CARPENTER MARTY transportation

Gahanna Sheetz Development

Traffic Impact Study

Prepared for: Skilken Gold Real Estate Development
July 15, 2022

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Columbus, OH 43229
614.656.2424
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I. Purpose of Report & Study Objectives

The purpose of this traffic analysis and report is to document the potential traffic impacts of a proposed Sheetz development located in Gahanna, Ohio. This traffic impact study (TIS) is required by the City of Gahanna as part of the development approval process. A Traffic Study Scoping document establishing an agreed upon scope of services was reviewed and approved by the City of Gahanna. The scoping document can be seen in **Appendix A**.

II. Proposed Development

A. Surrounding Area

The proposed site is located on the south side of Morse Road, east of Albany Chase Drive and west of Collingwood Point Place. The surrounding area includes mostly mixed residential developments. A mixed retail development is located immediately east of the proposed site and a daycare center is located immediately west of the proposed site.

B. On-Site Development

Location

The site is bounded by Morse Road to the north and Johnstown Road to the south. **Figure 1** shows the location of the proposed site in Central Ohio and **Figure 2** shows the study area.

Figure 1 – Location in Central Ohio

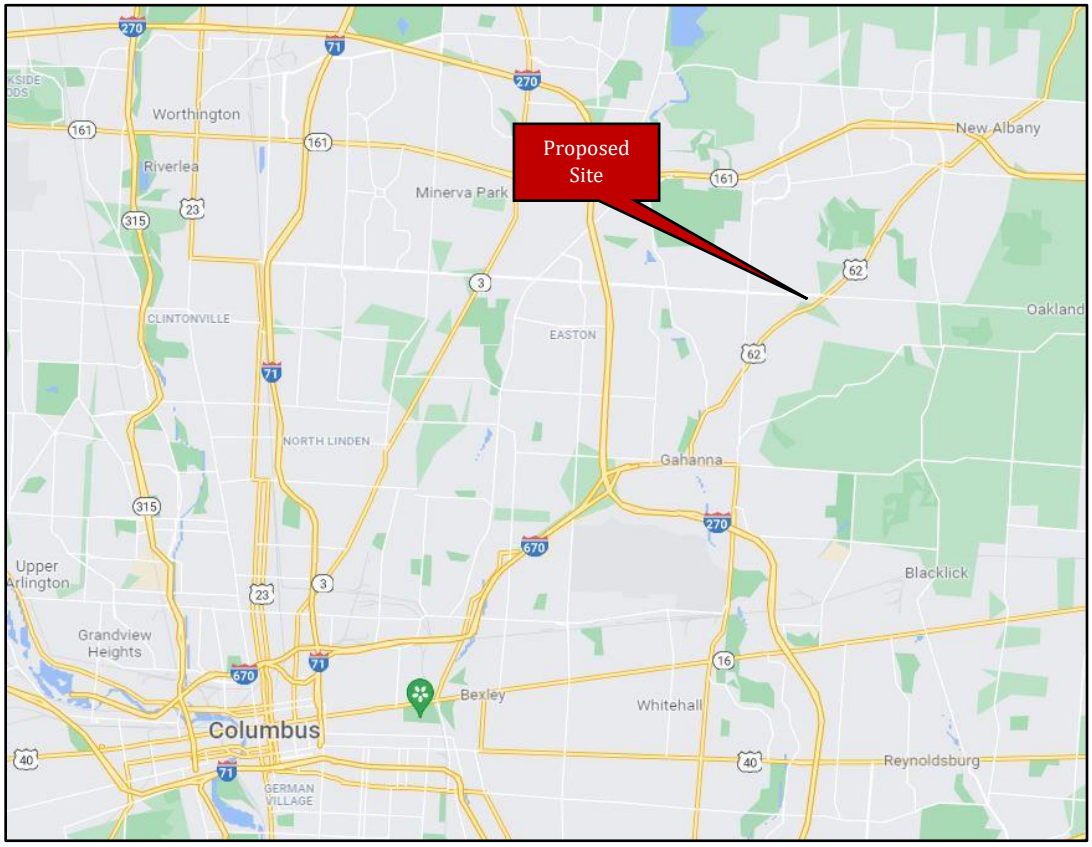
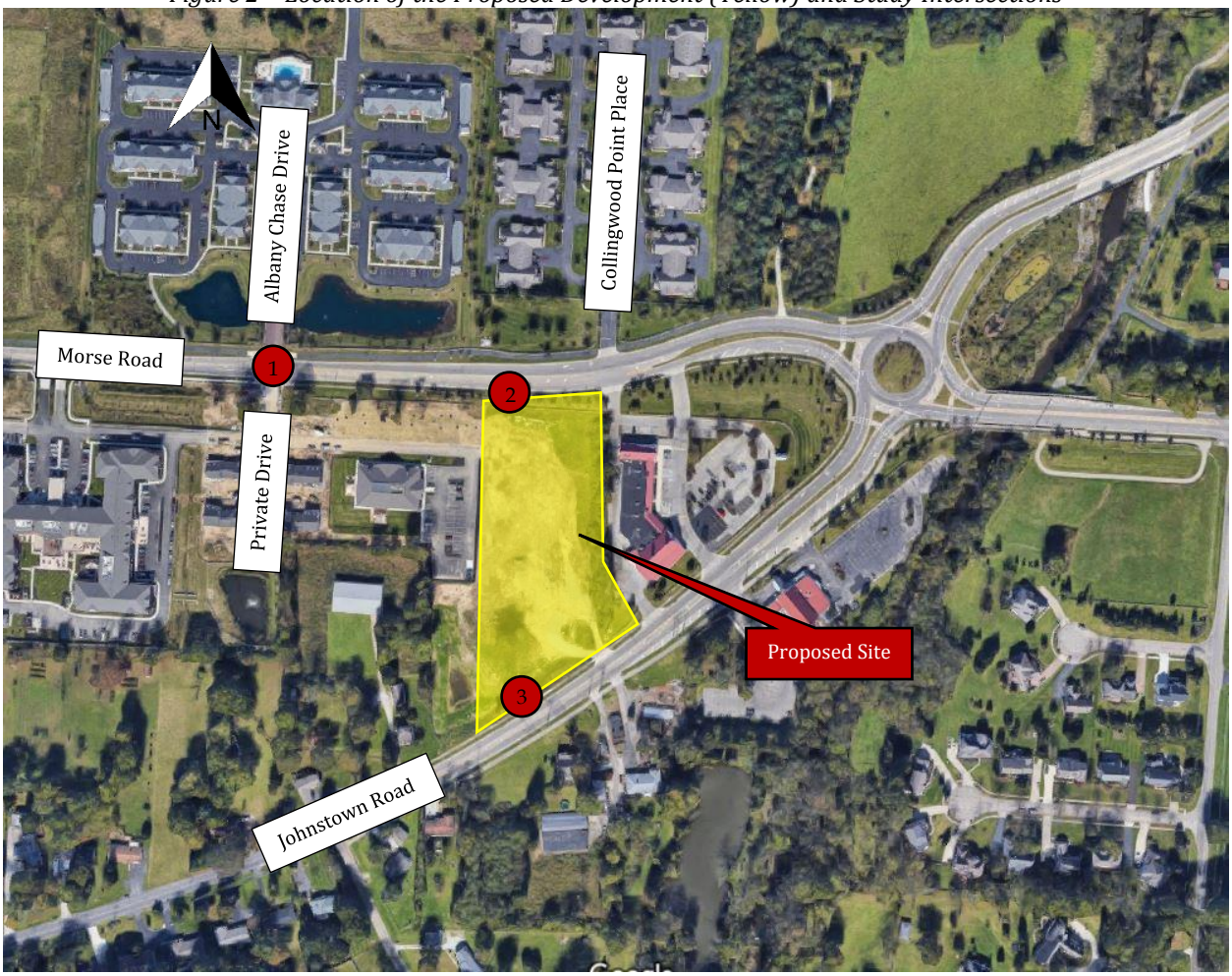


Figure 2 – Location of the Proposed Development (Yellow) and Study Intersections



Land Use & Intensity

The site is currently undeveloped and is proposed to be developed as a Sheetz convenience store, restaurant, and gas station. The site is proposed have a right in, right out (RIRO) access along Morse Road, cross access to the Morse Road & Albany Chase Drive/Private Drive intersection (full access), and a full access along Johnstown Road.

The site plan is provided in **Appendix A.**

III. Area Conditions

A. Area of Influence

The study intersections for the proposed development are listed below along with the turning movement restrictions associated with them. Numbers correspond to **Figure 2**.

1. Morse Road & Albany Chase Drive/Private Drive (Full)
2. Morse Road & Site Access 1 (RIRO)
3. Johnstown Road & Site Access 2 (Full)

B. Jurisdictions

All study intersections are within City of Gahanna jurisdiction. The north side of Morse Road in the study area is within City of Columbus jurisdiction.

C. Traffic Volumes & Conditions

Turning movement count data for the study area was collected on February 10, 2022 by Carpenter Marty Transportation. A 13-hour count was collected at the Morse Road & Albany Chase Drive intersection. Peak hour (7:00 – 9:00 AM, 4:00 – 6:00 PM) count data was collected along E. Johnstown Road near the proposed location of Site Access 2. All count data can be found in **Appendix B.**

IV. Projected Traffic

A. Background Traffic

ODOT peak hour to design hour factors were applied to collected count data per the ODOT State Highway Access Management Manual (SHAMM) methodologies to create adjusted count data for both the AM and PM peak hours. For analysis, the Opening Year of the development is 2023 and the Design, or Horizon Year, is 2043. A growth rate of 1% was obtained from the ODOT Transportation Data Management System (TDMS). This growth rate was applied to the adjusted count data to produce No Build volumes for the Opening and Horizon Years. The growth rate data can be found in **Appendix B.**

B. Site Traffic

Trip Generation

Trips for the proposed development were generated using standard Institute of Transportation Engineers (ITE) practices and the Trip Generation Manual, 11th edition, data via the OTISS program[1]. Land Use Code (LUC) 945 – *Convenience Store/Gas Station (VFP 16-24)* was used to generate trips for the proposed development. **Table 1** summarizes the trip generation. The full trip generation analysis can be found in **Appendix C**.

Table 1 – Proposed Site Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
945 – Convenience Store/Gas Station (VFP 16-24)	6,131 Sq. Ft.	280	280	242	242
Pass-By		176	176	160	160
Non-Pass-By		104	104	82	82

Site traffic was distributed to/from the access points based on the existing count data, knowledge of local travel patterns, and engineering judgement. Site traffic was added to the No Build traffic to produce Build traffic for the Opening and Horizon Years. The full volume calculations can be found in **Appendix D.**

[1] Online Traffic Impact Study Software developed by ITE and Transoft Solutions.

V. Traffic Analysis

A. Turn Lane Warrant Analysis

A turn lane warrant analysis was conducted using ODOT criteria and standard ODOT turn lane warrant graphs for all study intersections. If a turn lane was warranted in any particular scenario, the length was calculated using methodologies in the ODOT Location and Design (L&D) Manual. Both Morse Road and E. Johnstown Road have a posted speed limit of 45 MPH throughout the study area. Thus, a design speed of 45 MPH was utilized for all turn lane length calculations in order to match the existing turn lane characteristics of the surrounding area.

B. Signal Warrant Analysis

An eight-hour, four-hour, and peak hour signal warrant analysis was conducted at the intersection of Morse Road & Albany Chase Drive per the Ohio Manual of Uniform Traffic Control Devices (OMUTCD). If the intersection met signal warrants in any particular scenario, it was represented as such in the capacity analysis.

C. Capacity Analysis

Synchro 11 software was used to analyze capacity at all study intersections based on the Highway Capacity Manual, 6th Edition. A minimum level-of-service (LOS) of D for the overall intersection, approaches, and each individual movement during peak traffic hours was considered acceptable for all study intersections. If an intersection fell below these criteria, mitigation strategies were developed to bring each movement or intersection back to an acceptable LOS, unless otherwise noted.

VI. Results

A. Turn Lane Warrant Analysis

Results of the turn lane warrant analysis show that the following turn lanes are warranted based on ODOT criteria:

- Albany Chase Drive/Private Drive & Morse Road
  - 175’ Eastbound Right
  - 225’ Westbound Left
- Site Access 1 & Morse Road
  - 175’ Eastbound Right
- Site Access 2 & E. Johnstown Road
  - 225’ Eastbound Left
  - 175’ Westbound Right

All calculated turn lane lengths include a 50’ diverging taper. The full turn lane warrant analysis can be found in **Appendix E.**

B. Signal Warrant Analysis

The results of the signal warrant analysis for the intersection of Morse Road & Albany Chase Drive shows the following conclusions for the Opening Year Build scenario:

- Warrant 1: Condition B (70%) was met. Combination of A/B (56%) was met.
- Warrant 2: Met with 70% factor.
- Warrant 3: Met with 70% factor.

No warrants are met with Opening Year No Build volumes. The full signal warrant analysis can be found in **Appendix F**.

C. Capacity Analysis

Results of the baseline capacity analysis for the study intersections can be seen in **Table 2**. All warranted left turn lanes were represented in the analysis. No warranted right turn lanes were included in the capacity analysis, for reasons explained later in the report. For this analysis, the Morse Road & Albany Chase Drive intersection was analyzed under its existing stop-control condition. The full capacity analysis can be found in **Appendix G.**

Table 2 – Baseline Capacity Analysis Summary (LOS/delay)

Intersection	Approach/ Movement	Opening Year (2023)				Horizon Year (2043)			
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build
Morse Rd & Albany Chase Rd	EB Left	A/8.4	A/8.3	B/10.1	A/9.8	A/8.7	A/8.6	B/11.0	B/10.7
	WB Left	A/9.0	A/9.4	A/9.7	B/10.4	A/9.5	B/10.0	B/10.4	B/11.3
	NB	D/26.2	F/112.7	E/42.6	F/547.7	E/38.9	F/250.6	F/81.9	F/1177.0
	SB	E/38.8	F/51.6	F/152.8	F/236.7	F/60.4	F/84.1	F/380.1	F/552.5
Morse Rd & Site Access 1	NB		C/15.8		C/16.9		C/18.5		C/20.2
E. Johnstown Rd & Site Access 2	EB Left		B/10.2		A/9.2		B/11.1		A/9.8
	SB		F/57.3		F/71.3		F/137.0		F/190.7

As shown in **Table 2**, the southbound approach of Site Access 2 at E. Johnstown Road exceeds acceptable delay and LOS in all scenarios. However, it is typical for stop-controlled approaches connecting to arterial roadways to have increased delays which fall outside of acceptable LOS criteria due to the volume of traffic on the arterial roadway. For these reasons, this approach was considered acceptable.

Also shown in **Table 2**, the northbound and southbound approaches of the Morse Road & Albany Chase Road intersection exceed acceptable delay in almost all scenarios. Due to these results and the results of the signal warrant analysis, an additional capacity analysis scenario was performed assuming that the intersection of Morse Road & Albany Chase Road would be signalized. Planning-level signal timings and clearance intervals were utilized per the ODOT Analysis and Traffic Simulation (OATS) Manual methodologies. Results of the signalized capacity analysis can be seen in **Table 3**.

Table 3 – Signalized Capacity Analysis Summary (LOS/delay)

Intersection	Approach/ Movement	Opening Year (2023)				Horizon Year (2043)			
		AM No Build	AM Build	PM No Build	PM Build	AM No Build	AM Build	PM No Build	PM Build
Morse Rd & Albany Chase Rd	EB	A/8.3	A/9.3	A/8.1	A/8.2	A/9.1	A/9.5	A/8.2	A/8.7
	WB	A/6.7	A/8.2	A/9.4	A/9.3	A/6.8	A/8.0	B/10.9	B/10.7
	NB	B/13.7	B/14.6	B/19.0	C/22.5	B/15.6	B/18.1	C/25.7	C/29.5
	SB	B/14.1	B/14.5	B/19.7	C/22.8	B/16.1	B/17.9	C/26.6	C/29.9
	Total	**A/8.2**	**A/9.6**	**A/9.4**	**A/10.0**	**A/8.7**	**A/9.9**	**B/10.4**	**B/11.2**

As shown in **Table 3**, the intersection of Morse Road & Albany Chase Road operates with acceptable LOS/delay in all scenarios when signalized.

VII. Recommendations and Conclusions

Based on the results of the capacity and signal warrant analysis, a traffic signal is recommended to be installed at the intersection of Morse Road & Albany Chase Drive as a Build improvement. Based on the results of the turn lane warrant analysis (assuming the intersection is unsignalized), a 175' eastbound right turn lane and a 225' westbound left turn lane are warranted at the Morse Road & Albany Chase Drive intersection. A two-way left turn lane is currently present at the intersection and is expected to be sufficient with minor restriping to accommodate the proposed left turn lane. The right turn lane is not recommended to be installed because with the installation of a traffic signal, the capacity analysis shows operations would be acceptable without a dedicated right turn lane.

A 175' eastbound right turn lane is warranted at the intersection of Site Access 1 & Morse Road. It is recommended that the right turn lane not be installed as it would affect existing pedestrian infrastructure on Morse Road. Additionally, other large-scale developments along Morse Road do not have dedicated right turn lanes, and drivers are expected to be accustomed to these conditions.

A 225' eastbound left turn lane and a 175' westbound right turn lane are warranted at the intersection of Site Access 2 & E. Johnstown Road. It is recommended that the left turn lane be installed as a Build improvement. A two-way left turn lane is currently present at the intersection and is expected to be sufficient with minor restriping for the left turn lane. The right turn lane is not recommended to be installed, for the same reasons described for not installing the warranted right turn lane on Morse Road. All turn lane lengths listed are inclusive of a 50' diverging taper.

