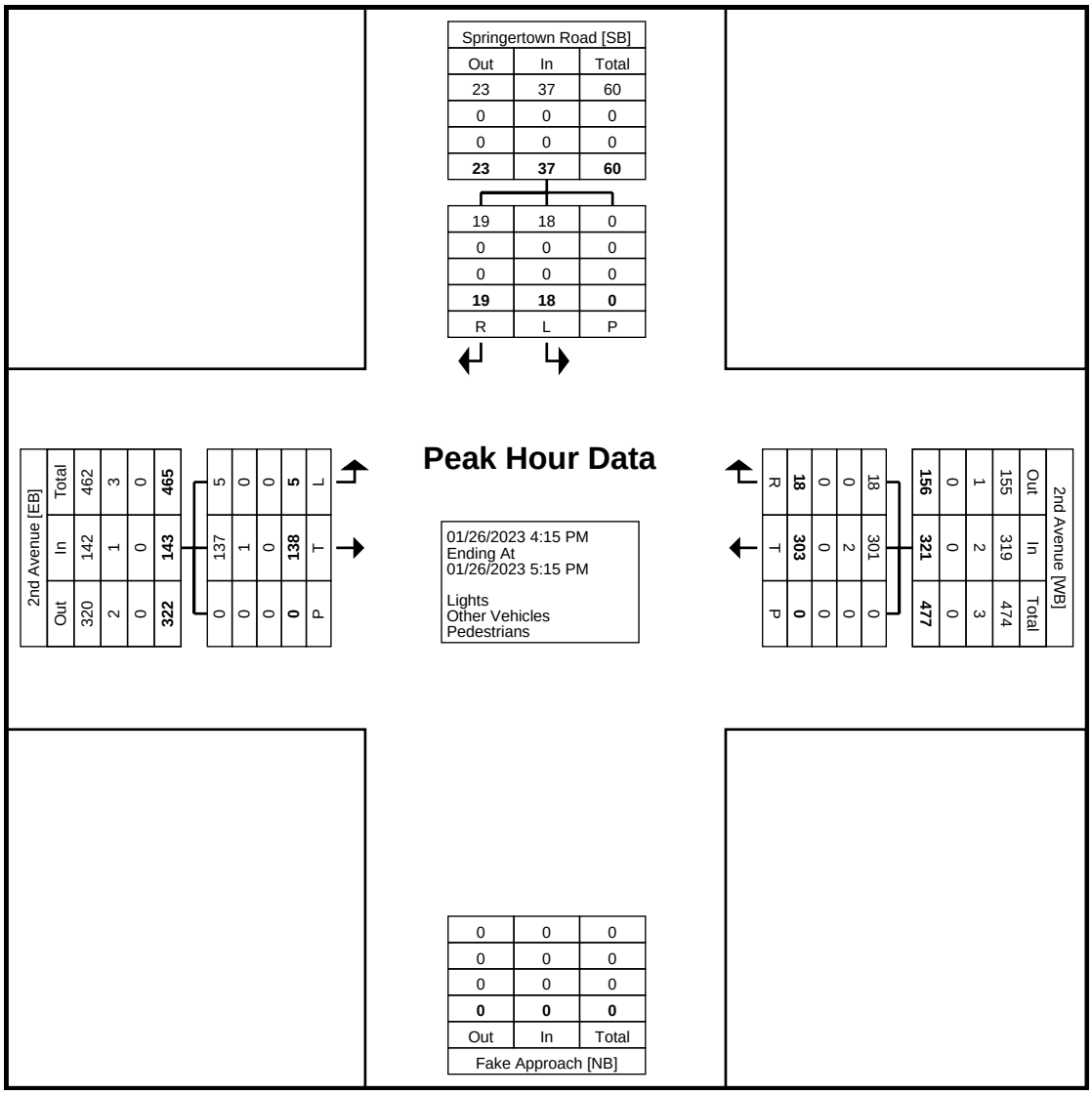
Count Name: 2nd Avenue and Springertown Road
Site Code:
Start Date: 01/17/2023



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

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Count Name: 2nd Avenue and Vaughn Road
Site Code:
Start Date: 01/17/2023

Turning Movement Data

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Veughn Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
6:00 AM	3	7	0	10	2	1	0	3	2	5	0	7	20
6:15 AM	7	17	0	24	2	4	0	6	5	6	0	11	41
6:30 AM	4	29	0	33	7	4	0	11	8	3	0	11	55
6:45 AM	10	29	0	39	10	5	0	15	18	6	0	24	78
Hourly Total	24	82	0	106	21	14	0	35	33	20	0	53	194
7:00 AM	13	45	0	58	15	4	0	19	6	8	0	14	91
7:15 AM	6	53	0	59	29	18	0	47	16	17	0	33	139
7:30 AM	10	79	0	89	22	5	0	27	32	10	0	42	158
7:45 AM	9	67	0	76	25	9	0	34	13	12	0	25	135
Hourly Total	38	244	0	282	91	36	0	127	67	47	0	114	523
8:00 AM	17	46	0	63	15	10	0	25	14	6	0	20	108
8:15 AM	8	38	0	46	16	12	0	28	8	6	0	14	88
8:30 AM	9	33	0	42	18	8	0	26	7	8	0	15	83
8:45 AM	9	31	0	40	20	6	0	26	11	9	0	20	86
Hourly Total	43	148	0	191	69	36	0	105	40	29	0	69	365
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	4	18	0	22	42	18	0	60	15	9	0	24	106
3:15 PM	8	18	0	26	42	9	0	51	12	9	0	21	98
3:30 PM	8	29	0	37	37	15	0	52	15	12	0	27	116
3:45 PM	11	14	0	25	36	16	0	52	6	9	0	15	92
Hourly Total	31	79	0	110	157	58	0	215	48	39	0	87	412
4:00 PM	8	25	0	33	37	6	0	43	13	18	0	31	107
4:15 PM	11	28	0	39	63	18	0	81	13	11	0	24	144
4:30 PM	3	21	0	24	56	24	0	80	11	15	0	26	130
4:45 PM	8	20	0	28	68	19	0	87	9	11	0	20	135
Hourly Total	30	94	0	124	224	67	0	291	46	55	0	101	516
5:00 PM	12	30	0	42	59	18	0	77	13	12	0	25	144
5:15 PM	9	21	0	30	49	17	0	66	10	8	0	18	114
5:30 PM	8	22	0	30	56	23	0	79	12	11	0	23	132
5:45 PM	9	19	0	28	40	13	0	53	14	8	0	22	103
Hourly Total	38	92	0	130	204	71	0	275	49	39	0	88	493
Grand Total	204	739	0	943	766	282	0	1048	283	229	0	512	2503
Approach %	21.6	78.4	-	-	73.1	26.9	-	-	55.3	44.7	-	-	-
Total %	8.2	29.5	-	37.7	30.6	11.3	-	41.9	11.3	9.1	-	20.5	-
Lights	192	725	-	917	748	265	-	1013	277	212	-	489	2419
% Lights	94.1	98.1	-	97.2	97.7	94.0	-	96.7	97.9	92.6	-	95.5	96.6
Other Vehicles	12	14	-	26	18	17	-	35	6	17	-	23	84
% Other Vehicles	5.9	1.9	-	2.8	2.3	6.0	-	3.3	2.1	7.4	-	4.5	3.4
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

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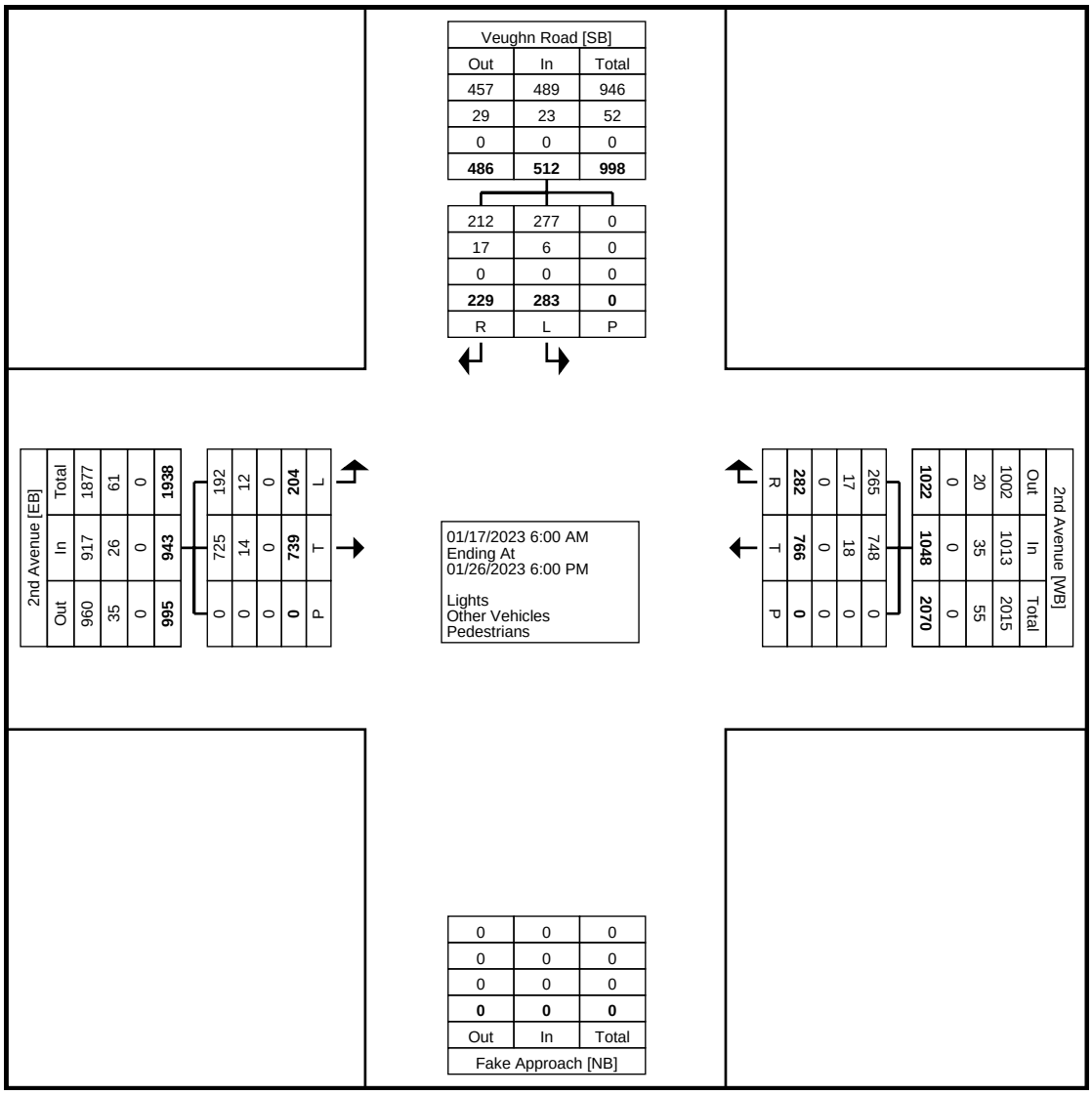
Count Name: 2nd Avenue and Vaughn Road
Site Code:
Start Date: 01/17/2023
Page No: 2



Turning Movement Data Plot

Traffic Planning and Design, Inc
2500 East High Street
Suite 650
Pottstown, Pennsylvania, United States 19464
610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Vaughn Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (7:15 AM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Veughn Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
7:15 AM	6	53	0	59	29	18	0	47	16	17	0	33	139
7:30 AM	10	79	0	89	22	5	0	27	32	10	0	42	158
7:45 AM	9	67	0	76	25	9	0	34	13	12	0	25	135
8:00 AM	17	46	0	63	15	10	0	25	14	6	0	20	108
Total	42	245	0	287	91	42	0	133	75	45	0	120	540
Approach %	14.6	85.4	-	-	68.4	31.6	-	-	62.5	37.5	-	-	-
Total %	7.8	45.4	-	53.1	16.9	7.8	-	24.6	13.9	8.3	-	22.2	-
PHF	0.618	0.775	-	0.806	0.784	0.583	-	0.707	0.586	0.662	-	0.714	0.854
Lights	41	237	-	278	86	39	-	125	73	38	-	111	514
% Lights	97.6	96.7	-	96.9	94.5	92.9	-	94.0	97.3	84.4	-	92.5	95.2
Other Vehicles	1	8	-	9	5	3	-	8	2	7	-	9	26
% Other Vehicles	2.4	3.3	-	3.1	5.5	7.1	-	6.0	2.7	15.6	-	7.5	4.8
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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Counter:: Mio
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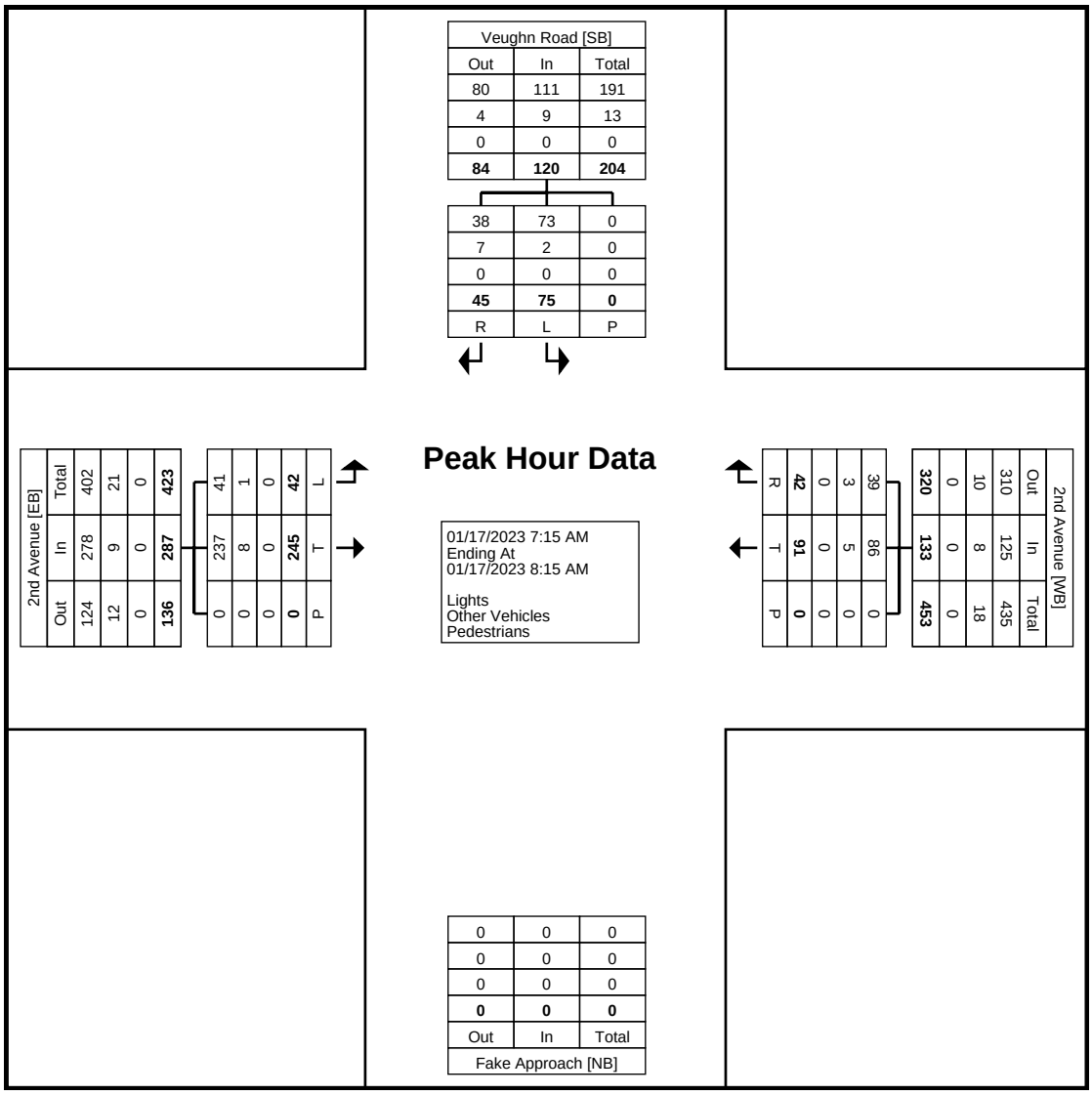
Weather:: Clear

Count Name: 2nd Avenue and Vaughn Road
Site Code:
Start Date: 01/17/2023



Turning Movement Peak Hour Data Plot (7:15 AM)

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Suite 650
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610.326.3100

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: 2nd Avenue and Vaughn Road
Site Code:
Start Date: 01/17/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	2nd Avenue Eastbound				2nd Avenue Westbound				Veughn Road Southbound				
	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:15 PM	11	28	0	39	63	18	0	81	13	11	0	24	144
4:30 PM	3	21	0	24	56	24	0	80	11	15	0	26	130
4:45 PM	8	20	0	28	68	19	0	87	9	11	0	20	135
5:00 PM	12	30	0	42	59	18	0	77	13	12	0	25	144
Total	34	99	0	133	246	79	0	325	46	49	0	95	553
Approach %	25.6	74.4	-	-	75.7	24.3	-	-	48.4	51.6	-	-	-
Total %	6.1	17.9	-	24.1	44.5	14.3	-	58.8	8.3	8.9	-	17.2	-
PHF	0.708	0.825	-	0.792	0.904	0.823	-	0.934	0.885	0.817	-	0.913	0.960
Lights	34	99	-	133	246	75	-	321	45	49	-	94	548
% Lights	100.0	100.0	-	100.0	100.0	94.9	-	98.8	97.8	100.0	-	98.9	99.1
Other Vehicles	0	0	-	0	0	4	-	4	1	0	-	1	5
% Other Vehicles	0.0	0.0	-	0.0	0.0	5.1	-	1.2	2.2	0.0	-	1.1	0.9
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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Count Name: 2nd Avenue and Vaughn Road
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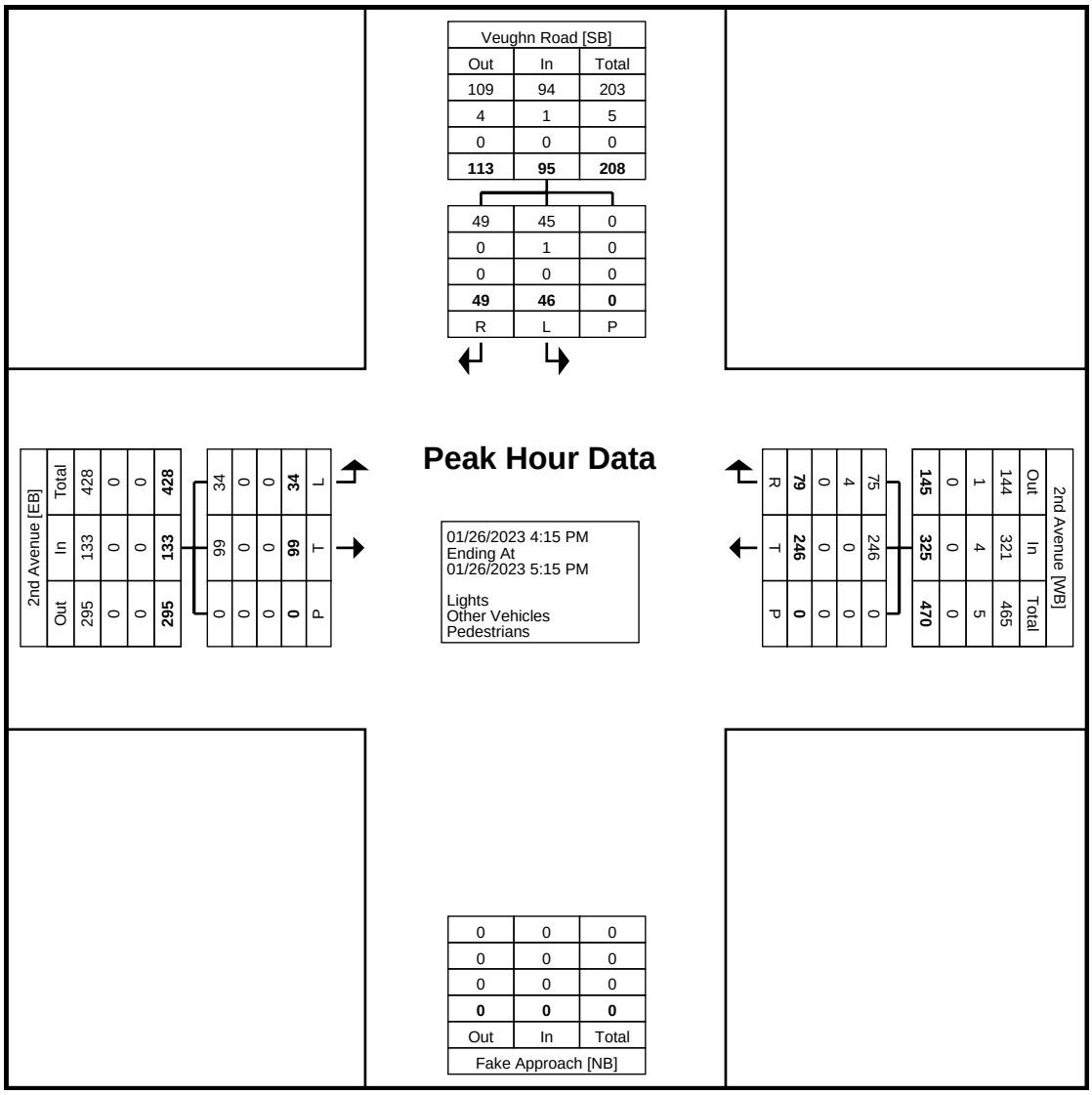
Start Date: 01/17/2023



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

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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Black Rock Road and Trappe Road-Ramsgate Drive
Site Code:
Start Date: 03/07/2023

Turning Movement Data

Start Time	Trappe Road Eastbound					Ramsgate Drive Westbound					Black Rock Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	33	0	0	33	0	17	0	0	17	50
6:15 AM	0	0	0	0	0	0	0	1	0	1	0	38	0	0	38	0	14	0	0	14	53
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	54	0	0	54	0	42	0	0	42	96
6:45 AM	0	0	0	0	0	0	0	1	0	1	0	54	0	0	54	0	64	0	0	64	119
Hourly Total	0	0	0	0	0	0	0	2	0	2	0	179	0	0	179	0	137	0	0	137	318
7:00 AM	1	0	0	0	1	0	1	3	0	4	0	75	0	0	75	0	64	0	0	64	144
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	86	1	0	87	1	63	0	0	64	151
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	92	0	0	92	1	76	0	0	77	170
7:45 AM	0	0	0	0	0	1	0	1	0	2	0	113	0	0	113	0	90	0	0	90	205
Hourly Total	1	0	0	0	1	2	1	4	0	7	0	366	1	0	367	2	293	0	0	295	670
8:00 AM	0	0	0	0	0	0	0	2	0	2	1	98	0	0	99	0	66	0	0	66	167
8:15 AM	0	0	0	0	0	1	0	1	0	2	0	85	0	0	85	0	73	0	0	73	160
8:30 AM	1	0	1	0	2	0	0	4	0	4	0	99	0	0	99	1	49	1	0	51	156
8:45 AM	0	0	0	0	0	0	0	1	0	1	0	62	0	0	62	0	78	0	0	78	141
Hourly Total	1	0	1	0	2	1	0	8	0	9	1	344	0	0	345	1	266	1	0	268	624
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	0	0	0	0	0	1	0	0	0	1	0	52	1	0	53	1	88	1	0	90	144
3:15 PM	0	0	0	0	0	1	0	0	0	1	0	60	0	0	60	0	93	0	0	93	154
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	79	0	0	79	1	87	0	0	88	167
3:45 PM	0	0	0	0	0	1	0	1	0	2	0	88	0	0	88	1	74	0	0	75	165
Hourly Total	0	0	0	0	0	3	0	1	0	4	0	279	1	0	280	3	342	1	0	346	630
4:00 PM	0	0	0	0	0	0	0	3	0	3	0	76	0	0	76	1	98	0	0	99	178
4:15 PM	0	0	0	0	0	1	0	2	2	3	0	80	0	0	80	1	92	1	0	94	177
4:30 PM	0	1	0	0	1	1	0	2	0	3	0	79	0	0	79	0	101	1	0	102	185
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	99	0	0	99	3	94	0	0	97	196
Hourly Total	0	1	0	0	1	2	0	7	2	9	0	334	0	0	334	5	385	2	0	392	736
5:00 PM	0	0	0	0	0	0	0	2	0	2	0	91	2	0	93	1	106	0	0	107	202
5:15 PM	1	0	0	0	1	2	0	0	0	2	0	73	1	0	74	0	119	0	0	119	196
5:30 PM	0	0	0	0	0	3	0	1	0	4	0	68	1	0	69	1	105	0	0	106	179
5:45 PM	0	0	0	0	0	1	0	2	0	3	0	65	0	0	65	1	105	0	0	106	174
Hourly Total	1	0	0	0	1	6	0	5	0	11	0	297	4	0	301	3	435	0	0	438	751
Grand Total	3	1	1	0	5	14	1	27	2	42	1	1799	6	0	1806	14	1858	4	0	1876	3729
Approach %	60.0	20.0	20.0	-	-	33.3	2.4	64.3	-	-	0.1	99.6	0.3	-	-	0.7	99.0	0.2	-	-	-
Total %	0.1	0.0	0.0	-	0.1	0.4	0.0	0.7	-	1.1	0.0	48.2	0.2	-	48.4	0.4	49.8	0.1	-	50.3	-
Lights	2	1	1	-	4	11	1	23	-	35	1	1742	4	-	1747	10	1795	3	-	1808	3594
% Lights	66.7	100.0	100.0	-	80.0	78.6	100.0	85.2	-	83.3	100.0	96.8	66.7	-	96.7	71.4	96.6	75.0	-	96.4	96.4
Other Vehicles	1	0	0	-	1	3	0	4	-	7	0	57	2	-	59	4	63	1	-	68	135
% Other Vehicles	33.3	0.0	0.0	-	20.0	21.4	0.0	14.8	-	16.7	0.0	3.2	33.3	-	3.3	28.6	3.4	25.0	-	3.6	3.6
Pedestrians	-	-	-	0	-	-	-	-	2	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
2500 East High Street
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
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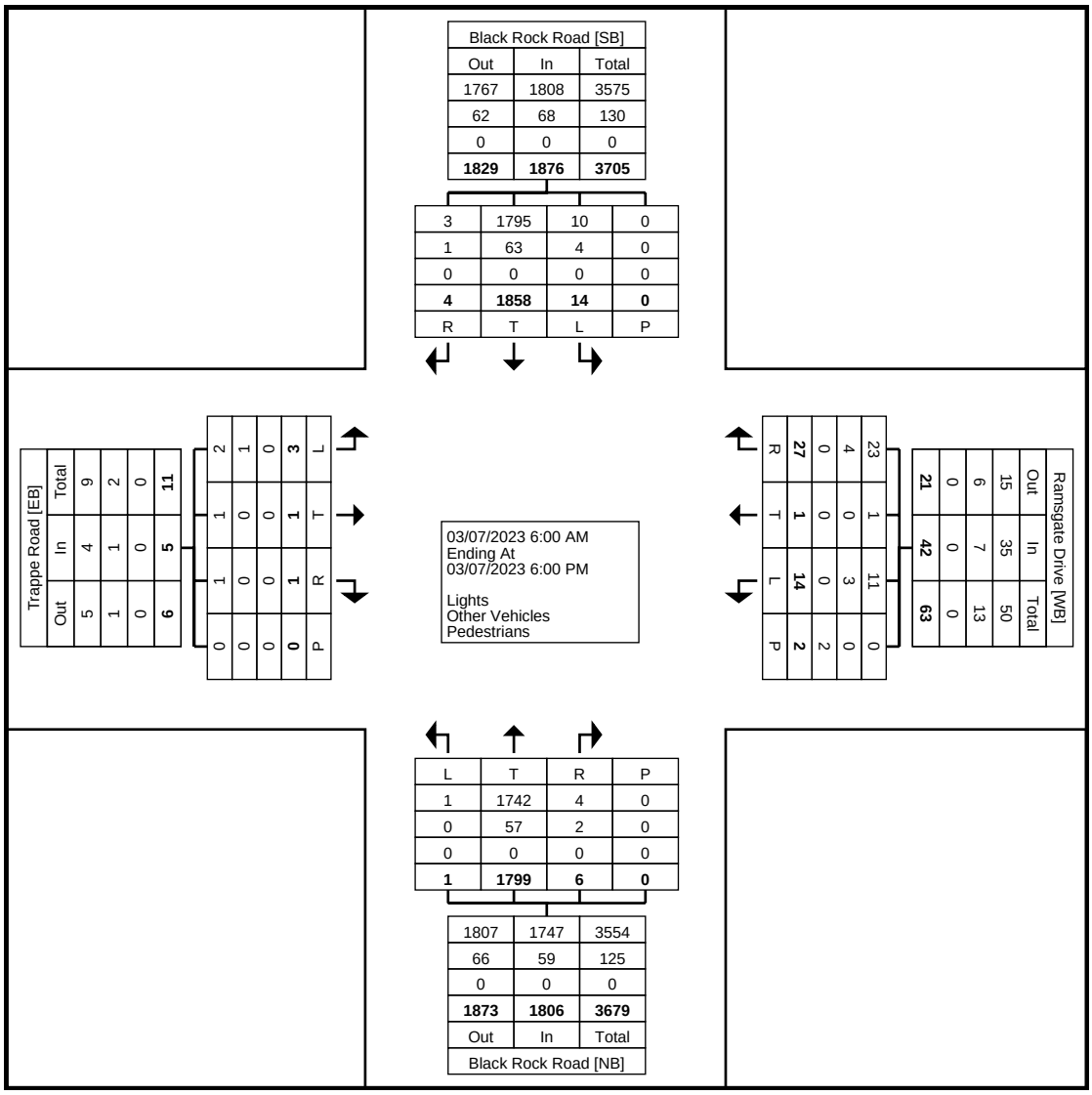
Weather:: Clear

Count Name: Black Rock Road and Trappe Road-Ramsgate Drive
Site Code:
Start Date: 03/07/2023



Turning Movement Data Plot

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Weather:: Clear

Count Name: Black Rock Road and Trappe Road-Ramsgate Drive
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Trappe Road Eastbound					Ramsgate Drive Westbound					Black Rock Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	92	0	0	92	1	76	0	0	77	170
7:45 AM	0	0	0	0	0	1	0	1	0	2	0	113	0	0	113	0	90	0	0	90	205
8:00 AM	0	0	0	0	0	0	0	2	0	2	1	98	0	0	99	0	66	0	0	66	167
8:15 AM	0	0	0	0	0	1	0	1	0	2	0	85	0	0	85	0	73	0	0	73	160
Total	0	0	0	0	0	3	0	4	0	7	1	388	0	0	389	1	305	0	0	306	702
Approach %	0.0	0.0	0.0	-	-	42.9	0.0	57.1	-	-	0.3	99.7	0.0	-	-	0.3	99.7	0.0	-	-	-
Total %	0.0	0.0	0.0	-	0.0	0.4	0.0	0.6	-	1.0	0.1	55.3	0.0	-	55.4	0.1	43.4	0.0	-	43.6	-
PHF	0.000	0.000	0.000	-	0.000	0.750	0.000	0.500	-	0.875	0.250	0.858	0.000	-	0.861	0.250	0.847	0.000	-	0.850	0.856
Lights	0	0	0	-	0	1	0	4	-	5	1	363	0	-	364	0	282	0	-	282	651
% Lights	-	-	-	-	-	33.3	-	100.0	-	71.4	100.0	93.6	-	-	93.6	0.0	92.5	-	-	92.2	92.7
Other Vehicles	0	0	0	-	0	2	0	0	-	2	0	25	0	-	25	1	23	0	-	24	51
% Other Vehicles	-	-	-	-	-	66.7	-	0.0	-	28.6	0.0	6.4	-	-	6.4	100.0	7.5	-	-	7.8	7.3
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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Site Code:
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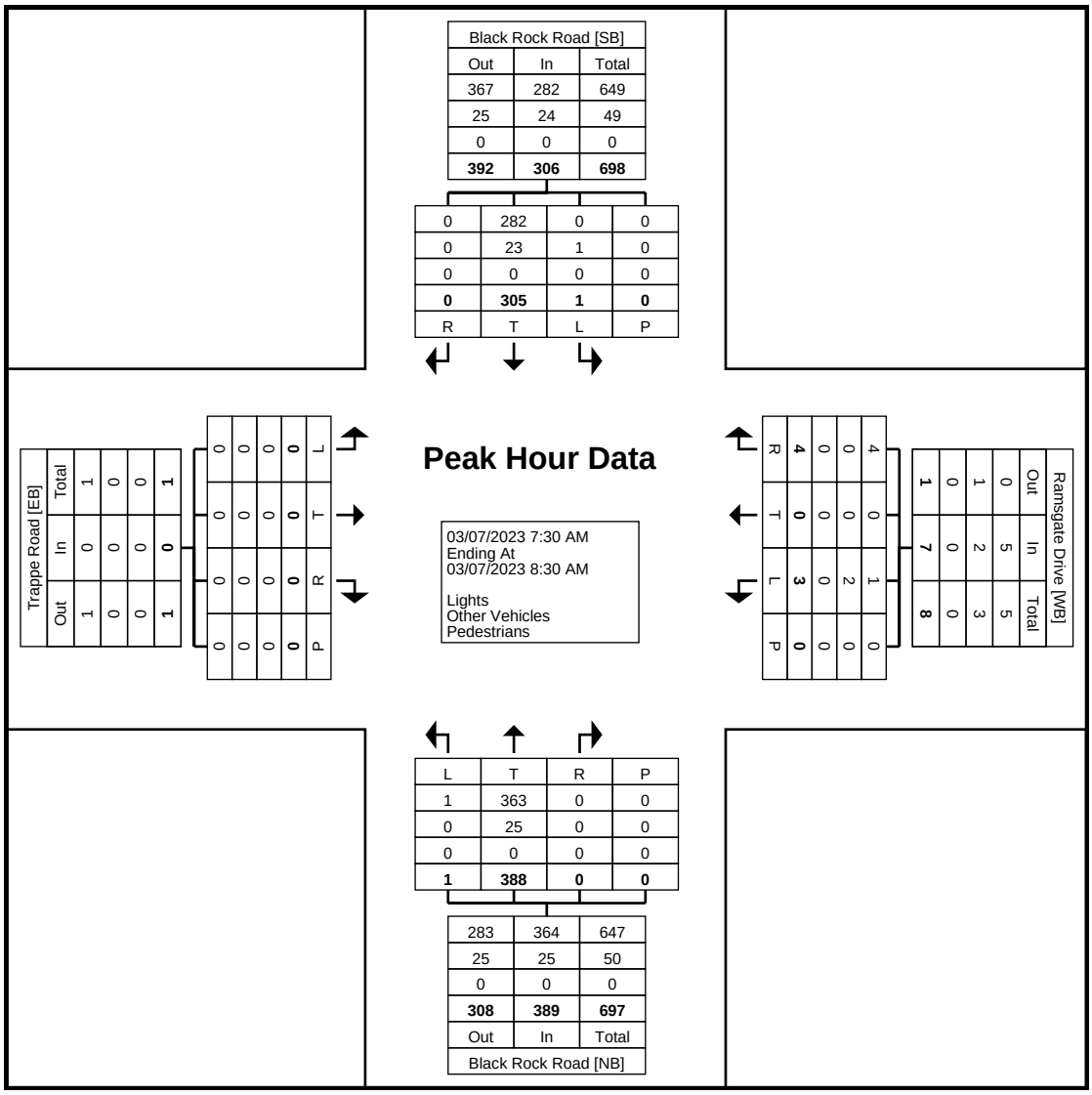

Turning Movement Peak Hour Data Plot (7:30 AM)

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Count Name: Black Rock Road and Trappe Road-Ramsgate Drive
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Trappe Road Eastbound					Ramsgate Drive Westbound					Black Rock Road Northbound					Black Rock Road Southbound					
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
4:30 PM	0	1	0	0	1	1	0	2	0	3	0	79	0	0	79	0	101	1	0	102	185
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	99	0	0	99	3	94	0	0	97	196
5:00 PM	0	0	0	0	0	0	0	2	0	2	0	91	2	0	93	1	106	0	0	107	202
5:15 PM	1	0	0	0	1	2	0	0	0	2	0	73	1	0	74	0	119	0	0	119	196
Total	1	1	0	0	2	3	0	4	0	7	0	342	3	0	345	4	420	1	0	425	779
Approach %	50.0	50.0	0.0	-	-	42.9	0.0	57.1	-	-	0.0	99.1	0.9	-	-	0.9	98.8	0.2	-	-	-
Total %	0.1	0.1	0.0	-	0.3	0.4	0.0	0.5	-	0.9	0.0	43.9	0.4	-	44.3	0.5	53.9	0.1	-	54.6	-
PHF	0.250	0.250	0.000	-	0.500	0.375	0.000	0.500	-	0.583	0.000	0.864	0.375	-	0.871	0.333	0.882	0.250	-	0.893	0.964
Lights	1	1	0	-	2	3	0	4	-	7	0	338	3	-	341	4	419	1	-	424	774
% Lights	100.0	100.0	-	-	100.0	100.0	-	100.0	-	100.0	-	98.8	100.0	-	98.8	100.0	99.8	100.0	-	99.8	99.4
Other Vehicles	0	0	0	-	0	0	0	0	-	0	0	4	0	-	4	0	1	0	-	1	5
% Other Vehicles	0.0	0.0	-	-	0.0	0.0	-	0.0	-	0.0	-	1.2	0.0	-	1.2	0.0	0.2	0.0	-	0.2	0.6
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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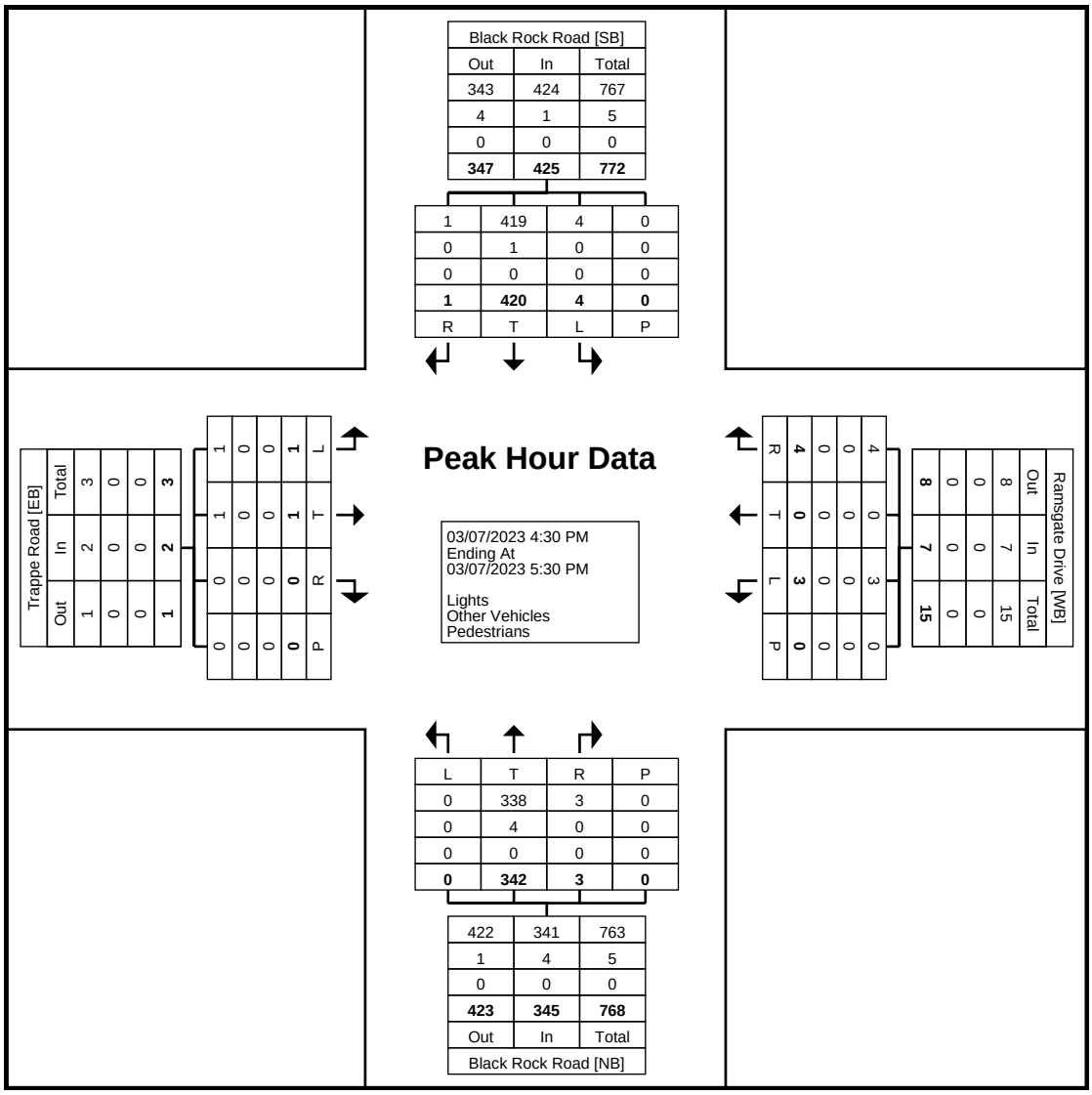
Count Name: Black Rock Road and Trappe Road-Ramsgate Drive
Site Code:
Start Date: 03/07/2023
Page No: 6



Black Rock Road [SB]		
Out	In	Total
343	424	767
4	1	5
0	0	0
347	**425**	**772**

1	419	4	0
0	1	0	0
0	0	0	0
1	**420**	**4**	**0**
R	T	L	P

Trappe Road [EB]					
	Out	In	Total		
	1	2	3		
	0	0	0		
	0	0	0		
	1	**2**	**3**		

1	0	0	1	L
1	0	0	1	T
0	0	0	0	R
0	0	0	0	P

R	4	0	0	4
T	0	0	0	0
L	3	0	0	3
P	0	0	0	0

				Ramsgate Drive [WB]
			Out	8
			In	7
			Total	15
8	0	0		
7	0	0		
15	0	0		

L	T	R	P
0	338	3	0
0	4	0	0
0	0	0	0
0	**342**	**3**	**0**

422	341	763
1	4	5
0	0	0
423	**345**	**768**
Out	In	Total
Black Rock Road [NB]		

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

Traffic Planning and Design, Inc
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Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Route 29 and Black Road Road
Site Code:
Start Date: 03/07/2023

Turning Movement Data

Start Time	Black Rock Road Eastbound						Black Rock Road Westbound						Route 29 Northbound						Route 29 Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
6:00 AM	13	21	2	9	0	45	2	2	2	4	0	10	5	26	0	0	0	31	23	49	1	4	0	77	163
6:15 AM	14	21	6	12	0	53	0	3	1	3	0	7	3	41	2	1	0	47	44	66	5	1	0	116	223
6:30 AM	28	40	15	11	0	94	2	14	0	15	0	31	10	47	5	0	0	62	33	66	6	9	0	114	301
6:45 AM	34	37	11	12	0	94	7	25	9	10	0	51	12	80	11	0	0	103	57	102	18	11	0	188	436
Hourly Total	89	119	34	44	0	286	11	44	12	32	0	99	30	194	18	1	0	243	157	283	30	25	0	495	1123
7:00 AM	36	55	11	10	0	112	2	32	3	7	0	44	29	67	8	4	0	108	34	88	8	6	0	136	400
7:15 AM	34	70	15	20	0	139	4	35	10	16	0	65	28	79	12	6	0	125	45	122	9	16	0	192	521
7:30 AM	28	90	16	15	0	149	2	35	4	23	0	64	19	93	9	1	0	122	64	114	11	20	0	209	544
7:45 AM	44	125	16	28	0	213	3	30	10	16	1	59	27	106	6	5	1	144	69	145	14	17	0	245	661
Hourly Total	142	340	58	73	0	613	11	132	27	62	1	232	103	345	35	16	1	499	212	469	42	59	0	782	2126
8:00 AM	41	77	17	16	0	151	4	21	6	17	0	48	9	92	11	2	0	114	51	111	7	4	0	173	486
8:15 AM	38	70	13	14	0	135	2	17	12	11	0	42	20	106	11	6	0	143	62	115	16	10	0	203	523
8:30 AM	41	70	22	12	0	145	3	28	6	15	0	52	14	97	18	0	0	129	41	123	11	7	0	182	508
8:45 AM	35	64	10	12	0	121	10	22	15	29	0	76	24	90	13	2	0	129	51	94	9	4	0	158	484
Hourly Total	155	281	62	54	0	552	19	88	39	72	0	218	67	385	53	10	0	515	205	443	43	25	0	716	2001
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	27	42	6	8	0	83	10	37	10	22	0	79	16	92	2	0	0	110	31	89	36	3	0	159	431
3:15 PM	30	29	9	6	0	74	10	47	18	16	0	91	28	125	3	2	0	158	41	82	25	13	0	161	484
3:30 PM	25	28	6	11	0	70	9	52	11	22	0	94	21	86	8	0	0	115	39	100	27	3	0	169	448
3:45 PM	22	51	6	13	0	92	17	40	14	19	0	90	22	96	6	0	0	124	23	109	44	2	0	178	484
Hourly Total	104	150	27	38	0	319	46	176	53	79	0	354	87	399	19	2	0	507	134	380	132	21	0	667	1847
4:00 PM	31	34	6	7	0	78	18	85	19	37	0	159	30	124	5	1	0	160	32	87	24	8	0	151	548
4:15 PM	25	40	5	9	0	79	16	72	20	26	0	134	38	123	5	0	0	166	29	124	20	15	0	188	567
4:30 PM	24	23	14	4	0	65	17	97	19	27	0	160	52	119	2	0	0	173	31	107	22	14	0	174	572
4:45 PM	25	50	11	11	0	97	17	80	18	32	0	147	41	112	5	0	0	158	29	104	23	9	0	165	567
Hourly Total	105	147	36	31	0	319	68	334	76	122	0	600	161	478	17	1	0	657	121	422	89	46	0	678	2254
5:00 PM	38	35	13	9	0	95	25	88	26	32	0	171	40	147	5	0	0	192	33	100	22	8	1	163	621
5:15 PM	35	46	17	15	0	113	17	107	18	37	0	179	37	133	6	0	0	176	37	121	30	5	0	193	661
5:30 PM	22	37	9	11	0	79	21	109	17	20	0	167	37	123	3	3	0	166	36	106	27	7	0	176	588
5:45 PM	32	36	8	9	0	85	10	71	3	28	0	112	33	120	6	1	0	160	29	88	21	5	0	143	500
Hourly Total	127	154	47	44	0	372	73	375	64	117	0	629	147	523	20	4	0	694	135	415	100	25	1	675	2370
Grand Total	722	1191	264	284	0	2461	228	1149	271	484	1	2132	595	2324	162	34	1	3115	964	2412	436	201	1	4013	11721
Approach %	29.3	48.4	10.7	11.5	-	-	10.7	53.9	12.7	22.7	-	-	19.1	74.6	5.2	1.1	-	-	24.0	60.1	10.9	5.0	-	-	-
Total %	6.2	10.2	2.3	2.4	-	21.0	1.9	9.8	2.3	4.1	-	18.2	5.1	19.8	1.4	0.3	-	26.6	8.2	20.6	3.7	1.7	-	34.2	-
Lights	701	1136	251	283	-	2371	221	1113	257	468	-	2059	576	2254	159	33	-	3022	917	2342	422	194	-	3875	11327
% Lights	97.1	95.4	95.1	99.6	-	96.3	96.9	96.9	94.8	96.7	-	96.6	96.8	97.0	98.1	97.1	-	97.0	95.1	97.1	96.8	96.5	-	96.6	96.6
Other Vehicles	21	55	13	1	-	90	7	36	14	16	-	73	19	70	3	1	-	93	47	70	14	7	-	138	394
% Other Vehicles	2.9	4.6	4.9	0.4	-	3.7	3.1	3.1	5.2	3.3	-	3.4	3.2	3.0	1.9	2.9	-	3.0	4.9	2.9	3.2	3.5	-	3.4	3.4
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

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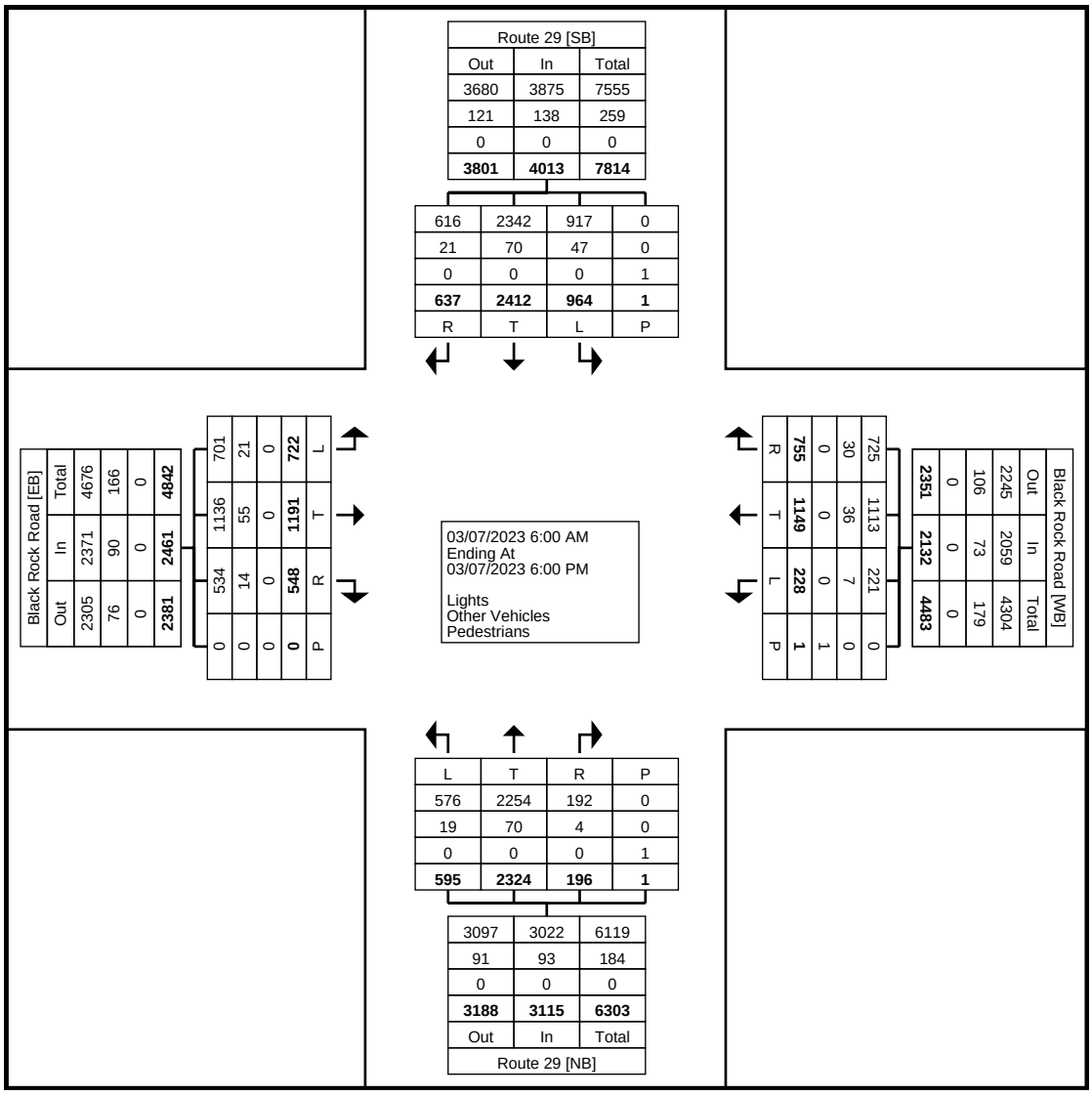

Turning Movement Data Plot

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Counted By:: Mio
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Count Name: Route 29 and Black Road Road
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Black Rock Road Eastbound						Black Rock Road Westbound						Route 29 Northbound						Route 29 Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
7:30 AM	28	90	16	15	0	149	2	35	4	23	0	64	19	93	9	1	0	122	64	114	11	20	0	209	544
7:45 AM	44	125	16	28	0	213	3	30	10	16	1	59	27	106	6	5	1	144	69	145	14	17	0	245	661
8:00 AM	41	77	17	16	0	151	4	21	6	17	0	48	9	92	11	2	0	114	51	111	7	4	0	173	486
8:15 AM	38	70	13	14	0	135	2	17	12	11	0	42	20	106	11	6	0	143	62	115	16	10	0	203	523
Total	151	362	62	73	0	648	11	103	32	67	1	213	75	397	37	14	1	523	246	485	48	51	0	830	2214
Approach %	23.3	55.9	9.6	11.3	-	-	5.2	48.4	15.0	31.5	-	-	14.3	75.9	7.1	2.7	-	-	29.6	58.4	5.8	6.1	-	-	-
Total %	6.8	16.4	2.8	3.3	-	29.3	0.5	4.7	1.4	3.0	-	9.6	3.4	17.9	1.7	0.6	-	23.6	11.1	21.9	2.2	2.3	-	37.5	-
PHF	0.858	0.724	0.912	0.652	-	0.761	0.688	0.736	0.667	0.728	-	0.832	0.694	0.936	0.841	0.583	-	0.908	0.891	0.836	0.750	0.638	-	0.847	0.837
Lights	146	344	58	72	-	620	11	89	32	66	-	198	70	385	36	13	-	504	233	461	46	48	-	788	2110
% Lights	96.7	95.0	93.5	98.6	-	95.7	100.0	86.4	100.0	98.5	-	93.0	93.3	97.0	97.3	92.9	-	96.4	94.7	95.1	95.8	94.1	-	94.9	95.3
Other Vehicles	5	18	4	1	-	28	0	14	0	1	-	15	5	12	1	1	-	19	13	24	2	3	-	42	104
% Other Vehicles	3.3	5.0	6.5	1.4	-	4.3	0.0	13.6	0.0	1.5	-	7.0	6.7	3.0	2.7	7.1	-	3.6	5.3	4.9	4.2	5.9	-	5.1	4.7
Pedestrians	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-	-	-	-	-	-	-

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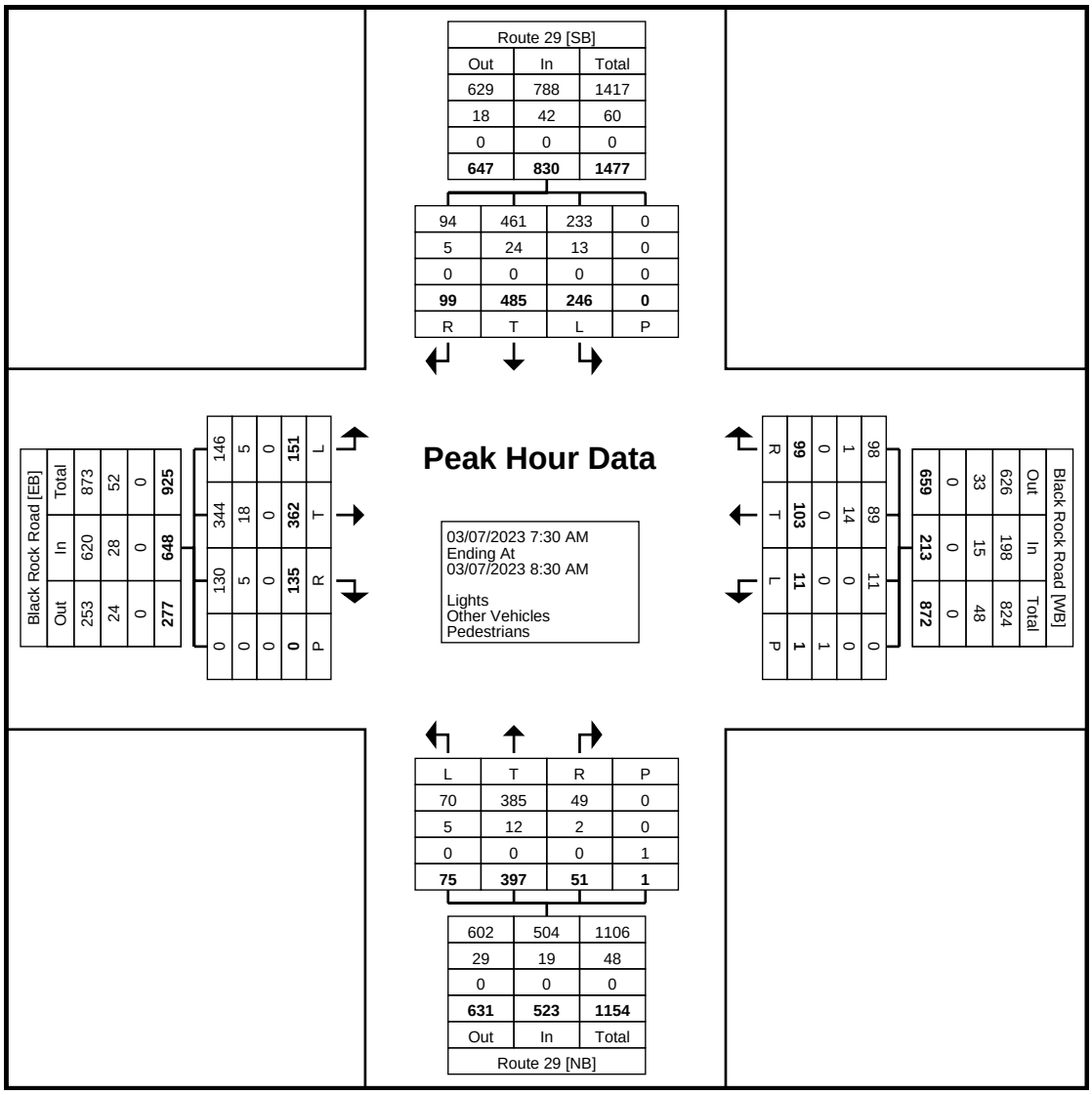
610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Route 29 and Black Road Road
Site Code:
Start Date: 03/07/2023



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

Traffic Planning and Design, Inc
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Route 29 and Black Road Road
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Black Rock Road Eastbound						Black Rock Road Westbound						Route 29 Northbound						Route 29 Southbound						Int. Total
	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	Left	Thru	Right	Right on Red	Peds	App. Total	
4:45 PM	25	50	11	11	0	97	17	80	18	32	0	147	41	112	5	0	0	158	29	104	23	9	0	165	567
5:00 PM	38	35	13	9	0	95	25	88	26	32	0	171	40	147	5	0	0	192	33	100	22	8	1	163	621
5:15 PM	35	46	17	15	0	113	17	107	18	37	0	179	37	133	6	0	0	176	37	121	30	5	0	193	661
5:30 PM	22	37	9	11	0	79	21	109	17	20	0	167	37	123	3	3	0	166	36	106	27	7	0	176	588
Total	120	168	50	46	0	384	80	384	79	121	0	664	155	515	19	3	0	692	135	431	102	29	1	697	2437
Approach %	31.3	43.8	13.0	12.0	-	-	12.0	57.8	11.9	18.2	-	-	22.4	74.4	2.7	0.4	-	-	19.4	61.8	14.6	4.2	-	-	-
Total %	4.9	6.9	2.1	1.9	-	15.8	3.3	15.8	3.2	5.0	-	27.2	6.4	21.1	0.8	0.1	-	28.4	5.5	17.7	4.2	1.2	-	28.6	-
PHF	0.789	0.840	0.735	0.767	-	0.850	0.800	0.881	0.760	0.818	-	0.927	0.945	0.876	0.792	0.250	-	0.901	0.912	0.890	0.850	0.806	-	0.903	0.922
Lights	117	164	50	46	-	377	80	379	78	120	-	657	155	513	19	3	-	690	128	428	100	29	-	685	2409
% Lights	97.5	97.6	100.0	100.0	-	98.2	100.0	98.7	98.7	99.2	-	98.9	100.0	99.6	100.0	100.0	-	99.7	94.8	99.3	98.0	100.0	-	98.3	98.9
Other Vehicles	3	4	0	0	-	7	0	5	1	1	-	7	0	2	0	0	-	2	7	3	2	0	-	12	28
% Other Vehicles	2.5	2.4	0.0	0.0	-	1.8	0.0	1.3	1.3	0.8	-	1.1	0.0	0.4	0.0	0.0	-	0.3	5.2	0.7	2.0	0.0	-	1.7	1.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-

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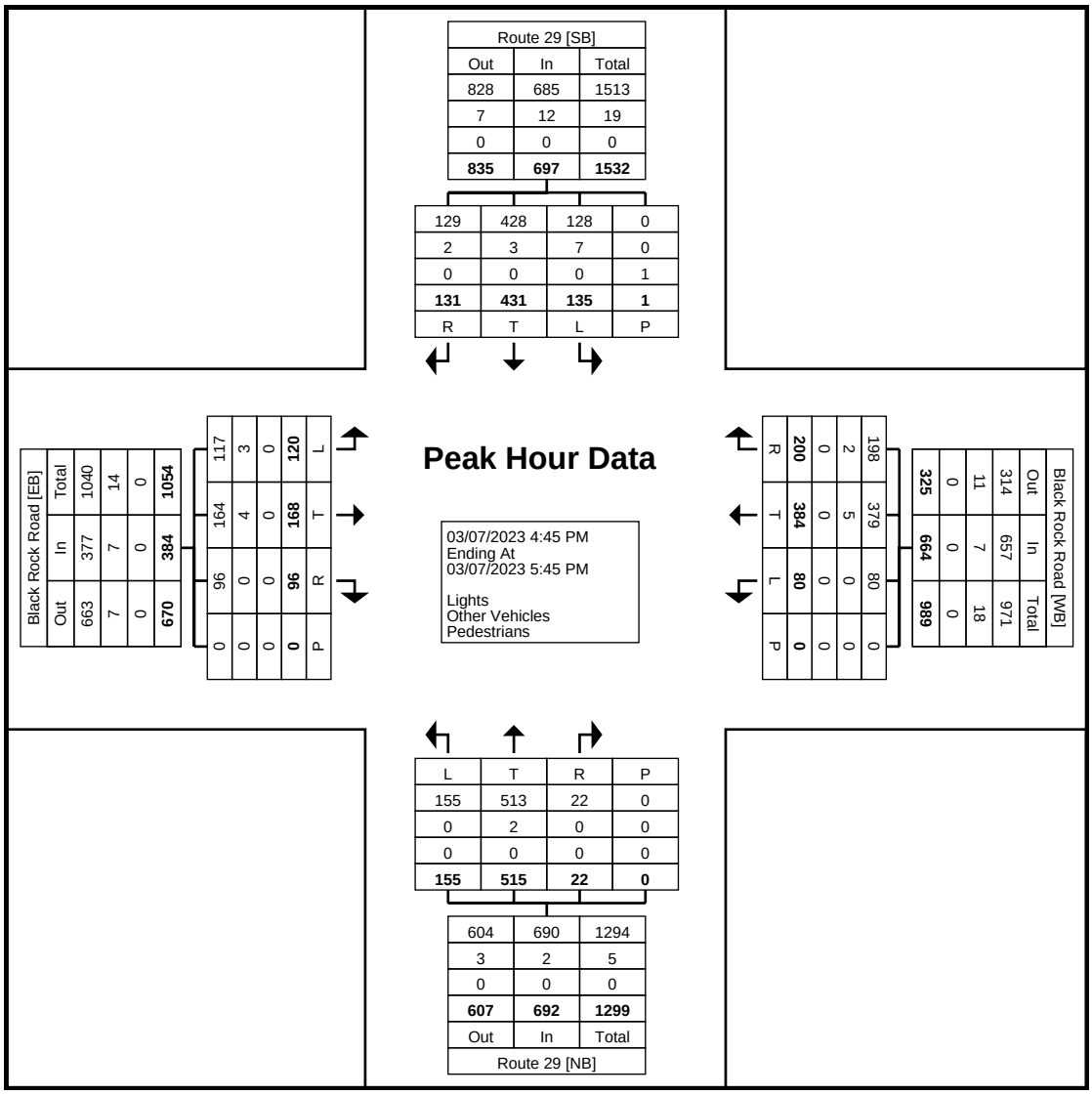
Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: Route 29 and Black Road Road
Site Code:
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (4:45 PM)

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

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023

Turning Movement Data

Start Time	S. Lewis Road Eastbound				S. Lewis Road Westbound				Yeager Road Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
6:00 AM	23	15	0	38	1	7	0	8	6	1	0	7	53
6:15 AM	18	19	0	37	2	16	0	18	14	0	0	14	69
6:30 AM	25	23	0	48	2	28	0	30	33	5	0	38	116
6:45 AM	26	32	0	58	6	139	0	145	57	1	0	58	261
Hourly Total	92	89	0	181	11	190	0	201	110	7	0	117	499
7:00 AM	39	42	0	81	3	98	0	101	85	1	0	86	268
7:15 AM	84	98	0	182	16	65	0	81	32	15	0	47	310
7:30 AM	83	39	0	122	22	76	0	98	29	26	0	55	275
7:45 AM	41	47	0	88	11	32	0	43	19	11	0	30	161
Hourly Total	247	226	0	473	52	271	0	323	165	53	0	218	1014
8:00 AM	71	26	0	97	1	32	0	33	34	14	0	48	178
8:15 AM	68	26	0	94	27	55	0	82	18	26	0	44	220
8:30 AM	61	36	0	97	38	103	0	141	25	23	0	48	286
8:45 AM	24	21	0	45	5	29	0	34	20	4	0	24	103
Hourly Total	224	109	0	333	71	219	0	290	97	67	0	164	787
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 PM	41	37	0	78	7	30	0	37	25	9	0	34	149
3:15 PM	31	28	0	59	13	36	0	49	38	14	0	52	160
3:30 PM	36	28	0	64	32	107	0	139	36	1	0	37	240
3:45 PM	40	37	0	77	22	89	0	111	39	10	0	49	237
Hourly Total	148	130	0	278	74	262	0	336	138	34	0	172	786
4:00 PM	43	33	0	76	8	55	0	63	56	15	0	71	210
4:15 PM	60	22	0	82	14	52	0	66	58	30	0	88	236
4:30 PM	41	45	0	86	45	100	0	145	55	13	0	68	299
4:45 PM	42	59	0	101	5	45	0	50	52	6	0	58	209
Hourly Total	186	159	0	345	72	252	0	324	221	64	0	285	954
5:00 PM	53	64	0	117	12	45	0	57	69	6	0	75	249
5:15 PM	48	40	0	88	4	31	0	35	59	13	0	72	195
5:30 PM	39	38	0	77	17	43	0	60	60	28	0	88	225
5:45 PM	20	31	0	51	9	41	0	50	37	5	0	42	143
Hourly Total	160	173	0	333	42	160	0	202	225	52	0	277	812
Grand Total	1057	886	0	1943	322	1354	0	1676	956	277	0	1233	4852
Approach %	54.4	45.6	-	-	19.2	80.8	-	-	77.5	22.5	-	-	-
Total %	21.8	18.3	-	40.0	6.6	27.9	-	34.5	19.7	5.7	-	25.4	-
Lights	1002	846	-	1848	307	1277	-	1584	929	262	-	1191	4623
% Lights	94.8	95.5	-	95.1	95.3	94.3	-	94.5	97.2	94.6	-	96.6	95.3
Other Vehicles	55	40	-	95	15	77	-	92	27	15	-	42	229
% Other Vehicles	5.2	4.5	-	4.9	4.7	5.7	-	5.5	2.8	5.4	-	3.4	4.7
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

Traffic Planning and Design, Inc
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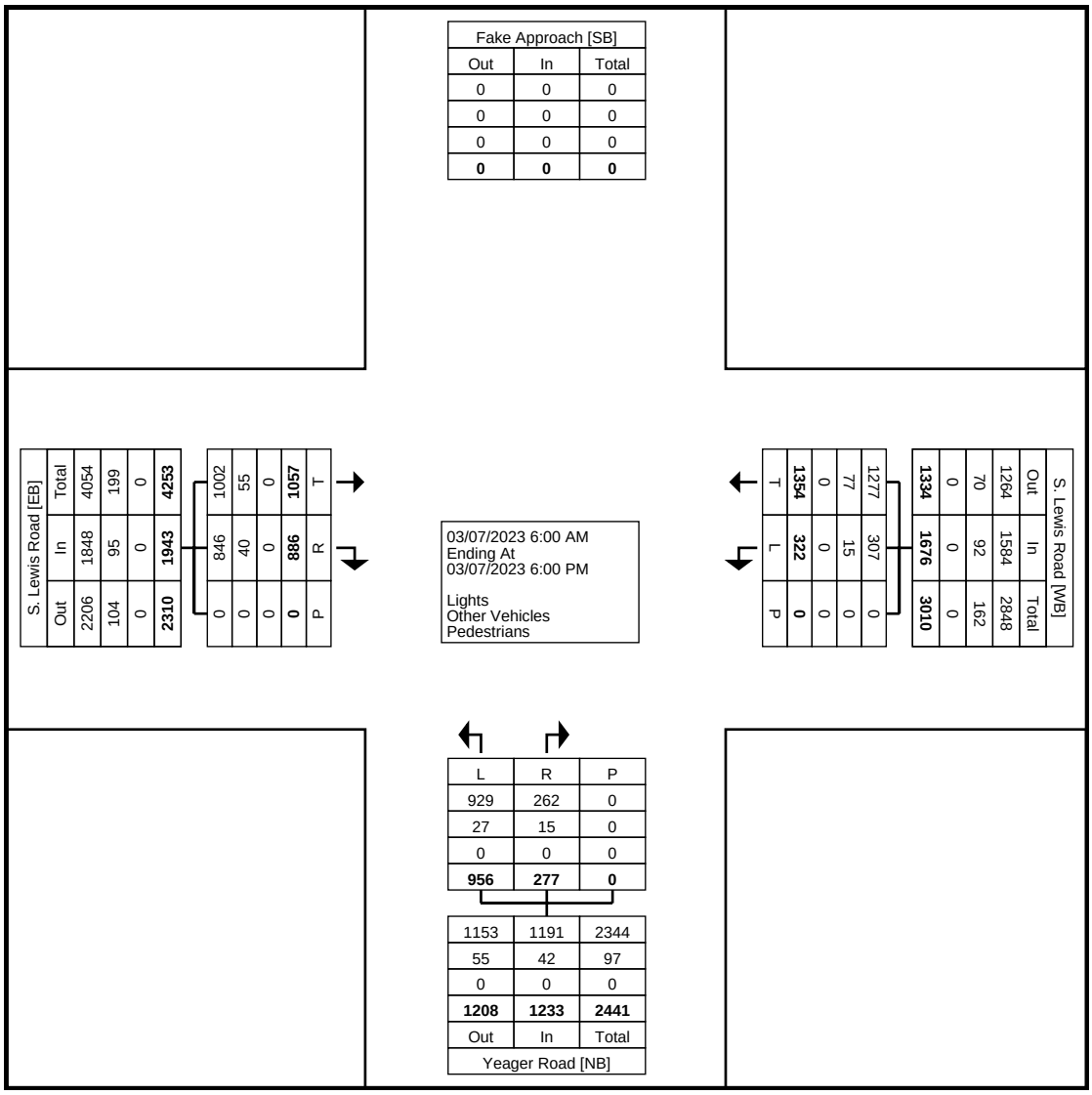
Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023



Turning Movement Data Plot

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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (6:45 AM)

Start Time	S. Lewis Road Eastbound				S. Lewis Road Westbound				Yeager Road Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
6:45 AM	26	32	0	58	6	139	0	145	57	1	0	58	261
7:00 AM	39	42	0	81	3	98	0	101	85	1	0	86	268
7:15 AM	84	98	0	182	16	65	0	81	32	15	0	47	310
7:30 AM	83	39	0	122	22	76	0	98	29	26	0	55	275
Total	232	211	0	443	47	378	0	425	203	43	0	246	1114
Approach %	52.4	47.6	-	-	11.1	88.9	-	-	82.5	17.5	-	-	-
Total %	20.8	18.9	-	39.8	4.2	33.9	-	38.2	18.2	3.9	-	22.1	-
PHF	0.690	0.538	-	0.609	0.534	0.680	-	0.733	0.597	0.413	-	0.715	0.898
Lights	214	194	-	408	45	350	-	395	196	37	-	233	1036
% Lights	92.2	91.9	-	92.1	95.7	92.6	-	92.9	96.6	86.0	-	94.7	93.0
Other Vehicles	18	17	-	35	2	28	-	30	7	6	-	13	78
% Other Vehicles	7.8	8.1	-	7.9	4.3	7.4	-	7.1	3.4	14.0	-	5.3	7.0
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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Counter:: Mio
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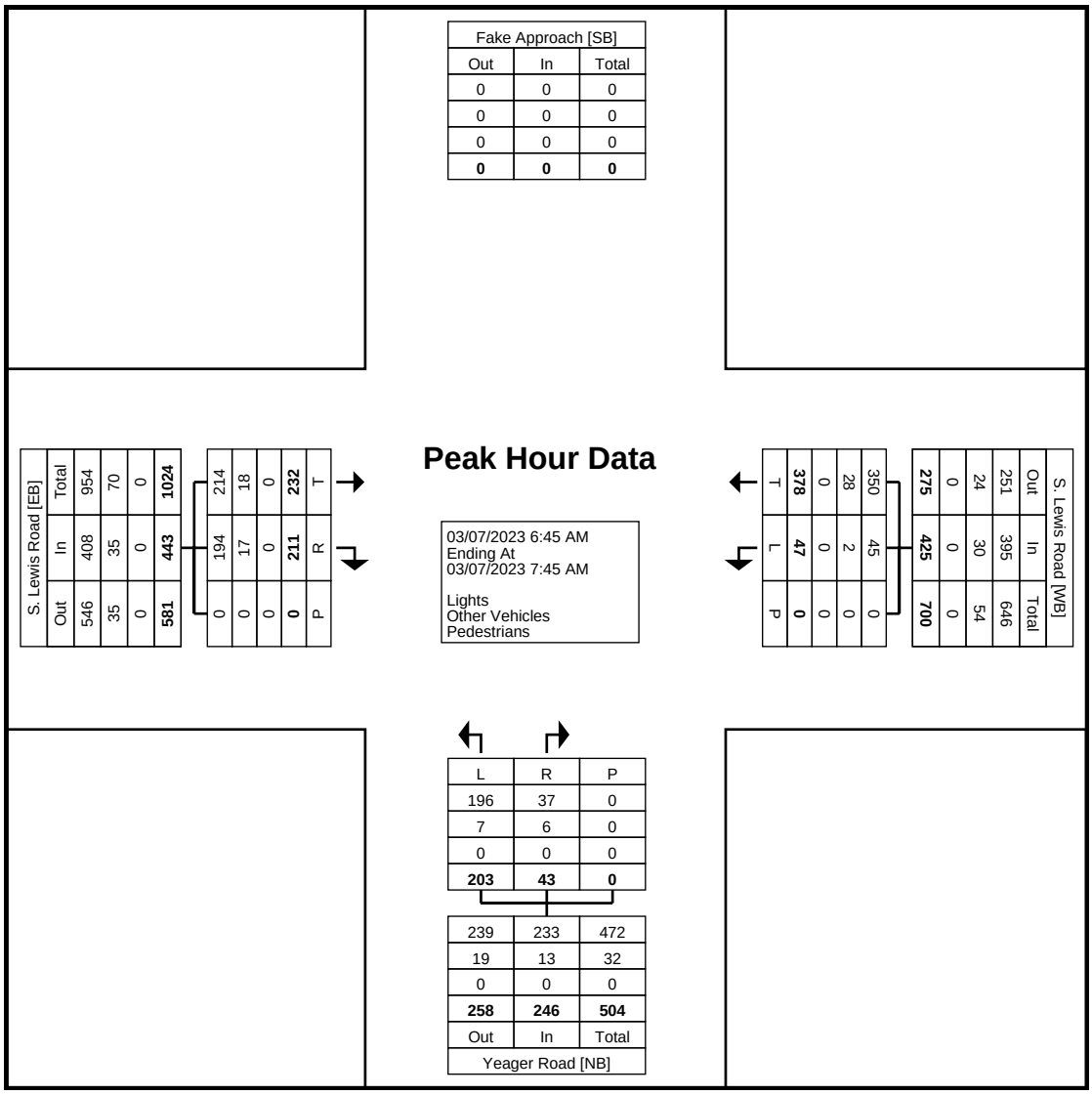
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023



Turning Movement Peak Hour Data Plot (6:45 AM)

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2500 East High Street
Suite 650
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610.326.3100 mbressler@trafficpd.com

Counter:: Mio
Counted By:: Mio
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023

Turning Movement Peak Hour Data (4:15 PM)

Start Time	S. Lewis Road Eastbound				S. Lewis Road Westbound				Yeager Road Northbound				
	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
4:15 PM	60	22	0	82	14	52	0	66	58	30	0	88	236
4:30 PM	41	45	0	86	45	100	0	145	55	13	0	68	299
4:45 PM	42	59	0	101	5	45	0	50	52	6	0	58	209
5:00 PM	53	64	0	117	12	45	0	57	69	6	0	75	249
Total	196	190	0	386	76	242	0	318	234	55	0	289	993
Approach %	50.8	49.2	-	-	23.9	76.1	-	-	81.0	19.0	-	-	-
Total %	19.7	19.1	-	38.9	7.7	24.4	-	32.0	23.6	5.5	-	29.1	-
PHF	0.817	0.742	-	0.825	0.422	0.605	-	0.548	0.848	0.458	-	0.821	0.830
Lights	195	188	-	383	76	242	-	318	229	55	-	284	985
% Lights	99.5	98.9	-	99.2	100.0	100.0	-	100.0	97.9	100.0	-	98.3	99.2
Other Vehicles	1	2	-	3	0	0	-	0	5	0	-	5	8
% Other Vehicles	0.5	1.1	-	0.8	0.0	0.0	-	0.0	2.1	0.0	-	1.7	0.8
Pedestrians	-	-	0	-	-	-	0	-	-	-	0	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-

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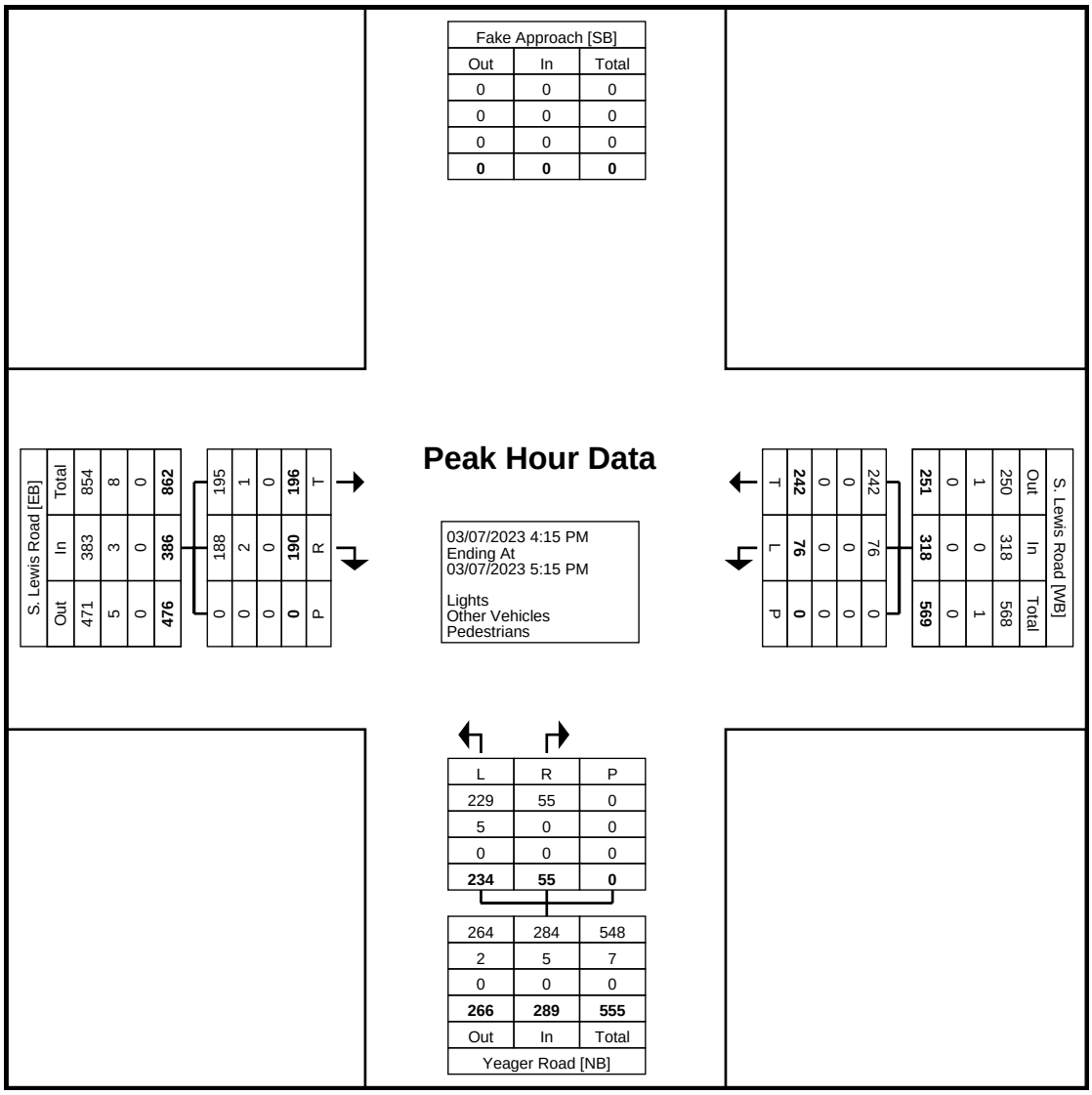
Weather:: Clear

Count Name: S. Lewis Road and Yeager Road
Site Code:
Start Date: 03/07/2023



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

APPENDIX D

Speed Study Data

Speed Study Data Sheet

Job Number	ROYH.00001	Road Name	Black Rock Road
Start Time	11am	Stop Time	1pm
Municipality	Royersford	County	Montgomery
Date	3/22/2023	Weather	Sunny & Clear
Direction	North	Speed Limit	40 mph
Location	Ramsgate Road	Technician	J. Burns

#	Speed	Truck	#	Speed	Truck	#	Speed	Truck	#	Speed	Truck
1	44		**26**	43		**51**	45		**76**	45	
2	42		**27**	47		**52**	48		**77**	52	
3	44		**28**	47		**53**	47		**78**	47	
4	39		**29**	49		**54**	43		**79**	52	
5	46		**30**	41		**55**	53		**80**	43	
6	42		**31**	41		**56**	49		**81**	51	
7	44		**32**	40		**57**	45		**82**	42	
8	47		**33**	49		**58**	42		**83**	49	
9	43		**34**	42		**59**	42		**84**	48	
10	51		**35**	39		**60**	49		**85**	45	
11	47		**36**	44		**61**	51		**86**	49	
12	45		**37**	46		**62**	47		**87**	48	
13	48		**38**	52		**63**	42		**88**	42	
14	46		**39**	45		**64**	47		**89**	44	
15	47		**40**	43		**65**	48		**90**	43	
16	45		**41**	50		**66**	44		**91**	45	
17	47		**42**	49		**67**	42		**92**	43	
18	50		**43**	45		**68**	46		**93**	44	
19	56		**44**	48		**69**	44		**94**	35	
20	46		**45**	50		**70**	42		**95**	48	
21	41		**46**	46		**71**	55		**96**	43	
22	48		**47**	52		**72**	52		**97**	49	
23	47		**48**	50		**73**	46		**98**	48	
24	49		**49**	55		**74**	45		**99**	45	
25	46		**50**	45		**75**	47		**100**	45	

Speed Distribution Survey

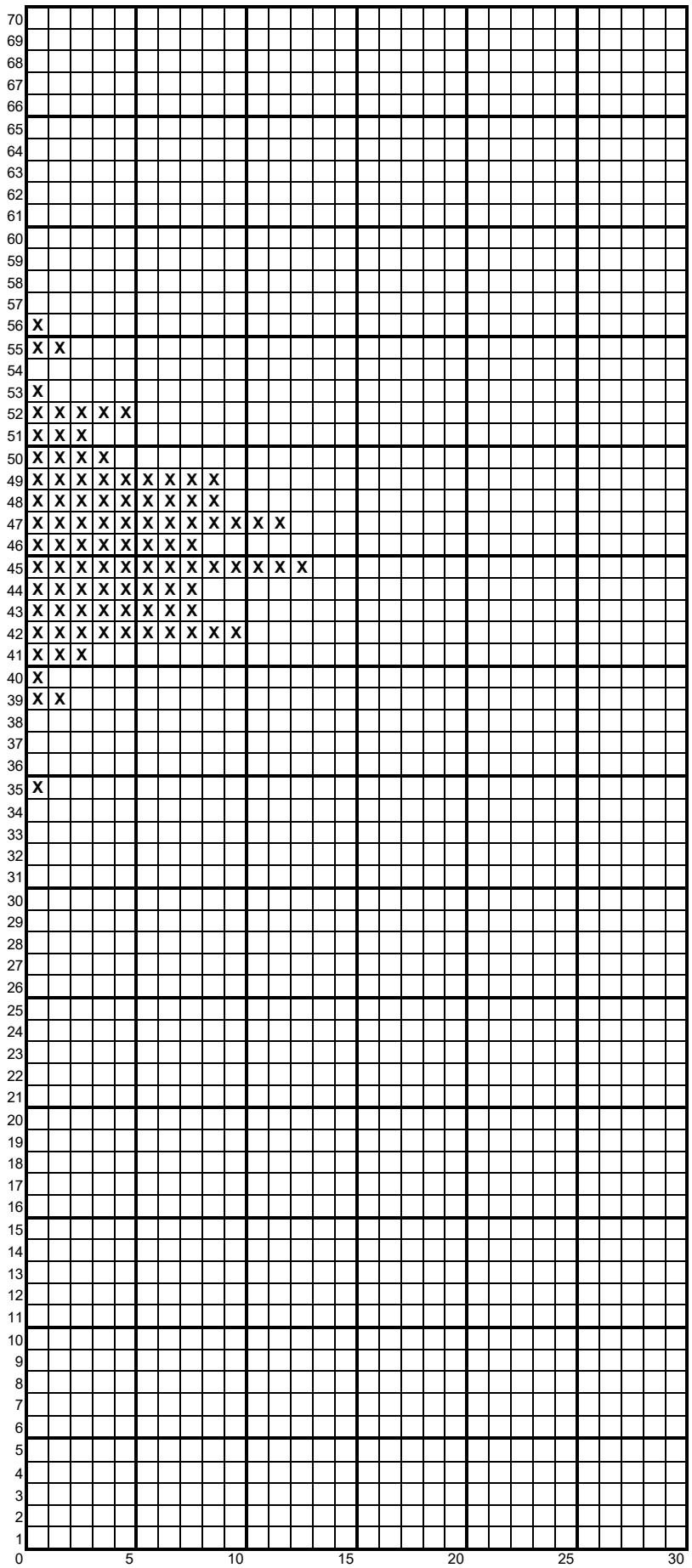
TRAFFIC PLANNING AND DESIGN, INC.

Job Number	ROYH.00001
Date	3/22/2023
Municipality	Royersford
County	Montgomery
Road Name	Black Rock Road
Speed Limit	40 mph
Direction of Traffic	North
Location	Ramsgate Road
Start Time	11am
End Time	1pm
Weather	Sunny & Clear
Technician	J. Burns
Total Vehicles	100
Total Heavy Vehicles	0

10 mph Pace	42 to 51 mph
Vehicles in Pace	84%
Vehicles above Pace	9%
Vehicles below Pace	7%

85th Percentile Speed
50 mph

Legend
Car = X
Heavy Vehicle = O



Speed Study Data Sheet

Job Number	ROYH.00001	Road Name	Black Rock Road
Start Time	11am	Stop Time	1pm
Municipality	Royersford	County	Montgomery
Date	3/22/2023	Weather	Sunny & Clear
Direction	South	Speed Limit	40 mph
Location	Ramsgate Road	Technician	J. Burns

#	Speed	Truck	#	Speed	Truck	#	Speed	Truck	#	Speed	Truck
1	39		**26**	47		**51**	43		**76**	46	
2	47		**27**	55		**52**	50		**77**	49	
3	45		**28**	45		**53**	46		**78**	48	
4	44		**29**	42		**54**	50		**79**	47	
5	35		**30**	43		**55**	44		**80**	45	
6	42		**31**	42		**56**	51		**81**	46	
7	39		**32**	49		**57**	47		**82**	50	
8	50		**33**	46		**58**	42		**83**	53	
9	47		**34**	49		**59**	50		**84**	42	
10	50		**35**	51		**60**	42		**85**	51	
11	50		**36**	46		**61**	51		**86**	46	
12	34		**37**	46		**62**	46		**87**	48	
13	47		**38**	50		**63**	47		**88**	46	
14	51		**39**	45		**64**	46		**89**	50	
15	41		**40**	45		**65**	47		**90**	49	
16	43		**41**	50		**66**	50		**91**	45	
17	35		**42**	49		**67**	45		**92**	42	
18	53		**43**	58		**68**	47		**93**	44	
19	53		**44**	50		**69**	47		**94**	48	
20	47		**45**	45		**70**	46		**95**	45	
21	49		**46**	47		**71**	48		**96**	49	
22	51		**47**	44		**72**	52		**97**	52	
23	52		**48**	45		**73**	49		**98**	52	
24	49		**49**	42		**74**	49		**99**	46	
25	56		**50**	50		**75**	45		**100**	52	

Speed Distribution Survey

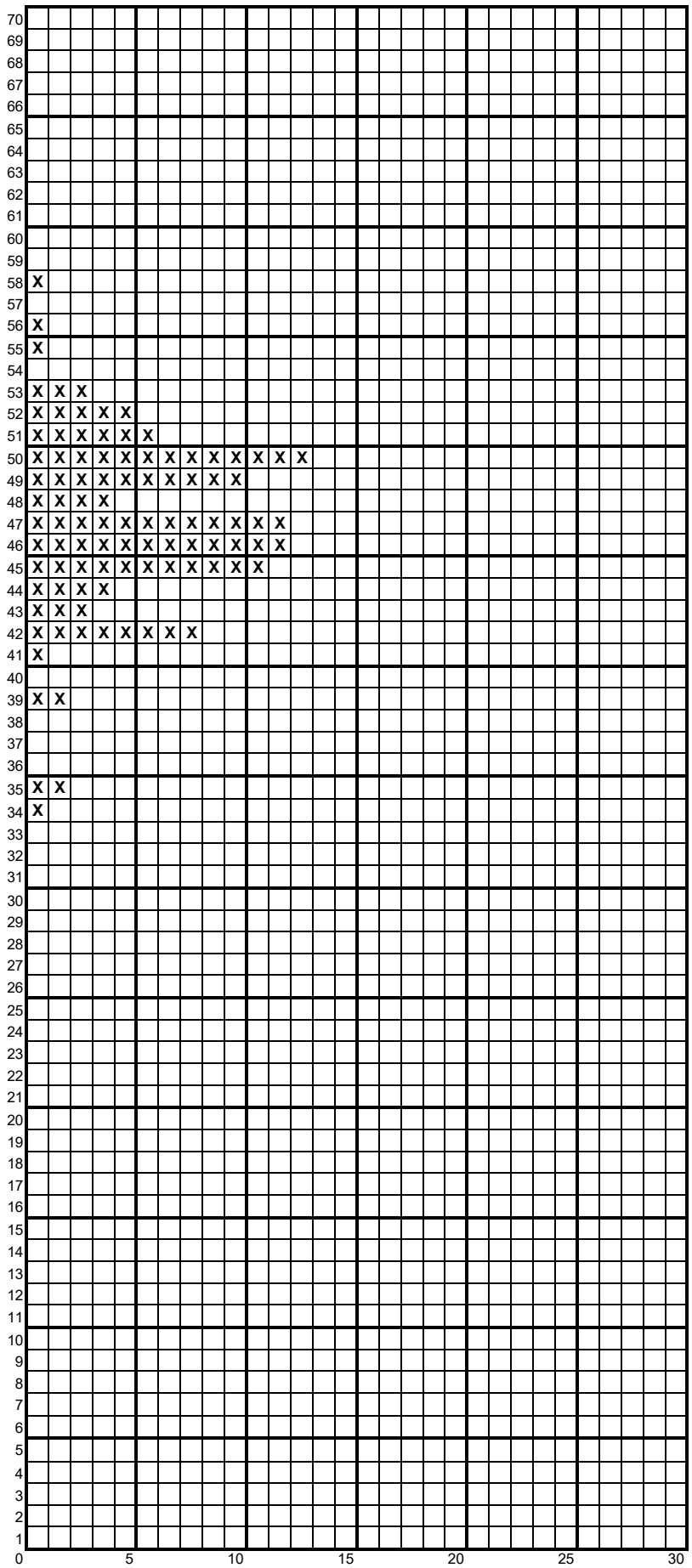
TRAFFIC PLANNING AND DESIGN, INC.

Job Number	ROYH.00001
Date	3/22/2023
Municipality	Royersford
County	Montgomery
Road Name	Black Rock Road
Speed Limit	40 mph
Direction of Traffic	South
Location	Ramsgate Road
Start Time	11am
End Time	1pm
Weather	Sunny & Clear
Technician	J. Burns
Total Vehicles	100
Total Heavy Vehicles	0

10 mph Pace	42 to 51 mph
Vehicles in Pace	83%
Vehicles above Pace	11%
Vehicles below Pace	6%

85th Percentile Speed
51 mph

Legend
Car = X
Heavy Vehicle = O



Speed Study Data Sheet

Job Number	ROYH.00001	Road Name	Black Rock Road
Start Time	1pm	Stop Time	2:30pm
Municipality	Royersford	County	Montgomery
Date	3/22/2023	Weather	Sunny & Clear
Direction	North	Speed Limit	40 mph
Location	River Road	Technician	J. Burns

#	Speed	Truck	#	Speed	Truck	#	Speed	Truck	#	Speed	Truck
1	47		**26**	49		**51**	44		**76**	45	
2	42		**27**	46		**52**	43		**77**	45	
3	44		**28**	40		**53**	38		**78**	42	
4	35		**29**	39		**54**	44		**79**	50	
5	44		**30**	44		**55**	38		**80**	46	
6	46		**31**	45		**56**	50		**81**	43	
7	40		**32**	49		**57**	47		**82**	48	
8	41		**33**	45		**58**	38		**83**	43	
9	41		**34**	42		**59**	45		**84**	45	
10	42		**35**	48		**60**	49		**85**	42	
11	48		**36**	43		**61**	46		**86**	43	
12	42		**37**	48		**62**	48		**87**	42	
13	46		**38**	42		**63**	42		**88**	43	
14	48		**39**	43		**64**	47		**89**	44	
15	37		**40**	42		**65**	45		**90**	45	
16	49		**41**	42		**66**	48		**91**	51	
17	42		**42**	47		**67**	47		**92**	42	
18	50		**43**	40		**68**	58		**93**	40	
19	43		**44**	44		**69**	49		**94**	41	
20	45		**45**	43		**70**	48		**95**	44	
21	43		**46**	42		**71**	43		**96**	40	
22	50		**47**	46		**72**	49		**97**	43	
23	49		**48**	40		**73**	53		**98**	45	
24	49		**49**	45		**74**	42		**99**	44	
25	45		**50**	45		**75**	43		**100**	41	

Speed Distribution Survey

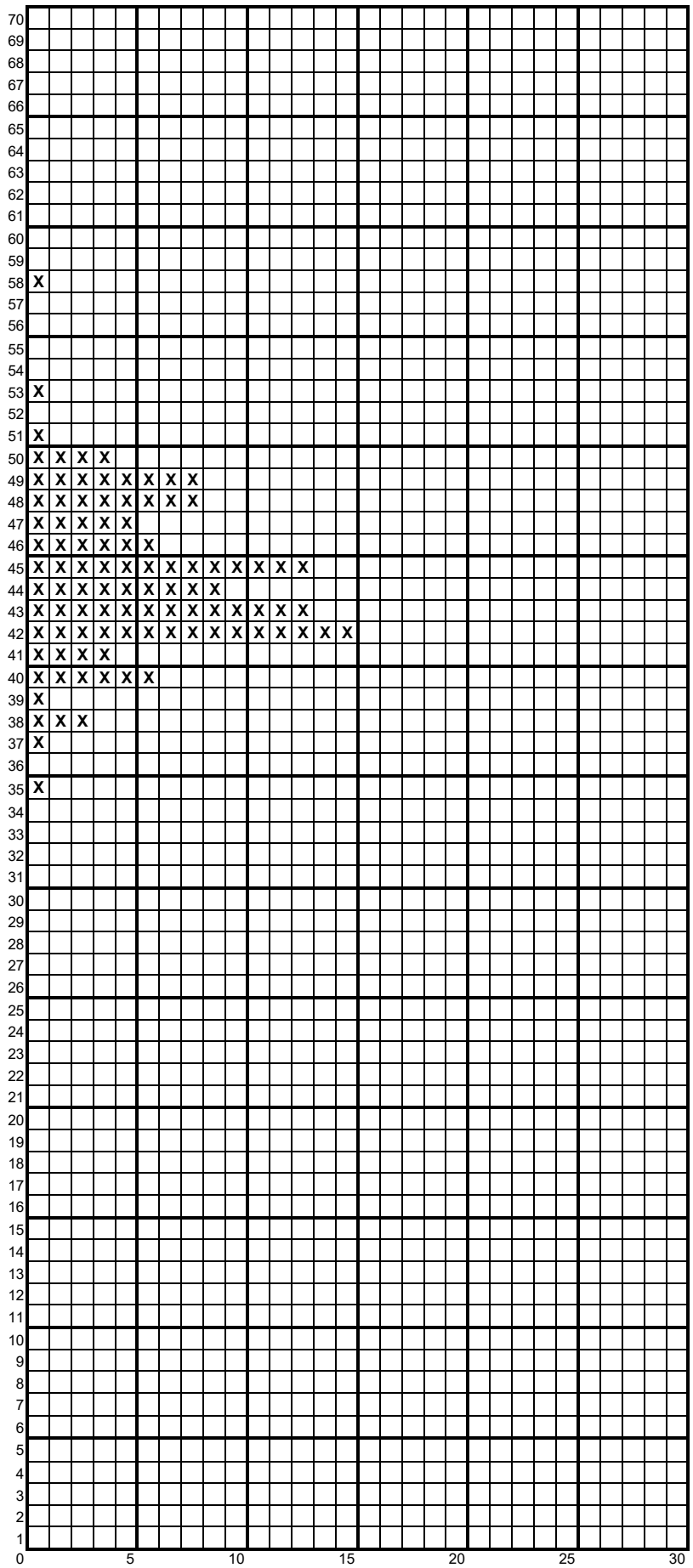
TRAFFIC PLANNING AND DESIGN, INC.

Job Number	ROYH.00001
Date	3/22/2023
Municipality	Royersford
County	Montgomery
Road Name	Black Rock Road
Speed Limit	40 mph
Direction of Traffic	North
Location	River Road
Start Time	1pm
End Time	2:30pm
Weather	Sunny & Clear
Technician	J. Burns
Total Vehicles	100
Total Heavy Vehicles	0

10 mph Pace	40 to 49 mph
Vehicles in Pace	87%
Vehicles above Pace	7%
Vehicles below Pace	6%

85th Percentile Speed
48 mph

Legend
Car = X
Heavy Vehicle = O



Speed Study Data Sheet

Job Number	ROYH.00001	Road Name	Black Rock Road
Start Time	1pm	Stop Time	2:30pm
Municipality	Royersford	County	Montgomery
Date	3/22/2023	Weather	Sunny & Clear
Direction	South	Speed Limit	40 mph
Location	River Road	Technician	J. Burns

#	Speed	Truck	#	Speed	Truck	#	Speed	Truck	#	Speed	Truck
1	54		**26**	47		**51**	47		**76**	48	
2	44		**27**	45		**52**	43		**77**	45	
3	49		**28**	43		**53**	47		**78**	47	
4	47		**29**	47		**54**	44		**79**	47	
5	47		**30**	51		**55**	42		**80**	49	
6	42		**31**	44		**56**	43		**81**	47	
7	38		**32**	43		**57**	49		**82**	47	
8	45		**33**	43		**58**	48		**83**	43	
9	50		**34**	46		**59**	49		**84**	45	
10	51		**35**	46		**60**	51		**85**	42	
11	49		**36**	45		**61**	45		**86**	43	
12	51		**37**	51		**62**	42		**87**	48	
13	45		**38**	50		**63**	42		**88**	49	
14	45		**39**	48		**64**	46		**89**	43	
15	42		**40**	53		**65**	45		**90**	41	
16	45		**41**	53		**66**	46		**91**	45	
17	45		**42**	50		**67**	44		**92**	45	
18	44		**43**	41		**68**	47		**93**	43	
19	45		**44**	44		**69**	52		**94**	48	
20	42		**45**	49		**70**	49		**95**	43	
21	46		**46**	43		**71**	48		**96**	51	
22	44		**47**	44		**72**	48		**97**	49	
23	43		**48**	46		**73**	45		**98**	45	
24	43		**49**	43		**74**	45		**99**	38	
25	47		**50**	44		**75**	49		**100**	46	

Speed Distribution Survey

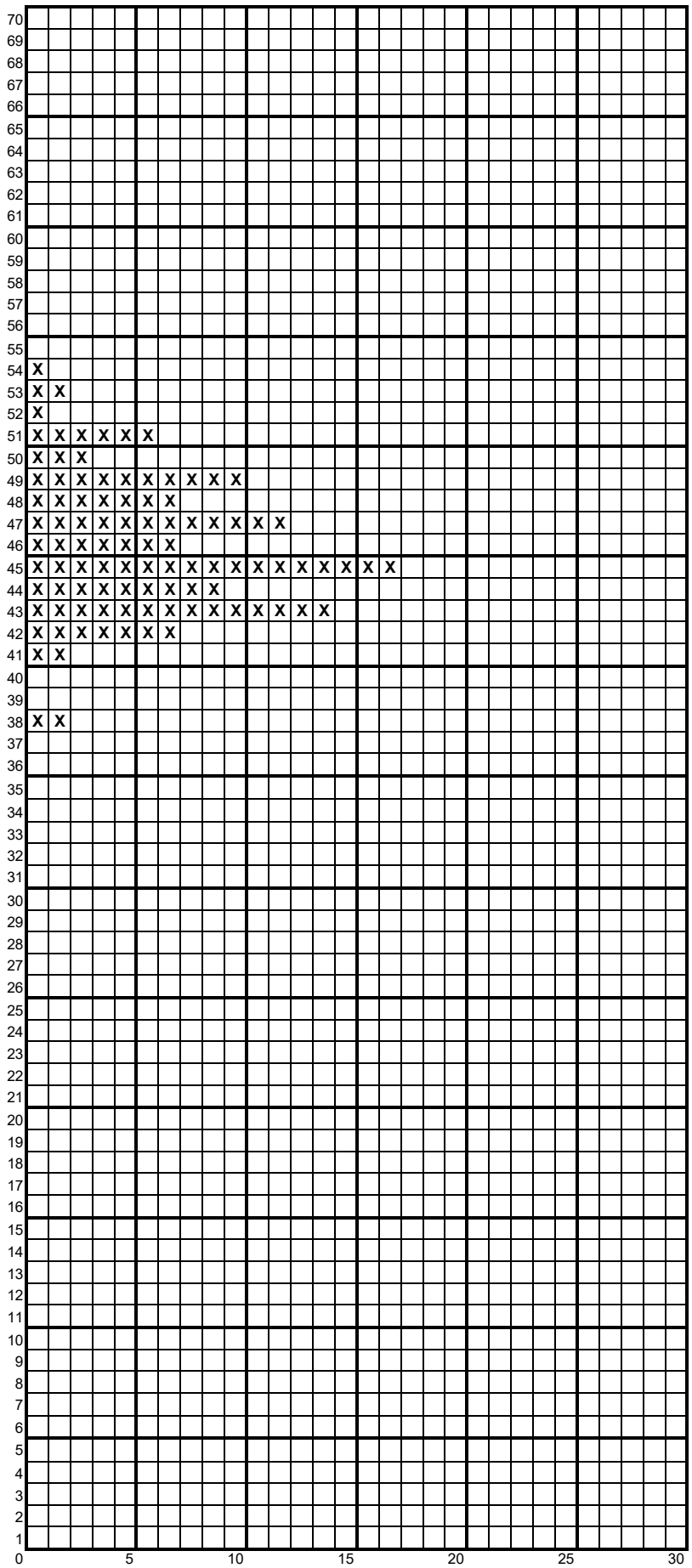
TRAFFIC PLANNING AND DESIGN, INC.

Job Number	ROYH.00001
Date	3/22/2023
Municipality	Royersford
County	Montgomery
Road Name	Black Rock Road
Speed Limit	40 mph
Direction of Traffic	South
Location	River Road
Start Time	1pm
End Time	2:30pm
Weather	Sunny & Clear
Technician	J. Burns
Total Vehicles	100
Total Heavy Vehicles	0

10 mph Pace	42 to 51 mph
Vehicles in Pace	92%
Vehicles above Pace	4%
Vehicles below Pace	4%

85th Percentile Speed
49 mph

Legend
Car = X
Heavy Vehicle = O



APPENDIX E

Scheduled Roadway Improvement

pennsylvania
DEPARTMENT OF TRANSPORTATION

TIP VISUALIZATION

April 11, 2023

Project Report

Federal Fiscal Year 2023 DVRPC TIP

County: Montgomery
Project ID: 118005 **Municipality:** Upper Providence
Title: Black Rock Rd o/ Trib Schuylkill Riv **Route:** 113 **Air Quality Status:** Exempt
Improvement Type: Bridge Rehabilitation
Exempt Code: Widen narw. pave. or recon brdgs (No addtl lanes)
Work Can Begin: **Completion Date:**
Project Limits Montgomery County
Narrative: Black Rock Road over Tributary of Schuylkill River
Montgomery County
Bridge Rehabilitation

TIP Program Years

Phase	Fund	Fiscal Year 2023	Fiscal Year 2024	Fiscal Year 2025	Fiscal Year 2026	2nd 4 Years	3rd 4 Years
Final Design	185	$250,000	$0	$0	$0	$0	$0
Construction	STU	$0	$1,000,000	$0	$0	$0	$0
		$250,000	**$1,000,000**	**$0**	**$0**	**$0**	**$0**

Total Twelve Year Program Costs - $1,250,000

NOTES:

1. THIS PLAN IS FOR CONCEPTUAL PURPOSES ONLY AND WAS PREPARED AT THE REQUEST OF THE TOWNSHIP.

2. EXISTING CONDITIONS DEPICTED ON THE CONCEPTUAL DESIGN EXHIBIT ARE BASED ON AERIAL PHOTOGRAPHY (DATA OBTAINED FROM THE PENNSYLVANIA SPATIAL DATA ACCESS) AND TOPOGRAPHIC SURVEY COMPLETED BY MCMAHON ASSOCIATES, INC., A BOWMAN COMPANY. ALSO SHOWN IS THE SITE PLAN FOR THE PROPOSED RESIDENTIAL CARE COMMUNITY FOR SENIOR CITIZENS (APRIL 25, 2022) COMPLETED BY BOHLER ENGINEERING.

3. NO EXISTING OR PROPOSED EASEMENTS ARE SHOWN. EASEMENTS WILL BE REQUIRED AND WILL BE DETERMINED DURING THE DESIGN PROCESS.

4. THIS PROJECT WILL REQUIRE THE RELOCATION OF UTILITY POLES. EXISTING AND PROPOSED UTILITY POLE LOCATIONS ARE NOT SHOWN AND WILL BE DETERMINED DURING DESIGN.

5. THE PROPOSED IMPROVEMENTS SHOWN ARE BASED ON DESIRABLE STANDARDS AND REQUIREMENTS, BUT ARE PRELIMINARY AND SUBJECT TO CHANGE. THIS MAY REQUIRE UPGRADING CERTAIN ELEMENTS OF THE DESIGN THROUGHOUT THE PERMITTING PROCESS. THE DESIGN SHOWN IS SUBJECT TO CHANGE DURING THE PERMITTING PROCESS.

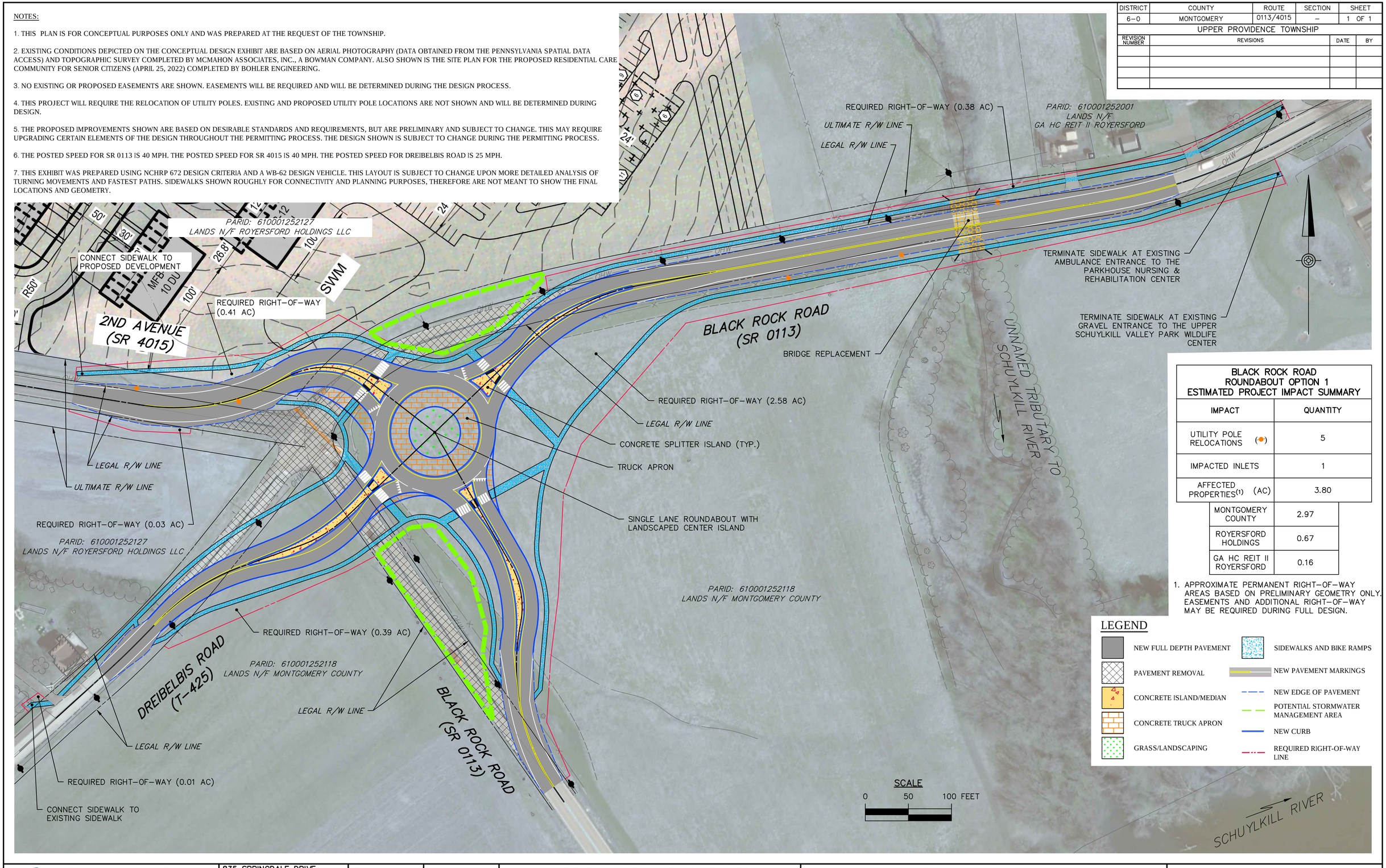
6. THE POSTED SPEED FOR SR 0113 IS 40 MPH. THE POSTED SPEED FOR SR 4015 IS 40 MPH. THE POSTED SPEED FOR DREIBELBIS ROAD IS 25 MPH.

7. THIS EXHIBIT WAS PREPARED USING NCHRP 672 DESIGN CRITERIA AND A WB-62 DESIGN VEHICLE. THIS LAYOUT IS SUBJECT TO CHANGE UPON MORE DETAILED ANALYSIS OF TURNING MOVEMENTS AND FASTEST PATHS. SIDEWALKS SHOWN ROUGHLY FOR CONNECTIVITY AND PLANNING PURPOSES, THEREFORE ARE NOT MEANT TO SHOW THE FINAL LOCATIONS AND GEOMETRY.

DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	MONTGOMERY	0113/4015	–	1 OF 1

UPPER PROVIDENCE TOWNSHIP

REVISION NUMBER	REVISIONS	DATE	BY



BLACK ROCK ROAD ROUNDABOUT OPTION 1 ESTIMATED PROJECT IMPACT SUMMARY

IMPACT	QUANTITY
UTILITY POLE RELOCATIONS (●)	5
IMPACTED INLETS	1
AFFECTED PROPERTIES(1) (AC)	3.80
MONTGOMERY COUNTY	2.97
ROYERSFORD HOLDINGS	0.67
GA HC REIT II ROYERSFORD	0.16

1. APPROXIMATE PERMANENT RIGHT-OF-WAY AREAS BASED ON PRELIMINARY GEOMETRY ONLY. EASEMENTS AND ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED DURING FULL DESIGN.

LEGEND

- NEW FULL DEPTH PAVEMENT
- PAVEMENT REMOVAL
- CONCRETE ISLAND/MEDIAN
- CONCRETE TRUCK APRON
- GRASS/LANDSCAPING
- SIDEWALKS AND BIKE RAMPS
- NEW PAVEMENT MARKINGS
- NEW EDGE OF PAVEMENT
- POTENTIAL STORMWATER MANAGEMENT AREA
- NEW CURB
- REQUIRED RIGHT-OF-WAY LINE

McMAHON a Bowman company
835 SPRINGDALE DRIVE
SUITE 200
EXTON, PA 19341
PH: (610) 594-9995
FAX: (610) 594-9565

DESIGN BY: JCT
DRAWN BY: NAR
CHECKED BY: KDK
JOB NO: 821578
DWG: 578CPT01_OPT_1
DATE: 11-29-22

UPPER PROVIDENCE TOWNSHIP
1286 BLACK ROCK ROAD
OAKS, PA 19456
(610) 933-9179

BLACK ROCK ROAD ROUNDABOUT
SR 0113 BLACK ROCK ROAD AND SR 4015 2ND AVENUE
UPPER PROVIDENCE TOWNSHIP MONTGOMERY COUNTY

ROUNDABOUT CONCEPT 1
EXHIBIT

APPENDIX F

Volume Development Spreadsheets & Trip Assignment Data

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road/Dreibelbis Road (EW) & 2nd Avenue/Black Rock Road (NS)**									
Synchro Node:	**1**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**11**	**23**	**14**	**226**	**8**	**47**	**2**	**89**	**215**	**126**	**175**	**8**	**944**
Balancing													0
2023 Existing Volumes (Balanced)	**11**	**23**	**14**	**226**	**8**	**47**	**2**	**89**	**215**	**126**	**175**	**8**	**944**
Base growth (0.27% compounded for 5 yrs)	0	0	0	3	0	1	0	1	3	2	2	0	12
Base growth (0.27% compounded for 10 yrs)	0	1	0	6	0	1	0	2	6	3	5	0	24
2028 Base Volumes	**11**	**23**	**14**	**229**	**8**	**48**	**2**	**90**	**218**	**128**	**177**	**8**	**956**
2033 Base Volumes	**11**	**24**	**14**	**232**	**8**	**48**	**2**	**91**	**221**	**129**	**180**	**8**	**968**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted	12.0%					14.0%							
Trip Assignment % - New Exit - Age Restricted										14.0%		12.0%	
Trip Assignment % - New Enter - Market Rate A					7.0%	7.0%						10.0%	
Trip Assignment % - New Exit - Market Rate A	10.0%	7.0%								7.0%			
Trip Assignment % - New Enter - Market Rate B					14.0%							10.0%	
Trip Assignment % - New Exit - Market Rate B	10.0%	14.0%											
New Trips - Age Restricted	1					2				3		2	**8**
New Trips - Market Rate A	17	11			4	4				12		5	**53**
New Trips - Market Rate B	1	2			1								**4**
2028 Projected Volumes	**30**	**36**	**14**	**229**	**13**	**54**	**2**	**90**	**218**	**143**	**177**	**15**	**1021**
2033 Projected Volumes	**30**	**37**	**14**	**232**	**13**	**54**	**2**	**91**	**221**	**144**	**180**	**15**	**1033**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**11**	**23**	**8**	**268**	**29**	**132**	**8**	**176**	**234**	**31**	**100**	**12**	**1032**
Balancing													0
2023 Existing Volumes (Balanced)	**11**	**23**	**8**	**268**	**29**	**132**	**8**	**176**	**234**	**31**	**100**	**12**	**1032**
Base growth (0.27% compounded for 5 yrs)	0	0	0	4	0	2	0	2	3	0	1	0	12
Base growth (0.27% compounded for 10 yrs)	0	1	0	7	1	4	0	5	6	1	3	0	28
2028 Base Volumes	**11**	**23**	**8**	**272**	**29**	**134**	**8**	**178**	**237**	**31**	**101**	**12**	**1044**
2033 Base Volumes	**11**	**24**	**8**	**275**	**30**	**136**	**8**	**181**	**240**	**32**	**103**	**12**	**1060**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted	12.0%					14.0%							
Trip Assignment % - New Exit - Age Restricted										14.0%		12.0%	
Trip Assignment % - New Enter - Market Rate A					7.0%	7.0%						10.0%	
Trip Assignment % - New Exit - Market Rate A	10.0%	7.0%								7.0%			
Trip Assignment % - New Enter - Market Rate B					14.0%							10.0%	
Trip Assignment % - New Exit - Market Rate B	10.0%	14.0%											
New Trips - Age Restricted	3					3				2		2	**10**
New Trips - Market Rate A	11	7			11	11				8		16	**64**
New Trips - Market Rate B	1	1			2							1	**5**
2028 Projected Volumes	**26**	**31**	**8**	**272**	**42**	**148**	**8**	**178**	**237**	**41**	**101**	**31**	**1123**
2033 Projected Volumes	**26**	**32**	**8**	**275**	**43**	**150**	**8**	**181**	**240**	**42**	**103**	**31**	**1139**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Yeager Road (EW) & Black Rock Road (NS)**												
Synchro Node:	**2**	**Adjacent intersections:**		**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**		

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**33**	**284**	**14**	**87**	**140**	**93**	**7**	**245**	**113**	**239**	**204**	**5**	**1464**
Balancing													0
2023 Existing Volumes (Balanced)	**33**	**284**	**14**	**87**	**140**	**93**	**7**	**245**	**113**	**239**	**204**	**5**	**1464**
Base growth (0.27% compounded for 5 yrs)	0	4	0	1	2	1	0	3	2	3	3	0	19
Base growth (0.27% compounded for 10 yrs)	1	8	0	2	4	3	0	7	3	7	6	0	41
2028 Base Volumes	**33**	**288**	**14**	**88**	**142**	**94**	**7**	**248**	**115**	**242**	**207**	**5**	**1483**
2033 Base Volumes	**34**	**292**	**14**	**89**	**144**	**96**	**7**	**252**	**116**	**246**	**210**	**5**	**1505**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted			20.0%	17.0%							37.0%		
Trip Assignment % - New Exit - Age Restricted							20.0%	37.0%	17.0%				
Trip Assignment % - New Enter - Market Rate A			6.0%	12.0%	5.0%						27.0%	10.0%	
Trip Assignment % - New Exit - Market Rate A	10.0%	5.0%					6.0%	27.0%	12.0%				
Trip Assignment % - New Enter - Market Rate B				5.0%	12.0%						5.0%	32.0%	
Trip Assignment % - New Exit - Market Rate B	32.0%	12.0%						5.0%	5.0%				
New Trips - Age Restricted			2	2			4	7	4		4		**23**
New Trips - Market Rate A	17	8	3	7	2		10	45	21		15	6	**134**
New Trips - Market Rate B	4	1						1				2	**8**
2028 Projected Volumes	**54**	**297**	**19**	**97**	**144**	**94**	**21**	**301**	**140**	**242**	**226**	**13**	**1648**
2033 Projected Volumes	**55**	**301**	**19**	**98**	**146**	**96**	**21**	**305**	**141**	**246**	**229**	**13**	**1670**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**13**	**96**	**15**	**133**	**234**	**238**	**23**	**214**	**59**	**128**	**291**	**10**	**1454**
Balancing													0
2023 Existing Volumes (Balanced)	**13**	**96**	**15**	**133**	**234**	**238**	**23**	**214**	**59**	**128**	**291**	**10**	**1454**
Base growth (0.27% compounded for 5 yrs)	0	1	0	2	3	3	0	3	1	2	4	0	19
Base growth (0.27% compounded for 10 yrs)	0	3	0	4	6	6	1	6	2	3	8	0	39
2028 Base Volumes	**13**	**97**	**15**	**135**	**237**	**241**	**23**	**217**	**60**	**130**	**295**	**10**	**1473**
2033 Base Volumes	**13**	**99**	**15**	**137**	**240**	**244**	**24**	**220**	**61**	**131**	**299**	**10**	**1493**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted			20.0%	17.0%							37.0%		
Trip Assignment % - New Exit - Age Restricted							20.0%	37.0%	17.0%				
Trip Assignment % - New Enter - Market Rate A			6.0%	12.0%	5.0%						27.0%	10.0%	
Trip Assignment % - New Exit - Market Rate A	10.0%	5.0%					6.0%	27.0%	12.0%				
Trip Assignment % - New Enter - Market Rate B				5.0%	12.0%						5.0%	32.0%	
Trip Assignment % - New Exit - Market Rate B	32.0%	12.0%						5.0%	5.0%				
New Trips - Age Restricted			4	4			4	6	3		7		**28**
New Trips - Market Rate A	11	5	9	19	8		7	29	13		43	16	**160**
New Trips - Market Rate B	2	1			1			1			1	4	**10**
2028 Projected Volumes	**26**	**103**	**28**	**158**	**246**	**241**	**34**	**253**	**76**	**130**	**346**	**30**	**1671**
2033 Projected Volumes	**26**	**105**	**28**	**160**	**249**	**244**	**35**	**256**	**77**	**131**	**350**	**30**	**1691**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Mennonite Road (EW) & Trappe Road (NS)**									
Synchro Node:	**3**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**38**	**174**	**49**	**31**	**36**	**31**	**14**	**246**	**85**	**130**	**377**	**20**	**1231**
Balancing													0
2023 Existing Volumes (Balanced)	**38**	**174**	**49**	**31**	**36**	**31**	**14**	**246**	**85**	**130**	**377**	**20**	**1231**
Base growth (0.27% compounded for 5 yrs)	1	2	1	0	0	0	0	3	1	2	5	0	15
Base growth (0.27% compounded for 10 yrs)	1	5	1	1	1	1	0	7	2	4	10	1	34
2028 Base Volumes	**39**	**176**	**50**	**31**	**36**	**31**	**14**	**249**	**86**	**132**	**382**	**20**	**1246**
2033 Base Volumes	**39**	**179**	**50**	**32**	**37**	**32**	**14**	**253**	**87**	**134**	**387**	**21**	**1265**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted				13.0%							24.0%		
Trip Assignment % - New Exit - Age Restricted								24.0%	13.0%				
Trip Assignment % - New Enter - Market Rate A				13.0%							24.0%		
Trip Assignment % - New Exit - Market Rate A								24.0%	13.0%				
Trip Assignment % - New Enter - Market Rate B				13.0%							24.0%		
Trip Assignment % - New Exit - Market Rate B								24.0%	13.0%				
New Trips - Age Restricted				1				5	2		3		**11**
New Trips - Market Rate A				7				40	22		14		**83**
New Trips - Market Rate B				1				3	2		1		**7**
2028 Projected Volumes	**39**	**176**	**50**	**40**	**36**	**31**	**14**	**297**	**112**	**132**	**400**	**20**	**1347**
2033 Projected Volumes	**39**	**179**	**50**	**41**	**37**	**32**	**14**	**301**	**113**	**134**	**405**	**21**	**1366**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**11**	**119**	**25**	**104**	**247**	**220**	**48**	**408**	**80**	**117**	**294**	**38**	**1711**
Balancing													0
2023 Existing Volumes (Balanced)	**11**	**119**	**25**	**104**	**247**	**220**	**48**	**408**	**80**	**117**	**294**	**38**	**1711**
Base growth (0.27% compounded for 5 yrs)	0	2	0	1	3	3	1	6	1	2	4	1	24
Base growth (0.27% compounded for 10 yrs)	0	3	1	3	7	6	1	11	2	3	8	1	46
2028 Base Volumes	**11**	**121**	**25**	**105**	**250**	**223**	**49**	**414**	**81**	**119**	**298**	**39**	**1735**
2033 Base Volumes	**11**	**122**	**26**	**107**	**254**	**226**	**49**	**419**	**82**	**120**	**302**	**39**	**1757**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted				13.0%							24.0%		
Trip Assignment % - New Exit - Age Restricted								24.0%	13.0%				
Trip Assignment % - New Enter - Market Rate A				13.0%							24.0%		
Trip Assignment % - New Exit - Market Rate A								24.0%	13.0%				
Trip Assignment % - New Enter - Market Rate B				13.0%							24.0%		
Trip Assignment % - New Exit - Market Rate B								24.0%	13.0%				
New Trips - Age Restricted				2				4	2		5		**13**
New Trips - Market Rate A				21				26	14		38		**99**
New Trips - Market Rate B				2				2	1		3		**8**
2028 Projected Volumes	**11**	**121**	**25**	**130**	**250**	**223**	**49**	**446**	**98**	**119**	**344**	**39**	**1855**
2033 Projected Volumes	**11**	**122**	**26**	**132**	**254**	**226**	**49**	**451**	**99**	**120**	**348**	**39**	**1877**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Hopwood Road/Bechtel Road (EW) & Trappe Road (NS)**											
Synchro Node:	**4**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**		

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**58**	**48**	**39**	**27**	**57**	**44**	**15**	**283**	**20**	**64**	**416**	**20**	**1091**
Balancing													0
2023 Existing Volumes (Balanced)	**58**	**48**	**39**	**27**	**57**	**44**	**15**	**283**	**20**	**64**	**416**	**20**	**1091**
Base growth (0.27% compounded for 5 yrs)	1	1	1	0	1	1	0	4	0	1	6	0	16
Base growth (0.27% compounded for 10 yrs)	2	1	1	1	2	1	0	8	1	2	11	1	31
2028 Base Volumes	**59**	**49**	**40**	**27**	**58**	**45**	**15**	**287**	**20**	**65**	**422**	**20**	**1107**
2033 Base Volumes	**60**	**49**	**40**	**28**	**59**	**45**	**15**	**291**	**21**	**66**	**427**	**21**	**1122**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted				5.0%							19.0%		
Trip Assignment % - New Exit - Age Restricted								19.0%	5.0%				
Trip Assignment % - New Enter - Market Rate A				5.0%							19.0%		
Trip Assignment % - New Exit - Market Rate A								19.0%	5.0%				
Trip Assignment % - New Enter - Market Rate B				5.0%							19.0%		
Trip Assignment % - New Exit - Market Rate B								19.0%	5.0%				
New Trips - Age Restricted				1				4	1		2		**8**
New Trips - Market Rate A				3				32	8		11		**54**
New Trips - Market Rate B								2	1		1		**4**
2028 Projected Volumes	**59**	**49**	**40**	**31**	**58**	**45**	**15**	**325**	**30**	**65**	**436**	**20**	**1173**
2033 Projected Volumes	**60**	**49**	**40**	**32**	**59**	**45**	**15**	**329**	**31**	**66**	**441**	**21**	**1188**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**30**	**51**	**27**	**26**	**75**	**123**	**60**	**530**	**23**	**45**	**403**	**43**	**1436**
Balancing													0
2023 Existing Volumes (Balanced)	**30**	**51**	**27**	**26**	**75**	**123**	**60**	**530**	**23**	**45**	**403**	**43**	**1436**
Base growth (0.27% compounded for 5 yrs)	0	1	0	0	1	2	1	7	0	1	5	1	19
Base growth (0.27% compounded for 10 yrs)	1	1	1	1	2	3	2	14	1	1	11	1	39
2028 Base Volumes	**30**	**52**	**27**	**26**	**76**	**125**	**61**	**537**	**23**	**46**	**408**	**44**	**1455**
2033 Base Volumes	**31**	**52**	**28**	**27**	**77**	**126**	**62**	**544**	**24**	**46**	**414**	**44**	**1475**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted				5.0%							19.0%		
Trip Assignment % - New Exit - Age Restricted								19.0%	5.0%				
Trip Assignment % - New Enter - Market Rate A				5.0%							19.0%		
Trip Assignment % - New Exit - Market Rate A								19.0%	5.0%				
Trip Assignment % - New Enter - Market Rate B				5.0%							19.0%		
Trip Assignment % - New Exit - Market Rate B								19.0%	5.0%				
New Trips - Age Restricted				1				3	1		4		**9**
New Trips - Market Rate A				8				21	5		30		**64**
New Trips - Market Rate B				1				2			2		**5**
2028 Projected Volumes	**30**	**52**	**27**	**36**	**76**	**125**	**61**	**563**	**29**	**46**	**444**	**44**	**1533**
2033 Projected Volumes	**31**	**52**	**28**	**37**	**77**	**126**	**62**	**570**	**30**	**46**	**450**	**44**	**1553**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Yeager Road (EW) & Old State Road (NS)**									
Synchro Node:	**5**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**12**	**254**	**10**	**2**	**186**	**7**	**10**	**31**	**23**	**21**	**14**	**10**	**580**
Balancing													0
2023 Existing Volumes (Balanced)	**12**	**254**	**10**	**2**	**186**	**7**	**10**	**31**	**23**	**21**	**14**	**10**	**580**
Base growth (0.27% compounded for 5 yrs)	0	3	0	0	3	0	0	0	0	0	0	0	6
Base growth (0.27% compounded for 10 yrs)	0	7	0	0	5	0	0	1	1	1	0	0	15
2028 Base Volumes	**12**	**257**	**10**	**2**	**189**	**7**	**10**	**31**	**23**	**21**	**14**	**10**	**586**
2033 Base Volumes	**12**	**261**	**10**	**2**	**191**	**7**	**10**	**32**	**24**	**22**	**14**	**10**	**595**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted		8.0%								12.0%			
Trip Assignment % - New Exit - Age Restricted					8.0%	12.0%							
Trip Assignment % - New Enter - Market Rate A		2.0%	6.0%	15.0%						4.0%	8.0%		
Trip Assignment % - New Exit - Market Rate A					2.0%	4.0%	6.0%	8.0%	15.0%				
Trip Assignment % - New Enter - Market Rate B			8.0%	44.0%							12.0%		
Trip Assignment % - New Exit - Market Rate B							8.0%	12.0%	44.0%				
New Trips - Age Restricted		1			2	2				1			**6**
New Trips - Market Rate A		1	3	8	3	7	11	13	25	2	5		**78**
New Trips - Market Rate B				2			1	1	5		1		**10**
2028 Projected Volumes	**12**	**259**	**13**	**12**	**194**	**16**	**22**	**45**	**53**	**24**	**20**	**10**	**680**
2033 Projected Volumes	**12**	**263**	**13**	**12**	**196**	**16**	**22**	**46**	**54**	**25**	**20**	**10**	**689**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**7**	**102**	**9**	**26**	**233**	**11**	**10**	**27**	**9**	**10**	**21**	**13**	**478**
Balancing													0
2023 Existing Volumes (Balanced)	**7**	**102**	**9**	**26**	**233**	**11**	**10**	**27**	**9**	**10**	**21**	**13**	**478**
Base growth (0.27% compounded for 5 yrs)	0	1	0	0	3	0	0	0	0	0	0	0	4
Base growth (0.27% compounded for 10 yrs)	0	3	0	1	6	0	0	1	0	0	1	0	12
2028 Base Volumes	**7**	**103**	**9**	**26**	**236**	**11**	**10**	**27**	**9**	**10**	**21**	**13**	**482**
2033 Base Volumes	**7**	**105**	**9**	**27**	**239**	**11**	**10**	**28**	**9**	**10**	**22**	**13**	**490**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted		8.0%								12.0%			
Trip Assignment % - New Exit - Age Restricted					8.0%	12.0%							
Trip Assignment % - New Enter - Market Rate A		2.0%	6.0%	15.0%						4.0%	8.0%		
Trip Assignment % - New Exit - Market Rate A					2.0%	4.0%	6.0%	8.0%	15.0%				
Trip Assignment % - New Enter - Market Rate B			8.0%	44.0%							12.0%		
Trip Assignment % - New Exit - Market Rate B							8.0%	12.0%	44.0%				
New Trips - Age Restricted		2			2	2				2			**8**
New Trips - Market Rate A		3	9	24	2	5	7	9	16	6	12		**93**
New Trips - Market Rate B			1	5				1	3		2		**12**
2028 Projected Volumes	**7**	**108**	**19**	**55**	**240**	**18**	**17**	**37**	**28**	**18**	**35**	**13**	**595**
2033 Projected Volumes	**7**	**110**	**19**	**56**	**243**	**18**	**17**	**38**	**28**	**18**	**36**	**13**	**603**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Meadowgreen Drive (EW) & Old State Road (NS)**									
Synchro Node:	**6**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**10**		**3**				**2**	**61**			**24**	**5**	**105**
Balancing													0
2023 Existing Volumes (Balanced)	**10**		**3**				**2**	**61**			**24**	**5**	**105**
Base growth (0.27% compounded for 5 yrs)	0		0				0	1			0	0	1
Base growth (0.27% compounded for 10 yrs)	0		0				0	2			1	0	3
2028 Base Volumes	**10**		**3**				**2**	**62**			**24**	**5**	**106**
2033 Base Volumes	**10**		**3**				**2**	**63**			**25**	**5**	**108**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A											29.0%		
Trip Assignment % - New Exit - Market Rate A								29.0%					
Trip Assignment % - New Enter - Market Rate B											64.0%		
Trip Assignment % - New Exit - Market Rate B								64.0%					
New Trips - Age Restricted													**0**
New Trips - Market Rate A								49			16		**65**
New Trips - Market Rate B								7			3		**10**
2028 Projected Volumes	**10**		**3**				**2**	**118**			**43**	**5**	**181**
2033 Projected Volumes	**10**		**3**				**2**	**119**			**44**	**5**	**183**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**7**		**2**				**3**	**38**			**42**	**8**	**100**
Balancing													0
2023 Existing Volumes (Balanced)	**7**		**2**				**3**	**38**			**42**	**8**	**100**
Base growth (0.27% compounded for 5 yrs)	0		0				0	1			1	0	2
Base growth (0.27% compounded for 10 yrs)	0		0				0	1			1	0	2
2028 Base Volumes	**7**		**2**				**3**	**39**			**43**	**8**	**102**
2033 Base Volumes	**7**		**2**				**3**	**39**			**43**	**8**	**102**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A											29.0%		
Trip Assignment % - New Exit - Market Rate A								29.0%					
Trip Assignment % - New Enter - Market Rate B											64.0%		
Trip Assignment % - New Exit - Market Rate B								64.0%					
New Trips - Age Restricted													**0**
New Trips - Market Rate A								32			45		**77**
New Trips - Market Rate B								4			8		**12**
2028 Projected Volumes	**7**		**2**				**3**	**75**			**96**	**8**	**191**
2033 Projected Volumes	**7**		**2**				**3**	**75**			**96**	**8**	**191**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Hafner Road/Proposed Driveway (EW) & Old State Road (NS)**								
Synchro Node:	**7**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**9**		**1**				**2**	**53**			**20**	**5**	**90**
Balancing													0
2023 Existing Volumes (Balanced)	**9**		**1**				**2**	**53**			**20**	**5**	**90**
Base growth (0.27% compounded for 5 yrs)	0		0				0	1			0	0	1
Base growth (0.27% compounded for 10 yrs)	0		0				0	1			1	0	2
2028 Base Volumes	**9**		**1**				**2**	**54**			**20**	**5**	**91**
2033 Base Volumes	**9**		**1**				**2**	**54**			**21**	**5**	**92**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A									6.0%	20.0%	9.0%		
Trip Assignment % - New Exit - Market Rate A				6.0%		20.0%		9.0%					
Trip Assignment % - New Enter - Market Rate B											64.0%		
Trip Assignment % - New Exit - Market Rate B								64.0%					
New Trips - Age Restricted													**0**
New Trips - Market Rate A				10		34		15	3	11	5		**78**
New Trips - Market Rate B								7			3		**10**
2028 Projected Volumes	**9**	**0**	**1**	**10**	**0**	**34**	**2**	**76**	**3**	**11**	**28**	**5**	**179**
2033 Projected Volumes	**9**	**0**	**1**	**10**	**0**	**34**	**2**	**76**	**3**	**11**	**29**	**5**	**180**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**1**		**0**				**2**	**41**			**37**	**8**	**89**
Balancing													0
2023 Existing Volumes (Balanced)	**1**		**0**				**2**	**41**			**37**	**8**	**89**
Base growth (0.27% compounded for 5 yrs)	0		0				0	1			1	0	2
Base growth (0.27% compounded for 10 yrs)	0		0				0	1			1	0	2
2028 Base Volumes	**1**		**0**				**2**	**42**			**38**	**8**	**91**
2033 Base Volumes	**1**		**0**				**2**	**42**			**38**	**8**	**91**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A									6.0%	20.0%	9.0%		
Trip Assignment % - New Exit - Market Rate A				6.0%		20.0%		9.0%					
Trip Assignment % - New Enter - Market Rate B											64.0%		
Trip Assignment % - New Exit - Market Rate B								64.0%					
New Trips - Age Restricted													**0**
New Trips - Market Rate A				6		22		10	9	31	14		**92**
New Trips - Market Rate B								4			8		**12**
2028 Projected Volumes	**1**	**0**	**0**	**6**	**0**	**22**	**2**	**56**	**9**	**31**	**60**	**8**	**195**
2033 Projected Volumes	**1**	**0**	**0**	**6**	**0**	**22**	**2**	**56**	**9**	**31**	**60**	**8**	**195**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**2nd Avenue(EW) & Old State Road (S)**									
Synchro Node:	**8**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**40**	**290**			**133**	**15**				**19**		**6**	**503**
Balancing													0
2023 Existing Volumes (Balanced)	**40**	**290**			**133**	**15**				**19**		**6**	**503**
Base growth (0.27% compounded for 5 yrs)	1	4			2	0				0		0	7
Base growth (0.27% compounded for 10 yrs)	1	8			4	0				1		0	14
2028 Base Volumes	**41**	**294**			**135**	**15**				**19**		**6**	**510**
2033 Base Volumes	**41**	**298**			**137**	**15**				**20**		**6**	**517**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A	4.0%	8.0%				2.0%				9.0%			
Trip Assignment % - New Exit - Market Rate A					8.0%	9.0%				2.0%		4.0%	
Trip Assignment % - New Enter - Market Rate B	12.0%					24.0%							
Trip Assignment % - New Exit - Market Rate B										24.0%		12.0%	
New Trips - Age Restricted		1			2								**3**
New Trips - Market Rate A	2	5			13	16				8		7	**51**
New Trips - Market Rate B						1				3		1	**5**
2028 Projected Volumes	**43**	**300**			**150**	**32**				**30**		**14**	**569**
2033 Projected Volumes	**43**	**304**			**152**	**32**				**31**		**14**	**576**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**11**	**136**			**290**	**32**				**15**		**24**	**508**
Balancing													0
2023 Existing Volumes (Balanced)	**11**	**136**			**290**	**32**				**15**		**24**	**508**
Base growth (0.27% compounded for 5 yrs)	0	2			4	0				0		0	6
Base growth (0.27% compounded for 10 yrs)	0	4			8	1				0		1	14
2028 Base Volumes	**11**	**138**			**294**	**32**				**15**		**24**	**514**
2033 Base Volumes	**11**	**140**			**298**	**33**				**15**		**25**	**522**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A	4.0%	8.0%				2.0%				9.0%			
Trip Assignment % - New Exit - Market Rate A					8.0%	9.0%				2.0%		4.0%	
Trip Assignment % - New Enter - Market Rate B	12.0%					24.0%							
Trip Assignment % - New Exit - Market Rate B										24.0%		12.0%	
New Trips - Age Restricted		3			2								**5**
New Trips - Market Rate A	6	13			8	13				16		4	**60**
New Trips - Market Rate B	1					3				2		1	**7**
2028 Projected Volumes	**18**	**154**			**304**	**48**				**33**		**29**	**586**
2033 Projected Volumes	**18**	**156**			**308**	**49**				**33**		**30**	**594**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Mennonite Road (EW) & Old State Road (NS)**									
Synchro Node:	**9**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**12**	**163**	**6**	**13**	**65**	**14**	**2**	**21**	**31**	**46**	**28**	**18**	**419**
Balancing													0
2023 Existing Volumes (Balanced)	**12**	**163**	**6**	**13**	**65**	**14**	**2**	**21**	**31**	**46**	**28**	**18**	**419**
Base growth (0.27% compounded for 5 yrs)	0	2	0	0	1	0	0	0	0	1	0	0	4
Base growth (0.27% compounded for 10 yrs)	0	4	0	0	2	0	0	1	1	1	1	0	10
2028 Base Volumes	**12**	**165**	**6**	**13**	**66**	**14**	**2**	**21**	**31**	**47**	**28**	**18**	**423**
2033 Base Volumes	**12**	**167**	**6**	**13**	**67**	**14**	**2**	**22**	**32**	**47**	**29**	**18**	**429**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted			6.0%								6.0%		
Trip Assignment % - New Exit - Age Restricted							6.0%	6.0%					
Trip Assignment % - New Enter - Market Rate A			6.0%								6.0%		
Trip Assignment % - New Exit - Market Rate A							6.0%	6.0%					
Trip Assignment % - New Enter - Market Rate B			6.0%								6.0%		
Trip Assignment % - New Exit - Market Rate B							6.0%	6.0%					
New Trips - Age Restricted							1	1			1		**3**
New Trips - Market Rate A			3				10	10			4		**27**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes	**12**	**165**	**9**	**13**	**66**	**14**	**13**	**33**	**31**	**47**	**34**	**18**	**455**
2033 Projected Volumes	**12**	**167**	**9**	**13**	**67**	**14**	**13**	**34**	**32**	**47**	**35**	**18**	**461**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**15**	**97**	**3**	**22**	**226**	**70**	**6**	**27**	**11**	**32**	**22**	**16**	**547**
Balancing													0
2023 Existing Volumes (Balanced)	**15**	**97**	**3**	**22**	**226**	**70**	**6**	**27**	**11**	**32**	**22**	**16**	**547**
Base growth (0.27% compounded for 5 yrs)	0	1	0	0	3	1	0	0	0	0	0	0	5
Base growth (0.27% compounded for 10 yrs)	0	3	0	1	6	2	0	1	0	1	1	0	15
2028 Base Volumes	**15**	**98**	**3**	**22**	**229**	**71**	**6**	**27**	**11**	**32**	**22**	**16**	**552**
2033 Base Volumes	**15**	**100**	**3**	**23**	**232**	**72**	**6**	**28**	**11**	**33**	**23**	**16**	**562**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted			6.0%								6.0%		
Trip Assignment % - New Exit - Age Restricted							6.0%	6.0%					
Trip Assignment % - New Enter - Market Rate A			6.0%								6.0%		
Trip Assignment % - New Exit - Market Rate A							6.0%	6.0%					
Trip Assignment % - New Enter - Market Rate B			6.0%								6.0%		
Trip Assignment % - New Exit - Market Rate B							6.0%	6.0%					
New Trips - Age Restricted			1				1	1			1		**4**
New Trips - Market Rate A			9				7	7			9		**32**
New Trips - Market Rate B			1					1			1		**3**
2028 Projected Volumes	**15**	**98**	**14**	**22**	**229**	**71**	**14**	**36**	**11**	**32**	**33**	**16**	**591**
2033 Projected Volumes	**15**	**100**	**14**	**23**	**232**	**72**	**14**	**37**	**11**	**33**	**34**	**16**	**601**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Bechtel Road (W) & Old State Road/Bechtel Road (NS)**								
Synchro Node:	**10**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts				**3**		**126**		**45**	**18**	**94**	**34**		**320**
Balancing													0
2023 Existing Volumes (Balanced)				**3**		**126**		**45**	**18**	**94**	**34**		**320**
Base growth (0.27% compounded for 5 yrs)				0		2		1	0	1	0		4
Base growth (0.27% compounded for 10 yrs)				0		3		1	0	3	1		8
2028 Base Volumes				**3**		**128**		**46**	**18**	**95**	**34**		**324**
2033 Base Volumes				**3**		**129**		**46**	**18**	**97**	**35**		**328**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted											6.0%		
Trip Assignment % - New Exit - Age Restricted								6.0%					
Trip Assignment % - New Enter - Market Rate A											6.0%		
Trip Assignment % - New Exit - Market Rate A								6.0%					
Trip Assignment % - New Enter - Market Rate B											6.0%		
Trip Assignment % - New Exit - Market Rate B								6.0%					
New Trips - Age Restricted								1			1		**2**
New Trips - Market Rate A								10			4		**14**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes				**3**		**128**		**58**	**18**	**95**	**40**		**342**
2033 Projected Volumes				**3**		**129**		**58**	**18**	**97**	**41**		**346**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts				**14**		**139**		**74**	**7**	**93**	**43**		**370**
Balancing													0
2023 Existing Volumes (Balanced)				**14**		**139**		**74**	**7**	**93**	**43**		**370**
Base growth (0.27% compounded for 5 yrs)				0		2		1	0	1	1		5
Base growth (0.27% compounded for 10 yrs)				0		4		2	0	3	1		10
2028 Base Volumes				**14**		**141**		**75**	**7**	**94**	**44**		**375**
2033 Base Volumes				**14**		**143**		**76**	**7**	**96**	**44**		**380**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted											6.0%		
Trip Assignment % - New Exit - Age Restricted								6.0%					
Trip Assignment % - New Enter - Market Rate A											6.0%		
Trip Assignment % - New Exit - Market Rate A								6.0%					
Trip Assignment % - New Enter - Market Rate B											6.0%		
Trip Assignment % - New Exit - Market Rate B								6.0%					
New Trips - Age Restricted								1			1		**2**
New Trips - Market Rate A								7			9		**16**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes				**14**		**141**		**84**	**7**	**94**	**55**		**395**
2033 Projected Volumes				**14**		**143**		**85**	**7**	**96**	**55**		**400**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**2nd Avenue(EW) & Springertown Road (S)**								
Synchro Node:	**11**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**12**	**309**			**127**	**17**				**24**		**7**	**496**
Balancing													0
2023 Existing Volumes (Balanced)	**12**	**309**			**127**	**17**				**24**		**7**	**496**
Base growth (0.27% compounded for 5 yrs)	0	4			2	0				0		0	6
Base growth (0.27% compounded for 10 yrs)	0	8			3	0				1		0	12
2028 Base Volumes	**12**	**313**			**129**	**17**				**24**		**7**	**502**
2033 Base Volumes	**12**	**317**			**130**	**17**				**25**		**7**	**508**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A		12.0%											
Trip Assignment % - New Exit - Market Rate A					12.0%								
Trip Assignment % - New Enter - Market Rate B		12.0%											
Trip Assignment % - New Exit - Market Rate B					12.0%								
New Trips - Age Restricted		1			2								**3**
New Trips - Market Rate A		7			20								**27**
New Trips - Market Rate B					1								**1**
2028 Projected Volumes	**12**	**321**			**152**	**17**				**24**		**7**	**533**
2033 Projected Volumes	**12**	**325**			**153**	**17**				**25**		**7**	**539**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**5**	**138**			**303**	**18**				**18**		**19**	**501**
Balancing													0
2023 Existing Volumes (Balanced)	**5**	**138**			**303**	**18**				**18**		**19**	**501**
Base growth (0.27% compounded for 5 yrs)	0	2			4	0				0		0	6
Base growth (0.27% compounded for 10 yrs)	0	4			8	0				0		1	13
2028 Base Volumes	**5**	**140**			**307**	**18**				**18**		**19**	**507**
2033 Base Volumes	**5**	**142**			**311**	**18**				**18**		**20**	**514**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A		12.0%											
Trip Assignment % - New Exit - Market Rate A					12.0%								
Trip Assignment % - New Enter - Market Rate B		12.0%											
Trip Assignment % - New Exit - Market Rate B					12.0%								
New Trips - Age Restricted		3			2								**5**
New Trips - Market Rate A		19			12								**31**
New Trips - Market Rate B		1			1								**2**
2028 Projected Volumes	**5**	**163**			**322**	**18**				**18**		**19**	**545**
2033 Projected Volumes	**5**	**165**			**326**	**18**				**18**		**20**	**552**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**2nd Avenue(EW) & Vaughn Road (S)**									
Synchro Node:	**12**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**42**	**245**			**91**	**42**				**75**		**45**	**540**
Balancing													0
2023 Existing Volumes (Balanced)	**42**	**245**			**91**	**42**				**75**		**45**	**540**
Base growth (0.27% compounded for 5 yrs)	1	3			1	1				1		1	8
Base growth (0.27% compounded for 10 yrs)	1	7			2	1				2		1	14
2028 Base Volumes	**43**	**248**			**92**	**43**				**76**		**46**	**548**
2033 Base Volumes	**43**	**252**			**93**	**43**				**77**		**46**	**554**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted		8.0%								4.0%			
Trip Assignment % - New Exit - Age Restricted					8.0%	4.0%							
Trip Assignment % - New Enter - Market Rate A		8.0%								4.0%			
Trip Assignment % - New Exit - Market Rate A					8.0%	4.0%							
Trip Assignment % - New Enter - Market Rate B		8.0%								4.0%			
Trip Assignment % - New Exit - Market Rate B					8.0%	4.0%							
New Trips - Age Restricted		1			1	1							**3**
New Trips - Market Rate A		5			13	7				2			**27**
New Trips - Market Rate B					1								**1**
2028 Projected Volumes	**43**	**254**			**107**	**51**				**78**		**46**	**579**
2033 Projected Volumes	**43**	**258**			**108**	**51**				**79**		**46**	**585**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**34**	**99**			**246**	**79**				**46**		**49**	**553**
Balancing													0
2023 Existing Volumes (Balanced)	**34**	**99**			**246**	**79**				**46**		**49**	**553**
Base growth (0.27% compounded for 5 yrs)	0	1			3	1				1		1	7
Base growth (0.27% compounded for 10 yrs)	1	3			7	2				1		1	15
2028 Base Volumes	**34**	**100**			**249**	**80**				**47**		**50**	**560**
2033 Base Volumes	**35**	**102**			**253**	**81**				**47**		**50**	**568**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted		8.0%								4.0%			
Trip Assignment % - New Exit - Age Restricted					8.0%	4.0%							
Trip Assignment % - New Enter - Market Rate A		8.0%								4.0%			
Trip Assignment % - New Exit - Market Rate A					8.0%	4.0%							
Trip Assignment % - New Enter - Market Rate B		8.0%								4.0%			
Trip Assignment % - New Exit - Market Rate B					8.0%	4.0%							
New Trips - Age Restricted		2			1	1				1			**5**
New Trips - Market Rate A		13			8	4				6			**31**
New Trips - Market Rate B		1			1								**2**
2028 Projected Volumes	**34**	**116**			**259**	**85**				**54**		**50**	**598**
2033 Projected Volumes	**35**	**118**			**263**	**86**				**54**		**50**	**606**

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4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road (NS) & S. Trappe Road (E)/Ramsgate Drive (W)**								
Synchro Node:	**13**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**0**	**0**	**0**	**3**	**0**	**4**	**1**	**388**	**0**	**1**	**305**	**0**	**702**
Balancing													0
2023 Existing Volumes (Balanced)	**0**	**0**	**0**	**3**	**0**	**4**	**1**	**388**	**0**	**1**	**305**	**0**	**702**
Base growth (0.27% compounded for 5 yrs)	0	0	0	0	0	0	0	5	0	0	4	0	9
Base growth (0.27% compounded for 10 yrs)	0	0	0	0	0	0	0	11	0	0	8	0	19
2028 Base Volumes	**0**	**0**	**0**	**3**	**0**	**4**	**1**	**393**	**0**	**1**	**309**	**0**	**711**
2033 Base Volumes	**0**	**0**	**0**	**3**	**0**	**4**	**1**	**399**	**0**	**1**	**313**	**0**	**721**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted							6.0%				54.0%	20.0%	
Trip Assignment % - New Exit - Age Restricted	20.0%		6.0%					54.0%					
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted	4		1				1	11			6	2	**25**
New Trips - Market Rate A								76			25		**101**
New Trips - Market Rate B								1					**1**
2028 Projected Volumes	**4**	**0**	**1**	**3**	**0**	**4**	**2**	**481**	**0**	**1**	**340**	**2**	**838**
2033 Projected Volumes	**4**	**0**	**1**	**3**	**0**	**4**	**2**	**487**	**0**	**1**	**344**	**2**	**848**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**1**	**1**	**0**	**3**	**0**	**4**	**0**	**342**	**3**	**4**	**420**	**1**	**779**
Balancing													0
2023 Existing Volumes (Balanced)	**1**	**1**	**0**	**3**	**0**	**4**	**0**	**342**	**3**	**4**	**420**	**1**	**779**
Base growth (0.27% compounded for 5 yrs)	0	0	0	0	0	0	0	5	0	0	6	0	11
Base growth (0.27% compounded for 10 yrs)	0	0	0	0	0	0	0	9	0	0	11	0	20
2028 Base Volumes	**1**	**1**	**0**	**3**	**0**	**4**	**0**	**347**	**3**	**4**	**426**	**1**	**790**
2033 Base Volumes	**1**	**1**	**0**	**3**	**0**	**4**	**0**	**351**	**3**	**4**	**431**	**1**	**799**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted							6.0%				54.0%	20.0%	
Trip Assignment % - New Exit - Age Restricted	20.0%		6.0%					54.0%					
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted	4		1				2	9			11	4	**31**
New Trips - Market Rate A								49			71		**120**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes	**5**	**1**	**1**	**3**	**0**	**4**	**2**	**406**	**3**	**4**	**509**	**5**	**943**
2033 Projected Volumes	**5**	**1**	**1**	**3**	**0**	**4**	**2**	**410**	**3**	**4**	**514**	**5**	**952**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road (EW) & Route 29 (NS)**									
Synchro Node:	**14**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**151**	**362**	**135**	**11**	**103**	**99**	**75**	**397**	**51**	**246**	**485**	**99**	**2214**
Balancing													0
2023 Existing Volumes (Balanced)	**151**	**362**	**135**	**11**	**103**	**99**	**75**	**397**	**51**	**246**	**485**	**99**	**2214**
Base growth (0.27% compounded for 5 yrs)	2	5	2	0	1	1	1	5	1	3	7	1	29
Base growth (0.27% compounded for 10 yrs)	4	10	4	0	3	3	2	11	1	7	13	3	61
2028 Base Volumes	**153**	**367**	**137**	**11**	**104**	**100**	**76**	**402**	**52**	**249**	**492**	**100**	**2243**
2033 Base Volumes	**155**	**372**	**139**	**11**	**106**	**102**	**77**	**408**	**52**	**253**	**498**	**102**	**2275**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Age Restricted	4.0%	9.0%	4.0%										
Trip Assignment % - New Enter - Market Rate A					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Market Rate A	4.0%	9.0%	4.0%										
Trip Assignment % - New Enter - Market Rate B					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Market Rate B	4.0%	9.0%	4.0%										
New Trips - Age Restricted	1	2	1		1		1						**6**
New Trips - Market Rate A	7	15	7		5		2					2	**38**
New Trips - Market Rate B		1											**1**
2028 Projected Volumes	**161**	**385**	**145**	**11**	**110**	**100**	**79**	**402**	**52**	**249**	**492**	**102**	**2288**
2033 Projected Volumes	**163**	**390**	**147**	**11**	**112**	**102**	**80**	**408**	**52**	**253**	**498**	**104**	**2320**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts	**120**	**168**	**96**	**80**	**384**	**200**	**155**	**515**	**22**	**135**	**431**	**131**	**2437**
Balancing													0
2023 Existing Volumes (Balanced)	**120**	**168**	**96**	**80**	**384**	**200**	**155**	**515**	**22**	**135**	**431**	**131**	**2437**
Base growth (0.27% compounded for 5 yrs)	2	2	1	1	5	3	2	7	0	2	6	2	33
Base growth (0.27% compounded for 10 yrs)	3	5	3	2	10	5	4	14	1	4	12	4	67
2028 Base Volumes	**122**	**170**	**97**	**81**	**389**	**203**	**157**	**522**	**22**	**137**	**437**	**133**	**2470**
2033 Base Volumes	**123**	**173**	**99**	**82**	**394**	**205**	**159**	**529**	**23**	**139**	**443**	**135**	**2504**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Age Restricted	4.0%	9.0%	4.0%										
Trip Assignment % - New Enter - Market Rate A					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Market Rate A	4.0%	9.0%	4.0%										
Trip Assignment % - New Enter - Market Rate B					9.0%		4.0%					4.0%	
Trip Assignment % - New Exit - Market Rate B	4.0%	9.0%	4.0%										
New Trips - Age Restricted	1	1	1		2		1					1	**7**
New Trips - Market Rate A	4	10	4		15		6					6	**45**
New Trips - Market Rate B		1			1								**2**
2028 Projected Volumes	**127**	**182**	**102**	**81**	**407**	**203**	**164**	**522**	**22**	**137**	**437**	**140**	**2524**
2033 Projected Volumes	**128**	**185**	**104**	**82**	**412**	**205**	**166**	**529**	**23**	**139**	**443**	**142**	**2558**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**South Lewis Road (EW) & Yeager Road (N)**								
Synchro Node:	**15**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts		**232**	**211**	**47**	**378**		**203**		**43**				**1114**
Balancing													0
2023 Existing Volumes (Balanced)		**232**	**211**	**47**	**378**		**203**		**43**				**1114**
Base growth (0.27% compounded for 5 yrs)		3	3	1	5		3		1				16
Base growth (0.27% compounded for 10 yrs)		6	6	1	10		6		1				30
2028 Base Volumes		**235**	**214**	**48**	**383**		**206**		**44**				**1130**
2033 Base Volumes		**238**	**217**	**48**	**388**		**209**		**44**				**1144**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted			6.0%	2.0%									
Trip Assignment % - New Exit - Age Restricted							6.0%		2.0%				
Trip Assignment % - New Enter - Market Rate A			6.0%	2.0%									
Trip Assignment % - New Exit - Market Rate A							6.0%		2.0%				
Trip Assignment % - New Enter - Market Rate B			6.0%	2.0%									
Trip Assignment % - New Exit - Market Rate B							6.0%		2.0%				
New Trips - Age Restricted			1				1		1				**3**
New Trips - Market Rate A			3	1			11		3				**18**
New Trips - Market Rate B							1						**1**
2028 Projected Volumes		**235**	**218**	**49**	**383**		**219**		**48**				**1152**
2033 Projected Volumes		**238**	**221**	**49**	**388**		**222**		**48**				**1166**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts		**196**	**190**	**76**	**242**		**234**		**55**				**993**
Balancing													0
2023 Existing Volumes (Balanced)		**196**	**190**	**76**	**242**		**234**		**55**				**993**
Base growth (0.27% compounded for 5 yrs)		3	3	1	3		3		1				14
Base growth (0.27% compounded for 10 yrs)		5	5	2	7		6		2				27
2028 Base Volumes		**199**	**193**	**77**	**245**		**237**		**56**				**1007**
2033 Base Volumes		**201**	**195**	**78**	**249**		**240**		**57**				**1020**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted			6.0%	2.0%									
Trip Assignment % - New Exit - Age Restricted							6.0%		2.0%				
Trip Assignment % - New Enter - Market Rate A			6.0%	2.0%									
Trip Assignment % - New Exit - Market Rate A							6.0%		2.0%				
Trip Assignment % - New Enter - Market Rate B			6.0%	2.0%									
Trip Assignment % - New Exit - Market Rate B							6.0%		2.0%				
New Trips - Age Restricted			2				1		1				**4**
New Trips - Market Rate A			9	3			7		2				**21**
New Trips - Market Rate B			1										**1**
2028 Projected Volumes		**199**	**205**	**80**	**245**		**245**		**59**				**1033**
2033 Projected Volumes		**201**	**207**	**81**	**249**		**248**		**60**				**1046**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road (NS) & Proposed Southern Driveway (EB)**								
Synchro Node:	**16**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**147**			**309**		**456**
Base growth (0.27% compounded for 5 yrs)								2			4		6
Base growth (0.27% compounded for 10 yrs)								4			8		12
2028 Base Volumes								**149**			**313**		**462**
2033 Base Volumes								**151**			**317**		**468**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted								26.0%					
Trip Assignment % - New Exit - Age Restricted											26.0%		
Trip Assignment % - New Enter - Market Rate A							7.0%				10.0%	35.0%	
Trip Assignment % - New Exit - Market Rate A	35.0%		7.0%					10.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted								3			5		**8**
New Trips - Market Rate A	59		12				4	17			5	20	**117**
New Trips - Market Rate B								1					**1**
2028 Projected Volumes	**59**		**12**				**4**	**170**			**323**	**20**	**588**
2033 Projected Volumes	**59**		**12**				**4**	**172**			**327**	**20**	**594**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**319**			**143**		**462**
Base growth (0.27% compounded for 5 yrs)								4			2		6
Base growth (0.27% compounded for 10 yrs)								9			4		13
2028 Base Volumes								**323**			**145**		**468**
2033 Base Volumes								**328**			**147**		**475**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted								26.0%					
Trip Assignment % - New Exit - Age Restricted											26.0%		
Trip Assignment % - New Enter - Market Rate A							7.0%				10.0%	35.0%	
Trip Assignment % - New Exit - Market Rate A	35.0%		7.0%					10.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted								6			4		**10**
New Trips - Market Rate A	38		8				11	11			16	55	**139**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes	**38**		**8**				**11**	**341**			**166**	**55**	**619**
2033 Projected Volumes	**38**		**8**				**11**	**346**			**168**	**55**	**626**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road (NS) & Proposed Central Driveway (EB)**									
Synchro Node:	**17**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**147**			**309**		**456**
Base growth (0.27% compounded for 5 yrs)								2			4		6
Base growth (0.27% compounded for 10 yrs)								4			8		12
2028 Base Volumes								**149**			**313**		**462**
2033 Base Volumes								**151**			**317**		**468**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted								26.0%					
Trip Assignment % - New Exit - Age Restricted											26.0%		
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted								3			5		**8**
New Trips - Market Rate A								76			25		**101**
New Trips - Market Rate B								1					**1**
2028 Projected Volumes								**229**			**343**		**572**
2033 Projected Volumes								**231**			**347**		**578**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**319**			**143**		**462**
Base growth (0.27% compounded for 5 yrs)								4			2		6
Base growth (0.27% compounded for 10 yrs)								9			4		13
2028 Base Volumes								**323**			**145**		**468**
2033 Base Volumes								**328**			**147**		**475**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted								26.0%					
Trip Assignment % - New Exit - Age Restricted											26.0%		
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted								5			4		**9**
New Trips - Market Rate A								49			71		**120**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes								**378**			**221**		**599**
2033 Projected Volumes								**383**			**223**		**606**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Black Rock Road (NS) & Proposed Northern Driveway (EB)**									
Synchro Node:	**18**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**147**			**309**		**456**
Base growth (0.27% compounded for 5 yrs)								2			4		6
Base growth (0.27% compounded for 10 yrs)								4			8		12
2028 Base Volumes								**149**			**313**		**462**
2033 Base Volumes								**151**			**317**		**468**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted							20.0%	6.0%				54.0%	
Trip Assignment % - New Exit - Age Restricted	54.0%		20.0%								6.0%		
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted	11		4				2	1			1	6	**25**
New Trips - Market Rate A								76			25		**101**
New Trips - Market Rate B								1					**1**
2028 Projected Volumes	**11**		**4**				**2**	**227**			**339**	**6**	**589**
2033 Projected Volumes	**11**		**4**				**2**	**229**			**343**	**6**	**595**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**319**			**143**		**462**
Base growth (0.27% compounded for 5 yrs)								4			2		6
Base growth (0.27% compounded for 10 yrs)								9			4		13
2028 Base Volumes								**323**			**145**		**468**
2033 Base Volumes								**328**			**147**		**475**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted							20.0%	6.0%				54.0%	
Trip Assignment % - New Exit - Age Restricted	54.0%		20.0%								6.0%		
Trip Assignment % - New Enter - Market Rate A											45.0%		
Trip Assignment % - New Exit - Market Rate A								45.0%					
Trip Assignment % - New Enter - Market Rate B											10.0%		
Trip Assignment % - New Exit - Market Rate B								10.0%					
New Trips - Age Restricted	9		3				4	2			1	11	**30**
New Trips - Market Rate A								49			71		**120**
New Trips - Market Rate B								1			1		**2**
2028 Projected Volumes	**9**		**3**				**4**	**375**			**218**	**11**	**620**
2033 Projected Volumes	**9**		**3**				**4**	**380**			**220**	**11**	**627**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**Old State Road (NS) & Proposed Southern Driveway (EB)**									
Synchro Node:	**19**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**55**			**21**		**76**
Base growth (0.27% compounded for 5 yrs)								1			0		1
Base growth (0.27% compounded for 10 yrs)								2			1		3
2028 Base Volumes								**56**			**21**		**77**
2033 Base Volumes								**57**			**22**		**79**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A								6.0%			9.0%		
Trip Assignment % - New Exit - Market Rate A								9.0%			6.0%		
Trip Assignment % - New Enter - Market Rate B							36.0%					64.0%	
Trip Assignment % - New Exit - Market Rate B	64.0%		36.0%										
New Trips - Age Restricted													**0**
New Trips - Market Rate A								18			15		**33**
New Trips - Market Rate B	7		4				1					3	**15**
2028 Projected Volumes	**7**		**4**				**1**	**74**			**36**	**3**	**125**
2033 Projected Volumes	**7**		**4**				**1**	**75**			**37**	**3**	**127**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)								**43**			**37**		**80**
Base growth (0.27% compounded for 5 yrs)								1			1		2
Base growth (0.27% compounded for 10 yrs)								1			1		2
2028 Base Volumes								**44**			**38**		**82**
2033 Base Volumes								**44**			**38**		**82**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted													
Trip Assignment % - New Exit - Age Restricted													
Trip Assignment % - New Enter - Market Rate A								6.0%			9.0%		
Trip Assignment % - New Exit - Market Rate A								9.0%			6.0%		
Trip Assignment % - New Enter - Market Rate B							36.0%					64.0%	
Trip Assignment % - New Exit - Market Rate B	64.0%		36.0%										
New Trips - Age Restricted													**0**
New Trips - Market Rate A								19			20		**39**
New Trips - Market Rate B	4		3				4					8	**19**
2028 Projected Volumes	**4**		**3**				**4**	**63**			**58**	**8**	**140**
2033 Projected Volumes	**4**		**3**				**4**	**63**			**58**	**8**	**140**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**South Trappe Road (EW) & Proposed Driveway (NB)**									
Synchro Node:	**20**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)		**0**			**1**								**1**
Base growth (0.27% compounded for 5 yrs)		0			0								0
Base growth (0.27% compounded for 10 yrs)		0			0								0
2028 Base Volumes		**0**			**1**								**1**
2033 Base Volumes		**0**			**1**								**1**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted				26.0%									
Trip Assignment % - New Exit - Age Restricted									26.0%				
Trip Assignment % - New Enter - Market Rate A													
Trip Assignment % - New Exit - Market Rate A													
Trip Assignment % - New Enter - Market Rate B													
Trip Assignment % - New Exit - Market Rate B													
New Trips - Age Restricted				3					5				**8**
New Trips - Market Rate A													**0**
New Trips - Market Rate B													**0**
2028 Projected Volumes		**0**	**0**	**3**	**1**		**0**		**5**				**9**
2033 Projected Volumes		**0**	**0**	**3**	**1**		**0**		**5**				**9**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)		**2**			**1**								**3**
Base growth (0.27% compounded for 5 yrs)		0			0								0
Base growth (0.27% compounded for 10 yrs)		0			0								0
2028 Base Volumes		**2**			**1**								**3**
2033 Base Volumes		**2**			**1**								**3**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted				26.0%									
Trip Assignment % - New Exit - Age Restricted									26.0%				
Trip Assignment % - New Enter - Market Rate A													
Trip Assignment % - New Exit - Market Rate A													
Trip Assignment % - New Enter - Market Rate B													
Trip Assignment % - New Exit - Market Rate B													
New Trips - Age Restricted				6					5				**11**
New Trips - Market Rate A													**0**
New Trips - Market Rate B													**0**
2028 Projected Volumes		**2**	**0**	**6**	**1**		**0**		**5**				**14**
2033 Projected Volumes		**2**	**0**	**6**	**1**		**0**		**5**				**14**

TPD# ROYH.00001
4/25/2024
Traffic Volumes Worksheet

Intersection:	**2nd Avenue(EW) & Proposed Driveway (S)**									
Synchro Node:	**21**	**Adjacent intersections:**	**West**	**0**	**East**	**0**	**North**	**0**	**South**	**0**

Time Period: Weekday A.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)		**309**			**148**								**457**
Base growth (0.27% compounded for 5 yrs)		4			2								6
Base growth (0.27% compounded for 10 yrs)		8			4								12
2028 Base Volumes		**313**			**150**								**463**
2033 Base Volumes		**317**			**152**								**469**

	AQ	MR A	MR B
ENTER =	**11**	**(56)**	**(4)**
EXIT =	**20**	**(168)**	**(11)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A	17.0%				2.0%	15.0%							
Trip Assignment % - New Exit - Market Rate A		2.0%								15.0%		17.0%	
Trip Assignment % - New Enter - Market Rate B					24.0%								
Trip Assignment % - New Exit - Market Rate B		24.0%											
New Trips - Age Restricted		1			2								**3**
New Trips - Market Rate A	10	3			1	8				25		28	**75**
New Trips - Market Rate B		3			1								**4**
2028 Projected Volumes	**10**	**320**			**154**	**8**				**25**		**28**	**545**
2033 Projected Volumes	**10**	**324**			**156**	**8**				**25**		**28**	**551**

Time Period: Weekday P.M. Peak Hour

	Eastbound			Westbound			Northbound			Southbound			Intersection
	left	thru	right	left	thru	right	left	thru	right	left	thru	right	Volume
2023 Existing Counts													**0**
Balancing													0
2023 Existing Volumes (Balanced)		**151**			**322**								**473**
Base growth (0.27% compounded for 5 yrs)		2			4								6
Base growth (0.27% compounded for 10 yrs)		4			9								13
2028 Base Volumes		**153**			**326**								**479**
2033 Base Volumes		**155**			**331**								**486**

	AQ	MR A	MR B
ENTER =	**21**	**(157)**	**(12)**
EXIT =	**17**	**(108)**	**(7)**

Trip Assignment % - New Enter - Age Restricted		12.0%											
Trip Assignment % - New Exit - Age Restricted					12.0%								
Trip Assignment % - New Enter - Market Rate A	17.0%				2.0%	15.0%							
Trip Assignment % - New Exit - Market Rate A		2.0%								15.0%		17.0%	
Trip Assignment % - New Enter - Market Rate B					24.0%								
Trip Assignment % - New Exit - Market Rate B		24.0%											
New Trips - Age Restricted		3			2								**5**
New Trips - Market Rate A	27	2			3	24				16		18	**90**
New Trips - Market Rate B		2			3								**5**
2028 Projected Volumes	**27**	**160**			**334**	**24**				**16**		**18**	**579**
2033 Projected Volumes	**27**	**162**			**339**	**24**				**16**		**18**	**586**

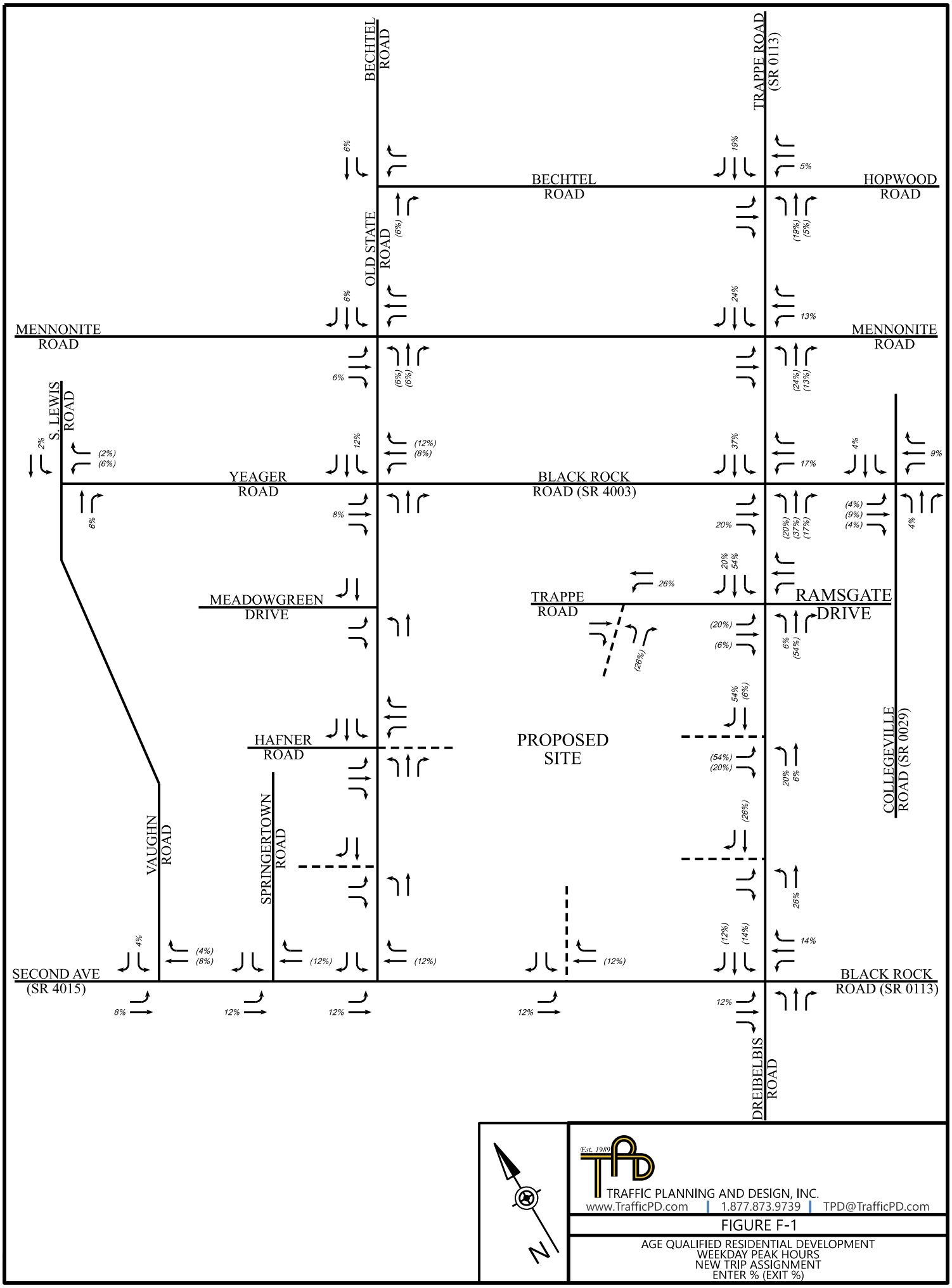

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FIGURE F-1

AGE QUALIFIED RESIDENTIAL DEVELOPMENT
WEEKDAY PEAK HOURS
NEW TRIP ASSIGNMENT
ENTER % (EXIT %)

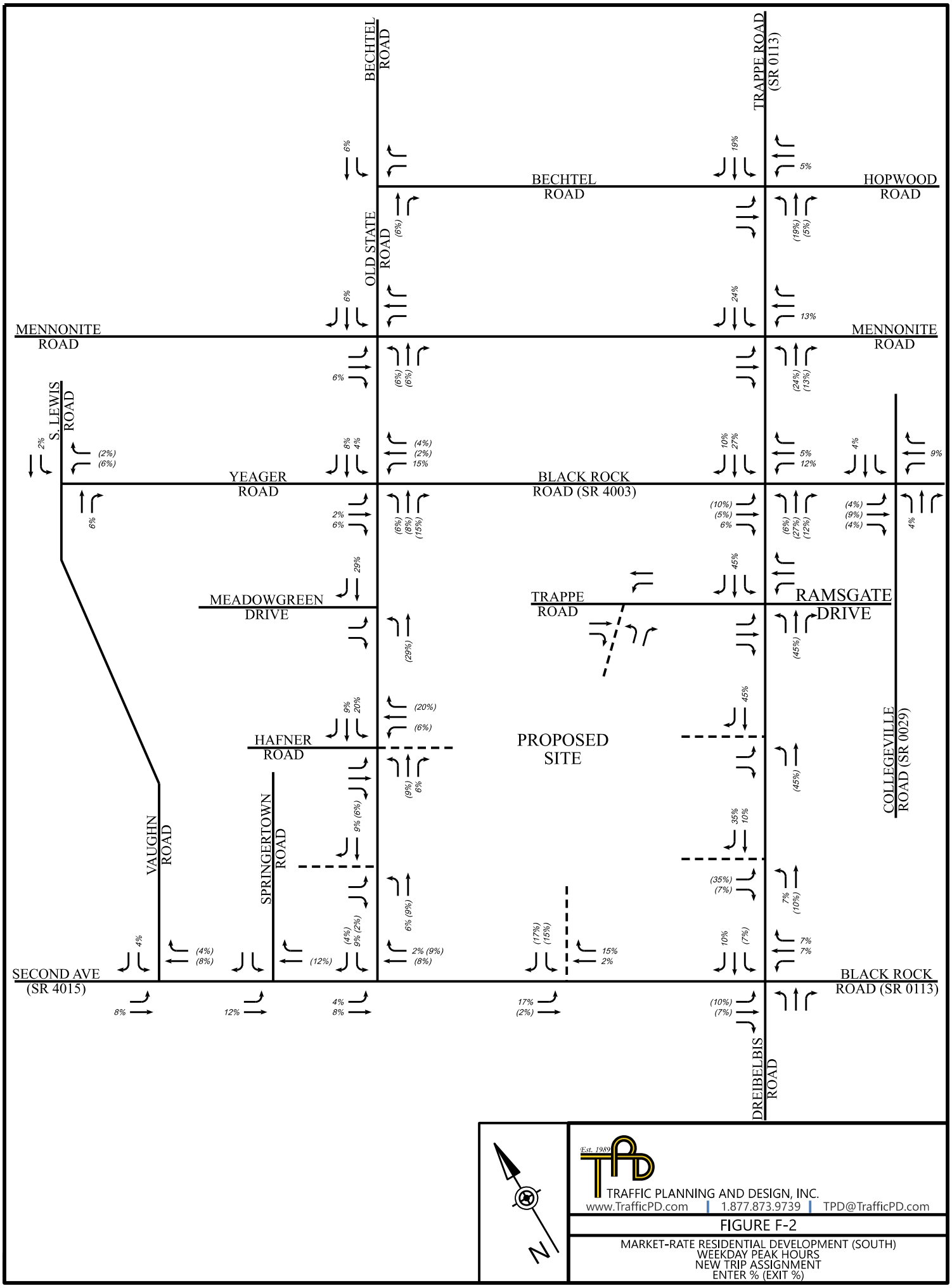

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FIGURE F-2

MARKET-RATE RESIDENTIAL DEVELOPMENT (SOUTH)
WEEKDAY PEAK HOURS
NEW TRIP ASSIGNMENT
ENTER % (EXIT %)

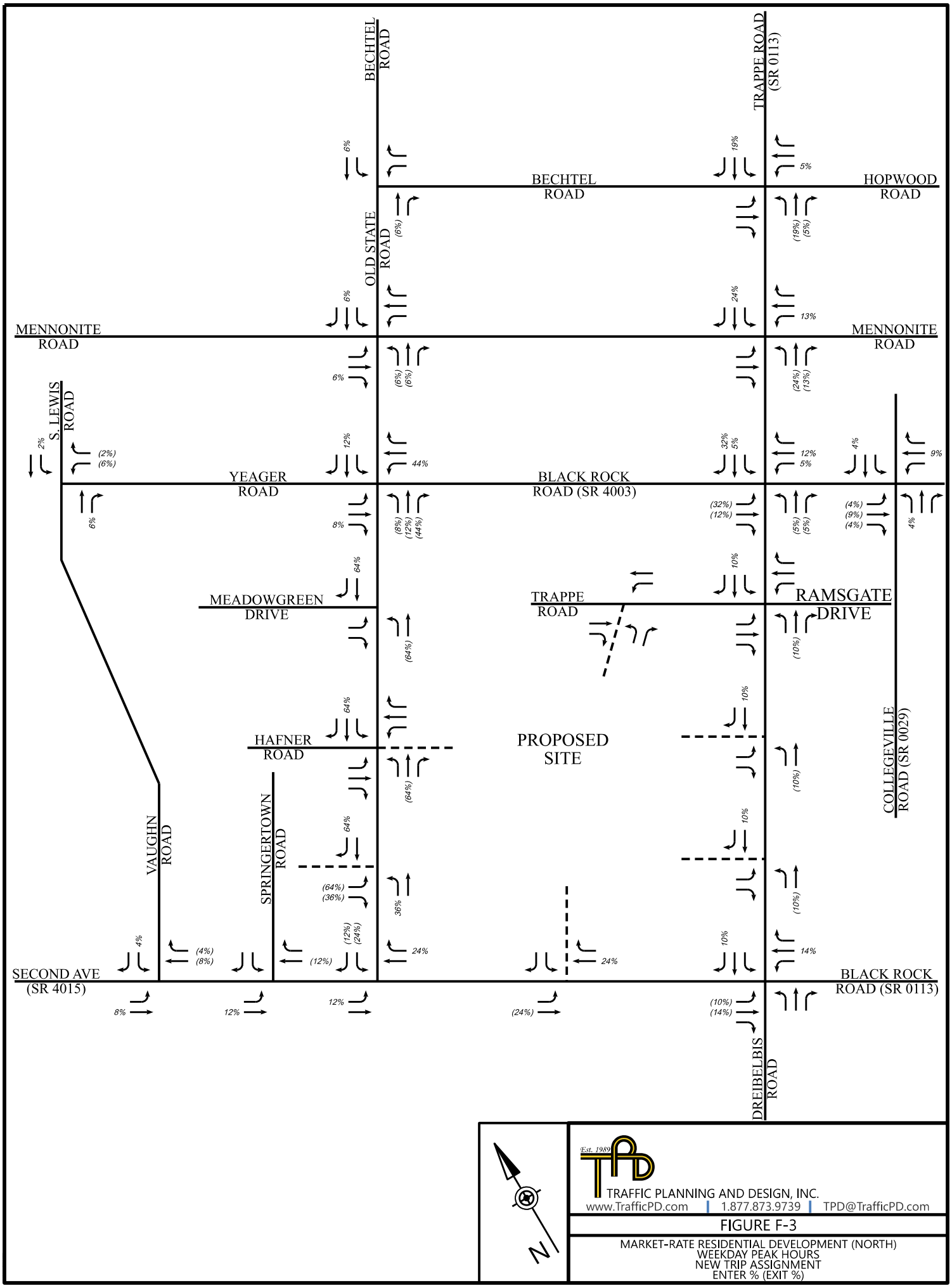

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FIGURE F-3

MARKET-RATE RESIDENTIAL DEVELOPMENT (NORTH)
WEEKDAY PEAK HOURS
NEW TRIP ASSIGNMENT
ENTER % (EXIT %)