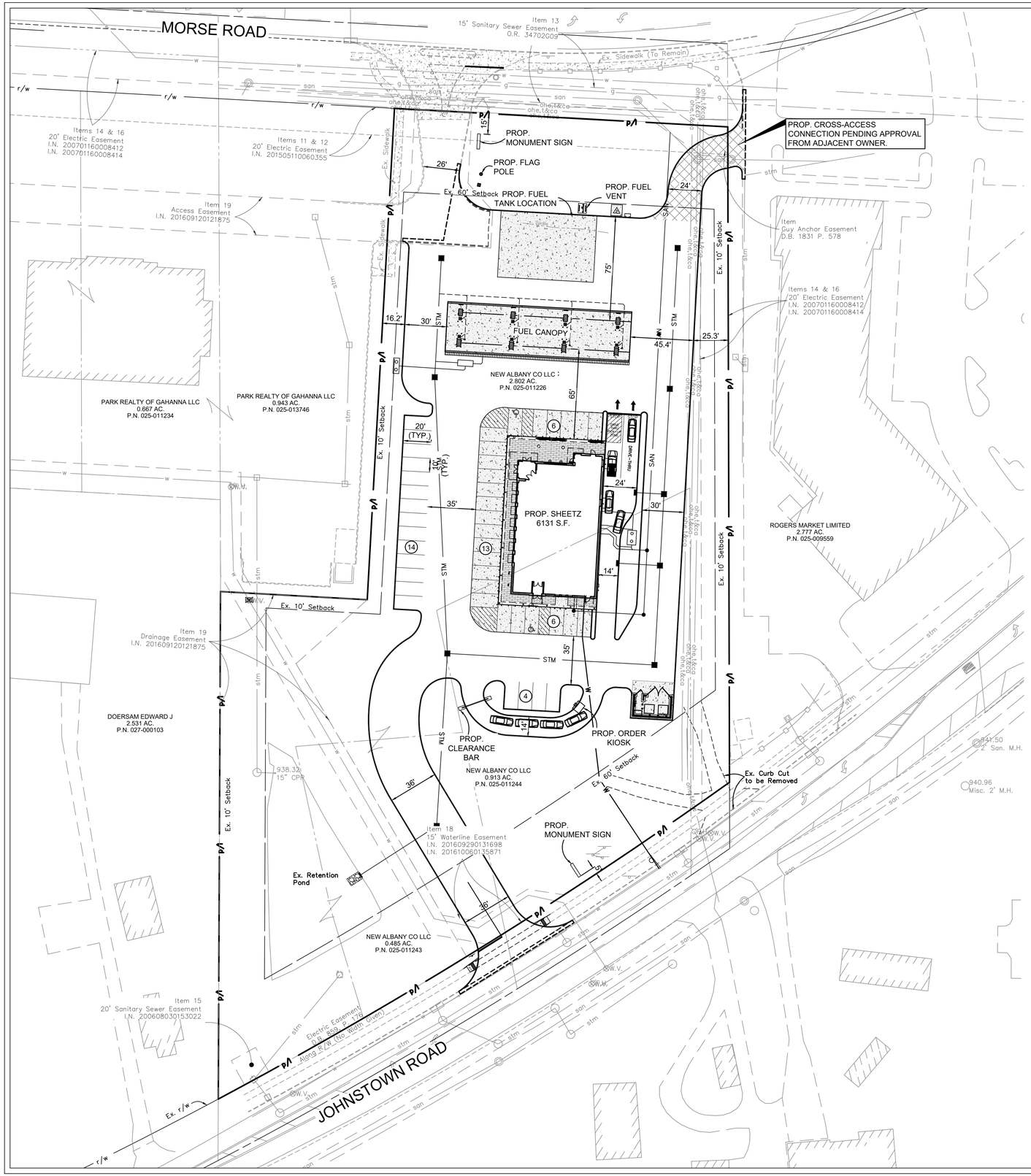
VIII. Appendices

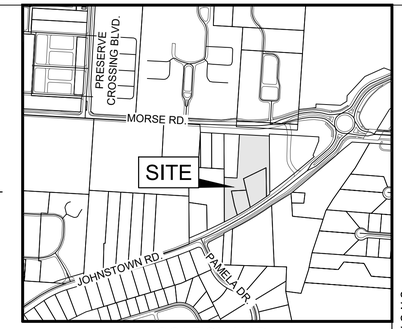
Appendix A – Scope Document & Site Plan
Appendix B – Count Data & Growth Rate Data
Appendix C – Trip Generation
Appendix D – Volume Calculations
Appendix E – Turn Lane Warrant Analysis
Appendix F – Signal Warrant Analysis
Appendix G – Capacity Analysis

Appendix A
Site Plan

Appendix A

CARPENTER MARTY transportation





LOCATION MAP
NO SCALE

SHEET INDEX

LEGEND

- PROPOSED BUILDING
- PROPOSED CONCRETE
- PROPOSED BRICK PAVERS
- PROPOSED CONCEPTUAL CROSS-ACCESS CONNECTION PENDING APPROVAL OF ADJACENT PROPERTY OWNER.
- PROPOSED SAWCUT LINE

SITE DEVELOPMENT INFORMATION

ZONING:

PROPERTY OWNER:	NEW ALBANY CO LLC
PROPERTY USE:	QUICK SERVICE RESTAURANT WITH FUEL CENTER
SITE ACREAGE:	4.15 AC.
EXISTING ZONING:	NC, NEIGHBORHOOD COMMERCIAL DISTRICT
ADJACENT ZONING NORTH:	PUD4, MULTI-FAMILY, (CITY OF COLUMBUS)
ADJACENT ZONING SOUTH:	NEIGHBORHOOD COMMERCIAL, (JEFFERSON TOWNSHIP)
ADJACENT ZONING EAST:	NCD, NEIGHBORHOOD COMMERCIAL DISTRICT
ADJACENT ZONING WEST:	NCD, NEIGHBORHOOD COMMERCIAL DISTRICT ER-2, ESTATE RESIDENTIAL DISTRICT
TOTAL EXISTING SITE AREA:	4.19 ACRES
TOTAL DISTURBED AREA:	3.2± ACRES
BUILDING/PARKING SETBACK:	60' (MORSE ROAD) 60' (JOHNSTOWN ROAD) 10' (SIDE)
BUILDING COVERAGE:	03.3%
LOT COVERAGE:	47.3%

PARKING CALCULATIONS

AREA	SQUARE FOOTAGE	MIN. PARKING REQ'D*	TOTAL PARKING PROVIDED	PARKING RATIO
RESTAURANT SPACE	3,066± S.F.	21	27	8.81/1000 S.F. 1/114 S.F.
RETAIL SPACE	3,066± S.F.	13	17	5.54/1000 S.F. 1/180 S.F.
OVERALL BUILDING	6,131± S.F.	34	42	7.01/1000 S.F. 1/143 S.F.

PER CHAPTER 1163, PARKING REGULATIONS, OF THE CITY OF GAHANNA ZONING CODE, 1 PARKING SPACE IS REQUIRED FOR EVERY 150 S.F. OF PARTIAL SERVICE RESTAURANT AREA (> 5 TABLES) AND 1 PARKING SPACE IS REQUIRED FOR EVERY 250 S.F. OF RETAIL AREA.

ENGINEER/SURVEYOR

V3 COMPANIES
3500 SNOUFFER ROAD, STE. 225
COLUMBUS, OHIO 43235
PHONE: 614-761-1661
FAX: 614-761-1328
CONTACT: ANDREW GARDNER, P.E.
E-MAIL: AGARDNER@V3CO.COM

DEVELOPER

SKILKEN GOLD REAL ESTATE DEVELOPMENT
4270 MORSE ROAD
COLUMBUS, OHIO 43230
PHONE: 330-604-6363
CONTACT: ELLEN SELLE
E-MAIL: ESELLE@SKILKENGOLD.COM

SCALE: 1" = 40'
0 40 80 120
GRAPHIC SCALE

REVISIONS

NO.	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 01/20/2022

PROJECT NO: 211042
PROJECT MANAGER: PM
DESIGNED BY: AAG
DRAWN BY: RJB

SITE PLAN

SHEETZ GAHANNA
S03
GAHANNA OH

3500 Snouffer Road, Suite 225
Columbus, OH 43235
614.761.1661 phone
www.v3co.com

DRAWING NO.
1

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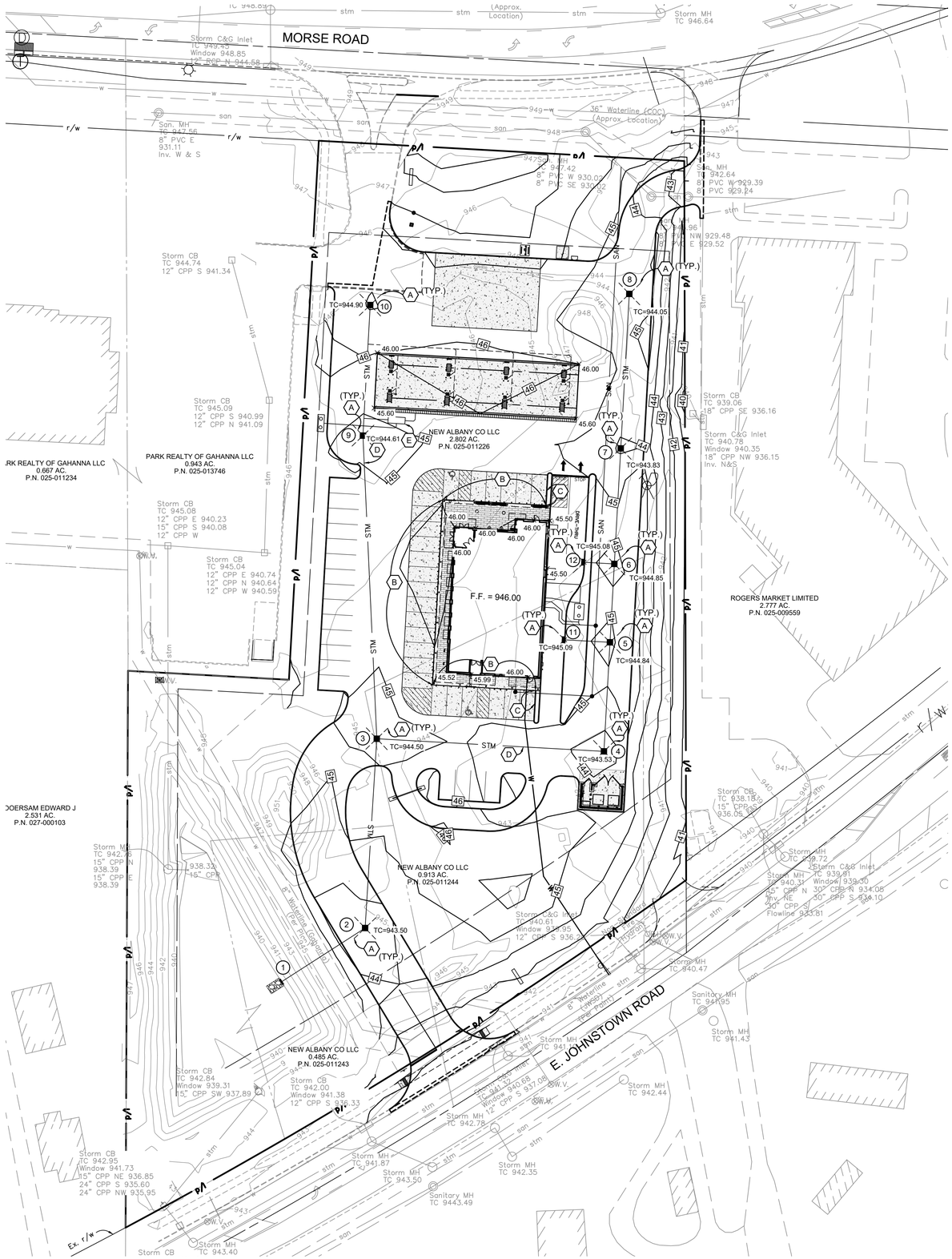
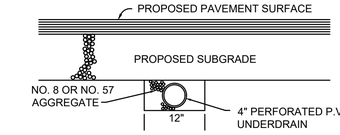


LEGEND

931	EXISTING CONTOUR
930	PROPOSED CONTOUR
×931.50	EXISTING SPOT ELEVATION
×930.5	PROPOSED SPOT ELEVATION ON PAVEMENT UNLESS OTHERWISE NOTED
	EXISTING STORM MANHOLE
	EXISTING CURB INLET
	EXISTING CATCH STORM BASIN
	PROPOSED STORM CATCH BASIN
	PROPOSED STORM MANHOLE
	EXISTING SANITARY MANHOLE
	PROPOSED SANITARY CLEANOUT
	EXISTING WATER VALVE
	PROPOSED WATER VALVE
	PROPOSED FIRE HYDRANT
	EXISTING LIGHT POLE
	PROPOSED LIGHT POLE
PMFX	PRIVATE METERED FIRE SYSTEM
PMDW	PRIVATE METERED DOMESTIC WATER

CODED NOTES



(A) INSTALL 10 FOOT LENGTHS (WHERE ALLOWABLE) OF 4" PERFORATED P.V.C. UNDERDRAIN AT ALL STRUCTURES WITHIN PAVEMENT AREAS PER THE ABOVE DETAIL. THE UNDERDRAIN IS TO BE INSTALLED AT A 1.00% GRADE TOWARD THE STRUCTURE, WITH THE UPSTREAM END PLUGGED, AND THE INVERT AT THE STRUCTURE 18" BELOW THE PROPOSED RIM ELEVATION. THE UNDERDRAIN SHALL BE PROTECTED FROM CONSTRUCTION TRAFFIC AFTER INSTALLATION.

(B) CONCRETE SIDEWALK TO BE CONSTRUCTED FLUSH WITH PROPOSED PAVEMENT ACROSS THIS AREA.

(C) TAPER CURB FROM 6" REVEAL TO 0" ACROSS THIS AREA.

(D) MAINTAIN 18" OF VERTICAL CLEARANCE (OUTSIDE OF PIPE TO OUTSIDE OF PIPE) BETWEEN PROPOSED STORM AND UTILITY.

(E) PROPOSED OIL/WATER SEPARATOR AS MANUFACTURED BY HIGHLAND TANK 00350HGDWHTCG OR APPROVED EQUAL.

SCALE: 1" = 40'

0 40 80 120

GRAPHIC SCALE

REVISIONS

NO.	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 01/20/2022

PROJECT NO.: 211042
PROJECT MANAGER: PM
DESIGNED BY: AAG
DRAWN BY: RJB

PRELIMINARY GRADING PLAN

SHEETZ GAHANNA

S03

GAHANNA OH

3500 Snouffer Road, Suite 225
Columbus, OH 43235
614.761.1661 phone
www.v3co.com

DRAWING NO.

2

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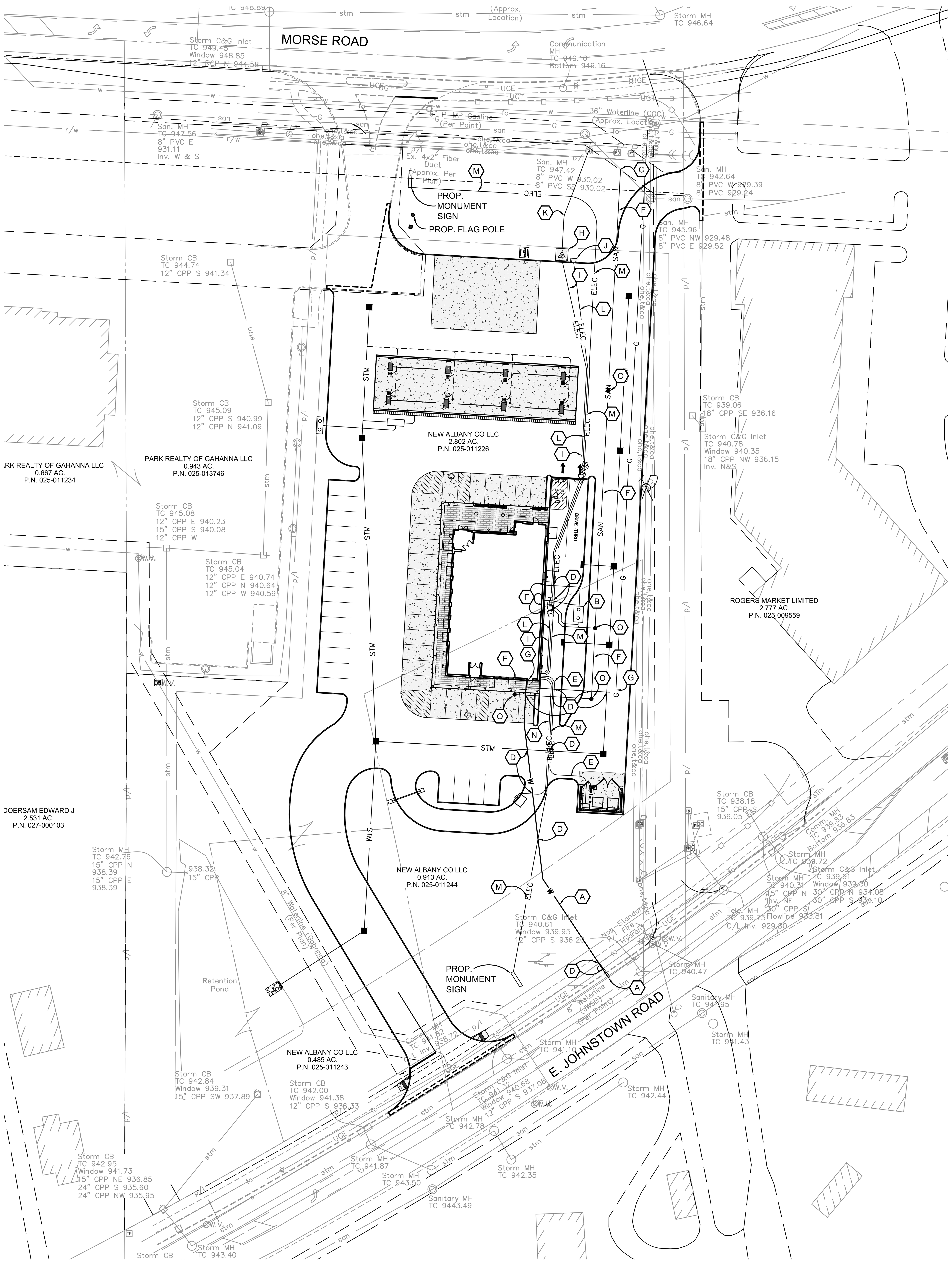


CODED NOTES

- (A) PROPOSED 2" WATER SERVICE TAP PER COC STANDARD DRAWING L-9901. INSTALL CURB STOP 1' INTERIOR TO PROPOSED RIGHT-OF-WAY. METER AND BACKFLOW PREVENTER TO BE LOCATED INSIDE BUILDING.
- (B) PROPOSED SANITARY GREASE INTERCEPTOR.
- (C) CONNECT SANITARY LATERAL TO PROPOSED SANITARY SEWER PER SEPARATE PLANS. PROVIDE 8" x 6" WYE.
- (D) MAINTAIN 18" OF VERTICAL CLEARANCE BETWEEN UTILITIES (OUTSIDE OF PIPE TO OUTSIDE OF PIPE).
- (E) ONE 1" SCHEDULE 40 CONDUIT FOR ELECTRIC SERVICE WITH PULL WIRE FROM STORE TO DUMPSTER (STUBBED AND CAPPED FOR FUTURE).
- (F) 6" SANITARY LATERAL TO BE BE INSTALLED WITHIN 5' OF BUILDING. PIPE TO BE RUN AT A MINIMUM SLOPE OF 2.08%.
- (G) PROPOSED 2" GAS SERVICE AND METER. CONTRACTOR TO COORDINATE WITH UTILITIES COMPANY.
- (H) PROPOSED TRANSFORMER TO BE INSTALLED BY UTILITY COMPANY. SITE CONTRACTOR SHALL PROVIDE 8' x 8' CONCRETE PAD PER TRANSFORMER PAD SPECIFICATIONS. COORDINATE WITH UTILITY COMPANY.
- (I) FOUR 4" SCHEDULE 40 CONDUIT FOR ELECTRICAL SERVICE FROM TRANSFORMER TO BUILDING.
- (J) AIR MACHINE AND PAD.
- (K) PROVIDE TWO 6" SCHEDULE 40 CONDUITS FOR ELECTRIC SERVICE TO TRANSFORMER. COORDINATE WITH UTILITIES COMPANY.
- (L) ELECTRICAL SERVICE TO AIR MACHINES FROM BUILDING. PROVIDE TWO 4" SCHEDULE 40 PVC CONDUITS.
- (M) PROPOSED ELECTRICAL LINE TO MONUMENT SIGN. PROVIDE ONE 4" SCHEDULE 40 CONDUIT.
- (N) TWO 4" SCHEDULE 40 CONDUITS FOR SERVICE FROM BUILDING TO ORDER KIOSK.
- (O) PROPOSED SANITARY SERVICE CLEANOUT.