APPENDIX G

Critical/Follow-Up Gap Data

CRITICAL HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{c,x} = t_{c,\,base} + t_{c,HV} * P_{HV} + t_{c,G} * G - t_{3,LT}$

where:

$t_{c,x}$ = critical headway for movement x (s)
$t_{c,base}$ = base crtitcal headway from Chapter 10 of PennDOT Publication 46
$t_{c,HV}$ = adjustment factor for heavy vehciles (1.0 for major streets with one lane in each direction; 2.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)
$t_{c,G}$ = adjustment factor for grade (0.1 for Movement 9 and 12; 0.2 for Movements 7,8,10, and 11) (s)
G = percent grade (expressed as an integer; e.g., G= -2 for a 2% downhill grade)
$t_{c,base}$ = adjustment factor for intersction geometry (0.7 for minor street left-turn movement at three-leg intersections; 0.0 otherwise) (s)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 4.3)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
10	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4

LEFT TURN FROM MINOR ROADWAY - TWO LANES - 4-LEG INTERSECTION ($t_{c,\,base}$ = 7.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
1	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
2	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
3	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
4	7.1	6.9	7.3	6.7	7.5	6.5	7.7	6.3	7.9	6.1	8.1	5.9	8.3	5.7	8.5	5.5	8.7	5.3	8.9	5.1	9.1
5	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
6	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
7	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
8	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
9	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2
10	7.2	7.0	7.4	6.8	7.6	6.6	7.8	6.4	8.0	6.2	8.2	6.0	8.4	5.8	8.6	5.6	8.8	5.4	9.0	5.2	9.2

THROUGH TRAFFIC ON MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.5)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
1	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
2	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
3	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
4	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
5	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
6	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
7	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
8	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
9	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6
10	6.6	6.4	6.8	6.2	7.0	6.0	7.2	5.8	7.4	5.6	7.6	5.4	7.8	5.2	8.0	5.0	8.2	4.8	8.4	4.6	8.6

RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.2)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
1	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
2	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
3	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
4	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
5	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
6	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
7	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
8	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
9	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
10	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3

CRITICAL HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{c,x} = t_{c,\,base} + t_{c,HV} * P_{HV} + t_{c,G} * G - t_{3,LT}$

where:

$t_{c,x}$ = critical headway for movement x (s)
$t_{c,base}$ = base crtitcal headway from Chapter 10 of PennDOT Publication 46
$t_{c,HV}$ = adjustment factor for heavy vehciles (1.0 for major streets with one lane in each direction; 2.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)
$t_{c,G}$ = adjustment factor for grade (0.1 for Movement 9 and 12; 0.2 for Movements 7,8,10, and 11) (s)
G = percent grade (expressed as an integer; e.g., G= -2 for a 2% downhill grade)
$t_{c,base}$ = adjustment factor for intersction geometry (0.7 for minor street left-turn movement at three-leg intersections; 0.0 otherwise) (s)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 4.3)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
2	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
5	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
7	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
8	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
9	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
10	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4

LEFT TURN FROM MINOR ROADWAY - TWO LANES - 3-LEG INTERSECTION ($t_{c,\,base}$ = 7.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
1	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
2	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
3	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
4	6.4	6.2	6.6	6.0	6.8	5.8	7.0	5.6	7.2	5.4	7.4	5.2	7.6	5.0	7.8	4.8	8.0	4.6	8.2	4.4	8.4
5	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
6	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
7	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
8	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
9	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5
10	6.5	6.3	6.7	6.1	6.9	5.9	7.1	5.7	7.3	5.5	7.5	5.3	7.7	5.1	7.9	4.9	8.1	4.7	8.3	4.5	8.5

RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{c,\,base}$ = 6.2)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
1	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
2	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
3	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
4	6.2	6.1	6.3	6.0	6.4	5.9	6.5	5.8	6.6	5.7	6.7	5.6	6.8	5.5	6.9	5.4	7.0	5.3	7.1	5.2	7.2
5	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
6	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
7	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
8	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
9	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3
10	6.3	6.2	6.4	6.1	6.5	6.0	6.6	5.9	6.7	5.8	6.8	5.7	6.9	5.6	7.0	5.5	7.1	5.4	7.2	5.3	7.3

FOLLOW-UP HEADWAY CALCULATIONS FOR TWSC INTERSECTION WITHIN SUBURBAN LAND USE CONTEXT
BASED ON PENNSYLVANIA DEFAULT VALUES FROM CHAPTER 10 OF PENNDOT PUBLICATION 46

$t_{f,x} = t_{f,\,base} + t_{f,HV} * P_{HV}$

where:

$t_{f,x}$ = follow-up headway for movement x (s)
$t_{f,base}$ = base follow-up headway from Chapter 10 of PennDOT Publication 46
$t_{f,HV}$ = adjustment factor for heavy vehciles (0.9 for major streets with one lane in each direction; 1.0 for major streets with two or three lanes in each direction) (s)
P_{HV} = proportion of heavy vehciles for movement (expressed as a decimal; e.g., P_{HV}=0.02 for 2% heavy vehciles)

LEFT TURN FROM MAJOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
10	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1

LEFT TURN FROM MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
1	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
2	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
3	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
4	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
7	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
8	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
9	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
10	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1

THROUGH TRAFFIC ON MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 4.0)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
1	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
2	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
3	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
4	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
5	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
6	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
7	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
8	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
9	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
10	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1

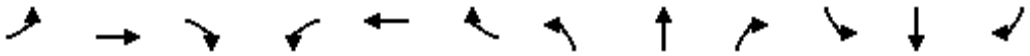
RIGHT TURN FROM MINOR ROADWAY - TWO LANES ($t_{f,\,base}$ = 3.1)

GRADE	0	-1	1	-2	2	-3	3	-4	4	-5	5	-6	6	-7	7	-8	8	-9	9	-10	10
HV %																					
0	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
4	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
5	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
6	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
7	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
8	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
9	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
10	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2

APPENDIX H

Capacity Analyses

2023 Existing Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	23	14	226	8	47	2	89	215	126	175	8
Future Volume (vph)	11	23	14	226	8	47	2	89	215	126	175	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.977			0.905			0.997	
Flt Protected		0.989			0.961						0.980	
Satd. Flow (prot)	0	1487	0	0	1486	0	0	1568	0	0	1682	0
Flt Permitted		0.989			0.961						0.980	
Satd. Flow (perm)	0	1487	0	0	1486	0	0	1568	0	0	1682	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	13	27	16	263	9	55	2	103	250	147	203	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	327	0	0	355	0	0	359	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	93.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	23	14	226	8	47	2	89	215	126	175	8
Future Vol, veh/h	11	23	14	226	8	47	2	89	215	126	175	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	9	9	7	7	38	13	0	3	5	2	2	25
Mvmt Flow	13	27	16	263	9	55	2	103	250	147	203	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	43	0	0	730	651	35	801	632	37
Stage 1	-	-	-	-	-	-	61	61	-	563	563	-
Stage 2	-	-	-	-	-	-	669	590	-	238	69	-
Critical Hdwy	4.4	-	-	4.4	-	-	6.9	6.33	6.15	6.52	5.92	6.15
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3	4.027	3.1	3	4.018	3.3
Pot Cap-1 Maneuver	1104	-	-	1122	-	-	395	401	1110	386	442	1042
Stage 1	-	-	-	-	-	-	1114	845	-	634	559	-
Stage 2	-	-	-	-	-	-	523	510	-	918	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1104	-	-	1122	-	-	164	299	1110	178	330	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	164	299	-	178	330	-
Stage 1	-	-	-	-	-	-	1101	835	-	626	422	-
Stage 2	-	-	-	-	-	-	203	385	-	616	837	-

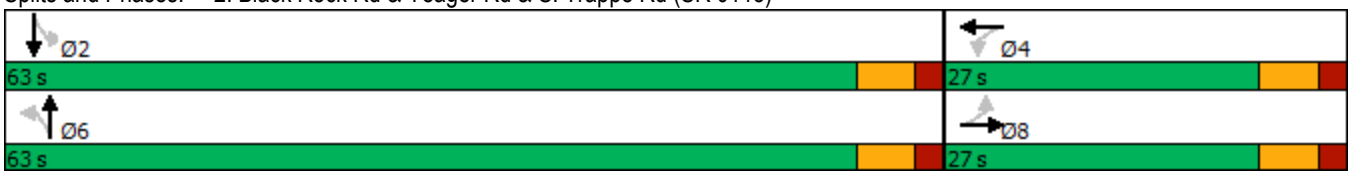
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	7.4	18.9	260.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	608	1104	-	-	1122	-	-	248
HCM Lane V/C Ratio	0.585	0.012	-	-	0.234	-	-	1.449
HCM Control Delay (s)	18.9	8.3	0	-	9.2	0	-	260.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.8	0	-	-	0.9	-	-	20.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	284	14	87	140	93	7	245	113	239	204	5
Future Volume (vph)	33	284	14	87	140	93	7	245	113	239	204	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.940			0.953			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1536	1793	0	1457	1718	0	1220	1693	0	1611	1660	0
Flt Permitted	0.414			0.281			0.612			0.490		
Satd. Flow (perm)	669	1793	0	431	1718	0	786	1693	0	831	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			35			52			3	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	5%	0%	14%	4%	8%	43%	4%	2%	4%	6%	0%
Adj. Flow (vph)	37	319	16	98	157	104	8	275	127	269	229	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	335	0	98	261	0	8	402	0	269	235	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	27.0	27.0		27.0	27.0		63.0	63.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		30.0%	30.0%		70.0%	70.0%		70.0%	70.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 89.2	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	284	14	87	140	93	7	245	113	239	204	5
Future Volume (veh/h)	33	284	14	87	140	93	7	245	113	239	204	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1666	1747	1750	1638	1852	1724	1338	1892	1921	1655	1626	1711
Adj Flow Rate, veh/h	37	319	12	98	157	93	8	275	98	269	229	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	5	0	14	4	8	43	4	2	4	6	0
Cap, veh/h	203	409	15	146	266	158	564	858	306	577	1022	22
Arrive On Green	0.24	0.24	0.23	0.24	0.24	0.23	0.64	0.64	0.63	0.64	0.64	0.63
Sat Flow, veh/h	1006	1673	63	919	1090	646	820	1332	475	893	1586	35
Grp Volume(v), veh/h	37	0	331	98	0	250	8	0	373	269	0	234
Grp Sat Flow(s),veh/h/ln	1006	0	1735	919	0	1735	820	0	1807	893	0	1620
Q Serve(g_s), s	3.0	0.0	16.0	6.5	0.0	11.5	0.4	0.0	8.4	17.2	0.0	5.4
Cycle Q Clear(g_c), s	14.0	0.0	16.0	22.0	0.0	11.5	5.3	0.0	8.4	25.1	0.0	5.4
Prop In Lane	1.00		0.04	1.00		0.37	1.00		0.26	1.00		0.02
Lane Grp Cap(c), veh/h	203	0	424	146	0	424	564	0	1164	577	0	1044
V/C Ratio(X)	0.18	0.00	0.78	0.67	0.00	0.59	0.01	0.00	0.32	0.47	0.00	0.22
Avail Cap(c_a), veh/h	203	0	424	146	0	424	564	0	1164	577	0	1044
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.0	0.0	31.8	42.8	0.0	30.2	7.6	0.0	7.2	12.6	0.0	6.7
Incr Delay (d2), s/veh	0.4	0.0	9.0	11.3	0.0	2.1	0.0	0.0	0.7	2.7	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	12.0	4.6	0.0	8.3	0.1	0.0	5.1	6.1	0.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.4	0.0	40.8	54.1	0.0	32.3	7.7	0.0	8.0	15.3	0.0	7.2
LnGrp LOS	D	A	D	D	A	C	A	A	A	B	A	A
Approach Vol, veh/h		368			348			381			503	
Approach Delay, s/veh		40.4			38.5			8.0			11.5	
Approach LOS		D			D			A			B	

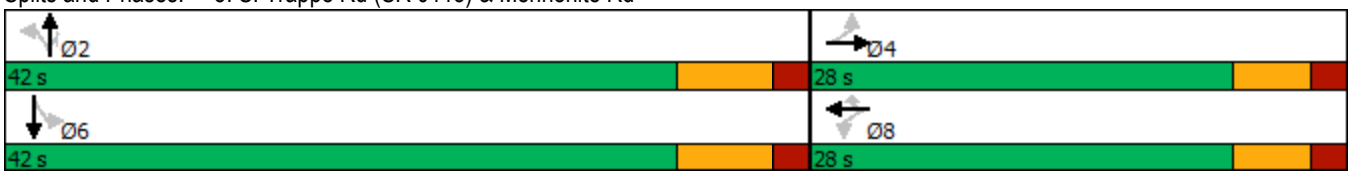
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		63.0		27.0		63.0		27.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		57.0		21.0		57.0		21.0				
Max Q Clear Time (g_c+I1), s		27.6		24.5		10.4		18.0				
Green Ext Time (p_c), s		11.5		0.0		15.2		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	174	49	31	36	31	14	246	85	130	377	20
Future Volume (vph)	38	174	49	31	36	31	14	246	85	130	377	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850			0.850		0.992	
Flt Protected		0.993			0.978		0.950			0.950		
Satd. Flow (prot)	0	1929	0	0	1590	1406	1443	1649	1547	1645	1688	0
Flt Permitted		0.942			0.748		0.475			0.593		
Satd. Flow (perm)	0	1830	0	0	1216	1406	721	1649	1547	1027	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62			93		6	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	1%	8%	7%	8%	13%	14%	5%	5%	2%	4%	0%
Adj. Flow (vph)	42	191	54	34	40	34	15	270	93	143	414	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	74	34	15	270	93	143	436	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	42.0	42.0	42.0	42.0	42.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 62.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	174	49	31	36	31	14	246	85	130	377	20
Future Volume (veh/h)	38	174	49	31	36	31	14	246	85	130	377	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	1896	1724	1738	1724	1718	1598	1724	1793	1883	1855	1912
Adj Flow Rate, veh/h	42	191	40	34	40	12	15	270	66	143	414	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	1	8	7	8	13	14	5	5	2	4	0
Cap, veh/h	107	278	54	190	191	302	525	1047	923	683	1068	49
Arrive On Green	0.19	0.21	0.19	0.19	0.21	0.21	0.61	0.61	0.61	0.61	0.61	0.59
Sat Flow, veh/h	180	1339	261	487	921	1456	816	1724	1520	1052	1760	81
Grp Volume(v), veh/h	273	0	0	74	0	12	15	270	66	143	0	433
Grp Sat Flow(s),veh/h/ln	1780	0	0	1409	0	1456	816	1724	1520	1052	0	1840
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.4	0.6	4.3	1.1	4.3	0.0	7.2
Cycle Q Clear(g_c), s	8.6	0.0	0.0	2.1	0.0	0.4	7.2	4.3	1.1	8.7	0.0	7.2
Prop In Lane	0.15		0.15	0.46		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	409	0	0	357	0	302	525	1047	923	683	0	1117
V/C Ratio(X)	0.67	0.00	0.00	0.21	0.00	0.04	0.03	0.26	0.07	0.21	0.00	0.39
Avail Cap(c_a), veh/h	725	0	0	599	0	565	525	1047	923	683	0	1117
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.1	0.0	0.0	19.7	0.0	18.8	7.7	5.4	4.8	7.4	0.0	6.0
Incr Delay (d2), s/veh	1.9	0.0	0.0	0.3	0.0	0.1	0.1	0.6	0.2	0.7	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	0.0	0.0	1.5	0.0	0.2	0.2	2.0	0.4	1.5	0.0	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.0	0.0	0.0	19.9	0.0	18.8	7.8	6.0	4.9	8.1	0.0	7.0
LnGrp LOS	C	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		273			86			351			576	
Approach Delay, s/veh		24.0			19.8			5.9			7.3	
Approach LOS		C			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.0		17.3		42.0		17.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		35.0		22.0		35.0		22.0				
Max Q Clear Time (g_c+I1), s		9.7		10.6		11.2		4.1				
Green Ext Time (p_c), s		8.0		0.7		12.9		0.2				

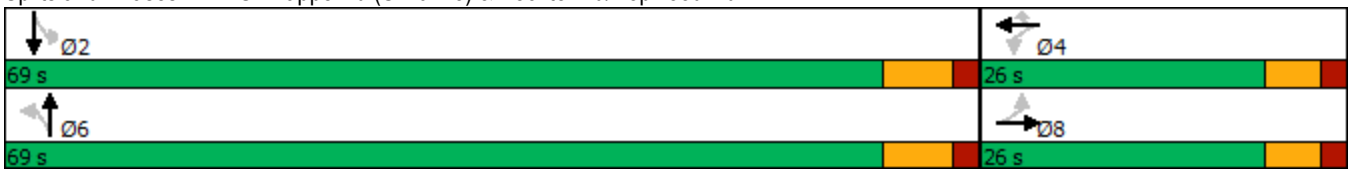
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	48	39	27	57	44	15	283	20	64	416	20
Future Volume (vph)	58	48	39	27	57	44	15	283	20	64	416	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00	1.00	
Frt		0.964				0.850		0.990			0.993	
Flt Protected		0.980			0.984		0.950			0.950		
Satd. Flow (prot)	0	1652	0	0	1693	1515	1507	1724	0	1580	1753	0
Flt Permitted		0.828			0.844		0.456			0.555		
Satd. Flow (perm)	0	1395	0	0	1452	1515	723	1724	0	923	1753	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				49		8			5	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	6%	3%	7%	2%	0%	7%	4%	10%	2%	3%	0%
Adj. Flow (vph)	65	54	44	30	64	49	17	318	22	72	467	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	94	49	17	340	0	72	489	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	26.0	26.0		26.0	26.0	26.0	69.0	69.0		69.0	69.0	
Total Split (%)	27.4%	27.4%		27.4%	27.4%	27.4%	72.6%	72.6%		72.6%	72.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 89.3	
Natural Cycle: 40	

Control Type: Actuated-Uncoordinated

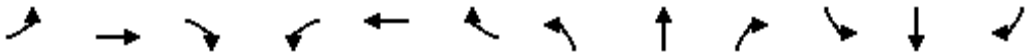
Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	48	39	27	57	44	15	283	20	64	416	20
Future Volume (veh/h)	58	48	39	27	57	44	15	283	20	64	416	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1789	1832	1679	1750	1778	1775	1818	1732	1846	1832	1875
Adj Flow Rate, veh/h	65	54	24	30	64	20	17	318	21	72	467	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	6	3	7	2	0	7	4	10	2	3	0
Cap, veh/h	127	91	32	106	195	233	620	1214	80	761	1258	51
Arrive On Green	0.14	0.15	0.14	0.14	0.15	0.15	0.72	0.72	0.71	0.72	0.72	0.71
Sat Flow, veh/h	437	591	207	338	1263	1507	863	1686	111	1028	1748	71
Grp Volume(v), veh/h	143	0	0	94	0	20	17	0	339	72	0	486
Grp Sat Flow(s),veh/h/ln	1236	0	0	1601	0	1507	863	0	1798	1028	0	1819
Q Serve(g_s), s	6.0	0.0	0.0	0.0	0.0	1.0	0.7	0.0	5.7	2.2	0.0	8.9
Cycle Q Clear(g_c), s	10.3	0.0	0.0	4.3	0.0	1.0	9.1	0.0	5.7	7.4	0.0	8.9
Prop In Lane	0.45		0.17	0.32		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	236	0	0	283	0	233	620	0	1294	761	0	1310
V/C Ratio(X)	0.60	0.00	0.00	0.33	0.00	0.09	0.03	0.00	0.26	0.09	0.00	0.37
Avail Cap(c_a), veh/h	362	0	0	415	0	362	620	0	1294	761	0	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.3	0.0	0.0	33.2	0.0	31.7	6.3	0.0	4.2	5.4	0.0	4.7
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.7	0.0	0.2	0.1	0.0	0.5	0.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0	3.3	0.0	0.7	0.2	0.0	2.8	0.7	0.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	0.0	0.0	33.9	0.0	31.9	6.4	0.0	4.7	5.7	0.0	5.5
LnGrp LOS	D	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		143			114			356			558	
Approach Delay, s/veh		38.8			33.5			4.8			5.5	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		69.0		18.5		69.0		18.5				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		62.0		20.0		62.0		20.0				
Max Q Clear Time (g_c+I1), s		10.9		6.3		11.6		12.3				
Green Ext Time (p_c), s		23.9		0.3		15.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			12.1									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	254	10	2	186	7	10	31	23	21	14	10
Future Volume (vph)	12	254	10	2	186	7	10	31	23	21	14	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.995			0.951			0.971	
Flt Protected		0.998						0.992			0.977	
Satd. Flow (prot)	0	1745	0	0	1862	0	0	1682	0	0	1445	0
Flt Permitted		0.998						0.992			0.977	
Satd. Flow (perm)	0	1745	0	0	1862	0	0	1682	0	0	1445	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	3%	10%	0%	5%	14%	10%	0%	4%	10%	0%	20%
Adj. Flow (vph)	14	289	11	2	211	8	11	35	26	24	16	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	0	0	221	0	0	72	0	0	51	0
Sign Control		Stop			Stop			Stop			Stop	

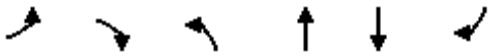
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	254	10	2	186	7	10	31	23	21	14	10
Future Vol, veh/h	12	254	10	2	186	7	10	31	23	21	14	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	8	3	10	0	5	14	10	0	4	10	0	20
Mvmt Flow	14	289	11	2	211	8	11	35	26	24	16	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.7	9.4	8.8	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	4%	1%	47%
Vol Thru, %	48%	92%	95%	31%
Vol Right, %	36%	4%	4%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	276	195	45
LT Vol	10	12	2	21
Through Vol	31	254	186	14
RT Vol	23	10	7	10
Lane Flow Rate	73	314	222	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.4	0.28	0.076
Departure Headway (Hd)	5.177	4.594	4.557	5.356
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	689	781	787	665
Service Time	3.235	2.63	2.597	3.417
HCM Lane V/C Ratio	0.106	0.402	0.282	0.077
HCM Control Delay	8.8	10.7	9.4	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.9	1.1	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	3	2	61	24	5
Future Volume (vph)	10	3	2	61	24	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.978	
Flt Protected	0.962			0.999		
Satd. Flow (prot)	1789	0	0	1507	1518	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1789	0	0	1507	1518	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	33%	0%	3%	0%	0%
Adj. Flow (vph)	11	3	2	65	26	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	67	31	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

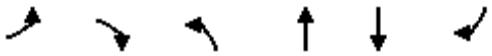
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	2	61	24	5
Future Vol, veh/h	10	3	2	61	24	5
Conflicting Peds, #/hr	1	1	0	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	33	0	3	0	0
Mvmt Flow	11	3	2	65	26	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	102	33	34	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	70	-	-	-	-	-
Critical Hdwy	6.2	6.43	4.3	-	-	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.4	3	-	-	-
Pot Cap-1 Maneuver	1050	1014	1169	-	-	-
Stage 1	1161	-	-	-	-	-
Stage 2	1117	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1042	1010	1165	-	-	-
Mov Cap-2 Maneuver	1042	-	-	-	-	-
Stage 1	1155	-	-	-	-	-
Stage 2	1114	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1165	-	1034	-	-
HCM Lane V/C Ratio	0.002	-	0.013	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	1	2	53	20	5
Future Volume (vph)	9	1	2	53	20	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.973	
Flt Protected	0.956			0.998		
Satd. Flow (prot)	1360	0	0	1586	1445	0
Flt Permitted	0.956			0.998		
Satd. Flow (perm)	1360	0	0	1586	1445	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	11%	0%	0%	2%	0%	20%
Adj. Flow (vph)	11	1	2	64	24	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	66	30	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

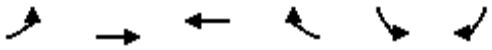
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	2	53	20	5
Future Vol, veh/h	9	1	2	53	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	11	0	0	2	0	20
Mvmt Flow	11	1	2	64	24	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	95	27	30	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	5.91	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.91	-	-	-	-	-
Critical Hdwy Stg 2	4.91	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	1035	1124	1172	-	-	-
Stage 1	1132	-	-	-	-	-
Stage 2	1090	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1033	1124	1172	-	-	-
Mov Cap-2 Maneuver	1033	-	-	-	-	-
Stage 1	1130	-	-	-	-	-
Stage 2	1090	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1172	-	1041	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	290	133	15	19	6
Future Volume (vph)	40	290	133	15	19	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986		0.966	
Flt Protected		0.994			0.964	
Satd. Flow (prot)	0	1595	1527	0	1572	0
Flt Permitted		0.994			0.964	
Satd. Flow (perm)	0	1595	1527	0	1572	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	7%	0%	0%	0%
Adj. Flow (vph)	45	326	149	17	21	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	371	166	0	28	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

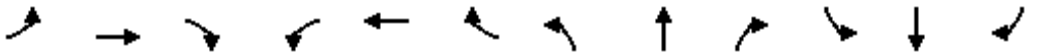
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	290	133	15	19	6
Future Vol, veh/h	40	290	133	15	19	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	7	0	0	0
Mvmt Flow	45	326	149	17	21	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	166	0	-	0	574	158
Stage 1	-	-	-	-	158	-
Stage 2	-	-	-	-	416	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1054	-	-	-	562	950
Stage 1	-	-	-	-	1019	-
Stage 2	-	-	-	-	779	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1054	-	-	-	533	950
Mov Cap-2 Maneuver	-	-	-	-	533	-
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	779	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1054	-	-	-	596
HCM Lane V/C Ratio	0.043	-	-	-	0.047
HCM Control Delay (s)	8.6	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	163	6	13	65	14	2	21	31	46	28	18
Future Volume (vph)	12	163	6	13	65	14	2	21	31	46	28	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.980			0.922			0.974	
Flt Protected		0.997			0.993			0.998			0.976	
Satd. Flow (prot)	0	1659	0	0	1591	0	0	1589	0	0	1603	0
Flt Permitted		0.997			0.993			0.998			0.976	
Satd. Flow (perm)	0	1659	0	0	1591	0	0	1589	0	0	1603	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	17%	1%	33%	8%	6%	7%	0%	5%	3%	9%	7%	6%
Adj. Flow (vph)	15	201	7	16	80	17	2	26	38	57	35	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	223	0	0	113	0	0	66	0	0	114	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	163	6	13	65	14	2	21	31	46	28	18
Future Vol, veh/h	12	163	6	13	65	14	2	21	31	46	28	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	17	1	33	8	6	7	0	5	3	9	7	6
Mvmt Flow	15	201	7	16	80	17	2	26	38	57	35	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	8.5	8	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	14%	50%
Vol Thru, %	39%	90%	71%	30%
Vol Right, %	57%	3%	15%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	181	92	92
LT Vol	2	12	13	46
Through Vol	21	163	65	28
RT Vol	31	6	14	18
Lane Flow Rate	67	223	114	114
Geometry Grp	1	1	1	1
Degree of Util (X)	0.084	0.295	0.147	0.155
Departure Headway (Hd)	4.523	4.75	4.675	4.926
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	790	755	766	727
Service Time	2.562	2.783	2.713	2.963
HCM Lane V/C Ratio	0.085	0.295	0.149	0.157
HCM Control Delay	8	9.8	8.5	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1.2	0.5	0.5

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	94	34	3	126	45	18
Future Volume (vph)	94	34	3	126	45	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964				0.962	
Flt Protected				0.999	0.965	
Satd. Flow (prot)	1637	0	0	1773	1515	0
Flt Permitted				0.999	0.965	
Satd. Flow (perm)	1637	0	0	1773	1515	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	2%	15%	0%	2%	7%	0%
Adj. Flow (vph)	122	44	4	164	58	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	0	0	168	81	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

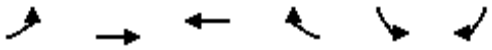
Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	34	3	126	45	18
Future Vol, veh/h	94	34	3	126	45	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	15	0	2	7	0
Mvmt Flow	122	44	4	164	58	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	166	0	316	144
Stage 1	-	-	-	-	144	-
Stage 2	-	-	-	-	172	-
Critical Hdwy	-	-	4.3	-	7.07	6.5
Critical Hdwy Stg 1	-	-	-	-	6.07	-
Critical Hdwy Stg 2	-	-	-	-	6.07	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1054	-	713	952
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	935	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1054	-	710	952
Mov Cap-2 Maneuver	-	-	-	-	710	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	931	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	766	-	-	1054	-
HCM Lane V/C Ratio	0.107	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	309	127	17	24	7
Future Volume (vph)	12	309	127	17	24	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.984			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1668	1560	0	1661	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1668	1560	0	1661	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	2%	6%	6%	4%	0%
Adj. Flow (vph)	14	364	149	20	28	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	378	169	0	28	8
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

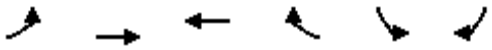
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	309	127	17	24	7
Future Vol, veh/h	12	309	127	17	24	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	17	2	6	6	4	0
Mvmt Flow	14	364	149	20	28	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	149	0	-	0	551	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	4.5	-	-	-	6.04	6
Critical Hdwy Stg 1	-	-	-	-	5.04	-
Critical Hdwy Stg 2	-	-	-	-	5.04	-
Follow-up Hdwy	3.2	-	-	-	3	3.1
Pot Cap-1 Maneuver	997	-	-	-	594	953
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	583	953
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	1008	-
Stage 2	-	-	-	-	813	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	997	-	-	-	583	953
HCM Lane V/C Ratio	0.014	-	-	-	0.048	0.009
HCM Control Delay (s)	8.7	0	-	-	11.5	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	42	245	91	42	75	45
Future Volume (vph)	42	245	91	42	75	45
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.958		0.949	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1630	1514	0	1476	0
Flt Permitted		0.993			0.970	
Satd. Flow (perm)	0	1630	1514	0	1476	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	3%	6%	7%	3%	16%
Adj. Flow (vph)	49	288	107	49	88	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	337	156	0	141	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

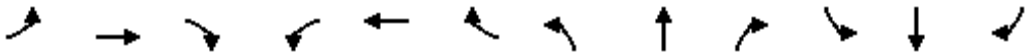
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	245	91	42	75	45
Future Vol, veh/h	42	245	91	42	75	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	3	6	7	3	16
Mvmt Flow	49	288	107	49	88	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	156	0	-	0	518	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	386	-
Critical Hdwy	4.3	-	-	-	5.23	5.76
Critical Hdwy Stg 1	-	-	-	-	4.23	-
Critical Hdwy Stg 2	-	-	-	-	4.23	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1062	-	-	-	696	965
Stage 1	-	-	-	-	1085	-
Stage 2	-	-	-	-	892	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1062	-	-	-	658	965
Mov Cap-2 Maneuver	-	-	-	-	658	-
Stage 1	-	-	-	-	1025	-
Stage 2	-	-	-	-	892	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1062	-	-	-	747
HCM Lane V/C Ratio	0.047	-	-	-	0.189
HCM Control Delay (s)	8.6	0	-	-	10.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	4	1	388	0	1	305	0
Future Volume (vph)	0	0	0	3	0	4	1	388	0	1	305	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916							
Flt Protected					0.982							
Satd. Flow (prot)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Flt Permitted					0.982							
Satd. Flow (perm)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	67%	0%	0%	0%	6%	0%	100%	8%	0%
Adj. Flow (vph)	0	0	0	3	0	5	1	451	0	1	355	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	8	0	0	452	0	0	356	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	3	0	4	1	388	0	1	305	0
Future Vol, veh/h	0	0	0	3	0	4	1	388	0	1	305	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	67	0	0	0	6	0	100	8	0
Mvmt Flow	0	0	0	3	0	5	1	451	0	1	355	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	813	810	355	810	810	451	355	0	0	451	0	0
Stage 1	357	357	-	453	453	-	-	-	-	-	-	-
Stage 2	456	453	-	357	357	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	7.37	6.1	6	4.3	-	-	5.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3.6	4	3.1	3	-	-	3.9	-	-
Pot Cap-1 Maneuver	417	396	768	278	346	661	907	-	-	601	-	-
Stage 1	837	698	-	558	603	-	-	-	-	-	-	-
Stage 2	756	650	-	632	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	413	395	768	277	345	661	907	-	-	601	-	-
Mov Cap-2 Maneuver	413	395	-	277	345	-	-	-	-	-	-	-
Stage 1	836	697	-	557	602	-	-	-	-	-	-	-
Stage 2	750	649	-	631	656	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	13.8	0	0
HCM LOS	A	B		

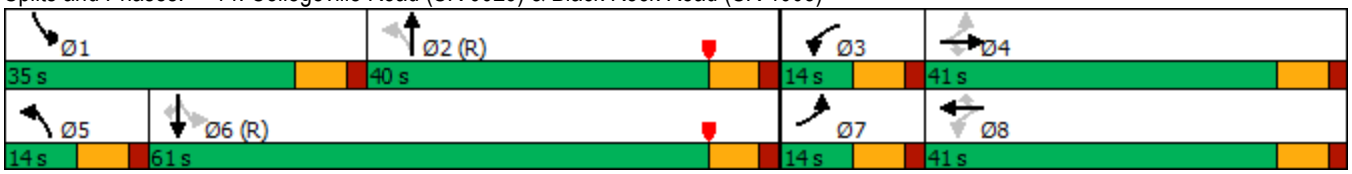
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	907	-	-	-	415	601	-	-
HCM Lane V/C Ratio	0.001	-	-	-	0.02	0.002	-	-
HCM Control Delay (s)	9	0	-	0	13.8	11	0	-
HCM Lane LOS	A	A	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	362	135	11	103	99	75	397	51	246	485	99
Future Volume (vph)	151	362	135	11	103	99	75	397	51	246	485	99
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00		0.99	1.00	1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1749	1601	1701	1571	1608	1568	3301	0	1551	3208	1435
Flt Permitted	0.572			0.193			0.435			0.323		
Satd. Flow (perm)	1020	1749	1601	346	1571	1587	717	3301	0	527	3208	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			210		10				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)				1		1	1		1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	0%	14%	1%	7%	3%	4%	5%	5%	5%
Adj. Flow (vph)	180	431	161	13	123	118	89	473	61	293	577	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	431	161	13	123	118	89	534	0	293	577	118
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0		10.0	22.0	22.0
Total Split (s)	14.0	41.0	41.0	14.0	41.0	41.0	14.0	40.0		35.0	61.0	61.0
Total Split (%)	10.8%	31.5%	31.5%	10.8%	31.5%	31.5%	10.8%	30.8%		26.9%	46.9%	46.9%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	362	135	11	103	99	75	397	51	246	485	99
Future Volume (veh/h)	151	362	135	11	103	99	75	397	51	246	485	99
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1878	1968	1794	1598	1852	1812	1869	1855	1680	1680	1680
Adj Flow Rate, veh/h	180	431	74	13	123	38	89	473	44	293	577	57
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	5	4	0	14	1	7	3	4	5	5	5
Cap, veh/h	346	476	423	111	334	328	439	1360	126	515	1566	699
Arrive On Green	0.06	0.25	0.25	0.02	0.21	0.21	0.05	0.41	0.41	0.13	0.49	0.49
Sat Flow, veh/h	1816	1878	1668	1709	1598	1567	1726	3285	305	1600	3191	1423
Grp Volume(v), veh/h	180	431	74	13	123	38	89	255	262	293	577	57
Grp Sat Flow(s),veh/h/ln	1816	1878	1668	1709	1598	1567	1726	1776	1814	1600	1596	1423
Q Serve(g_s), s	8.0	28.9	4.5	0.8	8.6	2.6	3.8	12.8	12.9	12.7	14.6	2.8
Cycle Q Clear(g_c), s	8.0	28.9	4.5	0.8	8.6	2.6	3.8	12.8	12.9	12.7	14.6	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	346	476	423	111	334	328	439	735	751	515	1566	699
V/C Ratio(X)	0.52	0.91	0.18	0.12	0.37	0.12	0.20	0.35	0.35	0.57	0.37	0.08
Avail Cap(c_a), veh/h	346	506	449	187	430	422	452	735	751	663	1566	699
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.1	47.0	37.9	41.3	44.1	41.7	19.5	26.1	26.2	16.5	20.6	17.6
Incr Delay (d2), s/veh	1.4	19.2	0.2	0.5	0.7	0.2	0.2	1.3	1.3	1.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	22.3	3.3	0.6	6.2	1.8	2.7	9.3	9.6	8.0	9.1	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.5	66.2	38.1	41.8	44.7	41.8	19.7	27.4	27.4	17.5	21.2	17.8
LnGrp LOS	D	E	D	D	D	D	B	C	C	B	C	B
Approach Vol, veh/h		685			174			606			927	
Approach Delay, s/veh		56.4			43.9			26.3			19.9	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	59.8	8.2	38.9	13.0	69.8	14.0	33.2
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	28.0	33.0	7.0	34.0	7.0	54.0	7.0	34.0
Max Q Clear Time (g_c+I1), s	15.2	15.3	3.3	31.4	6.3	17.1	10.5	11.1
Green Ext Time (p_c), s	0.8	1.6	0.0	0.5	0.0	2.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	33.7
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	232	211	47	378	203	43
Future Volume (vph)	232	211	47	378	203	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936				0.976	
Flt Protected				0.995	0.960	
Satd. Flow (prot)	1463	0	0	1567	1493	0
Flt Permitted				0.995	0.960	
Satd. Flow (perm)	1463	0	0	1567	1493	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	4%	7%	3%	14%
Adj. Flow (vph)	258	234	52	420	226	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	492	0	0	472	274	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

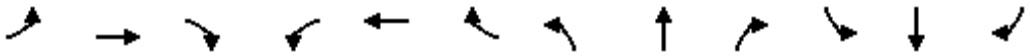
Intersection	
Int Delay, s/veh	11.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	232	211	47	378	203	43
Future Vol, veh/h	232	211	47	378	203	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	7	3	14
Mvmt Flow	258	234	52	420	226	48

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	492	0	899	375
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	524	-
Critical Hdwy	-	-	4.3	-	6.63	6.44
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	-	-	3	-	3	3.2
Pot Cap-1 Maneuver	-	-	813	-	326	676
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	653	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	813	-	299	676
Mov Cap-2 Maneuver	-	-	-	-	299	-
Stage 1	-	-	-	-	777	-
Stage 2	-	-	-	-	599	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	51.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	331	-	-	813	-
HCM Lane V/C Ratio	0.826	-	-	0.064	-
HCM Control Delay (s)	51.4	-	-	9.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	7.1	-	-	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	23	8	268	29	132	8	176	234	31	100	12
Future Volume (vph)	11	23	8	268	29	132	8	176	234	31	100	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.958			0.924			0.989	
Flt Protected		0.987			0.970			0.999			0.989	
Satd. Flow (prot)	0	1561	0	0	1583	0	0	1663	0	0	1715	0
Flt Permitted		0.987			0.970			0.999			0.989	
Satd. Flow (perm)	0	1561	0	0	1583	0	0	1663	0	0	1715	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	24	8	276	30	136	8	181	241	32	103	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	442	0	0	430	0	0	147	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	37.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	23	8	268	29	132	8	176	234	31	100	12
Future Vol, veh/h	11	23	8	268	29	132	8	176	234	31	100	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	18	0	0	1	3	1	0	1	0	0	1	0
Mvmt Flow	11	24	8	276	30	136	8	181	241	32	103	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	166	0	0	32	0	0	758	768	28	911	704	98
Stage 1	-	-	-	-	-	-	50	50	-	650	650	-
Stage 2	-	-	-	-	-	-	708	718	-	261	54	-
Critical Hdwy	4.5	-	-	4.3	-	-	6.9	6.31	6.1	6.5	5.91	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Follow-up Hdwy	3.2	-	-	3	-	-	3	4.009	3.1	3	4.009	3.1
Pot Cap-1 Maneuver	983	-	-	1170	-	-	379	348	1121	331	408	1031
Stage 1	-	-	-	-	-	-	1129	858	-	576	520	-
Stage 2	-	-	-	-	-	-	498	452	-	896	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	983	-	-	1170	-	-	219	253	1121	89	297	1031
Mov Cap-2 Maneuver	-	-	-	-	-	-	219	253	-	89	297	-
Stage 1	-	-	-	-	-	-	1117	849	-	570	383	-
Stage 2	-	-	-	-	-	-	265	333	-	547	851	-

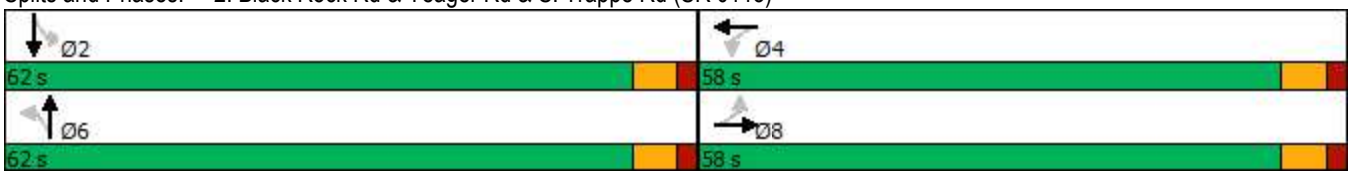
Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	5.6	66.4	57.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	444	983	-	-	1170	-	-	205
HCM Lane V/C Ratio	0.971	0.012	-	-	0.236	-	-	0.719
HCM Control Delay (s)	66.4	8.7	0	-	9	0	-	57.7
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	11.9	0	-	-	0.9	-	-	4.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	96	15	133	234	238	23	214	59	128	291	10
Future Volume (vph)	13	96	15	133	234	238	23	214	59	128	291	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.924			0.968			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1805	0	1645	1774	0	1677	1777	0	1643	1755	0
Flt Permitted	0.177			0.685			0.547			0.570		
Satd. Flow (perm)	281	1805	0	1186	1774	0	966	1777	0	986	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			55			16			2	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	7%	1%	0%	1%	4%	0%	0%	2%	0%	0%
Adj. Flow (vph)	13	96	15	133	234	238	23	214	59	128	291	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	111	0	133	472	0	23	273	0	128	301	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	58.0	58.0		58.0	58.0		62.0	62.0		62.0	62.0	
Total Split (%)	48.3%	48.3%		48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 97	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	96	15	133	234	238	23	214	59	128	291	10
Future Volume (veh/h)	13	96	15	133	234	238	23	214	59	128	291	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1637	1791	1652	1823	1911	1823	1892	1949	1949	1683	1711	1711
Adj Flow Rate, veh/h	13	96	7	133	234	222	23	214	43	128	291	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	2	7	1	0	1	4	0	0	2	0	0
Cap, veh/h	128	502	37	410	274	260	632	932	187	613	981	27
Arrive On Green	0.30	0.30	0.29	0.30	0.30	0.29	0.59	0.59	0.58	0.59	0.59	0.58
Sat Flow, veh/h	819	1649	120	1259	902	855	1093	1575	317	1010	1657	46
Grp Volume(v), veh/h	13	0	103	133	0	456	23	0	257	128	0	299
Grp Sat Flow(s),veh/h/ln	819	0	1769	1259	0	1757	1093	0	1892	1010	0	1703
Q Serve(g_s), s	1.5	0.0	4.1	8.3	0.0	23.5	1.0	0.0	6.2	6.5	0.0	8.4
Cycle Q Clear(g_c), s	24.5	0.0	4.1	12.0	0.0	23.5	8.9	0.0	6.2	12.2	0.0	8.4
Prop In Lane	1.00		0.07	1.00		0.49	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	128	0	538	410	0	535	632	0	1120	613	0	1008
V/C Ratio(X)	0.10	0.00	0.19	0.32	0.00	0.85	0.04	0.00	0.23	0.21	0.00	0.30
Avail Cap(c_a), veh/h	330	0	973	720	0	967	632	0	1120	613	0	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.7	0.0	24.8	29.0	0.0	31.7	11.8	0.0	9.3	12.0	0.0	9.7
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.5	0.0	4.0	0.1	0.0	0.5	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	3.1	4.4	0.0	15.1	0.4	0.0	4.3	2.7	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	0.0	24.9	29.4	0.0	35.7	11.9	0.0	9.8	12.8	0.0	10.5
LnGrp LOS	D	A	C	C	A	D	B	A	A	B	A	B
Approach Vol, veh/h		116			589			280			427	
Approach Delay, s/veh		27.0			34.3			10.0			11.2	
Approach LOS		C			C			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		34.3		62.0		34.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		56.0		52.0		56.0		52.0				
Max Q Clear Time (g_c+I1), s		14.7		25.5		11.4		27.0				
Green Ext Time (p_c), s		13.0		2.8		9.8		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			21.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	119	25	104	247	220	48	408	80	117	294	38
Future Volume (vph)	11	119	25	104	247	220	48	408	80	117	294	38
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00		0.98			
Frt		0.978				0.850			0.850		0.983	
Flt Protected		0.997			0.985		0.950			0.950		
Satd. Flow (prot)	0	1987	0	0	1699	1573	1581	1697	1624	1678	1715	0
Flt Permitted		0.964			0.852		0.530			0.461		
Satd. Flow (perm)	0	1921	0	0	1469	1573	880	1697	1585	814	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				229			83		14	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Confl. Peds. (#/hr)							4		4			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	9%	0%	0%	0%	2%	1%	4%	2%	0%	0%	1%	3%
Adj. Flow (vph)	11	124	26	108	257	229	50	425	83	122	306	40
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	365	229	50	425	83	122	346	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	42.0	42.0	42.0	42.0	42.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%	40.0%	60.0%	60.0%	60.0%	60.0%	60.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 67.7	
Natural Cycle: 45	

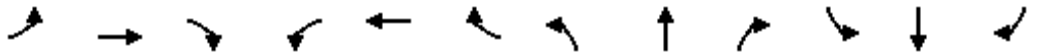
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	119	25	104	247	220	48	408	80	117	294	38
Future Volume (veh/h)	11	119	25	104	247	220	48	408	80	117	294	38
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1911	1837	1837	1809	1896	1738	1766	1866	1912	1898	1869
Adj Flow Rate, veh/h	11	124	24	108	257	130	50	425	59	122	306	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	0	0	0	2	1	4	2	0	0	1	3
Cap, veh/h	55	327	58	141	255	528	500	908	810	438	857	101
Arrive On Green	0.31	0.33	0.31	0.31	0.33	0.33	0.51	0.51	0.51	0.51	0.51	0.50
Sat Flow, veh/h	0	996	177	226	776	1607	965	1766	1575	930	1666	196
Grp Volume(v), veh/h	159	0	0	365	0	130	50	425	59	122	0	342
Grp Sat Flow(s),veh/h/ln	1174	0	0	1002	0	1607	965	1766	1575	930	0	1862
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.1	2.2	10.8	1.3	6.8	0.0	7.7
Cycle Q Clear(g_c), s	22.0	0.0	0.0	22.0	0.0	4.1	9.4	10.8	1.3	17.5	0.0	7.7
Prop In Lane	0.07		0.15	0.30		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	424	0	0	382	0	528	500	908	810	438	0	958
V/C Ratio(X)	0.38	0.00	0.00	0.96	0.00	0.25	0.10	0.47	0.07	0.28	0.00	0.36
Avail Cap(c_a), veh/h	424	0	0	382	0	528	500	908	810	438	0	958
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.8	0.0	0.0	23.8	0.0	17.2	12.8	10.9	8.6	16.5	0.0	10.2
Incr Delay (d2), s/veh	0.5	0.0	0.0	34.8	0.0	0.2	0.4	1.7	0.2	1.6	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	0.0	0.0	14.7	0.0	2.6	0.8	6.7	0.7	2.6	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.4	0.0	0.0	58.7	0.0	17.4	13.2	12.6	8.8	18.1	0.0	11.2
LnGrp LOS	B	A	A	E	A	B	B	B	A	B	A	B
Approach Vol, veh/h		159			495			534			464	
Approach Delay, s/veh		18.4			47.8			12.2			13.0	
Approach LOS		B			D			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		42.0		28.0		42.0		28.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		35.0		22.0		35.0		22.0				
Max Q Clear Time (g_c+I1), s		13.3		24.0		20.0		24.0				
Green Ext Time (p_c), s		11.2		0.0		7.7		0.0				

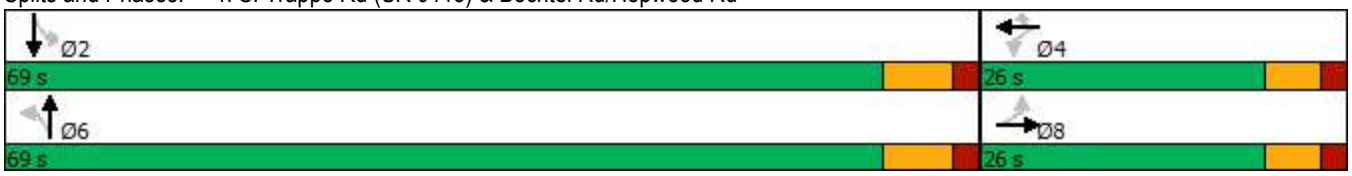
Intersection Summary												
HCM 6th Ctrl Delay			23.7									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	51	27	26	75	123	60	530	23	45	403	43
Future Volume (vph)	30	51	27	26	75	123	60	530	23	45	403	43
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966				0.850		0.994			0.986	
Flt Protected		0.986			0.987		0.950			0.950		
Satd. Flow (prot)	0	1717	0	0	1720	1500	1507	1787	0	1612	1776	0
Flt Permitted		0.874			0.883		0.471			0.402		
Satd. Flow (perm)	0	1522	0	0	1539	1500	747	1787	0	682	1776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				132		5			12	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	0%	0%	0%	3%	1%	7%	1%	4%	0%	1%	0%
Adj. Flow (vph)	32	55	29	28	81	132	65	570	25	48	433	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	0	0	109	132	65	595	0	48	479	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	26.0	26.0		26.0	26.0	26.0	69.0	69.0		69.0	69.0	
Total Split (%)	27.4%	27.4%		27.4%	27.4%	27.4%	72.6%	72.6%		72.6%	72.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 86.3	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	51	27	26	75	123	60	530	23	45	403	43
Future Volume (veh/h)	30	51	27	26	75	123	60	530	23	45	403	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1875	1875	1778	1736	1764	1775	1860	1818	1875	1860	1875
Adj Flow Rate, veh/h	32	55	16	28	81	73	65	570	22	48	433	38
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	0	0	3	1	7	1	4	0	1	0
Cap, veh/h	84	103	24	90	172	187	665	1325	51	606	1256	110
Arrive On Green	0.11	0.13	0.11	0.11	0.13	0.13	0.74	0.74	0.73	0.74	0.74	0.73
Sat Flow, veh/h	229	823	193	288	1375	1495	875	1779	69	827	1686	148
Grp Volume(v), veh/h	103	0	0	109	0	73	65	0	592	48	0	471
Grp Sat Flow(s),veh/h/ln	1245	0	0	1663	0	1495	875	0	1848	827	0	1834
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	3.8	2.3	0.0	10.2	1.9	0.0	7.5
Cycle Q Clear(g_c), s	7.4	0.0	0.0	5.1	0.0	3.8	9.3	0.0	10.2	11.6	0.0	7.5
Prop In Lane	0.31		0.16	0.26		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	197	0	0	242	0	187	665	0	1376	606	0	1366
V/C Ratio(X)	0.52	0.00	0.00	0.45	0.00	0.39	0.10	0.00	0.43	0.08	0.00	0.34
Avail Cap(c_a), veh/h	391	0	0	435	0	371	665	0	1376	606	0	1366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.6	0.0	0.0	34.7	0.0	34.0	5.2	0.0	4.1	6.1	0.0	3.7
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.3	0.0	1.3	0.3	0.0	1.0	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	0.0	3.9	0.0	2.5	0.6	0.0	4.5	0.5	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	0.0	36.0	0.0	35.4	5.5	0.0	5.0	6.4	0.0	4.4
LnGrp LOS	D	A	A	D	A	D	A	A	A	A	A	A
Approach Vol, veh/h		103			182			657			519	
Approach Delay, s/veh		37.7			35.7			5.1			4.6	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		69.0		15.6		69.0		15.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		62.0		20.0		62.0		20.0				
Max Q Clear Time (g_c+I1), s		14.1		7.1		12.2		9.4				
Green Ext Time (p_c), s		22.1		0.5		29.4		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	102	9	26	233	11	10	27	9	10	21	13
Future Volume (vph)	7	102	9	26	233	11	10	27	9	10	21	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.995			0.974			0.959	
Flt Protected		0.997			0.995			0.989			0.989	
Satd. Flow (prot)	0	1779	0	0	1943	0	0	1731	0	0	1541	0
Flt Permitted		0.997			0.995			0.989			0.989	
Satd. Flow (perm)	0	1779	0	0	1943	0	0	1731	0	0	1541	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Confl. Peds. (#/hr)				1		1				1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	4%	0%	0%	0%	0%	11%	10%	0%	0%
Adj. Flow (vph)	8	115	10	29	262	12	11	30	10	11	24	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	133	0	0	303	0	0	51	0	0	50	0
Sign Control		Stop			Stop			Stop			Stop	

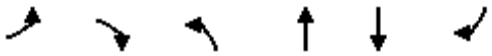
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	102	9	26	233	11	10	27	9	10	21	13
Future Vol, veh/h	7	102	9	26	233	11	10	27	9	10	21	13
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	1	0	4	0	0	0	0	11	10	0	0
Mvmt Flow	8	115	10	29	262	12	11	30	10	11	24	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	9.9	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	6%	10%	23%
Vol Thru, %	59%	86%	86%	48%
Vol Right, %	20%	8%	4%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	118	270	44
LT Vol	10	7	26	10
Through Vol	27	102	233	21
RT Vol	9	9	11	13
Lane Flow Rate	52	133	303	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.163	0.367	0.068
Departure Headway (Hd)	4.868	4.439	4.358	4.982
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	735	809	828	719
Service Time	2.899	2.462	2.376	3.015
HCM Lane V/C Ratio	0.071	0.164	0.366	0.068
HCM Control Delay	8.3	8.3	9.9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	1.7	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	2	3	38	42	8
Future Volume (vph)	7	2	3	38	42	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.978	
Flt Protected	0.962			0.996		
Satd. Flow (prot)	1726	0	0	1504	1493	0
Flt Permitted	0.962			0.996		
Satd. Flow (perm)	1726	0	0	1504	1493	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	0%	0%	3%	2%	0%
Adj. Flow (vph)	8	2	4	46	51	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	50	61	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

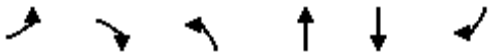
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	3	38	42	8
Future Vol, veh/h	7	2	3	38	42	8
Conflicting Peds, #/hr	1	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	14	0	0	3	2	0
Mvmt Flow	8	2	4	46	51	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	58	62	0	-	0
Stage 1	57	-	-	-	-	-
Stage 2	55	-	-	-	-	-
Critical Hdwy	6.34	6.1	4.3	-	-	-
Critical Hdwy Stg 1	5.34	-	-	-	-	-
Critical Hdwy Stg 2	5.34	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	1000	1079	1143	-	-	-
Stage 1	1094	-	-	-	-	-
Stage 2	1096	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	994	1077	1142	-	-	-
Mov Cap-2 Maneuver	994	-	-	-	-	-
Stage 1	1089	-	-	-	-	-
Stage 2	1095	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1142	-	1011	-	-
HCM Lane V/C Ratio	0.003	-	0.011	-	-
HCM Control Delay (s)	8.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	0	2	41	37	8
Future Volume (vph)	1	0	2	41	37	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.976	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1504	0	0	1615	1473	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1504	0	0	1615	1473	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	0%	0%	13%
Adj. Flow (vph)	1	0	3	51	46	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	54	56	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

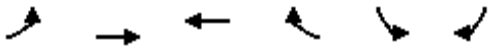
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	2	41	37	8
Future Vol, veh/h	1	0	2	41	37	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	13
Mvmt Flow	1	0	3	51	46	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	108	51	56	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	57	-	-	-	-	-
Critical Hdwy	5.8	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	1054	1092	1149	-	-	-
Stage 1	1145	-	-	-	-	-
Stage 2	1139	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1051	1092	1149	-	-	-
Mov Cap-2 Maneuver	1051	-	-	-	-	-
Stage 1	1142	-	-	-	-	-
Stage 2	1139	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1149	-	1051	-	-
HCM Lane V/C Ratio	0.002	-	0.001	-	-
HCM Control Delay (s)	8.1	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	136	290	32	15	24
Future Volume (vph)	11	136	290	32	15	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.918	
Flt Protected		0.996			0.981	
Satd. Flow (prot)	0	1631	1610	0	1521	0
Flt Permitted		0.996			0.981	
Satd. Flow (perm)	0	1631	1610	0	1521	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	11	142	302	33	16	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	153	335	0	41	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

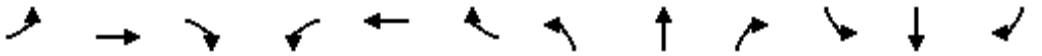
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	136	290	32	15	24
Future Vol, veh/h	11	136	290	32	15	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	11	142	302	33	16	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	335	0	-	0	483	319
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	164	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	922	-	-	-	634	774
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	922	-	-	-	626	774
Mov Cap-2 Maneuver	-	-	-	-	626	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	1013	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	922	-	-	-	709
HCM Lane V/C Ratio	0.012	-	-	-	0.057
HCM Control Delay (s)	9	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	97	3	22	226	70	6	27	11	32	22	16
Future Volume (vph)	15	97	3	22	226	70	6	27	11	32	22	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.970			0.966			0.969	
Flt Protected		0.994			0.997			0.994			0.978	
Satd. Flow (prot)	0	1707	0	0	1679	0	0	1720	0	0	1723	0
Flt Permitted		0.994			0.997			0.994			0.978	
Satd. Flow (perm)	0	1707	0	0	1679	0	0	1720	0	0	1723	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)				8		8	1		1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	104	3	24	243	75	6	29	12	34	24	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	123	0	0	342	0	0	47	0	0	75	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	97	3	22	226	70	6	27	11	32	22	16
Future Vol, veh/h	15	97	3	22	226	70	6	27	11	32	22	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	16	104	3	24	243	75	6	29	12	34	24	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	10.1	8.3	8.5
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	13%	7%	46%
Vol Thru, %	61%	84%	71%	31%
Vol Right, %	25%	3%	22%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	115	318	70
LT Vol	6	15	22	32
Through Vol	27	97	226	22
RT Vol	11	3	70	16
Lane Flow Rate	47	124	342	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.064	0.157	0.401	0.103
Departure Headway (Hd)	4.902	4.57	4.226	4.938
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	729	785	851	724
Service Time	2.943	2.599	2.247	2.977
HCM Lane V/C Ratio	0.064	0.158	0.402	0.104
HCM Control Delay	8.3	8.5	10.1	8.5
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.6	1.9	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	93	43	14	139	74	7
Future Volume (vph)	93	43	14	139	74	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.957				0.988	
Flt Protected				0.995	0.957	
Satd. Flow (prot)	1714	0	0	1768	1606	0
Flt Permitted				0.995	0.957	
Satd. Flow (perm)	1714	0	0	1768	1606	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	100	46	15	149	80	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	0	0	164	88	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

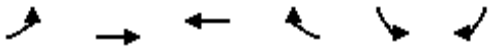
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	93	43	14	139	74	7
Future Vol, veh/h	93	43	14	139	74	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	100	46	15	149	80	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	146	0	302	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	-	-	4.3	-	7.01	6.5
Critical Hdwy Stg 1	-	-	-	-	6.01	-
Critical Hdwy Stg 2	-	-	-	-	6.01	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1071	-	754	980
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	958	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	743	980
Mov Cap-2 Maneuver	-	-	-	-	743	-
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	944	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	759	-	-	1071	-
HCM Lane V/C Ratio	0.115	-	-	0.014	-
HCM Control Delay (s)	10.4	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	138	303	18	18	19
Future Volume (vph)	5	138	303	18	18	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1694	1651	0	1727	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1694	1651	0	1727	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	144	316	19	19	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	149	335	0	19	20
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

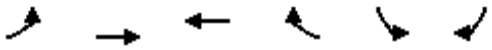
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	138	303	18	18	19
Future Vol, veh/h	5	138	303	18	18	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	144	316	19	19	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	316	0	-	0	480	326
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	154	-
Critical Hdwy	4.3	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	936	-	-	-	654	774
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	1032	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	936	-	-	-	650	774
Mov Cap-2 Maneuver	-	-	-	-	650	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	1032	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	936	-	-	-	650	774
HCM Lane V/C Ratio	0.006	-	-	-	0.029	0.026
HCM Control Delay (s)	8.9	0	-	-	10.7	9.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	99	246	79	46	49
Future Volume (vph)	34	99	246	79	46	49
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.967		0.930	
Flt Protected		0.987			0.976	
Satd. Flow (prot)	0	1666	1605	0	1556	0
Flt Permitted		0.987			0.976	
Satd. Flow (perm)	0	1666	1605	0	1556	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	2%	0%
Adj. Flow (vph)	35	103	256	82	48	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	138	338	0	99	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

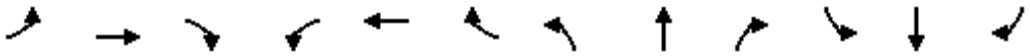
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	99	246	79	46	49
Future Vol, veh/h	34	99	246	79	46	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	5	2	0
Mvmt Flow	35	103	256	82	48	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	338	0	-	0	470	297
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	173	-
Critical Hdwy	4.3	-	-	-	5.22	5.6
Critical Hdwy Stg 1	-	-	-	-	4.22	-
Critical Hdwy Stg 2	-	-	-	-	4.22	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	920	-	-	-	734	829
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	1052	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	920	-	-	-	705	829
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	1052	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	920	-	-	-	764
HCM Lane V/C Ratio	0.038	-	-	-	0.13
HCM Control Delay (s)	9.1	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	0	3	0	4	0	342	3	4	420	1
Future Volume (vph)	1	1	0	3	0	4	0	342	3	4	420	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.923			0.999				
Flt Protected		0.976			0.979							
Satd. Flow (prot)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Flt Permitted		0.976			0.979							
Satd. Flow (perm)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	1	1	0	3	0	4	0	356	3	4	438	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	7	0	0	359	0	0	443	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	3	0	4	0	342	3	4	420	1
Future Vol, veh/h	1	1	0	3	0	4	0	342	3	4	420	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	1	0	3	0	4	0	356	3	4	438	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	807	806	439	805	805	358	439	0	0	359	0	0
Stage 1	447	447	-	358	358	-	-	-	-	-	-	-
Stage 2	360	359	-	447	447	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	6.7	6.1	6	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	420	398	696	368	348	743	848	-	-	904	-	-
Stage 1	763	653	-	787	657	-	-	-	-	-	-	-
Stage 2	834	697	-	708	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	416	396	696	365	346	743	848	-	-	904	-	-
Mov Cap-2 Maneuver	416	396	-	365	346	-	-	-	-	-	-	-
Stage 1	763	649	-	787	657	-	-	-	-	-	-	-
Stage 2	829	697	-	703	602	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.9	12.1	0	0.1
HCM LOS	B	B		

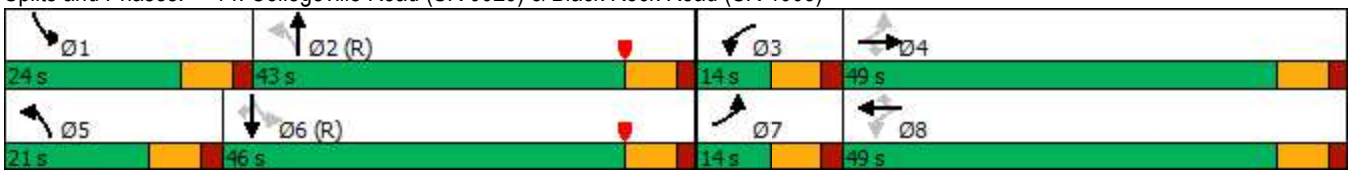
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	848	-	-	406	515	904	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.014	0.005	-	-
HCM Control Delay (s)	0	-	-	13.9	12.1	9	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	168	96	80	384	200	155	515	22	135	431	131
Future Volume (vph)	120	168	96	80	384	200	155	515	22	135	431	131
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor										1.00		0.98
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1800	1665	1701	1773	1608	1678	3450	0	1551	3335	1477
Flt Permitted	0.201			0.561			0.417			0.334		
Satd. Flow (perm)	358	1800	1665	1005	1773	1608	736	3450	0	545	3335	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			217		3				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	0%	0%	5%	1%	2%
Adj. Flow (vph)	130	183	104	87	417	217	168	560	24	147	468	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	130	183	104	87	417	217	168	584	0	147	468	142
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	11.0	11.0	11.0	11.0	11.0	11.0	23.0		11.0	23.0	23.0
Total Split (s)	14.0	49.0	49.0	14.0	49.0	49.0	21.0	43.0		24.0	46.0	46.0
Total Split (%)	10.8%	37.7%	37.7%	10.8%	37.7%	37.7%	16.2%	33.1%		18.5%	35.4%	35.4%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	168	96	80	384	200	155	515	22	135	431	131
Future Volume (veh/h)	120	168	96	80	384	200	155	515	22	135	431	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1921	2027	1794	1780	1852	1912	1912	1912	1680	1736	1722
Adj Flow Rate, veh/h	130	183	54	87	417	85	168	560	21	147	468	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	1	1	0	0	0	5	1	2
Cap, veh/h	201	506	453	363	468	413	469	1467	55	409	1355	599
Arrive On Green	0.06	0.26	0.26	0.06	0.26	0.26	0.08	0.41	0.40	0.08	0.41	0.41
Sat Flow, veh/h	1816	1921	1718	1709	1780	1569	1821	3570	134	1600	3298	1457
Grp Volume(v), veh/h	130	183	54	87	417	85	168	285	296	147	468	110
Grp Sat Flow(s),veh/h/ln	1816	1921	1718	1709	1780	1569	1821	1816	1888	1600	1649	1457
Q Serve(g_s), s	6.8	10.1	3.1	4.7	29.3	5.5	6.7	14.2	14.3	6.7	12.7	6.3
Cycle Q Clear(g_c), s	6.8	10.1	3.1	4.7	29.3	5.5	6.7	14.2	14.3	6.7	12.7	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	201	506	453	363	468	413	469	746	776	409	1355	599
V/C Ratio(X)	0.65	0.36	0.12	0.24	0.89	0.21	0.36	0.38	0.38	0.36	0.35	0.18
Avail Cap(c_a), veh/h	201	635	568	365	589	519	533	746	776	503	1355	599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.8	39.0	36.4	31.7	46.1	37.3	19.3	26.7	26.8	19.5	26.3	24.4
Incr Delay (d2), s/veh	6.9	0.4	0.1	0.3	13.4	0.2	0.5	1.5	1.4	0.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.0	8.3	2.4	3.5	20.6	3.8	5.0	10.4	10.7	4.4	8.6	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.7	39.4	36.5	32.1	59.5	37.6	19.8	28.2	28.2	20.1	27.0	25.1
LnGrp LOS	D	D	D	C	E	D	B	C	C	C	C	C
Approach Vol, veh/h		367			589			749			725	
Approach Delay, s/veh		40.2			52.3			26.3			25.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	59.4	13.9	40.3	16.4	59.4	14.0	40.2
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	17.0	36.0	7.0	42.0	14.0	39.0	7.0	42.0
Max Q Clear Time (g_c+I1), s	9.2	16.7	7.2	12.6	9.2	15.2	9.3	31.8
Green Ext Time (p_c), s	0.2	1.9	0.0	0.8	0.2	2.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	34.4
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	196	190	76	242	234	55
Future Volume (vph)	196	190	76	242	234	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.934				0.974	
Flt Protected				0.988	0.961	
Satd. Flow (prot)	1561	0	0	1660	1540	0
Flt Permitted				0.988	0.961	
Satd. Flow (perm)	1561	0	0	1660	1540	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	236	229	92	292	282	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	465	0	0	384	348	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	23.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	196	190	76	242	234	55
Future Vol, veh/h	196	190	76	242	234	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	1	0	0	2	0
Mvmt Flow	236	229	92	292	282	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	465	0	827	351
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	476	-
Critical Hdwy	-	-	4.3	-	6.62	6.3
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	831	-	363	728
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	831	-	315	728
Mov Cap-2 Maneuver	-	-	-	-	315	-
Stage 1	-	-	-	-	800	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	79.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	353	-	-	831	-
HCM Lane V/C Ratio	0.986	-	-	0.11	-
HCM Control Delay (s)	79.5	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	11.1	-	-	0.4	-

2028 Base Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	23	14	229	8	48	2	90	218	128	177	8
Future Volume (vph)	11	23	14	229	8	48	2	90	218	128	177	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.961			0.977			0.905			0.997	
Flt Protected		0.989			0.961						0.980	
Satd. Flow (prot)	0	1487	0	0	1486	0	0	1568	0	0	1682	0
Flt Permitted		0.989			0.961						0.980	
Satd. Flow (perm)	0	1487	0	0	1486	0	0	1568	0	0	1682	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	13	27	16	266	9	56	2	105	253	149	206	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	331	0	0	360	0	0	364	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	100.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	23	14	229	8	48	2	90	218	128	177	8
Future Vol, veh/h	11	23	14	229	8	48	2	90	218	128	177	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	9	9	7	7	38	13	0	3	5	2	2	25
Mvmt Flow	13	27	16	266	9	56	2	105	253	149	206	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	65	0	0	43	0	0	738	658	35	809	638	37
Stage 1	-	-	-	-	-	-	61	61	-	569	569	-
Stage 2	-	-	-	-	-	-	677	597	-	240	69	-
Critical Hdwy	4.4	-	-	4.4	-	-	6.9	6.33	6.15	6.52	5.92	6.15
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3	4.027	3.1	3	4.018	3.3
Pot Cap-1 Maneuver	1103	-	-	1122	-	-	390	397	1110	381	439	1042
Stage 1	-	-	-	-	-	-	1114	845	-	630	556	-
Stage 2	-	-	-	-	-	-	518	506	-	916	847	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1103	-	-	1122	-	-	158	295	1110	173	326	1042
Mov Cap-2 Maneuver	-	-	-	-	-	-	158	295	-	173	326	-
Stage 1	-	-	-	-	-	-	1101	835	-	622	418	-
Stage 2	-	-	-	-	-	-	196	381	-	611	837	-

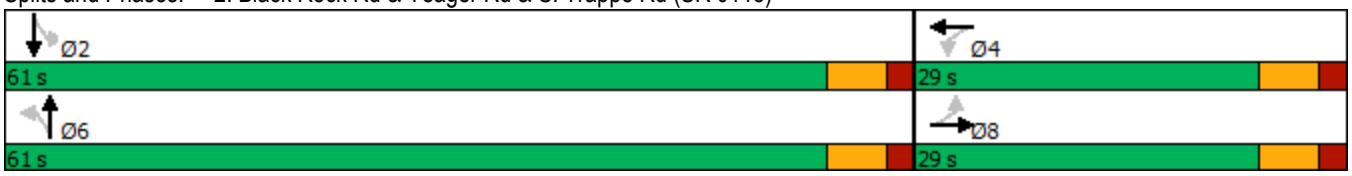
Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	7.4	19.4	281.9
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	603	1103	-	-	1122	-	-	243
HCM Lane V/C Ratio	0.598	0.012	-	-	0.237	-	-	1.498
HCM Control Delay (s)	19.4	8.3	0	-	9.2	0	-	281.9
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	3.9	0	-	-	0.9	-	-	21.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	288	14	88	142	94	7	248	115	242	207	5
Future Volume (vph)	33	288	14	88	142	94	7	248	115	242	207	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.940			0.953			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1536	1793	0	1457	1718	0	1220	1693	0	1611	1660	0
Flt Permitted	0.416			0.287			0.610			0.483		
Satd. Flow (perm)	673	1793	0	440	1718	0	783	1693	0	819	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			36			49			3	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	5%	0%	14%	4%	8%	43%	4%	2%	4%	6%	0%
Adj. Flow (vph)	37	324	16	99	160	106	8	279	129	272	233	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	340	0	99	266	0	8	408	0	272	239	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0		61.0	61.0		61.0	61.0	
Total Split (%)	32.2%	32.2%		32.2%	32.2%		67.8%	67.8%		67.8%	67.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 87.6	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	288	14	88	142	94	7	248	115	242	207	5
Future Volume (veh/h)	33	288	14	88	142	94	7	248	115	242	207	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1666	1747	1750	1638	1852	1724	1338	1892	1921	1655	1626	1711
Adj Flow Rate, veh/h	37	324	12	99	160	95	8	279	100	272	233	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	5	0	14	4	8	43	4	2	4	6	0
Cap, veh/h	226	446	17	168	290	172	540	827	297	548	987	21
Arrive On Green	0.27	0.27	0.26	0.27	0.27	0.26	0.62	0.62	0.61	0.62	0.62	0.61
Sat Flow, veh/h	1001	1674	62	915	1089	646	817	1330	477	888	1586	34
Grp Volume(v), veh/h	37	0	336	99	0	255	8	0	379	272	0	238
Grp Sat Flow(s),veh/h/ln	1001	0	1736	915	0	1735	817	0	1806	888	0	1620
Q Serve(g_s), s	3.0	0.0	15.8	8.7	0.0	11.4	0.4	0.0	9.1	18.8	0.0	5.9
Cycle Q Clear(g_c), s	13.9	0.0	15.8	24.0	0.0	11.4	5.7	0.0	9.1	27.4	0.0	5.9
Prop In Lane	1.00		0.04	1.00		0.37	1.00		0.26	1.00		0.02
Lane Grp Cap(c), veh/h	226	0	463	168	0	463	540	0	1124	548	0	1008
V/C Ratio(X)	0.16	0.00	0.73	0.59	0.00	0.55	0.01	0.00	0.34	0.50	0.00	0.24
Avail Cap(c_a), veh/h	226	0	463	168	0	463	540	0	1124	548	0	1008
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	30.0	41.2	0.0	28.5	8.7	0.0	8.2	14.5	0.0	7.5
Incr Delay (d2), s/veh	0.3	0.0	5.6	5.3	0.0	1.4	0.1	0.0	0.8	3.2	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0	11.4	4.2	0.0	8.1	0.1	0.0	5.7	6.9	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	0.0	35.6	46.5	0.0	29.9	8.7	0.0	9.0	17.7	0.0	8.1
LnGrp LOS	C	A	D	D	A	C	A	A	A	B	A	A
Approach Vol, veh/h		373			354			387			510	
Approach Delay, s/veh		35.5			34.6			9.0			13.2	
Approach LOS		D			C			A			B	

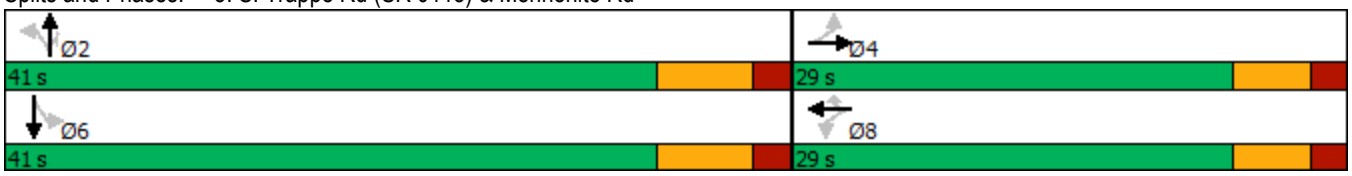
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0		29.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		55.0		23.0		55.0		23.0				
Max Q Clear Time (g_c+I1), s		29.9		26.5		11.1		17.8				
Green Ext Time (p_c), s		10.7		0.0		15.1		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			22.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	176	50	31	36	31	14	249	86	132	382	20
Future Volume (vph)	39	176	50	31	36	31	14	249	86	132	382	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974				0.850			0.850		0.993	
Flt Protected		0.993			0.978		0.950			0.950		
Satd. Flow (prot)	0	1927	0	0	1590	1406	1443	1649	1547	1645	1690	0
Flt Permitted		0.942			0.753		0.470			0.591		
Satd. Flow (perm)	0	1828	0	0	1224	1406	714	1649	1547	1023	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62			95		5	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	1%	8%	7%	8%	13%	14%	5%	5%	2%	4%	0%
Adj. Flow (vph)	43	193	55	34	40	34	15	274	95	145	420	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	74	34	15	274	95	145	442	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	29.0	29.0		29.0	29.0	29.0	41.0	41.0	41.0	41.0	41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%	41.4%	58.6%	58.6%	58.6%	58.6%	58.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 61.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	176	50	31	36	31	14	249	86	132	382	20
Future Volume (veh/h)	39	176	50	31	36	31	14	249	86	132	382	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	1896	1724	1738	1724	1718	1598	1724	1793	1883	1855	1912
Adj Flow Rate, veh/h	43	193	41	34	40	12	15	274	68	145	420	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	1	8	7	8	13	14	5	5	2	4	0
Cap, veh/h	110	281	56	193	195	307	516	1035	912	672	1057	48
Arrive On Green	0.19	0.21	0.19	0.19	0.21	0.21	0.60	0.60	0.60	0.60	0.60	0.58
Sat Flow, veh/h	182	1333	263	488	922	1456	812	1724	1520	1046	1761	80
Grp Volume(v), veh/h	277	0	0	74	0	12	15	274	68	145	0	439
Grp Sat Flow(s),veh/h/ln	1779	0	0	1410	0	1456	812	1724	1520	1046	0	1841
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.4	0.6	4.4	1.1	4.5	0.0	7.3
Cycle Q Clear(g_c), s	8.6	0.0	0.0	2.1	0.0	0.4	7.4	4.4	1.1	8.9	0.0	7.3
Prop In Lane	0.16		0.15	0.46		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	416	0	0	364	0	307	516	1035	912	672	0	1105
V/C Ratio(X)	0.67	0.00	0.00	0.20	0.00	0.04	0.03	0.26	0.07	0.22	0.00	0.40
Avail Cap(c_a), veh/h	766	0	0	631	0	599	516	1035	912	672	0	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	19.2	0.0	18.3	7.9	5.5	4.9	7.6	0.0	6.1
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.3	0.0	0.1	0.1	0.6	0.2	0.7	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	0.0	0.0	1.4	0.0	0.2	0.2	2.0	0.4	1.5	0.0	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	0.0	19.4	0.0	18.3	8.0	6.2	5.0	8.4	0.0	7.2
LnGrp LOS	C	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		277			86			357			584	
Approach Delay, s/veh		23.5			19.3			6.0			7.5	
Approach LOS		C			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.0		17.3		41.0		17.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		9.9		10.6		11.4		4.1				
Green Ext Time (p_c), s		7.9		0.8		12.6		0.2				

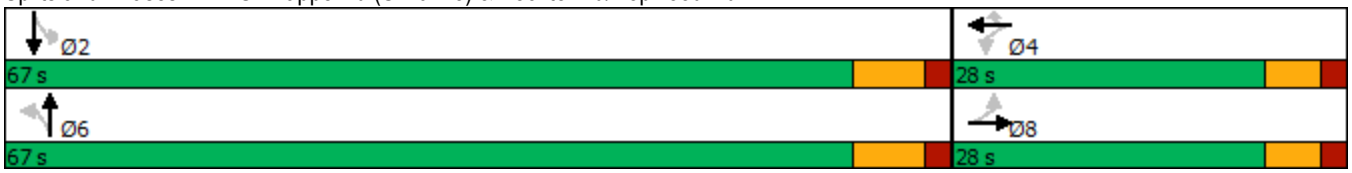
Intersection Summary												
HCM 6th Ctrl Delay			11.3									
HCM 6th LOS			B									

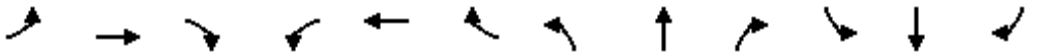
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	49	40	27	58	45	15	287	20	65	422	20
Future Volume (vph)	59	49	40	27	58	45	15	287	20	65	422	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00	1.00	
Frt		0.963				0.850		0.990			0.993	
Flt Protected		0.981			0.984		0.950			0.950		
Satd. Flow (prot)	0	1652	0	0	1693	1515	1507	1724	0	1580	1753	0
Flt Permitted		0.828			0.850		0.450			0.552		
Satd. Flow (perm)	0	1394	0	0	1462	1515	714	1724	0	918	1753	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				51		7			5	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	6%	3%	7%	2%	0%	7%	4%	10%	2%	3%	0%
Adj. Flow (vph)	66	55	45	30	65	51	17	322	22	73	474	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	166	0	0	95	51	17	344	0	73	496	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	67.0	67.0		67.0	67.0	
Total Split (%)	29.5%	29.5%		29.5%	29.5%	29.5%	70.5%	70.5%		70.5%	70.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 87.6	
Natural Cycle: 40	

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd

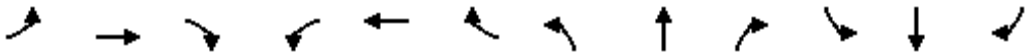




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	49	40	27	58	45	15	287	20	65	422	20
Future Volume (veh/h)	59	49	40	27	58	45	15	287	20	65	422	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1789	1832	1679	1750	1778	1775	1818	1732	1846	1832	1875
Adj Flow Rate, veh/h	66	55	25	30	65	22	17	322	21	73	474	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	6	3	7	2	0	7	4	10	2	3	0
Cap, veh/h	130	93	34	108	200	237	610	1205	79	752	1249	50
Arrive On Green	0.15	0.16	0.15	0.15	0.16	0.16	0.71	0.71	0.70	0.71	0.71	0.70
Sat Flow, veh/h	438	593	213	333	1274	1507	858	1688	110	1024	1749	70
Grp Volume(v), veh/h	146	0	0	95	0	22	17	0	343	73	0	493
Grp Sat Flow(s),veh/h/ln	1244	0	0	1607	0	1507	858	0	1798	1024	0	1819
Q Serve(g_s), s	5.9	0.0	0.0	0.0	0.0	1.1	0.7	0.0	5.8	2.3	0.0	9.1
Cycle Q Clear(g_c), s	10.2	0.0	0.0	4.2	0.0	1.1	9.3	0.0	5.8	7.6	0.0	9.1
Prop In Lane	0.45		0.17	0.32		1.00	1.00		0.06	1.00		0.04
Lane Grp Cap(c), veh/h	242	0	0	290	0	237	610	0	1284	752	0	1299
V/C Ratio(X)	0.60	0.00	0.00	0.33	0.00	0.09	0.03	0.00	0.27	0.10	0.00	0.38
Avail Cap(c_a), veh/h	406	0	0	462	0	406	610	0	1284	752	0	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	0.0	32.2	0.0	30.8	6.5	0.0	4.3	5.6	0.0	4.8
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.7	0.0	0.2	0.1	0.0	0.5	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	0.0	0.0	3.2	0.0	0.7	0.2	0.0	2.8	0.8	0.0	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	0.0	0.0	32.9	0.0	31.0	6.6	0.0	4.8	5.8	0.0	5.7
LnGrp LOS	D	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		146			117			360			566	
Approach Delay, s/veh		37.7			32.5			4.9			5.7	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		18.4		67.0		18.4				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		60.0		22.0		60.0		22.0				
Max Q Clear Time (g_c+I1), s		11.1		6.2		11.8		12.2				
Green Ext Time (p_c), s		23.8		0.3		15.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	257	10	2	189	7	10	31	23	21	14	10
Future Volume (vph)	12	257	10	2	189	7	10	31	23	21	14	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.995			0.951			0.971	
Flt Protected		0.998						0.992			0.977	
Satd. Flow (prot)	0	1745	0	0	1862	0	0	1682	0	0	1445	0
Flt Permitted		0.998						0.992			0.977	
Satd. Flow (perm)	0	1745	0	0	1862	0	0	1682	0	0	1445	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	3%	10%	0%	5%	14%	10%	0%	4%	10%	0%	20%
Adj. Flow (vph)	14	292	11	2	215	8	11	35	26	24	16	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	317	0	0	225	0	0	72	0	0	51	0
Sign Control		Stop			Stop			Stop			Stop	

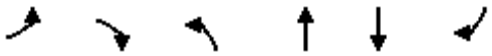
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	257	10	2	189	7	10	31	23	21	14	10
Future Vol, veh/h	12	257	10	2	189	7	10	31	23	21	14	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	8	3	10	0	5	14	10	0	4	10	0	20
Mvmt Flow	14	292	11	2	215	8	11	35	26	24	16	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.8	9.4	8.9	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	4%	1%	47%
Vol Thru, %	48%	92%	95%	31%
Vol Right, %	36%	4%	4%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	64	279	198	45
LT Vol	10	12	2	21
Through Vol	31	257	189	14
RT Vol	23	10	7	10
Lane Flow Rate	73	317	225	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.405	0.285	0.076
Departure Headway (Hd)	5.193	4.598	4.562	5.372
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	687	780	785	663
Service Time	3.253	2.635	2.602	3.435
HCM Lane V/C Ratio	0.106	0.406	0.287	0.077
HCM Control Delay	8.9	10.8	9.4	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2	1.2	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	3	2	62	24	5
Future Volume (vph)	10	3	2	62	24	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.978	
Flt Protected	0.962			0.999		
Satd. Flow (prot)	1789	0	0	1507	1518	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1789	0	0	1507	1518	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	33%	0%	3%	0%	0%
Adj. Flow (vph)	11	3	2	66	26	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	68	31	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

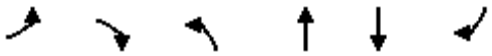
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	2	62	24	5
Future Vol, veh/h	10	3	2	62	24	5
Conflicting Peds, #/hr	1	1	0	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	33	0	3	0	0
Mvmt Flow	11	3	2	66	26	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	103	33	34	0	-	0
Stage 1	32	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.2	6.43	4.3	-	-	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.4	3	-	-	-
Pot Cap-1 Maneuver	1049	1014	1169	-	-	-
Stage 1	1161	-	-	-	-	-
Stage 2	1115	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1041	1010	1165	-	-	-
Mov Cap-2 Maneuver	1041	-	-	-	-	-
Stage 1	1155	-	-	-	-	-
Stage 2	1112	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1165	-	1034	-	-
HCM Lane V/C Ratio	0.002	-	0.013	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	1	2	54	20	5
Future Volume (vph)	9	1	2	54	20	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.973	
Flt Protected	0.956			0.999		
Satd. Flow (prot)	1360	0	0	1588	1445	0
Flt Permitted	0.956			0.999		
Satd. Flow (perm)	1360	0	0	1588	1445	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	11%	0%	0%	2%	0%	20%
Adj. Flow (vph)	11	1	2	65	24	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	67	30	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

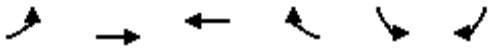
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	2	54	20	5
Future Vol, veh/h	9	1	2	54	20	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	11	0	0	2	0	20
Mvmt Flow	11	1	2	65	24	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	96	27	30	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	5.91	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.91	-	-	-	-	-
Critical Hdwy Stg 2	4.91	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	1034	1124	1172	-	-	-
Stage 1	1132	-	-	-	-	-
Stage 2	1089	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1032	1124	1172	-	-	-
Mov Cap-2 Maneuver	1032	-	-	-	-	-
Stage 1	1130	-	-	-	-	-
Stage 2	1089	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1172	-	1041	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	294	135	15	19	6
Future Volume (vph)	41	294	135	15	19	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986		0.966	
Flt Protected		0.994			0.964	
Satd. Flow (prot)	0	1595	1527	0	1572	0
Flt Permitted		0.994			0.964	
Satd. Flow (perm)	0	1595	1527	0	1572	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	7%	0%	0%	0%
Adj. Flow (vph)	46	330	152	17	21	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	376	169	0	28	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

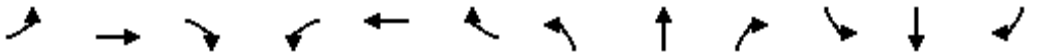
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	41	294	135	15	19	6
Future Vol, veh/h	41	294	135	15	19	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	7	0	0	0
Mvmt Flow	46	330	152	17	21	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	169	0	-	0	583	161
Stage 1	-	-	-	-	161	-
Stage 2	-	-	-	-	422	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1051	-	-	-	555	947
Stage 1	-	-	-	-	1016	-
Stage 2	-	-	-	-	774	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1051	-	-	-	525	947
Mov Cap-2 Maneuver	-	-	-	-	525	-
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	774	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1051	-	-	-	588
HCM Lane V/C Ratio	0.044	-	-	-	0.048
HCM Control Delay (s)	8.6	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	165	6	13	66	14	2	21	31	47	28	18
Future Volume (vph)	12	165	6	13	66	14	2	21	31	47	28	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.980			0.922			0.974	
Flt Protected		0.997			0.993			0.998			0.975	
Satd. Flow (prot)	0	1660	0	0	1591	0	0	1589	0	0	1601	0
Flt Permitted		0.997			0.993			0.998			0.975	
Satd. Flow (perm)	0	1660	0	0	1591	0	0	1589	0	0	1601	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	17%	1%	33%	8%	6%	7%	0%	5%	3%	9%	7%	6%
Adj. Flow (vph)	15	204	7	16	81	17	2	26	38	58	35	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	226	0	0	114	0	0	66	0	0	115	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	165	6	13	66	14	2	21	31	47	28	18
Future Vol, veh/h	12	165	6	13	66	14	2	21	31	47	28	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	17	1	33	8	6	7	0	5	3	9	7	6
Mvmt Flow	15	204	7	16	81	17	2	26	38	58	35	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.8	8.5	8	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	7%	14%	51%
Vol Thru, %	39%	90%	71%	30%
Vol Right, %	57%	3%	15%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	54	183	93	93
LT Vol	2	12	13	47
Through Vol	21	165	66	28
RT Vol	31	6	14	18
Lane Flow Rate	67	226	115	115
Geometry Grp	1	1	1	1
Degree of Util (X)	0.084	0.299	0.149	0.157
Departure Headway (Hd)	4.532	4.757	4.685	4.937
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	788	755	765	726
Service Time	2.575	2.789	2.722	2.976
HCM Lane V/C Ratio	0.085	0.299	0.15	0.158
HCM Control Delay	8	9.8	8.5	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1.3	0.5	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	95	34	3	128	46	18
Future Volume (vph)	95	34	3	128	46	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964				0.963	
Flt Protected				0.999	0.965	
Satd. Flow (prot)	1638	0	0	1773	1516	0
Flt Permitted				0.999	0.965	
Satd. Flow (perm)	1638	0	0	1773	1516	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	2%	15%	0%	2%	7%	0%
Adj. Flow (vph)	123	44	4	166	60	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	0	0	170	83	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

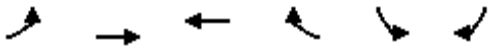
Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	34	3	128	46	18
Future Vol, veh/h	95	34	3	128	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	15	0	2	7	0
Mvmt Flow	123	44	4	166	60	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	167	0	319	145
Stage 1	-	-	-	-	145	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.3	-	7.07	6.5
Critical Hdwy Stg 1	-	-	-	-	6.07	-
Critical Hdwy Stg 2	-	-	-	-	6.07	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1053	-	710	951
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1053	-	707	951
Mov Cap-2 Maneuver	-	-	-	-	707	-
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1053	-
HCM Lane V/C Ratio	0.109	-	-	0.004	-
HCM Control Delay (s)	10.3	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	313	129	17	24	7
Future Volume (vph)	12	313	129	17	24	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.984			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1668	1560	0	1661	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1668	1560	0	1661	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	2%	6%	6%	4%	0%
Adj. Flow (vph)	14	368	152	20	28	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	382	172	0	28	8
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

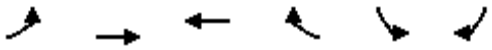
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	313	129	17	24	7
Future Vol, veh/h	12	313	129	17	24	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	17	2	6	6	4	0
Mvmt Flow	14	368	152	20	28	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	152	0	-	0	558	162
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	396	-
Critical Hdwy	4.5	-	-	-	6.04	6
Critical Hdwy Stg 1	-	-	-	-	5.04	-
Critical Hdwy Stg 2	-	-	-	-	5.04	-
Follow-up Hdwy	3.2	-	-	-	3	3.1
Pot Cap-1 Maneuver	995	-	-	-	588	950
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	995	-	-	-	577	950
Mov Cap-2 Maneuver	-	-	-	-	577	-
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	809	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	995	-	-	-	577	950
HCM Lane V/C Ratio	0.014	-	-	-	0.049	0.009
HCM Control Delay (s)	8.7	0	-	-	11.6	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	248	92	43	76	46
Future Volume (vph)	43	248	92	43	76	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.957		0.949	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1630	1512	0	1476	0
Flt Permitted		0.993			0.970	
Satd. Flow (perm)	0	1630	1512	0	1476	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	3%	6%	7%	3%	16%
Adj. Flow (vph)	51	292	108	51	89	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	343	159	0	143	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

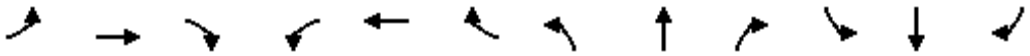
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	248	92	43	76	46
Future Vol, veh/h	43	248	92	43	76	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	3	6	7	3	16
Mvmt Flow	51	292	108	51	89	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	159	0	-	0	528	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	394	-
Critical Hdwy	4.3	-	-	-	5.23	5.76
Critical Hdwy Stg 1	-	-	-	-	4.23	-
Critical Hdwy Stg 2	-	-	-	-	4.23	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1060	-	-	-	689	963
Stage 1	-	-	-	-	1083	-
Stage 2	-	-	-	-	886	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1060	-	-	-	650	963
Mov Cap-2 Maneuver	-	-	-	-	650	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	886	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1060	-	-	-	741
HCM Lane V/C Ratio	0.048	-	-	-	0.194
HCM Control Delay (s)	8.6	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	4	1	393	0	1	309	0
Future Volume (vph)	0	0	0	3	0	4	1	393	0	1	309	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916							
Flt Protected					0.982							
Satd. Flow (prot)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Flt Permitted					0.982							
Satd. Flow (perm)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	67%	0%	0%	0%	6%	0%	100%	8%	0%
Adj. Flow (vph)	0	0	0	3	0	5	1	457	0	1	359	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	8	0	0	458	0	0	360	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	3	0	4	1	393	0	1	309	0
Future Vol, veh/h	0	0	0	3	0	4	1	393	0	1	309	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	67	0	0	0	6	0	100	8	0
Mvmt Flow	0	0	0	3	0	5	1	457	0	1	359	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	823	820	359	820	820	457	359	0	0	457	0	0
Stage 1	361	361	-	459	459	-	-	-	-	-	-	-
Stage 2	462	459	-	361	361	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	7.37	6.1	6	4.3	-	-	5.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3.6	4	3.1	3	-	-	3.9	-	-
Pot Cap-1 Maneuver	411	392	765	273	342	656	904	-	-	597	-	-
Stage 1	833	696	-	554	600	-	-	-	-	-	-	-
Stage 2	751	647	-	629	655	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	407	391	765	272	341	656	904	-	-	597	-	-
Mov Cap-2 Maneuver	407	391	-	272	341	-	-	-	-	-	-	-
Stage 1	832	695	-	553	599	-	-	-	-	-	-	-
Stage 2	745	646	-	628	654	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14	0	0
HCM LOS	A	B		

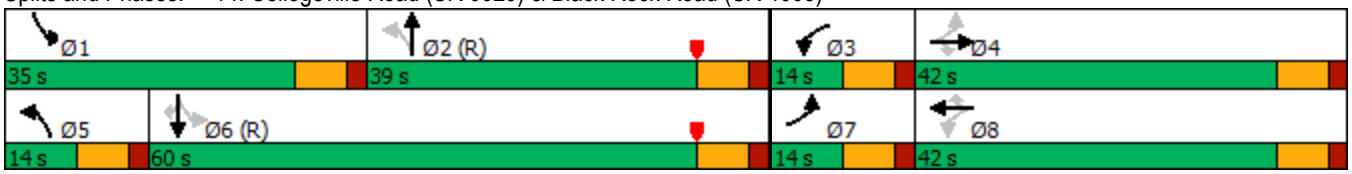
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	904	-	-	-	409	597	-	-
HCM Lane V/C Ratio	0.001	-	-	-	0.02	0.002	-	-
HCM Control Delay (s)	9	0	-	0	14	11	0	-
HCM Lane LOS	A	A	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	367	137	11	104	100	76	402	52	249	492	100
Future Volume (vph)	153	367	137	11	104	100	76	402	52	249	492	100
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00		0.99	1.00	1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1749	1601	1701	1571	1608	1568	3301	0	1551	3208	1435
Flt Permitted	0.573			0.190			0.431			0.315		
Satd. Flow (perm)	1021	1749	1601	340	1571	1587	711	3301	0	514	3208	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			210		10				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)				1		1	1		1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	0%	14%	1%	7%	3%	4%	5%	5%	5%
Adj. Flow (vph)	182	437	163	13	124	119	90	479	62	296	586	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	437	163	13	124	119	90	541	0	296	586	119
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0		10.0	22.0	22.0
Total Split (s)	14.0	42.0	42.0	14.0	42.0	42.0	14.0	39.0		35.0	60.0	60.0
Total Split (%)	10.8%	32.3%	32.3%	10.8%	32.3%	32.3%	10.8%	30.0%		26.9%	46.2%	46.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	367	137	11	104	100	76	402	52	249	492	100
Future Volume (veh/h)	153	367	137	11	104	100	76	402	52	249	492	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1878	1968	1794	1598	1852	1812	1869	1855	1680	1680	1680
Adj Flow Rate, veh/h	182	437	76	13	124	39	90	479	45	296	586	58
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	5	4	0	14	1	7	3	4	5	5	5
Cap, veh/h	350	483	429	112	340	333	432	1339	125	510	1552	692
Arrive On Green	0.06	0.26	0.26	0.02	0.21	0.21	0.05	0.41	0.40	0.13	0.49	0.49
Sat Flow, veh/h	1816	1878	1668	1709	1598	1567	1726	3282	307	1600	3191	1423
Grp Volume(v), veh/h	182	437	76	13	124	39	90	258	266	296	586	58
Grp Sat Flow(s),veh/h/ln	1816	1878	1668	1709	1598	1567	1726	1776	1813	1600	1596	1423
Q Serve(g_s), s	8.0	29.3	4.6	0.8	8.6	2.6	3.8	13.1	13.2	13.0	15.0	2.8
Cycle Q Clear(g_c), s	8.0	29.3	4.6	0.8	8.6	2.6	3.8	13.1	13.2	13.0	15.0	2.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	350	483	429	112	340	333	432	725	740	510	1552	692
V/C Ratio(X)	0.52	0.90	0.18	0.12	0.36	0.12	0.21	0.36	0.36	0.58	0.38	0.08
Avail Cap(c_a), veh/h	350	520	462	188	442	434	444	725	740	654	1552	692
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	46.7	37.6	41.0	43.7	41.3	19.9	26.7	26.7	16.9	21.0	17.9
Incr Delay (d2), s/veh	1.4	18.5	0.2	0.5	0.7	0.2	0.2	1.4	1.4	1.0	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	22.4	3.4	0.6	6.2	1.8	2.8	9.6	9.8	8.1	9.4	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.2	65.2	37.8	41.5	44.3	41.5	20.1	28.0	28.1	18.0	21.7	18.1
LnGrp LOS	D	E	D	D	D	D	C	C	C	B	C	B
Approach Vol, veh/h		695			176			614			940	
Approach Delay, s/veh		55.7			43.5			26.9			20.3	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.3	59.1	8.2	39.4	13.1	69.2	14.0	33.7
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	28.0	32.0	7.0	35.0	7.0	53.0	7.0	35.0
Max Q Clear Time (g_c+I1), s	15.5	15.6	3.3	31.8	6.3	17.5	10.5	11.1
Green Ext Time (p_c), s	0.8	1.6	0.0	0.7	0.0	2.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	235	214	48	383	206	44
Future Volume (vph)	235	214	48	383	206	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936				0.976	
Flt Protected				0.994	0.960	
Satd. Flow (prot)	1463	0	0	1566	1493	0
Flt Permitted				0.994	0.960	
Satd. Flow (perm)	1463	0	0	1566	1493	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	4%	7%	3%	14%
Adj. Flow (vph)	261	238	53	426	229	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	499	0	0	479	278	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

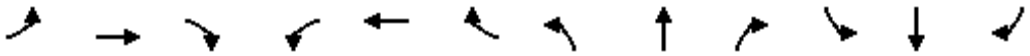
Intersection	
Int Delay, s/veh	13

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	214	48	383	206	44
Future Vol, veh/h	235	214	48	383	206	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	7	3	14
Mvmt Flow	261	238	53	426	229	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	499	0	912	380
Stage 1	-	-	-	-	380	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	-	-	4.3	-	6.63	6.44
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	-	-	3	-	3	3.2
Pot Cap-1 Maneuver	-	-	808	-	319	672
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	808	-	292	672
Mov Cap-2 Maneuver	-	-	-	-	292	-
Stage 1	-	-	-	-	773	-
Stage 2	-	-	-	-	591	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	56.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	324	-	-	808	-
HCM Lane V/C Ratio	0.857	-	-	0.066	-
HCM Control Delay (s)	56.9	-	-	9.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	7.7	-	-	0.2	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	23	8	272	29	134	8	178	237	31	101	12
Future Volume (vph)	11	23	8	272	29	134	8	178	237	31	101	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.958			0.924			0.989	
Flt Protected		0.987			0.970			0.999			0.989	
Satd. Flow (prot)	0	1561	0	0	1583	0	0	1663	0	0	1715	0
Flt Permitted		0.987			0.970			0.999			0.989	
Satd. Flow (perm)	0	1561	0	0	1583	0	0	1663	0	0	1715	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	24	8	280	30	138	8	184	244	32	104	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	43	0	0	448	0	0	436	0	0	148	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	41

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	11	23	8	272	29	134	8	178	237	31	101	12
Future Vol, veh/h	11	23	8	272	29	134	8	178	237	31	101	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	18	0	0	1	3	1	0	1	0	0	1	0
Mvmt Flow	11	24	8	280	30	138	8	184	244	32	104	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	168	0	0	32	0	0	767	778	28	923	713	99
Stage 1	-	-	-	-	-	-	50	50	-	659	659	-
Stage 2	-	-	-	-	-	-	717	728	-	264	54	-
Critical Hdwy	4.5	-	-	4.3	-	-	6.9	6.31	6.1	6.5	5.91	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Follow-up Hdwy	3.2	-	-	3	-	-	3	4.009	3.1	3	4.009	3.1
Pot Cap-1 Maneuver	982	-	-	1170	-	-	373	343	1121	325	404	1030
Stage 1	-	-	-	-	-	-	1129	858	-	570	516	-
Stage 2	-	-	-	-	-	-	492	448	-	893	860	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	982	-	-	1170	-	-	213	248	1121	82	292	1030
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	248	-	82	292	-
Stage 1	-	-	-	-	-	-	1117	849	-	564	377	-
Stage 2	-	-	-	-	-	-	257	327	-	541	851	-

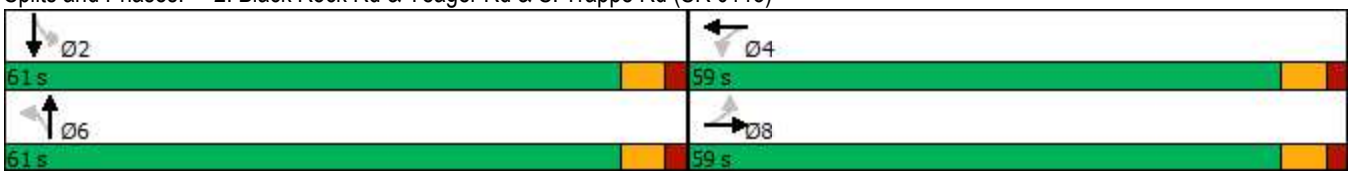
Approach	EB	WB	NB	SB
HCM Control Delay, s	2.3	5.7	72.9	64.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	438	982	-	-	1170	-	-	196
HCM Lane V/C Ratio	0.996	0.012	-	-	0.24	-	-	0.757
HCM Control Delay (s)	72.9	8.7	0	-	9	0	-	64.9
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	12.7	0	-	-	0.9	-	-	5.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	97	15	135	237	241	23	217	60	130	295	10
Future Volume (vph)	13	97	15	135	237	241	23	217	60	130	295	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.924			0.968			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1805	0	1645	1774	0	1677	1777	0	1643	1755	0
Flt Permitted	0.176			0.685			0.543			0.566		
Satd. Flow (perm)	279	1805	0	1186	1774	0	959	1777	0	979	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			55			16			2	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	7%	1%	0%	1%	4%	0%	0%	2%	0%	0%
Adj. Flow (vph)	13	97	15	135	237	241	23	217	60	130	295	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	112	0	135	478	0	23	277	0	130	305	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	59.0	59.0		59.0	59.0		61.0	61.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 96.1	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	97	15	135	237	241	23	217	60	130	295	10
Future Volume (veh/h)	13	97	15	135	237	241	23	217	60	130	295	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1637	1791	1652	1823	1911	1823	1892	1949	1949	1683	1711	1711
Adj Flow Rate, veh/h	13	97	7	135	237	225	23	217	44	130	295	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	2	7	1	0	1	4	0	0	2	0	0
Cap, veh/h	130	509	37	416	278	264	623	923	187	604	973	26
Arrive On Green	0.31	0.31	0.30	0.31	0.31	0.30	0.59	0.59	0.58	0.59	0.59	0.58
Sat Flow, veh/h	814	1650	119	1258	901	856	1089	1573	319	1006	1658	45
Grp Volume(v), veh/h	13	0	104	135	0	462	23	0	261	130	0	303
Grp Sat Flow(s),veh/h/ln	814	0	1769	1258	0	1757	1089	0	1892	1006	0	1703
Q Serve(g_s), s	1.4	0.0	4.1	8.4	0.0	23.6	1.0	0.0	6.3	6.7	0.0	8.5
Cycle Q Clear(g_c), s	24.5	0.0	4.1	12.0	0.0	23.6	9.1	0.0	6.3	12.6	0.0	8.5
Prop In Lane	1.00		0.07	1.00		0.49	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	130	0	546	416	0	542	623	0	1110	604	0	999
V/C Ratio(X)	0.10	0.00	0.19	0.32	0.00	0.85	0.04	0.00	0.24	0.22	0.00	0.30
Avail Cap(c_a), veh/h	339	0	1001	739	0	994	623	0	1110	604	0	999
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	0.0	24.3	28.5	0.0	31.2	12.1	0.0	9.5	12.3	0.0	9.9
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.4	0.0	3.9	0.1	0.0	0.5	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	3.1	4.4	0.0	15.1	0.4	0.0	4.4	2.7	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	0.0	24.4	28.9	0.0	35.1	12.2	0.0	10.0	13.1	0.0	10.7
LnGrp LOS	D	A	C	C	A	D	B	A	A	B	A	B
Approach Vol, veh/h		117			597			284			433	
Approach Delay, s/veh		26.5			33.7			10.2			11.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.0		34.4		61.0		34.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		55.0		53.0		55.0		53.0				
Max Q Clear Time (g_c+I1), s		15.1		25.6		11.6		27.0				
Green Ext Time (p_c), s		13.0		2.9		9.9		0.4				

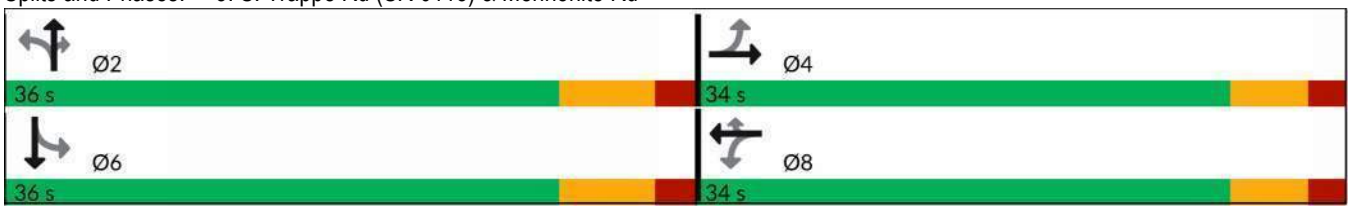
Intersection Summary												
HCM 6th Ctrl Delay			21.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	121	25	105	250	223	49	414	81	119	298	39
Future Volume (vph)	11	121	25	105	250	223	49	414	81	119	298	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							0.99		0.97			
Frt		0.978				0.850			0.850		0.982	
Flt Protected		0.997			0.985		0.950			0.950		
Satd. Flow (prot)	0	1987	0	0	1699	1573	1581	1697	1624	1678	1713	0
Flt Permitted		0.966			0.863		0.518			0.442		
Satd. Flow (perm)	0	1925	0	0	1488	1573	860	1697	1584	781	1713	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				232			84		12	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Confl. Peds. (#/hr)							4		4			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	9%	0%	0%	0%	2%	1%	4%	2%	0%	0%	1%	3%
Adj. Flow (vph)	11	126	26	109	260	232	51	431	84	124	310	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	369	232	51	431	84	124	351	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0	34.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	48.6%	48.6%		48.6%	48.6%	48.6%	51.4%	51.4%	51.4%	51.4%	51.4%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 62.5	
Natural Cycle: 45	

Control Type: Actuated-Uncoordinated

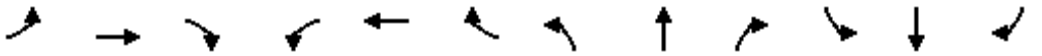
Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	121	25	105	250	223	49	414	81	119	298	39
Future Volume (veh/h)	11	121	25	105	250	223	49	414	81	119	298	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1911	1837	1837	1809	1896	1738	1766	1866	1912	1898	1869
Adj Flow Rate, veh/h	11	126	24	109	260	133	51	431	60	124	310	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	0	0	0	2	1	4	2	0	0	1	3
Cap, veh/h	56	417	73	148	305	666	395	757	675	328	713	85
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.41	0.43	0.43	0.43	0.43	0.43	0.41
Sat Flow, veh/h	3	1006	177	196	737	1607	961	1766	1574	924	1663	199
Grp Volume(v), veh/h	161	0	0	369	0	133	51	431	60	124	0	347
Grp Sat Flow(s),veh/h/ln	1185	0	0	933	0	1607	961	1766	1574	924	0	1862
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	3.7	2.7	12.9	1.6	8.2	0.0	9.2
Cycle Q Clear(g_c), s	28.0	0.0	0.0	27.3	0.0	3.7	11.4	12.9	1.6	21.1	0.0	9.2
Prop In Lane	0.07		0.15	0.30		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	529	0	0	440	0	666	395	757	675	328	0	798
V/C Ratio(X)	0.30	0.00	0.00	0.84	0.00	0.20	0.13	0.57	0.09	0.38	0.00	0.43
Avail Cap(c_a), veh/h	529	0	0	440	0	666	395	757	675	328	0	798
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	0.0	18.2	0.0	13.1	17.9	15.1	11.9	23.1	0.0	14.1
Incr Delay (d2), s/veh	0.3	0.0	0.0	13.5	0.0	0.1	0.7	3.1	0.3	3.3	0.0	1.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	0.0	10.9	0.0	2.2	1.1	8.6	0.9	3.4	0.0	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	31.7	0.0	13.2	18.5	18.2	12.1	26.4	0.0	15.8
LnGrp LOS	B			C		B	B	B	B	C		B
Approach Vol, veh/h		161			502			542			471	
Approach Delay, s/veh		14.4			26.8			17.6			18.6	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		34.0		36.0		34.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		29.0		28.0		29.0		28.0				
Max Q Clear Time (g_c+I1), s		15.4		30.0		23.6		29.3				
Green Ext Time (p_c), s		8.0		0.0		3.3		0.0				

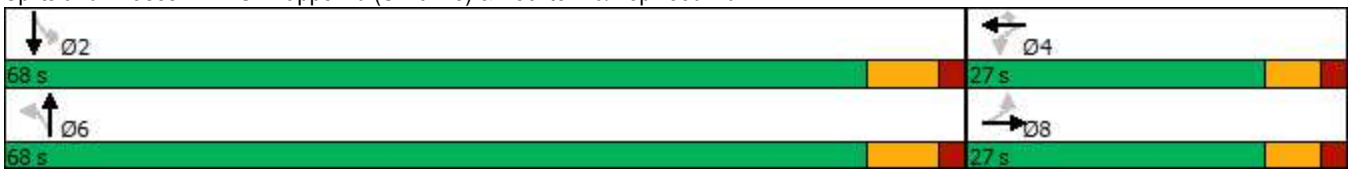
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			20.3									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	52	27	26	76	125	61	537	23	46	408	44
Future Volume (vph)	30	52	27	26	76	125	61	537	23	46	408	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967				0.850		0.994			0.985	
Flt Protected		0.987			0.987		0.950			0.950		
Satd. Flow (prot)	0	1721	0	0	1720	1500	1507	1787	0	1612	1775	0
Flt Permitted		0.875			0.886		0.466			0.397		
Satd. Flow (perm)	0	1526	0	0	1544	1500	739	1787	0	674	1775	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				134		5			12	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	0%	0%	0%	3%	1%	7%	1%	4%	0%	1%	0%
Adj. Flow (vph)	32	56	29	28	82	134	66	577	25	49	439	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	110	134	66	602	0	49	486	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	68.0	68.0		68.0	68.0	
Total Split (%)	28.4%	28.4%		28.4%	28.4%	28.4%	71.6%	71.6%		71.6%	71.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 85.3	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

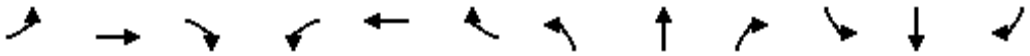
Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	52	27	26	76	125	61	537	23	46	408	44
Future Volume (veh/h)	30	52	27	26	76	125	61	537	23	46	408	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1875	1875	1778	1736	1764	1775	1860	1818	1875	1860	1875
Adj Flow Rate, veh/h	32	56	16	28	82	75	66	577	22	49	439	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	0	0	3	1	7	1	4	0	1	0
Cap, veh/h	85	105	24	90	174	189	658	1321	50	599	1250	111
Arrive On Green	0.11	0.13	0.11	0.11	0.13	0.13	0.74	0.74	0.73	0.74	0.74	0.73
Sat Flow, veh/h	227	831	192	286	1381	1495	870	1780	68	821	1684	150
Grp Volume(v), veh/h	104	0	0	110	0	75	66	0	599	49	0	478
Grp Sat Flow(s),veh/h/ln	1251	0	0	1666	0	1495	870	0	1848	821	0	1833
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	3.9	2.4	0.0	10.3	2.0	0.0	7.6
Cycle Q Clear(g_c), s	7.3	0.0	0.0	5.1	0.0	3.9	9.5	0.0	10.3	11.8	0.0	7.6
Prop In Lane	0.31		0.15	0.25		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	199	0	0	244	0	189	658	0	1372	599	0	1361
V/C Ratio(X)	0.52	0.00	0.00	0.45	0.00	0.40	0.10	0.00	0.44	0.08	0.00	0.35
Avail Cap(c_a), veh/h	416	0	0	460	0	394	658	0	1372	599	0	1361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	34.2	0.0	33.6	5.3	0.0	4.1	6.3	0.0	3.8
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.3	0.0	1.4	0.3	0.0	1.0	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	0.0	3.9	0.0	2.6	0.7	0.0	4.6	0.6	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.2	0.0	0.0	35.5	0.0	34.9	5.6	0.0	5.1	6.5	0.0	4.5
LnGrp LOS	D	A	A	D	A	C	A	A	A	A	A	A
Approach Vol, veh/h		104			185			665			527	
Approach Delay, s/veh		37.2			35.3			5.2			4.7	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		15.5		68.0		15.5				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		61.0		21.0		61.0		21.0				
Max Q Clear Time (g_c+I1), s		14.3		7.1		12.3		9.3				
Green Ext Time (p_c), s		22.2		0.5		29.4		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	103	9	26	236	11	10	27	9	10	21	13
Future Volume (vph)	7	103	9	26	236	11	10	27	9	10	21	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.995			0.974			0.959	
Flt Protected		0.997			0.995			0.989			0.989	
Satd. Flow (prot)	0	1779	0	0	1943	0	0	1731	0	0	1541	0
Flt Permitted		0.997			0.995			0.989			0.989	
Satd. Flow (perm)	0	1779	0	0	1943	0	0	1731	0	0	1541	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Confl. Peds. (#/hr)				1		1				1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	4%	0%	0%	0%	0%	11%	10%	0%	0%
Adj. Flow (vph)	8	116	10	29	265	12	11	30	10	11	24	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	134	0	0	306	0	0	51	0	0	50	0
Sign Control		Stop			Stop			Stop			Stop	

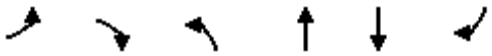
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	103	9	26	236	11	10	27	9	10	21	13
Future Vol, veh/h	7	103	9	26	236	11	10	27	9	10	21	13
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	1	0	4	0	0	0	0	11	10	0	0
Mvmt Flow	8	116	10	29	265	12	11	30	10	11	24	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.3	9.9	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	6%	10%	23%
Vol Thru, %	59%	87%	86%	48%
Vol Right, %	20%	8%	4%	30%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	119	273	44
LT Vol	10	7	26	10
Through Vol	27	103	236	21
RT Vol	9	9	11	13
Lane Flow Rate	52	134	307	49
Geometry Grp	1	1	1	1
Degree of Util (X)	0.07	0.165	0.371	0.069
Departure Headway (Hd)	4.877	4.443	4.359	4.992
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	734	808	825	717
Service Time	2.911	2.468	2.38	3.026
HCM Lane V/C Ratio	0.071	0.166	0.372	0.068
HCM Control Delay	8.3	8.3	9.9	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	1.7	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	2	3	39	43	8
Future Volume (vph)	7	2	3	39	43	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.978	
Flt Protected	0.962			0.996		
Satd. Flow (prot)	1726	0	0	1504	1493	0
Flt Permitted	0.962			0.996		
Satd. Flow (perm)	1726	0	0	1504	1493	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	0%	0%	3%	2%	0%
Adj. Flow (vph)	8	2	4	47	52	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	51	62	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

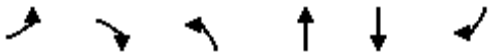
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	3	39	43	8
Future Vol, veh/h	7	2	3	39	43	8
Conflicting Peds, #/hr	1	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	14	0	0	3	2	0
Mvmt Flow	8	2	4	47	52	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	114	59	63	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.34	6.1	4.3	-	-	-
Critical Hdwy Stg 1	5.34	-	-	-	-	-
Critical Hdwy Stg 2	5.34	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	997	1078	1142	-	-	-
Stage 1	1092	-	-	-	-	-
Stage 2	1095	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	991	1076	1141	-	-	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1087	-	-	-	-	-
Stage 2	1094	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1141	-	1009	-	-
HCM Lane V/C Ratio	0.003	-	0.011	-	-
HCM Control Delay (s)	8.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	0	2	42	38	8
Future Volume (vph)	1	0	2	42	38	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.977	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1504	0	0	1615	1476	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1504	0	0	1615	1476	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	0%	0%	13%
Adj. Flow (vph)	1	0	3	53	48	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	56	58	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

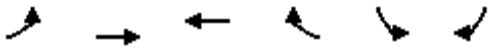
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	2	42	38	8
Future Vol, veh/h	1	0	2	42	38	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	13
Mvmt Flow	1	0	3	53	48	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	53	58	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	5.8	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	1049	1089	1147	-	-	-
Stage 1	1143	-	-	-	-	-
Stage 2	1137	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1046	1089	1147	-	-	-
Mov Cap-2 Maneuver	1046	-	-	-	-	-
Stage 1	1140	-	-	-	-	-
Stage 2	1137	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1147	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.001	-	-
HCM Control Delay (s)	8.1	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	138	294	32	15	24
Future Volume (vph)	11	138	294	32	15	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.918	
Flt Protected		0.996			0.981	
Satd. Flow (prot)	0	1631	1610	0	1521	0
Flt Permitted		0.996			0.981	
Satd. Flow (perm)	0	1631	1610	0	1521	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	11	144	306	33	16	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	155	339	0	41	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

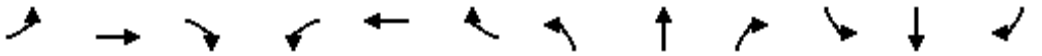
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	138	294	32	15	24
Future Vol, veh/h	11	138	294	32	15	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	11	144	306	33	16	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	339	0	-	0	489	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	166	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	919	-	-	-	629	770
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	1011	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	919	-	-	-	621	770
Mov Cap-2 Maneuver	-	-	-	-	621	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	1011	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	919	-	-	-	705
HCM Lane V/C Ratio	0.012	-	-	-	0.058
HCM Control Delay (s)	9	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	98	3	22	229	71	6	27	11	32	22	16
Future Volume (vph)	15	98	3	22	229	71	6	27	11	32	22	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.970			0.966			0.969	
Flt Protected		0.994			0.997			0.994			0.978	
Satd. Flow (prot)	0	1707	0	0	1679	0	0	1720	0	0	1723	0
Flt Permitted		0.994			0.997			0.994			0.978	
Satd. Flow (perm)	0	1707	0	0	1679	0	0	1720	0	0	1723	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)				8		8	1		1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	105	3	24	246	76	6	29	12	34	24	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	0	0	346	0	0	47	0	0	75	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	98	3	22	229	71	6	27	11	32	22	16
Future Vol, veh/h	15	98	3	22	229	71	6	27	11	32	22	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	16	105	3	24	246	76	6	29	12	34	24	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	10.1	8.3	8.6
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	13%	7%	46%
Vol Thru, %	61%	84%	71%	31%
Vol Right, %	25%	3%	22%	23%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	44	116	322	70
LT Vol	6	15	22	32
Through Vol	27	98	229	22
RT Vol	11	3	71	16
Lane Flow Rate	47	125	346	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.065	0.159	0.406	0.103
Departure Headway (Hd)	4.913	4.575	4.226	4.95
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	727	783	852	723
Service Time	2.956	2.605	2.251	2.991
HCM Lane V/C Ratio	0.065	0.16	0.406	0.104
HCM Control Delay	8.3	8.5	10.1	8.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.6	2	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	94	44	14	141	75	7
Future Volume (vph)	94	44	14	141	75	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.957				0.988	
Flt Protected				0.996	0.956	
Satd. Flow (prot)	1714	0	0	1770	1604	0
Flt Permitted				0.996	0.956	
Satd. Flow (perm)	1714	0	0	1770	1604	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	101	47	15	152	81	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	0	167	89	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

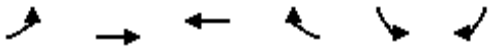
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	44	14	141	75	7
Future Vol, veh/h	94	44	14	141	75	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	101	47	15	152	81	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	307	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	4.3	-	7.01	6.5
Critical Hdwy Stg 1	-	-	-	-	6.01	-
Critical Hdwy Stg 2	-	-	-	-	6.01	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1069	-	748	977
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	954	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1069	-	737	977
Mov Cap-2 Maneuver	-	-	-	-	737	-
Stage 1	-	-	-	-	1026	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	753	-	-	1069	-
HCM Lane V/C Ratio	0.117	-	-	0.014	-
HCM Control Delay (s)	10.4	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	140	307	18	18	19
Future Volume (vph)	5	140	307	18	18	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1694	1651	0	1727	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1694	1651	0	1727	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	146	320	19	19	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	151	339	0	19	20
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

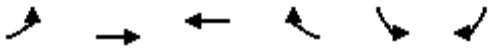
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	140	307	18	18	19
Future Vol, veh/h	5	140	307	18	18	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	146	320	19	19	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	320	0	-	0	486	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	156	-
Critical Hdwy	4.3	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	933	-	-	-	649	770
Stage 1	-	-	-	-	868	-
Stage 2	-	-	-	-	1030	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	933	-	-	-	645	770
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	1030	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	933	-	-	-	645	770
HCM Lane V/C Ratio	0.006	-	-	-	0.029	0.026
HCM Control Delay (s)	8.9	0	-	-	10.7	9.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	100	249	80	47	50
Future Volume (vph)	34	100	249	80	47	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.967		0.930	
Flt Protected		0.988			0.976	
Satd. Flow (prot)	0	1668	1605	0	1556	0
Flt Permitted		0.988			0.976	
Satd. Flow (perm)	0	1668	1605	0	1556	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	2%	0%
Adj. Flow (vph)	35	104	259	83	49	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	139	342	0	101	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

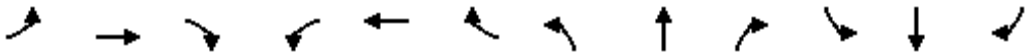
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	100	249	80	47	50
Future Vol, veh/h	34	100	249	80	47	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	5	2	0
Mvmt Flow	35	104	259	83	49	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	342	0	-	0	475	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	4.3	-	-	-	5.22	5.6
Critical Hdwy Stg 1	-	-	-	-	4.22	-
Critical Hdwy Stg 2	-	-	-	-	4.22	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	917	-	-	-	730	825
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	1051	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	917	-	-	-	700	825
Mov Cap-2 Maneuver	-	-	-	-	700	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	1051	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	917	-	-	-	759
HCM Lane V/C Ratio	0.039	-	-	-	0.133
HCM Control Delay (s)	9.1	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	0	3	0	4	0	347	3	4	426	1
Future Volume (vph)	1	1	0	3	0	4	0	347	3	4	426	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.923			0.999				
Flt Protected		0.976			0.979							
Satd. Flow (prot)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Flt Permitted		0.976			0.979							
Satd. Flow (perm)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	1	1	0	3	0	4	0	361	3	4	444	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	7	0	0	364	0	0	449	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	1	0	3	0	4	0	347	3	4	426	1
Future Vol, veh/h	1	1	0	3	0	4	0	347	3	4	426	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	1	0	3	0	4	0	361	3	4	444	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	818	817	445	816	816	363	445	0	0	364	0	0
Stage 1	453	453	-	363	363	-	-	-	-	-	-	-
Stage 2	365	364	-	453	453	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	6.7	6.1	6	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	414	393	691	362	343	738	844	-	-	901	-	-
Stage 1	758	650	-	783	654	-	-	-	-	-	-	-
Stage 2	830	694	-	703	603	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	410	391	691	359	341	738	844	-	-	901	-	-
Mov Cap-2 Maneuver	410	391	-	359	341	-	-	-	-	-	-	-
Stage 1	758	646	-	783	654	-	-	-	-	-	-	-
Stage 2	825	694	-	698	599	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14	12.2	0	0.1
HCM LOS	B	B		

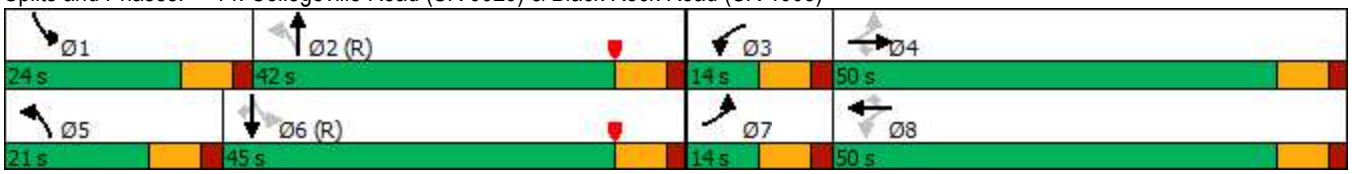
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	844	-	-	400	508	901	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.014	0.005	-	-
HCM Control Delay (s)	0	-	-	14	12.2	9	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	170	97	81	389	203	157	522	22	137	437	133
Future Volume (vph)	122	170	97	81	389	203	157	522	22	137	437	133
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor										1.00		0.98
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1800	1665	1701	1773	1608	1678	3450	0	1551	3335	1477
Flt Permitted	0.200			0.560			0.410			0.326		
Satd. Flow (perm)	357	1800	1665	1003	1773	1608	724	3450	0	532	3335	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			221		3				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	0%	0%	5%	1%	2%
Adj. Flow (vph)	133	185	105	88	423	221	171	567	24	149	475	145
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	185	105	88	423	221	171	591	0	149	475	145
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	11.0	11.0	11.0	11.0	11.0	11.0	23.0		11.0	23.0	23.0
Total Split (s)	14.0	50.0	50.0	14.0	50.0	50.0	21.0	42.0		24.0	45.0	45.0
Total Split (%)	10.8%	38.5%	38.5%	10.8%	38.5%	38.5%	16.2%	32.3%		18.5%	34.6%	34.6%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	122	170	97	81	389	203	157	522	22	137	437	133
Future Volume (veh/h)	122	170	97	81	389	203	157	522	22	137	437	133
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1921	2027	1794	1780	1852	1912	1912	1912	1680	1736	1722
Adj Flow Rate, veh/h	133	185	55	88	423	89	171	567	21	149	475	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	1	1	0	0	0	5	1	2
Cap, veh/h	202	513	459	366	475	418	462	1451	54	404	1338	591
Arrive On Green	0.06	0.27	0.27	0.06	0.27	0.27	0.08	0.41	0.40	0.08	0.41	0.41
Sat Flow, veh/h	1816	1921	1718	1709	1780	1569	1821	3572	132	1600	3298	1457
Grp Volume(v), veh/h	133	185	55	88	423	89	171	288	300	149	475	113
Grp Sat Flow(s),veh/h/ln	1816	1921	1718	1709	1780	1569	1821	1816	1888	1600	1649	1457
Q Serve(g_s), s	6.9	10.2	3.2	4.7	29.7	5.7	6.9	14.5	14.6	6.9	13.0	6.5
Cycle Q Clear(g_c), s	6.9	10.2	3.2	4.7	29.7	5.7	6.9	14.5	14.6	6.9	13.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	202	513	459	366	475	418	462	738	767	404	1338	591
V/C Ratio(X)	0.66	0.36	0.12	0.24	0.89	0.21	0.37	0.39	0.39	0.37	0.35	0.19
Avail Cap(c_a), veh/h	202	650	581	367	603	531	524	738	767	496	1338	591
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	38.6	36.1	31.4	45.9	37.1	19.7	27.2	27.3	19.9	26.8	24.9
Incr Delay (d2), s/veh	7.7	0.4	0.1	0.3	13.1	0.3	0.5	1.6	1.5	0.6	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	8.4	2.4	3.6	20.8	4.0	5.2	10.6	10.9	4.5	8.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	39.1	36.2	31.7	58.9	37.3	20.2	28.8	28.8	20.4	27.5	25.6
LnGrp LOS	D	D	D	C	E	D	C	C	C	C	C	C
Approach Vol, veh/h		373			600			759			737	
Approach Delay, s/veh		40.2			51.7			26.8			25.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	58.8	13.9	40.7	16.6	58.8	14.0	40.7
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	17.0	35.0	7.0	43.0	14.0	38.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	9.4	17.0	7.2	12.7	9.4	15.5	9.4	32.2
Green Ext Time (p_c), s	0.2	1.9	0.0	0.8	0.2	2.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	199	193	77	245	237	56
Future Volume (vph)	199	193	77	245	237	56
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933				0.974	
Flt Protected				0.988	0.961	
Satd. Flow (prot)	1560	0	0	1660	1540	0
Flt Permitted				0.988	0.961	
Satd. Flow (perm)	1560	0	0	1660	1540	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	240	233	93	295	286	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	473	0	0	388	353	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	26.5

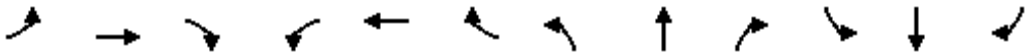
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	199	193	77	245	237	56
Future Vol, veh/h	199	193	77	245	237	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	1	0	0	2	0
Mvmt Flow	240	233	93	295	286	67

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	473	0	838	357
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	481	-
Critical Hdwy	-	-	4.3	-	6.62	6.3
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	825	-	357	722
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	687	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	825	-	309	722
Mov Cap-2 Maneuver	-	-	-	-	309	-
Stage 1	-	-	-	-	795	-
Stage 2	-	-	-	-	594	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	88.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	-	-	825	-
HCM Lane V/C Ratio	1.017	-	-	0.112	-
HCM Control Delay (s)	88.3	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	11.9	-	-	0.4	-

2033 Base Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	24	14	232	8	48	2	91	221	129	180	8
Future Volume (vph)	11	24	14	232	8	48	2	91	221	129	180	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.962			0.977			0.905			0.997	
Flt Protected		0.989			0.961						0.980	
Satd. Flow (prot)	0	1489	0	0	1486	0	0	1568	0	0	1682	0
Flt Permitted		0.989			0.961						0.980	
Satd. Flow (perm)	0	1489	0	0	1486	0	0	1568	0	0	1682	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	13	28	16	270	9	56	2	106	257	150	209	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	335	0	0	365	0	0	368	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	

Intersection	
Intersection Delay, s/veh	6.8
Intersection LOS	A

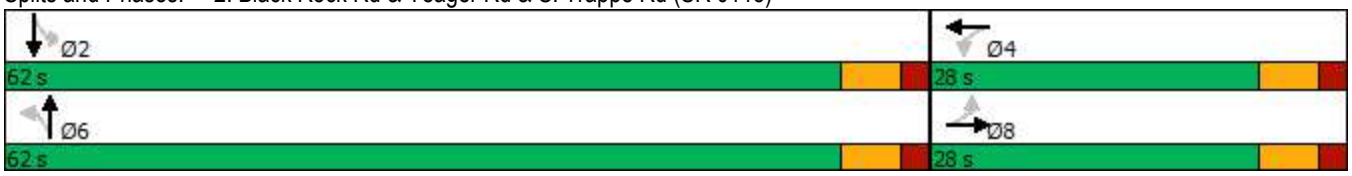
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	57	335	365	368
Demand Flow Rate, veh/h	62	364	381	377
Vehicles Circulating, veh/h	655	125	198	303
Vehicles Exiting, veh/h	25	454	519	186
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.5	6.1	6.7	7.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	62	364	381	377
Cap Entry Lane, veh/h	707	1215	1128	1013
Entry HV Adj Factor	0.926	0.919	0.958	0.976
Flow Entry, veh/h	57	335	365	368
Cap Entry, veh/h	655	1117	1080	988
V/C Ratio	0.088	0.300	0.338	0.372
Control Delay, s/veh	6.5	6.1	6.7	7.6
LOS	A	A	A	A
95th %tile Queue, veh	0	1	2	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	292	14	89	144	96	7	252	116	246	210	5
Future Volume (vph)	34	292	14	89	144	96	7	252	116	246	210	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.940			0.953			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1536	1793	0	1457	1718	0	1220	1693	0	1611	1660	0
Flt Permitted	0.407			0.279			0.608			0.479		
Satd. Flow (perm)	658	1793	0	428	1718	0	781	1693	0	812	1660	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			36			50			3	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	5%	0%	14%	4%	8%	43%	4%	2%	4%	6%	0%
Adj. Flow (vph)	38	328	16	100	162	108	8	283	130	276	236	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	344	0	100	270	0	8	413	0	276	242	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	28.0	28.0		28.0	28.0		62.0	62.0		62.0	62.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		68.9%	68.9%		68.9%	68.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 88.8	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	292	14	89	144	96	7	252	116	246	210	5
Future Volume (veh/h)	34	292	14	89	144	96	7	252	116	246	210	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1666	1747	1750	1638	1852	1724	1338	1892	1921	1655	1626	1711
Adj Flow Rate, veh/h	38	328	12	100	162	97	8	283	101	276	236	5
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	5	0	14	4	8	43	4	2	4	6	0
Cap, veh/h	210	428	16	153	277	166	548	843	301	557	1005	21
Arrive On Green	0.26	0.26	0.24	0.26	0.26	0.24	0.63	0.63	0.62	0.63	0.63	0.62
Sat Flow, veh/h	998	1674	61	911	1085	650	815	1331	475	884	1587	34
Grp Volume(v), veh/h	38	0	340	100	0	259	8	0	384	276	0	241
Grp Sat Flow(s),veh/h/ln	998	0	1736	911	0	1735	815	0	1807	884	0	1620
Q Serve(g_s), s	3.1	0.0	16.3	7.2	0.0	11.8	0.4	0.0	9.0	18.8	0.0	5.8
Cycle Q Clear(g_c), s	14.4	0.0	16.3	23.0	0.0	11.8	5.6	0.0	9.0	27.3	0.0	5.8
Prop In Lane	1.00		0.04	1.00		0.37	1.00		0.26	1.00		0.02
Lane Grp Cap(c), veh/h	210	0	444	153	0	443	548	0	1144	557	0	1026
V/C Ratio(X)	0.18	0.00	0.77	0.66	0.00	0.58	0.01	0.00	0.34	0.50	0.00	0.23
Avail Cap(c_a), veh/h	210	0	444	153	0	443	548	0	1144	557	0	1026
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	31.0	42.4	0.0	29.5	8.2	0.0	7.8	13.9	0.0	7.1
Incr Delay (d2), s/veh	0.4	0.0	7.9	9.7	0.0	2.0	0.0	0.0	0.8	3.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	12.0	4.6	0.0	8.5	0.1	0.0	5.6	6.8	0.0	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	0.0	38.9	52.1	0.0	31.5	8.3	0.0	8.5	17.0	0.0	7.6
LnGrp LOS	D	A	D	D	A	C	A	A	A	B	A	A
Approach Vol, veh/h		378			359			392			517	
Approach Delay, s/veh		38.6			37.2			8.5			12.7	
Approach LOS		D			D			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		28.0		62.0		28.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		56.0		22.0		56.0		22.0				
Max Q Clear Time (g_c+I1), s		29.8		25.5		11.0		18.3				
Green Ext Time (p_c), s		11.2		0.0		15.5		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			23.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	179	50	32	37	32	14	253	87	134	387	21
Future Volume (vph)	39	179	50	32	37	32	14	253	87	134	387	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850			0.850		0.992	
Flt Protected		0.993			0.977		0.950			0.950		
Satd. Flow (prot)	0	1929	0	0	1589	1406	1443	1649	1547	1645	1688	0
Flt Permitted		0.942			0.750		0.464			0.589		
Satd. Flow (perm)	0	1830	0	0	1220	1406	705	1649	1547	1020	1688	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62			96		5	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	1%	8%	7%	8%	13%	14%	5%	5%	2%	4%	0%
Adj. Flow (vph)	43	197	55	35	41	35	15	278	96	147	425	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	295	0	0	76	35	15	278	96	147	448	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%	42.9%	57.1%	57.1%	57.1%	57.1%	57.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 60.4	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	179	50	32	37	32	14	253	87	134	387	21
Future Volume (veh/h)	39	179	50	32	37	32	14	253	87	134	387	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	1896	1724	1738	1724	1718	1598	1724	1793	1883	1855	1912
Adj Flow Rate, veh/h	43	197	41	35	41	13	15	278	69	147	425	20
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	1	8	7	8	13	14	5	5	2	4	0
Cap, veh/h	111	288	56	197	198	313	507	1023	902	662	1043	49
Arrive On Green	0.20	0.21	0.20	0.20	0.21	0.21	0.59	0.59	0.59	0.59	0.59	0.58
Sat Flow, veh/h	179	1342	260	490	921	1456	807	1724	1520	1041	1757	83
Grp Volume(v), veh/h	281	0	0	76	0	13	15	278	69	147	0	445
Grp Sat Flow(s),veh/h/ln	1780	0	0	1411	0	1456	807	1724	1520	1041	0	1840
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.4	0.6	4.5	1.1	4.6	0.0	7.4
Cycle Q Clear(g_c), s	8.5	0.0	0.0	2.1	0.0	0.4	7.5	4.5	1.1	9.0	0.0	7.4
Prop In Lane	0.15		0.15	0.46		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	424	0	0	370	0	313	507	1023	902	662	0	1092
V/C Ratio(X)	0.66	0.00	0.00	0.21	0.00	0.04	0.03	0.27	0.08	0.22	0.00	0.41
Avail Cap(c_a), veh/h	811	0	0	665	0	635	507	1023	902	662	0	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	18.7	0.0	17.8	8.1	5.6	5.0	7.8	0.0	6.3
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.3	0.0	0.1	0.1	0.7	0.2	0.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	0.0	0.0	1.4	0.0	0.2	0.2	2.1	0.4	1.5	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	0.0	0.0	19.0	0.0	17.9	8.2	6.3	5.1	8.6	0.0	7.4
LnGrp LOS	C	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		281			89			362			592	
Approach Delay, s/veh		22.9			18.8			6.2			7.7	
Approach LOS		C			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		17.3		40.0		17.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		33.0		24.0		33.0		24.0				
Max Q Clear Time (g_c+I1), s		10.0		10.5		11.5		4.1				
Green Ext Time (p_c), s		7.8		0.8		12.3		0.2				

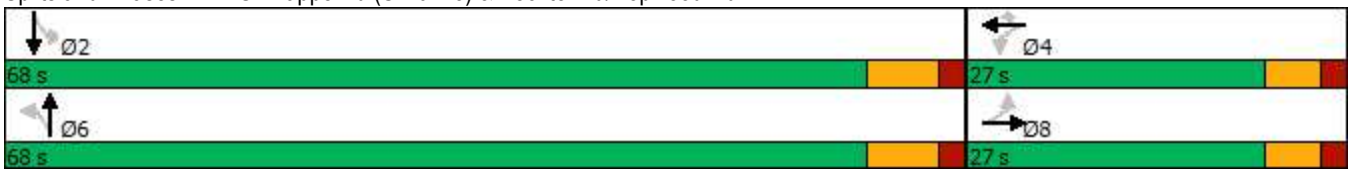
Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									

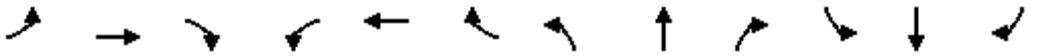
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	49	40	28	59	45	15	291	21	66	427	21
Future Volume (vph)	60	49	40	28	59	45	15	291	21	66	427	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										1.00	1.00	
Frt		0.964				0.850		0.990			0.993	
Flt Protected		0.980			0.984		0.950			0.950		
Satd. Flow (prot)	0	1652	0	0	1693	1515	1507	1724	0	1580	1753	0
Flt Permitted		0.826			0.842		0.446			0.547		
Satd. Flow (perm)	0	1392	0	0	1448	1515	707	1724	0	910	1753	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				51		8			5	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	6%	3%	7%	2%	0%	7%	4%	10%	2%	3%	0%
Adj. Flow (vph)	67	55	45	31	66	51	17	327	24	74	480	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	97	51	17	351	0	74	504	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	68.0	68.0		68.0	68.0	
Total Split (%)	28.4%	28.4%		28.4%	28.4%	28.4%	71.6%	71.6%		71.6%	71.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 88.6	
Natural Cycle: 40	

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd

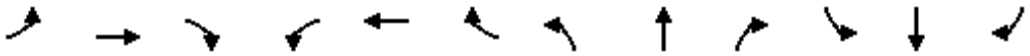




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	49	40	28	59	45	15	291	21	66	427	21
Future Volume (veh/h)	60	49	40	28	59	45	15	291	21	66	427	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1789	1832	1679	1750	1778	1775	1818	1732	1846	1832	1875
Adj Flow Rate, veh/h	67	55	25	31	66	22	17	327	23	74	480	21
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	6	3	7	2	0	7	4	10	2	3	0
Cap, veh/h	130	93	33	109	199	239	603	1199	84	745	1244	54
Arrive On Green	0.15	0.16	0.15	0.15	0.16	0.16	0.71	0.71	0.70	0.71	0.71	0.70
Sat Flow, veh/h	437	584	209	339	1254	1507	851	1678	118	1018	1742	76
Grp Volume(v), veh/h	147	0	0	97	0	22	17	0	350	74	0	501
Grp Sat Flow(s),veh/h/ln	1230	0	0	1593	0	1507	851	0	1796	1018	0	1818
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	1.1	0.7	0.0	6.0	2.4	0.0	9.4
Cycle Q Clear(g_c), s	10.5	0.0	0.0	4.4	0.0	1.1	9.6	0.0	6.0	7.9	0.0	9.4
Prop In Lane	0.46		0.17	0.32		1.00	1.00		0.07	1.00		0.04
Lane Grp Cap(c), veh/h	242	0	0	289	0	239	603	0	1283	745	0	1299
V/C Ratio(X)	0.61	0.00	0.00	0.34	0.00	0.09	0.03	0.00	0.27	0.10	0.00	0.39
Avail Cap(c_a), veh/h	380	0	0	435	0	382	603	0	1283	745	0	1299
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	32.7	0.0	31.2	6.7	0.0	4.4	5.7	0.0	4.9
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.7	0.0	0.2	0.1	0.0	0.5	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	0.0	3.3	0.0	0.7	0.2	0.0	2.9	0.8	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.3	0.0	0.0	33.3	0.0	31.3	6.8	0.0	4.9	6.0	0.0	5.8
LnGrp LOS	D	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		147			119			367			575	
Approach Delay, s/veh		38.3			33.0			5.0			5.8	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		18.8		68.0		18.8				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		61.0		21.0		61.0		21.0				
Max Q Clear Time (g_c+I1), s		11.4		6.4		12.1		12.5				
Green Ext Time (p_c), s		24.4		0.3		15.4		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			12.2									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	261	10	2	191	7	10	32	24	22	14	10
Future Volume (vph)	12	261	10	2	191	7	10	32	24	22	14	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.995			0.951			0.971	
Flt Protected		0.998						0.993			0.977	
Satd. Flow (prot)	0	1745	0	0	1862	0	0	1684	0	0	1445	0
Flt Permitted		0.998						0.993			0.977	
Satd. Flow (perm)	0	1745	0	0	1862	0	0	1684	0	0	1445	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	3%	10%	0%	5%	14%	10%	0%	4%	10%	0%	20%
Adj. Flow (vph)	14	297	11	2	217	8	11	36	27	25	16	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	322	0	0	227	0	0	74	0	0	52	0
Sign Control		Stop			Stop			Stop			Stop	

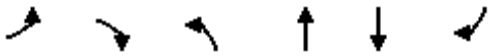
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	261	10	2	191	7	10	32	24	22	14	10
Future Vol, veh/h	12	261	10	2	191	7	10	32	24	22	14	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	8	3	10	0	5	14	10	0	4	10	0	20
Mvmt Flow	14	297	11	2	217	8	11	36	27	25	16	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	10.9	9.5	8.9	8.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	4%	1%	48%
Vol Thru, %	48%	92%	95%	30%
Vol Right, %	36%	4%	4%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	283	200	46
LT Vol	10	12	2	22
Through Vol	32	261	191	14
RT Vol	24	10	7	10
Lane Flow Rate	75	322	227	52
Geometry Grp	1	1	1	1
Degree of Util (X)	0.109	0.412	0.289	0.078
Departure Headway (Hd)	5.21	4.612	4.578	5.399
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	684	778	782	660
Service Time	3.271	2.651	2.621	3.465
HCM Lane V/C Ratio	0.11	0.414	0.29	0.079
HCM Control Delay	8.9	10.9	9.5	8.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	2	1.2	0.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	3	2	63	25	5
Future Volume (vph)	10	3	2	63	25	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.979	
Flt Protected	0.962			0.999		
Satd. Flow (prot)	1789	0	0	1507	1520	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1789	0	0	1507	1520	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	33%	0%	3%	0%	0%
Adj. Flow (vph)	11	3	2	67	27	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	69	32	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

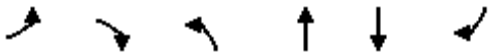
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	2	63	25	5
Future Vol, veh/h	10	3	2	63	25	5
Conflicting Peds, #/hr	1	1	0	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	33	0	3	0	0
Mvmt Flow	11	3	2	67	27	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	105	34	35	0	-	0
Stage 1	33	-	-	-	-	-
Stage 2	72	-	-	-	-	-
Critical Hdwy	6.2	6.43	4.3	-	-	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.4	3	-	-	-
Pot Cap-1 Maneuver	1046	1013	1168	-	-	-
Stage 1	1160	-	-	-	-	-
Stage 2	1114	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1038	1009	1164	-	-	-
Mov Cap-2 Maneuver	1038	-	-	-	-	-
Stage 1	1154	-	-	-	-	-
Stage 2	1111	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1164	-	1031	-	-
HCM Lane V/C Ratio	0.002	-	0.013	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	1	2	54	21	5
Future Volume (vph)	9	1	2	54	21	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.989				0.974	
Flt Protected	0.956			0.999		
Satd. Flow (prot)	1360	0	0	1588	1448	0
Flt Permitted	0.956			0.999		
Satd. Flow (perm)	1360	0	0	1588	1448	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	11%	0%	0%	2%	0%	20%
Adj. Flow (vph)	11	1	2	65	25	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	67	31	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

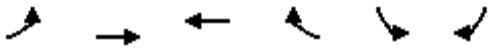
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	2	54	21	5
Future Vol, veh/h	9	1	2	54	21	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	11	0	0	2	0	20
Mvmt Flow	11	1	2	65	25	6

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	97	28	31	0	-	0
Stage 1	28	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	5.91	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.91	-	-	-	-	-
Critical Hdwy Stg 2	4.91	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	1032	1123	1171	-	-	-
Stage 1	1131	-	-	-	-	-
Stage 2	1089	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1030	1123	1171	-	-	-
Mov Cap-2 Maneuver	1030	-	-	-	-	-
Stage 1	1129	-	-	-	-	-
Stage 2	1089	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1171	-	1039	-	-
HCM Lane V/C Ratio	0.002	-	0.012	-	-
HCM Control Delay (s)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	298	137	15	20	6
Future Volume (vph)	41	298	137	15	20	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.967	
Flt Protected		0.994			0.963	
Satd. Flow (prot)	0	1595	1529	0	1572	0
Flt Permitted		0.994			0.963	
Satd. Flow (perm)	0	1595	1529	0	1572	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	7%	0%	0%	0%
Adj. Flow (vph)	46	335	154	17	22	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	381	171	0	29	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

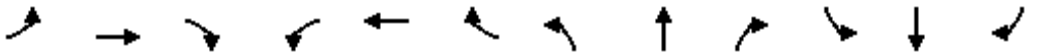
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	41	298	137	15	20	6
Future Vol, veh/h	41	298	137	15	20	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	7	0	0	0
Mvmt Flow	46	335	154	17	22	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	171	0	-	0	590	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	427	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1050	-	-	-	550	944
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	770	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1050	-	-	-	520	944
Mov Cap-2 Maneuver	-	-	-	-	520	-
Stage 1	-	-	-	-	959	-
Stage 2	-	-	-	-	770	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1050	-	-	-	580
HCM Lane V/C Ratio	0.044	-	-	-	0.05
HCM Control Delay (s)	8.6	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	167	6	13	67	14	2	22	32	47	29	18
Future Volume (vph)	12	167	6	13	67	14	2	22	32	47	29	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.996			0.980			0.922			0.974	
Flt Protected		0.997			0.993			0.999			0.976	
Satd. Flow (prot)	0	1660	0	0	1591	0	0	1591	0	0	1603	0
Flt Permitted		0.997			0.993			0.999			0.976	
Satd. Flow (perm)	0	1660	0	0	1591	0	0	1591	0	0	1603	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	17%	1%	33%	8%	6%	7%	0%	5%	3%	9%	7%	6%
Adj. Flow (vph)	15	206	7	16	83	17	2	27	40	58	36	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	0	116	0	0	69	0	0	116	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	167	6	13	67	14	2	22	32	47	29	18
Future Vol, veh/h	12	167	6	13	67	14	2	22	32	47	29	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	17	1	33	8	6	7	0	5	3	9	7	6
Mvmt Flow	15	206	7	16	83	17	2	27	40	58	36	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.9	8.6	8	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	6%	14%	50%
Vol Thru, %	39%	90%	71%	31%
Vol Right, %	57%	3%	15%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	56	185	94	94
LT Vol	2	12	13	47
Through Vol	22	167	67	29
RT Vol	32	6	14	18
Lane Flow Rate	69	228	116	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.087	0.302	0.151	0.16
Departure Headway (Hd)	4.545	4.768	4.698	4.95
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	754	761	723
Service Time	2.589	2.803	2.737	2.989
HCM Lane V/C Ratio	0.088	0.302	0.152	0.16
HCM Control Delay	8	9.9	8.6	8.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	1.3	0.5	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	97	35	3	129	46	18
Future Volume (vph)	97	35	3	129	46	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964				0.963	
Flt Protected				0.999	0.965	
Satd. Flow (prot)	1638	0	0	1773	1516	0
Flt Permitted				0.999	0.965	
Satd. Flow (perm)	1638	0	0	1773	1516	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	2%	15%	0%	2%	7%	0%
Adj. Flow (vph)	126	45	4	168	60	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	0	0	172	83	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

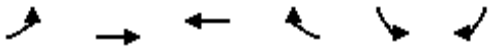
Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	35	3	129	46	18
Future Vol, veh/h	97	35	3	129	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	15	0	2	7	0
Mvmt Flow	126	45	4	168	60	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	171	0	325	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	176	-
Critical Hdwy	-	-	4.3	-	7.07	6.5
Critical Hdwy Stg 1	-	-	-	-	6.07	-
Critical Hdwy Stg 2	-	-	-	-	6.07	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1050	-	703	946
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1050	-	700	946
Mov Cap-2 Maneuver	-	-	-	-	700	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	755	-	-	1050	-
HCM Lane V/C Ratio	0.11	-	-	0.004	-
HCM Control Delay (s)	10.4	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	317	130	17	25	7
Future Volume (vph)	12	317	130	17	25	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.984			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1668	1560	0	1661	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1668	1560	0	1661	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	2%	6%	6%	4%	0%
Adj. Flow (vph)	14	373	153	20	29	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	387	173	0	29	8
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

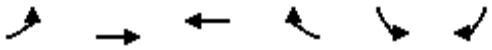
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	317	130	17	25	7
Future Vol, veh/h	12	317	130	17	25	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	17	2	6	6	4	0
Mvmt Flow	14	373	153	20	29	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	153	0	-	0	564	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.5	-	-	-	6.04	6
Critical Hdwy Stg 1	-	-	-	-	5.04	-
Critical Hdwy Stg 2	-	-	-	-	5.04	-
Follow-up Hdwy	3.2	-	-	-	3	3.1
Pot Cap-1 Maneuver	994	-	-	-	584	949
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	994	-	-	-	573	949
Mov Cap-2 Maneuver	-	-	-	-	573	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	805	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	994	-	-	-	573	949
HCM Lane V/C Ratio	0.014	-	-	-	0.051	0.009
HCM Control Delay (s)	8.7	0	-	-	11.6	8.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	252	93	43	77	46
Future Volume (vph)	43	252	93	43	77	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.957		0.950	
Flt Protected		0.993			0.970	
Satd. Flow (prot)	0	1630	1512	0	1479	0
Flt Permitted		0.993			0.970	
Satd. Flow (perm)	0	1630	1512	0	1479	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	3%	6%	7%	3%	16%
Adj. Flow (vph)	51	296	109	51	91	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	347	160	0	145	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

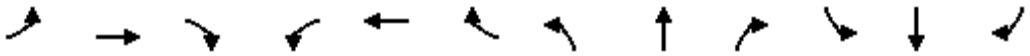
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	252	93	43	77	46
Future Vol, veh/h	43	252	93	43	77	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	3	6	7	3	16
Mvmt Flow	51	296	109	51	91	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	533	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	398	-
Critical Hdwy	4.3	-	-	-	5.23	5.76
Critical Hdwy Stg 1	-	-	-	-	4.23	-
Critical Hdwy Stg 2	-	-	-	-	4.23	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1059	-	-	-	685	962
Stage 1	-	-	-	-	1083	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1059	-	-	-	645	962
Mov Cap-2 Maneuver	-	-	-	-	645	-
Stage 1	-	-	-	-	1020	-
Stage 2	-	-	-	-	883	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1059	-	-	-	736
HCM Lane V/C Ratio	0.048	-	-	-	0.197
HCM Control Delay (s)	8.6	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	3	0	4	1	399	0	1	313	0
Future Volume (vph)	0	0	0	3	0	4	1	399	0	1	313	0
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.916							
Flt Protected					0.982							
Satd. Flow (prot)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Flt Permitted					0.982							
Satd. Flow (perm)	0	1845	0	0	1481	0	0	1673	0	0	1631	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	67%	0%	0%	0%	6%	0%	100%	8%	0%
Adj. Flow (vph)	0	0	0	3	0	5	1	464	0	1	364	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	8	0	0	465	0	0	365	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	0	3	0	4	1	399	0	1	313	0
Future Vol, veh/h	0	0	0	3	0	4	1	399	0	1	313	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	67	0	0	0	6	0	100	8	0
Mvmt Flow	0	0	0	3	0	5	1	464	0	1	364	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	835	832	364	832	832	464	364	0	0	464	0	0
Stage 1	366	366	-	466	466	-	-	-	-	-	-	-
Stage 2	469	466	-	366	366	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	7.37	6.1	6	4.3	-	-	5.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3.6	4	3.1	3	-	-	3.9	-	-
Pot Cap-1 Maneuver	405	387	760	268	337	650	901	-	-	593	-	-
Stage 1	829	693	-	548	596	-	-	-	-	-	-	-
Stage 2	746	644	-	625	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	401	386	760	267	336	650	901	-	-	593	-	-
Mov Cap-2 Maneuver	401	386	-	267	336	-	-	-	-	-	-	-
Stage 1	828	692	-	547	595	-	-	-	-	-	-	-
Stage 2	740	643	-	624	651	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	14.1	0	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	901	-	-	-	403	593	-	-
HCM Lane V/C Ratio	0.001	-	-	-	0.02	0.002	-	-
HCM Control Delay (s)	9	0	-	0	14.1	11.1	0	-
HCM Lane LOS	A	A	-	A	B	B	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	372	139	11	106	102	77	408	52	253	498	102
Future Volume (vph)	155	372	139	11	106	102	77	408	52	253	498	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				1.00		0.99	1.00	1.00				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1749	1601	1701	1571	1608	1568	3301	0	1551	3208	1435
Flt Permitted	0.545			0.195			0.428			0.310		
Satd. Flow (perm)	971	1749	1601	349	1571	1587	706	3301	0	506	3208	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			210		10				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)				1		1	1		1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	0%	14%	1%	7%	3%	4%	5%	5%	5%
Adj. Flow (vph)	185	443	165	13	126	121	92	486	62	301	593	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	443	165	13	126	121	92	548	0	301	593	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0		10.0	22.0	22.0
Total Split (s)	15.0	43.0	43.0	13.0	41.0	41.0	14.0	39.0		35.0	60.0	60.0
Total Split (%)	11.5%	33.1%	33.1%	10.0%	31.5%	31.5%	10.8%	30.0%		26.9%	46.2%	46.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	372	139	11	106	102	77	408	52	253	498	102
Future Volume (veh/h)	155	372	139	11	106	102	77	408	52	253	498	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1878	1968	1794	1598	1852	1812	1869	1855	1680	1680	1680
Adj Flow Rate, veh/h	185	443	78	13	126	41	92	486	45	301	593	60
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	5	4	0	14	1	7	3	4	5	5	5
Cap, veh/h	356	490	435	112	334	327	426	1319	122	506	1537	685
Arrive On Green	0.07	0.26	0.26	0.02	0.21	0.21	0.06	0.40	0.39	0.14	0.48	0.48
Sat Flow, veh/h	1816	1878	1668	1709	1598	1567	1726	3286	303	1600	3191	1423
Grp Volume(v), veh/h	185	443	78	13	126	41	92	262	269	301	593	60
Grp Sat Flow(s),veh/h/ln	1816	1878	1668	1709	1598	1567	1726	1776	1814	1600	1596	1423
Q Serve(g_s), s	9.0	29.7	4.7	0.8	8.8	2.8	4.0	13.5	13.6	13.4	15.4	3.0
Cycle Q Clear(g_c), s	9.0	29.7	4.7	0.8	8.8	2.8	4.0	13.5	13.6	13.4	15.4	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	356	490	435	112	334	327	426	713	728	506	1537	685
V/C Ratio(X)	0.52	0.90	0.18	0.12	0.38	0.13	0.22	0.37	0.37	0.59	0.39	0.09
Avail Cap(c_a), veh/h	356	534	475	175	430	422	436	713	728	645	1537	685
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.6	46.5	37.2	41.3	44.2	41.8	20.3	27.3	27.4	17.3	21.5	18.2
Incr Delay (d2), s/veh	1.3	17.9	0.2	0.5	0.7	0.2	0.3	1.5	1.4	1.1	0.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	22.5	3.5	0.6	6.3	1.9	2.9	9.8	10.0	8.3	9.6	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.9	64.3	37.4	41.7	44.9	41.9	20.6	28.8	28.9	18.5	22.2	18.5
LnGrp LOS	D	E	D	D	D	D	C	C	C	B	C	B
Approach Vol, veh/h		706			180			623			954	
Approach Delay, s/veh		54.7			44.0			27.6			20.8	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.7	58.2	8.2	39.9	13.3	68.6	15.0	33.2
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	28.0	32.0	6.0	36.0	7.0	53.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	15.9	16.0	3.3	32.2	6.5	17.9	11.5	11.3
Green Ext Time (p_c), s	0.8	1.6	0.0	0.8	0.0	2.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	33.9
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	238	217	48	388	209	44
Future Volume (vph)	238	217	48	388	209	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936				0.976	
Flt Protected				0.995	0.960	
Satd. Flow (prot)	1463	0	0	1567	1493	0
Flt Permitted				0.995	0.960	
Satd. Flow (perm)	1463	0	0	1567	1493	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	4%	7%	3%	14%
Adj. Flow (vph)	264	241	53	431	232	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	505	0	0	484	281	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	13.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	217	48	388	209	44
Future Vol, veh/h	238	217	48	388	209	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	7	3	14
Mvmt Flow	264	241	53	431	232	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	505	0	922	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	537	-
Critical Hdwy	-	-	4.3	-	6.63	6.44
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	-	-	3	-	3	3.2
Pot Cap-1 Maneuver	-	-	804	-	315	667
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	643	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	804	-	288	667
Mov Cap-2 Maneuver	-	-	-	-	288	-
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	61
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	320	-	-	804	-
HCM Lane V/C Ratio	0.878	-	-	0.066	-
HCM Control Delay (s)	61	-	-	9.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	8.1	-	-	0.2	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	24	8	275	30	136	8	181	240	32	103	12
Future Volume (vph)	11	24	8	275	30	136	8	181	240	32	103	12
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975			0.958			0.925			0.989	
Flt Protected		0.988			0.970			0.999			0.989	
Satd. Flow (prot)	0	1564	0	0	1583	0	0	1665	0	0	1715	0
Flt Permitted		0.988			0.970			0.999			0.989	
Satd. Flow (perm)	0	1564	0	0	1583	0	0	1665	0	0	1715	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		1335			1344			919			3949	
Travel Time (s)		22.8			22.9			25.1			89.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	11	25	8	284	31	140	8	187	247	33	106	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	0	0	455	0	0	442	0	0	151	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	

Intersection	
Intersection Delay, s/veh	6.5
Intersection LOS	A

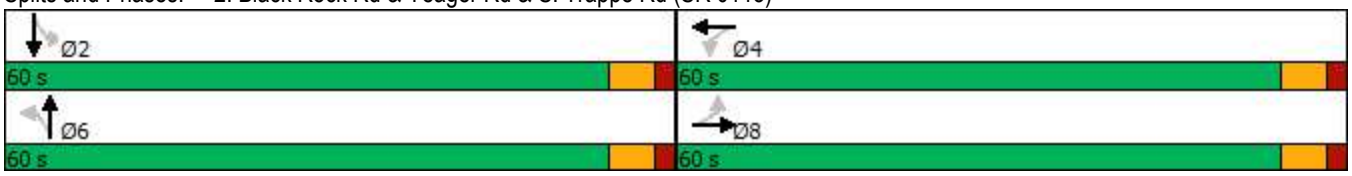
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	44	455	442	151
Demand Flow Rate, veh/h	46	460	444	152
Vehicles Circulating, veh/h	427	210	71	327
Vehicles Exiting, veh/h	52	305	402	343
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.7	7.6	6.0	5.1
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	46	460	444	152
Cap Entry Lane, veh/h	893	1114	1283	989
Entry HV Adj Factor	0.957	0.989	0.996	0.993
Flow Entry, veh/h	44	455	442	151
Cap Entry, veh/h	854	1102	1278	982
V/C Ratio	0.052	0.413	0.346	0.154
Control Delay, s/veh	4.7	7.6	6.0	5.1
LOS	A	A	A	A
95th %tile Queue, veh	0	2	2	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	99	15	137	240	244	24	220	61	131	299	10
Future Volume (vph)	13	99	15	137	240	244	24	220	61	131	299	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.980			0.924			0.967			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1805	0	1645	1774	0	1677	1775	0	1643	1755	0
Flt Permitted	0.179			0.684			0.538			0.562		
Satd. Flow (perm)	284	1805	0	1184	1774	0	950	1775	0	972	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			56			15			2	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3480			4738			1339			1539	
Travel Time (s)		67.8			71.8			22.8			26.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	7%	1%	0%	1%	4%	0%	0%	2%	0%	0%
Adj. Flow (vph)	13	99	15	137	240	244	24	220	61	131	299	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	13	114	0	137	484	0	24	281	0	131	309	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	60.0	60.0		60.0	60.0		60.0	60.0		60.0	60.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 95.6	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	99	15	137	240	244	24	220	61	131	299	10
Future Volume (veh/h)	13	99	15	137	240	244	24	220	61	131	299	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1637	1791	1652	1823	1911	1823	1892	1949	1949	1683	1711	1711
Adj Flow Rate, veh/h	13	99	7	137	240	228	24	220	45	131	299	8
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	2	7	1	0	1	4	0	0	2	0	0
Cap, veh/h	131	517	37	420	282	268	613	913	187	596	965	26
Arrive On Green	0.31	0.31	0.30	0.31	0.31	0.30	0.58	0.58	0.57	0.58	0.58	0.57
Sat Flow, veh/h	810	1653	117	1255	901	856	1085	1570	321	1003	1658	44
Grp Volume(v), veh/h	13	0	106	137	0	468	24	0	265	131	0	307
Grp Sat Flow(s),veh/h/ln	810	0	1770	1255	0	1757	1085	0	1891	1003	0	1703
Q Serve(g_s), s	1.4	0.0	4.1	8.4	0.0	23.6	1.1	0.0	6.5	6.8	0.0	8.7
Cycle Q Clear(g_c), s	24.6	0.0	4.1	12.1	0.0	23.6	9.3	0.0	6.5	12.8	0.0	8.7
Prop In Lane	1.00		0.07	1.00		0.49	1.00		0.17	1.00		0.03
Lane Grp Cap(c), veh/h	131	0	553	420	0	549	613	0	1100	596	0	990
V/C Ratio(X)	0.10	0.00	0.19	0.33	0.00	0.85	0.04	0.00	0.24	0.22	0.00	0.31
Avail Cap(c_a), veh/h	349	0	1029	758	0	1022	613	0	1100	596	0	990
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	41.7	0.0	23.8	28.0	0.0	30.7	12.3	0.0	9.7	12.6	0.0	10.1
Incr Delay (d2), s/veh	0.3	0.0	0.2	0.4	0.0	3.9	0.1	0.0	0.5	0.8	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	0.0	3.1	4.4	0.0	15.0	0.5	0.0	4.6	2.8	0.0	5.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.1	0.0	24.0	28.4	0.0	34.6	12.5	0.0	10.2	13.5	0.0	10.9
LnGrp LOS	D	A	C	C	A	C	B	A	B	B	A	B
Approach Vol, veh/h		119			605			289			438	
Approach Delay, s/veh		25.9			33.2			10.4			11.7	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		34.6		60.0		34.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		54.0		54.0		54.0		54.0				
Max Q Clear Time (g_c+I1), s		15.3		25.6		11.8		27.1				
Green Ext Time (p_c), s		13.0		2.9		10.0		0.4				

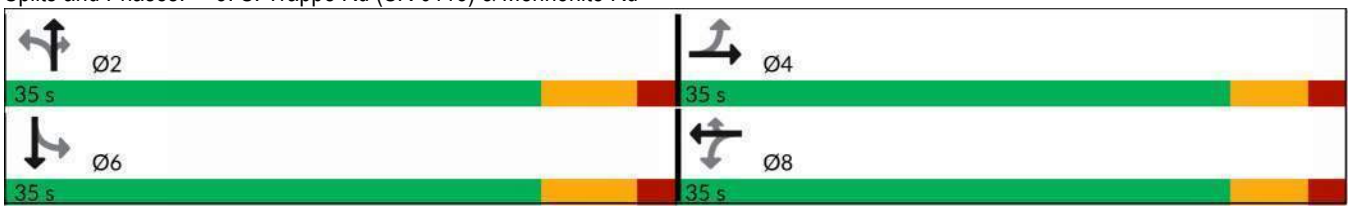
Intersection Summary												
HCM 6th Ctrl Delay			21.5									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	122	26	107	254	226	49	419	82	120	302	39
Future Volume (vph)	11	122	26	107	254	226	49	419	82	120	302	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							0.99		0.97			
Frt		0.978				0.850			0.850		0.983	
Flt Protected		0.997			0.985		0.950			0.950		
Satd. Flow (prot)	0	1987	0	0	1699	1573	1581	1697	1624	1678	1715	0
Flt Permitted		0.966			0.863		0.511			0.434		
Satd. Flow (perm)	0	1925	0	0	1488	1573	848	1697	1584	766	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				235			85		11	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Confl. Peds. (#/hr)							4		4			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	9%	0%	0%	0%	2%	1%	4%	2%	0%	0%	1%	3%
Adj. Flow (vph)	11	127	27	111	265	235	51	436	85	125	315	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	165	0	0	376	235	51	436	85	125	356	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 61.8	
Natural Cycle: 45	

Control Type: Actuated-Uncoordinated

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	122	26	107	254	226	49	419	82	120	302	39
Future Volume (veh/h)	11	122	26	107	254	226	49	419	82	120	302	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1911	1837	1837	1809	1896	1738	1766	1866	1912	1898	1869
Adj Flow Rate, veh/h	11	127	25	111	265	136	51	436	61	125	315	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	0	0	0	2	1	4	2	0	0	1	3
Cap, veh/h	56	424	77	149	311	689	375	732	652	307	690	81
Arrive On Green	0.41	0.43	0.41	0.41	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.40
Sat Flow, veh/h	3	988	180	192	725	1607	956	1766	1574	919	1667	196
Grp Volume(v), veh/h	163	0	0	376	0	136	51	436	61	125	0	352
Grp Sat Flow(s),veh/h/ln	1171	0	0	917	0	1607	956	1766	1574	919	0	1862
Q Serve(g_s), s	0.7	0.0	0.0	0.0	0.0	3.7	2.8	13.4	1.7	8.6	0.0	9.6
Cycle Q Clear(g_c), s	29.0	0.0	0.0	28.3	0.0	3.7	11.9	13.4	1.7	22.0	0.0	9.6
Prop In Lane	0.07		0.15	0.30		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	540	0	0	446	0	689	375	732	652	307	0	772
V/C Ratio(X)	0.30	0.00	0.00	0.84	0.00	0.20	0.14	0.60	0.09	0.41	0.00	0.46
Avail Cap(c_a), veh/h	540	0	0	446	0	689	375	732	652	307	0	772
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.5	0.0	0.0	17.6	0.0	12.5	18.9	15.9	12.5	24.5	0.0	14.8
Incr Delay (d2), s/veh	0.3	0.0	0.0	13.6	0.0	0.1	0.8	3.6	0.3	4.0	0.0	1.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	0.0	10.9	0.0	2.2	1.1	9.0	1.0	3.6	0.0	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.8	0.0	0.0	31.2	0.0	12.6	19.7	19.5	12.8	28.5	0.0	16.8
LnGrp LOS	B			C		B	B	B	B	C		B
Approach Vol, veh/h		163			512			548			477	
Approach Delay, s/veh		13.8			26.3			18.8			19.8	
Approach LOS		B			C			B			B	

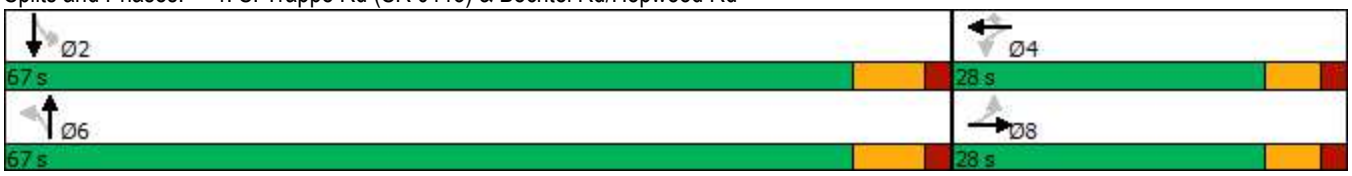
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.0		35.0		35.0		35.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		28.0		29.0		28.0		29.0				
Max Q Clear Time (g_c+I1), s		15.9		31.0		24.5		30.3				
Green Ext Time (p_c), s		7.3		0.0		2.2		0.0				

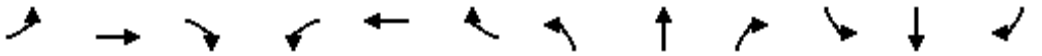
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			20.9									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	52	28	27	77	126	62	544	24	46	414	44
Future Volume (vph)	31	52	28	27	77	126	62	544	24	46	414	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966				0.850		0.994			0.986	
Flt Protected		0.986			0.987		0.950			0.950		
Satd. Flow (prot)	0	1717	0	0	1721	1500	1507	1787	0	1612	1776	0
Flt Permitted		0.872			0.883		0.462			0.391		
Satd. Flow (perm)	0	1519	0	0	1539	1500	733	1787	0	663	1776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				135		5			11	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	0%	0%	0%	3%	1%	7%	1%	4%	0%	1%	0%
Adj. Flow (vph)	33	56	30	29	83	135	67	585	26	49	445	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	112	135	67	611	0	49	492	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	67.0	67.0		67.0	67.0	
Total Split (%)	29.5%	29.5%		29.5%	29.5%	29.5%	70.5%	70.5%		70.5%	70.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 84.4	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd

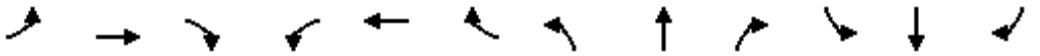




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	52	28	27	77	126	62	544	24	46	414	44
Future Volume (veh/h)	31	52	28	27	77	126	62	544	24	46	414	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1875	1875	1778	1736	1764	1775	1860	1818	1875	1860	1875
Adj Flow Rate, veh/h	33	56	17	29	83	76	67	585	23	49	445	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	0	0	3	1	7	1	4	0	1	0
Cap, veh/h	87	105	26	92	177	192	649	1312	52	588	1244	109
Arrive On Green	0.12	0.13	0.12	0.12	0.13	0.13	0.74	0.74	0.73	0.74	0.74	0.73
Sat Flow, veh/h	230	816	200	291	1371	1495	865	1778	70	815	1686	148
Grp Volume(v), veh/h	106	0	0	112	0	76	67	0	608	49	0	484
Grp Sat Flow(s),veh/h/ln	1246	0	0	1661	0	1495	865	0	1848	815	0	1834
Q Serve(g_s), s	2.3	0.0	0.0	0.0	0.0	3.9	2.4	0.0	10.6	2.0	0.0	7.8
Cycle Q Clear(g_c), s	7.4	0.0	0.0	5.1	0.0	3.9	9.7	0.0	10.6	12.2	0.0	7.8
Prop In Lane	0.31		0.16	0.26		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	202	0	0	249	0	192	649	0	1364	588	0	1353
V/C Ratio(X)	0.52	0.00	0.00	0.45	0.00	0.39	0.10	0.00	0.45	0.08	0.00	0.36
Avail Cap(c_a), veh/h	438	0	0	483	0	416	649	0	1364	588	0	1353
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.6	0.0	0.0	33.7	0.0	33.0	5.5	0.0	4.2	6.5	0.0	3.9
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.3	0.0	1.3	0.3	0.0	1.1	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	0.0	0.0	3.9	0.0	2.6	0.7	0.0	4.7	0.6	0.0	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.6	0.0	0.0	35.0	0.0	34.4	5.8	0.0	5.3	6.8	0.0	4.6
LnGrp LOS	D	A	A	C	A	C	A	A	A	A	A	A
Approach Vol, veh/h		106			188			675			533	
Approach Delay, s/veh		36.6			34.7			5.3			4.8	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		15.6		67.0		15.6				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		60.0		22.0		60.0		22.0				
Max Q Clear Time (g_c+I1), s		14.7		7.1		12.6		9.4				
Green Ext Time (p_c), s		22.2		0.5		29.3		0.2				

Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	105	9	27	239	11	10	28	9	10	22	13
Future Volume (vph)	7	105	9	27	239	11	10	28	9	10	22	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.995			0.974			0.960	
Flt Protected		0.997			0.995			0.990			0.989	
Satd. Flow (prot)	0	1779	0	0	1943	0	0	1734	0	0	1543	0
Flt Permitted		0.997			0.995			0.990			0.989	
Satd. Flow (perm)	0	1779	0	0	1943	0	0	1734	0	0	1543	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5695			3480			1149			1984	
Travel Time (s)		110.9			67.8			22.4			38.6	
Confl. Peds. (#/hr)				1		1				1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	4%	0%	0%	0%	0%	11%	10%	0%	0%
Adj. Flow (vph)	8	118	10	30	269	12	11	31	10	11	25	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	311	0	0	52	0	0	51	0
Sign Control		Stop			Stop			Stop			Stop	

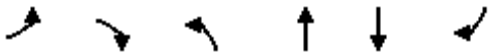
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	105	9	27	239	11	10	28	9	10	22	13
Future Vol, veh/h	7	105	9	27	239	11	10	28	9	10	22	13
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	1	0	4	0	0	0	0	11	10	0	0
Mvmt Flow	8	118	10	30	269	12	11	31	10	11	25	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	10	8.3	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	6%	10%	22%
Vol Thru, %	60%	87%	86%	49%
Vol Right, %	19%	7%	4%	29%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	47	121	277	45
LT Vol	10	7	27	10
Through Vol	28	105	239	22
RT Vol	9	9	11	13
Lane Flow Rate	53	136	311	51
Geometry Grp	1	1	1	1
Degree of Util (X)	0.072	0.168	0.378	0.07
Departure Headway (Hd)	4.898	4.457	4.37	5.013
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	731	805	825	714
Service Time	2.932	2.481	2.39	3.049
HCM Lane V/C Ratio	0.073	0.169	0.377	0.071
HCM Control Delay	8.3	8.4	10	8.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.6	1.8	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	2	3	39	43	8
Future Volume (vph)	7	2	3	39	43	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.978	
Flt Protected	0.962			0.996		
Satd. Flow (prot)	1726	0	0	1504	1493	0
Flt Permitted	0.962			0.996		
Satd. Flow (perm)	1726	0	0	1504	1493	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	595			1641	1149	
Travel Time (s)	16.2			32.0	22.4	
Confl. Peds. (#/hr)	1	1				1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	0%	0%	3%	2%	0%
Adj. Flow (vph)	8	2	4	47	52	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	51	62	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

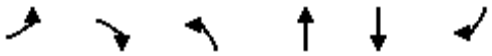
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	3	39	43	8
Future Vol, veh/h	7	2	3	39	43	8
Conflicting Peds, #/hr	1	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	14	0	0	3	2	0
Mvmt Flow	8	2	4	47	52	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	114	59	63	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	56	-	-	-	-	-
Critical Hdwy	6.34	6.1	4.3	-	-	-
Critical Hdwy Stg 1	5.34	-	-	-	-	-
Critical Hdwy Stg 2	5.34	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	997	1078	1142	-	-	-
Stage 1	1092	-	-	-	-	-
Stage 2	1095	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	991	1076	1141	-	-	-
Mov Cap-2 Maneuver	991	-	-	-	-	-
Stage 1	1087	-	-	-	-	-
Stage 2	1094	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1141	-	1009	-	-
HCM Lane V/C Ratio	0.003	-	0.011	-	-
HCM Control Delay (s)	8.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	0	2	42	38	8
Future Volume (vph)	1	0	2	42	38	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	8	12	12	9	8	12
Grade (%)	-3%			0%	2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.977	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1504	0	0	1615	1476	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1504	0	0	1615	1476	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	582			1915	1641	
Travel Time (s)	11.3			37.3	32.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	0%	0%	0%	0%	13%
Adj. Flow (vph)	1	0	3	53	48	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	0	56	58	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