REVISIONS

NO.	DATE	DESCRIPTION

ORIGINAL ISSUE DATE: 01/20/2022

NO.	DATE	DESCRIPTION

PROJECT NO.: 211042
PROJECT MANAGER: PM
DESIGNED BY: AAG
DRAWN BY: RJB

PRELIMINARY UTILITY PLAN

SHEETZ GAHANNA

S03

GAHANNA OH

3500 Snouffer Road,
Suite 225
Columbus, OH 43235
614.761.1661 phone
www.v3co.com

DRAWING NO.

3

Appendix B
Count Data

Appendix B

CARPENTER MARTY transportation

Morse Road & Albany Chase Drive - TMC

Thu Feb 10, 2022
Full Length (6 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

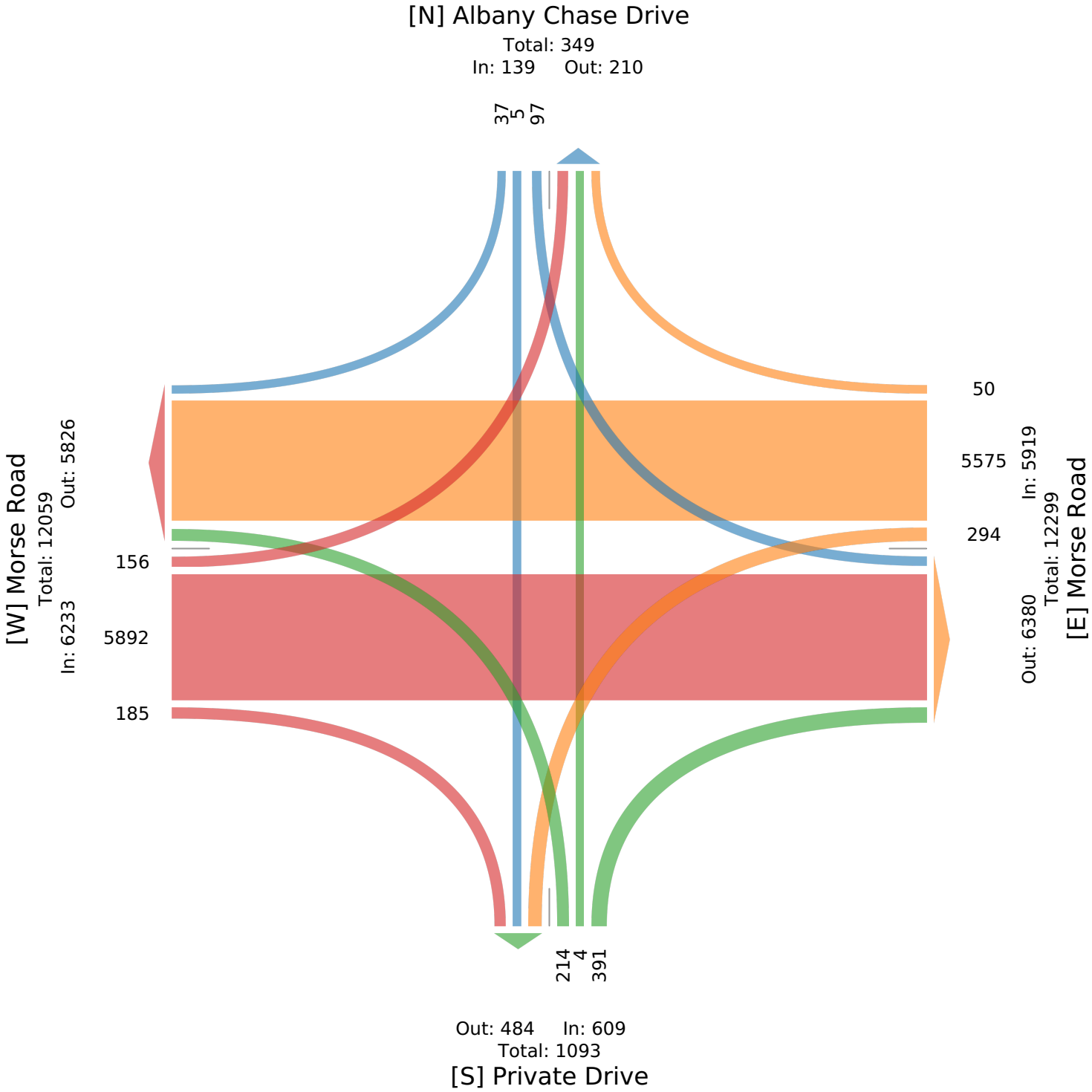
Leg	Morse Road					Morse Road					Private Drive					Albany Chase Drive					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-10 6:00AM	0	29	0	0	**29**	1	27	0	0	**28**	6	0	6	0	**12**	0	0	0	0	**0**	**69**
6:15AM	0	29	0	0	**29**	0	40	0	0	**40**	2	0	9	0	**11**	0	0	1	0	**1**	**81**
6:30AM	0	56	1	0	**57**	1	52	0	0	**53**	8	0	5	0	**13**	0	0	0	0	**0**	**123**
6:45AM	3	69	2	0	**74**	2	58	0	0	**60**	6	0	8	0	**14**	1	0	0	0	**1**	**149**
Hourly Total	3	183	3	0	**189**	4	177	0	0	**181**	22	0	28	0	**50**	1	0	1	0	**2**	**422**
7:00AM	1	93	3	0	**97**	3	55	0	0	**58**	5	0	9	0	**14**	1	0	0	0	**1**	**170**
7:15AM	3	109	4	0	**116**	4	79	2	0	**85**	10	0	13	0	**23**	1	0	0	0	**1**	**225**
7:30AM	6	168	0	0	**174**	3	68	1	0	**72**	9	0	17	0	**26**	2	1	0	0	**3**	**275**
7:45AM	11	150	1	0	**162**	3	92	2	0	**97**	9	0	8	0	**17**	4	0	0	0	**4**	**280**
Hourly Total	21	520	8	0	**549**	13	294	5	0	**312**	33	0	47	0	**80**	8	1	0	0	**9**	**950**
8:00AM	15	93	1	0	**109**	1	97	4	0	**102**	10	0	8	0	**18**	6	0	0	0	**6**	**235**
8:15AM	6	123	0	0	**129**	2	100	4	0	**106**	4	0	5	0	**9**	5	0	1	0	**6**	**250**
8:30AM	4	115	2	0	**121**	2	59	1	0	**62**	6	0	11	0	**17**	4	0	0	0	**4**	**204**
8:45AM	9	117	0	0	**126**	4	70	1	0	**75**	6	0	10	0	**16**	1	0	0	0	**1**	**218**
Hourly Total	34	448	3	0	**485**	9	326	10	0	**345**	26	0	34	0	**60**	16	0	1	0	**17**	**907**
9:00AM	4	88	5	0	**97**	7	87	4	0	**98**	6	0	13	0	**19**	6	1	0	0	**7**	**221**
9:15AM	2	92	4	0	**98**	5	63	0	0	**68**	5	1	11	0	**17**	0	0	0	0	**0**	**183**
9:30AM	2	108	3	0	**113**	4	74	1	0	**79**	4	1	5	0	**10**	0	0	1	0	**1**	**203**
9:45AM	3	79	3	0	**85**	2	66	0	0	**68**	2	0	9	0	**11**	1	1	1	0	**3**	**167**
Hourly Total	11	367	15	0	**393**	18	290	5	0	**313**	17	2	38	0	**57**	7	2	2	0	**11**	**774**
10:00AM	2	112	2	0	**116**	2	67	0	0	**69**	1	0	6	0	**7**	1	0	0	0	**1**	**193**
10:15AM	1	90	0	0	**91**	6	77	0	0	**83**	5	0	5	0	**10**	0	0	0	0	**0**	**184**
10:30AM	1	101	1	0	**103**	2	79	1	0	**82**	4	0	2	0	**6**	2	0	2	0	**4**	**195**
10:45AM	0	119	3	0	**122**	4	69	0	0	**73**	0	0	7	0	**7**	1	0	1	0	**2**	**204**
Hourly Total	4	422	6	0	**432**	14	292	1	0	**307**	10	0	20	0	**30**	4	0	3	0	**7**	**776**
11:00AM	2	110	1	0	**113**	4	80	0	0	**84**	2	0	5	0	**7**	2	0	1	0	**3**	**207**
11:15AM	1	137	3	0	**141**	7	83	0	0	**90**	1	0	4	0	**5**	3	0	3	0	**6**	**242**
11:30AM	2	129	2	0	**133**	4	100	0	0	**104**	0	0	9	0	**9**	1	0	1	0	**2**	**248**
11:45AM	1	116	2	0	**119**	3	97	0	0	**100**	1	0	5	0	**6**	0	0	1	0	**1**	**226**
Hourly Total	6	492	8	0	**506**	18	360	0	0	**378**	4	0	23	0	**27**	6	0	6	0	**12**	**923**
12:00PM	0	143	3	0	**146**	2	108	1	0	**111**	4	0	7	0	**11**	1	0	0	0	**1**	**269**
12:15PM	0	110	2	0	**112**	7	110	0	0	**117**	5	0	5	0	**10**	0	0	0	0	**0**	**239**
12:30PM	1	129	6	0	**136**	9	130	3	0	**142**	6	0	7	0	**13**	1	0	0	0	**1**	**292**
12:45PM	2	114	3	0	**119**	0	133	0	0	**133**	2	1	7	0	**10**	1	1	1	0	**3**	**265**
Hourly Total	3	496	14	0	**513**	18	481	4	0	**503**	17	1	26	0	**44**	3	1	1	0	**5**	**1065**
1:00PM	0	108	2	0	**110**	3	140	1	0	**144**	3	0	5	0	**8**	5	0	0	0	**5**	**267**
1:15PM	1	84	2	0	**87**	3	140	2	0	**145**	5	0	2	0	**7**	1	0	1	0	**2**	**241**
1:30PM	2	111	5	0	**118**	3	120	2	0	**125**	3	0	10	0	**13**	1	0	0	0	**1**	**257**
1:45PM	1	91	2	0	**94**	5	123	1	0	**129**	0	0	7	0	**7**	5	0	0	0	**5**	**235**
Hourly Total	4	394	11	0	**409**	14	523	6	0	**543**	11	0	24	0	**35**	12	0	1	0	**13**	**1000**
2:00PM	1	102	4	0	**107**	8	123	0	0	**131**	4	0	7	0	**11**	1	0	2	0	**3**	**252**
2:15PM	1	92	3	0	**96**	8	113	2	0	**123**	4	0	5	0	**9**	3	0	2	0	**5**	**233**
2:30PM	3	108	2	0	**113**	5	119	0	0	**124**	3	0	3	0	**6**	2	0	3	0	**5**	**248**
2:45PM	1	119	4	0	**124**	3	114	0	0	**117**	2	0	4	0	**6**	2	0	1	0	**3**	**250**
Hourly Total	6	421	13	0	**440**	24	469	2	0	**495**	13	0	19	0	**32**	8	0	8	0	**16**	**983**
3:00PM	1	135	5	0	**141**	7	139	1	0	**147**	0	1	5	0	**6**	1	0	2	0	**3**	**297**
3:15PM	1	137	4	0	**142**	4	126	0	0	**130**	2	0	6	0	**8**	1	0	2	0	**3**	**283**
3:30PM	5	141	8	0	**154**	7	128	0	0	**135**	4	0	4	0	**8**	0	0	2	0	**2**	**299**
3:45PM	1	112	1	0	**114**	10	139	2	0	**151**	2	0	3	0	**5**	2	0	1	0	**3**	**273**
Hourly Total	8	525	18	0	**551**	28	532	3	0	**563**	8	1	18	0	**27**	4	0	7	0	**11**	**1152**
4:00PM	5	141	6	0	**152**	6	146	0	0	**152**	3	0	4	0	**7**	4	0	2	0	**6**	**317**
4:15PM	5	148	8	0	**161**	14	135	2	0	**151**	7	0	4	0	**11**	1	0	1	0	**2**	**325**
4:30PM	7	136	10	0	**153**	11	133	3	0	**147**	5	0	10	0	**15**	1	1	1	0	**3**	**318**
4:45PM	9	137	4	0	**150**	15	152	1	0	**168**	5	0	9	0	**14**	3	0	1	0	**4**	**336**

Leg	Morse Road					Morse Road					Private Drive					Albany Chase Drive					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
Hourly Total	26	562	28	0	**616**	46	566	6	0	**618**	20	0	27	0	**47**	9	1	5	0	**15**	**1296**
5:00PM	13	107	11	0	**131**	9	196	4	0	**209**	2	0	10	0	**12**	4	0	0	0	**4**	**356**
5:15PM	11	165	10	0	**186**	11	190	2	0	**203**	6	0	14	0	**20**	7	0	1	0	**8**	**417**
5:30PM	3	151	10	0	**164**	13	169	2	0	**184**	4	0	18	0	**22**	3	0	1	0	**4**	**374**
5:45PM	0	173	8	0	**181**	11	160	0	0	**171**	4	0	8	0	**12**	2	0	0	0	**2**	**366**
Hourly Total	27	596	39	0	**662**	44	715	8	0	**767**	16	0	50	0	**66**	16	0	2	0	**18**	**1513**
6:00PM	0	138	9	0	**147**	12	132	0	0	**144**	7	0	8	0	**15**	1	0	0	0	**1**	**307**
6:15PM	1	115	6	0	**122**	9	157	0	0	**166**	1	0	14	0	**15**	1	0	0	0	**1**	**304**
6:30PM	1	115	2	0	**118**	14	127	0	0	**141**	4	0	11	0	**15**	0	0	0	0	**0**	**274**
6:45PM	1	98	2	0	**101**	9	134	0	0	**143**	5	0	4	0	**9**	1	0	0	0	**1**	**254**
Hourly Total	3	466	19	0	**488**	44	550	0	0	**594**	17	0	37	0	**54**	3	0	0	0	**3**	**1139**
Total	156	5892	185	0	**6233**	294	5575	50	0	**5919**	214	4	391	0	**609**	97	5	37	0	**139**	**12900**
% Approach	2.5%	94.5%	3.0%	0%	**-**	5.0%	94.2%	0.8%	0%	**-**	35.1%	0.7%	64.2%	0%	**-**	69.8%	3.6%	26.6%	0%	**-**	-
% Total	1.2%	45.7%	1.4%	0%	**48.3%**	2.3%	43.2%	0.4%	0%	**45.9%**	1.7%	0%	3.0%	0%	**4.7%**	0.8%	0%	0.3%	0%	**1.1%**	-
Lights	150	5781	181	0	**6112**	289	5466	49	0	**5804**	211	4	387	0	**602**	93	5	34	0	**132**	12650
% Lights	96.2%	98.1%	97.8%	0%	**98.1%**	98.3%	98.0%	98.0%	0%	**98.1%**	98.6%	100%	99.0%	0%	**98.9%**	95.9%	100%	91.9%	0%	**95.0%**	98.1%
Articulated Trucks	0	14	0	0	**14**	0	12	0	0	**12**	0	0	0	0	**0**	0	0	0	0	**0**	26
% Articulated Trucks	0%	0.2%	0%	0%	**0.2%**	0%	0.2%	0%	0%	**0.2%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.2%
Buses and Single-Unit Trucks	6	97	4	0	**107**	5	97	1	0	**103**	3	0	4	0	**7**	4	0	3	0	**7**	224
% Buses and Single-Unit Trucks	3.8%	1.6%	2.2%	0%	**1.7%**	1.7%	1.7%	2.0%	0%	**1.7%**	1.4%	0%	1.0%	0%	**1.1%**	4.1%	0%	8.1%	0%	**5.0%**	1.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Albany Chase Drive - TMC
Thu Feb 10, 2022
Full Length (6 AM-7 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Albany Chase Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