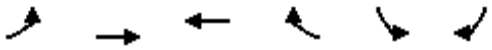
Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	0	2	42	38	8
Future Vol, veh/h	1	0	2	42	38	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-3	-	-	0	2	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	0	0	0	0	0	13
Mvmt Flow	1	0	3	53	48	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	112	53	58	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	5.8	5.9	4.3	-	-	-
Critical Hdwy Stg 1	4.8	-	-	-	-	-
Critical Hdwy Stg 2	4.8	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	1049	1089	1147	-	-	-
Stage 1	1143	-	-	-	-	-
Stage 2	1137	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1046	1089	1147	-	-	-
Mov Cap-2 Maneuver	1046	-	-	-	-	-
Stage 1	1140	-	-	-	-	-
Stage 2	1137	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1147	-	1046	-	-
HCM Lane V/C Ratio	0.002	-	0.001	-	-
HCM Control Delay (s)	8.1	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	140	298	33	15	25
Future Volume (vph)	11	140	298	33	15	25
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.987		0.916	
Flt Protected		0.997			0.981	
Satd. Flow (prot)	0	1632	1610	0	1517	0
Flt Permitted		0.997			0.981	
Satd. Flow (perm)	0	1632	1610	0	1517	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3929	1335		1915	
Travel Time (s)		67.0	22.8		37.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	11	146	310	34	16	26
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	157	344	0	42	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

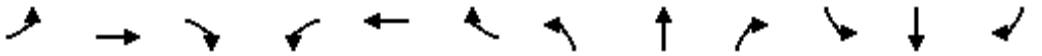
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	140	298	33	15	25
Future Vol, veh/h	11	140	298	33	15	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	11	146	310	34	16	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	344	0	-	0	495	327
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	915	-	-	-	624	766
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	1009	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	915	-	-	-	616	766
Mov Cap-2 Maneuver	-	-	-	-	616	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	1009	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	915	-	-	-	702
HCM Lane V/C Ratio	0.013	-	-	-	0.059
HCM Control Delay (s)	9	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	100	3	23	232	72	6	28	11	33	23	16
Future Volume (vph)	15	100	3	23	232	72	6	28	11	33	23	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.997			0.970			0.966			0.970	
Flt Protected		0.994			0.996			0.994			0.978	
Satd. Flow (prot)	0	1707	0	0	1677	0	0	1720	0	0	1725	0
Flt Permitted		0.994			0.996			0.994			0.978	
Satd. Flow (perm)	0	1707	0	0	1677	0	0	1720	0	0	1725	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1984			4679	
Travel Time (s)		6.8			56.8			38.6			91.1	
Confl. Peds. (#/hr)				8		8	1		1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	108	3	25	249	77	6	30	12	35	25	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	127	0	0	351	0	0	48	0	0	77	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	100	3	23	232	72	6	28	11	33	23	16
Future Vol, veh/h	15	100	3	23	232	72	6	28	11	33	23	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	16	108	3	25	249	77	6	30	12	35	25	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.5	10.2	8.3	8.6
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	13%	7%	46%
Vol Thru, %	62%	85%	71%	32%
Vol Right, %	24%	3%	22%	22%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	45	118	327	72
LT Vol	6	15	23	33
Through Vol	28	100	232	23
RT Vol	11	3	72	16
Lane Flow Rate	48	127	352	77
Geometry Grp	1	1	1	1
Degree of Util (X)	0.066	0.162	0.414	0.107
Departure Headway (Hd)	4.938	4.591	4.24	4.974
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	723	780	851	719
Service Time	2.984	2.623	2.264	3.016
HCM Lane V/C Ratio	0.066	0.163	0.414	0.107
HCM Control Delay	8.3	8.5	10.2	8.6
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.2	0.6	2.1	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	96	44	14	143	76	7
Future Volume (vph)	96	44	14	143	76	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.988	
Flt Protected				0.996	0.956	
Satd. Flow (prot)	1716	0	0	1770	1604	0
Flt Permitted				0.996	0.956	
Satd. Flow (perm)	1716	0	0	1770	1604	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	103	47	15	154	82	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	150	0	0	169	90	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

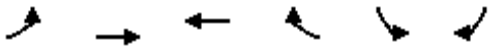
Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	96	44	14	143	76	7
Future Vol, veh/h	96	44	14	143	76	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	103	47	15	154	82	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	150	0	311	127
Stage 1	-	-	-	-	127	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.3	-	7.01	6.5
Critical Hdwy Stg 1	-	-	-	-	6.01	-
Critical Hdwy Stg 2	-	-	-	-	6.01	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1067	-	743	975
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1067	-	732	975
Mov Cap-2 Maneuver	-	-	-	-	732	-
Stage 1	-	-	-	-	1023	-
Stage 2	-	-	-	-	938	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	748	-	-	1067	-
HCM Lane V/C Ratio	0.119	-	-	0.014	-
HCM Control Delay (s)	10.5	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	142	311	18	18	20
Future Volume (vph)	5	142	311	18	18	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1694	1653	0	1727	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1694	1653	0	1727	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3929		678	
Travel Time (s)		38.0	67.0		18.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	148	324	19	19	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	153	343	0	19	21
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

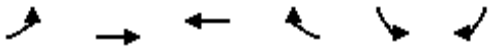
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	142	311	18	18	20
Future Vol, veh/h	5	142	311	18	18	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	148	324	19	19	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	324	0	-	0	492	334
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	158	-
Critical Hdwy	4.3	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	930	-	-	-	644	766
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	1028	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	640	766
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	1028	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	930	-	-	-	640	766
HCM Lane V/C Ratio	0.006	-	-	-	0.029	0.027
HCM Control Delay (s)	8.9	0	-	-	10.8	9.8
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0.1



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	102	253	81	47	50
Future Volume (vph)	35	102	253	81	47	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.967		0.930	
Flt Protected		0.987			0.976	
Satd. Flow (prot)	0	1666	1605	0	1556	0
Flt Permitted		0.987			0.976	
Satd. Flow (perm)	0	1666	1605	0	1556	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	2%	0%
Adj. Flow (vph)	36	106	264	84	49	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	142	348	0	101	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

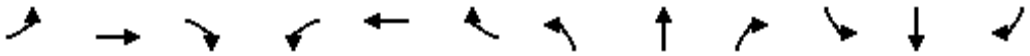
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	102	253	81	47	50
Future Vol, veh/h	35	102	253	81	47	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	5	2	0
Mvmt Flow	36	106	264	84	49	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	348	0	-	0	484	306
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	178	-
Critical Hdwy	4.3	-	-	-	5.22	5.6
Critical Hdwy Stg 1	-	-	-	-	4.22	-
Critical Hdwy Stg 2	-	-	-	-	4.22	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	912	-	-	-	723	821
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	1048	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	912	-	-	-	693	821
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	1048	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	912	-	-	-	754
HCM Lane V/C Ratio	0.04	-	-	-	0.134
HCM Control Delay (s)	9.1	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1	0	3	0	4	0	351	3	4	431	1
Future Volume (vph)	1	1	0	3	0	4	0	351	3	4	431	1
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.923			0.999				
Flt Protected		0.976			0.979							
Satd. Flow (prot)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Flt Permitted		0.976			0.979							
Satd. Flow (perm)	0	1801	0	0	1862	0	0	1754	0	0	1766	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		261			228			3949			1339	
Travel Time (s)		7.1			6.2			59.8			20.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	1	1	0	3	0	4	0	366	3	4	449	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2	0	0	7	0	0	369	0	0	454	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	0	3	0	4	0	351	3	4	431	1
Future Vol, veh/h	1	1	0	3	0	4	0	351	3	4	431	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	1	1	0	3	0	4	0	366	3	4	449	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	828	827	450	826	826	368	450	0	0	369	0	0
Stage 1	458	458	-	368	368	-	-	-	-	-	-	-
Stage 2	370	369	-	458	458	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	6.7	6.1	6	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	408	389	687	357	339	734	841	-	-	897	-	-
Stage 1	754	648	-	778	651	-	-	-	-	-	-	-
Stage 2	826	692	-	699	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	404	387	687	355	337	734	841	-	-	897	-	-
Mov Cap-2 Maneuver	404	387	-	355	337	-	-	-	-	-	-	-
Stage 1	754	644	-	778	651	-	-	-	-	-	-	-
Stage 2	821	692	-	694	596	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	14.2	12.2	0	0.1
HCM LOS	B	B		

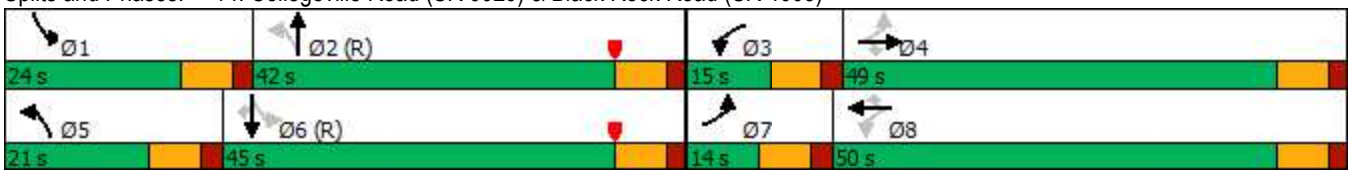
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	841	-	-	395	504	897	-	-
HCM Lane V/C Ratio	-	-	-	0.005	0.014	0.005	-	-
HCM Control Delay (s)	0	-	-	14.2	12.2	9	0	-
HCM Lane LOS	A	-	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	173	99	82	394	205	159	529	23	139	443	135
Future Volume (vph)	123	173	99	82	394	205	159	529	23	139	443	135
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor										1.00		0.98
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1800	1665	1701	1773	1608	1678	3450	0	1551	3335	1477
Flt Permitted	0.200			0.540			0.404			0.320		
Satd. Flow (perm)	357	1800	1665	967	1773	1608	714	3450	0	522	3335	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			223		3				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	0%	0%	5%	1%	2%
Adj. Flow (vph)	134	188	108	89	428	223	173	575	25	151	482	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	188	108	89	428	223	173	600	0	151	482	147
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	11.0	11.0	11.0	11.0	11.0	11.0	23.0		11.0	23.0	23.0
Total Split (s)	14.0	49.0	49.0	15.0	50.0	50.0	21.0	42.0		24.0	45.0	45.0
Total Split (%)	10.8%	37.7%	37.7%	11.5%	38.5%	38.5%	16.2%	32.3%		18.5%	34.6%	34.6%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	173	99	82	394	205	159	529	23	139	443	135
Future Volume (veh/h)	123	173	99	82	394	205	159	529	23	139	443	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1921	2027	1794	1780	1852	1912	1912	1912	1680	1736	1722
Adj Flow Rate, veh/h	134	188	58	89	428	91	173	575	22	151	482	115
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	1	1	0	0	0	5	1	2
Cap, veh/h	201	517	463	367	479	423	457	1435	55	399	1326	586
Arrive On Green	0.06	0.27	0.27	0.06	0.27	0.27	0.08	0.40	0.39	0.08	0.40	0.40
Sat Flow, veh/h	1816	1921	1718	1709	1780	1569	1821	3567	136	1600	3298	1457
Grp Volume(v), veh/h	134	188	58	89	428	91	173	292	305	151	482	115
Grp Sat Flow(s),veh/h/ln	1816	1921	1718	1709	1780	1569	1821	1816	1887	1600	1649	1457
Q Serve(g_s), s	6.9	10.3	3.3	4.8	30.1	5.8	7.0	14.9	15.0	7.0	13.3	6.7
Cycle Q Clear(g_c), s	6.9	10.3	3.3	4.8	30.1	5.8	7.0	14.9	15.0	7.0	13.3	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	201	517	463	367	479	423	457	731	759	399	1326	586
V/C Ratio(X)	0.67	0.36	0.13	0.24	0.89	0.22	0.38	0.40	0.40	0.38	0.36	0.20
Avail Cap(c_a), veh/h	201	635	568	380	603	531	517	731	759	489	1326	586
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.5	38.5	35.9	31.2	45.7	36.8	19.9	27.7	27.7	20.2	27.2	25.2
Incr Delay (d2), s/veh	8.0	0.4	0.1	0.3	13.4	0.3	0.5	1.6	1.6	0.6	0.8	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	8.5	2.5	3.6	21.0	4.1	5.3	10.8	11.2	4.6	9.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	38.9	36.0	31.5	59.0	37.1	20.5	29.3	29.3	20.7	28.0	26.0
LnGrp LOS	D	D	D	C	E	D	C	C	C	C	C	C
Approach Vol, veh/h		380			608			770			748	
Approach Delay, s/veh		40.1			51.7			27.3			26.2	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	58.3	14.0	41.0	16.7	58.3	14.0	41.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	17.0	35.0	8.0	42.0	14.0	38.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	9.5	17.4	7.3	12.8	9.5	15.8	9.4	32.6
Green Ext Time (p_c), s	0.2	1.9	0.0	0.8	0.2	2.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	201	195	78	249	240	57
Future Volume (vph)	201	195	78	249	240	57
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933				0.974	
Flt Protected				0.988	0.961	
Satd. Flow (prot)	1560	0	0	1660	1540	0
Flt Permitted				0.988	0.961	
Satd. Flow (perm)	1560	0	0	1660	1540	0
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5695	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	242	235	94	300	289	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	477	0	0	394	358	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	29

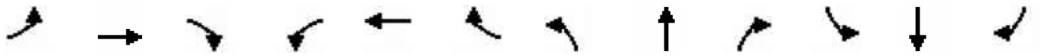
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	195	78	249	240	57
Future Vol, veh/h	201	195	78	249	240	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	1	0	0	2	0
Mvmt Flow	242	235	94	300	289	69

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	477	0	848	360
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	488	-
Critical Hdwy	-	-	4.3	-	6.62	6.3
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	823	-	352	719
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	682	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	823	-	304	719
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	589	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	97.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	342	-	-	823	-
HCM Lane V/C Ratio	1.046	-	-	0.114	-
HCM Control Delay (s)	97.1	-	-	9.9	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	12.6	-	-	0.4	-

2028 Projected Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	14	229	13	54	2	90	218	143	177	15
Future Volume (vph)	30	36	14	229	13	54	2	90	218	143	177	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.975			0.905			0.994	
Flt Protected		0.982			0.963						0.979	
Satd. Flow (prot)	0	1498	0	0	1478	0	0	1568	0	0	1668	0
Flt Permitted		0.982			0.963						0.979	
Satd. Flow (perm)	0	1498	0	0	1478	0	0	1568	0	0	1668	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		653			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	35	42	16	266	15	63	2	105	253	166	206	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	344	0	0	360	0	0	389	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	155.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	36	14	229	13	54	2	90	218	143	177	15
Future Vol, veh/h	30	36	14	229	13	54	2	90	218	143	177	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	9	9	7	7	38	13	0	3	5	2	2	25
Mvmt Flow	35	42	16	266	15	63	2	105	253	166	206	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	78	0	0	58	0	0	810	730	50	878	707	47
Stage 1	-	-	-	-	-	-	120	120	-	579	579	-
Stage 2	-	-	-	-	-	-	690	610	-	299	128	-
Critical Hdwy	4.4	-	-	4.4	-	-	6.9	6.33	6.15	6.52	5.92	6.15
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.33	-	5.52	4.92	-
Follow-up Hdwy	3.1	-	-	3.1	-	-	3	4.027	3.1	3	4.018	3.3
Pot Cap-1 Maneuver	1092	-	-	1109	-	-	349	362	1089	345	405	1029
Stage 1	-	-	-	-	-	-	1036	800	-	623	551	-
Stage 2	-	-	-	-	-	-	509	500	-	857	807	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1092	-	-	1109	-	-	120	261	1089	~ 146	292	1029
Mov Cap-2 Maneuver	-	-	-	-	-	-	120	261	-	~ 146	292	-
Stage 1	-	-	-	-	-	-	1002	774	-	602	412	-
Stage 2	-	-	-	-	-	-	187	374	-	550	780	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.2	7.2	23	$ 445.1
HCM LOS			C	F

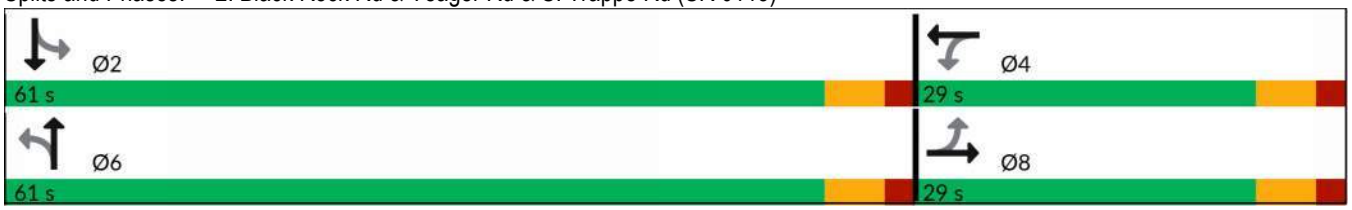
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	552	1092	-	-	1109	-	-	209
HCM Lane V/C Ratio	0.653	0.032	-	-	0.24	-	-	1.864
HCM Control Delay (s/veh)	23	8.4	0	-	9.3	0	-	$ 445.1
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q (veh)	4.7	0.1	-	-	0.9	-	-	27.8

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	297	19	97	144	94	21	301	140	242	226	13
Future Volume (vph)	54	297	19	97	144	94	21	301	140	242	226	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.941			0.952			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1536	1790	0	1457	1720	0	1220	1691	0	1611	1656	0
Flt Permitted	0.427			0.283			0.585			0.417		
Satd. Flow (perm)	690	1790	0	434	1720	0	751	1691	0	707	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			36			49			6	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3233			4738			1352			1539	
Travel Time (s)		63.0			71.8			23.0			26.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	5%	0%	14%	4%	8%	43%	4%	2%	4%	6%	0%
Adj. Flow (vph)	61	334	21	109	162	106	24	338	157	272	254	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	61	355	0	109	268	0	24	495	0	272	269	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	29.0	29.0		29.0	29.0		61.0	61.0		61.0	61.0	
Total Split (%)	32.2%	32.2%		32.2%	32.2%		67.8%	67.8%		67.8%	67.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 89.2	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	297	19	97	144	94	21	301	140	242	226	13
Future Volume (veh/h)	54	297	19	97	144	94	21	301	140	242	226	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1666	1747	1750	1638	1852	1724	1338	1892	1921	1655	1626	1711
Adj Flow Rate, veh/h	61	334	17	109	162	95	24	338	128	272	254	14
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	5	0	14	4	8	43	4	2	4	6	0
Cap, veh/h	224	439	22	157	292	171	519	814	308	486	950	52
Arrive On Green	0.27	0.27	0.26	0.27	0.27	0.26	0.62	0.62	0.61	0.62	0.62	0.61
Sat Flow, veh/h	1000	1648	84	902	1094	642	795	1308	495	820	1527	84
Grp Volume(v), veh/h	61	0	351	109	0	257	24	0	466	272	0	268
Grp Sat Flow(s),veh/h/ln	1000	0	1732	902	0	1736	795	0	1803	820	0	1611
Q Serve(g_s), s	5.0	0.0	16.8	7.7	0.0	11.5	1.3	0.0	11.9	22.6	0.0	6.8
Cycle Q Clear(g_c), s	16.0	0.0	16.8	24.0	0.0	11.5	7.5	0.0	11.9	34.0	0.0	6.8
Prop In Lane	1.00		0.05	1.00		0.37	1.00		0.27	1.00		0.05
Lane Grp Cap(c), veh/h	224	0	462	157	0	463	519	0	1122	486	0	1003
V/C Ratio(X)	0.27	0.00	0.76	0.69	0.00	0.56	0.05	0.00	0.42	0.56	0.00	0.27
Avail Cap(c_a), veh/h	224	0	462	157	0	463	519	0	1122	486	0	1003
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	30.4	42.3	0.0	28.6	9.3	0.0	8.7	17.2	0.0	7.7
Incr Delay (d2), s/veh	0.6	0.0	7.2	12.3	0.0	1.5	0.2	0.0	1.1	4.6	0.0	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.0	12.2	5.2	0.0	8.2	0.4	0.0	7.6	7.8	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	35.7	0.0	37.6	54.5	0.0	30.0	9.5	0.0	9.9	21.8	0.0	8.4
LnGrp LOS	D		D	D		C	A		A	C		A
Approach Vol, veh/h		412			366			490			540	
Approach Delay, s/veh		37.3			37.3			9.9			15.1	
Approach LOS		D			D			A			B	

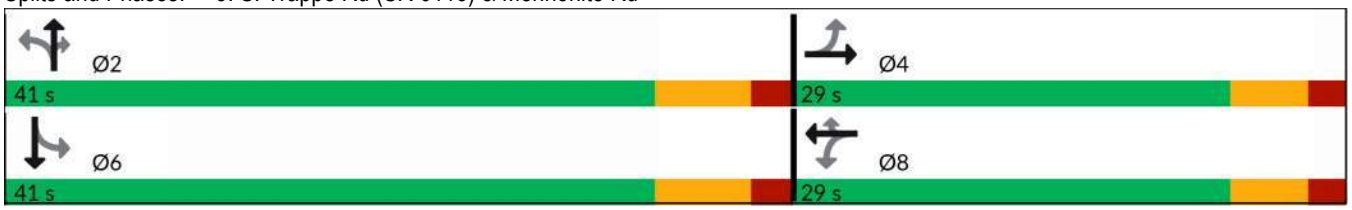
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.0		29.0		61.0		29.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		55.0		23.0		55.0		23.0				
Max Q Clear Time (g_c+I1), s		36.5		26.5		13.9		18.8				
Green Ext Time (p_c), s		9.6		0.0		18.8		0.9				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			23.2									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	176	50	40	36	31	14	297	112	132	400	20
Future Volume (vph)	39	176	50	40	36	31	14	297	112	132	400	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974				0.850			0.850		0.993	
Flt Protected		0.993			0.974		0.950			0.950		
Satd. Flow (prot)	0	1927	0	0	1585	1406	1443	1649	1547	1645	1689	0
Flt Permitted		0.940			0.690		0.454			0.563		
Satd. Flow (perm)	0	1824	0	0	1123	1406	689	1649	1547	975	1689	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62			123		5	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	1%	8%	7%	8%	13%	14%	5%	5%	2%	4%	0%
Adj. Flow (vph)	43	193	55	44	40	34	15	326	123	145	440	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	0	0	84	34	15	326	123	145	462	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	29.0	29.0		29.0	29.0	29.0	41.0	41.0	41.0	41.0	41.0	
Total Split (%)	41.4%	41.4%		41.4%	41.4%	41.4%	58.6%	58.6%	58.6%	58.6%	58.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 61.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

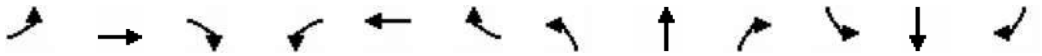
Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	176	50	40	36	31	14	297	112	132	400	20
Future Volume (veh/h)	39	176	50	40	36	31	14	297	112	132	400	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	1896	1724	1738	1724	1719	1598	1724	1793	1883	1855	1912
Adj Flow Rate, veh/h	43	193	41	44	40	12	15	326	96	145	440	19
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	1	8	7	8	13	14	5	5	2	4	0
Cap, veh/h	110	281	56	211	164	307	503	1035	912	616	1059	46
Arrive On Green	0.19	0.21	0.19	0.19	0.21	0.21	0.60	0.60	0.60	0.60	0.60	0.58
Sat Flow, veh/h	182	1333	263	552	775	1456	797	1724	1520	972	1765	76
Grp Volume(v), veh/h	277	0	0	84	0	12	15	326	96	145	0	459
Grp Sat Flow(s),veh/h/ln	1779	0	0	1327	0	1456	797	1724	1520	972	0	1841
Q Serve(g_s), s	4.9	0.0	0.0	0.0	0.0	0.4	0.6	5.4	1.6	5.0	0.0	7.8
Cycle Q Clear(g_c), s	8.6	0.0	0.0	2.6	0.0	0.4	7.8	5.4	1.6	10.5	0.0	7.8
Prop In Lane	0.16		0.15	0.52		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	416	0	0	351	0	307	503	1035	912	616	0	1105
V/C Ratio(X)	0.67	0.00	0.00	0.24	0.00	0.04	0.03	0.31	0.11	0.24	0.00	0.42
Avail Cap(c_a), veh/h	766	0	0	611	0	599	503	1035	912	616	0	1105
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	0.0	19.3	0.0	18.3	8.2	5.7	5.0	8.3	0.0	6.2
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.3	0.0	0.1	0.1	0.8	0.2	0.9	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.3	0.0	0.0	1.7	0.0	0.2	0.2	2.5	0.6	1.6	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	23.4	0.0	0.0	19.7	0.0	18.3	8.3	6.5	5.2	9.2	0.0	7.4
LnGrp LOS	C			B		B	A	A	A	A		A
Approach Vol, veh/h		277			96			437			604	
Approach Delay, s/veh		23.4			19.5			6.3			7.8	
Approach LOS		C			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		41.0		17.3		41.0		17.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		34.0		23.0		34.0		23.0				
Max Q Clear Time (g_c+I1), s		10.3		10.6		13.0		4.6				
Green Ext Time (p_c), s		9.7		0.8		12.4		0.3				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			11.2									
HCM 6th LOS			B									

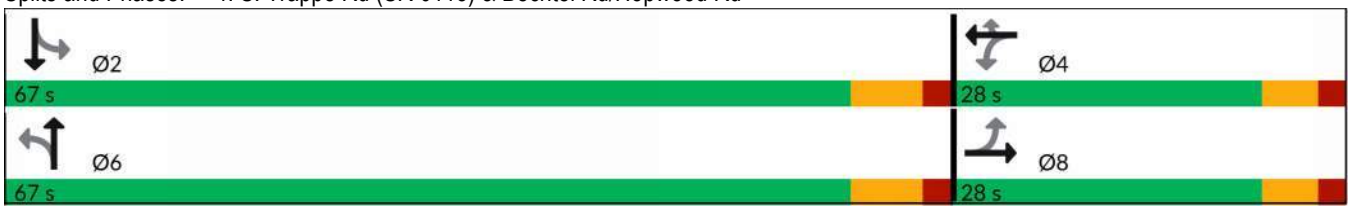


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	49	40	31	58	45	15	325	30	65	436	20
Future Volume (vph)	59	49	40	31	58	45	15	325	30	65	436	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										0.99	0.99	
Frt		0.963				0.850		0.987			0.994	
Flt Protected		0.981			0.983		0.950			0.950		
Satd. Flow (prot)	0	1652	0	0	1688	1515	1507	1717	0	1580	1755	0
Flt Permitted		0.826			0.824		0.440			0.514		
Satd. Flow (perm)	0	1391	0	0	1415	1515	698	1717	0	855	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19				51		10			5	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	6%	3%	7%	2%	0%	7%	4%	10%	2%	3%	0%
Adj. Flow (vph)	66	55	45	35	65	51	17	365	34	73	490	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	166	0	0	100	51	17	399	0	73	512	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	67.0	67.0		67.0	67.0	
Total Split (%)	29.5%	29.5%		29.5%	29.5%	29.5%	70.5%	70.5%		70.5%	70.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 87.6	
Natural Cycle: 40	

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	49	40	31	58	45	15	325	30	65	436	20
Future Volume (veh/h)	59	49	40	31	58	45	15	325	30	65	436	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1789	1832	1679	1750	1778	1775	1818	1732	1846	1832	1875
Adj Flow Rate, veh/h	66	55	25	35	65	22	17	365	33	73	490	19
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	6	3	7	2	0	7	4	10	2	3	0
Cap, veh/h	129	94	33	118	189	242	595	1168	106	702	1246	48
Arrive On Green	0.15	0.16	0.15	0.15	0.16	0.16	0.71	0.71	0.70	0.71	0.71	0.70
Sat Flow, veh/h	423	586	208	379	1182	1507	845	1642	148	974	1752	68
Grp Volume(v), veh/h	146	0	0	100	0	22	17	0	398	73	0	509
Grp Sat Flow(s),veh/h/ln	1218	0	0	1561	0	1507	845	0	1791	974	0	1820
Q Serve(g_s), s	5.9	0.0	0.0	0.0	0.0	1.1	0.7	0.0	7.1	2.5	0.0	9.6
Cycle Q Clear(g_c), s	10.5	0.0	0.0	4.6	0.0	1.1	9.8	0.0	7.1	9.1	0.0	9.6
Prop In Lane	0.45		0.17	0.35		1.00	1.00		0.08	1.00		0.04
Lane Grp Cap(c), veh/h	242	0	0	289	0	242	595	0	1274	702	0	1294
V/C Ratio(X)	0.60	0.00	0.00	0.35	0.00	0.09	0.03	0.00	0.31	0.10	0.00	0.39
Avail Cap(c_a), veh/h	400	0	0	453	0	404	595	0	1274	702	0	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.3	0.0	0.0	32.2	0.0	30.7	6.8	0.0	4.6	6.2	0.0	5.0
Incr Delay (d2), s/veh	2.4	0.0	0.0	0.7	0.0	0.2	0.1	0.0	0.6	0.3	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	0.0	0.0	3.4	0.0	0.7	0.2	0.0	3.5	0.8	0.0	4.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.7	0.0	0.0	33.0	0.0	30.8	6.9	0.0	5.3	6.5	0.0	5.9
LnGrp LOS	D			C		C	A		A	A		A
Approach Vol, veh/h		146			122			415			582	
Approach Delay, s/veh		37.7			32.6			5.3			5.9	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		18.7		67.0		18.7				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		60.0		22.0		60.0		22.0				
Max Q Clear Time (g_c+I1), s		11.6		6.6		12.3		12.5				
Green Ext Time (p_c), s		24.5		0.3		17.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			12.0									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	259	13	12	194	16	22	45	53	24	20	10
Future Volume (vph)	12	259	13	12	194	16	22	45	53	24	20	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.990			0.940			0.976	
Flt Protected		0.998			0.997			0.991			0.978	
Satd. Flow (prot)	0	1742	0	0	1846	0	0	1651	0	0	1467	0
Flt Permitted		0.998			0.997			0.991			0.978	
Satd. Flow (perm)	0	1742	0	0	1846	0	0	1651	0	0	1467	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5693			3233			2804			1970	
Travel Time (s)		110.9			20.2			22.6			38.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	3%	10%	0%	5%	14%	10%	0%	4%	10%	0%	20%
Adj. Flow (vph)	14	294	15	14	220	18	25	51	60	27	23	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	323	0	0	252	0	0	136	0	0	61	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	259	13	12	194	16	22	45	53	24	20	10
Future Vol, veh/h	12	259	13	12	194	16	22	45	53	24	20	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	8	3	10	0	5	14	10	0	4	10	0	20
Mvmt Flow	14	294	15	14	220	18	25	51	60	27	23	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.6	10.3	9.7	9.3
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	4%	5%	44%
Vol Thru, %	38%	91%	87%	37%
Vol Right, %	44%	5%	7%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	120	284	222	54
LT Vol	22	12	12	24
Through Vol	45	259	194	20
RT Vol	53	13	16	10
Lane Flow Rate	136	323	252	61
Geometry Grp	1	1	1	1
Degree of Util (X)	0.2	0.434	0.335	0.097
Departure Headway (Hd)	5.279	4.842	4.785	5.718
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	672	736	744	630
Service Time	3.375	2.915	2.862	3.718
HCM Lane V/C Ratio	0.202	0.439	0.339	0.097
HCM Control Delay, s/veh	9.7	11.6	10.3	9.3
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.7	2.2	1.5	0.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	3	2	118	43	5
Future Volume (vph)	10	3	2	118	43	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.987	
Flt Protected	0.962			0.999		
Satd. Flow (prot)	1789	0	0	1506	1532	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1789	0	0	1506	1532	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	395			1663	1140	
Travel Time (s)	10.8			32.4	22.2	
Confl. Peds. (#/hr)	1	1				3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	33%	0%	3%	0%	0%
Adj. Flow (vph)	11	3	2	126	46	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	128	51	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	2	118	43	5
Future Vol, veh/h	10	3	2	118	43	5
Conflicting Peds, #/hr	1	1	0	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	33	0	3	0	0
Mvmt Flow	11	3	2	126	46	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	183	53	54	0	-	0
Stage 1	52	-	-	-	-	-
Stage 2	131	-	-	-	-	-
Critical Hdwy	6.2	6.43	4.3	-	-	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.4	3	-	-	-
Pot Cap-1 Maneuver	944	987	1151	-	-	-
Stage 1	1137	-	-	-	-	-
Stage 2	1048	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	936	983	1147	-	-	-
Mov Cap-2 Maneuver	936	-	-	-	-	-
Stage 1	1131	-	-	-	-	-
Stage 2	1045	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.9	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1147	-	946	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s/veh)	8.1	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	0	1	10	0	34	2	76	3	11	28	5
Future Volume (vph)	9	0	1	10	0	34	2	76	3	11	28	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	8	12	12	12	12	12	9	12	12	8	12
Grade (%)		-3%			0%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.896			0.994			0.985	
Flt Protected		0.956			0.989			0.999			0.988	
Satd. Flow (prot)	0	1360	0	0	1564	0	0	1578	0	0	1485	0
Flt Permitted		0.956			0.989			0.999			0.988	
Satd. Flow (perm)	0	1360	0	0	1564	0	0	1578	0	0	1485	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		582			209			363			2804	
Travel Time (s)		11.3			4.8			21.8			32.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	11%	2%	0%	2%	2%	2%	0%	2%	2%	2%	0%	20%
Adj. Flow (vph)	11	0	1	12	0	41	2	92	4	13	34	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	53	0	0	98	0	0	53	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	0	1	10	0	34	2	76	3	11	28	5
Future Vol, veh/h	9	0	1	10	0	34	2	76	3	11	28	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	0	-	-	0	-	-	-1	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	11	2	0	2	2	2	0	2	2	2	0	20
Mvmt Flow	11	0	1	12	0	41	2	92	4	13	34	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	182	163	37	162	164	94	40	0	0	96	0	0
Stage 1	63	63	-	98	98	-	-	-	-	-	-	-
Stage 2	119	100	-	64	66	-	-	-	-	-	-	-
Critical Hdwy	6.61	5.92	5.9	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.61	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.1	4.018	3.1	3	4.018	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	898	750	1110	931	729	1028	1163	-	-	1113	-	-
Stage 1	1082	851	-	1058	814	-	-	-	-	-	-	-
Stage 2	1015	826	-	1105	840	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	853	740	1110	920	719	1028	1163	-	-	1113	-	-
Mov Cap-2 Maneuver	853	740	-	920	719	-	-	-	-	-	-	-
Stage 1	1080	841	-	1056	812	-	-	-	-	-	-	-
Stage 2	973	824	-	1091	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.2	8.8	0.2	2.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1163	-	-	873	1001	1113	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.053	0.012	-	-
HCM Control Delay (s/veh)	8.1	0	-	9.2	8.8	8.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.2	0	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	300	150	32	30	14
Future Volume (vph)	43	300	150	32	30	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.976		0.957	
Flt Protected		0.994			0.967	
Satd. Flow (prot)	0	1595	1519	0	1562	0
Flt Permitted		0.994			0.967	
Satd. Flow (perm)	0	1595	1519	0	1562	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3884	643		1474	
Travel Time (s)		66.2	14.7		14.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	7%	0%	0%	0%
Adj. Flow (vph)	48	337	169	36	34	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	385	205	0	50	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	300	150	32	30	14
Future Vol, veh/h	43	300	150	32	30	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	7	0	0	0
Mvmt Flow	48	337	169	36	34	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	205	0	-	0	620	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1022	-	-	-	528	916
Stage 1	-	-	-	-	989	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1022	-	-	-	497	916
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	765	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.1	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1022	-	-	-	582
HCM Lane V/C Ratio	0.047	-	-	-	0.085
HCM Control Delay (s/veh)	8.7	0	-	-	11.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	165	9	13	66	14	13	33	31	47	34	18
Future Volume (vph)	12	165	9	13	66	14	13	33	31	47	34	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.980			0.946			0.976	
Flt Protected		0.997			0.993			0.992			0.977	
Satd. Flow (prot)	0	1648	0	0	1591	0	0	1626	0	0	1609	0
Flt Permitted		0.997			0.993			0.992			0.977	
Satd. Flow (perm)	0	1648	0	0	1591	0	0	1626	0	0	1609	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1970			4679	
Travel Time (s)		6.8			56.8			38.4			91.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	17%	1%	33%	8%	6%	7%	0%	5%	3%	9%	7%	6%
Adj. Flow (vph)	15	204	11	16	81	17	16	41	38	58	42	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	230	0	0	114	0	0	95	0	0	122	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	165	9	13	66	14	13	33	31	47	34	18
Future Vol, veh/h	12	165	9	13	66	14	13	33	31	47	34	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	17	1	33	8	6	7	0	5	3	9	7	6
Mvmt Flow	15	204	11	16	81	17	16	41	38	58	42	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	8.7	8.4	9.1
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	6%	14%	47%
Vol Thru, %	43%	89%	71%	34%
Vol Right, %	40%	5%	15%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	186	93	99
LT Vol	13	12	13	47
Through Vol	33	165	66	34
RT Vol	31	9	14	18
Lane Flow Rate	95	230	115	122
Geometry Grp	1	1	1	1
Degree of Util (X)	0.124	0.309	0.153	0.17
Departure Headway (Hd)	4.696	4.843	4.79	4.998
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	760	739	745	715
Service Time	2.747	2.886	2.839	3.047
HCM Lane V/C Ratio	0.125	0.311	0.154	0.171
HCM Control Delay, s/veh	8.4	10.1	8.7	9.1
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.3	0.5	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	95	40	3	128	58	18
Future Volume (vph)	95	40	3	128	58	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	1624	0	0	1773	1516	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	1624	0	0	1773	1516	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	2%	15%	0%	2%	7%	0%
Adj. Flow (vph)	123	52	4	166	75	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	175	0	0	170	98	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	95	40	3	128	58	18
Future Vol, veh/h	95	40	3	128	58	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	15	0	2	7	0
Mvmt Flow	123	52	4	166	75	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	175	0	323	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	174	-
Critical Hdwy	-	-	4.3	-	7.07	6.5
Critical Hdwy Stg 1	-	-	-	-	6.07	-
Critical Hdwy Stg 2	-	-	-	-	6.07	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1046	-	705	946
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	933	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1046	-	702	946
Mov Cap-2 Maneuver	-	-	-	-	702	-
Stage 1	-	-	-	-	962	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	748	-	-	1046	-
HCM Lane V/C Ratio	0.132	-	-	0.004	-
HCM Control Delay (s/veh)	10.5	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.5	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	321	152	17	24	7
Future Volume (vph)	12	321	152	17	24	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1668	1563	0	1661	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1668	1563	0	1661	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3884		678	
Travel Time (s)		38.0	66.2		18.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	2%	6%	6%	4%	0%
Adj. Flow (vph)	14	378	179	20	28	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	392	199	0	28	8
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	321	152	17	24	7
Future Vol, veh/h	12	321	152	17	24	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	17	2	6	6	4	0
Mvmt Flow	14	378	179	20	28	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	595	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	406	-
Critical Hdwy	4.5	-	-	-	6.04	6
Critical Hdwy Stg 1	-	-	-	-	5.04	-
Critical Hdwy Stg 2	-	-	-	-	5.04	-
Follow-up Hdwy	3.2	-	-	-	3	3.1
Pot Cap-1 Maneuver	973	-	-	-	561	918
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	973	-	-	-	551	918
Mov Cap-2 Maneuver	-	-	-	-	551	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	801	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	973	-	-	-	551	918
HCM Lane V/C Ratio	0.015	-	-	-	0.051	0.009
HCM Control Delay (s/veh)	8.8	0	-	-	11.9	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q (veh)	0	-	-	-	0.2	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	254	107	51	78	46
Future Volume (vph)	43	254	107	51	78	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.956		0.950	
Flt Protected		0.993			0.969	
Satd. Flow (prot)	0	1630	1511	0	1478	0
Flt Permitted		0.993			0.969	
Satd. Flow (perm)	0	1630	1511	0	1478	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	3%	6%	7%	3%	16%
Adj. Flow (vph)	51	299	126	60	92	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	350	186	0	146	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	254	107	51	78	46
Future Vol, veh/h	43	254	107	51	78	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	3	6	7	3	16
Mvmt Flow	51	299	126	60	92	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	186	0	-	0	557	156
Stage 1	-	-	-	-	156	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.3	-	-	-	5.23	5.76
Critical Hdwy Stg 1	-	-	-	-	4.23	-
Critical Hdwy Stg 2	-	-	-	-	4.23	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1037	-	-	-	668	939
Stage 1	-	-	-	-	1065	-
Stage 2	-	-	-	-	881	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1037	-	-	-	629	939
Mov Cap-2 Maneuver	-	-	-	-	629	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	881	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.3	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1037	-	-	-	717
HCM Lane V/C Ratio	0.049	-	-	-	0.203
HCM Control Delay (s/veh)	8.7	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.2	-	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	1	3	0	4	2	481	0	1	340	2
Future Volume (vph)	4	0	1	3	0	4	2	481	0	1	340	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.916						0.999	
Flt Protected		0.960			0.982							
Satd. Flow (prot)	0	1730	0	0	1481	0	0	1673	0	0	1631	0
Flt Permitted		0.960			0.982							
Satd. Flow (perm)	0	1730	0	0	1481	0	0	1673	0	0	1631	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		378			228			362			1352	
Travel Time (s)		7.1			6.2			5.5			20.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	67%	0%	0%	0%	6%	0%	100%	8%	0%
Adj. Flow (vph)	5	0	1	3	0	5	2	559	0	1	395	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	8	0	0	561	0	0	398	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	1	3	0	4	2	481	0	1	340	2
Future Vol, veh/h	4	0	1	3	0	4	2	481	0	1	340	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	67	0	0	0	6	0	100	8	0
Mvmt Flow	5	0	1	3	0	5	2	559	0	1	395	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	964	961	396	962	962	559	397	0	0	559	0	0
Stage 1	398	398	-	563	563	-	-	-	-	-	-	-
Stage 2	566	563	-	399	399	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	7.37	6.1	6	4.3	-	-	5.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3.6	4	3.1	3	-	-	3.9	-	-
Pot Cap-1 Maneuver	341	337	732	217	287	576	877	-	-	540	-	-
Stage 1	802	677	-	483	545	-	-	-	-	-	-	-
Stage 2	675	599	-	599	633	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	337	335	732	216	286	576	877	-	-	540	-	-
Mov Cap-2 Maneuver	337	335	-	216	286	-	-	-	-	-	-	-
Stage 1	800	676	-	482	543	-	-	-	-	-	-	-
Stage 2	668	597	-	597	632	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.7	16	0	0
HCM LOS	B	C		

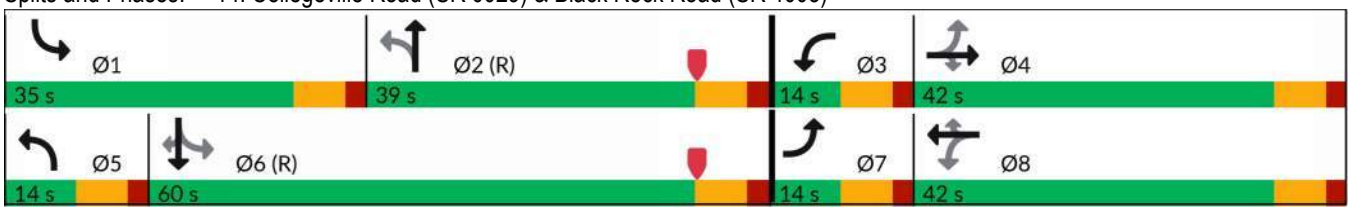
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	877	-	-	378	336	540	-	-
HCM Lane V/C Ratio	0.003	-	-	0.015	0.024	0.002	-	-
HCM Control Delay (s/veh)	9.1	0	-	14.7	16	11.7	0	-
HCM Lane LOS	A	A	-	B	C	B	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	385	145	11	110	100	79	402	52	249	492	102
Future Volume (vph)	161	385	145	11	110	100	79	402	52	249	492	102
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				0.99		0.98	0.99	0.99				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1749	1601	1701	1571	1608	1568	3301	0	1551	3208	1435
Flt Permitted	0.568			0.182			0.431			0.307		
Satd. Flow (perm)	1012	1749	1601	326	1571	1587	711	3301	0	501	3208	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			210		10				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)				1		1	1		1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	0%	14%	1%	7%	3%	4%	5%	5%	5%
Adj. Flow (vph)	192	458	173	13	131	119	94	479	62	296	586	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	458	173	13	131	119	94	541	0	296	586	121
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0		10.0	22.0	22.0
Total Split (s)	14.0	42.0	42.0	14.0	42.0	42.0	14.0	39.0		35.0	60.0	60.0
Total Split (%)	10.8%	32.3%	32.3%	10.8%	32.3%	32.3%	10.8%	30.0%		26.9%	46.2%	46.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	385	145	11	110	100	79	402	52	249	492	102
Future Volume (veh/h)	161	385	145	11	110	100	79	402	52	249	492	102
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1878	1968	1794	1598	1852	1812	1869	1855	1680	1680	1680
Adj Flow Rate, veh/h	192	458	86	13	131	39	94	479	45	296	586	60
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	5	4	0	14	1	7	3	4	5	5	5
Cap, veh/h	356	501	445	110	355	348	425	1301	122	503	1515	676
Arrive On Green	0.06	0.27	0.27	0.02	0.22	0.22	0.06	0.40	0.39	0.14	0.47	0.47
Sat Flow, veh/h	1816	1878	1668	1709	1598	1567	1726	3282	307	1600	3191	1423
Grp Volume(v), veh/h	192	458	86	13	131	39	94	258	266	296	586	60
Grp Sat Flow(s),veh/h/ln	1816	1878	1668	1709	1598	1567	1726	1776	1813	1600	1596	1423
Q Serve(g_s), s	8.0	30.7	5.2	0.8	9.0	2.6	4.1	13.4	13.5	13.3	15.4	3.0
Cycle Q Clear(g_c), s	8.0	30.7	5.2	0.8	9.0	2.6	4.1	13.4	13.5	13.3	15.4	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	356	501	445	110	355	348	425	704	719	503	1515	676
V/C Ratio(X)	0.54	0.91	0.19	0.12	0.37	0.11	0.22	0.37	0.37	0.59	0.39	0.09
Avail Cap(c_a), veh/h	356	520	462	186	442	434	433	704	719	644	1515	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.6	46.2	36.9	40.3	42.8	40.3	20.7	27.7	27.8	17.6	22.0	18.7
Incr Delay (d2), s/veh	1.6	20.4	0.2	0.5	0.6	0.1	0.3	1.5	1.5	1.1	0.7	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	23.6	3.8	0.6	6.5	1.8	2.9	9.8	10.0	8.3	9.6	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.2	66.6	37.1	40.8	43.5	40.5	20.9	29.2	29.3	18.7	22.7	19.0
LnGrp LOS	D	E	D	D	D	D	C	C	C	B	C	B
Approach Vol, veh/h		736			183			618			942	
Approach Delay, s/veh		56.3			42.6			28.0			21.2	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.6	57.6	8.2	40.7	13.4	67.7	14.0	34.9
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	28.0	32.0	7.0	35.0	7.0	53.0	7.0	35.0
Max Q Clear Time (g_c+I1), s	15.8	15.9	3.3	33.2	6.6	17.9	10.5	11.5
Green Ext Time (p_c), s	0.8	1.6	0.0	0.4	0.0	2.7	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	34.9
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	235	218	49	383	219	48
Future Volume (vph)	235	218	49	383	219	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1462	0	0	1566	1542	1335
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1462	0	0	1566	1542	1335
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5693	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	4%	7%	3%	14%
Adj. Flow (vph)	261	242	54	426	243	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	503	0	0	480	243	53
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	12

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	235	218	49	383	219	48
Future Vol, veh/h	235	218	49	383	219	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	7	3	14
Mvmt Flow	261	242	54	426	243	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	503	0	916	382
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	-	-	4.3	-	6.63	6.44
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	-	-	3	-	3	3.2
Pot Cap-1 Maneuver	-	-	806	-	318	670
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	645	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	806	-	290	670
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.1	50.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	670	-	-	806	-
HCM Lane V/C Ratio	0.839	0.08	-	-	0.068	-
HCM Control Delay (s/veh)	58.7	10.8	-	-	9.8	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q (veh)	7.1	0.3	-	-	0.2	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	12	4	170	323	20
Future Volume (vph)	59	12	4	170	323	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	12
Grade (%)	0%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.992	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1655	0	0	1707	1668	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1655	0	0	1707	1668	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	129			431	3149	
Travel Time (s)	2.9			7.3	42.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%
Adj. Flow (vph)	64	13	4	185	351	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	0	189	373	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	12	4	170	323	20
Future Vol, veh/h	59	12	4	170	323	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-3	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	3	2
Mvmt Flow	64	13	4	185	351	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	555	362	373	0	-	0
Stage 1	362	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	557	723	894	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	554	723	894	-	-	-
Mov Cap-2 Maneuver	554	-	-	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	972	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	894	-	577	-	-
HCM Lane V/C Ratio	0.005	-	0.134	-	-
HCM Control Delay (s/veh)	9	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.5	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	4	2	227	339	6
Future Volume (vph)	11	4	2	227	339	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	0%			0%	-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966				0.997	
Flt Protected	0.964					
Satd. Flow (prot)	1643	0	0	1683	1769	0
Flt Permitted	0.964					
Satd. Flow (perm)	1643	0	0	1683	1769	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	161			3149	362	
Travel Time (s)	3.7			11.5	6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%
Adj. Flow (vph)	12	4	2	247	368	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	249	375	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	4	2	227	339	6
Future Vol, veh/h	11	4	2	227	339	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	3	2
Mvmt Flow	12	4	2	247	368	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	623	372	375	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	251	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	506	714	893	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	504	714	893	-	-	-
Mov Cap-2 Maneuver	504	-	-	-	-	-
Stage 1	795	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	893	-	547	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	9	0	11.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	4	1	74	36	3
Future Volume (vph)	7	4	1	74	36	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	9	9	12
Grade (%)	0%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955				0.990	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1631	0	0	1579	1594	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1631	0	0	1579	1594	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	259			1474	363	
Travel Time (s)	5.9			28.7	7.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Adj. Flow (vph)	8	4	1	80	39	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	81	42	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	4	1	74	36	3
Future Vol, veh/h	7	4	1	74	36	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	0	2
Mvmt Flow	8	4	1	80	39	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	123	41	42	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	82	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	1014	1101	1161	-	-	-
Stage 1	1148	-	-	-	-	-
Stage 2	1097	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1013	1101	1161	-	-	-
Mov Cap-2 Maneuver	1013	-	-	-	-	-
Stage 1	1147	-	-	-	-	-
Stage 2	1097	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.5	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1161	-	1043	-	-
HCM Lane V/C Ratio	0.001	-	0.011	-	-
HCM Control Delay (s/veh)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	3	1	0	5
Future Volume (vph)	0	0	3	1	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12
Grade (%)	-2%			5%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.964		
Satd. Flow (prot)	1697	0	0	1556	1526	0
Flt Permitted				0.964		
Satd. Flow (perm)	1697	0	0	1556	1526	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	254			378	388	
Travel Time (s)	6.9			8.6	8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	3	1	0	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	4	5	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	3	1	0	5
Future Vol, veh/h	0	0	3	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	5	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	2
Mvmt Flow	0	0	3	1	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	8	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.3	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1199	-	1187	1160
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	1191	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1199	-	1183	1160
Mov Cap-2 Maneuver	-	-	-	-	1183	-
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	1187	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	6	8.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1160	-	-	1199	-
HCM Lane V/C Ratio	0.005	-	-	0.003	-
HCM Control Delay (s/veh)	8.1	-	-	8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	320	154	8	25	28
Future Volume (vph)	10	320	154	8	25	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	12
Grade (%)		-3%	3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.929	
Flt Protected		0.998			0.977	
Satd. Flow (prot)	0	1653	1553	0	1602	0
Flt Permitted		0.998			0.977	
Satd. Flow (perm)	0	1653	1553	0	1602	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		643	653		130	
Travel Time (s)		14.7	7.4		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Adj. Flow (vph)	11	348	167	9	27	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	359	176	0	57	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

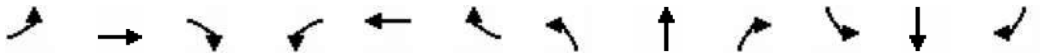
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	320	154	8	25	28
Future Vol, veh/h	10	320	154	8	25	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	6	2	2	2
Mvmt Flow	11	348	167	9	27	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	176	0	-	0	542	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1046	-	-	-	567	928
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	799	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1046	-	-	-	560	928
Mov Cap-2 Maneuver	-	-	-	-	560	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1046	-	-	-	708
HCM Lane V/C Ratio	0.01	-	-	-	0.081
HCM Control Delay (s/veh)	8.5	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	31	8	272	42	148	8	178	237	41	101	31
Future Volume (vph)	26	31	8	272	42	148	8	178	237	41	101	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.957			0.924			0.976	
Flt Protected		0.980			0.971			0.999			0.988	
Satd. Flow (prot)	0	1526	0	0	1582	0	0	1663	0	0	1693	0
Flt Permitted		0.980			0.971			0.999			0.988	
Satd. Flow (perm)	0	1526	0	0	1582	0	0	1663	0	0	1693	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		654			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	27	32	8	280	43	153	8	184	244	42	104	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	476	0	0	436	0	0	178	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	69.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	26	31	8	272	42	148	8	178	237	41	101	31
Future Vol, veh/h	26	31	8	272	42	148	8	178	237	41	101	31
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-2	-	-	2	-	-	-1	-	-	-3	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	18	0	0	1	3	1	0	1	0	0	1	0
Mvmt Flow	27	32	8	280	43	153	8	184	244	42	104	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	196	0	0	40	0	0	838	846	36	984	774	120
Stage 1	-	-	-	-	-	-	90	90	-	680	680	-
Stage 2	-	-	-	-	-	-	748	756	-	304	94	-
Critical Hdwy	4.5	-	-	4.3	-	-	6.9	6.31	6.1	6.5	5.91	5.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.31	-	5.5	4.91	-
Follow-up Hdwy	3.2	-	-	3	-	-	3	4.009	3.1	3	4.009	3.1
Pot Cap-1 Maneuver	959	-	-	1163	-	-	335	315	1110	298	376	1004
Stage 1	-	-	-	-	-	-	1075	826	-	556	507	-
Stage 2	-	-	-	-	-	-	473	436	-	854	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	959	-	-	1163	-	-	177	222	1110	58	265	1004
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	222	-	58	265	-
Stage 1	-	-	-	-	-	-	1044	802	-	540	368	-
Stage 2	-	-	-	-	-	-	238	316	-	499	808	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	3.5	5.3	104.8	176.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	399	959	-	-	1163	-	-	155
HCM Lane V/C Ratio	1.093	0.028	-	-	0.241	-	-	1.151
HCM Control Delay (s/veh)	104.8	8.9	0	-	9.1	0	-	176.9
HCM Lane LOS	F	A	A	-	A	A	-	F
HCM 95th %tile Q (veh)	15.3	0.1	-	-	0.9	-	-	9.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	103	28	158	246	241	34	253	76	130	346	30
Future Volume (vph)	26	103	28	158	246	241	34	253	76	130	346	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.926			0.965			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1776	0	1645	1778	0	1677	1772	0	1643	1743	0
Flt Permitted	0.176			0.669			0.483			0.521		
Satd. Flow (perm)	279	1776	0	1158	1778	0	853	1772	0	901	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			53			17			5	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3233			4738			1352			1539	
Travel Time (s)		63.0			71.8			23.0			26.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	7%	1%	0%	1%	4%	0%	0%	2%	0%	0%
Adj. Flow (vph)	26	103	28	158	246	241	34	253	76	130	346	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	131	0	158	487	0	34	329	0	130	376	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	59.0	59.0		59.0	59.0		61.0	61.0		61.0	61.0	
Total Split (%)	49.2%	49.2%		49.2%	49.2%		50.8%	50.8%		50.8%	50.8%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 97.3	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	103	28	158	246	241	34	253	76	130	346	30
Future Volume (veh/h)	26	103	28	158	246	241	34	253	76	130	346	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1637	1791	1652	1823	1911	1823	1892	1949	1949	1683	1711	1711
Adj Flow Rate, veh/h	26	103	20	158	246	225	34	253	60	130	346	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	2	7	1	0	1	4	0	0	2	0	0
Cap, veh/h	135	465	90	411	293	268	546	880	209	553	902	73
Arrive On Green	0.32	0.32	0.31	0.32	0.32	0.31	0.58	0.58	0.57	0.58	0.58	0.57
Sat Flow, veh/h	808	1457	283	1236	919	841	1020	1523	361	959	1562	126
Grp Volume(v), veh/h	26	0	123	158	0	471	34	0	313	130	0	374
Grp Sat Flow(s),veh/h/ln	808	0	1740	1236	0	1759	1020	0	1884	959	0	1688
Q Serve(g_s), s	3.0	0.0	5.0	10.3	0.0	24.2	1.8	0.0	8.2	7.6	0.0	11.7
Cycle Q Clear(g_c), s	26.6	0.0	5.0	14.9	0.0	24.2	13.0	0.0	8.2	15.3	0.0	11.7
Prop In Lane	1.00		0.16	1.00		0.48	1.00		0.19	1.00		0.07
Lane Grp Cap(c), veh/h	135	0	555	411	0	561	546	0	1089	553	0	975
V/C Ratio(X)	0.19	0.00	0.22	0.38	0.00	0.84	0.06	0.00	0.29	0.24	0.00	0.38
Avail Cap(c_a), veh/h	327	0	969	705	0	980	546	0	1089	553	0	975
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.9	0.0	24.2	29.4	0.0	30.9	14.5	0.0	10.4	14.1	0.0	11.1
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.6	0.0	3.5	0.2	0.0	0.7	1.0	0.0	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	3.7	5.3	0.0	15.3	0.8	0.0	5.8	3.0	0.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.6	0.0	24.4	30.0	0.0	34.4	14.7	0.0	11.1	15.1	0.0	12.3
LnGrp LOS	D		C	C		C	B		B	B		B
Approach Vol, veh/h		149			629			347			504	
Approach Delay, s/veh		27.8			33.3			11.4			13.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.0		35.9		61.0		35.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		55.0		53.0		55.0		53.0				
Max Q Clear Time (g_c+I1), s		17.8		26.2		15.5		29.1				
Green Ext Time (p_c), s		15.5		3.0		11.9		0.8				

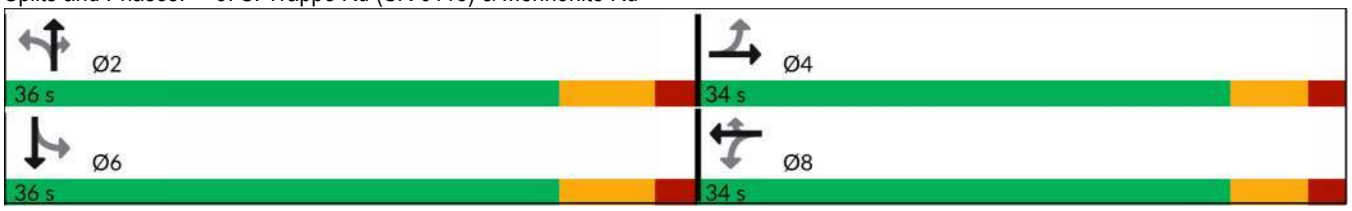
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			21.8									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	121	25	130	250	223	49	446	98	119	344	39
Future Volume (vph)	11	121	25	130	250	223	49	446	98	119	344	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							0.99		0.97			
Frt		0.978				0.850			0.850		0.985	
Flt Protected		0.997			0.983		0.950			0.950		
Satd. Flow (prot)	0	1987	0	0	1697	1573	1581	1697	1624	1678	1719	0
Flt Permitted		0.965			0.838		0.465			0.403		
Satd. Flow (perm)	0	1923	0	0	1446	1573	772	1697	1584	712	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				232			102		10	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Confl. Peds. (#/hr)							4		4			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	9%	0%	0%	0%	2%	1%	4%	2%	0%	0%	1%	3%
Adj. Flow (vph)	11	126	26	135	260	232	51	465	102	124	358	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	163	0	0	395	232	51	465	102	124	399	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	34.0	34.0		34.0	34.0	34.0	36.0	36.0	36.0	36.0	36.0	
Total Split (%)	48.6%	48.6%		48.6%	48.6%	48.6%	51.4%	51.4%	51.4%	51.4%	51.4%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 63.8	
Natural Cycle: 50	

Control Type: Actuated-Uncoordinated

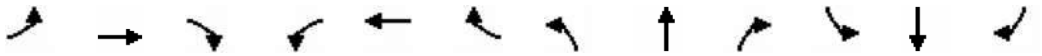
Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	121	25	130	250	223	49	446	98	119	344	39
Future Volume (veh/h)	11	121	25	130	250	223	49	446	98	119	344	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1911	1837	1837	1809	1896	1738	1766	1866	1912	1898	1869
Adj Flow Rate, veh/h	11	126	24	135	260	133	51	465	78	124	358	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	0	0	0	2	1	4	2	0	0	1	3
Cap, veh/h	55	402	70	157	245	666	362	757	675	300	725	75
Arrive On Green	0.40	0.41	0.40	0.40	0.41	0.41	0.43	0.43	0.43	0.43	0.43	0.41
Sat Flow, veh/h	0	970	170	213	592	1607	919	1766	1574	881	1691	175
Grp Volume(v), veh/h	161	0	0	395	0	133	51	465	78	124	0	395
Grp Sat Flow(s),veh/h/ln	1140	0	0	804	0	1607	919	1766	1574	881	0	1866
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.7	3.0	14.3	2.1	8.9	0.0	10.8
Cycle Q Clear(g_c), s	28.0	0.0	0.0	28.0	0.0	3.7	13.2	14.3	2.1	23.2	0.0	10.8
Prop In Lane	0.07		0.15	0.34		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	511	0	0	391	0	666	362	757	675	300	0	800
V/C Ratio(X)	0.32	0.00	0.00	1.01	0.00	0.20	0.14	0.61	0.12	0.41	0.00	0.49
Avail Cap(c_a), veh/h	511	0	0	391	0	666	362	757	675	300	0	800
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.1	0.0	0.0	21.4	0.0	13.1	19.1	15.5	12.0	24.5	0.0	14.5
Incr Delay (d2), s/veh	0.4	0.0	0.0	48.3	0.0	0.1	0.8	3.7	0.3	4.1	0.0	2.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	0.0	17.4	0.0	2.2	1.2	9.4	1.2	3.6	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	14.4	0.0	0.0	69.7	0.0	13.2	19.9	19.2	12.4	28.6	0.0	16.7
LnGrp LOS	B			F		B	B	B	B	C		B
Approach Vol, veh/h		161			528			594			519	
Approach Delay, s/veh		14.4			55.4			18.4			19.6	
Approach LOS		B			E			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		36.0		34.0		36.0		34.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		29.0		28.0		29.0		28.0				
Max Q Clear Time (g_c+I1), s		16.8		30.0		25.7		30.0				
Green Ext Time (p_c), s		7.9		0.0		2.2		0.0				

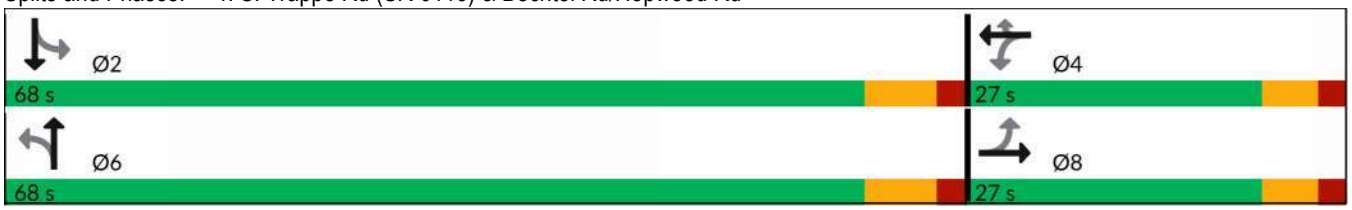
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			29.2									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	52	27	36	76	125	61	563	29	46	444	44
Future Volume (vph)	30	52	27	36	76	125	61	563	29	46	444	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.967				0.850		0.993			0.987	
Flt Protected		0.987			0.984		0.950			0.950		
Satd. Flow (prot)	0	1721	0	0	1719	1500	1507	1785	0	1612	1778	0
Flt Permitted		0.875			0.845		0.440			0.375		
Satd. Flow (perm)	0	1526	0	0	1476	1500	698	1785	0	636	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				134		6			11	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	0%	0%	0%	3%	1%	7%	1%	4%	0%	1%	0%
Adj. Flow (vph)	32	56	29	39	82	134	66	605	31	49	477	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	121	134	66	636	0	49	524	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	68.0	68.0		68.0	68.0	
Total Split (%)	28.4%	28.4%		28.4%	28.4%	28.4%	71.6%	71.6%		71.6%	71.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 86.2	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

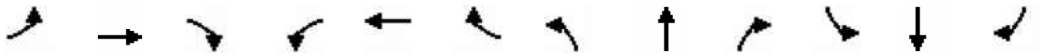
Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	52	27	36	76	125	61	563	29	46	444	44
Future Volume (veh/h)	30	52	27	36	76	125	61	563	29	46	444	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1875	1875	1778	1736	1764	1775	1860	1818	1875	1860	1875
Adj Flow Rate, veh/h	32	56	16	39	82	75	66	605	28	49	477	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	0	0	3	1	7	1	4	0	1	0
Cap, veh/h	82	106	24	106	160	198	623	1300	60	567	1250	102
Arrive On Green	0.12	0.13	0.12	0.12	0.13	0.13	0.74	0.74	0.73	0.74	0.74	0.73
Sat Flow, veh/h	200	800	182	376	1209	1495	840	1764	82	796	1697	139
Grp Volume(v), veh/h	104	0	0	121	0	75	66	0	633	49	0	516
Grp Sat Flow(s),veh/h/ln	1183	0	0	1585	0	1495	840	0	1846	796	0	1835
Q Serve(g_s), s	2.0	0.0	0.0	0.0	0.0	3.9	2.6	0.0	11.6	2.2	0.0	8.7
Cycle Q Clear(g_c), s	7.9	0.0	0.0	6.0	0.0	3.9	10.8	0.0	11.6	13.3	0.0	8.7
Prop In Lane	0.31		0.15	0.32		1.00	1.00		0.04	1.00		0.08
Lane Grp Cap(c), veh/h	198	0	0	248	0	198	623	0	1360	567	0	1352
V/C Ratio(X)	0.52	0.00	0.00	0.49	0.00	0.38	0.11	0.00	0.47	0.09	0.00	0.38
Avail Cap(c_a), veh/h	402	0	0	446	0	391	623	0	1360	567	0	1352
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	34.3	0.0	33.3	5.9	0.0	4.4	7.0	0.0	4.1
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.5	0.0	1.2	0.3	0.0	1.1	0.3	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	0.0	0.0	4.3	0.0	2.6	0.7	0.0	5.3	0.6	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.0	0.0	0.0	35.8	0.0	34.5	6.3	0.0	5.6	7.3	0.0	4.9
LnGrp LOS	D			D		C	A		A	A		A
Approach Vol, veh/h		104			196			699			565	
Approach Delay, s/veh		37.0			35.3			5.7			5.1	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		16.1		68.0		16.1				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		61.0		21.0		61.0		21.0				
Max Q Clear Time (g_c+I1), s		15.8		8.0		13.6		9.9				
Green Ext Time (p_c), s		23.8		0.5		30.6		0.2				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			11.3									
HCM 6th LOS			B									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	108	19	55	240	18	17	37	28	18	35	13
Future Volume (vph)	7	108	19	55	240	18	17	37	28	18	35	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.992			0.955			0.973	
Flt Protected		0.997			0.991			0.990			0.987	
Satd. Flow (prot)	0	1764	0	0	1923	0	0	1674	0	0	1553	0
Flt Permitted		0.997			0.991			0.990			0.987	
Satd. Flow (perm)	0	1764	0	0	1923	0	0	1674	0	0	1553	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5693			3233			2804			1970	
Travel Time (s)		110.9			20.2			22.6			38.4	
Confl. Peds. (#/hr)				1		1				1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	4%	0%	0%	0%	0%	11%	10%	0%	0%
Adj. Flow (vph)	8	121	21	62	270	20	19	42	31	20	39	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	150	0	0	352	0	0	92	0	0	74	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	108	19	55	240	18	17	37	28	18	35	13
Future Vol, veh/h	7	108	19	55	240	18	17	37	28	18	35	13
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	1	0	4	0	0	0	0	11	10	0	0
Mvmt Flow	8	121	21	62	270	20	19	42	31	20	39	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.8	11.3	8.8	9
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	5%	18%	27%
Vol Thru, %	45%	81%	77%	53%
Vol Right, %	34%	14%	6%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	82	134	313	66
LT Vol	17	7	55	18
Through Vol	37	108	240	35
RT Vol	28	19	18	13
Lane Flow Rate	92	151	352	74
Geometry Grp	1	1	1	1
Degree of Util (X)	0.128	0.195	0.446	0.109
Departure Headway (Hd)	4.998	4.651	4.567	5.291
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	713	768	788	673
Service Time	3.061	2.703	2.609	3.357
HCM Lane V/C Ratio	0.129	0.197	0.447	0.11
HCM Control Delay, s/veh	8.8	8.8	11.3	9
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	0.7	2.3	0.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	2	3	75	96	8
Future Volume (vph)	7	2	3	75	96	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973				0.989	
Flt Protected	0.962			0.998		
Satd. Flow (prot)	1726	0	0	1506	1507	0
Flt Permitted	0.962			0.998		
Satd. Flow (perm)	1726	0	0	1506	1507	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	266			1655	1148	
Travel Time (s)	7.3			32.2	22.4	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	0%	0%	3%	2%	0%
Adj. Flow (vph)	8	2	4	90	116	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	94	126	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	3	75	96	8
Future Vol, veh/h	7	2	3	75	96	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	14	0	0	3	2	0
Mvmt Flow	8	2	4	90	116	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	219	121	126	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	98	-	-	-	-	-
Critical Hdwy	6.34	6.1	4.3	-	-	-
Critical Hdwy Stg 1	5.34	-	-	-	-	-
Critical Hdwy Stg 2	5.34	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	866	996	1087	-	-	-
Stage 1	1022	-	-	-	-	-
Stage 2	1047	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	863	996	1087	-	-	-
Mov Cap-2 Maneuver	863	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1047	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1087	-	889	-	-
HCM Lane V/C Ratio	0.003	-	0.012	-	-
HCM Control Delay (s/veh)	8.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	6	0	22	2	56	9	31	60	8
Future Volume (vph)	1	0	0	6	0	22	2	56	9	31	60	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	8	12	12	12	12	12	9	12	12	8	12
Grade (%)		-3%			0%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.895			0.982			0.989	
Flt Protected		0.950			0.989			0.998			0.985	
Satd. Flow (prot)	0	1504	0	0	1562	0	0	1584	0	0	1502	0
Flt Permitted		0.950			0.989			0.998			0.985	
Satd. Flow (perm)	0	1504	0	0	1562	0	0	1584	0	0	1502	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		582			209			363			2804	
Travel Time (s)		11.3			4.8			21.8			32.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	0%	2%	2%	0%	13%
Adj. Flow (vph)	1	0	0	8	0	28	3	70	11	39	75	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	36	0	0	84	0	0	124	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	6	0	22	2	56	9	31	60	8
Future Vol, veh/h	1	0	0	6	0	22	2	56	9	31	60	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	0	-	-	0	-	-	-1	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	13
Mvmt Flow	1	0	0	8	0	28	3	70	11	39	75	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	254	245	80	240	245	76	85	0	0	81	0	0
Stage 1	158	158	-	82	82	-	-	-	-	-	-	-
Stage 2	96	87	-	158	163	-	-	-	-	-	-	-
Critical Hdwy	6.5	5.92	5.9	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.5	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3	4.018	3.1	3	4.018	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	842	684	1054	824	657	1052	1123	-	-	1127	-	-
Stage 1	1006	787	-	1080	827	-	-	-	-	-	-	-
Stage 2	1078	835	-	979	763	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	796	657	1054	799	631	1052	1123	-	-	1127	-	-
Mov Cap-2 Maneuver	796	657	-	799	631	-	-	-	-	-	-	-
Stage 1	1003	759	-	1077	825	-	-	-	-	-	-	-
Stage 2	1047	832	-	944	736	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.5	8.8	0.2	2.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	796	985	1127	-	-
HCM Lane V/C Ratio	0.002	-	-	0.002	0.036	0.034	-	-
HCM Control Delay (s/veh)	8.2	0	-	9.5	8.8	8.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0.1	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	154	304	48	33	29
Future Volume (vph)	18	154	304	48	33	29
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.982		0.937	
Flt Protected		0.995			0.974	
Satd. Flow (prot)	0	1630	1603	0	1541	0
Flt Permitted		0.995			0.974	
Satd. Flow (perm)	0	1630	1603	0	1541	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3884	642		1474	
Travel Time (s)		66.2	14.7		14.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	19	160	317	50	34	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	179	367	0	64	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

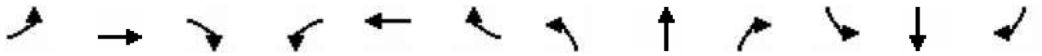
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	154	304	48	33	29
Future Vol, veh/h	18	154	304	48	33	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	19	160	317	50	34	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	367	0	-	0	540	342
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	198	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	899	-	-	-	588	751
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	978	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	899	-	-	-	574	751
Mov Cap-2 Maneuver	-	-	-	-	574	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	978	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	899	-	-	-	645
HCM Lane V/C Ratio	0.021	-	-	-	0.1
HCM Control Delay (s/veh)	9.1	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	98	14	22	229	71	14	36	11	32	33	16
Future Volume (vph)	15	98	14	22	229	71	14	36	11	32	33	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.970			0.975			0.973	
Flt Protected		0.994			0.997			0.989			0.981	
Satd. Flow (prot)	0	1687	0	0	1679	0	0	1727	0	0	1735	0
Flt Permitted		0.994			0.997			0.989			0.981	
Satd. Flow (perm)	0	1687	0	0	1679	0	0	1727	0	0	1735	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1970			4679	
Travel Time (s)		6.8			56.8			38.4			91.1	
Confl. Peds. (#/hr)				8		8	1		1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	105	15	24	246	76	15	39	12	34	35	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	346	0	0	66	0	0	86	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	98	14	22	229	71	14	36	11	32	33	16
Future Vol, veh/h	15	98	14	22	229	71	14	36	11	32	33	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	16	105	15	24	246	76	15	39	12	34	35	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	10.4	8.6	8.8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	12%	7%	40%
Vol Thru, %	59%	77%	71%	41%
Vol Right, %	18%	11%	22%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	61	127	322	81
LT Vol	14	15	22	32
Through Vol	36	98	229	33
RT Vol	11	14	71	16
Lane Flow Rate	66	137	346	87
Geometry Grp	1	1	1	1
Degree of Util (X)	0.092	0.175	0.416	0.122
Departure Headway (Hd)	5.032	4.615	4.323	5.022
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	708	774	831	711
Service Time	3.087	2.658	2.356	3.075
HCM Lane V/C Ratio	0.093	0.177	0.416	0.122
HCM Control Delay, s/veh	8.6	8.6	10.4	8.8
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.3	0.6	2.1	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	94	55	14	141	84	7
Future Volume (vph)	94	55	14	141	84	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.950				0.989	
Flt Protected				0.996	0.956	
Satd. Flow (prot)	1701	0	0	1770	1606	0
Flt Permitted				0.996	0.956	
Satd. Flow (perm)	1701	0	0	1770	1606	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	101	59	15	152	90	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	160	0	0	167	98	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	55	14	141	84	7
Future Vol, veh/h	94	55	14	141	84	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	101	59	15	152	90	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	160	0	313	131
Stage 1	-	-	-	-	131	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	-	-	4.3	-	7.01	6.5
Critical Hdwy Stg 1	-	-	-	-	6.01	-
Critical Hdwy Stg 2	-	-	-	-	6.01	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1059	-	741	969
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	954	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1059	-	730	969
Mov Cap-2 Maneuver	-	-	-	-	730	-
Stage 1	-	-	-	-	1018	-
Stage 2	-	-	-	-	940	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.8	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1059	-
HCM Lane V/C Ratio	0.132	-	-	0.014	-
HCM Control Delay (s/veh)	10.6	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.5	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	163	322	18	18	19
Future Volume (vph)	5	163	322	18	18	19
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1695	1653	0	1727	1751
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1695	1653	0	1727	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3884		678	
Travel Time (s)		38.0	66.2		18.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	170	335	19	19	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	175	354	0	19	20
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	163	322	18	18	19
Future Vol, veh/h	5	163	322	18	18	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	170	335	19	19	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	335	0	-	0	525	345
Stage 1	-	-	-	-	345	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	4.3	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	922	-	-	-	618	755
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	1006	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	922	-	-	-	614	755
Mov Cap-2 Maneuver	-	-	-	-	614	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	1006	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	922	-	-	-	614	755
HCM Lane V/C Ratio	0.006	-	-	-	0.031	0.026
HCM Control Delay (s/veh)	8.9	0	-	-	11	9.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q (veh)	0	-	-	-	0.1	0.1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	116	259	85	54	50
Future Volume (vph)	34	116	259	85	54	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.967		0.935	
Flt Protected		0.989			0.975	
Satd. Flow (prot)	0	1670	1605	0	1561	0
Flt Permitted		0.989			0.975	
Satd. Flow (perm)	0	1670	1605	0	1561	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	2%	0%
Adj. Flow (vph)	35	121	270	89	56	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	156	359	0	108	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	34	116	259	85	54	50
Future Vol, veh/h	34	116	259	85	54	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	5	2	0
Mvmt Flow	35	121	270	89	56	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	359	0	-	0	506	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	191	-
Critical Hdwy	4.3	-	-	-	5.22	5.6
Critical Hdwy Stg 1	-	-	-	-	4.22	-
Critical Hdwy Stg 2	-	-	-	-	4.22	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	904	-	-	-	706	812
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	1038	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	904	-	-	-	676	812
Mov Cap-2 Maneuver	-	-	-	-	676	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	1038	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.1	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	904	-	-	-	735
HCM Lane V/C Ratio	0.039	-	-	-	0.147
HCM Control Delay (s/veh)	9.1	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	1	3	0	4	2	406	3	4	509	5
Future Volume (vph)	5	1	1	3	0	4	2	406	3	4	509	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.923			0.999			0.999	
Flt Protected		0.966			0.979							
Satd. Flow (prot)	0	1748	0	0	1862	0	0	1754	0	0	1764	0
Flt Permitted		0.966			0.979							
Satd. Flow (perm)	0	1748	0	0	1862	0	0	1754	0	0	1764	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		378			228			362			1352	
Travel Time (s)		7.1			6.2			5.5			20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	5	1	1	3	0	4	2	423	3	4	530	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	7	0	0	428	0	0	539	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	1	3	0	4	2	406	3	4	509	5
Future Vol, veh/h	5	1	1	3	0	4	2	406	3	4	509	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	5	1	1	3	0	4	2	423	3	4	530	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	972	971	533	971	972	425	535	0	0	426	0	0
Stage 1	541	541	-	429	429	-	-	-	-	-	-	-
Stage 2	431	430	-	542	543	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	6.7	6.1	6	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	337	334	623	287	284	683	785	-	-	857	-	-
Stage 1	693	609	-	724	616	-	-	-	-	-	-	-
Stage 2	776	661	-	632	555	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	332	331	623	284	281	683	785	-	-	857	-	-
Mov Cap-2 Maneuver	332	331	-	284	281	-	-	-	-	-	-	-
Stage 1	691	605	-	722	614	-	-	-	-	-	-	-
Stage 2	769	659	-	625	551	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.3	13.6	0	0.1
HCM LOS	C	B		

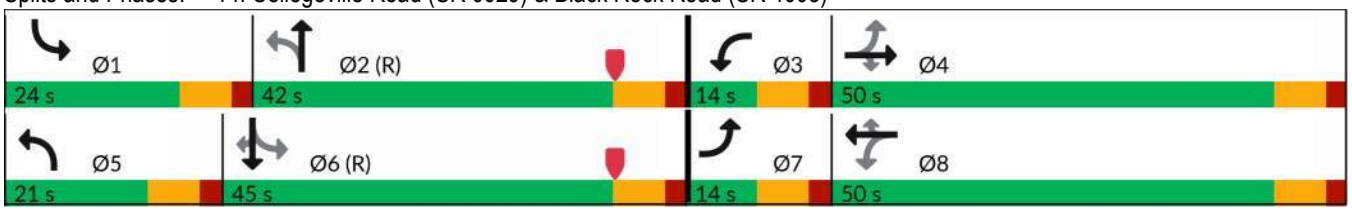
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	785	-	-	356	426	857	-	-
HCM Lane V/C Ratio	0.003	-	-	0.02	0.017	0.005	-	-
HCM Control Delay (s/veh)	9.6	0	-	15.3	13.6	9.2	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	182	102	81	407	203	164	522	22	137	437	140
Future Volume (vph)	127	182	102	81	407	203	164	522	22	137	437	140
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor										0.99		0.97
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1800	1665	1701	1773	1608	1678	3450	0	1551	3335	1477
Flt Permitted	0.186			0.543			0.405			0.323		
Satd. Flow (perm)	332	1800	1665	973	1773	1608	715	3450	0	527	3335	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			221		3				152
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	0%	0%	5%	1%	2%
Adj. Flow (vph)	138	198	111	88	442	221	178	567	24	149	475	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	198	111	88	442	221	178	591	0	149	475	152
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	11.0	11.0	11.0	11.0	11.0	11.0	23.0		11.0	23.0	23.0
Total Split (s)	14.0	50.0	50.0	14.0	50.0	50.0	21.0	42.0		24.0	45.0	45.0
Total Split (%)	10.8%	38.5%	38.5%	10.8%	38.5%	38.5%	16.2%	32.3%		18.5%	34.6%	34.6%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	182	102	81	407	203	164	522	22	137	437	140
Future Volume (veh/h)	127	182	102	81	407	203	164	522	22	137	437	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1921	2027	1794	1780	1852	1912	1912	1912	1680	1736	1722
Adj Flow Rate, veh/h	138	198	61	88	442	89	178	567	21	149	475	120
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	1	1	0	0	0	5	1	2
Cap, veh/h	201	533	477	368	493	434	454	1410	52	396	1294	572
Arrive On Green	0.06	0.28	0.28	0.06	0.28	0.28	0.08	0.39	0.39	0.08	0.39	0.39
Sat Flow, veh/h	1816	1921	1718	1709	1780	1569	1821	3572	132	1600	3298	1457
Grp Volume(v), veh/h	138	198	61	88	442	89	178	288	300	149	475	120
Grp Sat Flow(s),veh/h/ln	1816	1921	1718	1709	1780	1569	1821	1816	1888	1600	1649	1457
Q Serve(g_s), s	7.1	10.8	3.5	4.7	31.1	5.7	7.4	14.8	14.9	7.0	13.3	7.1
Cycle Q Clear(g_c), s	7.1	10.8	3.5	4.7	31.1	5.7	7.4	14.8	14.9	7.0	13.3	7.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	201	533	477	368	493	434	454	717	745	396	1294	572
V/C Ratio(X)	0.69	0.37	0.13	0.24	0.90	0.20	0.39	0.40	0.40	0.38	0.37	0.21
Avail Cap(c_a), veh/h	201	650	581	370	603	531	509	717	745	486	1294	572
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.2	37.8	35.2	30.6	45.2	36.1	20.6	28.3	28.3	20.8	28.0	26.2
Incr Delay (d2), s/veh	9.4	0.4	0.1	0.3	14.2	0.2	0.6	1.7	1.6	0.6	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.5	8.8	2.6	3.5	21.8	3.9	5.6	10.8	11.2	4.7	9.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.6	38.2	35.3	30.9	59.5	36.3	21.1	30.0	29.9	21.4	28.9	27.0
LnGrp LOS	D	D	D	C	E	D	C	C	C	C	C	C
Approach Vol, veh/h		397			619			766			744	
Approach Delay, s/veh		40.0			52.1			27.9			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	57.3	13.9	42.1	17.0	57.0	14.0	42.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	17.0	35.0	7.0	43.0	14.0	38.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	9.5	17.3	7.2	13.3	9.9	15.8	9.6	33.6
Green Ext Time (p_c), s	0.2	1.8	0.0	0.9	0.2	2.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	35.5
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	199	205	80	245	245	59
Future Volume (vph)	199	205	80	245	245	59
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932					0.850
Flt Protected				0.988	0.950	
Satd. Flow (prot)	1558	0	0	1660	1557	1522
Flt Permitted				0.988	0.950	
Satd. Flow (perm)	1558	0	0	1660	1557	1522
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5693	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	240	247	96	295	295	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	487	0	0	391	295	71
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	21.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	199	205	80	245	245	59
Future Vol, veh/h	199	205	80	245	245	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	1	0	0	2	0
Mvmt Flow	240	247	96	295	295	71

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	487	0	851	364
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	-	-	4.3	-	6.62	6.3
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	816	-	350	715
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	816	-	301	715
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.5	70.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	715	-	-	816	-
HCM Lane V/C Ratio	0.981	0.099	-	-	0.118	-
HCM Control Delay (s/veh)	85.4	10.6	-	-	10	0
HCM Lane LOS	F	B	-	-	B	A
HCM 95th %tile Q (veh)	10.2	0.3	-	-	0.4	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	8	11	341	166	55
Future Volume (vph)	38	8	11	341	166	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	12
Grade (%)	0%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976				0.966	
Flt Protected	0.961			0.998		
Satd. Flow (prot)	1655	0	0	1788	1652	0
Flt Permitted	0.961			0.998		
Satd. Flow (perm)	1655	0	0	1788	1652	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	129			431	3148	
Travel Time (s)	2.9			9.8	56.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	41	9	12	371	180	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	383	240	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	8	11	341	166	55
Future Vol, veh/h	38	8	11	341	166	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-3	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	41	9	12	371	180	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	605	210	240	0	-	0
Stage 1	210	-	-	-	-	-
Stage 2	395	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	519	883	994	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	777	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	511	883	994	-	-	-
Mov Cap-2 Maneuver	511	-	-	-	-	-
Stage 1	939	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	994	-	551	-	-
HCM Lane V/C Ratio	0.012	-	0.091	-	-
HCM Control Delay (s/veh)	8.7	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	3	4	375	218	11
Future Volume (vph)	9	3	4	375	218	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	0%			0%	-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969				0.993	
Flt Protected	0.963					
Satd. Flow (prot)	1647	0	0	1765	1795	0
Flt Permitted	0.963					
Satd. Flow (perm)	1647	0	0	1765	1795	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	161			3148	362	
Travel Time (s)	3.7			15.3	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	10	3	4	408	237	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	412	249	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	3	4	375	218	11
Future Vol, veh/h	9	3	4	375	218	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	10	3	4	408	237	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	659	243	249	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	416	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	482	846	987	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	759	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	480	846	987	-	-	-
Mov Cap-2 Maneuver	480	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	759	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	987	-	538	-	-
HCM Lane V/C Ratio	0.004	-	0.024	-	-
HCM Control Delay (s/veh)	8.7	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	3	4	63	58	8
Future Volume (vph)	4	3	4	63	58	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	9	9	12
Grade (%)	0%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.983	
Flt Protected	0.972			0.997		
Satd. Flow (prot)	1616	0	0	1605	1581	0
Flt Permitted	0.972			0.997		
Satd. Flow (perm)	1616	0	0	1605	1581	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	168			1474	363	
Travel Time (s)	3.8			29.6	6.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	4	3	4	68	63	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	72	72	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	3	4	63	58	8
Future Vol, veh/h	4	3	4	63	58	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	4	3	4	68	63	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	144	68	72	0	-	0
Stage 1	68	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	985	1063	1134	-	-	-
Stage 1	1114	-	-	-	-	-
Stage 2	1105	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1063	1134	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1110	-	-	-	-	-
Stage 2	1105	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.6	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1134	-	1015	-	-
HCM Lane V/C Ratio	0.004	-	0.007	-	-
HCM Control Delay (s/veh)	8.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2	0	6	1	0	5
Future Volume (vph)	2	0	6	1	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12
Grade (%)	-2%			5%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.958		
Satd. Flow (prot)	1697	0	0	1542	1526	0
Flt Permitted				0.958		
Satd. Flow (perm)	1697	0	0	1542	1526	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	238			378	223	
Travel Time (s)	6.5			8.6	5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%
Adj. Flow (vph)	2	0	7	1	0	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	8	5	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	0	6	1	0	5
Future Vol, veh/h	2	0	6	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	5	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	2
Mvmt Flow	2	0	7	1	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	17	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.3	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1198	-	1172	1158
Stage 1	-	-	-	-	1197	-
Stage 2	-	-	-	-	1181	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1198	-	1165	1158
Mov Cap-2 Maneuver	-	-	-	-	1165	-
Stage 1	-	-	-	-	1197	-
Stage 2	-	-	-	-	1174	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	6.9	8.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1158	-	-	1198	-
HCM Lane V/C Ratio	0.005	-	-	0.005	-
HCM Control Delay (s/veh)	8.1	-	-	8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	160	334	24	16	18
Future Volume (vph)	27	160	334	24	16	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	12
Grade (%)		-3%	3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.927	
Flt Protected		0.993			0.978	
Satd. Flow (prot)	0	1674	1623	0	1600	0
Flt Permitted		0.993			0.978	
Satd. Flow (perm)	0	1674	1623	0	1600	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		642	654		130	
Travel Time (s)		19.6	9.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%
Adj. Flow (vph)	29	174	363	26	17	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	203	389	0	37	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

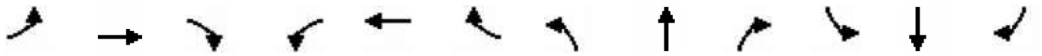
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	160	334	24	16	18
Future Vol, veh/h	27	160	334	24	16	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2
Mvmt Flow	29	174	363	26	17	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	389	0	-	0	608	376
Stage 1	-	-	-	-	376	-
Stage 2	-	-	-	-	232	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	883	-	-	-	517	710
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	931	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	883	-	-	-	498	710
Mov Cap-2 Maneuver	-	-	-	-	498	-
Stage 1	-	-	-	-	765	-
Stage 2	-	-	-	-	931	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.3	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	883	-	-	-	592
HCM Lane V/C Ratio	0.033	-	-	-	0.062
HCM Control Delay (s/veh)	9.2	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2

2028 Projected Conditions With AWSC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	36	14	229	13	54	2	90	218	143	177	15
Future Volume (vph)	30	36	14	229	13	54	2	90	218	143	177	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.975			0.905			0.994	
Flt Protected		0.982			0.963						0.979	
Satd. Flow (prot)	0	1498	0	0	1478	0	0	1568	0	0	1668	0
Flt Permitted		0.982			0.963						0.979	
Satd. Flow (perm)	0	1498	0	0	1478	0	0	1568	0	0	1668	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		653			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	35	42	16	266	15	63	2	105	253	166	206	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	93	0	0	344	0	0	360	0	0	389	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	18.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	36	14	229	13	54	2	90	218	143	177	15
Future Vol, veh/h	30	36	14	229	13	54	2	90	218	143	177	15
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	9	9	7	7	38	13	0	3	5	2	2	25
Mvmt Flow	35	42	16	266	15	63	2	105	253	166	206	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	12	19.9	16.6	21.1
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	38%	77%	43%
Vol Thru, %	29%	45%	4%	53%
Vol Right, %	70%	18%	18%	4%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	310	80	296	335
LT Vol	2	30	229	143
Through Vol	90	36	13	177
RT Vol	218	14	54	15
Lane Flow Rate	360	93	344	390
Geometry Grp	1	1	1	1
Degree of Util (X)	0.58	0.187	0.624	0.671
Departure Headway (Hd)	5.796	7.225	6.525	6.203
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	620	494	551	580
Service Time	3.85	5.303	4.579	4.257
HCM Lane V/C Ratio	0.581	0.188	0.624	0.672
HCM Control Delay, s/veh	16.6	12	19.9	21.1
HCM Lane LOS	C	B	C	C
HCM 95th-tile Q	3.7	0.7	4.3	5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	31	8	272	42	148	8	178	237	41	101	31
Future Volume (vph)	26	31	8	272	42	148	8	178	237	41	101	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.957			0.924			0.976	
Flt Protected		0.980			0.971			0.999			0.988	
Satd. Flow (prot)	0	1526	0	0	1582	0	0	1663	0	0	1693	0
Flt Permitted		0.980			0.971			0.999			0.988	
Satd. Flow (perm)	0	1526	0	0	1582	0	0	1663	0	0	1693	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		654			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	27	32	8	280	43	153	8	184	244	42	104	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	67	0	0	476	0	0	436	0	0	178	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

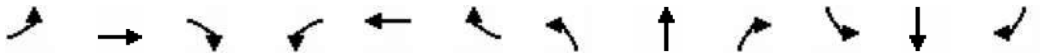
Intersection	
Intersection Delay, s/veh	20.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	31	8	272	42	148	8	178	237	41	101	31
Future Vol, veh/h	26	31	8	272	42	148	8	178	237	41	101	31
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles, %	18	0	0	1	3	1	0	1	0	0	1	0
Mvmt Flow	27	32	8	280	43	153	8	184	244	42	104	32
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.2	24.8	20	12.4
HCM LOS	B	C	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	2%	40%	59%	24%
Vol Thru, %	42%	48%	9%	58%
Vol Right, %	56%	12%	32%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	423	65	462	173
LT Vol	8	26	272	41
Through Vol	178	31	42	101
RT Vol	237	8	148	31
Lane Flow Rate	436	67	476	178
Geometry Grp	1	1	1	1
Degree of Util (X)	0.685	0.132	0.758	0.317
Departure Headway (Hd)	5.654	7.111	5.851	6.395
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	645	504	624	564
Service Time	3.654	5.155	3.851	4.416
HCM Lane V/C Ratio	0.676	0.133	0.763	0.316
HCM Control Delay, s/veh	20	11.2	24.8	12.4
HCM Lane LOS	C	B	C	B
HCM 95th-tile Q	5.4	0.5	6.9	1.4

2033 Projected Conditions



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	37	14	232	13	54	2	91	221	144	180	15
Future Volume (vph)	30	37	14	232	13	54	2	91	221	144	180	15
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.976			0.905			0.994	
Flt Protected		0.982			0.963						0.979	
Satd. Flow (prot)	0	1498	0	0	1480	0	0	1568	0	0	1669	0
Flt Permitted		0.982			0.963						0.979	
Satd. Flow (perm)	0	1498	0	0	1480	0	0	1568	0	0	1669	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		653			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	9%	9%	7%	7%	38%	13%	0%	3%	5%	2%	2%	25%
Adj. Flow (vph)	35	43	16	270	15	63	2	106	257	167	209	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	94	0	0	348	0	0	365	0	0	393	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

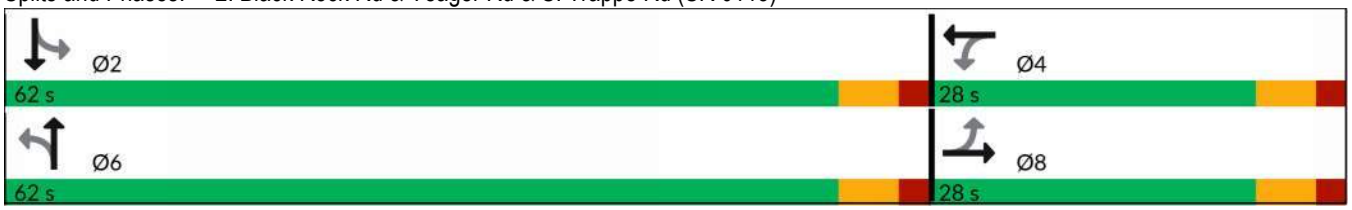
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	94	348	365	393
Demand Flow Rate, veh/h	102	381	381	404
Vehicles Circulating, veh/h	672	149	255	312
Vehicles Exiting, veh/h	44	487	519	218
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	6.5	7.3	8.2
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	102	381	381	404
Cap Entry Lane, veh/h	695	1185	1064	1004
Entry HV Adj Factor	0.923	0.914	0.958	0.972
Flow Entry, veh/h	94	348	365	393
Cap Entry, veh/h	642	1083	1019	976
V/C Ratio	0.147	0.321	0.358	0.402
Control Delay, s/veh	7.3	6.5	7.3	8.2
LOS	A	A	A	A
95th %tile Queue, veh	1	1	2	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	301	19	98	146	96	21	305	141	246	229	13
Future Volume (vph)	55	301	19	98	146	96	21	305	141	246	229	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991			0.940			0.953			0.992	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1536	1790	0	1457	1718	0	1220	1693	0	1611	1656	0
Flt Permitted	0.414			0.269			0.583			0.415		
Satd. Flow (perm)	669	1790	0	413	1718	0	749	1693	0	704	1656	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			35			50			6	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3233			4738			1352			1539	
Travel Time (s)		63.0			71.8			23.0			26.2	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	6%	5%	0%	14%	4%	8%	43%	4%	2%	4%	6%	0%
Adj. Flow (vph)	62	338	21	110	164	108	24	343	158	276	257	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	359	0	110	272	0	24	501	0	276	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	28.0	28.0		28.0	28.0		62.0	62.0		62.0	62.0	
Total Split (%)	31.1%	31.1%		31.1%	31.1%		68.9%	68.9%		68.9%	68.9%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	301	19	98	146	96	21	305	141	246	229	13
Future Volume (veh/h)	55	301	19	98	146	96	21	305	141	246	229	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1666	1747	1750	1638	1852	1724	1338	1892	1921	1655	1626	1711
Adj Flow Rate, veh/h	62	338	17	110	164	97	24	343	129	276	257	14
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	6	5	0	14	4	8	43	4	2	4	6	0
Cap, veh/h	208	421	21	142	279	165	528	830	312	494	968	53
Arrive On Green	0.26	0.26	0.24	0.26	0.26	0.24	0.63	0.63	0.62	0.63	0.63	0.62
Sat Flow, veh/h	996	1649	83	899	1091	645	793	1311	493	815	1528	83
Grp Volume(v), veh/h	62	0	355	110	0	261	24	0	472	276	0	271
Grp Sat Flow(s),veh/h/ln	996	0	1732	899	0	1736	793	0	1803	815	0	1611
Q Serve(g_s), s	5.2	0.0	17.3	6.2	0.0	11.9	1.2	0.0	11.8	22.7	0.0	6.7
Cycle Q Clear(g_c), s	16.6	0.0	17.3	23.0	0.0	11.9	7.4	0.0	11.8	33.9	0.0	6.7
Prop In Lane	1.00		0.05	1.00		0.37	1.00		0.27	1.00		0.05
Lane Grp Cap(c), veh/h	208	0	443	142	0	444	528	0	1142	494	0	1021
V/C Ratio(X)	0.30	0.00	0.80	0.77	0.00	0.59	0.05	0.00	0.41	0.56	0.00	0.27
Avail Cap(c_a), veh/h	208	0	443	142	0	444	528	0	1142	494	0	1021
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.4	0.0	31.4	43.2	0.0	29.5	8.8	0.0	8.3	16.5	0.0	7.3
Incr Delay (d2), s/veh	0.8	0.0	10.2	22.8	0.0	2.0	0.2	0.0	1.1	4.5	0.0	0.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	0.0	12.9	5.9	0.0	8.5	0.4	0.0	7.4	7.8	0.0	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	37.2	0.0	41.6	66.1	0.0	31.6	9.0	0.0	9.4	21.0	0.0	7.9
LnGrp LOS	D		D	E		C	A		A	C		A
Approach Vol, veh/h		417			371			496			547	
Approach Delay, s/veh		40.9			41.8			9.4			14.5	
Approach LOS		D			D			A			B	

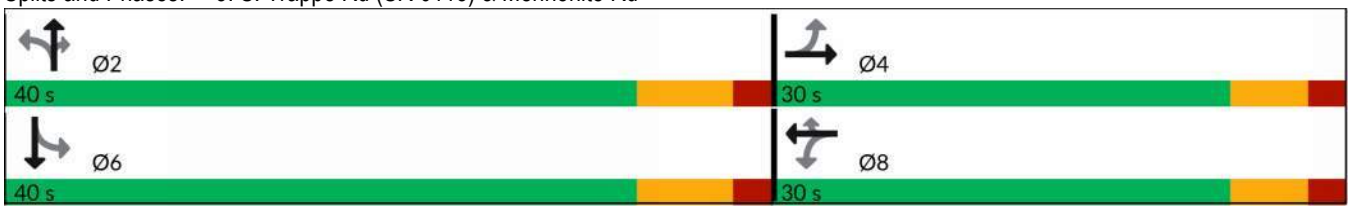
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		62.0		28.0		62.0		28.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		56.0		22.0		56.0		22.0				
Max Q Clear Time (g_c+I1), s		36.4		25.5		13.8		19.3				
Green Ext Time (p_c), s		10.1		0.0		19.4		0.6				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			24.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	179	50	41	37	32	14	301	113	134	405	21
Future Volume (vph)	39	179	50	41	37	32	14	301	113	134	405	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.975				0.850			0.850		0.993	
Flt Protected		0.993			0.975		0.950			0.950		
Satd. Flow (prot)	0	1929	0	0	1586	1406	1443	1649	1547	1645	1689	0
Flt Permitted		0.940			0.690		0.448			0.561		
Satd. Flow (perm)	0	1826	0	0	1123	1406	680	1649	1547	971	1689	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				62			124		5	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	5%	1%	8%	7%	8%	13%	14%	5%	5%	2%	4%	0%
Adj. Flow (vph)	43	197	55	45	41	35	15	331	124	147	445	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	295	0	0	86	35	15	331	124	147	468	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	30.0	30.0		30.0	30.0	30.0	40.0	40.0	40.0	40.0	40.0	
Total Split (%)	42.9%	42.9%		42.9%	42.9%	42.9%	57.1%	57.1%	57.1%	57.1%	57.1%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 60.4	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

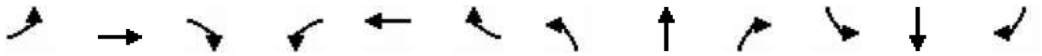
Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	179	50	41	37	32	14	301	113	134	405	21
Future Volume (veh/h)	39	179	50	41	37	32	14	301	113	134	405	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1766	1896	1724	1738	1724	1719	1598	1724	1793	1883	1855	1912
Adj Flow Rate, veh/h	43	197	41	45	41	13	15	331	97	147	445	20
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	5	1	8	7	8	13	14	5	5	2	4	0
Cap, veh/h	111	288	56	214	167	313	494	1023	902	606	1045	47
Arrive On Green	0.20	0.21	0.20	0.20	0.21	0.21	0.59	0.59	0.59	0.59	0.59	0.58
Sat Flow, veh/h	179	1342	260	553	777	1456	792	1724	1520	966	1761	79
Grp Volume(v), veh/h	281	0	0	86	0	13	15	331	97	147	0	465
Grp Sat Flow(s),veh/h/ln	1780	0	0	1330	0	1456	792	1724	1520	966	0	1841
Q Serve(g_s), s	4.8	0.0	0.0	0.0	0.0	0.4	0.6	5.5	1.6	5.2	0.0	7.9
Cycle Q Clear(g_c), s	8.5	0.0	0.0	2.6	0.0	0.4	8.0	5.5	1.6	10.7	0.0	7.9
Prop In Lane	0.15		0.15	0.52		1.00	1.00		1.00	1.00		0.04
Lane Grp Cap(c), veh/h	424	0	0	358	0	313	494	1023	902	606	0	1092
V/C Ratio(X)	0.66	0.00	0.00	0.24	0.00	0.04	0.03	0.32	0.11	0.24	0.00	0.43
Avail Cap(c_a), veh/h	811	0	0	644	0	635	494	1023	902	606	0	1092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.1	0.0	0.0	18.9	0.0	17.8	8.4	5.9	5.1	8.6	0.0	6.4
Incr Delay (d2), s/veh	1.8	0.0	0.0	0.3	0.0	0.1	0.1	0.8	0.2	0.9	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	0.0	0.0	1.7	0.0	0.2	0.2	2.6	0.7	1.7	0.0	3.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	22.9	0.0	0.0	19.2	0.0	17.9	8.5	6.7	5.3	9.5	0.0	7.6
LnGrp LOS	C			B		B	A	A	A	A		A
Approach Vol, veh/h		281			99			443			612	
Approach Delay, s/veh		22.9			19.0			6.5			8.0	
Approach LOS		C			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.0		17.3		40.0		17.3				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		33.0		24.0		33.0		24.0				
Max Q Clear Time (g_c+I1), s		10.5		10.5		13.2		4.6				
Green Ext Time (p_c), s		9.5		0.8		12.0		0.3				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			11.2									
HCM 6th LOS			B									

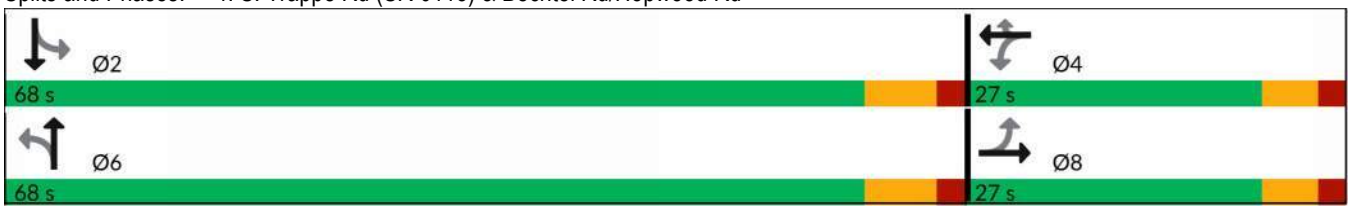


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	49	40	32	59	45	15	329	31	66	441	21
Future Volume (vph)	60	49	40	32	59	45	15	329	31	66	441	21
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor										0.99	0.99	
Frt		0.964				0.850		0.987			0.993	
Flt Protected		0.980			0.983		0.950			0.950		
Satd. Flow (prot)	0	1652	0	0	1688	1515	1507	1717	0	1580	1753	0
Flt Permitted		0.824			0.818		0.435			0.510		
Satd. Flow (perm)	0	1389	0	0	1405	1515	690	1717	0	848	1753	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				51		10			5	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	6%	3%	7%	2%	0%	7%	4%	10%	2%	3%	0%
Adj. Flow (vph)	67	55	45	36	66	51	17	370	35	74	496	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	167	0	0	102	51	17	405	0	74	520	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	68.0	68.0		68.0	68.0	
Total Split (%)	28.4%	28.4%		28.4%	28.4%	28.4%	71.6%	71.6%		71.6%	71.6%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 88.7	
Natural Cycle: 40	

Control Type: Actuated-Uncoordinated

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	49	40	32	59	45	15	329	31	66	441	21
Future Volume (veh/h)	60	49	40	32	59	45	15	329	31	66	441	21
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1789	1832	1679	1750	1778	1775	1818	1732	1846	1832	1875
Adj Flow Rate, veh/h	67	55	25	36	66	22	17	370	34	74	496	21
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	3	6	3	7	2	0	7	4	10	2	3	0
Cap, veh/h	129	93	33	118	188	244	588	1167	107	696	1242	53
Arrive On Green	0.15	0.16	0.15	0.15	0.16	0.16	0.71	0.71	0.70	0.71	0.71	0.70
Sat Flow, veh/h	422	576	205	383	1164	1507	839	1640	151	968	1745	74
Grp Volume(v), veh/h	147	0	0	102	0	22	17	0	404	74	0	517
Grp Sat Flow(s),veh/h/ln	1202	0	0	1547	0	1507	839	0	1791	968	0	1819
Q Serve(g_s), s	6.1	0.0	0.0	0.0	0.0	1.1	0.7	0.0	7.3	2.6	0.0	10.0
Cycle Q Clear(g_c), s	10.8	0.0	0.0	4.8	0.0	1.1	10.2	0.0	7.3	9.5	0.0	10.0
Prop In Lane	0.46		0.17	0.35		1.00	1.00		0.08	1.00		0.04
Lane Grp Cap(c), veh/h	241	0	0	289	0	244	588	0	1274	696	0	1294
V/C Ratio(X)	0.61	0.00	0.00	0.35	0.00	0.09	0.03	0.00	0.32	0.11	0.00	0.40
Avail Cap(c_a), veh/h	373	0	0	427	0	380	588	0	1274	696	0	1294
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.8	0.0	0.0	32.7	0.0	31.0	7.0	0.0	4.7	6.3	0.0	5.1
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.7	0.0	0.2	0.1	0.0	0.7	0.3	0.0	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	0.0	0.0	3.5	0.0	0.7	0.2	0.0	3.6	0.9	0.0	5.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.3	0.0	0.0	33.4	0.0	31.2	7.1	0.0	5.3	6.7	0.0	6.0
LnGrp LOS	D			C		C	A		A	A		A
Approach Vol, veh/h		147			124			421			591	
Approach Delay, s/veh		38.3			33.0			5.4			6.1	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		68.0		19.1		68.0		19.1				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		61.0		21.0		61.0		21.0				
Max Q Clear Time (g_c+I1), s		12.0		6.8		12.7		12.8				
Green Ext Time (p_c), s		25.2		0.3		18.1		0.3				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			12.2									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	263	13	12	196	16	22	46	54	25	20	10
Future Volume (vph)	12	263	13	12	196	16	22	46	54	25	20	10
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.990			0.940			0.976	
Flt Protected		0.998			0.997			0.991			0.978	
Satd. Flow (prot)	0	1742	0	0	1846	0	0	1651	0	0	1467	0
Flt Permitted		0.998			0.997			0.991			0.978	
Satd. Flow (perm)	0	1742	0	0	1846	0	0	1651	0	0	1467	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5693			3233			2804			1970	
Travel Time (s)		110.9			20.2			22.6			38.4	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles (%)	8%	3%	10%	0%	5%	14%	10%	0%	4%	10%	0%	20%
Adj. Flow (vph)	14	299	15	14	223	18	25	52	61	28	23	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	328	0	0	255	0	0	138	0	0	62	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	263	13	12	196	16	22	46	54	25	20	10
Future Vol, veh/h	12	263	13	12	196	16	22	46	54	25	20	10
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	8	3	10	0	5	14	10	0	4	10	0	20
Mvmt Flow	14	299	15	14	223	18	25	52	61	28	23	11
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	11.8	10.4	9.8	9.4
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	4%	5%	45%
Vol Thru, %	38%	91%	88%	36%
Vol Right, %	44%	5%	7%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	122	288	224	55
LT Vol	22	12	12	25
Through Vol	46	263	196	20
RT Vol	54	13	16	10
Lane Flow Rate	139	327	255	63
Geometry Grp	1	1	1	1
Degree of Util (X)	0.208	0.442	0.34	0.1
Departure Headway (Hd)	5.4	4.859	4.804	5.752
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	668	733	741	626
Service Time	3.4	2.943	2.893	3.757
HCM Lane V/C Ratio	0.208	0.446	0.344	0.101
HCM Control Delay, s/veh	9.8	11.8	10.4	9.4
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.8	2.3	1.5	0.3

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	3	2	119	44	5
Future Volume (vph)	10	3	2	119	44	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.971				0.987	
Flt Protected	0.962			0.999		
Satd. Flow (prot)	1789	0	0	1506	1532	0
Flt Permitted	0.962			0.999		
Satd. Flow (perm)	1789	0	0	1506	1532	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	399			1655	1148	
Travel Time (s)	10.9			32.2	22.4	
Confl. Peds. (#/hr)	1	1				3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	33%	0%	3%	0%	0%
Adj. Flow (vph)	11	3	2	127	47	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	0	0	129	52	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	3	2	119	44	5
Future Vol, veh/h	10	3	2	119	44	5
Conflicting Peds, #/hr	1	1	0	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	33	0	3	0	0
Mvmt Flow	11	3	2	127	47	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	185	54	55	0	-	0
Stage 1	53	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.2	6.43	4.3	-	-	-
Critical Hdwy Stg 1	5.2	-	-	-	-	-
Critical Hdwy Stg 2	5.2	-	-	-	-	-
Follow-up Hdwy	3	3.4	3	-	-	-
Pot Cap-1 Maneuver	942	986	1150	-	-	-
Stage 1	1136	-	-	-	-	-
Stage 2	1047	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	934	982	1146	-	-	-
Mov Cap-2 Maneuver	934	-	-	-	-	-
Stage 1	1130	-	-	-	-	-
Stage 2	1044	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.9	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1146	-	945	-	-
HCM Lane V/C Ratio	0.002	-	0.015	-	-
HCM Control Delay (s/veh)	8.1	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	0	1	10	0	34	2	76	3	11	29	5
Future Volume (vph)	9	0	1	10	0	34	2	76	3	11	29	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	8	12	12	12	12	12	9	12	12	8	12
Grade (%)		-3%			0%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989			0.896			0.994			0.985	
Flt Protected		0.956			0.989			0.999			0.988	
Satd. Flow (prot)	0	1360	0	0	1564	0	0	1578	0	0	1486	0
Flt Permitted		0.956			0.989			0.999			0.988	
Satd. Flow (perm)	0	1360	0	0	1564	0	0	1578	0	0	1486	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		582			209			364			2804	
Travel Time (s)		11.3			4.8			21.8			32.0	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	11%	2%	0%	2%	2%	2%	0%	2%	2%	2%	0%	20%
Adj. Flow (vph)	11	0	1	12	0	41	2	92	4	13	35	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	53	0	0	98	0	0	54	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	0	1	10	0	34	2	76	3	11	29	5
Future Vol, veh/h	9	0	1	10	0	34	2	76	3	11	29	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	0	-	-	0	-	-	-1	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	11	2	0	2	2	2	0	2	2	2	0	20
Mvmt Flow	11	0	1	12	0	41	2	92	4	13	35	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	183	164	38	163	165	94	41	0	0	96	0	0
Stage 1	64	64	-	98	98	-	-	-	-	-	-	-
Stage 2	119	100	-	65	67	-	-	-	-	-	-	-
Critical Hdwy	6.61	5.92	5.9	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.61	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.61	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.1	4.018	3.1	3	4.018	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	897	749	1109	930	728	1028	1162	-	-	1113	-	-
Stage 1	1080	851	-	1058	814	-	-	-	-	-	-	-
Stage 2	1015	826	-	1104	839	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	852	739	1109	919	718	1028	1162	-	-	1113	-	-
Mov Cap-2 Maneuver	852	739	-	919	718	-	-	-	-	-	-	-
Stage 1	1078	841	-	1056	812	-	-	-	-	-	-	-
Stage 2	973	824	-	1090	829	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.2	8.8	0.2	2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1162	-	-	872	1001	1113	-	-
HCM Lane V/C Ratio	0.002	-	-	0.014	0.053	0.012	-	-
HCM Control Delay (s/veh)	8.1	0	-	9.2	8.8	8.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.2	0	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	304	152	32	31	14
Future Volume (vph)	43	304	152	32	31	14
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.977		0.958	
Flt Protected		0.994			0.967	
Satd. Flow (prot)	0	1595	1521	0	1564	0
Flt Permitted		0.994			0.967	
Satd. Flow (perm)	0	1595	1521	0	1564	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3884	643		1474	
Travel Time (s)		66.2	14.7		14.0	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	3%	3%	7%	0%	0%	0%
Adj. Flow (vph)	48	342	171	36	35	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	390	207	0	51	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

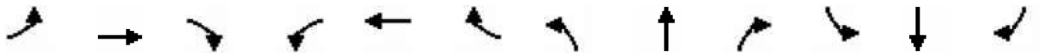
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	304	152	32	31	14
Future Vol, veh/h	43	304	152	32	31	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	3	7	0	0	0
Mvmt Flow	48	342	171	36	35	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	207	0	-	0	627	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	438	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1020	-	-	-	523	914
Stage 1	-	-	-	-	987	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1020	-	-	-	493	914
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.1	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1020	-	-	-	575
HCM Lane V/C Ratio	0.047	-	-	-	0.088
HCM Control Delay (s/veh)	8.7	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	12	167	9	13	67	14	13	34	32	47	35	18
Future Volume (vph)	12	167	9	13	67	14	13	34	32	47	35	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.994			0.980			0.945			0.976	
Flt Protected		0.997			0.993			0.992			0.977	
Satd. Flow (prot)	0	1649	0	0	1591	0	0	1624	0	0	1609	0
Flt Permitted		0.997			0.993			0.992			0.977	
Satd. Flow (perm)	0	1649	0	0	1591	0	0	1624	0	0	1609	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1970			4679	
Travel Time (s)		6.8			56.8			38.4			91.1	
Confl. Peds. (#/hr)	1		1	1		1						
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	17%	1%	33%	8%	6%	7%	0%	5%	3%	9%	7%	6%
Adj. Flow (vph)	15	206	11	16	83	17	16	42	40	58	43	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	232	0	0	116	0	0	98	0	0	123	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	167	9	13	67	14	13	34	32	47	35	18
Future Vol, veh/h	12	167	9	13	67	14	13	34	32	47	35	18
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	17	1	33	8	6	7	0	5	3	9	7	6
Mvmt Flow	15	206	11	16	83	17	16	42	40	58	43	22
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	10.1	8.7	8.5	9.1
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	6%	14%	47%
Vol Thru, %	43%	89%	71%	35%
Vol Right, %	41%	5%	15%	18%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	188	94	100
LT Vol	13	12	13	47
Through Vol	34	167	67	35
RT Vol	32	9	14	18
Lane Flow Rate	98	232	116	123
Geometry Grp	1	1	1	1
Degree of Util (X)	0.128	0.313	0.155	0.172
Departure Headway (Hd)	4.707	4.855	4.804	5.013
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	758	738	743	712
Service Time	2.758	2.9	2.856	3.063
HCM Lane V/C Ratio	0.129	0.314	0.156	0.173
HCM Control Delay, s/veh	8.5	10.1	8.7	9.1
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.4	1.3	0.5	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	97	41	3	129	58	18
Future Volume (vph)	97	41	3	129	58	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.960				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	1624	0	0	1773	1516	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	1624	0	0	1773	1516	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	2%	15%	0%	2%	7%	0%
Adj. Flow (vph)	126	53	4	168	75	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	179	0	0	172	98	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	41	3	129	58	18
Future Vol, veh/h	97	41	3	129	58	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	15	0	2	7	0
Mvmt Flow	126	53	4	168	75	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	179	0	329	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	176	-
Critical Hdwy	-	-	4.3	-	7.07	6.5
Critical Hdwy Stg 1	-	-	-	-	6.07	-
Critical Hdwy Stg 2	-	-	-	-	6.07	-
Follow-up Hdwy	-	-	3	-	3.1	3.1
Pot Cap-1 Maneuver	-	-	1043	-	699	940
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1043	-	696	940
Mov Cap-2 Maneuver	-	-	-	-	696	-
Stage 1	-	-	-	-	958	-
Stage 2	-	-	-	-	926	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.2	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	742	-	-	1043	-
HCM Lane V/C Ratio	0.133	-	-	0.004	-
HCM Control Delay (s/veh)	10.6	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.5	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	325	153	17	25	7
Future Volume (vph)	12	325	153	17	25	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.986			0.850
Flt Protected		0.998			0.950	
Satd. Flow (prot)	0	1668	1563	0	1661	1751
Flt Permitted		0.998			0.950	
Satd. Flow (perm)	0	1668	1563	0	1661	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3884		678	
Travel Time (s)		38.0	66.2		18.5	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	17%	2%	6%	6%	4%	0%
Adj. Flow (vph)	14	382	180	20	29	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	396	200	0	29	8
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	325	153	17	25	7
Future Vol, veh/h	12	325	153	17	25	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	17	2	6	6	4	0
Mvmt Flow	14	382	180	20	29	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	180	0	-	0	600	190
Stage 1	-	-	-	-	190	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	4.5	-	-	-	6.04	6
Critical Hdwy Stg 1	-	-	-	-	5.04	-
Critical Hdwy Stg 2	-	-	-	-	5.04	-
Follow-up Hdwy	3.2	-	-	-	3	3.1
Pot Cap-1 Maneuver	972	-	-	-	557	917
Stage 1	-	-	-	-	994	-
Stage 2	-	-	-	-	798	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	972	-	-	-	547	917
Mov Cap-2 Maneuver	-	-	-	-	547	-
Stage 1	-	-	-	-	976	-
Stage 2	-	-	-	-	798	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	972	-	-	-	547	917
HCM Lane V/C Ratio	0.015	-	-	-	0.054	0.009
HCM Control Delay (s/veh)	8.8	0	-	-	12	9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q (veh)	0	-	-	-	0.2	0

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	258	108	51	79	46
Future Volume (vph)	43	258	108	51	79	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.957		0.950	
Flt Protected		0.993			0.969	
Satd. Flow (prot)	0	1630	1512	0	1478	0
Flt Permitted		0.993			0.969	
Satd. Flow (perm)	0	1630	1512	0	1478	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	2%	3%	6%	7%	3%	16%
Adj. Flow (vph)	51	304	127	60	93	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	355	187	0	147	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	258	108	51	79	46
Future Vol, veh/h	43	258	108	51	79	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	3	6	7	3	16
Mvmt Flow	51	304	127	60	93	54

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	187	0	-	0	563	157
Stage 1	-	-	-	-	157	-
Stage 2	-	-	-	-	406	-
Critical Hdwy	4.3	-	-	-	5.23	5.76
Critical Hdwy Stg 1	-	-	-	-	4.23	-
Critical Hdwy Stg 2	-	-	-	-	4.23	-
Follow-up Hdwy	3	-	-	-	3	3.2
Pot Cap-1 Maneuver	1037	-	-	-	664	938
Stage 1	-	-	-	-	1065	-
Stage 2	-	-	-	-	878	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1037	-	-	-	625	938
Mov Cap-2 Maneuver	-	-	-	-	625	-
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	878	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.2	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1037	-	-	-	712
HCM Lane V/C Ratio	0.049	-	-	-	0.207
HCM Control Delay (s/veh)	8.7	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.2	-	-	-	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	0	1	3	0	4	2	487	0	1	344	2
Future Volume (vph)	4	0	1	3	0	4	2	487	0	1	344	2
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977			0.916						0.999	
Flt Protected		0.960			0.982							
Satd. Flow (prot)	0	1730	0	0	1481	0	0	1673	0	0	1631	0
Flt Permitted		0.960			0.982							
Satd. Flow (perm)	0	1730	0	0	1481	0	0	1673	0	0	1631	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		379			228			362			1352	
Travel Time (s)		7.1			6.2			5.5			20.5	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles (%)	0%	0%	0%	67%	0%	0%	0%	6%	0%	100%	8%	0%
Adj. Flow (vph)	5	0	1	3	0	5	2	566	0	1	400	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	6	0	0	8	0	0	568	0	0	403	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	1	3	0	4	2	487	0	1	344	2
Future Vol, veh/h	4	0	1	3	0	4	2	487	0	1	344	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	67	0	0	0	6	0	100	8	0
Mvmt Flow	5	0	1	3	0	5	2	566	0	1	400	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	976	973	401	974	974	566	402	0	0	566	0	0
Stage 1	403	403	-	570	570	-	-	-	-	-	-	-
Stage 2	573	570	-	404	404	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	7.37	6.1	6	4.3	-	-	5.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	6.37	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3.6	4	3.1	3	-	-	3.9	-	-
Pot Cap-1 Maneuver	335	333	728	213	283	571	874	-	-	537	-	-
Stage 1	798	675	-	479	542	-	-	-	-	-	-	-
Stage 2	670	596	-	595	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	331	331	728	212	282	571	874	-	-	537	-	-
Mov Cap-2 Maneuver	331	331	-	212	282	-	-	-	-	-	-	-
Stage 1	796	674	-	478	540	-	-	-	-	-	-	-
Stage 2	663	594	-	593	629	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.8	16.2	0	0
HCM LOS	B	C		

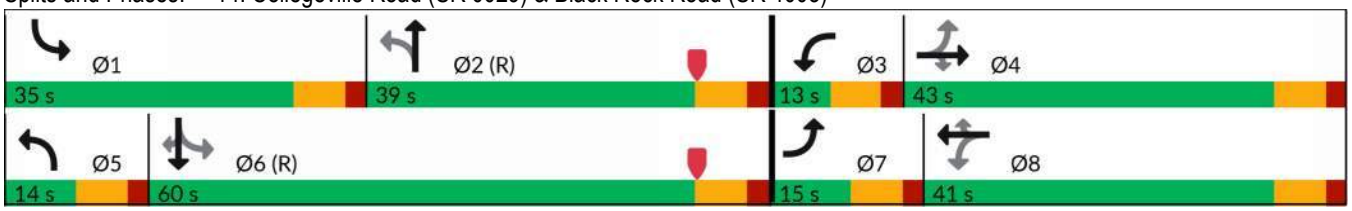
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	874	-	-	372	331	537	-	-
HCM Lane V/C Ratio	0.003	-	-	0.016	0.025	0.002	-	-
HCM Control Delay (s/veh)	9.1	0	-	14.8	16.2	11.7	0	-
HCM Lane LOS	A	A	-	B	C	B	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	390	147	11	112	102	80	408	52	253	498	104
Future Volume (vph)	163	390	147	11	112	102	80	408	52	253	498	104
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor				0.99		0.98	0.99	0.99				
Frt			0.850			0.850		0.983				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1749	1601	1701	1571	1608	1568	3301	0	1551	3208	1435
Flt Permitted	0.541			0.185			0.428			0.301		
Satd. Flow (perm)	964	1749	1601	331	1571	1587	706	3301	0	491	3208	1435
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			210			210		10				151
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)				1		1	1		1			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	3%	5%	4%	0%	14%	1%	7%	3%	4%	5%	5%	5%
Adj. Flow (vph)	194	464	175	13	133	121	95	486	62	301	593	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	464	175	13	133	121	95	548	0	301	593	124
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0		10.0	22.0	22.0
Total Split (s)	15.0	43.0	43.0	13.0	41.0	41.0	14.0	39.0		35.0	60.0	60.0
Total Split (%)	11.5%	33.1%	33.1%	10.0%	31.5%	31.5%	10.8%	30.0%		26.9%	46.2%	46.2%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 122 (94%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	390	147	11	112	102	80	408	52	253	498	104
Future Volume (veh/h)	163	390	147	11	112	102	80	408	52	253	498	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1878	1968	1794	1598	1852	1812	1869	1855	1680	1680	1680
Adj Flow Rate, veh/h	194	464	88	13	133	41	95	486	45	301	593	63
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	3	5	4	0	14	1	7	3	4	5	5	5
Cap, veh/h	363	508	451	110	349	342	418	1280	118	499	1500	669
Arrive On Green	0.07	0.27	0.27	0.02	0.22	0.22	0.06	0.39	0.38	0.14	0.47	0.47
Sat Flow, veh/h	1816	1878	1668	1709	1598	1567	1726	3286	303	1600	3191	1423
Grp Volume(v), veh/h	194	464	88	13	133	41	95	262	269	301	593	63
Grp Sat Flow(s),veh/h/ln	1816	1878	1668	1709	1598	1567	1726	1776	1814	1600	1596	1423
Q Serve(g_s), s	9.0	31.1	5.3	0.8	9.2	2.7	4.2	13.7	13.8	13.7	15.7	3.2
Cycle Q Clear(g_c), s	9.0	31.1	5.3	0.8	9.2	2.7	4.2	13.7	13.8	13.7	15.7	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.17	1.00		1.00
Lane Grp Cap(c), veh/h	363	508	451	110	349	342	418	692	707	499	1500	669
V/C Ratio(X)	0.53	0.91	0.20	0.12	0.38	0.12	0.23	0.38	0.38	0.60	0.40	0.09
Avail Cap(c_a), veh/h	363	534	475	173	430	422	425	692	707	635	1500	669
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.2	45.9	36.5	40.6	43.3	40.8	21.1	28.4	28.5	18.1	22.4	19.1
Incr Delay (d2), s/veh	1.5	19.6	0.2	0.5	0.7	0.2	0.3	1.6	1.6	1.2	0.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	23.7	3.9	0.6	6.6	1.9	3.0	10.0	10.2	8.5	9.8	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.8	65.6	36.7	41.1	44.0	40.9	21.4	30.0	30.1	19.3	23.2	19.4
LnGrp LOS	D	E	D	D	D	D	C	C	C	B	C	B
Approach Vol, veh/h		746			187			626			957	
Approach Delay, s/veh		55.2			43.1			28.7			21.7	
Approach LOS		E			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.0	56.6	8.2	41.2	13.5	67.1	15.0	34.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	28.0	32.0	6.0	36.0	7.0	53.0	8.0	34.0
Max Q Clear Time (g_c+I1), s	16.2	16.2	3.3	33.6	6.7	18.2	11.5	11.7
Green Ext Time (p_c), s	0.8	1.6	0.0	0.6	0.0	2.8	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	35.0
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	238	221	49	388	222	48
Future Volume (vph)	238	221	49	388	222	48
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935					0.850
Flt Protected				0.994	0.950	
Satd. Flow (prot)	1462	0	0	1566	1542	1335
Flt Permitted				0.994	0.950	
Satd. Flow (perm)	1462	0	0	1566	1542	1335
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5693	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	8%	4%	7%	3%	14%
Adj. Flow (vph)	264	246	54	431	247	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	510	0	0	485	247	53
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	13

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	238	221	49	388	222	48
Future Vol, veh/h	238	221	49	388	222	48
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	7	3	14
Mvmt Flow	264	246	54	431	247	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	510	0	926	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	539	-
Critical Hdwy	-	-	4.3	-	6.63	6.44
Critical Hdwy Stg 1	-	-	-	-	5.63	-
Critical Hdwy Stg 2	-	-	-	-	5.63	-
Follow-up Hdwy	-	-	3	-	3	3.2
Pot Cap-1 Maneuver	-	-	801	-	313	665
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	801	-	285	665
Mov Cap-2 Maneuver	-	-	-	-	285	-
Stage 1	-	-	-	-	766	-
Stage 2	-	-	-	-	584	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.1	54.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	285	665	-	-	801	-
HCM Lane V/C Ratio	0.865	0.08	-	-	0.068	-
HCM Control Delay (s/veh)	63.8	10.9	-	-	9.8	0
HCM Lane LOS	F	B	-	-	A	A
HCM 95th %tile Q (veh)	7.5	0.3	-	-	0.2	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	59	12	4	172	327	20
Future Volume (vph)	59	12	4	172	327	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	12
Grade (%)	0%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.992	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1655	0	0	1707	1668	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1655	0	0	1707	1668	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	129			431	3144	
Travel Time (s)	2.9			7.3	42.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%
Adj. Flow (vph)	64	13	4	187	355	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	0	191	377	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	12	4	172	327	20
Future Vol, veh/h	59	12	4	172	327	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-3	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	3	2
Mvmt Flow	64	13	4	187	355	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	561	366	377	0	-	0
Stage 1	366	-	-	-	-	-
Stage 2	195	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	552	719	891	-	-	-
Stage 1	802	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	549	719	891	-	-	-
Mov Cap-2 Maneuver	549	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	969	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.3	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	891	-	572	-	-
HCM Lane V/C Ratio	0.005	-	0.135	-	-
HCM Control Delay (s/veh)	9.1	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.5	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	4	2	229	343	6
Future Volume (vph)	11	4	2	229	343	6
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	0%			0%	-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.966				0.998	
Flt Protected	0.964					
Satd. Flow (prot)	1643	0	0	1683	1771	0
Flt Permitted	0.964					
Satd. Flow (perm)	1643	0	0	1683	1771	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	161			3144	362	
Travel Time (s)	3.7			11.5	6.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	7%	3%	2%
Adj. Flow (vph)	12	4	2	249	373	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	0	251	380	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	4	2	229	343	6
Future Vol, veh/h	11	4	2	229	343	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	3	2
Mvmt Flow	12	4	2	249	373	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	630	377	380	0	-	0
Stage 1	377	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	502	709	889	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	909	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	500	709	889	-	-	-
Mov Cap-2 Maneuver	500	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.8	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	889	-	543	-	-
HCM Lane V/C Ratio	0.002	-	0.03	-	-
HCM Control Delay (s/veh)	9.1	0	11.8	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	4	1	75	37	3
Future Volume (vph)	7	4	1	75	37	3
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	9	9	12
Grade (%)	0%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955				0.991	
Flt Protected	0.968			0.999		
Satd. Flow (prot)	1631	0	0	1579	1595	0
Flt Permitted	0.968			0.999		
Satd. Flow (perm)	1631	0	0	1579	1595	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	165			1474	364	
Travel Time (s)	3.8			28.2	7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	0%	2%
Adj. Flow (vph)	8	4	1	82	40	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	0	0	83	43	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	4	1	75	37	3
Future Vol, veh/h	7	4	1	75	37	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	0	2
Mvmt Flow	8	4	1	82	40	3

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	126	42	43	0	-	0
Stage 1	42	-	-	-	-	-
Stage 2	84	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	1010	1100	1160	-	-	-
Stage 1	1146	-	-	-	-	-
Stage 2	1095	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1009	1100	1160	-	-	-
Mov Cap-2 Maneuver	1009	-	-	-	-	-
Stage 1	1145	-	-	-	-	-
Stage 2	1095	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.5	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1160	-	1040	-	-
HCM Lane V/C Ratio	0.001	-	0.011	-	-
HCM Control Delay (s/veh)	8.1	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	0	0	3	1	0	5
Future Volume (vph)	0	0	3	1	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12
Grade (%)	-2%			5%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.964		
Satd. Flow (prot)	1697	0	0	1556	1526	0
Flt Permitted				0.964		
Satd. Flow (perm)	1697	0	0	1556	1526	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	317			379	302	
Travel Time (s)	8.6			8.6	6.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%
Adj. Flow (vph)	0	0	3	1	0	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	4	5	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	0	0	3	1	0	5
Future Vol, veh/h	0	0	3	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	5	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	2
Mvmt Flow	0	0	3	1	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1	0	8	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	7	-
Critical Hdwy	-	-	4.3	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1199	-	1187	1160
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	1191	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1199	-	1183	1160
Mov Cap-2 Maneuver	-	-	-	-	1183	-
Stage 1	-	-	-	-	1199	-
Stage 2	-	-	-	-	1187	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	6	8.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1160	-	-	1199	-
HCM Lane V/C Ratio	0.005	-	-	0.003	-
HCM Control Delay (s/veh)	8.1	-	-	8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	10	324	156	8	25	28
Future Volume (vph)	10	324	156	8	25	28
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	12
Grade (%)		-3%	3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.929	
Flt Protected		0.998			0.977	
Satd. Flow (prot)	0	1653	1553	0	1602	0
Flt Permitted		0.998			0.977	
Satd. Flow (perm)	0	1653	1553	0	1602	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		643	653		130	
Travel Time (s)		14.7	7.4		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	3%	6%	2%	2%	2%
Adj. Flow (vph)	11	352	170	9	27	30
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	363	179	0	57	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

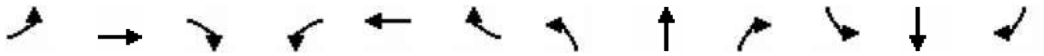
Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	324	156	8	25	28
Future Vol, veh/h	10	324	156	8	25	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	3	6	2	2	2
Mvmt Flow	11	352	170	9	27	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	179	0	-	0	549	175
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	1043	-	-	-	562	925
Stage 1	-	-	-	-	991	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1043	-	-	-	555	925
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	795	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1043	-	-	-	704
HCM Lane V/C Ratio	0.01	-	-	-	0.082
HCM Control Delay (s/veh)	8.5	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	32	8	275	43	150	8	181	240	42	103	31
Future Volume (vph)	26	32	8	275	43	150	8	181	240	42	103	31
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	12	12	11	12	12	12	12	12	11	12
Grade (%)		-2%			2%			-1%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.984			0.957			0.925			0.976	
Flt Protected		0.981			0.971			0.999			0.988	
Satd. Flow (prot)	0	1529	0	0	1582	0	0	1665	0	0	1693	0
Flt Permitted		0.981			0.971			0.999			0.988	
Satd. Flow (perm)	0	1529	0	0	1582	0	0	1665	0	0	1693	0
Link Speed (mph)		40			40			25			30	
Link Distance (ft)		654			1344			753			431	
Travel Time (s)		7.4			22.9			20.5			9.8	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	18%	0%	0%	1%	3%	1%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	27	33	8	284	44	155	8	187	247	43	106	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	483	0	0	442	0	0	181	0
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary	
Area Type:	Other
Control Type: Roundabout	

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	68	483	442	181
Demand Flow Rate, veh/h	73	489	444	182
Vehicles Circulating, veh/h	437	229	108	340
Vehicles Exiting, veh/h	85	323	402	378
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.2	8.3	6.4	5.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	73	489	444	182
Cap Entry Lane, veh/h	884	1092	1236	976
Entry HV Adj Factor	0.932	0.987	0.996	0.994
Flow Entry, veh/h	68	483	442	181
Cap Entry, veh/h	823	1078	1231	970
V/C Ratio	0.083	0.448	0.359	0.187
Control Delay, s/veh	5.2	8.3	6.4	5.5
LOS	A	A	A	A
95th %tile Queue, veh	0	2	2	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	105	28	160	249	244	35	256	77	131	350	30
Future Volume (vph)	26	105	28	160	249	244	35	256	77	131	350	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	11	14	12	11	14	12	12	12	12	12	12	12
Grade (%)		3%			-1%			-4%			4%	
Storage Length (ft)	85		0	180		0	60		0	190		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.926			0.965			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1508	1776	0	1645	1778	0	1677	1772	0	1643	1743	0
Flt Permitted	0.175			0.667			0.479			0.517		
Satd. Flow (perm)	278	1776	0	1155	1778	0	846	1772	0	894	1743	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			54			17			5	
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		3233			4738			1352			1539	
Travel Time (s)		63.0			71.8			23.0			26.2	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	8%	2%	7%	1%	0%	1%	4%	0%	0%	2%	0%	0%
Adj. Flow (vph)	26	105	28	160	249	244	35	256	77	131	350	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	133	0	160	493	0	35	333	0	131	380	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Detector Phase	8	8		4	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	11.0	11.0		11.0	11.0		21.0	21.0		21.0	21.0	
Total Split (s)	60.0	60.0		60.0	60.0		60.0	60.0		60.0	60.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 96.3	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 2: Black Rock Rd & Yeager Rd & S. Trappe Rd (SR 0113)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	105	28	160	249	244	35	256	77	131	350	30
Future Volume (veh/h)	26	105	28	160	249	244	35	256	77	131	350	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1637	1791	1652	1823	1911	1823	1892	1949	1949	1683	1711	1711
Adj Flow Rate, veh/h	26	105	20	160	249	228	35	256	61	131	350	28
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %	8	2	7	1	0	1	4	0	0	2	0	0
Cap, veh/h	136	472	90	415	296	271	538	872	208	545	896	72
Arrive On Green	0.32	0.32	0.31	0.32	0.32	0.31	0.57	0.57	0.56	0.57	0.57	0.56
Sat Flow, veh/h	803	1462	278	1234	918	841	1017	1521	362	956	1563	125
Grp Volume(v), veh/h	26	0	125	160	0	477	35	0	317	131	0	378
Grp Sat Flow(s),veh/h/ln	803	0	1740	1234	0	1759	1017	0	1884	956	0	1688
Q Serve(g_s), s	3.0	0.0	5.0	10.4	0.0	24.2	1.9	0.0	8.3	7.7	0.0	11.8
Cycle Q Clear(g_c), s	26.7	0.0	5.0	14.9	0.0	24.2	13.2	0.0	8.3	15.6	0.0	11.8
Prop In Lane	1.00		0.16	1.00		0.48	1.00		0.19	1.00		0.07
Lane Grp Cap(c), veh/h	136	0	562	415	0	568	538	0	1080	545	0	968
V/C Ratio(X)	0.19	0.00	0.22	0.39	0.00	0.84	0.07	0.00	0.29	0.24	0.00	0.39
Avail Cap(c_a), veh/h	337	0	997	724	0	1008	538	0	1080	545	0	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.4	0.0	23.8	28.9	0.0	30.4	14.8	0.0	10.6	14.4	0.0	11.3
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.6	0.0	3.4	0.2	0.0	0.7	1.0	0.0	1.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.0	3.7	5.3	0.0	15.3	0.8	0.0	5.9	3.1	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	43.1	0.0	24.0	29.5	0.0	33.9	15.0	0.0	11.3	15.4	0.0	12.5
LnGrp LOS	D		C	C		C	B		B	B		B
Approach Vol, veh/h		151			637			352			509	
Approach Delay, s/veh		27.3			32.8			11.6			13.2	
Approach LOS		C			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		36.0		60.0		36.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		54.0		54.0		54.0		54.0				
Max Q Clear Time (g_c+I1), s		18.1		26.2		15.7		29.2				
Green Ext Time (p_c), s		15.4		3.1		11.9		0.8				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			21.7									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	122	26	132	254	226	49	451	99	120	348	39
Future Volume (vph)	11	122	26	132	254	226	49	451	99	120	348	39
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	16	12	12	11	13	11	11	14	11	11	12
Grade (%)		-1%			-1%			1%			-3%	
Storage Length (ft)	0		0	0		160	75		195	325		0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							0.99		0.97			
Frt		0.978				0.850			0.850		0.985	
Flt Protected		0.997			0.983		0.950			0.950		
Satd. Flow (prot)	0	1987	0	0	1697	1573	1581	1697	1624	1678	1719	0
Flt Permitted		0.965			0.837		0.457			0.393		
Satd. Flow (perm)	0	1923	0	0	1445	1573	759	1697	1584	694	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				235			103		10	
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2918			241			1539			5176	
Travel Time (s)		56.8			4.7			23.3			78.4	
Confl. Peds. (#/hr)							4		4			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	9%	0%	0%	0%	2%	1%	4%	2%	0%	0%	1%	3%
Adj. Flow (vph)	11	127	27	138	265	235	51	470	103	125	363	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	165	0	0	403	235	51	470	103	125	404	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	3.0		3.0	3.0	3.0	18.0	18.0	18.0	18.0	18.0	
Minimum Split (s)	9.0	9.0		9.0	9.0	9.0	25.0	25.0	25.0	25.0	25.0	
Total Split (s)	35.0	35.0		35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0	6.0	6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max	Max	Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 63.1	
Natural Cycle: 50	

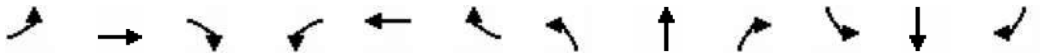
Control Type: Actuated-Uncoordinated

Splits and Phases: 3: S. Trappe Rd (SR 0113) & Mennonite Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	122	26	132	254	226	49	451	99	120	348	39
Future Volume (veh/h)	11	122	26	132	254	226	49	451	99	120	348	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1911	1837	1837	1809	1896	1738	1766	1866	1912	1898	1869
Adj Flow Rate, veh/h	11	127	25	138	265	136	51	470	79	125	362	37
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	9	0	0	0	2	1	4	2	0	0	1	3
Cap, veh/h	55	410	74	158	248	689	343	732	652	280	702	72
Arrive On Green	0.41	0.43	0.41	0.41	0.43	0.43	0.41	0.41	0.41	0.41	0.41	0.40
Sat Flow, veh/h	0	956	173	209	578	1607	916	1766	1574	876	1693	173
Grp Volume(v), veh/h	163	0	0	403	0	136	51	470	79	125	0	399
Grp Sat Flow(s),veh/h/ln	1129	0	0	787	0	1607	916	1766	1574	876	0	1866
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	3.7	3.0	14.9	2.2	9.3	0.0	11.2
Cycle Q Clear(g_c), s	29.0	0.0	0.0	29.0	0.0	3.7	13.7	14.9	2.2	24.2	0.0	11.2
Prop In Lane	0.07		0.15	0.34		1.00	1.00		1.00	1.00		0.09
Lane Grp Cap(c), veh/h	522	0	0	395	0	689	343	732	652	280	0	773
V/C Ratio(X)	0.31	0.00	0.00	1.02	0.00	0.20	0.15	0.64	0.12	0.45	0.00	0.52
Avail Cap(c_a), veh/h	522	0	0	395	0	689	343	732	652	280	0	773
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.6	0.0	0.0	20.9	0.0	12.5	20.2	16.4	12.6	26.0	0.0	15.3
Incr Delay (d2), s/veh	0.3	0.0	0.0	50.6	0.0	0.1	0.9	4.3	0.4	5.1	0.0	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	0.0	0.0	18.0	0.0	2.2	1.2	9.8	1.3	3.8	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.9	0.0	0.0	71.5	0.0	12.6	21.1	20.7	13.0	31.1	0.0	17.8
LnGrp LOS	B			F		B	C	C	B	C		B
Approach Vol, veh/h		163			539			600			524	
Approach Delay, s/veh		13.9			56.6			19.7			20.9	
Approach LOS		B			E			B			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		35.0		35.0		35.0		35.0				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		28.0		29.0		28.0		29.0				
Max Q Clear Time (g_c+I1), s		17.4		31.0		26.7		31.0				
Green Ext Time (p_c), s		7.1		0.0		0.9		0.0				

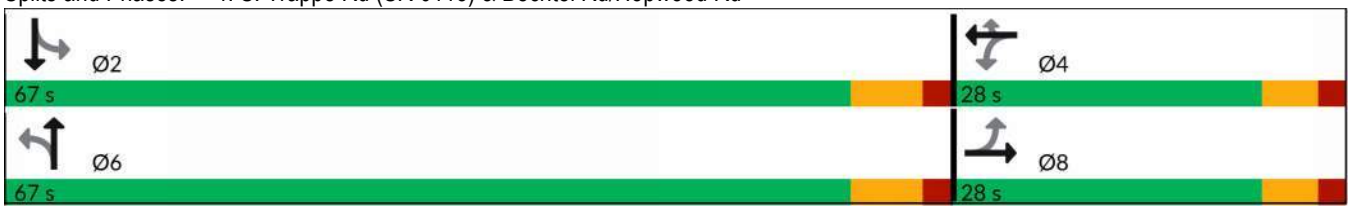
Intersection Summary												
HCM 6th Ctrl Delay, s/veh			30.4									
HCM 6th LOS			C									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	52	28	37	77	126	62	570	30	46	450	44
Future Volume (vph)	31	52	28	37	77	126	62	570	30	46	450	44
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	12	12	10	12	12	10	12	12
Grade (%)		-2%			2%			-2%			-2%	
Storage Length (ft)	0		0	0		120	140		0	195		0
Storage Lanes	0		0	0		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.966				0.850		0.993			0.987	
Flt Protected		0.986			0.984		0.950			0.950		
Satd. Flow (prot)	0	1717	0	0	1719	1500	1507	1785	0	1612	1778	0
Flt Permitted		0.872			0.841		0.435			0.369		
Satd. Flow (perm)	0	1519	0	0	1469	1500	690	1785	0	626	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				135		6			10	
Link Speed (mph)		25			35			45			45	
Link Distance (ft)		3236			526			5176			473	
Travel Time (s)		88.3			10.2			78.4			7.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	0%	0%	0%	3%	1%	7%	1%	4%	0%	1%	0%
Adj. Flow (vph)	33	56	30	40	83	135	67	613	32	49	484	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	119	0	0	123	135	67	645	0	49	531	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Detector Phase	8	8		4	4	4	6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	20.0	20.0		20.0	20.0	
Minimum Split (s)	11.0	11.0		11.0	11.0	11.0	27.0	27.0		27.0	27.0	
Total Split (s)	28.0	28.0		28.0	28.0	28.0	67.0	67.0		67.0	67.0	
Total Split (%)	29.5%	29.5%		29.5%	29.5%	29.5%	70.5%	70.5%		70.5%	70.5%	
Yellow Time (s)	4.0	4.0		4.0	4.0	4.0	5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-1.0			-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		5.0			5.0	5.0	6.0	6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	Max	Max		Max	Max	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 85.2	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 4: S. Trappe Rd (SR 0113) & Bechtel Rd/Hopwood Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	52	28	37	77	126	62	570	30	46	450	44
Future Volume (veh/h)	31	52	28	37	77	126	62	570	30	46	450	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1832	1875	1875	1778	1736	1764	1775	1860	1818	1875	1860	1875
Adj Flow Rate, veh/h	33	56	17	40	83	76	67	613	29	49	484	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	0	0	0	3	1	7	1	4	0	1	0
Cap, veh/h	84	106	26	109	162	202	614	1291	61	557	1245	100
Arrive On Green	0.12	0.14	0.12	0.12	0.14	0.14	0.73	0.73	0.72	0.73	0.73	0.72
Sat Flow, veh/h	203	786	189	379	1201	1495	834	1762	83	789	1699	137
Grp Volume(v), veh/h	106	0	0	123	0	76	67	0	642	49	0	523
Grp Sat Flow(s),veh/h/ln	1178	0	0	1581	0	1495	834	0	1845	789	0	1836
Q Serve(g_s), s	2.0	0.0	0.0	0.0	0.0	3.9	2.7	0.0	11.9	2.2	0.0	8.9
Cycle Q Clear(g_c), s	8.0	0.0	0.0	6.0	0.0	3.9	11.1	0.0	11.9	13.6	0.0	8.9
Prop In Lane	0.31		0.16	0.33		1.00	1.00		0.05	1.00		0.07
Lane Grp Cap(c), veh/h	202	0	0	252	0	202	614	0	1352	557	0	1345
V/C Ratio(X)	0.53	0.00	0.00	0.49	0.00	0.38	0.11	0.00	0.47	0.09	0.00	0.39
Avail Cap(c_a), veh/h	424	0	0	468	0	413	614	0	1352	557	0	1345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.4	0.0	0.0	33.8	0.0	32.8	6.1	0.0	4.6	7.2	0.0	4.2
Incr Delay (d2), s/veh	2.1	0.0	0.0	1.5	0.0	1.2	0.4	0.0	1.2	0.3	0.0	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.0	0.0	0.0	4.3	0.0	2.5	0.8	0.0	5.4	0.6	0.0	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	36.5	0.0	0.0	35.3	0.0	34.0	6.5	0.0	5.8	7.6	0.0	5.0
LnGrp LOS	D			D		C	A		A	A		A
Approach Vol, veh/h		106			199			709			572	
Approach Delay, s/veh		36.5			34.8			5.8			5.2	
Approach LOS		D			C			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		67.0		16.2		67.0		16.2				
Change Period (Y+Rc), s		7.0		6.0		7.0		6.0				
Max Green Setting (Gmax), s		60.0		22.0		60.0		22.0				
Max Q Clear Time (g_c+I1), s		16.1		8.0		13.9		10.0				
Green Ext Time (p_c), s		23.7		0.5		30.4		0.2				

Intersection Summary												
HCM 6th Ctrl Delay, s/veh			11.3									
HCM 6th LOS			B									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	110	19	56	243	18	17	38	28	18	36	13
Future Volume (vph)	7	110	19	56	243	18	17	38	28	18	36	13
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	15	12	12	12	12	12	9	12
Grade (%)		-2%			1%			-4%			-5%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.981			0.992			0.955			0.973	
Flt Protected		0.997			0.991			0.990			0.987	
Satd. Flow (prot)	0	1764	0	0	1923	0	0	1674	0	0	1553	0
Flt Permitted		0.997			0.991			0.990			0.987	
Satd. Flow (perm)	0	1764	0	0	1923	0	0	1674	0	0	1553	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		5693			3233			2804			1970	
Travel Time (s)		110.9			20.2			22.6			38.4	
Confl. Peds. (#/hr)				1		1				1		1
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	0%	1%	0%	4%	0%	0%	0%	0%	11%	10%	0%	0%
Adj. Flow (vph)	8	124	21	63	273	20	19	43	31	20	40	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	153	0	0	356	0	0	93	0	0	75	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	110	19	56	243	18	17	38	28	18	36	13
Future Vol, veh/h	7	110	19	56	243	18	17	38	28	18	36	13
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	1	0	4	0	0	0	0	11	10	0	0
Mvmt Flow	8	124	21	63	273	20	19	43	31	20	40	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.9	11.4	8.8	9
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	20%	5%	18%	27%
Vol Thru, %	46%	81%	77%	54%
Vol Right, %	34%	14%	6%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	83	136	317	67
LT Vol	17	7	56	18
Through Vol	38	110	243	36
RT Vol	28	19	18	13
Lane Flow Rate	93	153	356	75
Geometry Grp	1	1	1	1
Degree of Util (X)	0.13	0.198	0.453	0.111
Departure Headway (Hd)	5.021	4.667	4.578	5.313
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	710	766	784	671
Service Time	3.084	2.719	2.62	3.379
HCM Lane V/C Ratio	0.131	0.2	0.454	0.112
HCM Control Delay, s/veh	8.8	8.9	11.4	9
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.4	0.7	2.4	0.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	2	3	75	96	8
Future Volume (vph)	7	2	3	75	96	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	16	12	12	8	8	12
Grade (%)	-1%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973				0.989	
Flt Protected	0.962			0.998		
Satd. Flow (prot)	1726	0	0	1506	1507	0
Flt Permitted	0.962			0.998		
Satd. Flow (perm)	1726	0	0	1506	1507	0
Link Speed (mph)	25			35	35	
Link Distance (ft)	397			1663	1140	
Travel Time (s)	10.8			32.4	22.2	
Confl. Peds. (#/hr)	1	1				1
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	0%	0%	3%	2%	0%
Adj. Flow (vph)	8	2	4	90	116	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	0	0	94	126	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	3	75	96	8
Future Vol, veh/h	7	2	3	75	96	8
Conflicting Peds, #/hr	1	1	0	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	1	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	14	0	0	3	2	0
Mvmt Flow	8	2	4	90	116	10

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	221	123	127	0	-	0
Stage 1	122	-	-	-	-	-
Stage 2	99	-	-	-	-	-
Critical Hdwy	6.34	6.1	4.3	-	-	-
Critical Hdwy Stg 1	5.34	-	-	-	-	-
Critical Hdwy Stg 2	5.34	-	-	-	-	-
Follow-up Hdwy	3.1	3.1	3	-	-	-
Pot Cap-1 Maneuver	864	994	1087	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	1046	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	859	992	1086	-	-	-
Mov Cap-2 Maneuver	859	-	-	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	1045	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.1	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1086	-	885	-	-
HCM Lane V/C Ratio	0.003	-	0.012	-	-
HCM Control Delay (s/veh)	8.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	0	0	6	0	22	2	56	9	31	60	8
Future Volume (vph)	1	0	0	6	0	22	2	56	9	31	60	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	8	12	12	12	12	12	9	12	12	8	12
Grade (%)		-3%			0%			0%			-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.895			0.982			0.989	
Flt Protected		0.950			0.989			0.998			0.985	
Satd. Flow (prot)	0	1504	0	0	1562	0	0	1584	0	0	1502	0
Flt Permitted		0.950			0.989			0.998			0.985	
Satd. Flow (perm)	0	1504	0	0	1562	0	0	1584	0	0	1502	0
Link Speed (mph)		35			30			35			35	
Link Distance (ft)		582			209			363			2804	
Travel Time (s)		11.3			4.8			21.8			32.0	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	0%	2%	2%	0%	13%
Adj. Flow (vph)	1	0	0	8	0	28	3	70	11	39	75	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1	0	0	36	0	0	84	0	0	124	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	0	6	0	22	2	56	9	31	60	8
Future Vol, veh/h	1	0	0	6	0	22	2	56	9	31	60	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-3	-	-	0	-	-	0	-	-	-1	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	0	2	0	2	2	2	0	0	2	2	0	13
Mvmt Flow	1	0	0	8	0	28	3	70	11	39	75	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	254	245	80	240	245	76	85	0	0	81	0	0
Stage 1	158	158	-	82	82	-	-	-	-	-	-	-
Stage 2	96	87	-	158	163	-	-	-	-	-	-	-
Critical Hdwy	6.5	5.92	5.9	7.12	6.52	6.22	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.5	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	4.92	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3	4.018	3.1	3	4.018	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	842	684	1054	824	657	1052	1123	-	-	1127	-	-
Stage 1	1006	787	-	1080	827	-	-	-	-	-	-	-
Stage 2	1078	835	-	979	763	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	796	657	1054	799	631	1052	1123	-	-	1127	-	-
Mov Cap-2 Maneuver	796	657	-	799	631	-	-	-	-	-	-	-
Stage 1	1003	759	-	1077	825	-	-	-	-	-	-	-
Stage 2	1047	832	-	944	736	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	9.5	8.8	0.2	2.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	796	985	1127	-	-
HCM Lane V/C Ratio	0.002	-	-	0.002	0.036	0.034	-	-
HCM Control Delay (s/veh)	8.2	0	-	9.5	8.8	8.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0	0.1	0.1	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	156	308	49	33	30
Future Volume (vph)	18	156	308	49	33	30
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	9	10	12	10	12
Grade (%)		-4%	4%		-1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.981		0.936	
Flt Protected		0.995			0.975	
Satd. Flow (prot)	0	1630	1601	0	1541	0
Flt Permitted		0.995			0.975	
Satd. Flow (perm)	0	1630	1601	0	1541	0
Link Speed (mph)		40	40		35	
Link Distance (ft)		3884	641		1475	
Travel Time (s)		66.2	14.7		14.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	19	163	321	51	34	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	182	372	0	65	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

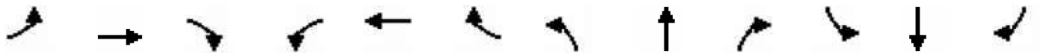
Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	156	308	49	33	30
Future Vol, veh/h	18	156	308	49	33	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	4	-	-1	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	19	163	321	51	34	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	372	0	-	0	548	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	201	-
Critical Hdwy	4.3	-	-	-	6.2	6.1
Critical Hdwy Stg 1	-	-	-	-	5.2	-
Critical Hdwy Stg 2	-	-	-	-	5.2	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	895	-	-	-	582	746
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	975	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	895	-	-	-	569	746
Mov Cap-2 Maneuver	-	-	-	-	569	-
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	975	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.9	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	895	-	-	-	641
HCM Lane V/C Ratio	0.021	-	-	-	0.102
HCM Control Delay (s/veh)	9.1	0	-	-	11.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	100	14	23	232	72	14	37	11	33	34	16
Future Volume (vph)	15	100	14	23	232	72	14	37	11	33	34	16
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	11	12	12	11	12	12	12	12	12	12	12
Grade (%)		2%			0%			1%			-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.970			0.976			0.974	
Flt Protected		0.994			0.996			0.989			0.981	
Satd. Flow (prot)	0	1687	0	0	1677	0	0	1729	0	0	1737	0
Flt Permitted		0.994			0.996			0.989			0.981	
Satd. Flow (perm)	0	1687	0	0	1677	0	0	1729	0	0	1737	0
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		351			2918			1970			4679	
Travel Time (s)		6.8			56.8			38.4			91.1	
Confl. Peds. (#/hr)				8		8	1		1			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	16	108	15	25	249	77	15	40	12	35	37	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	351	0	0	67	0	0	89	0
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	100	14	23	232	72	14	37	11	33	34	16
Future Vol, veh/h	15	100	14	23	232	72	14	37	11	33	34	16
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	0	0
Mvmt Flow	16	108	15	25	249	77	15	40	12	35	37	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.7	10.5	8.6	8.8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	12%	7%	40%
Vol Thru, %	60%	78%	71%	41%
Vol Right, %	18%	11%	22%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	62	129	327	83
LT Vol	14	15	23	33
Through Vol	37	100	232	34
RT Vol	11	14	72	16
Lane Flow Rate	67	139	352	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.094	0.179	0.423	0.125
Departure Headway (Hd)	5.055	4.633	4.336	5.046
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	705	773	830	707
Service Time	3.112	2.676	2.371	3.101
HCM Lane V/C Ratio	0.095	0.18	0.424	0.126
HCM Control Delay, s/veh	8.6	8.7	10.5	8.8
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.3	0.6	2.1	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	96	55	14	143	85	7
Future Volume (vph)	96	55	14	143	85	7
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	11	12
Grade (%)	1%			-1%	3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.951				0.989	
Flt Protected				0.996	0.956	
Satd. Flow (prot)	1703	0	0	1770	1606	0
Flt Permitted				0.996	0.956	
Satd. Flow (perm)	1703	0	0	1770	1606	0
Link Speed (mph)	35			25	25	
Link Distance (ft)	290			3236	4679	
Travel Time (s)	5.6			88.3	127.6	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	2%	1%	0%
Adj. Flow (vph)	103	59	15	154	91	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	169	99	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	96	55	14	143	85	7
Future Vol, veh/h	96	55	14	143	85	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	1	-	-	-1	3	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	0	2	1	0
Mvmt Flow	103	59	15	154	91	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	162	0	317	133
Stage 1	-	-	-	-	133	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.3	-	7.01	6.5
Critical Hdwy Stg 1	-	-	-	-	6.01	-
Critical Hdwy Stg 2	-	-	-	-	6.01	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1057	-	737	967
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1057	-	725	967
Mov Cap-2 Maneuver	-	-	-	-	725	-
Stage 1	-	-	-	-	1015	-
Stage 2	-	-	-	-	937	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.8	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1057	-
HCM Lane V/C Ratio	0.134	-	-	0.014	-
HCM Control Delay (s/veh)	10.6	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q (veh)	0.5	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	165	326	18	18	20
Future Volume (vph)	5	165	326	18	18	20
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	16
Grade (%)		-4%	0%		-2%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993			0.850
Flt Protected		0.999			0.950	
Satd. Flow (prot)	0	1695	1653	0	1727	1751
Flt Permitted		0.999			0.950	
Satd. Flow (perm)	0	1695	1653	0	1727	1751
Link Speed (mph)		40	40		25	
Link Distance (ft)		2230	3884		678	
Travel Time (s)		38.0	66.2		18.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	5	172	340	19	19	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	177	359	0	19	21
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	165	326	18	18	20
Future Vol, veh/h	5	165	326	18	18	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Yield	-	Yield
Storage Length	-	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-4	0	-	-2	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	5	172	340	19	19	21

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	340	0	-	0	532	350
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	4.3	-	-	-	6	6
Critical Hdwy Stg 1	-	-	-	-	5	-
Critical Hdwy Stg 2	-	-	-	-	5	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	918	-	-	-	612	751
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	1004	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	918	-	-	-	608	751
Mov Cap-2 Maneuver	-	-	-	-	608	-
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	1004	-

Approach	EB	WB	SB
HCM Control Delay, s/v	0.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	918	-	-	-	608	751
HCM Lane V/C Ratio	0.006	-	-	-	0.031	0.028
HCM Control Delay (s/veh)	8.9	0	-	-	11.1	9.9
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q (veh)	0	-	-	-	0.1	0.1

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	35	118	263	86	54	50
Future Volume (vph)	35	118	263	86	54	50
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	10	12
Grade (%)		-1%	0%		-6%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.967		0.935	
Flt Protected		0.989			0.975	
Satd. Flow (prot)	0	1670	1605	0	1561	0
Flt Permitted		0.989			0.975	
Satd. Flow (perm)	0	1670	1605	0	1561	0
Link Speed (mph)		40	25		35	
Link Distance (ft)		485	2230		5545	
Travel Time (s)		8.3	60.8		108.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	5%	2%	0%
Adj. Flow (vph)	36	123	274	90	56	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	159	364	0	108	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	35	118	263	86	54	50
Future Vol, veh/h	35	118	263	86	54	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-1	0	-	-6	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	5	2	0
Mvmt Flow	36	123	274	90	56	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	364	0	-	0	514	319
Stage 1	-	-	-	-	319	-
Stage 2	-	-	-	-	195	-
Critical Hdwy	4.3	-	-	-	5.22	5.6
Critical Hdwy Stg 1	-	-	-	-	4.22	-
Critical Hdwy Stg 2	-	-	-	-	4.22	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	901	-	-	-	700	809
Stage 1	-	-	-	-	940	-
Stage 2	-	-	-	-	1034	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	901	-	-	-	670	809
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	1034	-

Approach	EB	WB	SB
HCM Control Delay, s/v	2.1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	901	-	-	-	730
HCM Lane V/C Ratio	0.04	-	-	-	0.148
HCM Control Delay (s/veh)	9.2	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1	1	3	0	4	2	410	3	4	514	5
Future Volume (vph)	5	1	1	3	0	4	2	410	3	4	514	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	16	12	12	12	12	12	11	12
Grade (%)		-5%			-2%			3%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.981			0.923			0.999			0.999	
Flt Protected		0.966			0.979							
Satd. Flow (prot)	0	1748	0	0	1862	0	0	1754	0	0	1764	0
Flt Permitted		0.966			0.979							
Satd. Flow (perm)	0	1748	0	0	1862	0	0	1754	0	0	1764	0
Link Speed (mph)		25			25			45			45	
Link Distance (ft)		379			228			362			1352	
Travel Time (s)		7.1			6.2			5.5			20.5	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	5	1	1	3	0	4	2	427	3	4	535	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	7	0	0	7	0	0	432	0	0	544	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	1	1	3	0	4	2	410	3	4	514	5
Future Vol, veh/h	5	1	1	3	0	4	2	410	3	4	514	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-5	-	-	-2	-	-	3	-	-	-3	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	0	0
Mvmt Flow	5	1	1	3	0	4	2	427	3	4	535	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	981	980	538	980	981	429	540	0	0	430	0	0
Stage 1	546	546	-	433	433	-	-	-	-	-	-	-
Stage 2	435	434	-	547	548	-	-	-	-	-	-	-
Critical Hdwy	6.1	5.5	5.7	6.7	6.1	6	4.3	-	-	4.3	-	-
Critical Hdwy Stg 1	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.1	4.5	-	5.7	5.1	-	-	-	-	-	-	-
Follow-up Hdwy	3	4	3.1	3	4	3.1	3	-	-	3	-	-
Pot Cap-1 Maneuver	333	331	619	283	280	679	782	-	-	854	-	-
Stage 1	689	607	-	720	614	-	-	-	-	-	-	-
Stage 2	772	659	-	628	553	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	328	328	619	280	277	679	782	-	-	854	-	-
Mov Cap-2 Maneuver	328	328	-	280	277	-	-	-	-	-	-	-
Stage 1	687	603	-	718	612	-	-	-	-	-	-	-
Stage 2	765	657	-	621	549	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.4	13.7	0	0.1
HCM LOS	C	B		

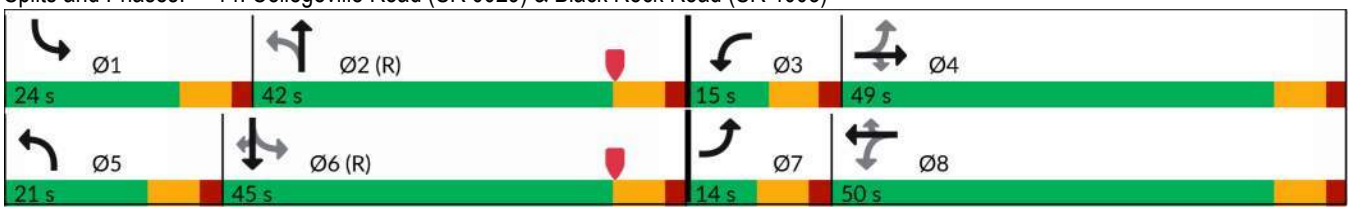
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	782	-	-	352	422	854	-	-
HCM Lane V/C Ratio	0.003	-	-	0.021	0.017	0.005	-	-
HCM Control Delay (s/veh)	9.6	0	-	15.4	13.7	9.2	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q (veh)	0	-	-	0.1	0.1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	185	104	82	412	205	166	529	23	139	443	142
Future Volume (vph)	128	185	104	82	412	205	166	529	23	139	443	142
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	14	12	12	14	11	12	12	11	12	12
Grade (%)		-4%			1%			-3%			3%	
Storage Length (ft)	215		250	0		260	245		0	525		180
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Ped Bike Factor										0.99		0.97
Frt			0.850			0.850		0.994				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1693	1800	1665	1701	1773	1608	1678	3450	0	1551	3335	1477
Flt Permitted	0.186			0.525			0.401			0.314		
Satd. Flow (perm)	332	1800	1665	940	1773	1608	708	3450	0	512	3335	1446
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			151			223		3				154
Link Speed (mph)		40			40			45			45	
Link Distance (ft)		1195			596			520			659	
Travel Time (s)		20.4			10.2			7.9			10.0	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	0%	0%	1%	1%	0%	0%	0%	5%	1%	2%
Adj. Flow (vph)	139	201	113	89	448	223	180	575	25	151	482	154
Shared Lane Traffic (%)												
Lane Group Flow (vph)	139	201	113	89	448	223	180	600	0	151	482	154
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		6
Detector Phase	7	4	4	3	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	15.0		3.0	15.0	15.0
Minimum Split (s)	10.0	11.0	11.0	11.0	11.0	11.0	11.0	23.0		11.0	23.0	23.0
Total Split (s)	14.0	49.0	49.0	15.0	50.0	50.0	21.0	42.0		24.0	45.0	45.0
Total Split (%)	10.8%	37.7%	37.7%	11.5%	38.5%	38.5%	16.2%	32.3%		18.5%	34.6%	34.6%
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max		None	C-Max	C-Max

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 6 (5%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	

Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 14: Collegeville Road (SR 0029) & Black Rock Road (SR 4003)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	185	104	82	412	205	166	529	23	139	443	142
Future Volume (veh/h)	128	185	104	82	412	205	166	529	23	139	443	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1906	1921	2027	1794	1780	1852	1912	1912	1912	1680	1736	1722
Adj Flow Rate, veh/h	139	201	63	89	448	91	180	575	22	151	482	122
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	2	0	0	1	1	0	0	0	5	1	2
Cap, veh/h	200	539	482	370	498	439	448	1393	53	391	1280	565
Arrive On Green	0.06	0.28	0.28	0.06	0.28	0.28	0.09	0.39	0.38	0.08	0.39	0.39
Sat Flow, veh/h	1816	1921	1718	1709	1780	1569	1821	3567	136	1600	3298	1457
Grp Volume(v), veh/h	139	201	63	89	448	91	180	292	305	151	482	122
Grp Sat Flow(s),veh/h/ln	1816	1921	1718	1709	1780	1569	1821	1816	1887	1600	1649	1457
Q Serve(g_s), s	7.1	10.9	3.6	4.7	31.5	5.8	7.5	15.2	15.3	7.2	13.6	7.3
Cycle Q Clear(g_c), s	7.1	10.9	3.6	4.7	31.5	5.8	7.5	15.2	15.3	7.2	13.6	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	200	539	482	370	498	439	448	709	737	391	1280	565
V/C Ratio(X)	0.69	0.37	0.13	0.24	0.90	0.21	0.40	0.41	0.41	0.39	0.38	0.22
Avail Cap(c_a), veh/h	200	635	568	384	603	531	502	709	737	478	1280	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.0	37.6	34.9	30.3	45.0	35.8	20.9	28.8	28.8	21.1	28.5	26.6
Incr Delay (d2), s/veh	9.8	0.4	0.1	0.3	14.6	0.2	0.6	1.8	1.7	0.6	0.8	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.5	8.9	2.7	3.5	22.1	4.0	5.7	11.0	11.4	4.8	9.2	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	44.9	38.0	35.1	30.6	59.6	36.0	21.5	30.6	30.5	21.7	29.4	27.4
LnGrp LOS	D	D	D	C	E	D	C	C	C	C	C	C
Approach Vol, veh/h		403			628			777			755	
Approach Delay, s/veh		39.9			52.1			28.4			27.5	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.9	56.8	13.9	42.5	17.2	56.4	14.0	42.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	17.0	35.0	8.0	42.0	14.0	38.0	7.0	43.0
Max Q Clear Time (g_c+I1), s	9.7	17.7	7.2	13.4	10.0	16.1	9.6	34.0
Green Ext Time (p_c), s	0.2	1.9	0.0	0.9	0.2	2.3	0.0	1.4

Intersection Summary	
HCM 6th Ctrl Delay, s/veh	35.8
HCM 6th LOS	D

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	201	207	81	249	248	60
Future Volume (vph)	201	207	81	249	248	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	10	12
Grade (%)	-1%			0%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.932					0.850
Flt Protected				0.988	0.950	
Satd. Flow (prot)	1558	0	0	1660	1557	1522
Flt Permitted				0.988	0.950	
Satd. Flow (perm)	1558	0	0	1660	1557	1522
Link Speed (mph)	40			40	45	
Link Distance (ft)	5545			344	5693	
Travel Time (s)	94.5			5.9	86.3	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	1%	1%	0%	0%	2%	0%
Adj. Flow (vph)	242	249	98	300	299	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	491	0	0	398	299	72
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	24.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	201	207	81	249	248	60
Future Vol, veh/h	201	207	81	249	248	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-1	-	-	0	1	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	1	1	0	0	2	0
Mvmt Flow	242	249	98	300	299	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	491	0	863	367
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.3	-	6.62	6.3
Critical Hdwy Stg 1	-	-	-	-	5.62	-
Critical Hdwy Stg 2	-	-	-	-	5.62	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	813	-	344	713
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	675	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	813	-	~ 294	713
Mov Cap-2 Maneuver	-	-	-	-	~ 294	-
Stage 1	-	-	-	-	785	-
Stage 2	-	-	-	-	577	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	2.5	79.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	294	713	-	-	813	-
HCM Lane V/C Ratio	1.016	0.101	-	-	0.12	-
HCM Control Delay (s/veh)	95.8	10.6	-	-	10	0
HCM Lane LOS	F	B	-	-	B	A
HCM 95th %tile Q (veh)	10.9	0.3	-	-	0.4	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	38	8	11	346	168	55
Future Volume (vph)	38	8	11	346	168	55
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	12	11	12
Grade (%)	0%			-3%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976				0.967	
Flt Protected	0.961			0.998		
Satd. Flow (prot)	1655	0	0	1788	1654	0
Flt Permitted	0.961			0.998		
Satd. Flow (perm)	1655	0	0	1788	1654	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	129			431	3144	
Travel Time (s)	2.9			9.8	56.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	41	9	12	376	183	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	388	243	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	8	11	346	168	55
Future Vol, veh/h	38	8	11	346	168	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	-3	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	41	9	12	376	183	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	613	213	243	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	514	880	992	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	773	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	506	880	992	-	-	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.3	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	992	-	546	-	-
HCM Lane V/C Ratio	0.012	-	0.092	-	-
HCM Control Delay (s/veh)	8.7	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	3	4	380	220	11
Future Volume (vph)	9	3	4	380	220	11
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Grade (%)	0%			0%	-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.969				0.994	
Flt Protected	0.963					
Satd. Flow (prot)	1647	0	0	1765	1797	0
Flt Permitted	0.963					
Satd. Flow (perm)	1647	0	0	1765	1797	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	161			3144	362	
Travel Time (s)	3.7			15.3	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	1%	2%
Adj. Flow (vph)	10	3	4	413	239	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	0	417	251	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	3	4	380	220	11
Future Vol, veh/h	9	3	4	380	220	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	-3	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	1	2
Mvmt Flow	10	3	4	413	239	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	666	245	251	0	-	0
Stage 1	245	-	-	-	-	-
Stage 2	421	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	477	844	985	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	475	844	985	-	-	-
Mov Cap-2 Maneuver	475	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.9	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	985	-	533	-	-
HCM Lane V/C Ratio	0.004	-	0.024	-	-
HCM Control Delay (s/veh)	8.7	0	11.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q (veh)	0	-	0.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	3	4	63	58	8
Future Volume (vph)	4	3	4	63	58	8
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	12	12	9	9	12
Grade (%)	0%			1%	1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.942				0.983	
Flt Protected	0.972			0.997		
Satd. Flow (prot)	1616	0	0	1605	1581	0
Flt Permitted	0.972			0.997		
Satd. Flow (perm)	1616	0	0	1605	1581	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	208			1475	363	
Travel Time (s)	4.7			28.4	7.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	0%	0%	2%
Adj. Flow (vph)	4	3	4	68	63	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	7	0	0	72	72	0
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	3	4	63	58	8
Future Vol, veh/h	4	3	4	63	58	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	1	1	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	0	0	2
Mvmt Flow	4	3	4	68	63	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	144	68	72	0	-	0
Stage 1	68	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.3	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3	3.1	3	-	-	-
Pot Cap-1 Maneuver	985	1063	1134	-	-	-
Stage 1	1114	-	-	-	-	-
Stage 2	1105	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	981	1063	1134	-	-	-
Mov Cap-2 Maneuver	981	-	-	-	-	-
Stage 1	1110	-	-	-	-	-
Stage 2	1105	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.6	0.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1134	-	1015	-	-
HCM Lane V/C Ratio	0.004	-	0.007	-	-
HCM Control Delay (s/veh)	8.2	0	8.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q (veh)	0	-	0	-	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	2	0	6	1	0	5
Future Volume (vph)	2	0	6	1	0	5
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	12	12	10	12	12
Grade (%)	-2%			5%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.865	
Flt Protected				0.958		
Satd. Flow (prot)	1697	0	0	1542	1526	0
Flt Permitted				0.958		
Satd. Flow (perm)	1697	0	0	1542	1526	0
Link Speed (mph)	25			25	30	
Link Distance (ft)	259			379	166	
Travel Time (s)	7.1			10.0	3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	2%	2%
Adj. Flow (vph)	2	0	7	1	0	5
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	0	0	8	5	0
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	0	6	1	0	5
Future Vol, veh/h	2	0	6	1	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-2	-	-	5	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	2
Mvmt Flow	2	0	7	1	0	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	2	0	17	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.3	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	3	-	3	3.1
Pot Cap-1 Maneuver	-	-	1198	-	1172	1158
Stage 1	-	-	-	-	1197	-
Stage 2	-	-	-	-	1181	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1198	-	1165	1158
Mov Cap-2 Maneuver	-	-	-	-	1165	-
Stage 1	-	-	-	-	1197	-
Stage 2	-	-	-	-	1174	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	6.9	8.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1158	-	-	1198	-
HCM Lane V/C Ratio	0.005	-	-	0.005	-
HCM Control Delay (s/veh)	8.1	-	-	8	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q (veh)	0	-	-	0	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	162	339	24	16	18
Future Volume (vph)	27	162	339	24	16	18
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Lane Width (ft)	12	10	10	12	12	12
Grade (%)		-3%	3%		0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.991		0.927	
Flt Protected		0.993			0.978	
Satd. Flow (prot)	0	1674	1623	0	1600	0
Flt Permitted		0.993			0.978	
Satd. Flow (perm)	0	1674	1623	0	1600	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		641	654		130	
Travel Time (s)		19.6	9.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	1%	2%	2%	2%
Adj. Flow (vph)	29	176	368	26	17	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	205	394	0	37	0
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	162	339	24	16	18
Future Vol, veh/h	27	162	339	24	16	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-3	3	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	1	1	2	2	2
Mvmt Flow	29	176	368	26	17	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	394	0	-	0	615	381
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	234	-
Critical Hdwy	4.3	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	3	-	-	-	3	3.1
Pot Cap-1 Maneuver	879	-	-	-	512	705
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	929	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	879	-	-	-	493	705
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	929	-

Approach	EB	WB	SB
HCM Control Delay, s/v	1.3	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	879	-	-	-	586
HCM Lane V/C Ratio	0.033	-	-	-	0.063
HCM Control Delay (s/veh)	9.2	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0.1	-	-	-	0.2

APPENDIX I

Traffic Signal Plans

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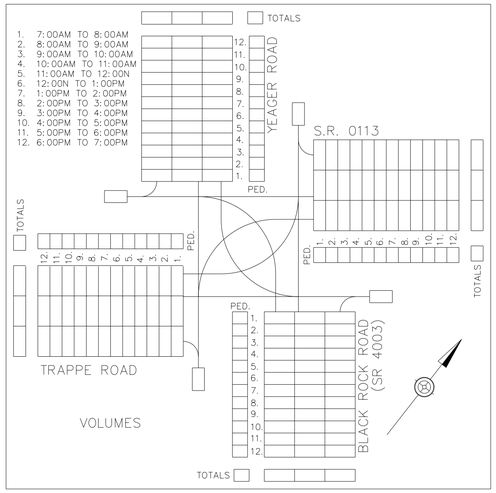
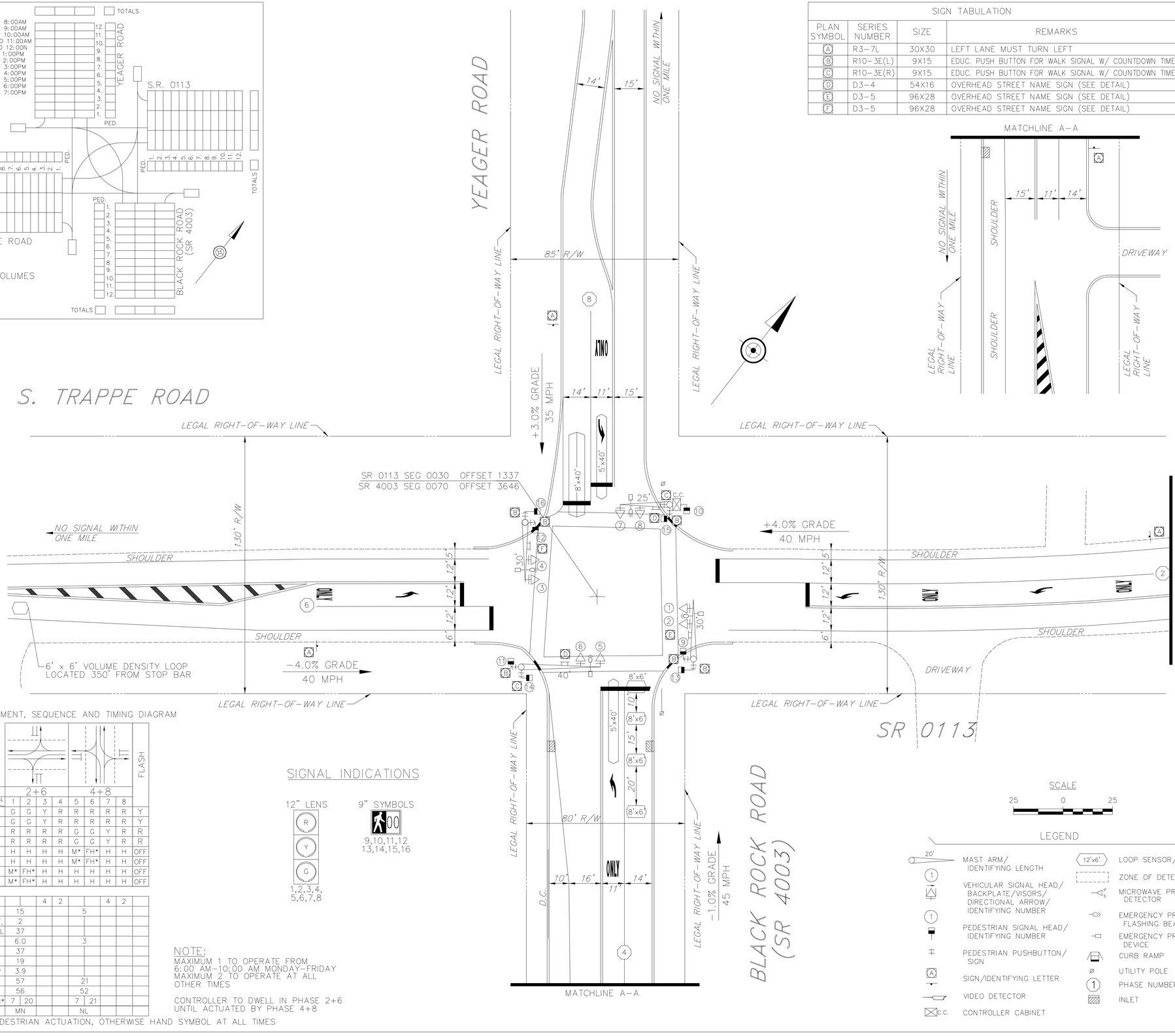


SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R3-7L	30X30	LEFT LANE MUST TURN LEFT
B	R10-3E(L)	9X15	EDUC. PUSH BUTTON FOR WALK SIGNAL W/ COUNTDOWN TIMER
C	R10-3E(R)	9X15	EDUC. PUSH BUTTON FOR WALK SIGNAL W/ COUNTDOWN TIMER
D	D3-4	54X16	OVERHEAD STREET NAME SIGN (SEE DETAIL)
E	D3-5	96X28	OVERHEAD STREET NAME SIGN (SEE DETAIL)
F	D3-5	96X28	OVERHEAD STREET NAME SIGN (SEE DETAIL)



MOVEMENT, SEQUENCE AND TIMING DIAGRAM

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

FIXED			4	2			4	2	
MINIMUM	15				5				
SEC./ACT.	2								
MAX. INITIAL	37								
PASSAGE	6.0				3				
TBR	37								
TTR	19								
MIN. GAP	3.9								
MAX. I	57				21				
MAX. II	56				52				
PEDESTRIAN*	7	20			7	21			
MEMORY	MN				NL				

*UPON PEDESTRIAN ACTUATION, OTHERWISE HAND SYMBOL AT ALL TIMES

SIGNAL INDICATIONS

12" LENS: R, Y, G — 1,2,3,4, 5,6,7,8

9" SYMBOLS: 00 — 9,10,11,12 13,14,15,16

NOTE:
MAXIMUM 1 TO OPERATE FROM 6:00 AM-10:00 AM MONDAY-FRIDAY
MAXIMUM 2 TO OPERATE AT ALL OTHER TIMES

CONTROLLER TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 4+8

SCALE
25 0 25

LEGEND

- MAST ARM/ IDENTIFYING LENGTH (20')
- VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER (1)
- PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER (1)
- PEDESTRIAN PUSHBUTTON/ SIGN
- SIGN/IDENTIFYING LETTER (A)
- VIDEO DETECTOR
- C.C. CONTROLLER CABINET
- LOOP SENSOR/SIZE (12'x6')
- ZONE OF DETECTION
- MICROWAVE PRESENCE DETECTOR
- EMERGENCY PRE-EMPTION FLASHING BEACON
- EMERGENCY PRE-EMPTION DEVICE
- CURB RAMP
- UTILITY POLE
- PHASE NUMBER (1)
- INLET

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP

INTERSECTION: S. TRAPPE ROAD (S.R. 0113) AND BLACK ROCK ROAD (S.R. 4003)/YEAGER ROAD

REVIEWED:

DocuSigned by: 122507E0AA364CD
MUNICIPAL OFFICIAL — DATE 5/6/2021

RECOMMENDED:

MARK L. KRAY 08/04/99

DOUGLAS MAY 08/05/99
DISTRICT TRAFFIC ENGINEER — DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	EXTEND MA 25' TO 30'	JPS / MK	12/13/99	RP MK	12/16/99 12/13/99	DWM	12/16/99
2	TIMING CHANGE	TPD	7/16/08	DLA	7/17/08	ABP	8/17/08
3	ADD EMERGENCY PRE-EMPTION, LATCHING PUSH BUTTONS AND COUNTDOWN PED HEADS	MCM	5/11/18	KPL	8/2/18	DLA	8/7/18
4	ADD TRAPPE RD LEFT TURN LANES; RE-ALIGN SH 1	TPD	5/6/21				
5							
6							
7							
8							

SHEET 2 OF 3 | PERMIT # 64-3116 | FILE # 3116

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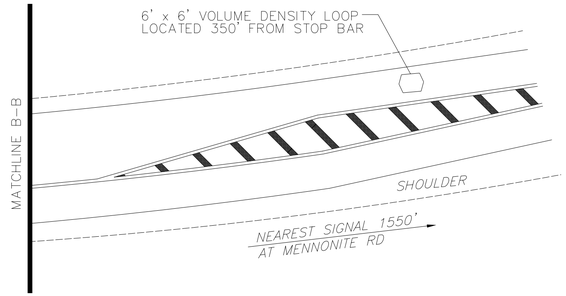
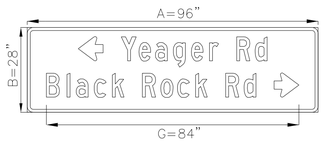


SIGN DETAILS
NOT TO SCALE

SIGN D

FONT: HIGHWAY GOTHIC SERIES E
8" UPPER CASE
6" LOWER CASE



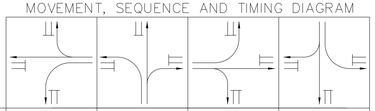
SIGN E

FONT: HIGHWAY GOTHIC SERIES C
8" UPPER CASE
6" LOWER CASE

SIGN F

FONT: HIGHWAY GOTHIC SERIES C
8" UPPER CASE
6" LOWER CASE

EMERGENCY PREEMPTION PHASING
MOVEMENT, SEQUENCE AND TIMING DIAGRAM



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

** FOR DURATION OF PREEMPTION

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

ⓠ G WHEN RETURNING TO NORMAL OPERATION

EMERGENCY PREEMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PREEMPTION FOR THE NORTHBOUND APPROACH OF BLACK ROCK ROAD (SR 4003), THE SOUTHBOUND APPROACH OF YEAGER ROAD AND THE EASTBOUND & WESTBOUND APPROACHES OF S. TRAPPE ROAD (SR 0113) WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.