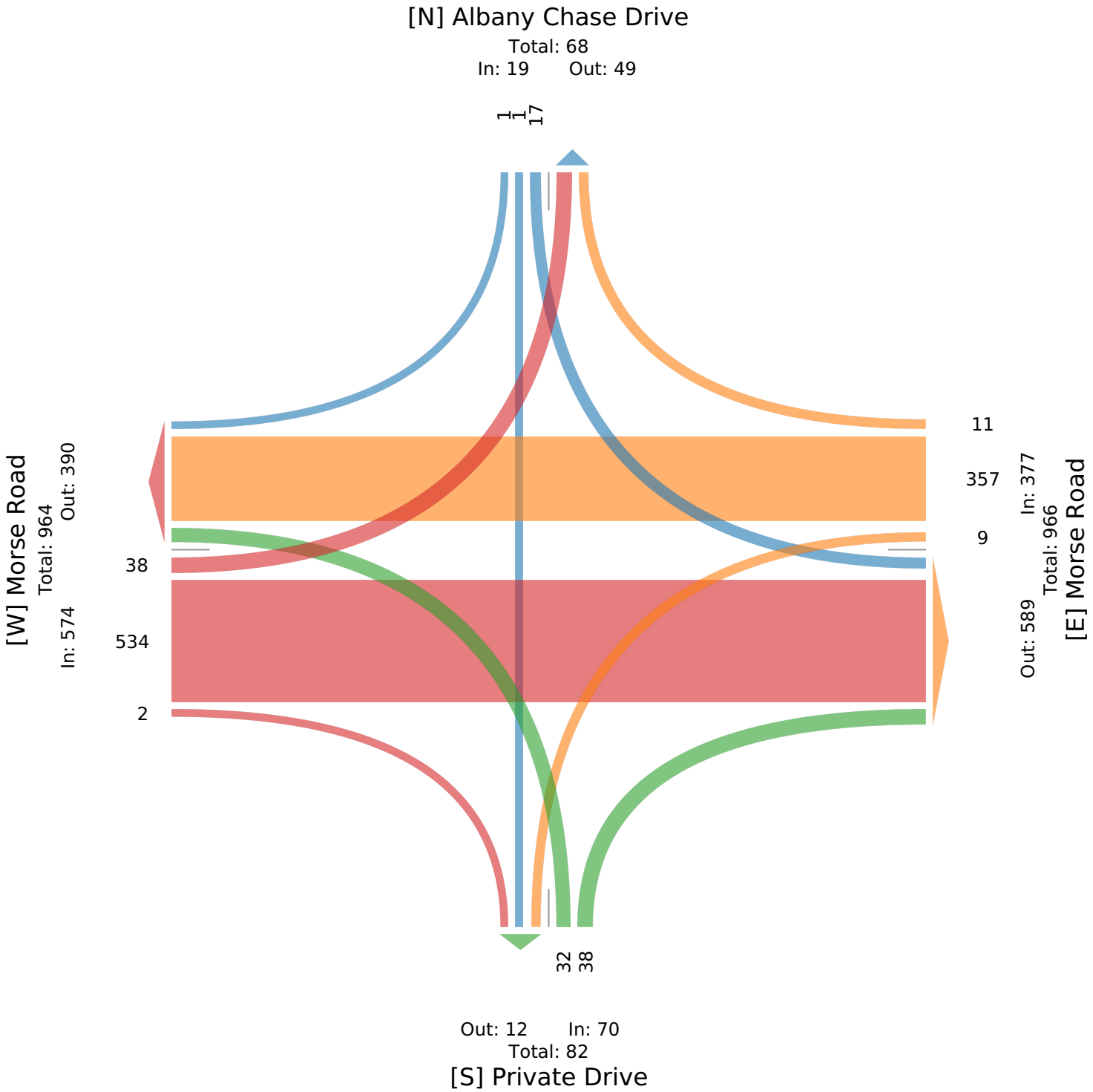
Thu Feb 10, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Leg	Morse Road					Morse Road					Private Drive					Albany Chase Drive					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-10 7:30AM	6	168	0	0	**174**	3	68	1	0	**72**	9	0	17	0	**26**	2	1	0	0	**3**	**275**
7:45AM	11	150	1	0	**162**	3	92	2	0	**97**	9	0	8	0	**17**	4	0	0	0	**4**	**280**
8:00AM	15	93	1	0	**109**	1	97	4	0	**102**	10	0	8	0	**18**	6	0	0	0	**6**	**235**
8:15AM	6	123	0	0	**129**	2	100	4	0	**106**	4	0	5	0	**9**	5	0	1	0	**6**	**250**
Total	38	534	2	0	**574**	9	357	11	0	**377**	32	0	38	0	**70**	17	1	1	0	**19**	**1040**
% Approach	6.6%	93.0%	0.3%	0%	**-**	2.4%	94.7%	2.9%	0%	**-**	45.7%	0%	54.3%	0%	**-**	89.5%	5.3%	5.3%	0%	**-**	-
% Total	3.7%	51.3%	0.2%	0%	**55.2%**	0.9%	34.3%	1.1%	0%	**36.3%**	3.1%	0%	3.7%	0%	**6.7%**	1.6%	0.1%	0.1%	0%	**1.8%**	-
PHF	0.633	0.795	0.500	-	**0.825**	0.750	0.893	0.688	-	**0.889**	0.800	-	0.559	-	**0.673**	0.708	0.250	0.250	-	**0.792**	0.929
Lights	37	527	2	0	**566**	9	338	11	0	**358**	32	0	37	0	**69**	16	1	1	0	**18**	1011
% Lights	97.4%	98.7%	100%	0%	**98.6%**	100%	94.7%	100%	0%	**95.0%**	100%	0%	97.4%	0%	**98.6%**	94.1%	100%	100%	0%	**94.7%**	97.2%
Articulated Trucks	0	1	0	0	**1**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	1
% Articulated Trucks	0%	0.2%	0%	0%	**0.2%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%
Buses and Single-Unit Trucks	1	6	0	0	**7**	0	19	0	0	**19**	0	0	1	0	**1**	1	0	0	0	**1**	28
% Buses and Single-Unit Trucks	2.6%	1.1%	0%	0%	**1.2%**	0%	5.3%	0%	0%	**5.0%**	0%	0%	2.6%	0%	**1.4%**	5.9%	0%	0%	0%	**5.3%**	2.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Albany Chase Drive - TMC
Thu Feb 10, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Albany Chase Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

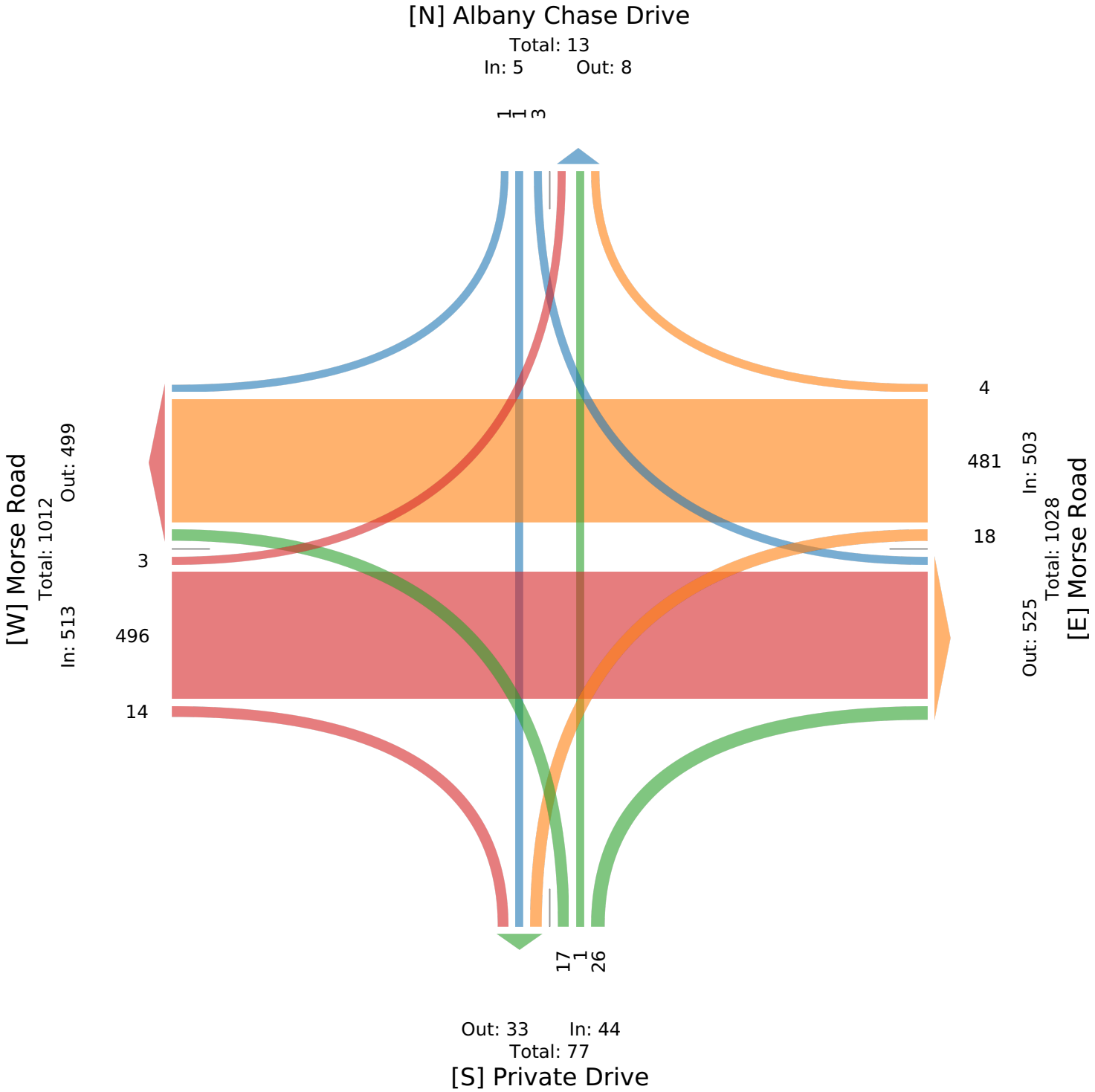
Thu Feb 10, 2022
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Leg	Morse Road					Morse Road					Private Drive					Albany Chase Drive					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-10 12:00PM	0	143	3	0	**146**	2	108	1	0	**111**	4	0	7	0	**11**	1	0	0	0	**1**	**269**
12:15PM	0	110	2	0	**112**	7	110	0	0	**117**	5	0	5	0	**10**	0	0	0	0	**0**	**239**
12:30PM	1	129	6	0	**136**	9	130	3	0	**142**	6	0	7	0	**13**	1	0	0	0	**1**	**292**
12:45PM	2	114	3	0	**119**	0	133	0	0	**133**	2	1	7	0	**10**	1	1	1	0	**3**	**265**
Total	3	496	14	0	**513**	18	481	4	0	**503**	17	1	26	0	**44**	3	1	1	0	**5**	**1065**
% Approach	0.6%	96.7%	2.7%	0%	**-**	3.6%	95.6%	0.8%	0%	**-**	38.6%	2.3%	59.1%	0%	**-**	60.0%	20.0%	20.0%	0%	**-**	-
% Total	0.3%	46.6%	1.3%	0%	**48.2%**	1.7%	45.2%	0.4%	0%	**47.2%**	1.6%	0.1%	2.4%	0%	**4.1%**	0.3%	0.1%	0.1%	0%	**0.5%**	-
PHF	0.375	0.867	0.583	-	**0.878**	0.500	0.904	0.333	-	**0.886**	0.708	0.250	0.929	-	**0.846**	0.750	0.250	0.250	-	**0.417**	0.912
Lights	3	483	14	0	**500**	18	471	4	0	**493**	17	1	26	0	**44**	2	1	0	0	**3**	1040
% Lights	100%	97.4%	100%	0%	**97.5%**	100%	97.9%	100%	0%	**98.0%**	100%	100%	100%	0%	**100%**	66.7%	100%	0%	0%	**60.0%**	97.7%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	13	0	0	**13**	0	10	0	0	**10**	0	0	0	0	**0**	1	0	1	0	**2**	25
% Buses and Single-Unit Trucks	0%	2.6%	0%	0%	**2.5%**	0%	2.1%	0%	0%	**2.0%**	0%	0%	0%	0%	**0%**	33.3%	0%	100%	0%	**40.0%**	2.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Albany Chase Drive - TMC
Thu Feb 10, 2022
Midday Peak (12 PM - 1 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Albany Chase Drive - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

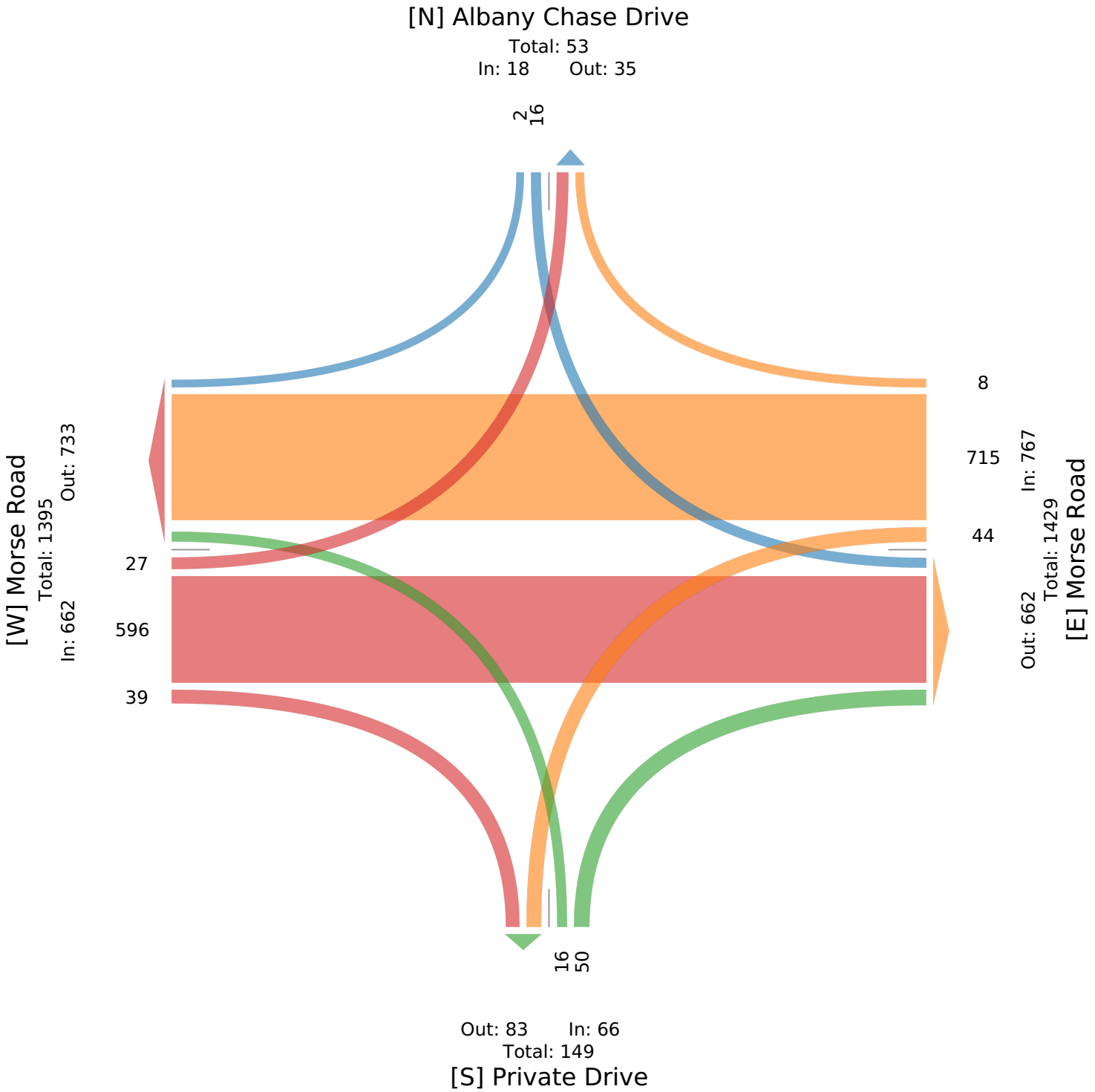
Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Leg	Morse Road					Morse Road					Private Drive					Albany Chase Drive					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-10 5:00PM	13	107	11	0	**131**	9	196	4	0	**209**	2	0	10	0	**12**	4	0	0	0	**4**	**356**
5:15PM	11	165	10	0	**186**	11	190	2	0	**203**	6	0	14	0	**20**	7	0	1	0	**8**	**417**
5:30PM	3	151	10	0	**164**	13	169	2	0	**184**	4	0	18	0	**22**	3	0	1	0	**4**	**374**
5:45PM	0	173	8	0	**181**	11	160	0	0	**171**	4	0	8	0	**12**	2	0	0	0	**2**	**366**
Total	27	596	39	0	**662**	44	715	8	0	**767**	16	0	50	0	**66**	16	0	2	0	**18**	**1513**
% Approach	4.1%	90.0%	5.9%	0%	**-**	5.7%	93.2%	1.0%	0%	**-**	24.2%	0%	75.8%	0%	**-**	88.9%	0%	11.1%	0%	**-**	-
% Total	1.8%	39.4%	2.6%	0%	**43.8%**	2.9%	47.3%	0.5%	0%	**50.7%**	1.1%	0%	3.3%	0%	**4.4%**	1.1%	0%	0.1%	0%	**1.2%**	-
PHF	0.519	0.861	0.886	-	**0.890**	0.846	0.912	0.500	-	**0.917**	0.667	-	0.694	-	**0.750**	0.571	-	0.500	-	**0.563**	0.907
Lights	27	594	39	0	**660**	44	715	8	0	**767**	16	0	50	0	**66**	16	0	2	0	**18**	1511
% Lights	100%	99.7%	100%	0%	**99.7%**	100%	100%	100%	0%	**100%**	100%	0%	100%	0%	**100%**	100%	0%	100%	0%	**100%**	99.9%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	2	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	2
% Buses and Single-Unit Trucks	0%	0.3%	0%	0%	**0.3%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Albany Chase Drive - TMC
Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921647, Location: 40.054573, -82.846458

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Collingwood Pointe Place - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

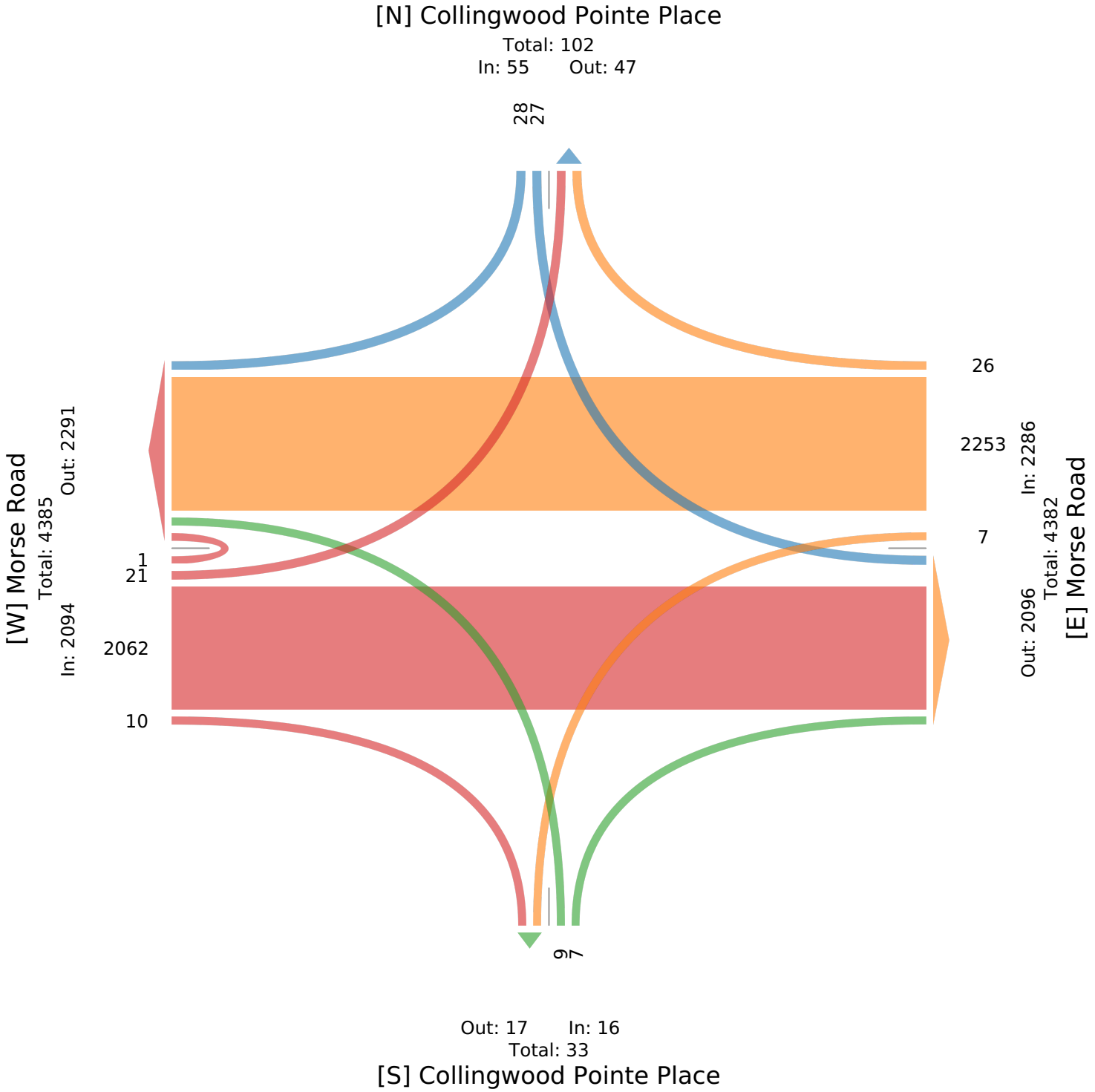
Thu Feb 10, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