  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PREEMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PREEMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PREEMPTED DURING THE "MAN" PHASE, THE MAN PHASE SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "FLASHING HAND" INDICATION IN ITS ENTIRETY, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE PROCEEDING TO THE PREEMPTION PHASE.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PREEMPTION PHASES ARE ACTIVATED WHILE IN PREEMPTION, THE ORIGINAL PREEMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PREEMPTION PHASE.
- UPON COMPLETION OF PREEMPTION, PHASE 2,4,6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
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2	TIMING CHANGE	TPD	7/16/08	DLA	7/17/08	ABP	8/17/08
3	ADD EMERGENCY PRE-EMPTION, LATCHING PUSH BUTTONS AND COUNTDOWN PED HEADS	MCM	5/11/18	KPL	8/2/18	DLA	8/7/18
4	ADD TRAPPE RD LEFT TURN LANES; RE-ALIGN SH 1	TPD	5/6/21				
5							
6							
7							
8							

SHEET 3 OF 3 | PERMIT # 64-3116 | FILE # 3116

MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

PHASE / INTERVAL	2+6			4+8			FLASH
SIGNAL	1	2	3	4	5	6	
1,2	G	Y	R	R	R	R	Y
3,4	G	Y	R	R	R	R	Y
5,6	R	R	R	G	Y	R	R
7,8	R	R	R	G	Y	R	R
9	G	Y	R	R	R	R	OFF
10	G	Y	R	R	R	R	OFF
11	R	R	R	G	Y	R	OFF
12	R	R	R	G	Y	R	OFF

		5	2		4	2	
FIXED							
MINIMUM	18			3			
SEC. / ACT.	1.5						
MAX. INT.	35						
PASSAGE	5			3			
TBR	35						
TO REDUCE	15						
MIN. GAP	2.7						
MAX. 1	47			20			
MAX. 2	47			20			
PEDESTRIAN*	18			20			
MEMORY	MN			NL			

* CONTROLLER TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY PHASE 4+8 OR PEDESTRIAN PUSH BUTTON

		5	2		4	2		CYCLE
PROGRAM 1	35	5	2	22	4	2		70 SEC
PROGRAM 2	35	5	2	22	4	2		70 SEC
PROGRAM 3	28	5	2	29	4	2		70 SEC

*UPON PEDESTRIAN ACTUATION ONLY

WEEKLY PROGRAM CHART

EVENT	DAY *	TIME	REMARKS
1	1–7	0000	MAXIMUM 1
2	1–5	0600	PROGRAM 1
3	1–5	0900	MAXIMUM 1
4	1–5	1500	PROGRAM 2
5	1–7	1800	MAXIMUM 1
6	6–7	1000	PROGRAM 3
7	6–7	1400	MAXIMUM 1

* DAY 1 = MONDAY

EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE, AND TIMING DIAGRAM

PHASE / INTERVAL	2			6			4			8		
SIGNALS	7	8	9	10	11	12	13	14	15	16	17	18
1,2	G	Y	R	R	R	R	R	R	R	R	R	R
3,4	R	R	R	G	Y	R	R	R	R	R	R	R
5,6	R	R	R	R	R	R	G	Y	R	R	R	R
7,8	R	R	R	R	R	R	R	R	R	G	Y	R
9	R	R	R	R	R	R	R	R	R	R	R	R
10	R	R	R	R	R	R	R	R	R	R	R	R
11	R	R	R	R	R	R	R	R	R	R	R	R
12	R	R	R	R	R	R	R	R	R	R	R	R
FIXED	▲	5	2	▲	5	2	▲	4	2	▲	4	2

▲ FOR DURATION OF PRE-EMPTION

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EMERGENCY PRE-EMPTION OPERATION NOTES

Ⓖ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATION

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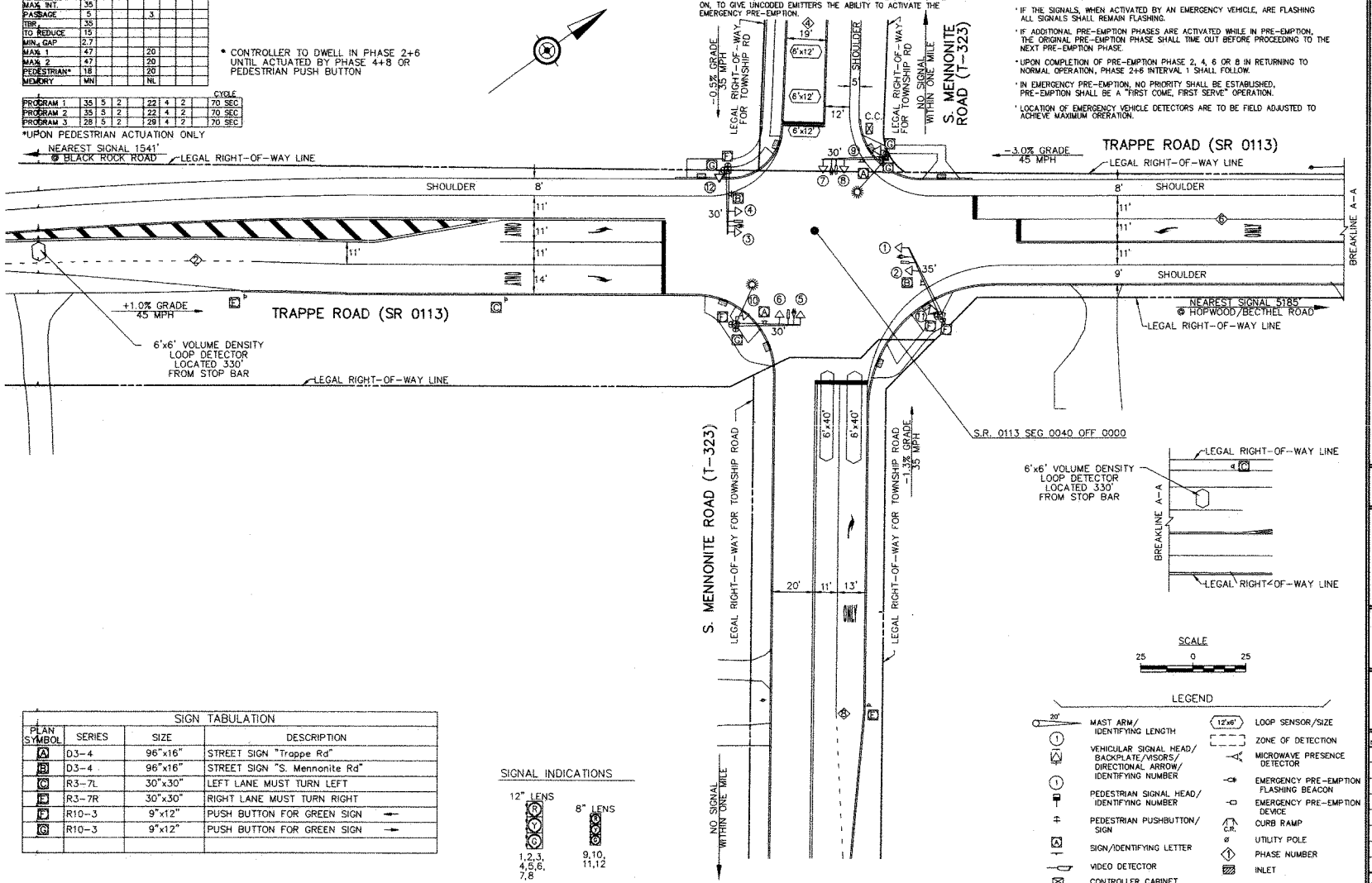

SIGN TABULATION

PLAN SYMBOL	SERIES	SIZE	DESCRIPTION
A	D3-4	96"x16"	STREET SIGN "Trappe Rd"
B	D3-4	96"x16"	STREET SIGN "S. Mennonite Rd"
C	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
E	R3-7R	30"x30"	RIGHT LANE MUST TURN RIGHT
F	R10-3	9"x12"	PUSH BUTTON FOR GREEN SIGN ←
G	R10-3	9"x12"	PUSH BUTTON FOR GREEN SIGN →

SIGNAL INDICATIONS

LEGEND

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

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP
INTERSECTION: TRAPPE ROAD (S.R. 0113) AND S. MENNONITE ROAD (T-323)

REVIEWED:

DATE

MUNICIPAL OFFICIAL DATE

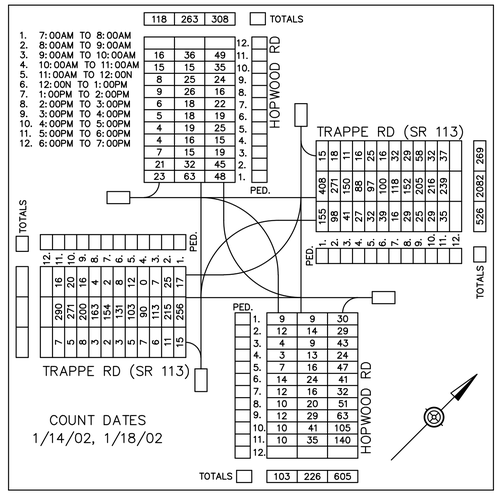
RECOMMENDED:

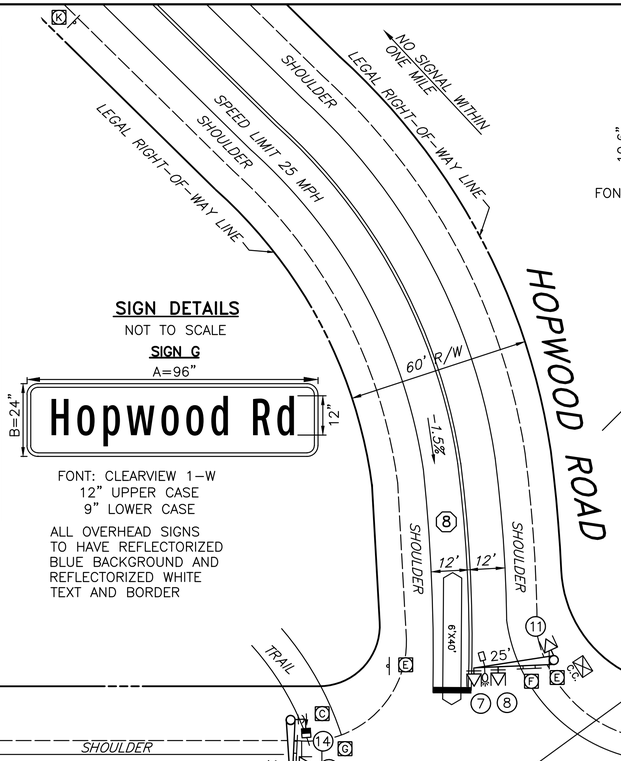
KEVIN CONAHAN 2/13/06

LOUIS R. BELMONTE 2/14/06
DISTRICT TRAFFIC ENGINEER DATE

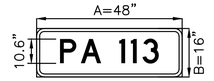
NO.	REVISION	RES./ REVW.	DATE	REVR.	DATE	RECOM.	DATE
1	AS-BUILT, REVISED CLEARANCES, SPLITS	MDM		DAL	10/24/06		
2							
3							
4							
5							
6							
7							
8							

SHEET 2 OF 2 | PERMIT # 64-3746 | FILE # 3746





SIGN DETAILS
NOT TO SCALE
SIGN F



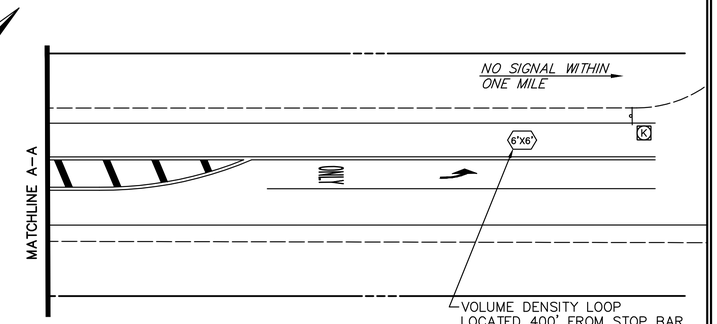
FONT: HIGHWAY GOTHIC SERIES D
10.6" UPPER CASE

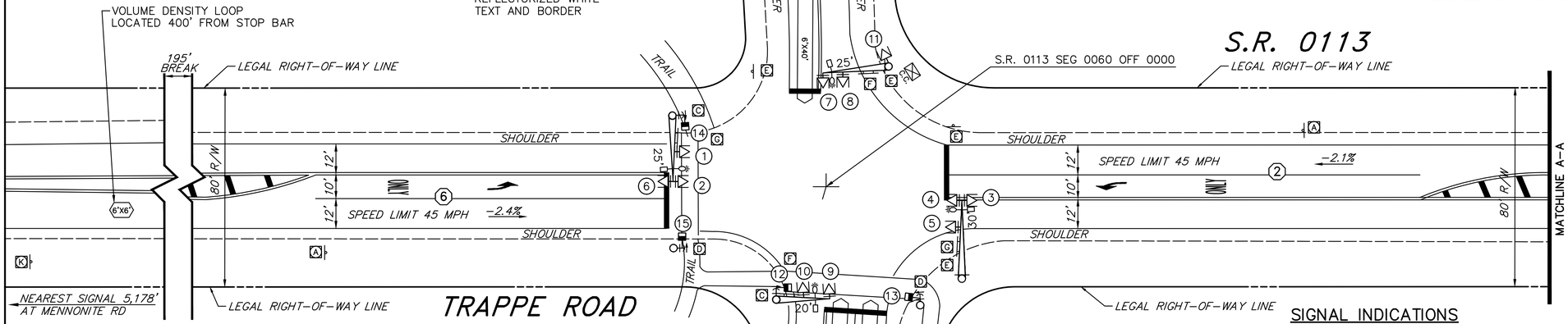
SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R3-7L	30X30	LEFT LANE MUST TURN LEFT
B	R3-7R	30X30	RIGHT LANE MUST TURN RIGHT
C	R10-3B(L)	9X12	EDUC PUSH BUTTON FOR WALKING PERSON SIGNAL ←
D	R10-3B(R)	9X12	EDUC PUSH BUTTON FOR WALKING PERSON SIGNAL →
E	R9-3	18X18	NO PEDESTRIAN CROSSING
F	D3-4	48X16	PA 113
G	D3-4	96X24	Hopwood Rd
K	W3-3	36X36	SIGNAL AHEAD

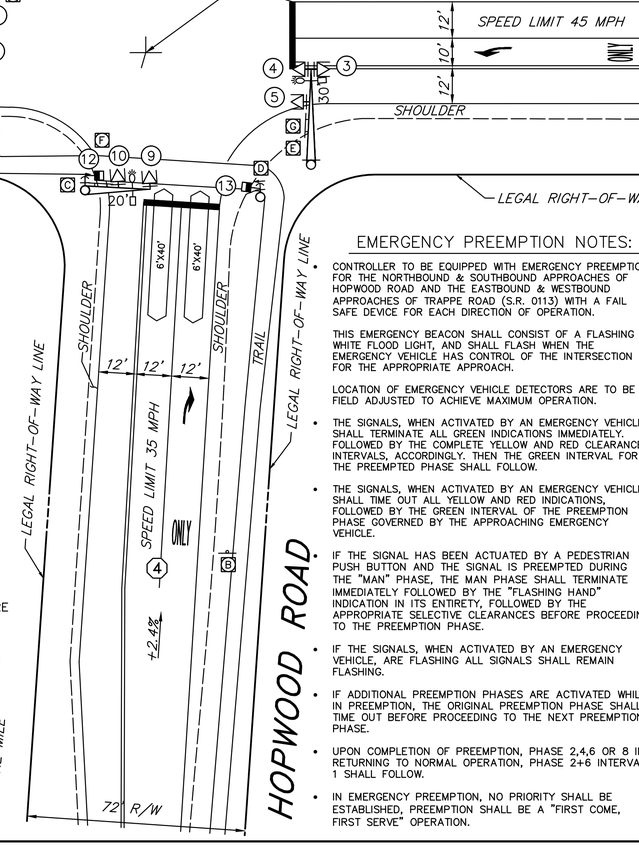
SIGN DETAILS
NOT TO SCALE
SIGN G

FONT: CLEARVIEW 1-W
12" UPPER CASE
9" LOWER CASE

ALL OVERHEAD SIGNS TO HAVE REFLECTORIZED BLUE BACKGROUND AND REFLECTORIZED WHITE TEXT AND BORDER







MOVEMENT, SEQUENCE AND TIMING DIAGRAM

PHASE	2+6				4+8				FLASH
INTERVAL / SIGNALS	1	2	3	4	5	6	7	8	
1,2,3	G	G	Y	R	R	R	R	R	Y
4,5,6	G	G	Y	R	R	R	R	R	Y
7,8	R	R	R	R	G	G	Y	R	R
9,10,11	R	R	R	R	G	G	Y	R	R
12,13	M	FH	H	H	H	H	H	H	OFF
14,15	H	H	H	H	M	FH	H	H	OFF

FIXED			5	2			4	2
MINIMUM	20				5			
SEC./ACT	3							
MAX. INITIAL	42							
PASSAGE	6				3			
TIME TO REDUCE	20							
TIME BEFORE RED.	42							
MIN. GAP	3.8							
MAXIMUM 1	62				20			
PEDESTRIAN*	7	13			7	17		
MEMORY	MN				NL			

* UPON PEDESTRIAN ACTUATION ONLY, OTHERWISE HAND SYMBOL AT ALL TIMES.

EMERGENCY PREEMPTION PHASING
MOVEMENT, SEQUENCE AND TIMING DIAGRAM

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

** FOR DURATION OF PREEMPTION

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

ⓞ G WHEN RETURNING TO NORMAL OPERATION

EMERGENCY PREEMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PREEMPTION FOR THE NORTHBOUND & SOUTHBOUND APPROACHES OF HOPWOOD ROAD AND THE EASTBOUND & WESTBOUND APPROACHES OF TRAPPE ROAD (S.R. 0113) WITH A FAIL SAFE DEVICE FOR EACH DIRECTION OF OPERATION.

  THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, AND SHALL FLASH WHEN THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.

  LOCATION OF EMERGENCY VEHICLE DETECTORS ARE TO BE FIELD ADJUSTED TO ACHIEVE MAXIMUM OPERATION.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INDICATIONS IMMEDIATELY, FOLLOWED BY THE COMPLETE YELLOW AND RED CLEARANCE INTERVALS, ACCORDINGLY. THEN THE GREEN INTERVAL FOR THE PREEMPTED PHASE SHALL FOLLOW.
- THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, SHALL TIME OUT ALL YELLOW AND RED INDICATIONS, FOLLOWED BY THE GREEN INTERVAL OF THE PREEMPTION PHASE GOVERNED BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGNAL HAS BEEN ACTUATED BY A PEDESTRIAN PUSH BUTTON AND THE SIGNAL IS PREEMPTED DURING THE "MAN" PHASE, THE MAN PHASE SHALL TERMINATE IMMEDIATELY FOLLOWED BY THE "FLASHING HAND" INDICATION IN ITS ENTIRETY, FOLLOWED BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE PROCEEDING TO THE PREEMPTION PHASE.
- IF THE SIGNALS, WHEN ACTIVATED BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGNALS SHALL REMAIN FLASHING.
- IF ADDITIONAL PREEMPTION PHASES ARE ACTIVATED WHILE IN PREEMPTION, THE ORIGINAL PREEMPTION PHASE SHALL TIME OUT BEFORE PROCEEDING TO THE NEXT PREEMPTION PHASE.
- UPON COMPLETION OF PREEMPTION, PHASE 2,4,6 OR 8 IN RETURNING TO NORMAL OPERATION, PHASE 2+6 INTERVAL 1 SHALL FOLLOW.
- IN EMERGENCY PREEMPTION, NO PRIORITY SHALL BE ESTABLISHED, PREEMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.

SIGNAL INDICATIONS

9" SYMBOLS
12,13
14,15

12" LENS
R
Y
G
1,2,3,4
5,6,7,8
9,10,11

SIGNALS TO BE EQUIPPED WITH TUNNEL VISORS 1-11

SCALE
0 25 50 FEET

LEGEND

20'	MAST ARM/ IDENTIFYING LENGTH	12'x6'	LOOP SENSOR/SIZE
1	VEHICULAR SIGNAL HEAD/ BACKPLATE/VISORS/ DIRECTIONAL ARROW/ IDENTIFYING NUMBER		ZONE OF DETECTION
			MICROWAVE PRESENCE DETECTOR
1	PEDESTRIAN SIGNAL HEAD/ IDENTIFYING NUMBER		EMERGENCY PRE-EMPTION FLASHING BEACON
	PEDESTRIAN PUSHBUTTON/ SIGN		EMERGENCY PRE-EMPTION DEVICE
A	SIGN/IDENTIFYING LETTER		CURB RAMP
	VIDEO DETECTOR		UTILITY POLE
C.C.	CONTROLLER CABINET	1	PHASE NUMBER
			INLET
			DILEMMA ZONE DETECTOR

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP
INTERSECTION: TRAPPE ROAD (S.R. 0113) & HOPWOOD ROAD

REVIEWED:

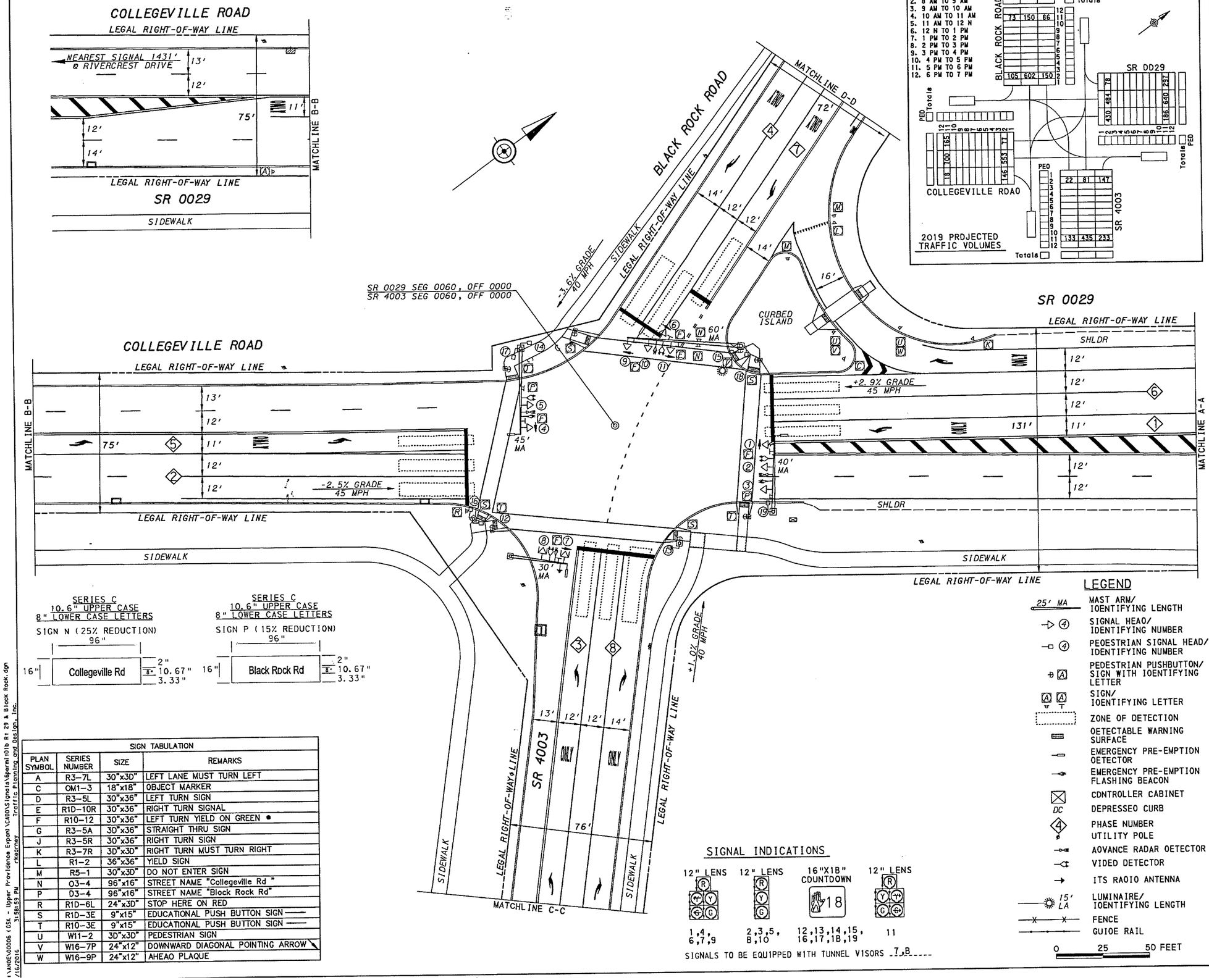
DATE
TIMOTHY J. TIEPERMAN 3/8/2021
MUNICIPAL OFFICIAL DATE

RECOMMENDED:
MARK L. KRAY 11/14/02
LOUIS R BELMONTE 11/15/02
DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	NEW DRAWING, REVISE PRE-EMPTION NOTES, RETIMING	McM	6/27/16	DLA	7/2/16	ABP	7/2/16
2	RENAMING OF BECHTEL RD TO HOPWOOD RD	McM	2/18/21				
3							
4							
5							
6							
7							
8							

SHEET 2 OF 2 | PERMIT # 64-3344 | FILE # 3344

\\fhfs\mem\eng\819494 - 188 Bechtel Road\Submissions\2021-01-14 - Revised Traffic Signal Plan\File #3344 Rev 2.dwg, 3/10/2021 9:08:57 AM, DWG To PDF.pc3



SIGN TABULATION			
PLAN SYMBOL	SERIES NUMBER	SIZE	REMARKS
A	R3-7L	30"x30"	LEFT LANE MUST TURN LEFT
C	OM1-3	18"x18"	OBJECT MARKER
D	R3-5L	30"x36"	LEFT TURN SIGN
E	R1D-10R	30"x36"	RIGHT TURN SIGNAL
F	R10-12	30"x36"	LEFT TURN YIELD ON GREEN ●
G	R3-5A	30"x36"	STRAIGHT THRU SIGN
J	R3-5R	30"x36"	RIGHT TURN SIGN
K	R3-7R	30"x30"	RIGHT TURN MUST TURN RIGHT
L	R1-2	36"x36"	YIELD SIGN
M	R5-1	30"x30"	DO NOT ENTER SIGN
N	O3-4	96"x16"	STREET NAME "Collegeville Rd "
P	O3-4	96"x16"	STREET NAME "Black Rock Rd"
R	R1D-6L	24"x30"	STOP HERE ON RED
S	R1D-3E	9"x15"	EDUCATIONAL PUSH BUTTON SIGN ——
T	R10-3E	9"x15"	EDUCATIONAL PUSH BUTTON SIGN ——
U	W11-2	30"x30"	PEDESTRIAN SIGN
V	W16-7P	24"x12"	DOWNWARD DIAGONAL POINTING ARROW
W	W16-9P	24"x12"	AHEAD PLAQUE

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SYSTEM PERMIT # I-0055

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP

INTERSECTION: COLLEGEVILLE ROAD (SR 0029) AND BLACK ROCK ROAD (SR 4003)

REVIEWED:

MUNICIPAL OFFICIAL — DATE 8/23/2016

RECOMMENDED:
MARK L KRAY — 09/23/93

DOUGLAS MAY — 09/27/93
DISTRICT TRAFFIC ENGINEER — DATE

NO	REVISION	DES/ REVW	DATE	REVW	DATE	RECOM	DATE
1	ADDED VO OPERATION, ALL OAK	PAT/ NV	09/20/93	MLK	09/23/93	DM	09/27/93
2	ADDED INTERCONNECT MOD. TIMINGS AND CONT.)	ORA/ BRB	10/18/02	MLK	10/18/02	LRB	11/15/02
3	MODIFIED TIMINGS	FAZ/ JRM	01/20/04	MLK	01/20/04	LRB	01/26/04
4	MOD. TIMINGS, RUN AM FREE	KMC	10/31/05	KMC	10/31/05	LRB	11/01/05
5	ADDED EMERGENCY PREEMTION & SIGNS W, N, & P	TPD / TPD	12/24/07	ABP	12/26/07	LRB	01/04/08
6	TIMING CHANGE, LENGTHEN EB LT LANE, ADD OLC & SIGN M	TPD	07/16/08	OLA	07/17/08	ABP	08/17/08
7	WIDEN EB APPROACH ADD EB RIGHT TURN LANE, SIDE ST VIDEO DET & PEDS, RETIMED, UPDATE PREEMP NOTES	TPD		DLA	07/11/13	ABP	07/12/13
8	INTERSECTION WIDENING, NEW ADA RAMPS, SIGNAL EQUIPMENT	BURNS	03/11/16	DLA	07/07/16	ABP	07/12/16
9	ADD WB RT LANE, #3 & 7, WB RT SIGNAL, ADAPTIVE) REVISE STOP BAR ZONES	TPD		DLA	9/7/16	ABP	9/8/16

SHEET 2 OF 3 | PERMIT # 64-1712 | FILE # 1712

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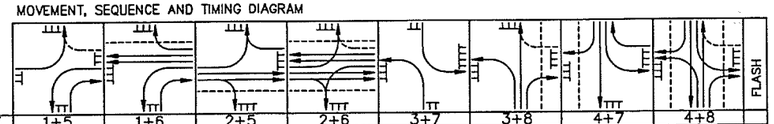
7/16/2016 3:58:59 PM rmcnamey
Traffic Planning and Design, Inc.

MOVEMENT, SEQUENCE AND TIMING DIAGRAM



PHASE	1+5			1+6				2+5				2+6				3+7			3+8				4+7				4+8				FLASH
INTERVAL / SIGNALS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
1	R/G	R/G	R/G	R	R	R	R	R/G	R/G	Y/G	R/G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
2,3	R	R	R	R	R	R	R	G	G	Y/G	R/G	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
4	R/G	R/G	R/G	R/G	R/G	Y/G	R/G	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Y	
5	R	R	R	G	G	Y/G	R/G	R	R	R	R	G	G	Y	R	R	R	R	R	R	R	R	R/G	R/G	Y/G	R/G	G	G	Y	R	
6,7	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R/G	R/G	R/G	R	R	R	R	G	G	Y/G	R/G	G	G	Y	R	R
8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y/G	R/G	G	G	Y	R	R
9	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R/G	R/G	R/G	R/G	R/G	Y/G	R/G	R	R	R	R	G	G	Y	R	R
10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	G	Y/G	R/G	R	R	R	R	G	G	Y	R	R
11	R/G	R/G	R/G	R/G	R/G	R/G	R/G	R	R	R	R	R	R	R	R	R	R	R	G	G	Y/G	R/G	R	R	R	R	G	G	Y	R	OFF
12,13	H	H	H	H	H	H	M	FH	H	H	M	FH	H	H	M	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	OFF
14,15	H	H	H	M	FH	H	H	H	H	H	M	FH	H	H	M	FH	H	H	H	H	H	H	H	H	H	H	H	H	H	H	OFF
16,17	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	FH	H	H	M	FH	H	H	OFF
18,19	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	FH	H	H	H	H	H	H	M	FH	H	H	OFF

FIXED		5	2		5	2		5	2		5	2		5	2		5	2		5	2		5	2
MINIMUM	3			3			3			15			3			3			3			3		
PASSAGE	#			#			#			#/**			#			#			#			#		
MAX. I	10			10			10			57			7			7			7			18		
MAX. II	17			17			10			49			7			7			7			41		
PEDESTRIAN*	–			⑩			⑩			7	26		–			⑪			⑪			7	21	
MEMORY	NL			NL			NL			SVR			NL			NL			NL			NL		

REFER TO SYSTEM PERMIT #–0055 FOR TRAFFIC ADAPTIVE OPERATION

- UPON PEDESTRIAN ACTUATION, OTHERWISE HAND SYMBOL AT ALL TIMES
- PEDESTRIAN COUNTDOWN TIMER TO COUNTDOWN DURING FLASHING HAND INTERVAL
- # PHASE PASSAGE CALCULATED BY TRAFFIC ADAPTIVE PROCESSOR
- PHASE SEQUENCE SELECTED BY TRAFFIC ADAPTIVE PROCESSOR
- ADAPTIVE OPERATION SHALL NOT ALLOW PHASE 1+6 OR 2+5 TO FOLLOW 2+6, OR PHASE 3+8 OR 4+7 TO FOLLOW 4+8.
- CONTROLLER TO DWELL IN PHASE 2+6 UNTIL ACTUATED BY ANOTHER PHASE
- ADVANCE DILEMMA/DENSITY ZONE DETECTION TO OPERATE DURING FREE OPERATION

** ADVANCE DILEMMA ZONE DETECTION SYSTEM NOTES

EST. TIME OF ARRIVAL: MIN. 2.5 SEC.–MAX. 5.5 SEC.
RANGE OF DETECTION: STOP BAR TO 450 FT.
SPEED BOUNDRY: MIN. 27 MPH – MAX.100 MPH

DENSITY ZONE NOTES

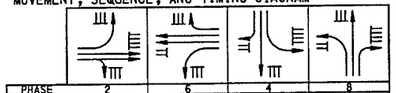
RANGE OF DETECTION: STOP BAR TO 100 FT.
MINIMUM SPEED BOUNDRY: 5 MPH OR 30 MPH

OPERATIONAL NOTES:

① R/G IF FOLLOWED BY PHASE 2+5
② R/G IF FOLLOWED BY PHASE 1+6
③ G/Y IF FOLLOWED BY PHASE 2+6
④ G IF FOLLOWED BY PHASE 2+6
⑤ G/Y IF FOLLOWED BY PHASE 4+8
⑥ G IF FOLLOWED BY PHASE 4+8
⑦ R/G IF FOLLOWED BY PHASE 4+7
⑧ R/G IF FOLLOWED BY PHASE 3+8
⑨ R/G IF FOLLOWED BY PHASE 1+6
⑩ TIMING TO BE AS SHOWN IN PHASE 2+6. IT MAY TIME OUT IN THIS PHASE OR MAY BE COMPLETED IN PHASE 2+6
⑪ TIMING TO BE AS SHOWN IN PHASE 4+8. IT MAY TIME OUT IN THIS PHASE OR MAY BE COMPLETED IN PHASE 4+8

EMERGENCY PRE-EMPTION PHASING

MOVEMENT, SEQUENCE, ANO TIMING OIAGRAM



PHASE	2			6			4			8		
INTERVAL / SIGNALS	31	32	33	34	35	36	37	38	39	40	41	42
1	G	Y/G	R/G	R	R	R	R	R	R	R	R	R
2,3	G	Y/G	R/G	R	R	R	R	R	R	R	R	R
4	R	R	R	G	Y/G	R/G	R	R	R	R	R	R
5	R	R	R	G	Y/G	R/G	R	R	R	R	R	R
6,7	R	R	R	R	R	R	G	Y	R	R	R	R
8	R	R	R	R	R	R	G	Y	R	R	R	R
9	R	R	R	R	R	R	R	R	R	G	Y	R
10	R	R	R	R	R	R	R	R	R	G	Y	R
11	R	R	R	R	R	R	R	R	R	G	Y	R
12,13	H	H	H	H	H	H	H	H	H	H	H	H
14,15	H	H	H	H	H	H	H	H	H	H	H	H
16,17	H	H	H	H	H	H	H	H	H	H	H	H
18,19	H	H	H	H	H	H	H	H	H	H	H	H
FIXED	▲	5	2	▲	5	2	▲	5	2	▲	5	2

▲ FOR DURATION OF PRE-EMPTION

NOTE:

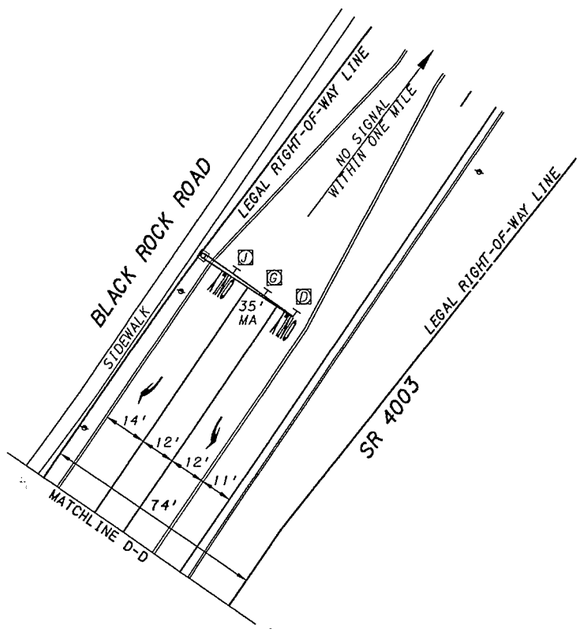
IF PRE-EMPTION EQUIPMENT HAS ENCODING CAPABILITIES FOR VEHICLE IDENTIFICATION, IT IS RECOMMENDED TO HAVE THE ZERO "00" FEATURE ON, TO GIVE UNCODED EMITTERS THE ABILITY TO ACTIVATE THE EMERGENCY PRE-EMPTION.

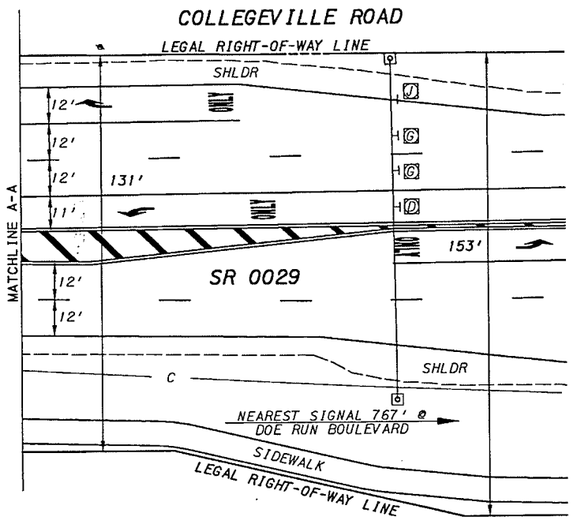
EMERGENCY PRE-EMPTION OPERATION NOTES

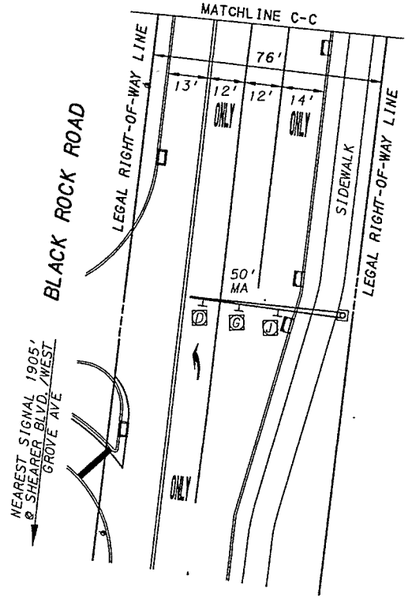
ⓐ SIGNAL TO INDICATE G WHEN RETURNING TO NORMAL OPERATIDN
ⓑ SIGNAL TO INDICATE G/Y WHEN RETURNING TO NORMAL DPERATION

EMERGENCY PRE-EMPTION NOTES:

- CONTROLLER TO BE EQUIPPED WITH EMERGENCY PRE-EMPTION FOR THE NORTHBOUND AND SOUTHBOUNO APPROACHES OF COLLEGEVILLE ROAO (SR 0029) ANO THE EASTBOUNO AND WESTBOUHO APPROACHES OF BLACK ROCK ROAD (SR 4003) WITH A FAIL SAFE OEVICE FOR EACH OIRECTION OF OPERATION. THIS EMERGENCY BEACON SHALL CONSIST OF A FLASHING WHITE FLOOD LIGHT, ANO SHALL FLASH WHEH THE EMERGENCY VEHICLE HAS CONTROL OF THE INTERSECTION FOR THE APPROPRIATE APPROACH.
- THE SIGHALS, WHEN ACTIVATEO BY EMERGENCY VEHICLE, SHALL TERMINATE ALL GREEN INOICATIONS IMMEOIATELY, FOLLOWEO BY THE COMPLETE YELLOW AND REO CLEARANCE INTERVALS, ACCOROINGLY. THEH THE GREEN INTERVAL FOR THE PRE-EMPTION PHASE SHALL FOLLOW. ONLY THOSE PHASES HOT POSING A YELLOW TRAP CONOITION MAY REMAIN GREEN (1+6, 2+5, 3+8, OR 4+7) WHEN GOVERHEO BY APPROACHING EMERGENCY VEHICLE.
- THE SIGHALS, WHEH ACTIVATEO BY EMERGENCY VEHICLE SHALL TIME OUT ALL YELLOW ANO REO INOICATIONS, FOLLOWEO BY THE GREEN IHTERVAL OF THE PRE-EMPTION PHASE GOVERNEO BY THE APPROACHING EMERGENCY VEHICLE.
- IF THE SIGHAL HAS BEEN ACTUATEO BY A PEOESTRIAN PUSH BUTTON ANO THE SIGHAL IS PRE-EMPTEO THE PEO "WALK (WAN)" INTERVAL SHALL TERMINATE IMMEOIATELY ANO THE PEO "CLEAR (FLASHING HAHO ANO COUNTDOWN TIMER) "IHTERVAL SHALL TIME OUT THIS INTERVAL FOLLOWEO BY THE APPROPRIATE SELECTIVE CLEARANCES BEFORE GOING IHTO EMERGENCY PREEMPTION.
- IF THE SIGNALS, WHEN ACTIVATEO BY AN EMERGENCY VEHICLE, ARE FLASHING ALL SIGHALS SHALL REMAIN FLASHING.
- IF AOOITIONAL PRE-EMPTION PHASES ARE ACTIVATEO WHILE IH PRE-EMPTION, THE ORIGINAL PRE-EMPTION PHASE SHALL TIME OUT BEFORE PROCEEOING TO THE NEXT PRE-EMPTION PHASE.
- UPOH COMPLETION OF PRE-EMPTION PHASE 2,4,6 OR 8 IN RETURHING TO NORMAL OPERATION, PHASE 2+6 IHTERVAL 12 SHALL FOLLOW.
- IN EMERGENCY PRE-EMPTION, NO PRIORITY SHALL BE ESTABLISHEO, PRE-EMPTION SHALL BE A "FIRST COME, FIRST SERVE" OPERATION.
- LOCATION OF EMERGENCY VEHICLE OETECTORS ARE TO BE FIELO AOJUSTEO TO ACHIEVE MAXIMUM OPERATION.







GENERAL NOTES

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

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

ALL SIGNS ANO PAVEMENT MARKINGS INOICATEO ON THIS ORAWING ARE CONSIOERED PART OF THE PERMIT ANO SHALL BE INSTALLEO ANO MAINTAINED IN ACCOROANCE WITH PUBLICATION NO. 212.

POST MOUNTEO SIGNALS SHALL BE INSTALLED WITH THE SIGNAL HEAOS A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB OR THE EDGE OF THE SHOULOER. SUPPORT POLES FOR OVERHEAO SIGNALS SHALL ALSO HAVE A MINIMUM CLEARANCE HORIZONTALLY OF 2 FEET.

SIGNALS ERECTEO OVER THE ROADWAY SHALL HAVE A MINIMUM VERTICAL CLEARANCE OF 16 FT. ABOVE THE ROAOWAY. POST MOUNTEO SIGNALS SHALL BE A MINIMUM OF 8 FT. ABOVE THE SIOEWALK OR PAVEMENT.

ALL OVERHEAO SIGNALS MUST BE RIGIOLY MOUNTEO, TOP ANO BOTTOM, ANO EQUIPPED WITH BACKPLATES.

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

EXACT LOCATION OF OETECTORS SHALL BE OETERMINEO PRIOR TO INSTALLATION BY A REPRESENTATIVE OF PENNOOT.

CURBING TO BE INSTALLEO BY MUNICIPALITY ANO WHERE NOTEO, SHALL BE PLAIN CEMENT CONCRETE CURB OR GRANITE CURB, INSTALLEO IN ACCOROANCE WITH DEPARTMENT SPECIFICATIONS FORM 408.

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

THIS ORAWING CANNOT BE USEO AS A CONSTRUCTION ORAWING UNLESS THE PERMITTEE COMPLIES WITH THE PROVISIONS OF THE LATEST AMENOMENT TO ACT 287, PREVENTION OF DAMAGE TO UNDERGRDUND UTILITIES, DATED DECEMBER 20, 1974.

WHEN LIQUIO FUELS MONEY IS USEO, SIGNAL INSTALLATION MUST CONFORM TO FORM 408 AND A COPY OF THE PROPOSEO SPECIFICATIONS MUST BE SUBMITTEO TO THE DISTRICT TRAFFIC UNIT FOR REVIEW PRIOR TO BIOOING.

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

CONOUIT INSTALLED IN BITUMINOUS ROAOWAY LESS THAN 5 YEARS OLD, OR CONCRETE ROAOWAY REGAROLESS OF AGE, MUST BE BOREO OR JACKEO UNOER THE ROAOWAY. INSTALL IN ACCOROANCE WITH TRAFFIC SIGNAL STANDARDS TC-8800 SERIES.

SYSTEM PERMIT # I-0055

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION
ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY
MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP
INTERSECTION: COLLEGEVILLE ROAD (SR 0029) AND BLACK ROCK ROAD (SR 4003)

REVIEWED:

MUNICIPAL OFFICIAL — DATE 8/25/2016

RECOMMENOED:
MARK L KRAY — 09/23/93
DOUGLAS MAY — 09/27/93
DISTRICT TRAFFIC ENGINEER — DATE

NO	REVISION	OES/ REVW	DATE	REVW	DATE	RECOM	DATE
1	ADDED VD OPERATION, ALL DAY	PAT/ NV	09/20/93	MLK	09/23/93	DM	09/27/93
2	ADDED INTERCONNECT (MOD. TIMINGS ANO CONT.)	ORA/ BRB	10/18/02	MLK	10/18/02	LRB	11/15/02
3	MODIFIED TIMINGS	FAZ/ JRM	01/20/04	MLK	01/20/04	LRB	01/26/04
4	MOD. TIMINGS, RUN AM FREE	KMC	10/31/05	KMC	10/31/05	LRB	11/01/05
5	ADDED EMERGENCY PREEMTION & SIGNS W, N, & P	TPD / TPD	12/24/07	ABP	12/26/07	LRB	01/04/08
6	TIMING CHANGE, LENGTHEN EB LT LANE, ADD OLC & SIGN M	TPD / TPD	07/16/08	OLA	07/17/08	ABP	08/17/08
7	WIDEN EB APPROACH ADD EB RIGHT TURN LANE, SIDE ST VIDEO DET & PEDS, RETIMED, UPDATE PREEMP NOTES	TPD /		OLA	07/11/13	ABP	07/12/13
8	INTERSECTION WIDENING, NEW ADA RAMPS, SIGNAL EQUIPMENT	BURNS /	03/11/16	OLA	07/27/16	ABP	07/12/16
9	ADD WB RT LANE, #3 & 7, NB RT SIGNAL, ADAPTIVE, REVISE STOP BAR ZONES	TPD /		DCA	9/7/16	ABP	9/8/16

SHEET 3 OF 3 | PERMIT # 64-1712 | FILE # 1712

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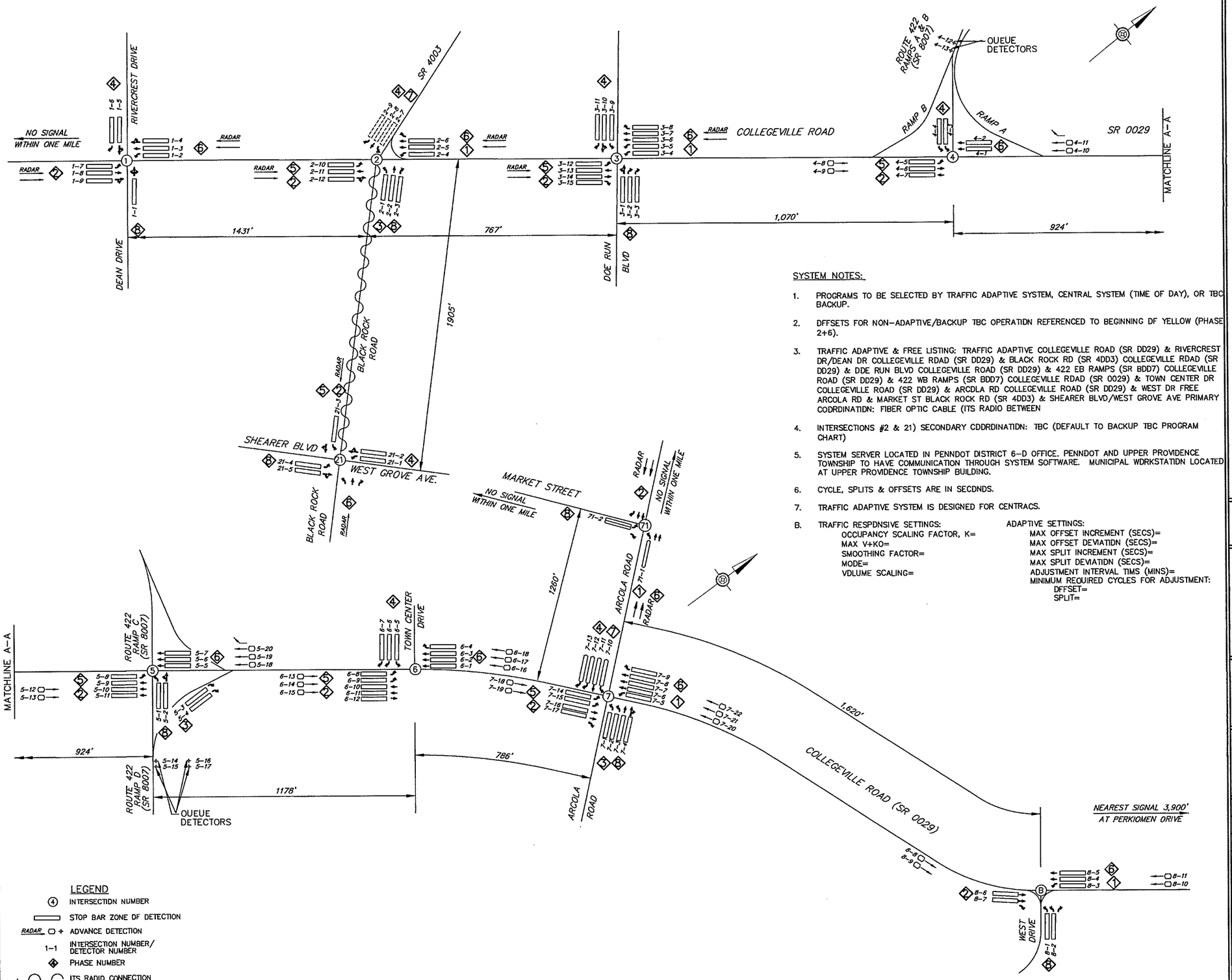
8/16/2016 3:58:52 PM rkearney Traffic Planning and Design, Inc.



SYSTEM NOTES:

1. PROGRAMS TO BE SELECTED BY TRAFFIC ADAPTIVE SYSTEM, CENTRAL SYSTEM (TIME OF DAY), OR TBC BACKUP.
2. OFFSETS FOR NON-ADAPTIVE/BACKUP TBC OPERATION REFERENCED TO BEGINNING OF YELLOW (PHASE 2+6).
3. TRAFFIC ADAPTIVE & FREE LISTING: TRAFFIC ADAPTIVE COLLEGEVILLE ROAD (SR 0029) & RIVERCREST DR/DEAN DR COLLEGEVILLE RDAD (SR 0029) & BLACK ROCK RD (SR 4003) COLLEGEVILLE RDAD (SR 0029) & DOE RUN BLVD COLLEGEVILLE ROAD (SR 0029) & 422 EB RAMPS (SR 8007) COLLEGEVILLE ROAD (SR 0029) & 422 WB RAMPS (SR 8007) COLLEGEVILLE RDAD (SR 0029) & TOWN CENTER DR COLLEGEVILLE ROAD (SR 0029) & ARCOLA RD COLLEGEVILLE ROAD (SR 0029) & WEST DR FREE ARCOLA RD & MARKET ST BLACK ROCK RD (SR 4003) & SHEARER BLVD/WEST GROVE AVE PRIMARY COORDINATION: FIBER OPTIC CABLE (ITS RADIO BETWEEN
4. INTERSECTIONS #2 & 21) SECONDARY COORDINATION: TBC (DEFAULT TO BACKUP TBC PROGRAM CHART)
5. SYSTEM SERVER LOCATED IN PENNDOT DISTRICT 6-D OFFICE. PENNDOT AND UPPER PROVIDENCE TOWNSHIP TO HAVE COMMUNICATION THROUGH SYSTEM SOFTWARE. MUNICIPAL WORKSTATION LOCATED AT UPPER PROVIDENCE TOWNSHIP BUILDING.
6. CYCLE, SPLITS & OFFSETS ARE IN SECONDS.
7. TRAFFIC ADAPTIVE SYSTEM IS DESIGNED FOR CENTRACS.
8. TRAFFIC RESPONSIVE SETTINGS:
   OCCUPANCY SCALING FACTOR, K=
   MAX V+KO=
   SMOOTHING FACTOR=
   MODE=
   VOLUME SCALING=

   ADAPTIVE SETTINGS:
   MAX OFFSET INCREMENT (SECS)=
   MAX OFFSET DEVIATION (SECS)=
   MAX SPLIT INCREMENT (SECS)=
   MAX SPLIT DEVIATION (SECS)=
   ADJUSTMENT INTERVAL TIMS (MINS)=
   MINIMUM REQUIRED CYCLES FOR ADJUSTMENT:
   OFFSET=
   SPLIT=

GENERAL NOTES

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

REFER TO TRAFFIC SIGNAL PERMIT DRAWING FOR INDIVIDUAL INTERSECTION OPERATION, GEOMETRY, PHASING AND CRITICAL TIMES.

FOR CONSTRUCTION AND INSPECTION THE SYSTEM PERMIT SHOULD ALWAYS BE ACCOMPANIED WITH TRAFFIC SIGNAL PERMIT DRAWING.

TEST THE SYSTEM AT THE INTERSECTION, PENNDOT 6-D AND LOCAL MUNICIPALITY LEVELS.

GATHER THE SYSTEM FAILURE CRITICAL ALARMS REPORT AND ARCHIVE THEM WHERE APPLICABLE.

SET UP PENNDOT DISTRICT 6-D COMPUTER WITH THE SYSTEM DATABASE AND GRAPHICS. MODIFY THE DATABASE AND GRAPHICS FOR SYSTEMS REVISIONS.

ASSIGN LOOP DETECTORS AND PROGRAM THE CONTROLLERS TO GATHER TRAFFIC VOLUMES IN 15 MINUTE INTERVAL, WHERE APPLICABLE.

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

OBTAIN POLE ATTACHMENT PERMIT FOR AERIAL FIBER OPTIC INSTALLATION.

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

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

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

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

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

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP

CORRIDOR: COLLEGEVILLE ROAD (S.R. 0029)- BLACK ROCK ROAD TO WEST DRIVE

REVIEWED:

DATE

TIM TIEPERMAN — MUNICIPAL OFFICIAL — 8/23/16 DATE

RECOMMENDED:

KEVIN CONAHAN — 2/13/06 DATE

L.R. BELMONTE — DISTRICT TRAFFIC ENGINEER — 2/13/06 DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	TIMING CHANGES	TPD	7/17/08	DLA	7/19/08	ABP	8/17/08
2	ADDED MAIN ST & ARCOLA RD	TPD		DLA	8/21/09	ABP	8/25/09
3	TIMING CHANGES	PAI	1/28/13	DLA	1/31/13	ABP	2/04/13
4	REVISED LANE CONFIG & COORD AT INT #1	TPD		DLA	7/11/13	ABP	7/12/13
5	REVISED INT. #8 TIMING	TPD		DLA	4/9/14	ABP	4/9/14
6	INTERIM TIMINGS	SBW	11/10/15	DLA	7/7/16	ABP	7/12/16
7	HOP IMPROVEMENTS INT #1 & #2, ADDED INT. #9, RETIMED INT #1	BURNS	8/6/18	DLA	7/7/16	ABP	7/12/16
8	ADD ADAPTIVE/CENTRAL SYSTEM, RE-NUMBER INTERSECTIONS	TPD		DLA	9/7/16	ABP	9/8/16
9	INT. #1 ROAD NAME/LANE CONFIGURATION CHANGE	MCM	9/3/19	KRL	9/5/19	DLA	9/6/19

SHEET 1 OF 3 — SYSTEM PERMIT # 1-0055

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TRAFFIC ADAPTIVE TIMING PROGRAMS

Cycle/Split/Offset

Program 1 = Intersections	File #	1	2	3	4	5	6	7	8	Cycle	Offset Northbound	Offset Balanced	Offset Southbound
1 RT. 29 & RIVERCREST DR/DEAN DR	3736												
2 RT. 29 & BLACK ROCK RD	1712												
3 RT. 29 & DOE RUN BLVD	2742												
4 RT. 29 & 422 EB RAMPS	3182												
5 RT. 29 & 422 WB RAMPS	2743												
6 RT. 29 & TOWN CENTER DR	3573												
7 RT. 29 & ARCOLA RD	2683												
8 RT. 29 & WEST DR	3255												
71 ARCOLA RD & MARKET ST	3735												
21 BLACK ROCK RD & W GROVE/SHEARER	3911												

Program 2 = Intersections	File #	1	2	3	4	5	6	7	8	Cycle	Offset Northbound	Offset Balanced	Offset Southbound
1 RT. 29 & RIVERCREST DR/DEAN DR	3736												
2 RT. 29 & BLACK ROCK RD	1712												
3 RT. 29 & DOE RUN BLVD	2742												
4 RT. 29 & 422 EB RAMPS	3182												
5 RT. 29 & 422 WB RAMPS	2743												
6 RT. 29 & TOWN CENTER DR	3573												
7 RT. 29 & ARCOLA RD	2683												
8 RT. 29 & WEST DR	32SS												
71 ARCOLA RD & MARKET ST	373S												
21 BLACK ROCK RD & W GROVE/SHEARER	3911												

Program 3 = Intersections	File #	1	2	3	4	5	6	7	8	Cycle	Offset Northbound	Offset Balanced	Offset Southbound
1 RT. 29 & RIVERCREST DR/DEAN DR	3736												
2 RT. 29 & BLACK ROCK RD	1712												
3 RT. 29 & DOE RUN BLVD	2742												
4 RT. 29 & 422 EB RAMPS	3182												
5 RT. 29 & 422 WB RAMPS	2743												
6 RT. 29 & TOWN CENTER DR	3573												
7 RT. 29 & ARCOLA RD	2683												
8 RT. 29 & WEST DR	32SS												
71 ARCOLA RD & MARKET ST	3735												
21 BLACK ROCK RD & W GROVE/SHEARER	3911												

TRAFFIC RESPONSIVE DETECTOR ASSIGNMENT

CHANNELS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DIRECTION 1 (DR1)														
DIRECTION 2 (DR2)														
GROUP 1 (GP1)														
GROUP 2 (GP2)														
SPLIT DEMAND 1 (NA1)														
SPLIT DEMAND 2 (NA2)														
OPTION 1														
OPTION 2														
SIDESTREET														

WEEKLY TIMING PROGRAMS (NON-ADAPTIVE)/ BACKUP TBC TIMING PROGRAMS (ALL INTERSECTIONS)

Cycle/Split/Offset

Program 1 = AM Peak Intersections	File #	1	2	3	4	5	6	7	8	Cycle	Offset Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		76		54		76		54	130	37
2 RT. 29 & BLACK ROCK RD	1712	35(Lead)	40	14(Lead)	41	14(Lead)	61	14(Lead)	41	130	122
3 RT. 29 & DOE RUN BLVD	2742	41(Lead)	S2		18(SPLIT)	16(Lag)	77		19(SPLIT)	130	115
4 RT. 29 & 422 EB RAMPS	3182		88		42	16(Lag)	72		-	130	0
5 RT. 29 & 422 WB RAMPS	2743		60	35		35(Lead)	25		3S	130	S7
6 RT. 29 & TOWN CENTER DR	3573		1DS		2S	30(Lag)	7S			130	79
7 RT. 29 & ARCOLA RD	2683	31(Lead)	34	15(Lead)	50	15(Lead)	50	18(Lead)	47	130	58
8 RT. 29 & WEST DR	3255	31(Lead)	80				111		19	130	39
71 ARCOLA RD & MARKET ST	373S									**	-
21 BLACK ROCK RD & W GROVE/SHEARER	3911									**	-

Program 2 = PM Peak Intersections	File #	1	2	3	4	S	6	7	6	Cycle	Offset 6al
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		87		43		87		43	130	39
2 RT. 29 & BLACK ROCK RD	1712	24(Lead)	43	14(Lead)	49	21(Lead)	46	14(Lead)	49	130	6
3 RT. 29 & DOE RUN BLVD	2742	14(Lead)	70		17(SPLIT)	14(Lag)	70		29(SPLIT)	130	22
4 RT. 29 & 422 EB RAMPS	3182		91		39	33(Lag)	58			130	D
5 RT. 29 & 422 WB RAMPS	2743		82	31		59(Lead)	23		17	130	68
6 RT. 29 & TOWN CENTER DR	3573		98		32	37(Lead)	61			130	78
7 RT. 29 & ARCOLA RD	2683	15(Lead)	58	35(lead)	22	25(Lead)	48	20(Lead)	37	130	71
8 RT. 29 & WEST DR	3255	13(Lead)	95				108		22	130	103
71 ARCOLA RD & MARKET ST	3735									**	-
21 BLACK ROCK RD & W GROVE/SHEARER	3911									**	-

Program 3 = Weekend Intersections	File #	1	2	3	4	5	6	7	8	Cycle	Offset 8al
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		62		38		62		38	100	56
2 RT. 29 & BLACK ROCK RD	1712	14(Lead)	39	14(Lead)	33	14(Lead)	39	14(Lead)	33	100	95
3 RT. 29 & DOE RUN BLVD	2742	18(Lead)	43		17(SPLIT)	18(Lag)	43		22(SPLIT)	100	0
4 RT. 29 & 422 EB RAMPS	3182		67		33	28(Lag)	39			100	0
5 RT. 29 & 422 WB RAMPS	2743		49	36		35(Lag)	14		15	100	87
6 RT. 29 & TOWN CENTER DR	3573		74		26	33(Lag)	41			100	57
7 RT. 29 & ARCOLA RD	2683	14(Lead)	43	22(Lead)	21	19(Lag)	38	19(Lag)	24	100	57
8 RT. 29 & WEST DR	32SS	16(Lead)	68				84		16	100	94
71 ARCOLA RD & MARKET ST	373S									**	-
21 BLACK ROCK RD & W GROVE/SHEARER	3911									**	-

NOTES:

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- REFER TO SIGNAL PERMIT PLAN FOR MAX 1, MAX 2 AND CLEARANCE AND PED TIMES.
** REFER TO SIGNAL PERMIT PLAN FOR MAX 1, MAX 2 OPERATION

WEEKLY PROGRAM CHART & (NON-ADAPTIVE) BACKUP TBC PROGRAM CHART (ALL INTERSECTIONS)

EVENT	DAY*	TIME	PROGRAM	REMARKS
1	1-7	00:00	MAX 1	OFF PEAK
2	1-5	06:00	1	AM PEAK
3	1-5	10:00	MAX 1	MID-DAY
4	1-5	15:00	2	PM PEAK
5	1-5	19:00	MAX 1	OFF PEAK
6	6-7	10:00	3	WEEKEND PEAK
7	6-7	14:00	MAX 1	WEEKEND

* DAY 1 = MONDAY

GENERAL NOTES

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP

CORRIDOR: COLLEGEVILLE ROAD (S.R. 0029)- BLACK ROCK ROAD TO WEST DRIVE

REVIEWED:

DATE

TIM TIEPERMAN 8/23/16

MUNICIPAL OFFICIAL DATE

RECOMMENDED:

KEVIN CONAHAN 2/13/06

DATE

L.R. BELMONTE 2/13/06

DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	TIMING CHANGES	TPD	7/17/08	DLA	7/19/08	ABP	8/17/08
2	ADDED MAIN ST & ARCOLA RD	TPD		DLA	8/21/09	ABP	8/25/09
3	TIMING CHANGES	PAI	1/28/13	DLA	1/31/13	ABP	2/04/13
4	REVISED LANE CONFIG & COORD AT INT #1	TPD		DLA	7/11/13	ABP	7/12/13
5	REVISED INT. #8 TIMING	TPD		DLA	4/9/14	ABP	4/9/14
6	INTERIM TIMINGS	SBW	11/10/15	DLA	7/7/16	ABP	7/12/16
7	HOP IMPROVEMENTS INT #1 & #2, ADDED INT. #9, RETIMED INT #1	BURNS	6/6/18	DLA	7/7/16	ABP	7/12/16
8	ADD ADAPTIVE/CENTRAL SYSTEM, RE-NUMBER INTERSECTIONS	TPD		DLA	9/7/16	ABP	9/8/18
9	INT. #1 ROAD NAME/LANE CONFIGURATION CHANGE	MCM	9/3/19	KPL	9/6/19	DLA	9/6/19

SHEET 2 OF 3 SYSTEM PERMIT # 1-0055

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INCIDENT PROGRAM CHART			
ROAD SEGMENT CLOSED	ROUTE 422 DIVERSION DIRECTION	TIME	PROGRAM
Township Line Rd to PA 29 [West of Rt.422 Interchange]	EASTBOUND	AM	11
		PM	12
	WESTBOUND	AM	13
		PM	14
	BI-DIRECTIONAL	AM	15
		PM	16
PA 29 to Egypt Road [East of Rt.422 Interchange]	EASTBOUND	AM	21
		PM	22
	WESTBOUND	AM	23
		PM	24
	BI-DIRECTIONAL	AM	25
		PM	26

INCIDENT TIMING PROGRAMS

Program 11		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		114		36		114		36	150	135
2 RT. 29 & BLACK ROCK RD	1712	32(Lead)	40	14(Lead)	64	14(Lag)	58	43(Lag)	35	150	54
3 RT. 29 & DOE RUN BLVD	2742	40(Lead)	76		17(SPLIT)	14(Lag)	102		17(SPLIT)	150	84
4 RT. 29 & 422 EB RAMPS	3182		103		47*	50(Lag)	53			150	0
5 RT. 29 & 422 WB RAMPS	2743		98	25		25(Lag)	73		27	150	82
6 RT. 29 & TOWN CENTER DR	3573		125		25	24(Lag)	101			150	128
7 RT. 29 & ARCOLA RD	2683	37(Lag)	40	18(Lag)	55	15(Lag)	62	21(Lag)	52	150	118
8 RT. 29 & WEST DR	3255	21(Lag)	112				133		17	150	142

Program 12		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		85		65		85		65	150	60
2 RT. 29 & BLACK ROCK RD	1712	17(Lag)	40	15(Lag)	78	17(Lag)	40	51(Lag)	42	150	37
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	91		17(SPLIT)	14(Lag)	91		28(SPLIT)	150	52
4 RT. 29 & 422 EB RAMPS	3182		100		50*	60(Lag)	40			150	0
5 RT. 29 & 422 WB RAMPS	2743		97	39		48(Lag)	49		14	150	105
6 RT. 29 & TOWN CENTER DR	3573		129		21	33(Lag)	96			150	129
7 RT. 29 & ARCOLA RD	2683	15(Lag)	72	41(Lag)	22	18(Lag)	69	25(Lag)	38	150	99
8 RT. 29 & WEST DR	3255	13(Lag)	107				120		30	150	126

Program 13		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		114		36		114		36	150	47
2 RT. 29 & BLACK ROCK RD	1712	40(Lag)	40	14(Lag)	56	14(Lag)	66	14(Lag)	56	150	124
3 RT. 29 & DOE RUN BLVD	2742	42(Lag)	74		17(SPLIT)	14(Lag)	102		17(SPLIT)	150	134
4 RT. 29 & 422 EB RAMPS	3182		110		40	15(Lag)	95			150	0
5 RT. 29 & 422 WB RAMPS	2743		46	55		23(Lag)	23		49	150	44
8 RT. 29 & TOWN CENTER DR	3573		120		30	32(Lag)	88			150	112
7 RT. 29 & ARCOLA RD	2683	28(Lag)	68	15(Lag)	39	20(Lag)	76	20(Lag)	34	150	120
8 RT. 29 & WEST DR	3255	25(Lag)	108				133		17	150	43

Program 14		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		114		36		114		36	150	71
2 RT. 29 & BLACK ROCK RD	1712	30(Lag)	48	14(Lag)	58	23(Lag)	55	15(Lag)	57	150	148
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	81		20(SPLIT)	14(Lag)	81		35(SPLIT)	150	7
4 RT. 29 & 422 EB RAMPS	3182		113		37	32(Lag)	81			150	0
5 RT. 29 & 422 WB RAMPS	2743		73	47		51(Lag)	22		30	150	43
6 RT. 29 & TOWN CENTER DR	3573		110		40	40(Lag)	70			150	45
7 RT. 29 & ARCOLA RD	2683	15(Lag)	83	34(Lag)	18	29(Lag)	69	21(Lag)	31	150	149
8 RT. 29 & WEST DR	3255	13(Lag)	97				110		40	150	48

Program 15		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		114		36		114		36	150	107
2 RT. 29 & BLACK ROCK RD	1712	32(Lag)	40	14(Lag)	64	14(Lag)	58	43(Lag)	35	150	26
3 RT. 29 & DOE RUN BLVD	2742	40(Lag)	76		17(SPLIT)	14(Lag)	102		17(SPLIT)	150	22
4 RT. 29 & 422 EB RAMPS	3182		118		32	50(Lag)	68			150	0
5 RT. 29 & 422 WB RAMPS	2743		55	57		20(Lag)	32		38	150	82
6 RT. 29 & TOWN CENTER DR	3573		125		25	20(Lag)	105			150	128
7 RT. 29 & ARCOLA RD	2683	28(Lag)	61	19(Lag)	42	20(Lag)	69	27(Lag)	34	150	118
8 RT. 29 & WEST DR	3255	25(Lag)	108				133		17	150	142

Program 16		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		105		45		105		45	150	86
2 RT. 29 & BLACK ROCK RD	1712	19(Lag)	40	15(Lag)	76	17(Lag)	42	51(Lag)	40	150	38
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	99		14(SPLIT)	22(Lag)	91		23(SPLIT)	150	53
4 RT. 29 & 422 EB RAMPS	3182		112		38*	64(Lag)	48			150	0
5 RT. 29 & 422 WB RAMPS	2743		66	57		44(Lag)	22		27	150	54
8 RT. 29 & TOWN CENTER DR	3573		125		25	31(Lag)	94			150	93
7 RT. 29 & ARCOLA RD	2683	15(Lag)	77	41(Lag)	17	29(Lag)	63	23(Lag)	35	150	66
8 RT. 29 & WEST DR	3255	13(Lag)	87				100		50	150	109

NOTES:
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- REFER TO SIGNAL PERMIT PLAN FOR MAX 1, MAX 2 AND CLEARANCE AND PED TIMES.
- * MAX RECALL.
- ** REFER TO SIGNAL PERMIT PLAN FOR MAX 1, MAX 2 OPERATION

Program 21		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		112		68		112		68	180	93
2 RT. 29 & BLACK ROCK RD	1712	88(Lag)	40	14(Lag)	38	14(Lag)	114	14(Lag)	38	180	168
3 RT. 29 & DOE RUN BLVD	2742	45(Lag)	101		17(SPLIT)	14(Lag)	132		17(SPLIT)	180	16
4 RT. 29 & 422 EB RAMPS	3182		129		51	16(Lag)	113			180	0
5 RT. 29 & 422 WB RAMPS	2743		96	29		43(Lag)	53		55	180	109
8 RT. 29 & TOWN CENTER DR	3573		147		33	41(Lag)	106			180	19
7 RT. 29 & ARCOLA RD	2683	40(Lag)	57	17(Lag)	66	17(Lag)	80	32(Lag)	51	180	110
8 RT. 29 & WEST DR	3255	34(Lag)	129				163		17	180	162

Program 22		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	8	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		115		65		115		65	180	71
2 RT. 29 & BLACK ROCK RD	1712	85(Lag)	40	19(Lag)	36	24(Lag)	101	14(Lag)	41	180	130
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	106		25(SPLIT)	14(Lag)	106		35(SPLIT)	180	10
4 RT. 29 & 422 EB RAMPS	3182		107		73	36(Lag)	71			180	0
5 RT. 29 & 422 WB RAMPS	2743		110	40		86(Lag)	24		30	180	104
8 RT. 29 & TOWN CENTER DR	3573		135		45	57(Lag)	78			180	139
7 RT. 29 & ARCOLA RD	2683	15(Lag)	92	49(Lag)	24	30(Lag)	77	26(Lag)	47	180	75
8 RT. 29 & WEST DR	3255	13(Lag)	137				150		30	180	130

Program 23		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		91		59		91		59	150	63
2 RT. 29 & BLACK ROCK RD	1712	47(Lag)	41	14(Lag)	48	14(Lag)	74	14(Lag)	48	150	142
3 RT. 29 & DOE RUN BLVD	2742	31(Lag)	85		17(SPLIT)	14(Lag)	102		17(SPLIT)	150	148
4 RT. 29 & 422 EB RAMPS	3182		109		41	14(Lag)	95			150	0
5 RT. 29 & 422 WB RAMPS	2743		110	18		88(Lag)	22		22	150	58
8 RT. 29 & TOWN CENTER DR	3573		125		25	28(Lag)	97			150	74
7 RT. 29 & ARCOLA RD	2683	38(Lag)	38	19(Lag)	55	15(Lag)	61	19(Lag)	55	150	9
8 RT. 29 & WEST DR	3255	27(Lag)	106				133		17	150	50

Program 24		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		100		50		100		50	150	127
2 RT. 29 & BLACK ROCK RD	1712	17(Lag)	41	14(Lag)	78	16(Lag)	42	14(Lag)	78	150	147
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	96		14(SPLIT)	14(Lag)	96		26(SPLIT)	150	143
4 RT. 29 & 422 EB RAMPS	3182		120		30	23(Lag)	97			150	0
5 RT. 29 & 422 WB RAMPS	2743		111	21		89(Lag)	22		18	150	62
6 RT. 29 & TOWN CENTER DR	3573		125		25	28(Lag)	97			150	80
7 RT. 29 & ARCOLA RD	2683	15(Lag)	67	40(Lag)	28	23(Lag)	59	24(Lag)	44	150	8
8 RT. 29 & WEST DR	3255	13(Lag)	97				110		40	150	137

Program 25		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	6	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		112		68		112		68	180	99
2 RT. 29 & BLACK ROCK RD	1712	91(Lag)	40	14(Lag)	35	14(Lag)	117	14(Lag)	35	180	125
3 RT. 29 & DOE RUN BLVD	2742	39(Lag)	107		17(SPLIT)	14(Lag)	132		17(SPLIT)	180	167
4 RT. 29 & 422 EB RAMPS	3182		110		70	14(Lag)	96			180	0
5 RT. 29 & 422 WB RAMPS	2743		130	26		108(Lag)	22		24	180	41
8 RT. 29 & TOWN CENTER DR	3573		152		28	34(Lag)	118			180	49
7 RT. 29 & ARCOLA RD	2683	40(Lag)	65	23(Lag)	52	17(Lag)	88	24(Lag)	51	180	176
8 RT. 29 & WEST DR	3255	34(Lag)	129				163		17	180	100

Program 26		Phase								Cycle	Offset
Intersections	File #	1	2	3	4	5	8	7	8		Bal
1 RT. 29 & RIVERCREST DR/DEAN DR	3736		129		51		129		51	180	167
2 RT. 29 & BLACK ROCK RD	1712	84(Lag)	40	16(Lag)	40	24(Lag)	100	16(Lag)	40	180	0
3 RT. 29 & DOE RUN BLVD	2742	14(Lag)	111		20(SPLIT)	14(Lag)	111		35(SPLIT)	180	178
4 RT. 29 & 422 EB RAMPS	3182		130		50	29(Lag)	101			180	0
5 RT. 29 & 422 WB RAMPS	2743		128	35		106(Lag)	22		17	180	96
6 RT. 29 & TOWN CENTER DR	3573		150		30	30(Lag)	120			180	132
7 RT. 29 & ARCOLA RD	2683	15(Lag)	97	42(Lag)	26	30(Lag)	82	23(Lag)	45	180	123
8 RT. 29 & WEST DR	3255	13(Lag)	127				140		40	180	120

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PENNSYLVANIA DEPARTMENT OF TRANSPORTATION

ENGINEERING DISTRICT 6-0

COUNTY: MONTGOMERY

MUNICIPALITY: UPPER PROVIDENCE TOWNSHIP

CORRIDOR: COLLEGEVILLE ROAD (S.R. 0029)- BLACK ROCK ROAD TO WEST DRIVE

REVIEWED:

DATE

TIM TIEPERMAN 8/23/16

MUNICIPAL DFFICIAL DATE

RECOMMENDED:

KEVIN CONAHAN 2/13/06

DATE

L.R. BELMONTE 2/13/06

DISTRICT TRAFFIC ENGINEER DATE

NO.	REVISION	DES./ REVW.	DATE	REVW.	DATE	RECOM.	DATE
1	TIMING CHANGES	TPD	7/17/08	DLA	7/19/08	ABP	8/17/08
2	ADDED MAIN ST & ARCOLA RD	TPD		DLA	8/21/09	ABP	8/25/09
3	TIMING CHANGES	PAI	1/28/13	DLA	1/31/13	ABP	2/04/13
4	REVISED LANE CONFIG & COORD AT INT #1	TPD		DLA	7/11/13	ABP	7/12/13
5	REVISED INT. #8 TIMING	TPD		DLA	4/9/14	ABP	4/9/14
6	INTERIM TIMINGS	SBW	11/10/15	DLA	7/7/16	ABP	7/12/16
7	HOP IMPROVEMENTS INT #1 & #2, ADDED INT. #9, RETIMED INT #1	BURNS	6/6/16	DLA	7/7/16	ABP	7/12/16
8	ADD ADAPTIVE/CENTRAL SYSTEM, RE-NUMBER INTERSECTIONS	TPD		DLA	9/7/16	ABP	9/8/16
9	INT. #1 ROAD NAME/LANE CONFIGURATIDN CHANGE	MCM	9/3/19	LRL	9/6/19	DLA	9/6/19

SHEET 3 OF 3 SYSTEM PERMIT # 1-0055

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APPENDIX J

Auxiliary Turn Lane Warrant Analysis

Old State Road &
Hafner Road/Proposed Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Hafner Road/Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	11	2.0%	12
	Through	-	29	0.0%	29
	Right	Yes	5	20.0%	6
Opposing	Left	Yes	2	0.0%	2
	Through	-	76	2.0%	77
	Right	Yes	3	2.0%	4

Advancing Volume:	47
Opposing Volume:	83
Left Turn Volume:	12
% Left Turns in Advancing Volume:	25.53%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	0.0%	N/A
	Through	-	76	2.0%	N/A
	Right	-	3	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	12
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

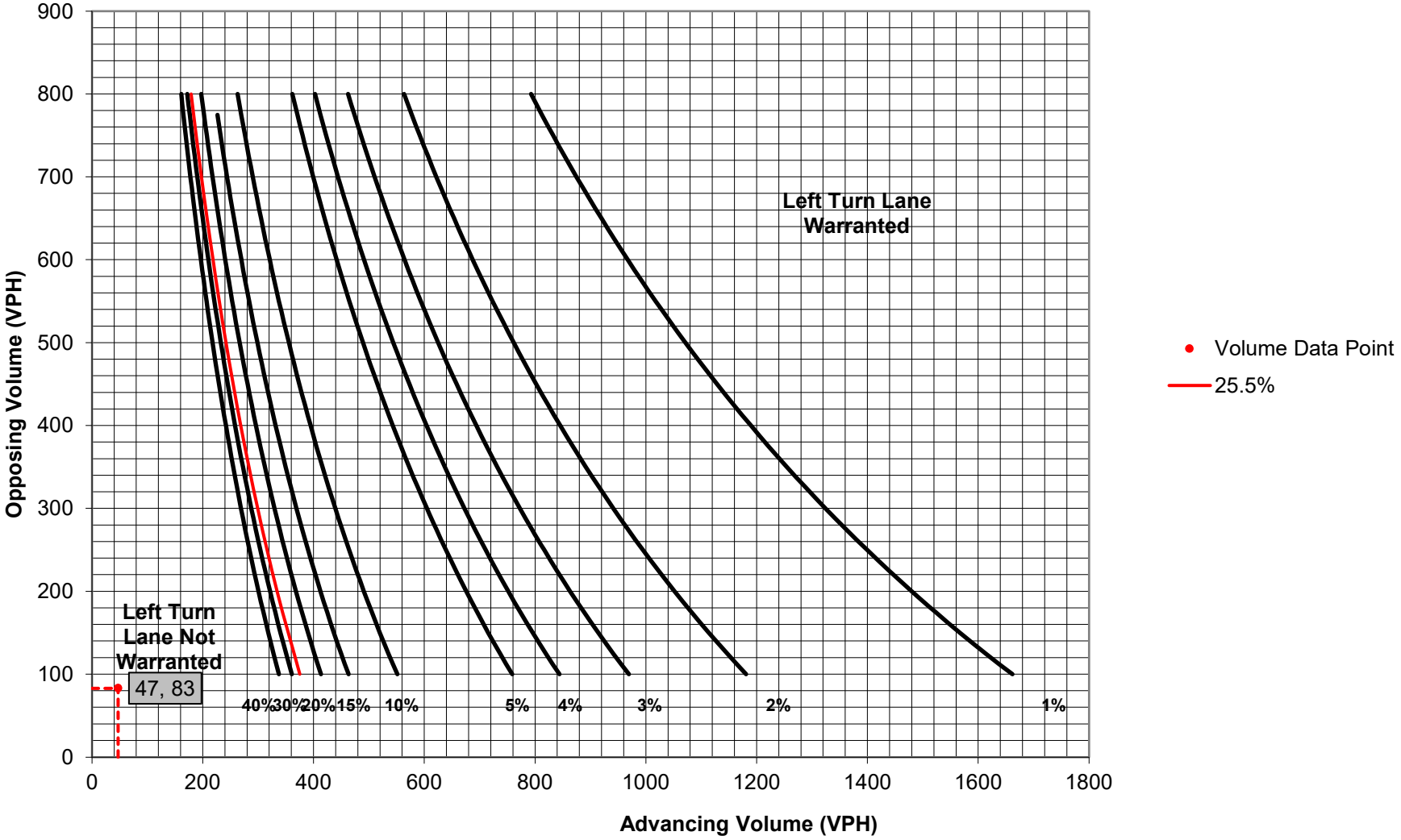
Additional Findings:

N/A

Additional Comments / Justifications:

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

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Hafner Road/Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35	**Type of Analysis**	
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	11	2.0%	N/A
	Through	-	29	0.0%	N/A
	Right	Yes	5	20.0%	N/A
Opposing	Left	Yes	2	0.0%	N/A
	Through	-	76	2.0%	N/A
	Right	Yes	3	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	0.0%	2
	Through	-	76	2.0%	77
	Right	-	3	2.0%	4

Advancing Volume:	83
Right Turn Volume:	4

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:	4
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