Leg	Morse Road					Morse Road					Collingwood Pointe Place					Collingwood Pointe Place					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	L	T	R	U	App	Int
2022-02-10 7:00AM	0	62	1	1	**64**	0	89	0	0	**89**	0	0	0	0	**0**	1	0	1	0	**2**	**155**
7:15AM	0	78	0	0	**78**	0	111	0	0	**111**	0	0	0	0	**0**	1	0	2	0	**3**	**192**
7:30AM	1	86	0	0	**87**	1	165	0	0	**166**	1	0	0	0	**1**	1	0	1	0	**2**	**256**
7:45AM	1	107	1	0	**109**	0	169	2	0	**171**	1	0	0	0	**1**	0	0	1	0	**1**	**282**
Hourly Total	2	333	2	1	**338**	1	534	2	0	**537**	2	0	0	0	**2**	3	0	5	0	**8**	**885**
8:00AM	0	111	0	0	**111**	0	107	0	0	**107**	0	0	0	0	**0**	2	0	2	0	**4**	**222**
8:15AM	2	99	0	0	**101**	0	126	1	0	**127**	0	0	0	0	**0**	0	0	1	0	**1**	**229**
8:30AM	1	80	1	0	**82**	0	117	0	0	**117**	0	0	0	0	**0**	4	0	3	0	**7**	**206**
8:45AM	1	76	0	0	**77**	0	128	2	0	**130**	1	0	0	0	**1**	1	0	2	0	**3**	**211**
Hourly Total	4	366	1	0	**371**	0	478	3	0	**481**	1	0	0	0	**1**	7	0	8	0	**15**	**868**
4:00PM	1	149	1	0	**151**	1	146	0	0	**147**	0	0	0	0	**0**	4	0	0	0	**4**	**302**
4:15PM	3	144	1	0	**148**	0	168	1	0	**169**	1	0	0	0	**1**	3	0	0	0	**3**	**321**
4:30PM	0	142	3	0	**145**	1	147	6	0	**154**	0	0	0	0	**0**	2	0	3	0	**5**	**304**
4:45PM	5	162	0	0	**167**	0	142	4	0	**146**	2	0	0	0	**2**	3	0	1	0	**4**	**319**
Hourly Total	9	597	5	0	**611**	2	603	11	0	**616**	3	0	0	0	**3**	12	0	4	0	**16**	**1246**
5:00PM	0	192	1	0	**193**	1	132	6	0	**139**	1	0	2	0	**3**	0	0	2	0	**2**	**337**
5:15PM	2	221	0	0	**223**	1	179	1	0	**181**	1	0	1	0	**2**	2	0	2	0	**4**	**410**
5:30PM	2	180	0	0	**182**	0	158	1	0	**159**	1	0	2	0	**3**	2	0	1	0	**3**	**347**
5:45PM	2	173	1	0	**176**	2	169	2	0	**173**	0	0	2	0	**2**	1	0	6	0	**7**	**358**
Hourly Total	6	766	2	0	**774**	4	638	10	0	**652**	3	0	7	0	**10**	5	0	11	0	**16**	**1452**
Total	21	2062	10	1	**2094**	7	2253	26	0	**2286**	9	0	7	0	**16**	27	0	28	0	**55**	**4451**
% Approach	1.0%	98.5%	0.5%	0%	**-**	0.3%	98.6%	1.1%	0%	**-**	56.3%	0%	43.8%	0%	**-**	49.1%	0%	50.9%	0%	**-**	-
% Total	0.5%	46.3%	0.2%	0%	**47.0%**	0.2%	50.6%	0.6%	0%	**51.4%**	0.2%	0%	0.2%	0%	**0.4%**	0.6%	0%	0.6%	0%	**1.2%**	-
Lights	20	2030	10	1	**2061**	7	2229	25	0	**2261**	8	0	7	0	**15**	27	0	27	0	**54**	4391
% Lights	95.2%	98.4%	100%	100%	**98.4%**	100%	98.9%	96.2%	0%	**98.9%**	88.9%	0%	100%	0%	**93.8%**	100%	0%	96.4%	0%	**98.2%**	98.7%
Articulated Trucks	0	1	0	0	**1**	0	2	1	0	**3**	0	0	0	0	**0**	0	0	0	0	**0**	4
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0.1%	3.8%	0%	**0.1%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%
Buses and Single-Unit Trucks	1	31	0	0	**32**	0	22	0	0	**22**	1	0	0	0	**1**	0	0	1	0	**1**	56
% Buses and Single-Unit Trucks	4.8%	1.5%	0%	0%	**1.5%**	0%	1.0%	0%	0%	**1.0%**	11.1%	0%	0%	0%	**6.3%**	0%	0%	3.6%	0%	**1.8%**	1.3%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Collingwood Pointe Place - TMC
Thu Feb 10, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Collingwood Pointe Place - TMC

Thu Feb 10, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

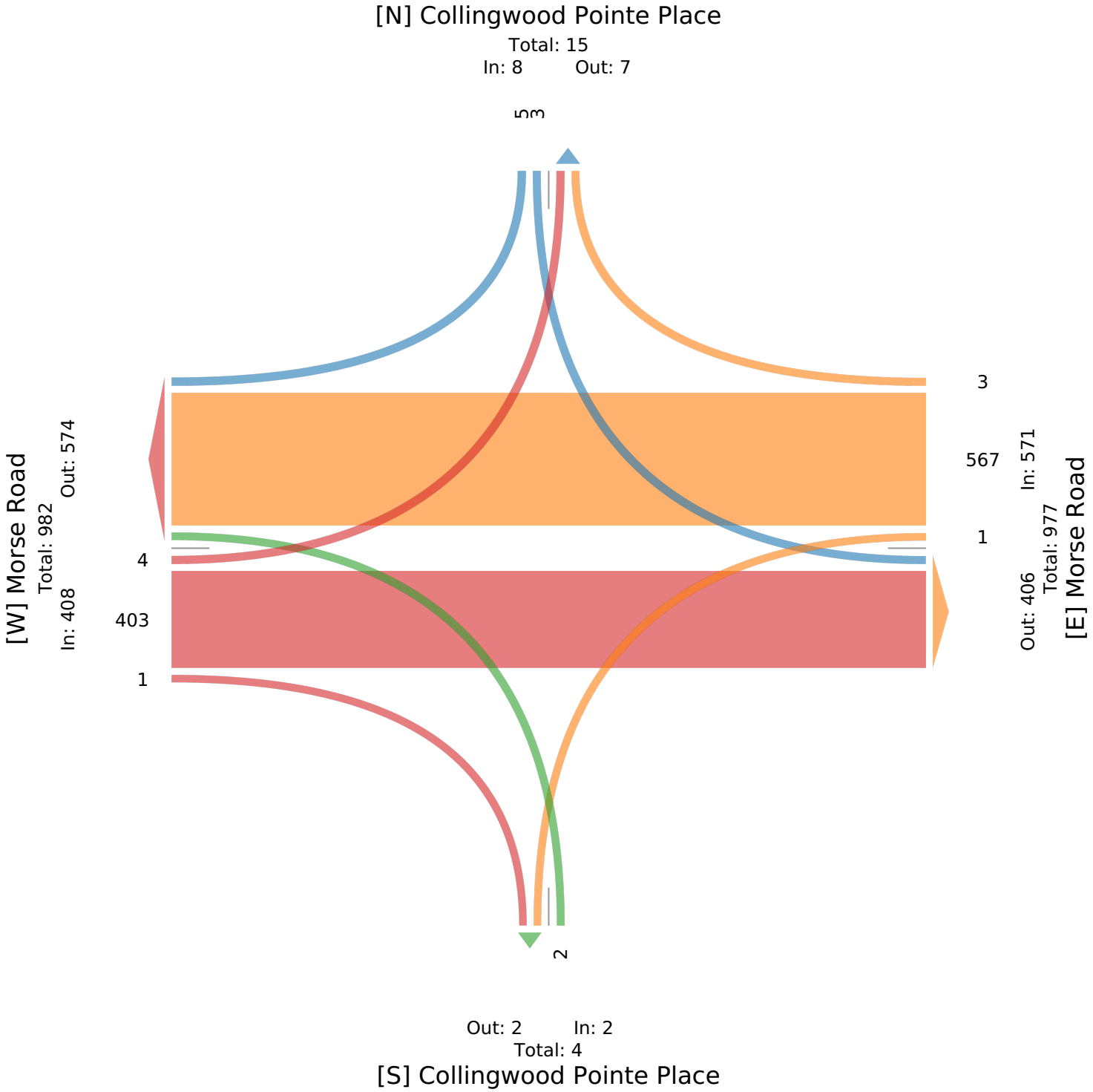
Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg	Morse Road					Morse Road					Collingwood Pointe Place					Collingwood Pointe Place					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-10 7:30AM	1	86	0	0	**87**	1	165	0	0	**166**	1	0	0	0	**1**	1	0	1	0	**2**	**256**
7:45AM	1	107	1	0	**109**	0	169	2	0	**171**	1	0	0	0	**1**	0	0	1	0	**1**	**282**
8:00AM	0	111	0	0	**111**	0	107	0	0	**107**	0	0	0	0	**0**	2	0	2	0	**4**	**222**
8:15AM	2	99	0	0	**101**	0	126	1	0	**127**	0	0	0	0	**0**	0	0	1	0	**1**	**229**
Total	4	403	1	0	**408**	1	567	3	0	**571**	2	0	0	0	**2**	3	0	5	0	**8**	**989**
% Approach	1.0%	98.8%	0.2%	0%	**-**	0.2%	99.3%	0.5%	0%	**-**	100%	0%	0%	0%	**-**	37.5%	0%	62.5%	0%	**-**	-
% Total	0.4%	40.7%	0.1%	0%	**41.3%**	0.1%	57.3%	0.3%	0%	**57.7%**	0.2%	0%	0%	0%	**0.2%**	0.3%	0%	0.5%	0%	**0.8%**	-
PHF	0.500	0.908	0.250	-	**0.919**	0.250	0.839	0.375	-	**0.835**	0.500	-	-	-	**0.500**	0.375	-	0.625	-	**0.500**	0.877
Lights	4	385	1	0	**390**	1	557	2	0	**560**	2	0	0	0	**2**	3	0	5	0	**8**	960
% Lights	100%	95.5%	100%	0%	**95.6%**	100%	98.2%	66.7%	0%	**98.1%**	100%	0%	0%	0%	**100%**	100%	0%	100%	0%	**100%**	97.1%
Articulated Trucks	0	0	0	0	**0**	0	1	1	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	2
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0.2%	33.3%	0%	**0.4%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.2%
Buses and Single-Unit Trucks	0	18	0	0	**18**	0	9	0	0	**9**	0	0	0	0	**0**	0	0	0	0	**0**	27
% Buses and Single-Unit Trucks	0%	4.5%	0%	0%	**4.4%**	0%	1.6%	0%	0%	**1.6%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	2.7%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Collingwood Pointe Place - TMC
Thu Feb 10, 2022
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Morse Road & Collingwood Pointe Place - TMC

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

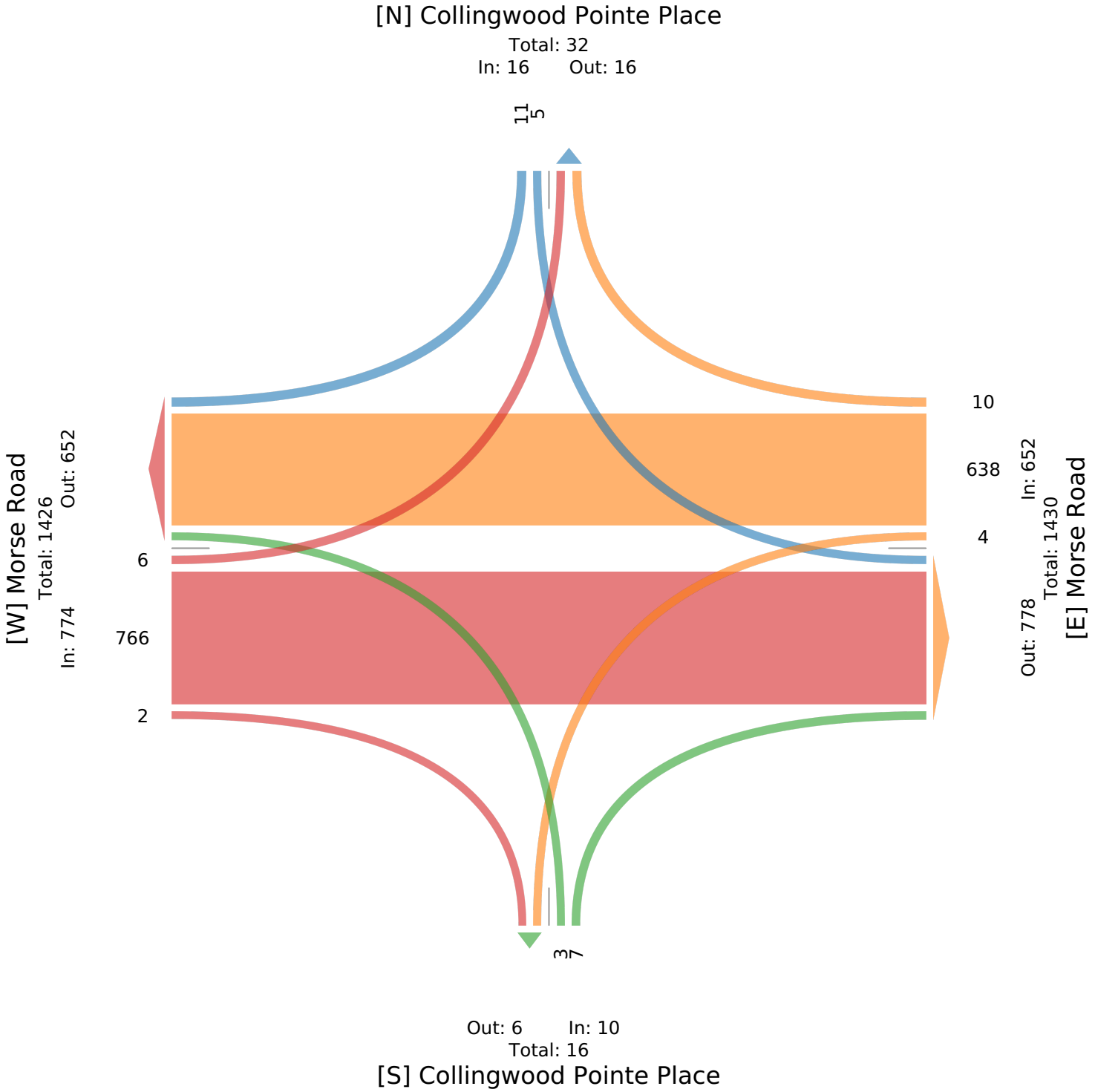
Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

Leg	Morse Road					Morse Road					Collingwood Pointe Place					Collingwood Pointe Place					
Direction	Eastbound					Westbound					Northbound					Southbound					
Time	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	L	T	R	U	**App**	**Int**
2022-02-10 5:00PM	0	192	1	0	**193**	1	132	6	0	**139**	1	0	2	0	**3**	0	0	2	0	**2**	**337**
5:15PM	2	221	0	0	**223**	1	179	1	0	**181**	1	0	1	0	**2**	2	0	2	0	**4**	**410**
5:30PM	2	180	0	0	**182**	0	158	1	0	**159**	1	0	2	0	**3**	2	0	1	0	**3**	**347**
5:45PM	2	173	1	0	**176**	2	169	2	0	**173**	0	0	2	0	**2**	1	0	6	0	**7**	**358**
Total	6	766	2	0	**774**	4	638	10	0	**652**	3	0	7	0	**10**	5	0	11	0	**16**	**1452**
% Approach	0.8%	99.0%	0.3%	0%	**-**	0.6%	97.9%	1.5%	0%	**-**	30.0%	0%	70.0%	0%	**-**	31.3%	0%	68.8%	0%	**-**	-
% Total	0.4%	52.8%	0.1%	0%	**53.3%**	0.3%	43.9%	0.7%	0%	**44.9%**	0.2%	0%	0.5%	0%	**0.7%**	0.3%	0%	0.8%	0%	**1.1%**	-
PHF	0.750	0.867	0.500	-	**0.868**	0.500	0.891	0.417	-	**0.901**	0.750	-	0.875	-	**0.833**	0.625	-	0.458	-	**0.571**	0.885
Lights	6	766	2	0	**774**	4	636	10	0	**650**	3	0	7	0	**10**	5	0	11	0	**16**	1450
% Lights	100%	100%	100%	0%	**100%**	100%	99.7%	100%	0%	**99.7%**	100%	0%	100%	0%	**100%**	100%	0%	100%	0%	**100%**	99.9%
Articulated Trucks	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0	0	0	0	**0**	0
% Articulated Trucks	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0%
Buses and Single-Unit Trucks	0	0	0	0	**0**	0	2	0	0	**2**	0	0	0	0	**0**	0	0	0	0	**0**	2
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	0%	0.3%	0%	0%	**0.3%**	0%	0%	0%	0%	**0%**	0%	0%	0%	0%	**0%**	0.1%

*L: Left, R: Right, T: Thru, U: U-Turn

Morse Road & Collingwood Pointe Place - TMC
Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Movements
ID: 921645, Location: 40.054585, -82.843979

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US



Johnstown Road Segment - ATR

Thu Feb 10, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Leg Direction	West Eastbound		East Westbound		
Time	T	**App**	T	**App**	**Int**
2022-02-10 7:00AM	46	**46**	109	**109**	**155**
7:15AM	49	**49**	163	**163**	**212**
7:30AM	94	**94**	205	**205**	**299**
7:45AM	121	**121**	199	**199**	**320**
Hourly Total	310	**310**	676	**676**	**986**
8:00AM	119	**119**	107	**107**	**226**
8:15AM	89	**89**	115	**115**	**204**
8:30AM	88	**88**	128	**128**	**216**
8:45AM	74	**74**	122	**122**	**196**
Hourly Total	370	**370**	472	**472**	**842**
4:00PM	124	**124**	94	**94**	**218**
4:15PM	167	**167**	105	**105**	**272**
4:30PM	152	**152**	105	**105**	**257**
4:45PM	168	**168**	123	**123**	**291**
Hourly Total	611	**611**	427	**427**	**1038**
5:00PM	172	**172**	120	**120**	**292**
5:15PM	193	**193**	127	**127**	**320**
5:30PM	167	**167**	130	**130**	**297**
5:45PM	157	**157**	138	**138**	**295**
Hourly Total	689	**689**	515	**515**	**1204**
Total	1980	**1980**	2090	**2090**	**4070**
% Approach	100%	**-**	100%	**-**	-
% Total	48.6%	**48.6%**	51.4%	**51.4%**	-
Lights	1953	**1953**	2060	**2060**	4013
% Lights	98.6%	**98.6%**	98.6%	**98.6%**	98.6%
Articulated Trucks	2	**2**	2	**2**	4
% Articulated Trucks	0.1%	**0.1%**	0.1%	**0.1%**	0.1%
Buses and Single-Unit Trucks	25	**25**	28	**28**	53
% Buses and Single-Unit Trucks	1.3%	**1.3%**	1.3%	**1.3%**	1.3%

*T: Thru

Johnstown Road Segment - ATR

Thu Feb 10, 2022
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Johnstown Road Segment - ATR

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Thu Feb 10, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Leg Direction	West Eastbound		East Westbound		
Time	T	**App**	T	**App**	**Int**
2022-02-10 7:15AM	49	**49**	163	**163**	**212**
7:30AM	94	**94**	205	**205**	**299**
7:45AM	121	**121**	199	**199**	**320**
8:00AM	119	**119**	107	**107**	**226**
Total	383	**383**	674	**674**	**1057**
% Approach	100%	**-**	100%	**-**	-
% Total	36.2%	**36.2%**	63.8%	**63.8%**	-
PHF	0.791	**0.791**	0.822	**0.822**	0.826
Lights	375	**375**	663	**663**	1038
% Lights	97.9%	**97.9%**	98.4%	**98.4%**	98.2%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	8	**8**	11	**11**	19
% Buses and Single-Unit Trucks	2.1%	**2.1%**	1.6%	**1.6%**	1.8%

*T: Thru

Johnstown Road Segment - ATR

Thu Feb 10, 2022
AM Peak (7:15 AM - 8:15 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Johnstown Road Segment - ATR

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Leg Direction	West Eastbound		East Westbound		
Time	T	**App**	T	**App**	**Int**
2022-02-10 5:00PM	172	**172**	120	**120**	**292**
5:15PM	193	**193**	127	**127**	**320**
5:30PM	167	**167**	130	**130**	**297**
5:45PM	157	**157**	138	**138**	**295**
Total	689	**689**	515	**515**	**1204**
% Approach	100%	**-**	100%	**-**	-
% Total	57.2%	**57.2%**	42.8%	**42.8%**	-
PHF	0.892	**0.892**	0.933	**0.933**	0.941
Lights	688	**688**	510	**510**	1198
% Lights	99.9%	**99.9%**	99.0%	**99.0%**	99.5%
Articulated Trucks	0	**0**	0	**0**	0
% Articulated Trucks	0%	**0%**	0%	**0%**	0%
Buses and Single-Unit Trucks	1	**1**	5	**5**	6
% Buses and Single-Unit Trucks	0.1%	**0.1%**	1.0%	**1.0%**	0.5%

*T: Thru

Johnstown Road Segment - ATR

Thu Feb 10, 2022
PM Peak (5 PM - 6 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks)
All Channels
ID: 922181, Location: 40.052519, -82.844724

Provided by: Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive, Columbus, OH, 43229, US

OHIO DEPARTMENT OF TRANSPORTATION

MS2 Transportation Data Management System

List View | All DIRs

Record 1 of 1 Goto Record go

Location ID	108225	**MPO ID**	
Type	SPOT	**HPMS ID**	
On NHS		**On HPMS**	
LRS ID	SFRAUS00062*GC	**LRS Loc Pt.**	0.019
SF Group	Urban Minor Arterial (4);Collector(5-6);Local(7)	**Route Type**	US
AF Group	URBAN_MINOR_ARTERIAL	**Route**	00062
GF Group	URBAN_MINOR_ARTERIAL	**Active**	Yes
Class Dist Grp		**Category**	State Program
Seas Clss Grp	Urban Minor Arterial (4);Collector(5-6);Local(7)		
WIM Group			
QC Group	Default		
Fnct'l Class	Minor Arterial	**Milepost**	
Located On	JOHNSTOWN RD		
Loc On Alias			
	US62 DA3 W OF US62, SW OF NEW ALBANY		

More Detail

STATION DATA

Directions: 2-WAY | EB | WB

AADT

Year	AADT	DHV-30	K %	D %	PA	BC	Src
2020	8,411[3]		11	52	8,115 (96%)	296 (4%)	Grown from 2019
2019	9,083[3]		11	52	8,763 (96%)	320 (4%)	Grown from 2018
2018	9,020[3]		11	52	8,702 (96%)	318 (4%)	Grown from 2017
2017	8,940[3]		11	52	8,625 (96%)	315 (4%)	Grown from 2016
2016	8,705	930	11	52	8,398 (96%)	307 (4%)	

|<< < > >>| 1-5 of 10

Travel Demand Model

	Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV

VOLUME COUNT

	Date	Int	Total
	Mon 11/28/2016	15	9,760
	Wed 7/10/2013	60	9,843

VOLUME TREND

Year	Annual Growth
2020	-7%
2019	1%
2018	1%
2017	3%
2016	-5%
2015	1%
2014	-3%
2013	25%
2010	0%

SPEED

	Date	Int	Pace	85th	Total
No Data					

CLASSIFICATION

	Date	Int	Total
No Data			

WEIGH-IN-MOTION

	Date	Axles	Avg GVW	Total
No Data				

PER VEHICLE

	Date	Axles	85th	Total
No Data				

Appendix C
Trip Generation

CARPENTER MARTY transportation

Appendix C

Scenario - 1

Scenario Name: AM Peak
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
945 - Convenience Store/Gas Station - VFP (16-	General Urban/Suburban	1000 Sq. Ft. GFA	6.13	Weekday, Peak Hour of Adjacent Street Traffic,	Average	280	280	560
Data Source: Trip Generation Manual, 11th Ed					91.35	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
945 - Convenience Store/Gas Station - VFP (16-24)	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	280	280	0	0	280	280
	560		0		560	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
945 - Convenience Store/Gas Station - VFP (16-24)	Resturant

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:

945 - Convenience Store/Gas Station-VFP (16-24)

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:

945 - Convenience Store/Gas Station-VFP (16-24)

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	280	280	560
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	280	280	63.00%	63.00%	176	176

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	280	280	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	104	104	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - VFP (16-24)	104	104	208

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	280	280	560
Internal Vehicle Trips	0	0	0
External Vehicle Trips	280	280	560
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	176	176	352
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	104	104	208

Scenario - 2

Scenario Name: PM Peak
Dev. phase: 1
Analyst Note:
Warning:
User Group:
No. of Years to Project Traffic : 0

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method Rate/Equation	Entry Split%	Exit Split%	Total
945 - Convenience Store/Gas Station - VFP (16-	General Urban/Suburban	1000 Sq. Ft. GFA	6.13	Weekday, Peak Hour of Adjacent Street Traffic,	Average	242	242	484
Data Source: Trip Generation Manual, 11th Ed					78.95	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
945 - Convenience Store/Gas Station - VFP (16-24)	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	242	242	0	0	242	242
	484		0		484	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
945 - Convenience Store/Gas Station - VFP (16-24)	Resturant

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:
945 - Convenience Store/Gas Station-VFP (16-24)

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:
945 - Convenience Store/Gas Station-VFP (16-24)

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	242	242	484
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	242	242	66.00%	66.00%	160	160

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	242	242	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	82	82	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - VFP (16-24)	82	82	164

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	242	242	484
Internal Vehicle Trips	0	0	0
External Vehicle Trips	242	242	484
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	160	160	320
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	82	82	164

Scenario - 3

Scenario Name: Weekday
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
945 - Convenience Store/Gas Station - VFP (16-	General Urban/Suburban	1000 Sq. Ft. GFA	6.13	Weekday	Average	3934	3934	7868
Data Source: Trip Generation Manual, 11th Ed					1283.38	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
945 - Convenience Store/Gas Station - VFP (16-24)	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	3934	3934	0	0	3934	3934
	7868		0		7868	

INTERNAL VEHICLE TRIP REDUCTION

LAND USE GROUP ASSIGNMENT:

Land Use	Land Use Group
945 - Convenience Store/Gas Station - VFP (16-24)	Resturant

BALANCED PERSON TRIPS:

INTERNAL PERSON TRIPS:

945 - Convenience Store/Gas Station-VFP (16-24)

Internal Person Trips From	Entry	Exit	Total
Total Internal Person Trips	**0**	**0**	**0**

INTERNAL VEHICLE TRIPS AND CAPTURE:

945 - Convenience Store/Gas Station-VFP (16-24)

Total Internal Person Trips	0	0	0
Vehicle Mode Share	100%	100%	-
Vehicle Occupancy	1.00	1.00	-
Total Vehicle Internal Trips	**0**	**0**	**0**
Total External Vehicle Trips	3934	3934	7868
Internal Vehicle Trip Capture	**0%**	**0%**	**0%**

PASS-BY VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Pass-by Vehicle Trip %		Pass-by Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	3934	3934	0.00%	0.00%	0	0

DIVERTED VEHICLE TRIP REDUCTION

Land Use	External Vehicle Trips		Diverted Vehicle Trip %		Diverted Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	3934	3934	0.00%	0.00%	0	0

EXTRA VEHICLE TRIP REDUCTION

Land Use	(External - (Pass-by + Diverted)) Vehicle Trips		Extra Vehicle Trip Reduction %		Extra Reduced Vehicle Trips	
	Entry	Exit	Entry (%)	Exit (%)	Entry	Exit
945 - Convenience Store/Gas Station - VFP (16-24)	3934	3934	0.00%	0.00%	0	0

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
945 - Convenience Store/Gas Station - VFP (16-24)	3934	3934	7868

RESULTS

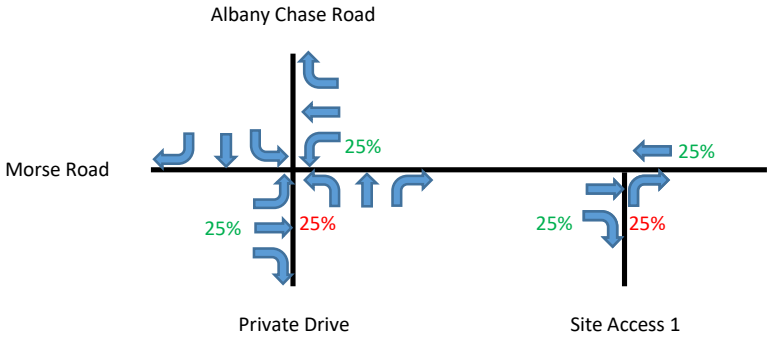
Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	3934	3934	7868
Internal Vehicle Trips	0	0	0
External Vehicle Trips	3934	3934	7868
Internal Vehicle Trip Capture	0%	0%	0%
Pass-by Vehicle Trips	0	0	0
Diverted Vehicle Trips	0	0	0
Extra Reduced Vehicle Trips	0	0	0
New Vehicle Trips	3934	3934	7868

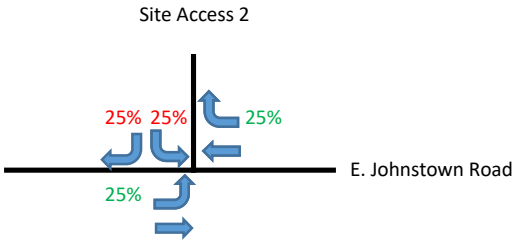
Appendix D
Volume Calculations

CARPENTER MARTY transportation

CARPENTER MARTY transportation	Year	Period	Scenario	Plate
			Non-Pass-By Distribution	

^
N

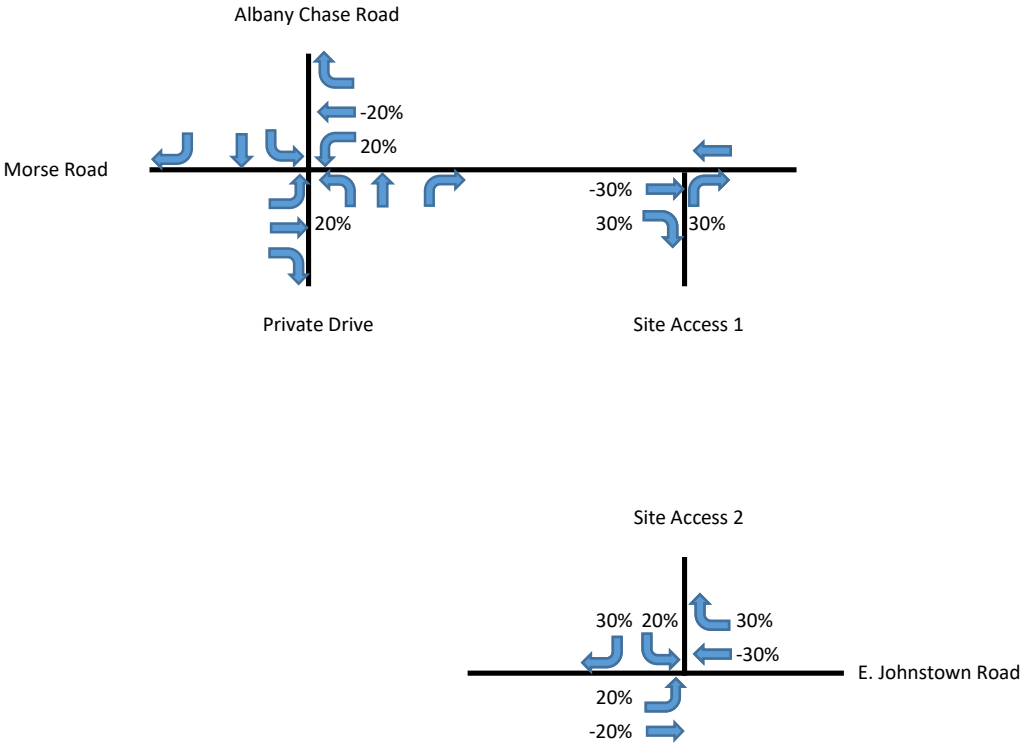




CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		AM	Pass-By Distribution	

^

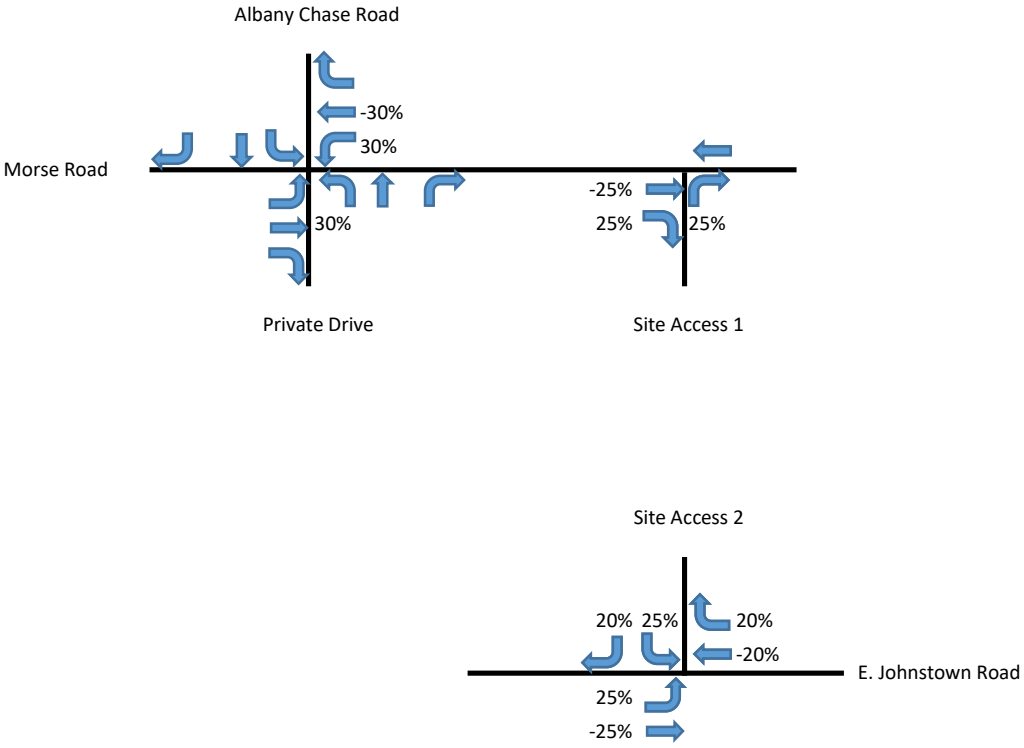
N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Pass-By Distribution	

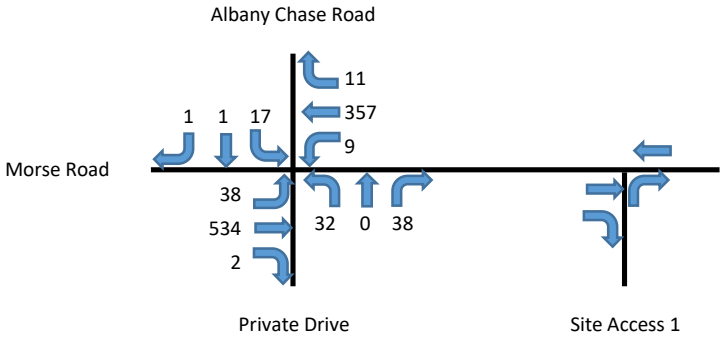
^

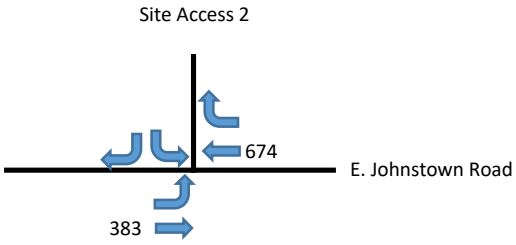
N



CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2022	AM	Count	

^
N



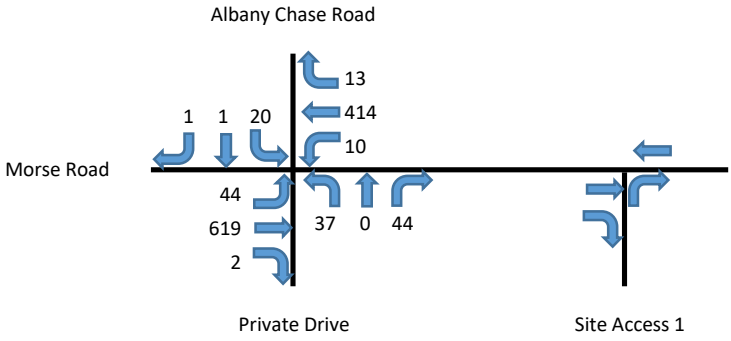


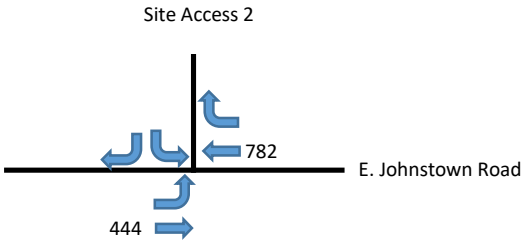
Year	Period	Scenario	Plate
2022	AM	Count Adjusted	