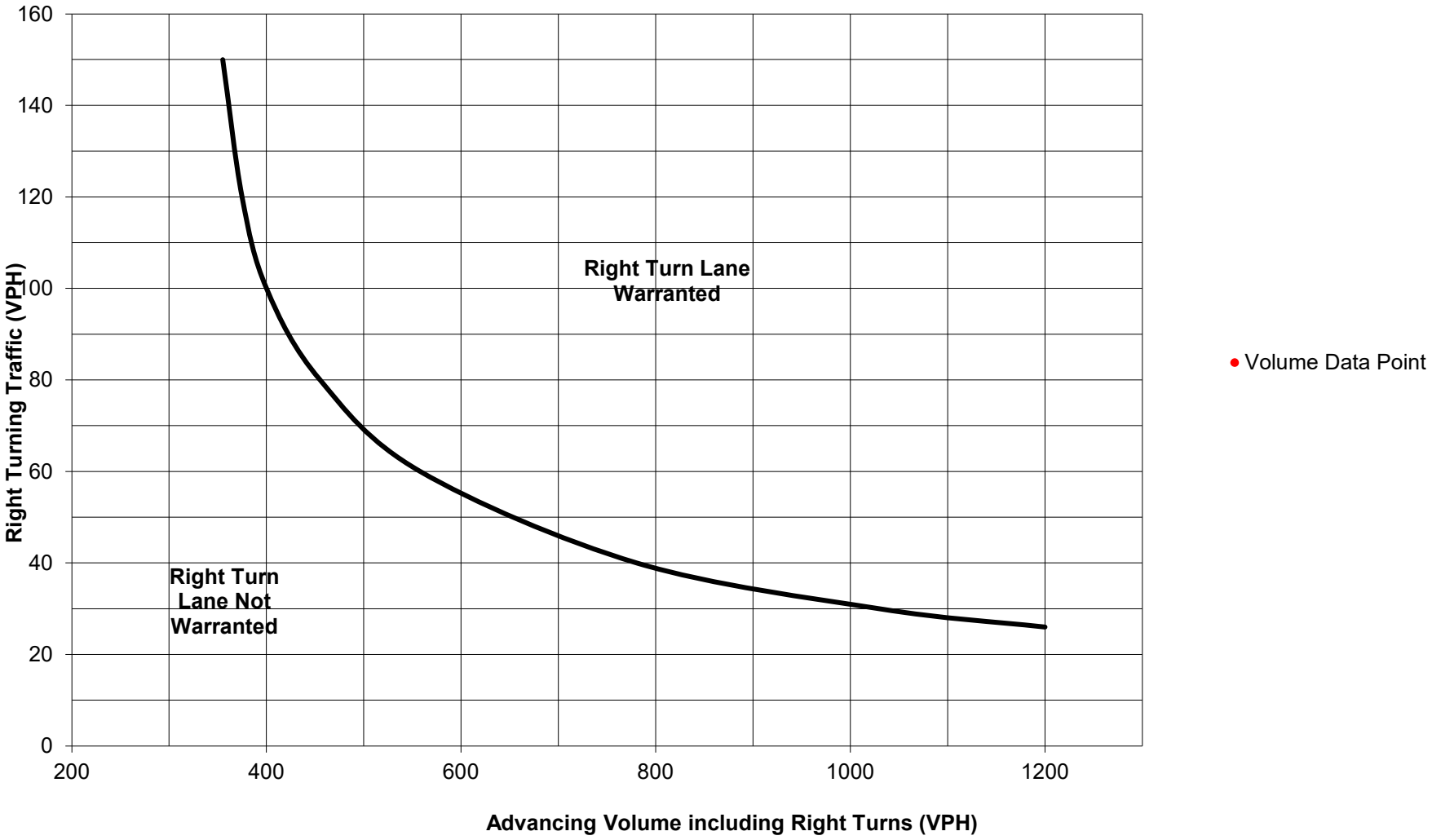
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Hafner Road/Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35	**Type of Analysis**	
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	31	2.0%	32
	Through	-	60	0.0%	60
	Right	Yes	8	13.0%	9
Opposing	Left	Yes	2	0.0%	2
	Through	-	56	0.0%	56
	Right	Yes	9	2.0%	10

Advancing Volume:	101
Opposing Volume:	68
Left Turn Volume:	32
% Left Turns in Advancing Volume:	31.68%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	0.0%	N/A
	Through	-	56	0.0%	N/A
	Right	-	9	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	32
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

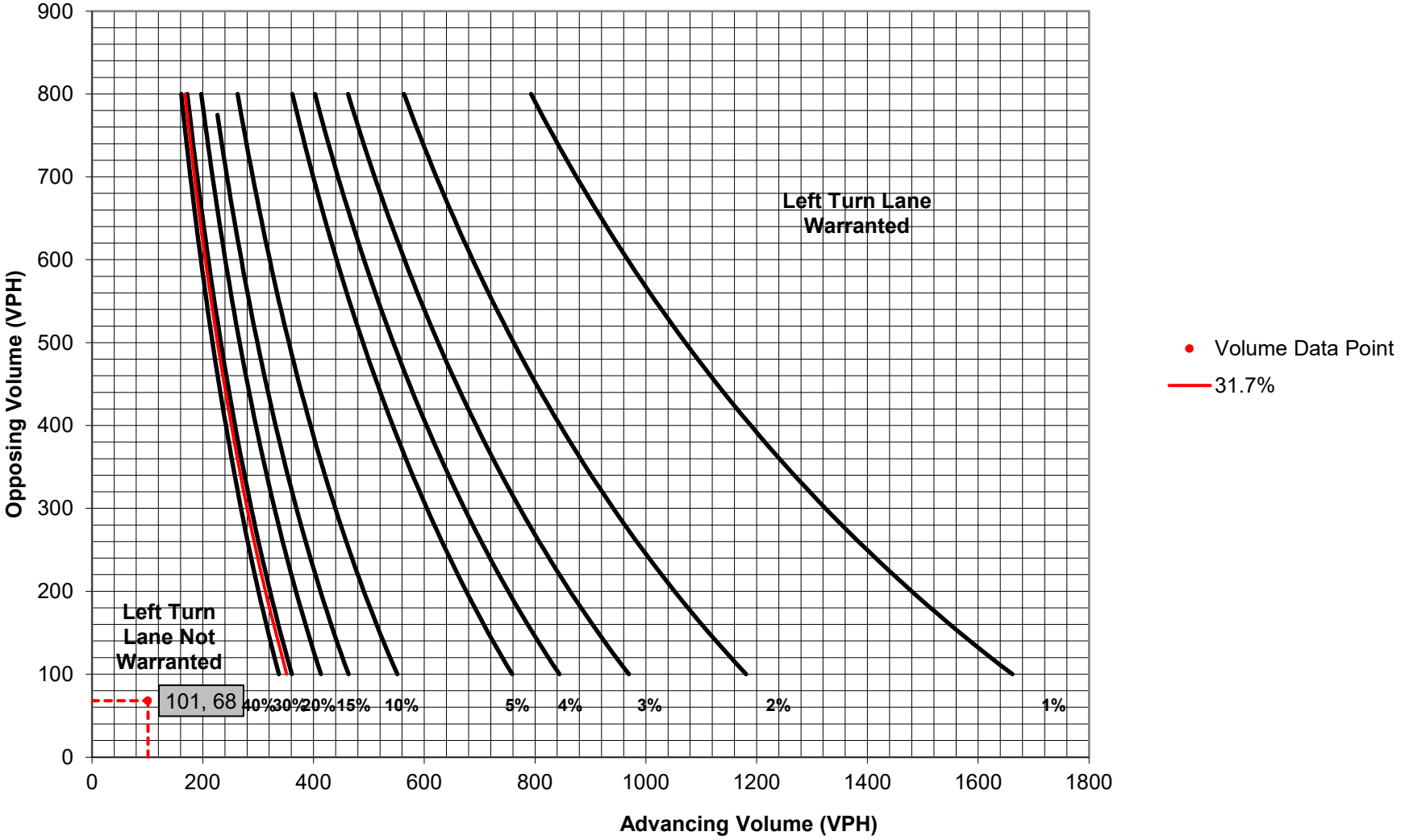
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

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

Additional Findings: N/A

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Hafner Road/Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35	**Type of Analysis**	
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	31	2.0%	N/A
	Through	-	60	0.0%	N/A
	Right	Yes	8	13.0%	N/A
Opposing	Left	Yes	2	0.0%	N/A
	Through	-	56	0.0%	N/A
	Right	Yes	9	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	0.0%	2
	Through	-	56	0.0%	56
	Right	-	9	2.0%	10

Advancing Volume:	68
Right Turn Volume:	10

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

Right Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 9

Warrant Met?: No

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	10
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

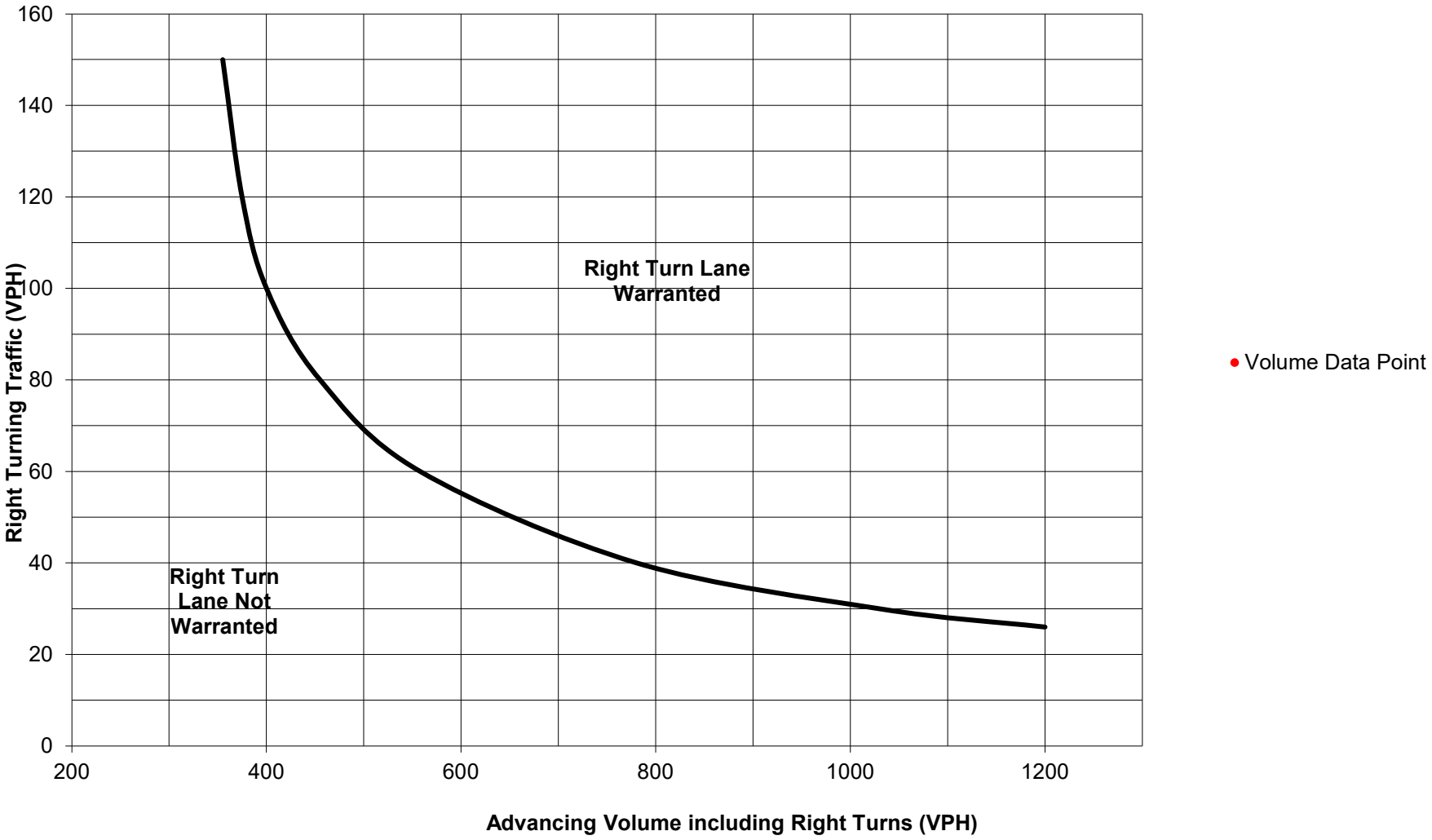
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



Black Rock Road (SR 0113) & Proposed Southern Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Southern Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	5
	Through	-	172	7.0%	179
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	327	3.0%	332
	Right	Yes	20	2.0%	21

Advancing Volume:	184
Opposing Volume:	353
Left Turn Volume:	5
% Left Turns in Advancing Volume:	2.72%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	327	3.0%	N/A
	Right	-	20	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	5
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

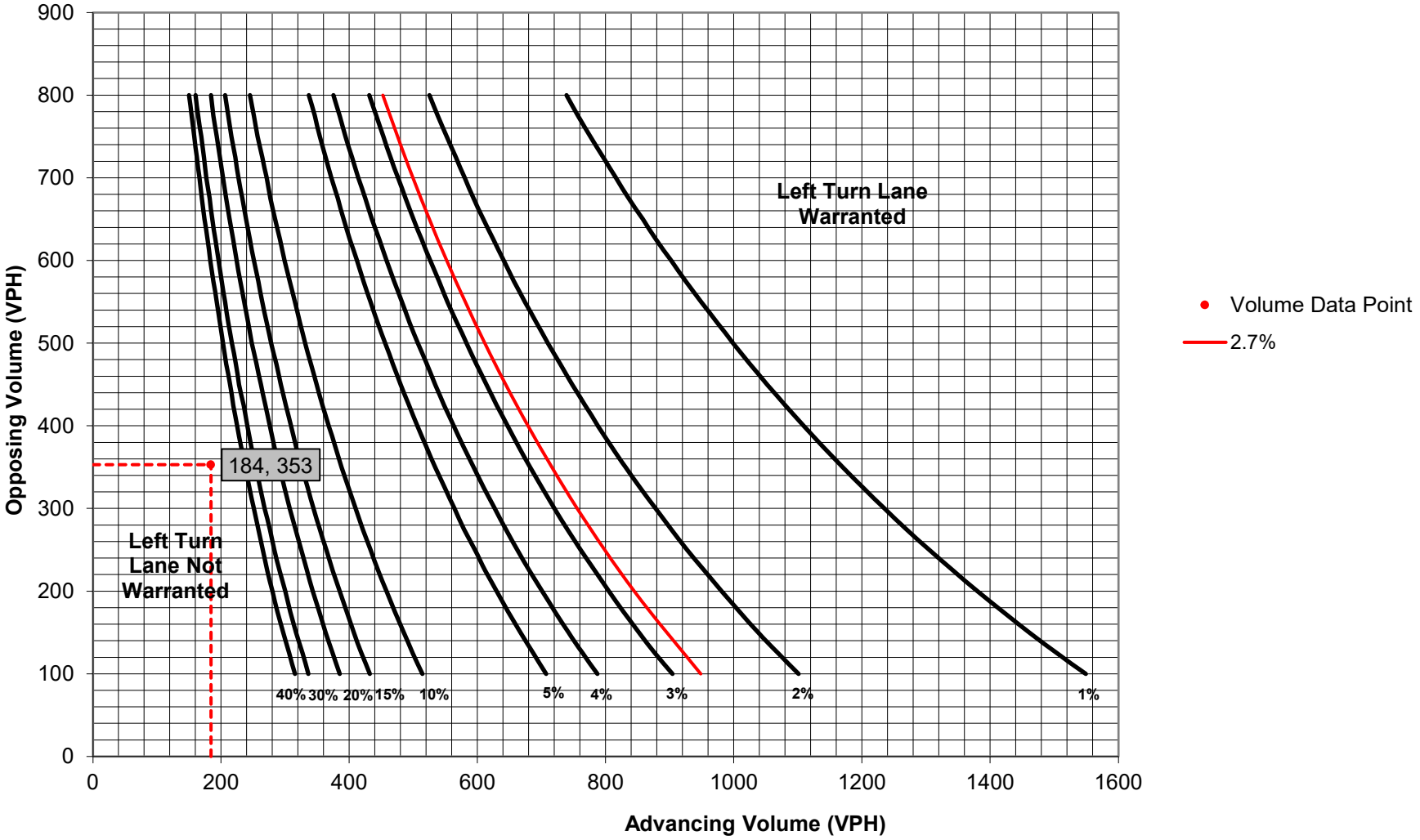
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Southern Site Driveway

Analysis Period:	2033 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	Yes	4	2.0%	N/A
	Through	-	172	7.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	327	3.0%	N/A
	Right	Yes	20	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	327	3.0%	332
	Right	-	20	2.0%	21

Advancing Volume:	353
Right Turn Volume:	21

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:	21
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

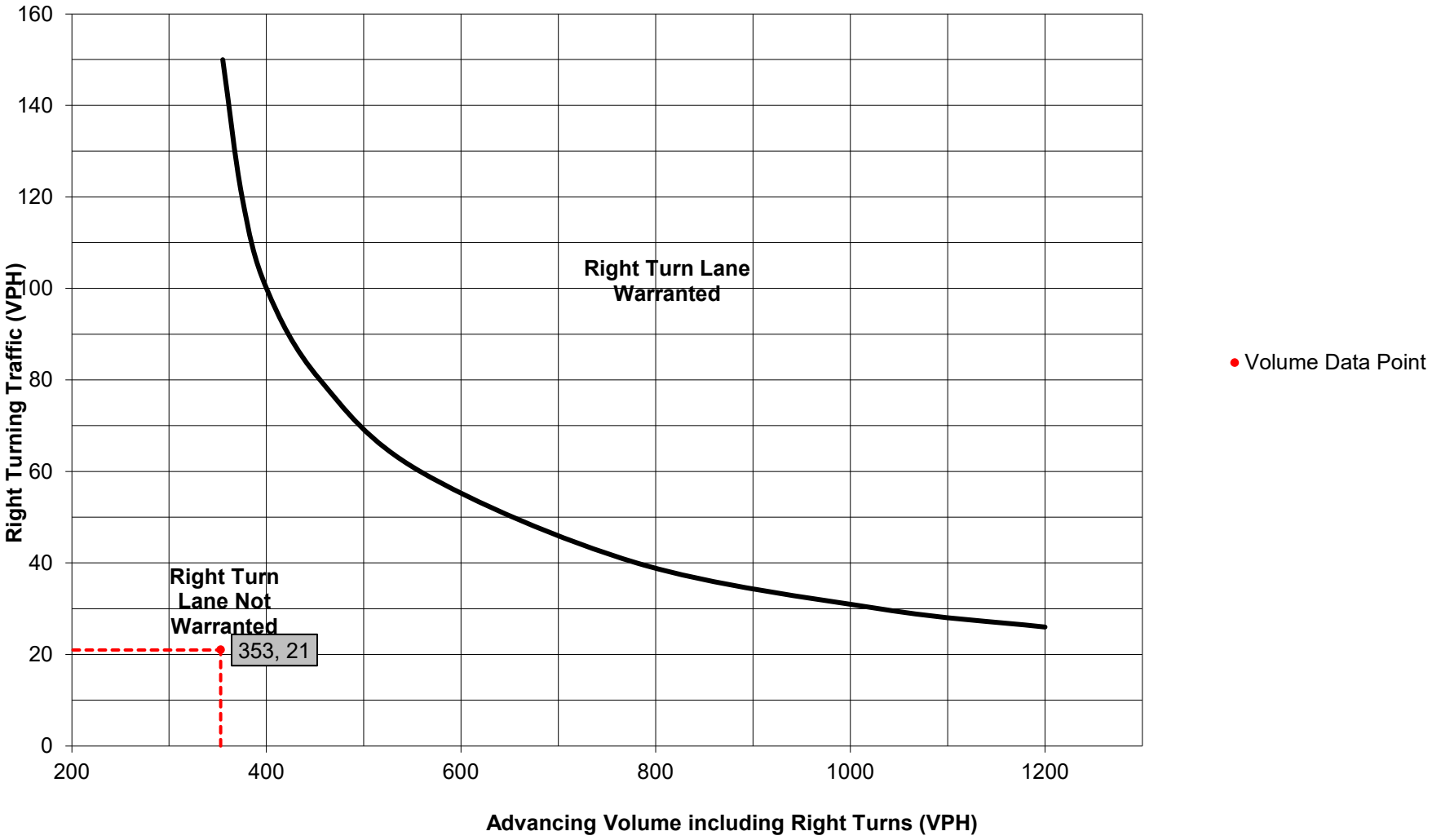
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Southern Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	11	2.0%	12
	Through	-	346	2.0%	350
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	168	1.0%	169
	Right	Yes	55	2.0%	56

Advancing Volume:	362
Opposing Volume:	225
Left Turn Volume:	12
% Left Turns in Advancing Volume:	3.31%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	168	1.0%	N/A
	Right	-	55	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	12
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

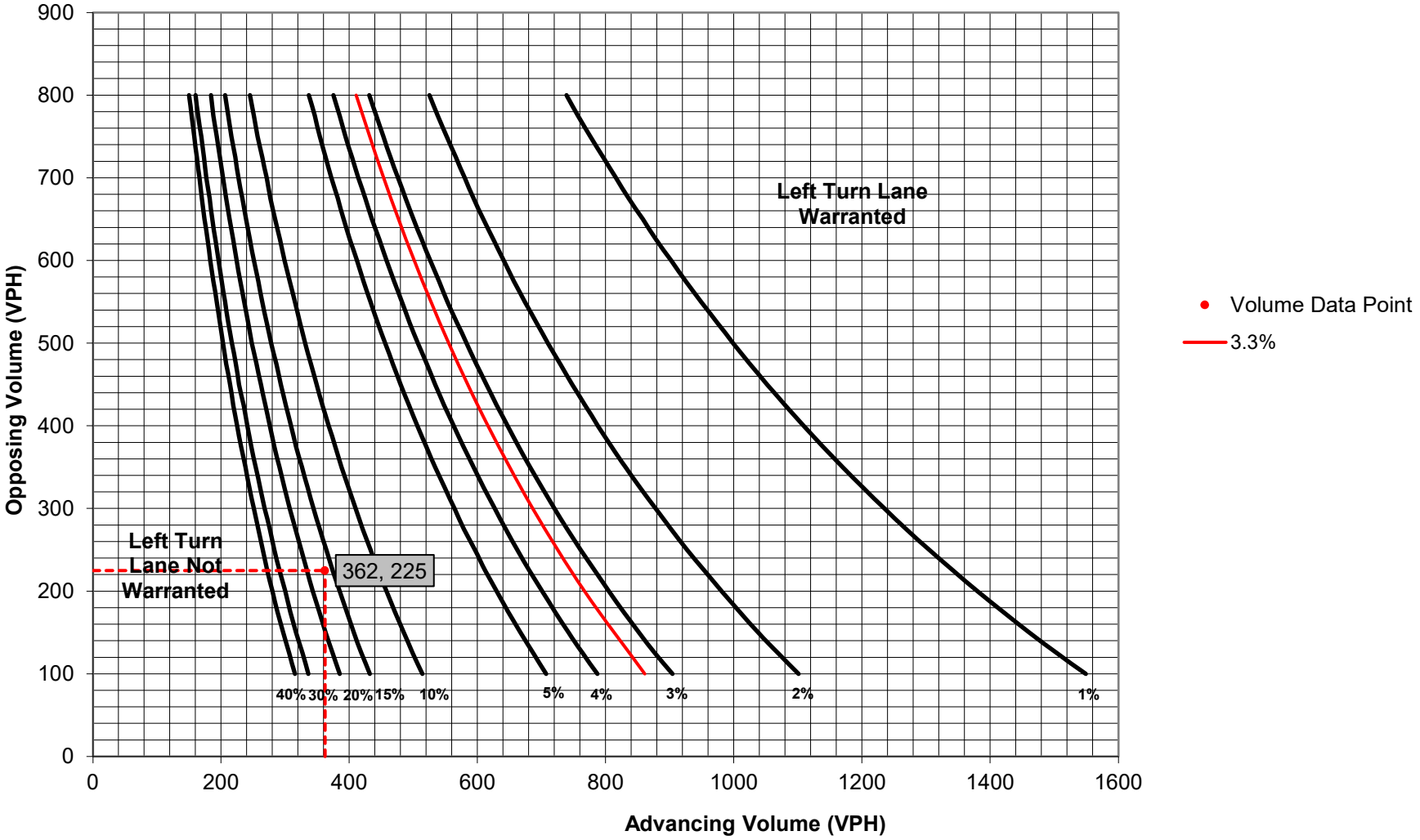
Additional Findings:

N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Southern Site Driveway

Analysis Period:	2033 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	Yes	11	2.0%	N/A
	Through	-	346	2.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	168	1.0%	N/A
	Right	Yes	55	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	168	1.0%	169
	Right	-	55	2.0%	56

Advancing Volume:	225
Right Turn Volume:	56

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:	56
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

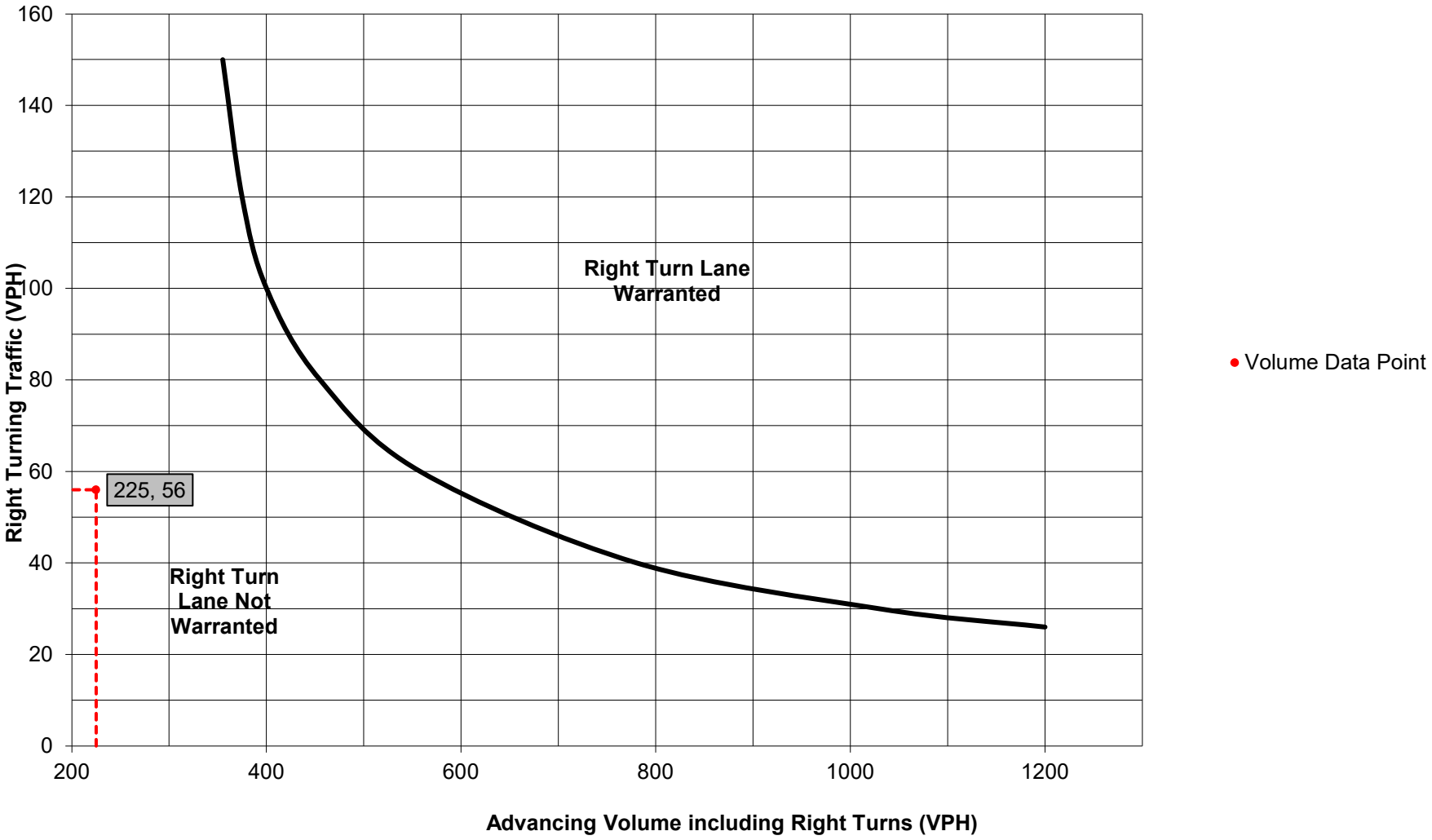
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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)



Black Rock Road (SR 0113) & Proposed Northern Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Northern Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	2	2.0%	3
	Through	-	229	7.0%	238
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	343	3.0%	349
	Right	Yes	6	2.0%	7

Advancing Volume:	241
Opposing Volume:	356
Left Turn Volume:	3
% Left Turns in Advancing Volume:	1.24%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	343	3.0%	N/A
	Right	-	6	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	3
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

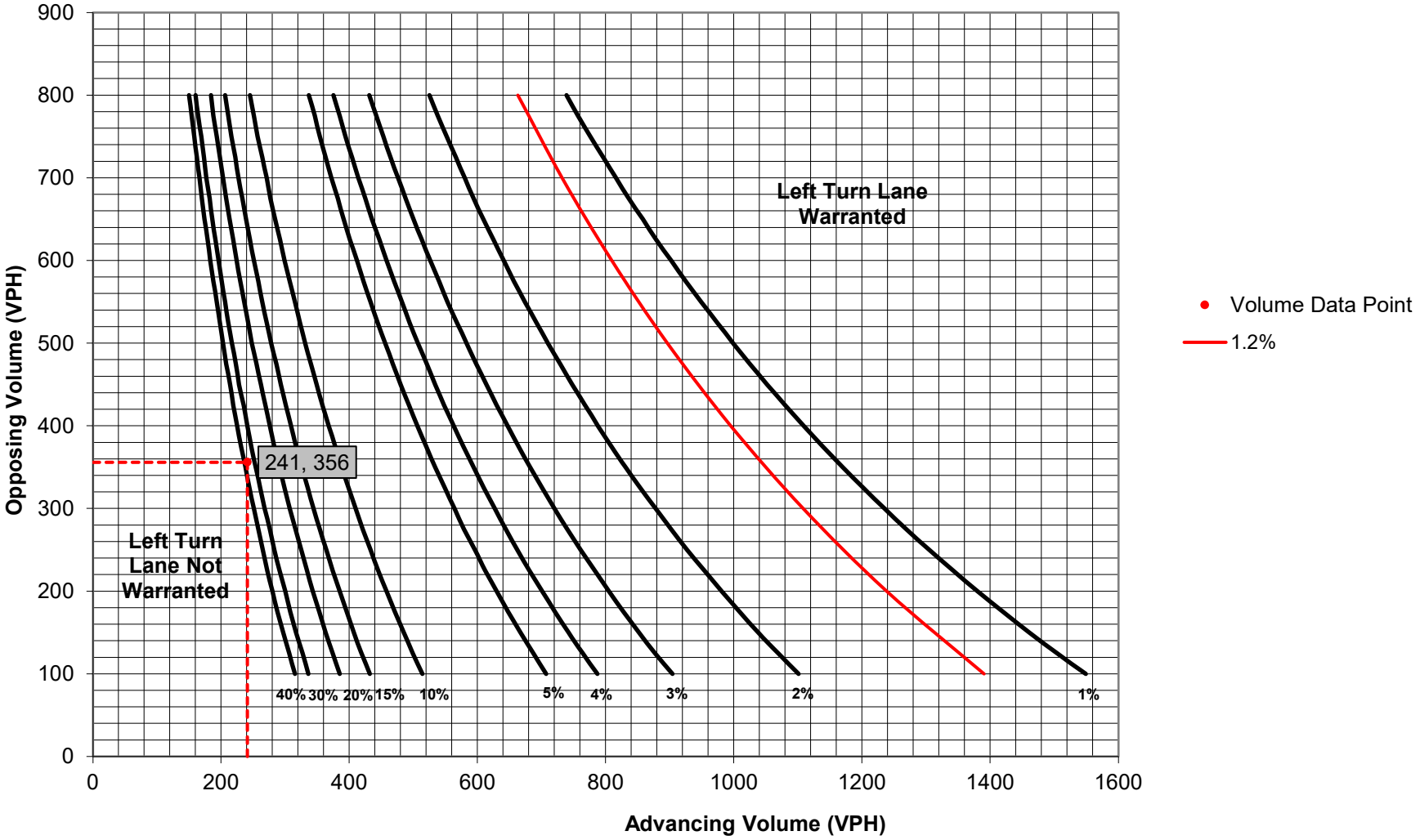
Additional Findings:

N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Northern Site Driveway

Analysis Period:	2033 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	Yes	2	2.0%	N/A
	Through	-	229	7.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	343	3.0%	N/A
	Right	Yes	6	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	343	3.0%	349
	Right	-	6	2.0%	7

Advancing Volume:	356
Right Turn Volume:	7

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:	7
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

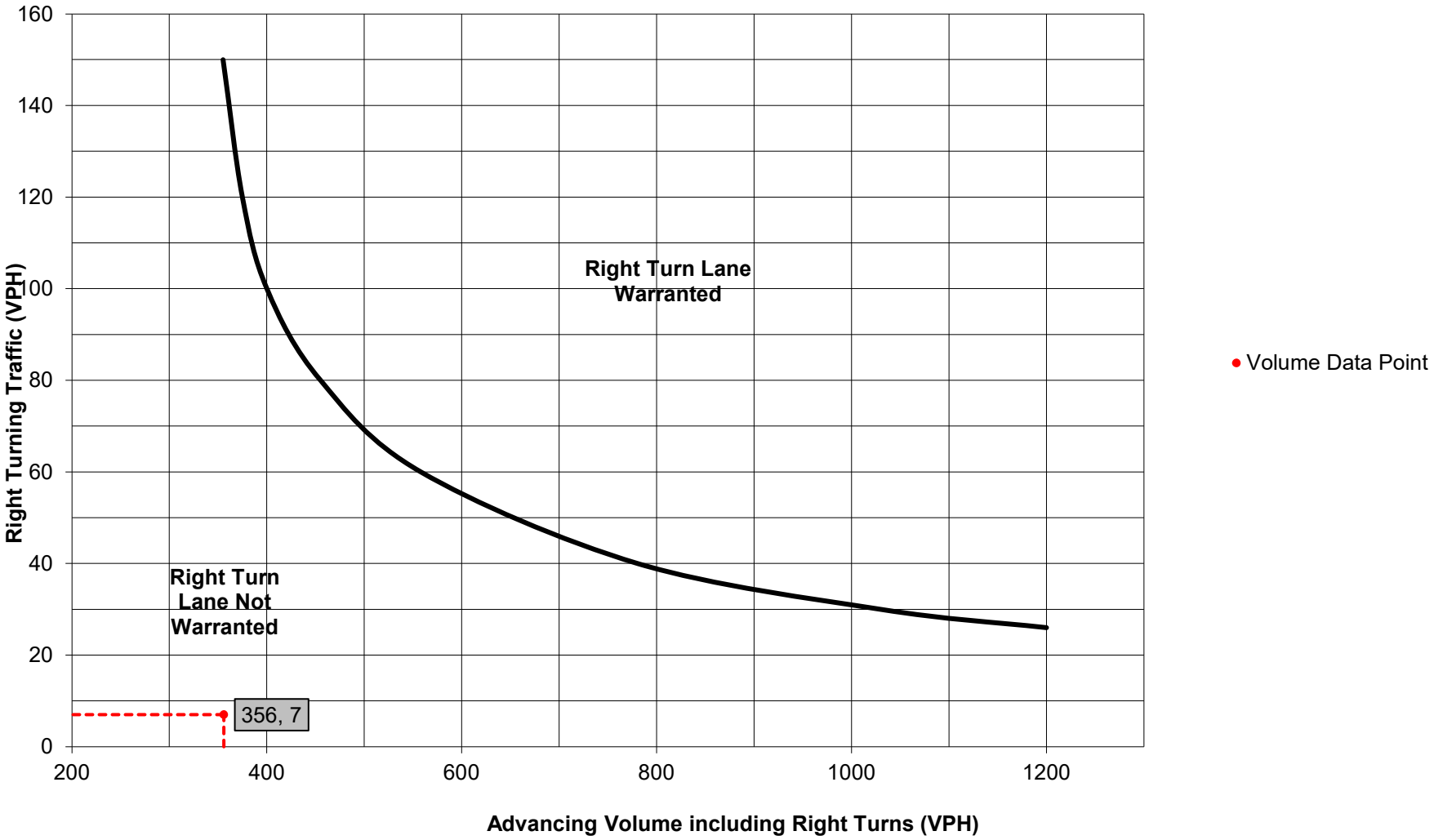
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Northern Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	5
	Through	-	380	2.0%	384
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	220	1.0%	222
	Right	Yes	11	2.0%	12

Advancing Volume:	389
Opposing Volume:	234
Left Turn Volume:	5
% Left Turns in Advancing Volume:	1.29%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	220	1.0%	N/A
	Right	-	11	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	5
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

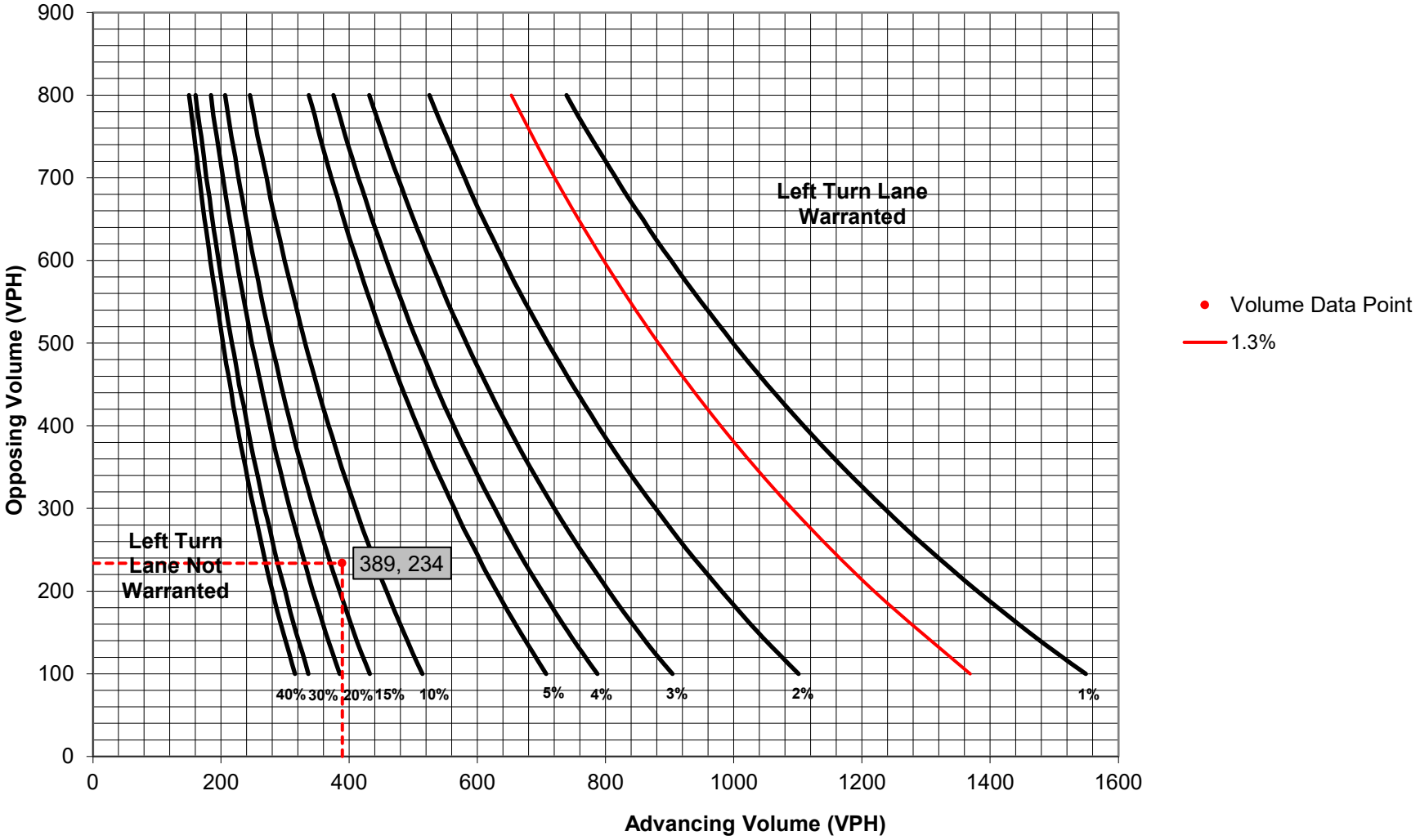
Additional Findings:

N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Black Road Road and Northern Site Driveway

Analysis Period:	2033 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	Yes	4	2.0%	N/A
	Through	-	380	2.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	220	1.0%	N/A
	Right	Yes	11	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	220	1.0%	222
	Right	-	11	2.0%	12

Advancing Volume:	234
Right Turn Volume:	12

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:	12
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

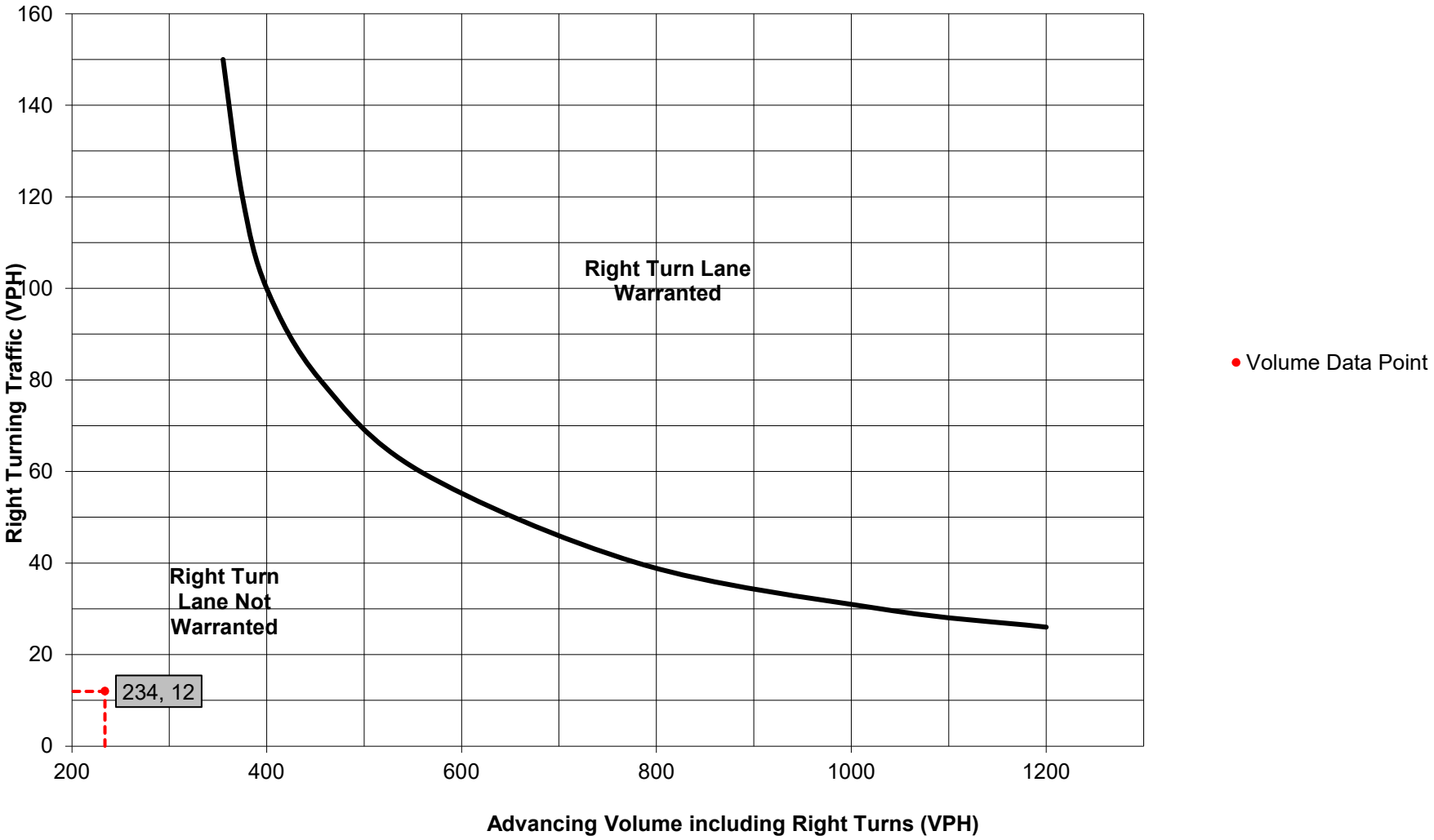
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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)



Old State Road &
Proposed Southern Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Southern Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	1	2.0%	2
	Through	-	75	2.0%	76
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	37	0.0%	37
	Right	Yes	3	2.0%	4

Advancing Volume:	78
Opposing Volume:	41
Left Turn Volume:	2
% Left Turns in Advancing Volume:	2.56%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	37	0.0%	N/A
	Right	-	3	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	2
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

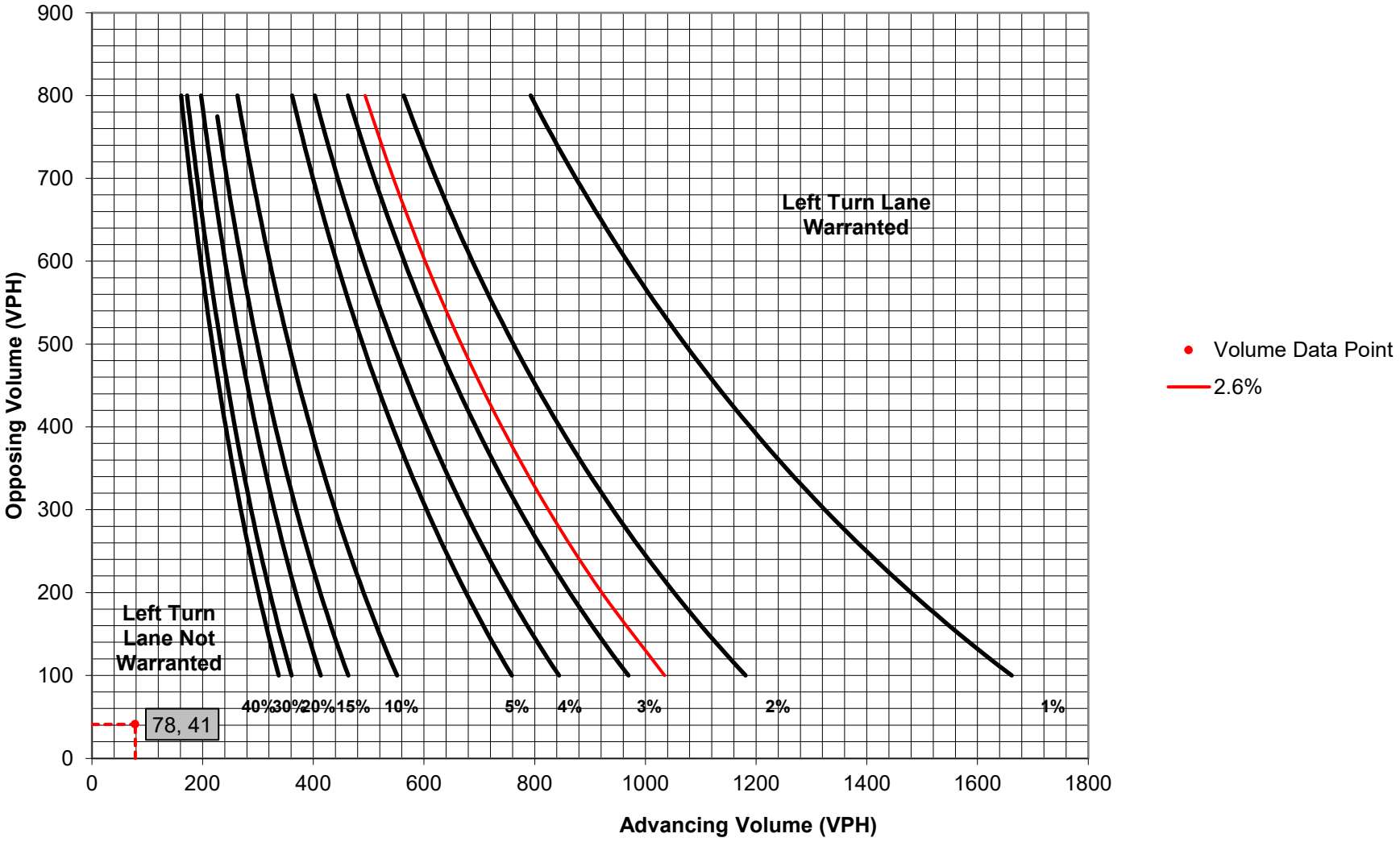
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Southern Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	1	2.0%	N/A
	Through	-	75	2.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	37	0.0%	N/A
	Right	Yes	3	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	37	0.0%	37
	Right	-	3	2.0%	4

Advancing Volume:	41
Right Turn Volume:	4

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:	4
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

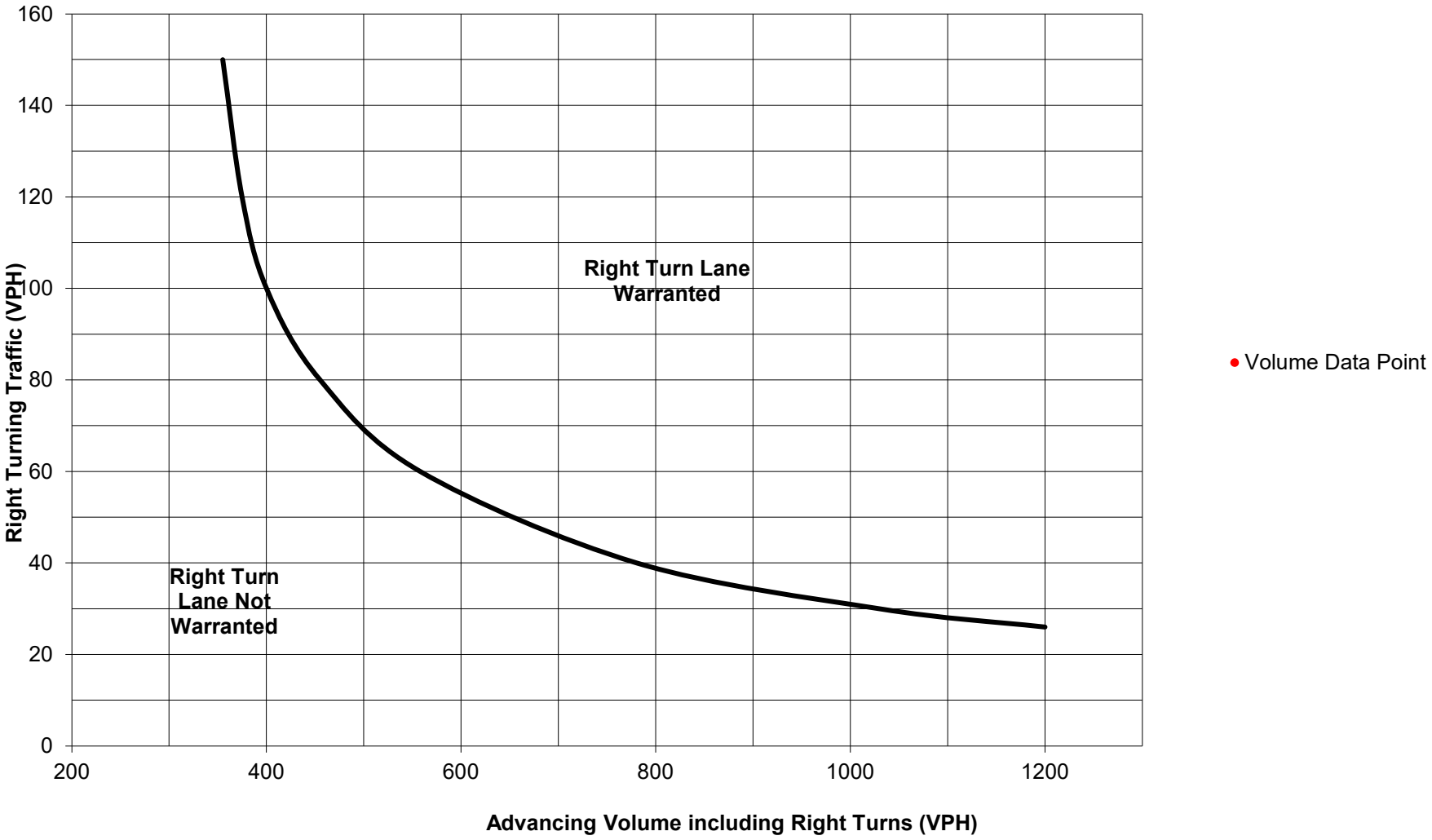
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Southern Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	5
	Through	-	63	0.0%	63
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	58	0.0%	58
	Right	Yes	8	2.0%	9

Advancing Volume:	68
Opposing Volume:	67
Left Turn Volume:	5
% Left Turns in Advancing Volume:	7.35%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	58	0.0%	N/A
	Right	-	8	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	5
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

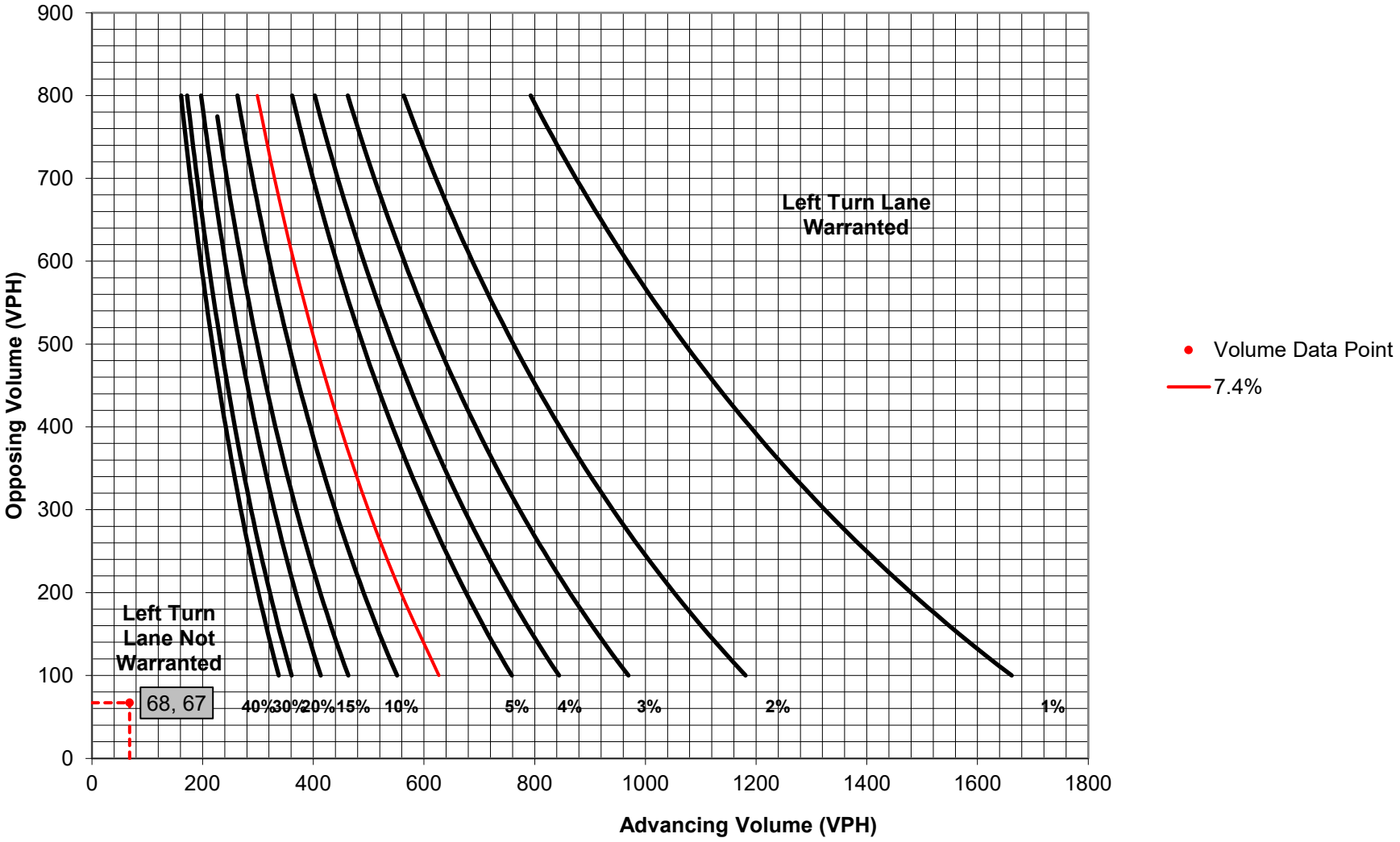
Additional Findings:

N/A

Additional Comments / Justifications:

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

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Old State Road and Southern Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	35		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	4	2.0%	N/A
	Through	-	63	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	58	0.0%	N/A
	Right	Yes	8	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	58	0.0%	58
	Right	-	8	2.0%	9

Advancing Volume:	67
Right Turn Volume:	9

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:	9
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

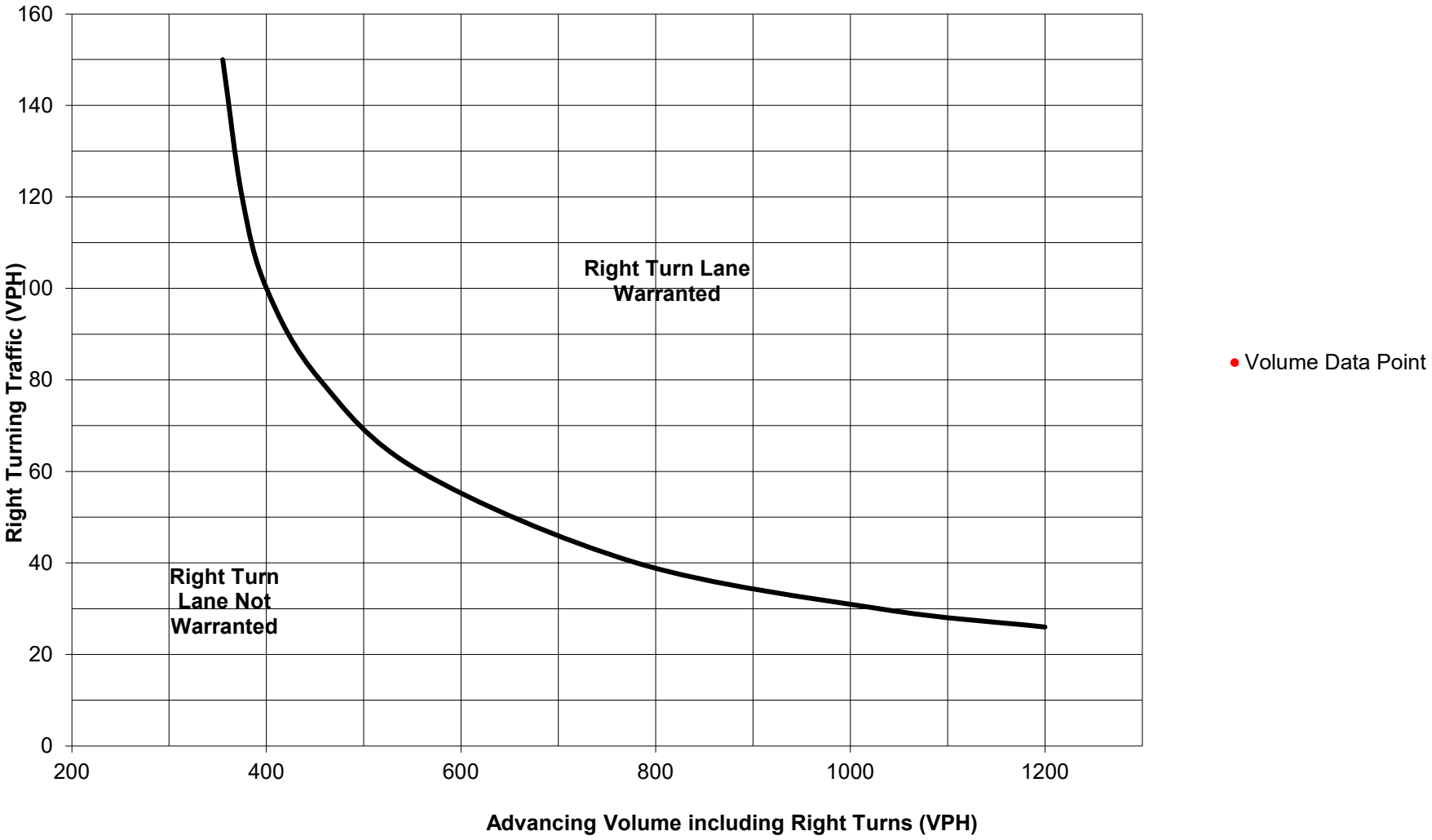
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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)



Trappe Road & Proposed Site Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Trappe Road and Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	2.0%	4
	Through	-	1	0.0%	1
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	0	0.0%	0
	Right	Yes	0	2.0%	0

Advancing Volume:	5
Opposing Volume:	0
Left Turn Volume:	4
% Left Turns in Advancing Volume:	80.00%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	-	0	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: #DIV/0!

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	4
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: #DIV/0!

PennDOT Publication 46, Exhibit 11-6

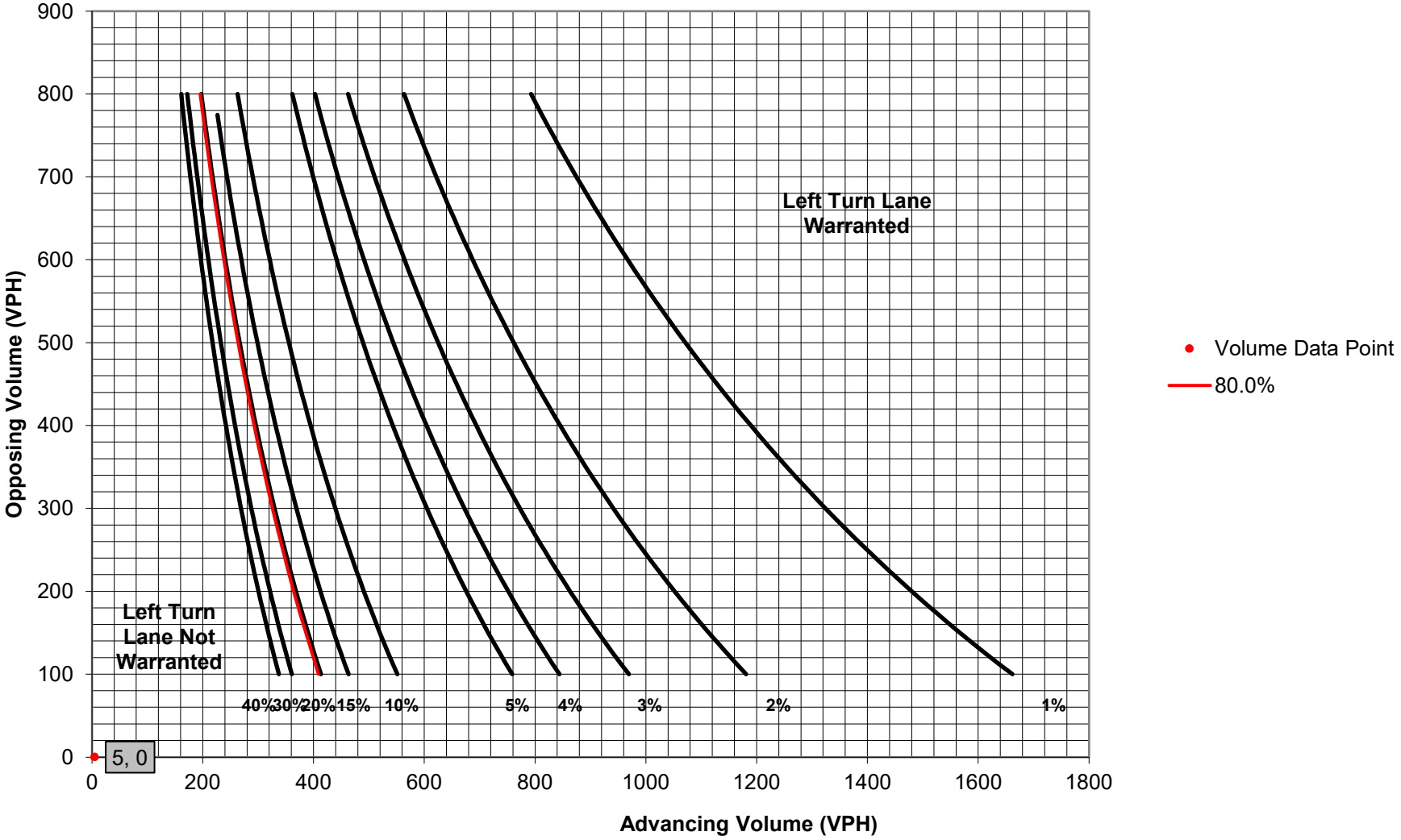
Type of Traffic Control	Speed (MPH)					
	25-35		40-45		50-60	
	Turn Demand Volume					
	High	Low	High	Low	High	Low
Signalized	A	A	B or C	B or C	B or C	B or C
Unsignalized	A	A	C	B	B or C	B

Left Turn Lane Storage Length, Condition A:	#DIV/0!	Feet
Condition B:	#DIV/0!	Feet
Condition C:	#DIV/0!	Feet
Required Left Turn Lane Storage Length:	#DIV/0!	Feet

Additional Findings: #DIV/0!

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Trappe Road and Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	AM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	3	2.0%	N/A
	Through	-	1	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	0	0.0%	N/A
	Right	Yes	0	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	0	0.0%	0
	Right	-	0	2.0%	0

Advancing Volume:	0
Right Turn Volume:	0

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:	0
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

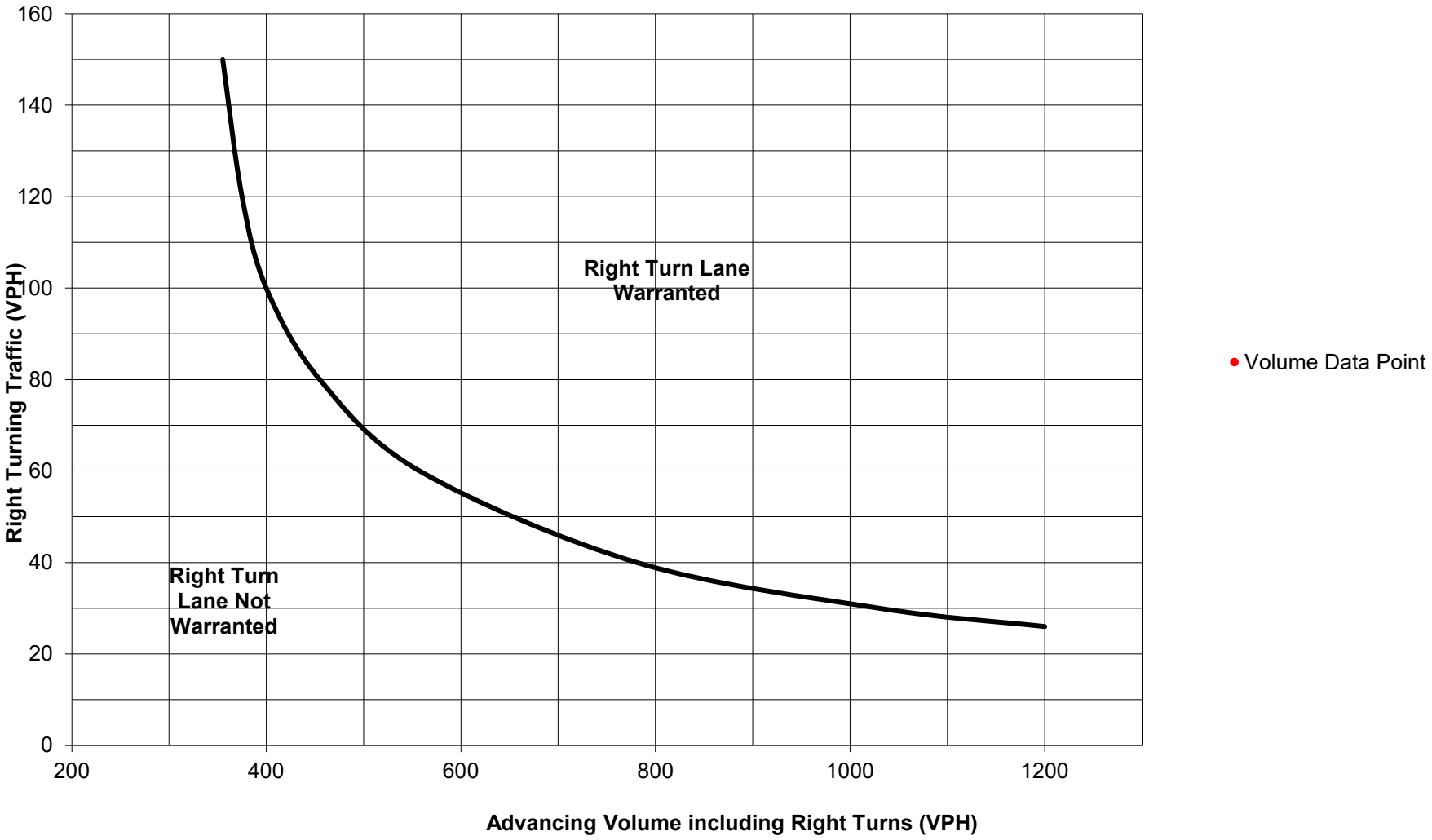
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Trappe Road and Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25		**Type of Analysis**
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	6	2.0%	7
	Through	-	1	0.0%	1
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	2	0.0%	2
	Right	Yes	0	2.0%	0

Advancing Volume:	8
Opposing Volume:	2
Left Turn Volume:	7
% Left Turns in Advancing Volume:	87.50%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	2	0.0%	N/A
	Right	-	0	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 1

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	7
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

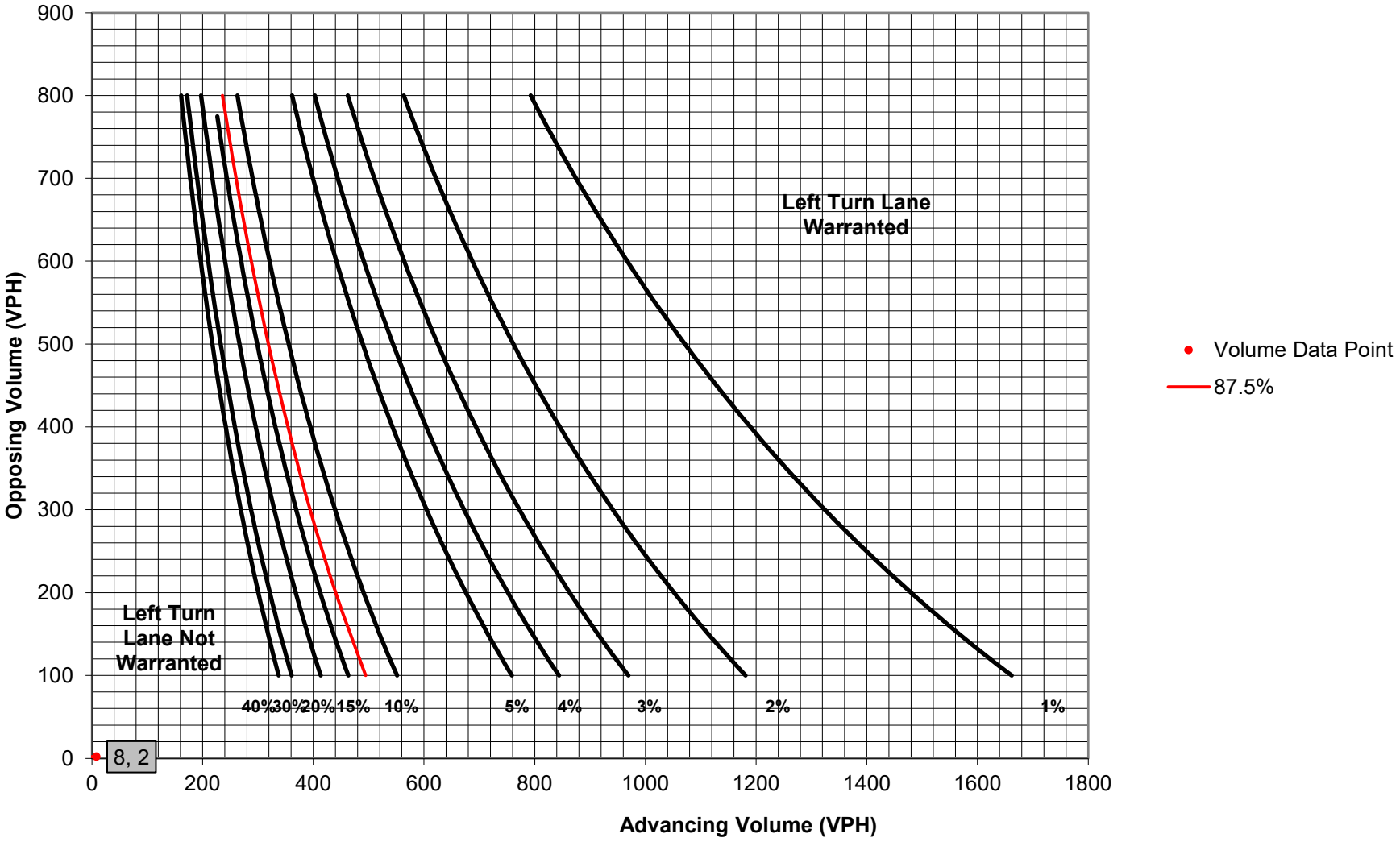
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Trappe Road and Site Driveway

Analysis Period:	2033 Build	**Number of Approach Lanes:**	1
Design Hour:	PM Peak Hour	**Undivided or Divided Highway:**	Undivided
Intersection Control:	Unsignalized		
Posted Speed Limit (MPH):	25	**Type of Analysis**	
Type of Terrain:	Level	**Left or Right-Turn Lane Analysis?:**	Right Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	6	2.0%	N/A
	Through	-	1	0.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	2	0.0%	N/A
	Right	Yes	0	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	2	0.0%	2
	Right	-	0	2.0%	0

Advancing Volume:	2
Right Turn Volume:	0

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:	0
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

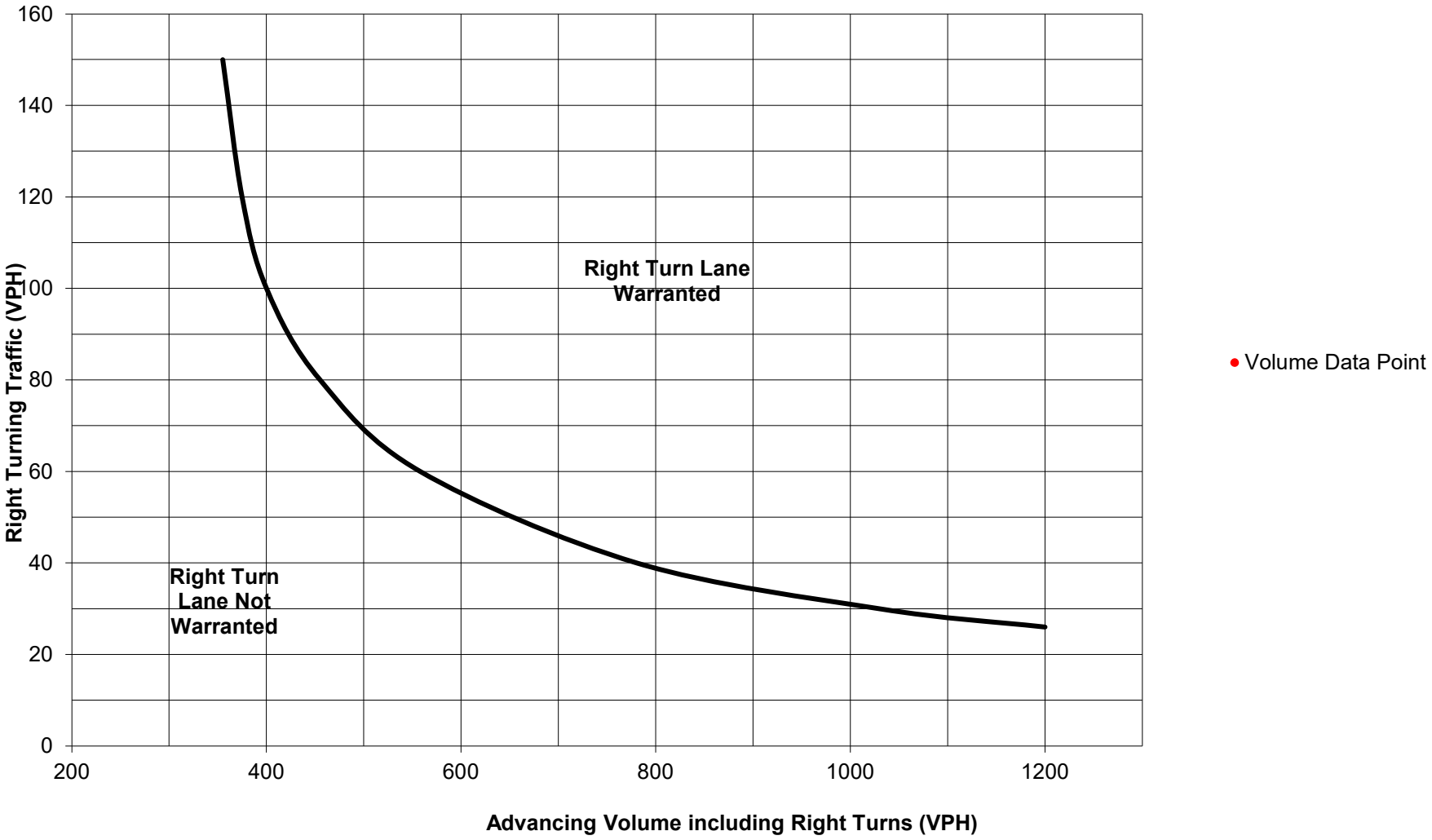
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

Additional Findings:

N/A

Additional Comments / Justifications:

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



2nd Avenue (SR 4015) & Proposed Site Driveway

Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Second Avenue and Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	10	2.0%	11
	Through	-	324	3.0%	329
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	156	6.0%	161
	Right	Yes	8	2.0%	9

Advancing Volume:	340
Opposing Volume:	170
Left Turn Volume:	11
% Left Turns in Advancing Volume:	3.24%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	156	6.0%	N/A
	Right	-	8	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	11
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

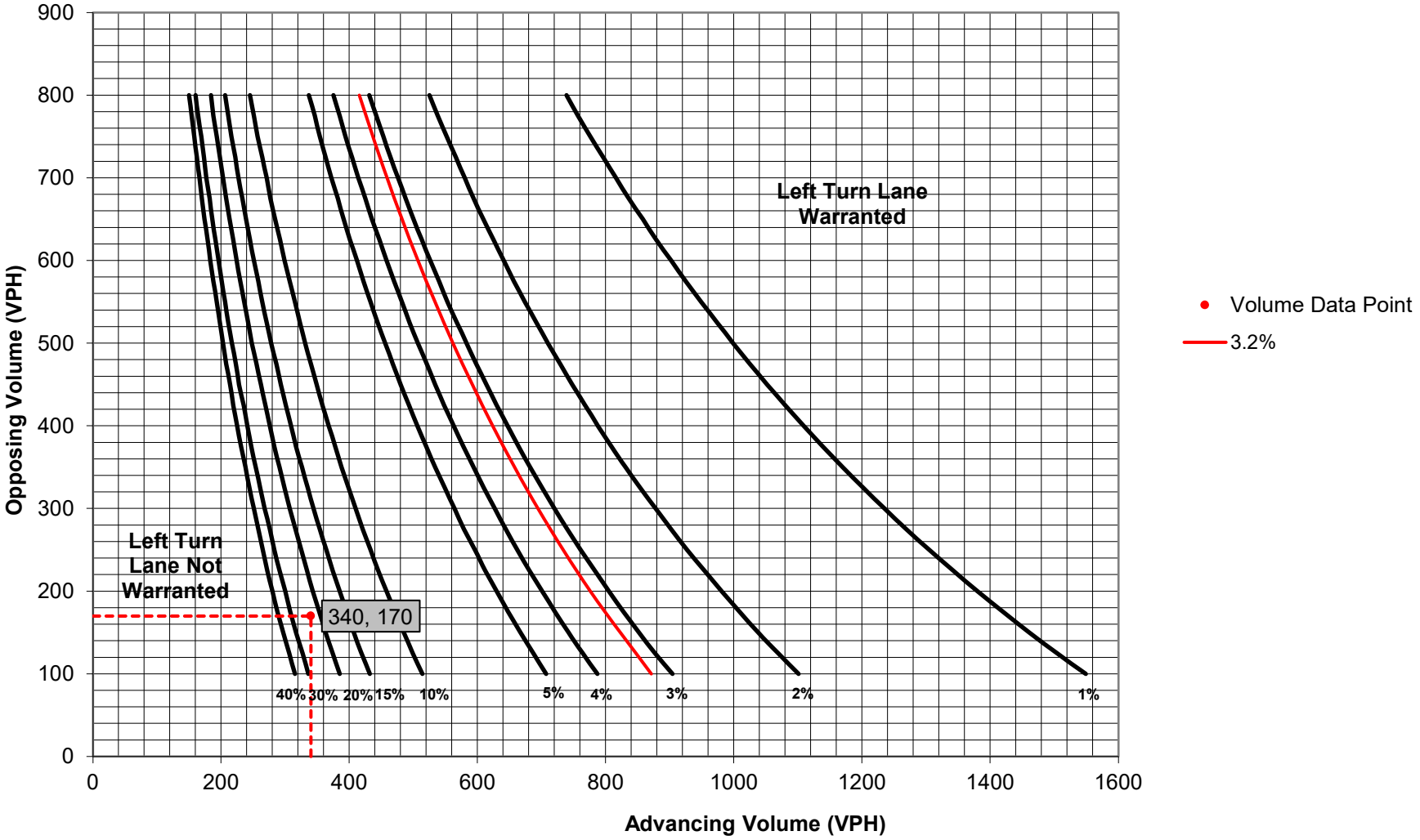
Left Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Left Turn Lane Storage Length:	N/A	Feet

Additional Findings: N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Second Avenue and Site Driveway

Analysis Period:	2033 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	Yes	10	2.0%	N/A
	Through	-	324	3.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	156	6.0%	N/A
	Right	Yes	8	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	156	6.0%	161
	Right	-	8	2.0%	9

Advancing Volume:	170
Right Turn Volume:	9

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:	9
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

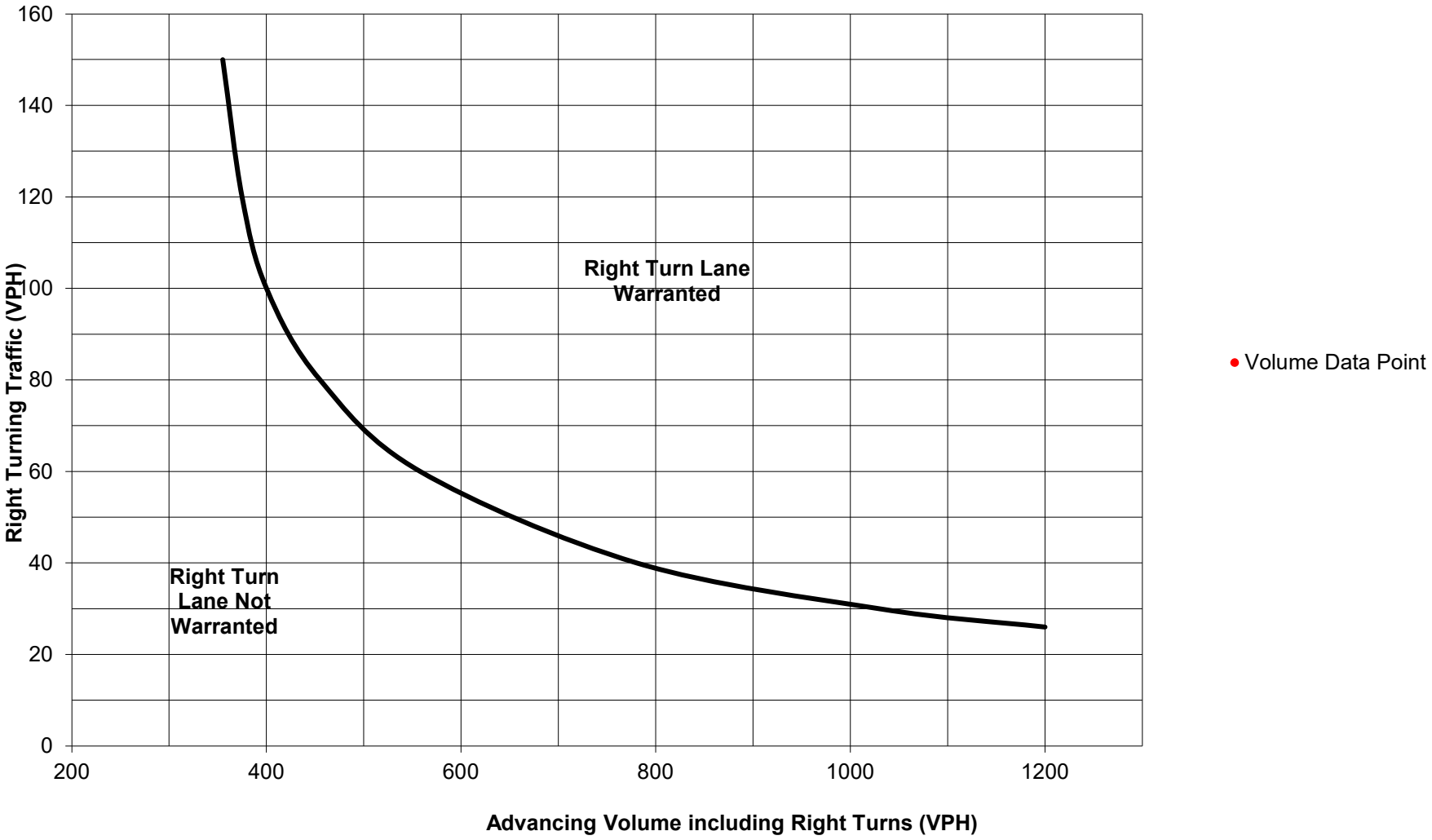
Right Turn Lane Storage Length, Condition A:	N/A	Feet
Condition B:	N/A	Feet
Condition C:	N/A	Feet
Required Right Turn Lane Storage Length:	N/A	Feet

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:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Second Avenue and Site Driveway

Analysis Period:	2033 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?:**	Left Turn Lane

VOLUME CALCULATIONS

Left Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	27	2.0%	28
	Through	-	162	1.0%	163
	Right	Yes	0	0.0%	0
Opposing	Left	Yes	0	0.0%	0
	Through	-	339	1.0%	341
	Right	Yes	24	2.0%	25

Advancing Volume:	191
Opposing Volume:	366
Left Turn Volume:	28
% Left Turns in Advancing Volume:	14.66%

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	N/A
	Through	-	339	1.0%	N/A
	Right	-	24	2.0%	N/A

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

TURN LANE WARRANT FINDINGS

Left Turn Lane Warrant Findings

Applicable Warrant Figure: Figure 2

Warrant Met?: No

Right Turn Lane Warrant Findings

Applicable Warrant Figure: N/A

Warrant Met?: N/A

TURN LANE LENGTH CALCULATIONS

Intersection Control:	Unsignalized
Design Hour Volume of Turning Lane:	28
Cycles Per Hour (Assumed):	60
Cycles Per Hour (If Known):	

Average # of Vehicles/Cycle: N/A

PennDOT Publication 46, Exhibit 11-6

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

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

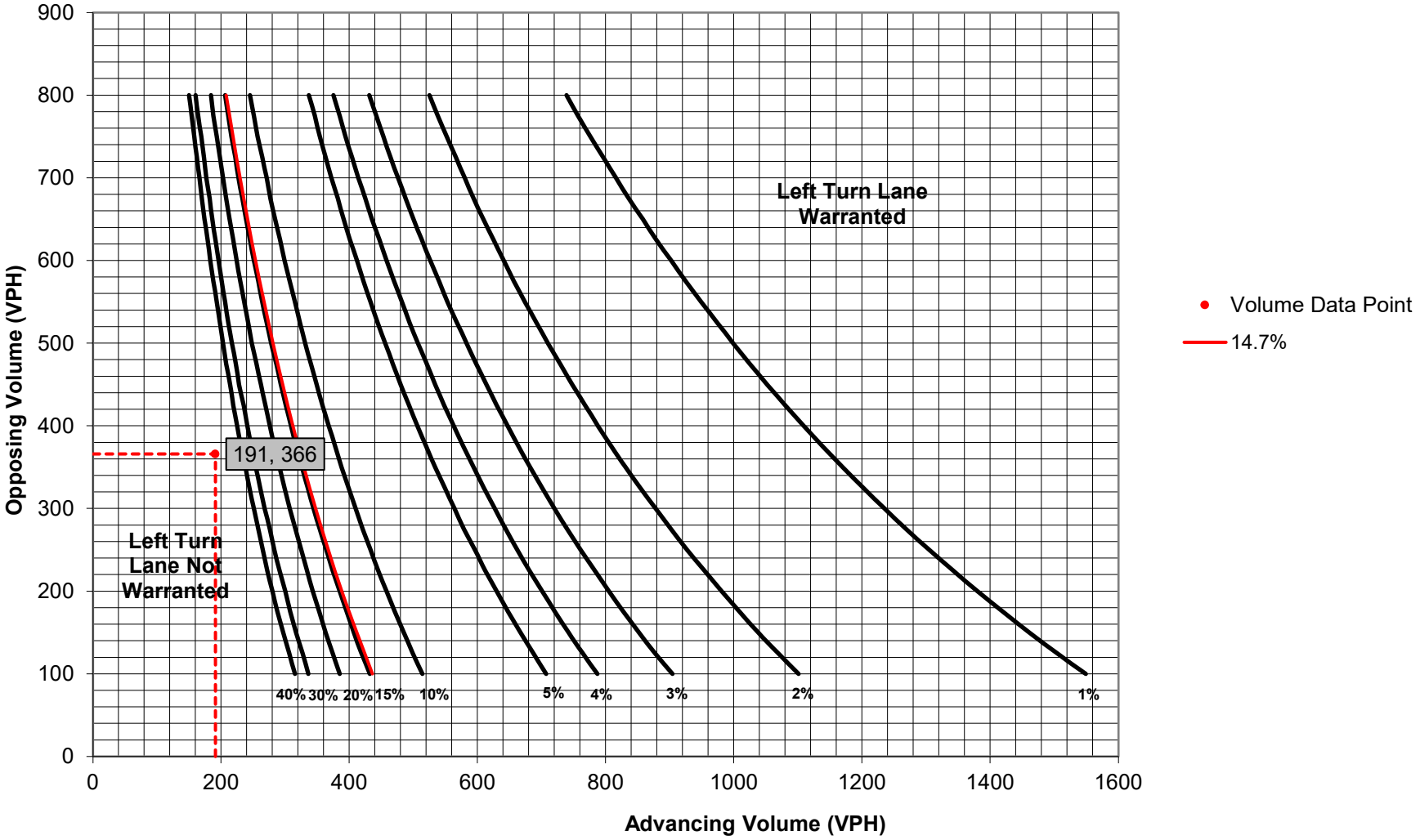
Additional Findings:

N/A

Additional Comments / Justifications:

Figure 2. Warrant for left turn lanes on two-lane highways (40 mph speed, unsignalized and signalized intersections)

(L = % Left Turns in Advancing Volume)



Turn Lane Warrant and Length Analysis Workbook

STUDY LOCATION AND ANALYSIS INFORMATION

Municipality:	Upper Providence Township	**Analysis Date:**	4/25/2024
County:	Montgomery County	**Conducted By:**	BH
PennDOT Engineering District:	6	**Checked By:**	MB
		Agency/Company Name:	Traffic Planning and Design, Inc.

Intersection & Approach Description: Second Avenue and Site Driveway

Analysis Period:	2033 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	Yes	27	2.0%	N/A
	Through	-	162	1.0%	N/A
	Right	Yes	0	0.0%	N/A
Opposing	Left	Yes	0	0.0%	N/A
	Through	-	339	1.0%	N/A
	Right	Yes	24	2.0%	N/A

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

Right Turn Lane Volume Calculations

Movement		Include?	Volume	% Trucks	PCEV
Advancing	Left	Yes	0	0.0%	0
	Through	-	339	1.0%	341
	Right	-	24	2.0%	25

Advancing Volume: 366
Right Turn Volume: 25

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:	25
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)