^

N

Design Hour Factor 1.16



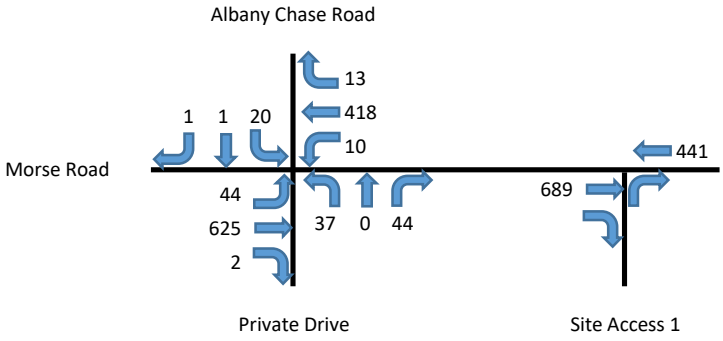


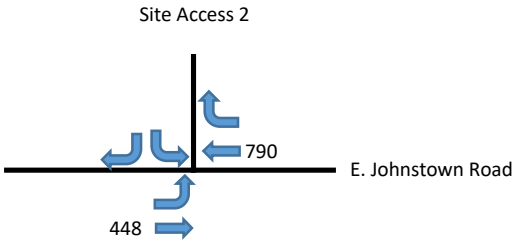
Year	Period	Scenario	Plate
2023	AM	No Build	A1

^

N

Growth Rate 1%





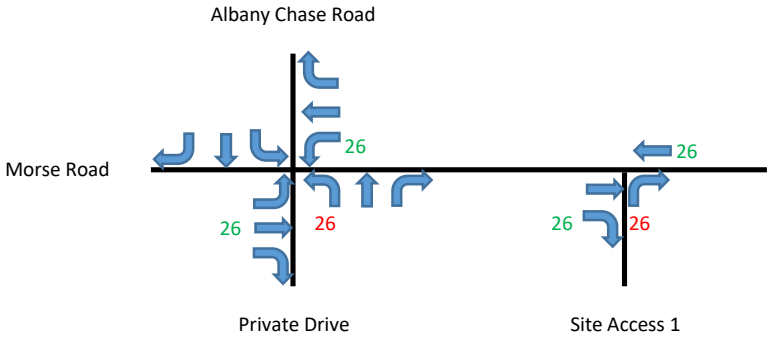
Year	Period	Scenario	Plate
	AM	Non-Pass-By Traffic	B1

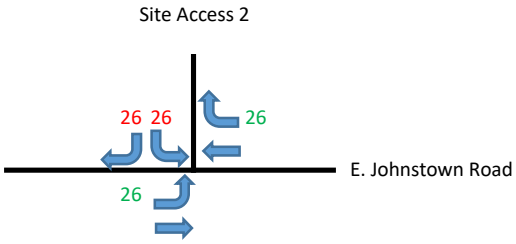
^

N

Enter 104

Exit 104



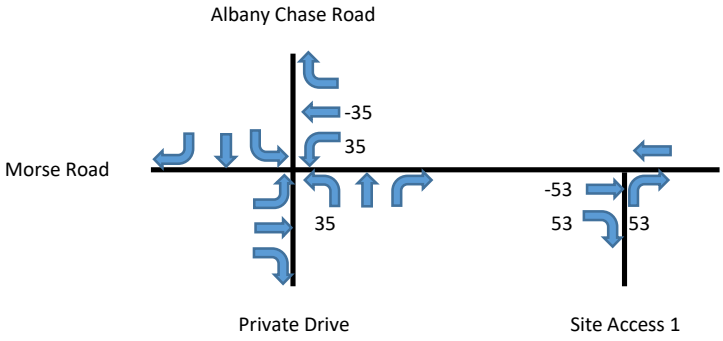


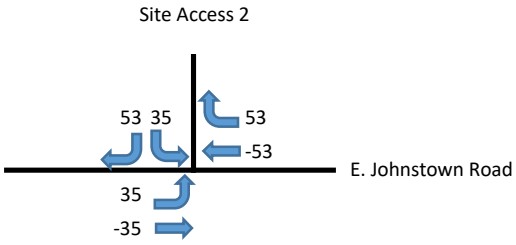
Year	Period	Scenario	Plate
	AM	Pass-By Traffic	C1

^

N

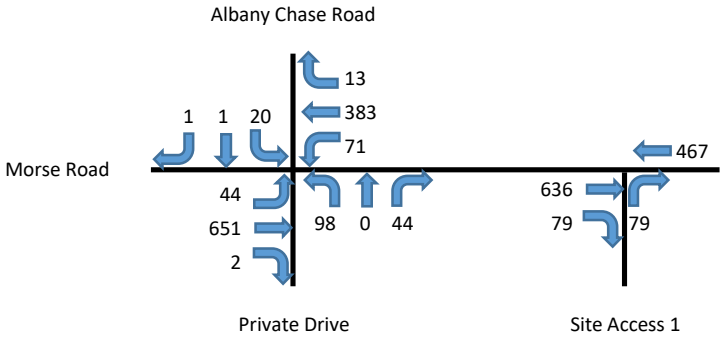
Enter	176
Exit	176
Average	176

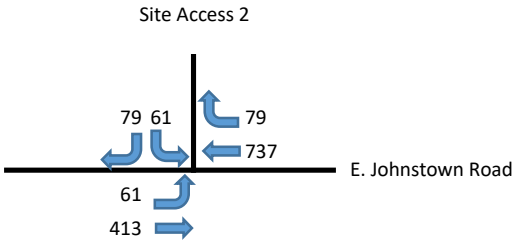




CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2023	AM	Build	D1 = A1 + B1 + C1

^
N



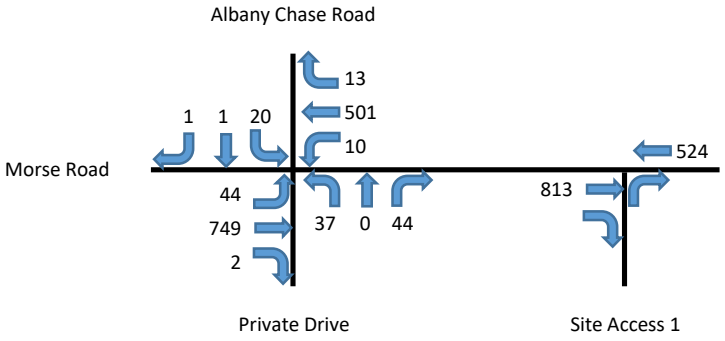


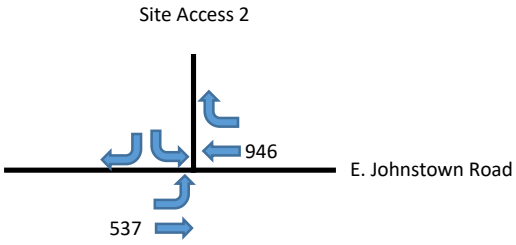
Year	Period	Scenario	Plate
2043	AM	No Build	E1

^

N

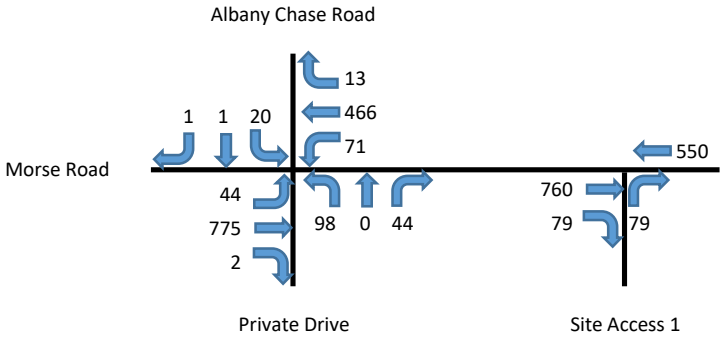
Growth Rate 1%

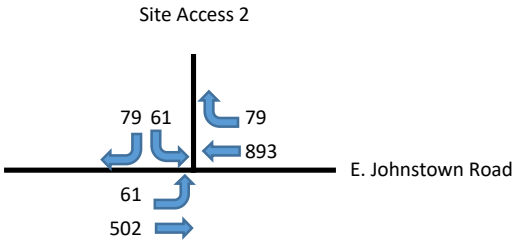




Year	Period	Scenario	Plate
2043	AM	Build	F1 = B1 + C1 + E1

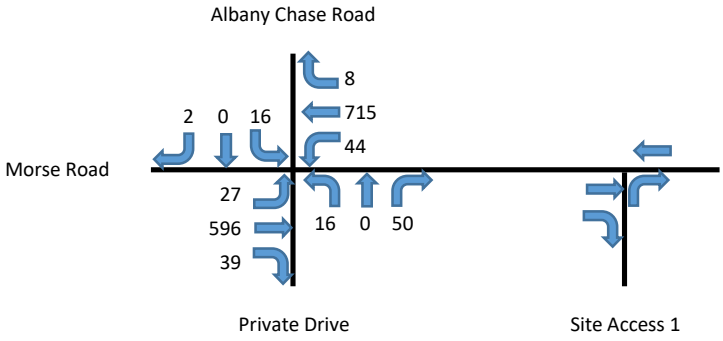
^
N

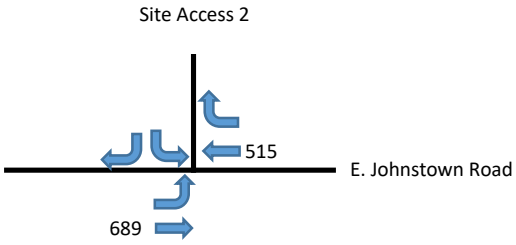




CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2022	PM	Count	

^
N



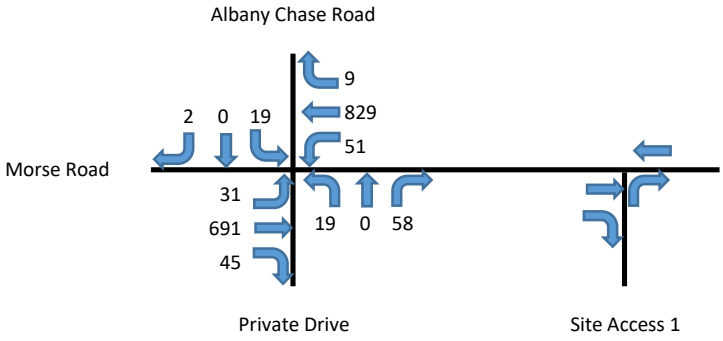


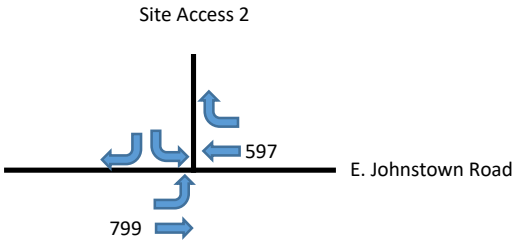
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
	2022	PM	Count Adjusted	

^

N

Design Hour Factor 1.16



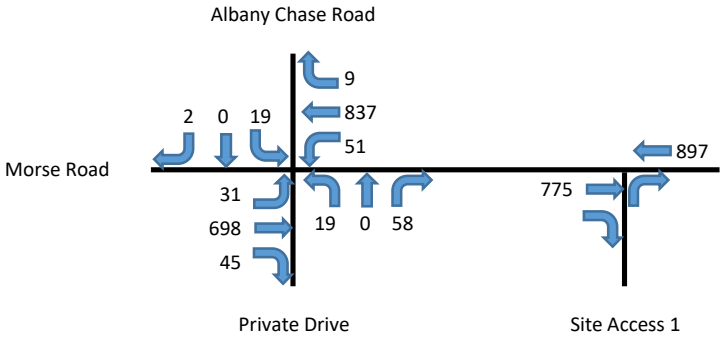


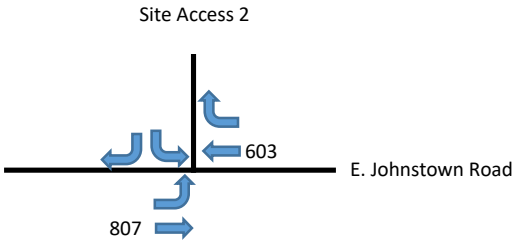
Year	Period	Scenario	Plate
2023	PM	No Build	A2

^

N

Growth Rate 1%





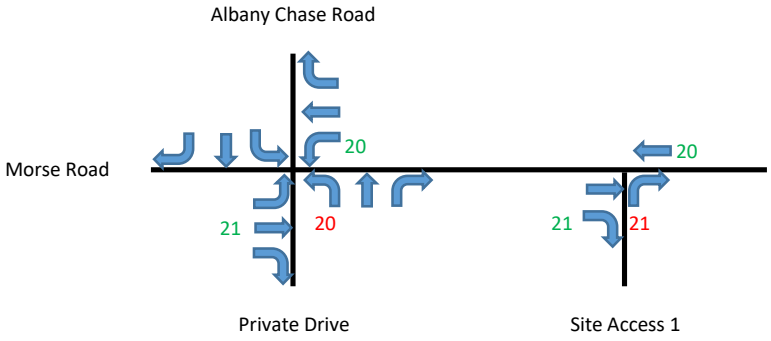
Year	Period	Scenario	Plate
	PM	Non-Pass-By Traffic	B2

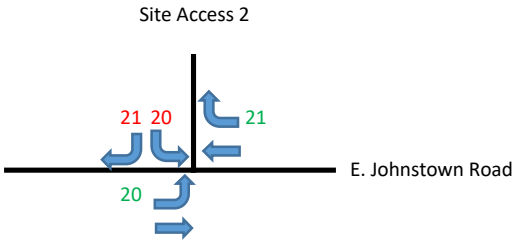
^

N

Enter 82

Exit 82



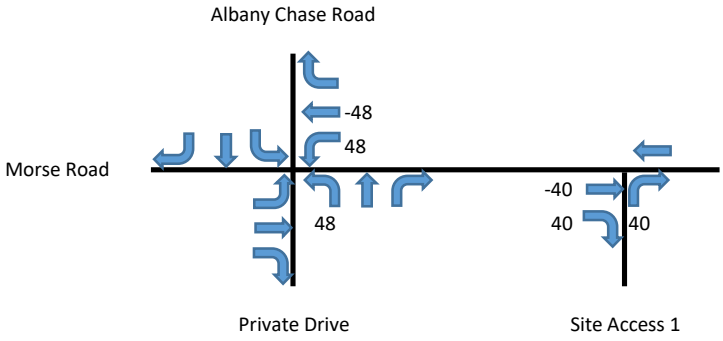


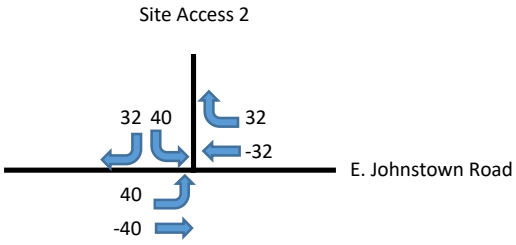
CARPENTER MARTY transportation	Year	Period	Scenario	Plate
		PM	Pass-By Traffic	C2

^

N

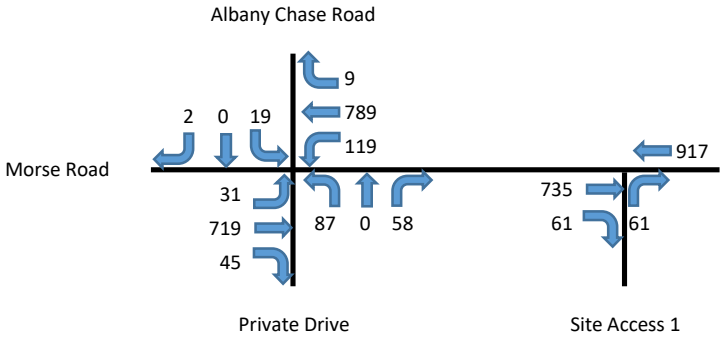
Enter	160
Exit	160
Average	160

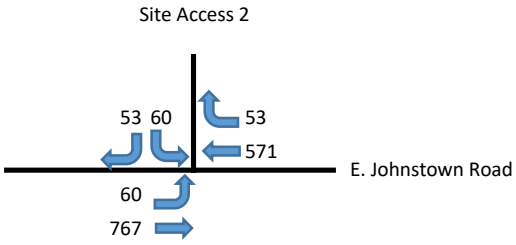




Year	Period	Scenario	Plate
2023	PM	Build	D2 = A2 + B2 + C2

^
N



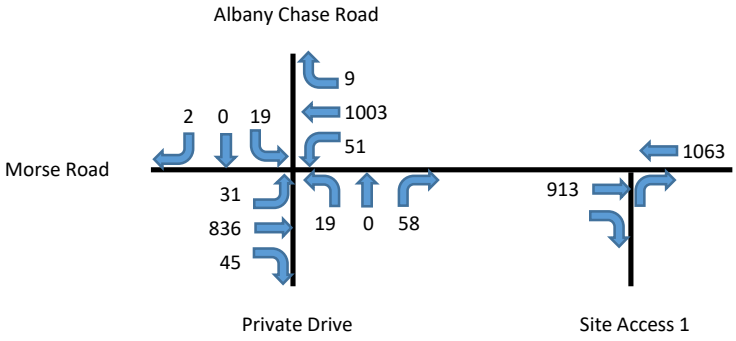


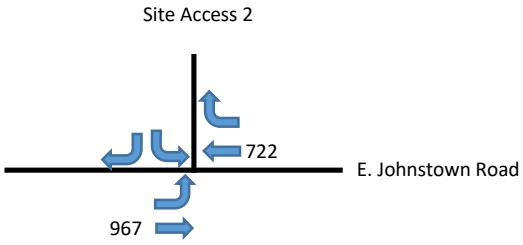
Year	Period	Scenario	Plate
2043	PM	No Build	E2

^

N

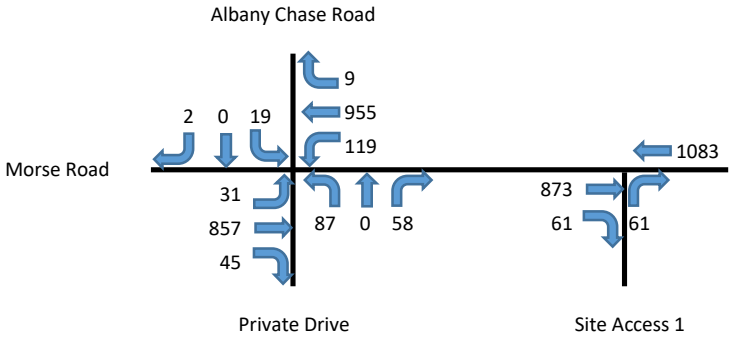
Growth Rate 1%

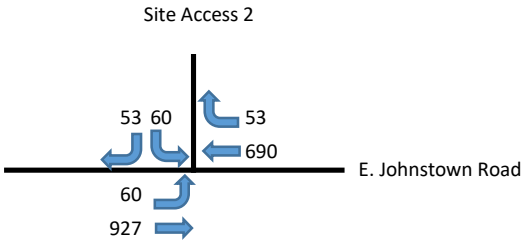




Year	Period	Scenario	Plate
2043	PM	Build	F2 = B2 + C2 + E2

^
N



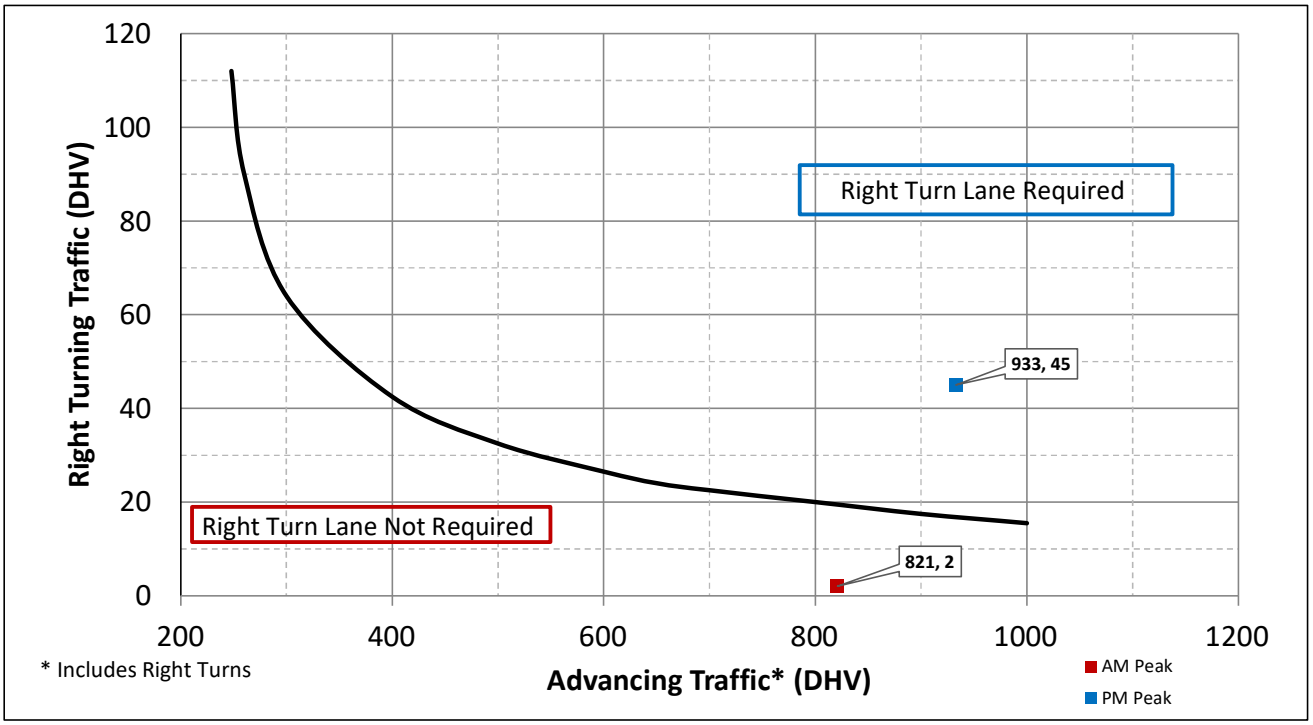


Appendix E
Turn Lane Warrant Analysis

CARPENTER MARTY transportation

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

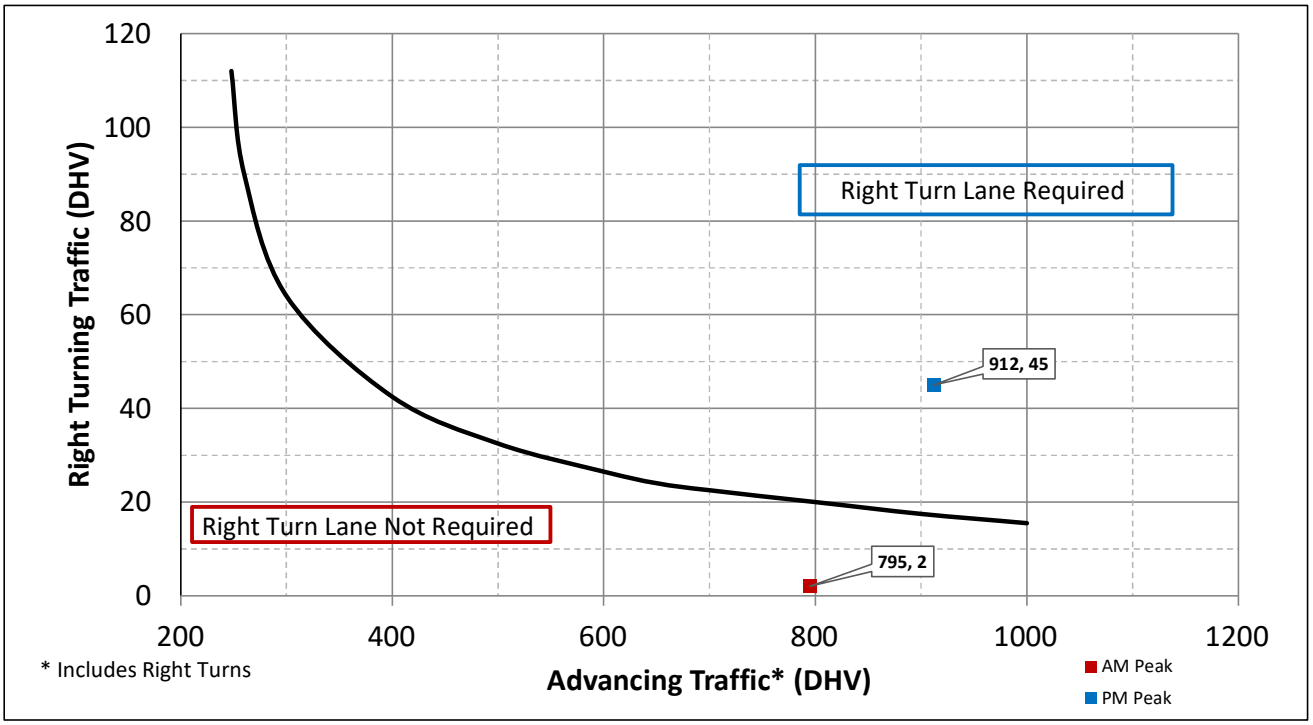
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	2	VPH
	Advancing Traffic	821	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	45	VPH
	Advancing Traffic	933	VPH
	Right Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

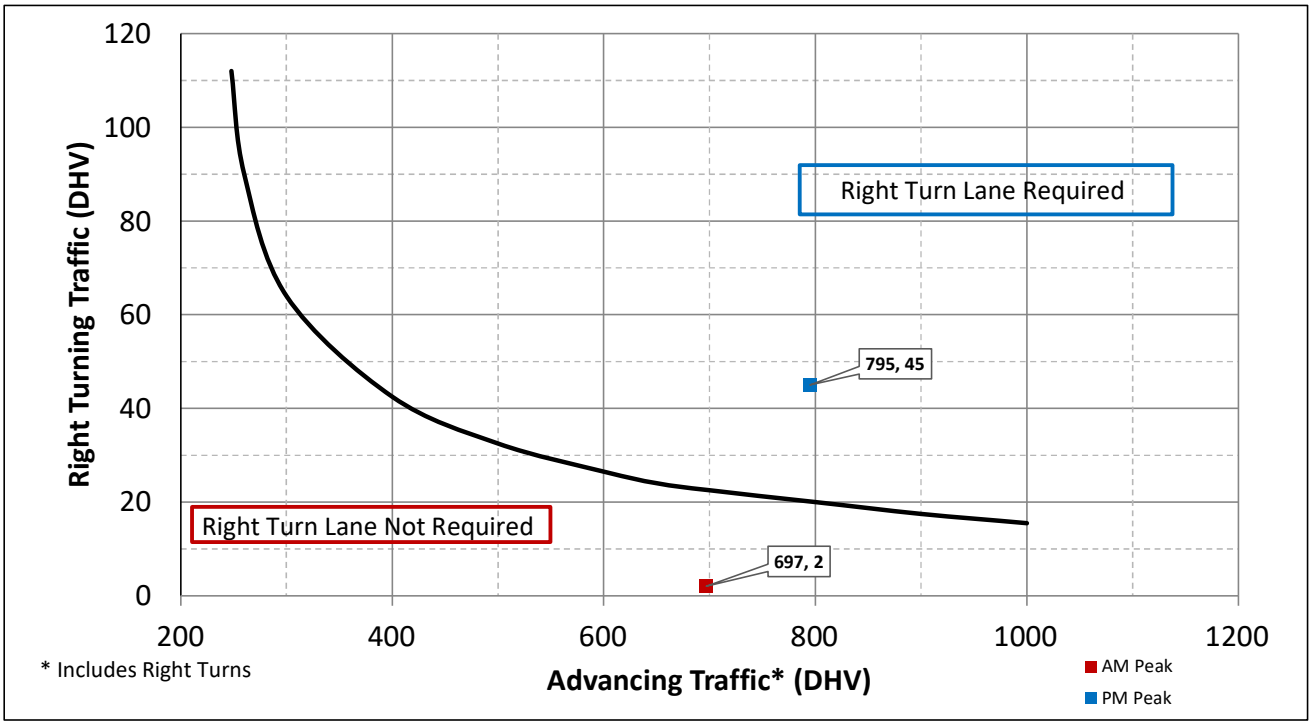
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	2	VPH
	Advancing Traffic	795	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	45	VPH
	Advancing Traffic	912	VPH
	Right Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

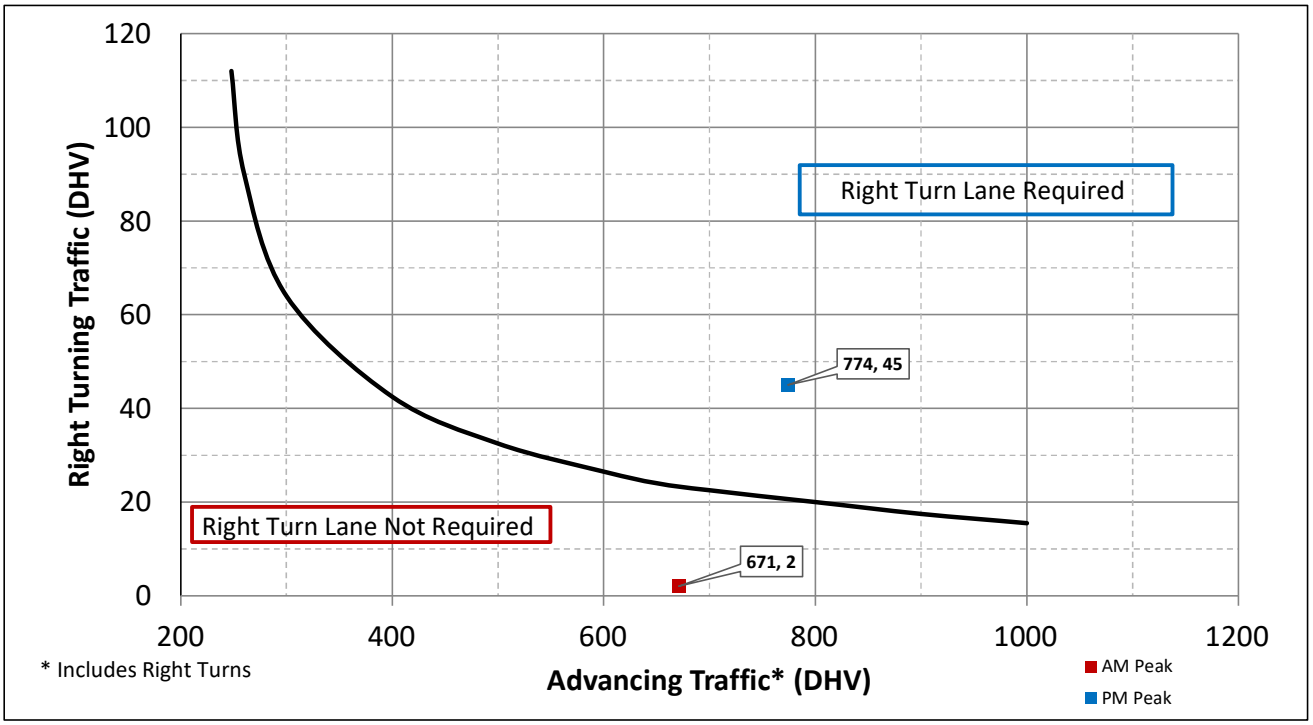
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	2	VPH
	Advancing Traffic	697	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	45	VPH
	Advancing Traffic	795	VPH
	Right Turn Percentage	6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

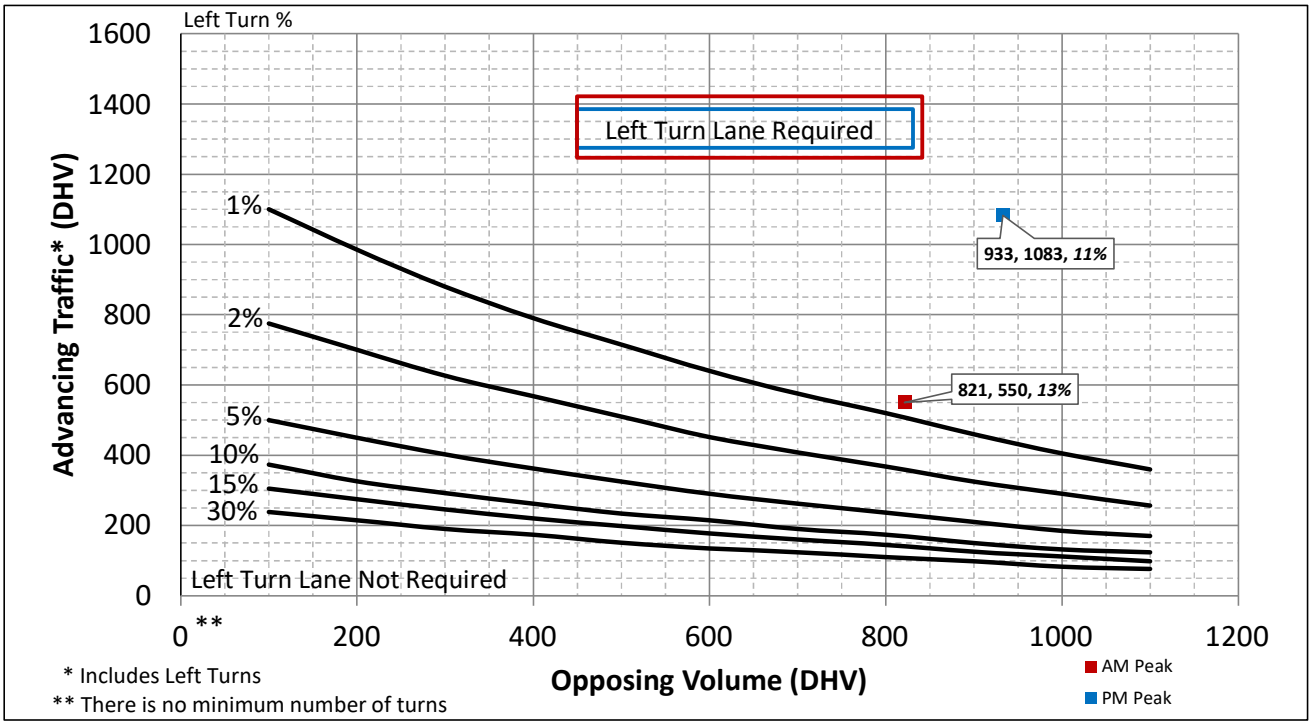
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	2	VPH
	Advancing Traffic	671	VPH
	Right Turn Percentage	0%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	45	VPH
	Advancing Traffic	774	VPH
	Right Turn Percentage	6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

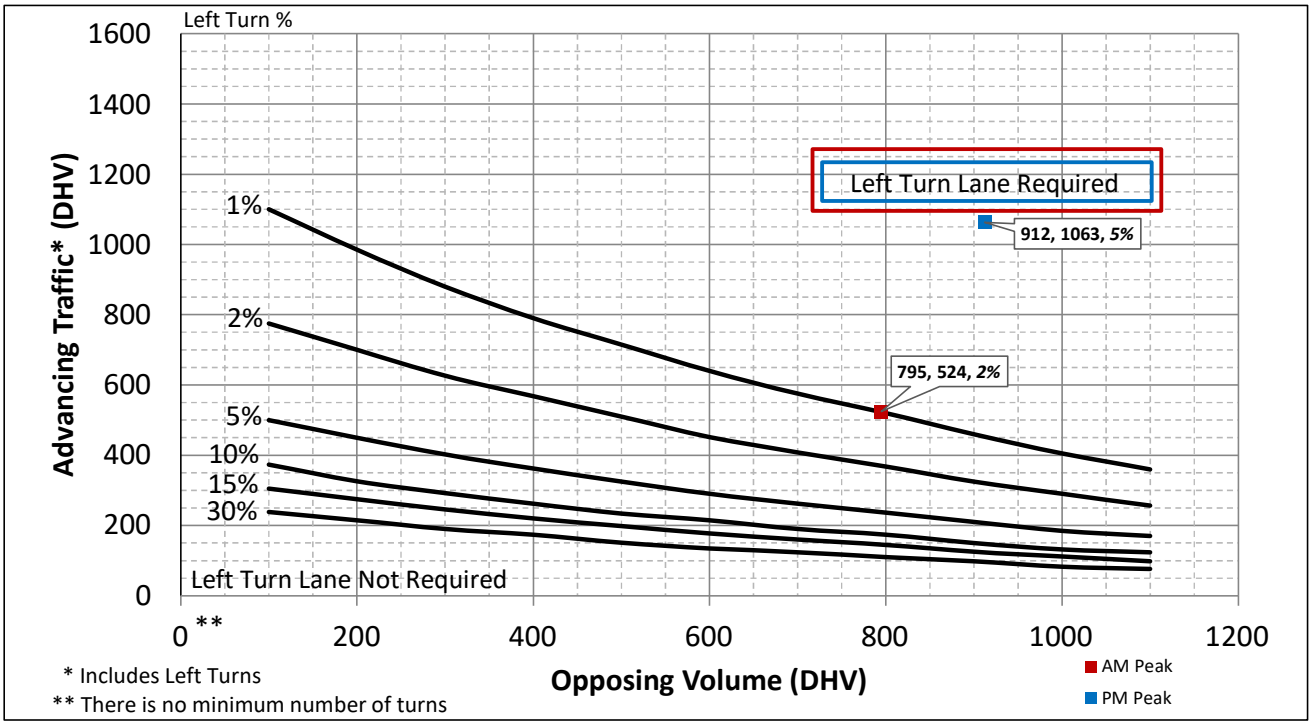


Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	71	VPH
	Advancing Traffic	550	VPH
	Opposing Volume	821	VPH
	Left Turn Percentage	13%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	119	VPH
	Advancing Traffic	1083	VPH
	Opposing Volume	933	VPH
	Left Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

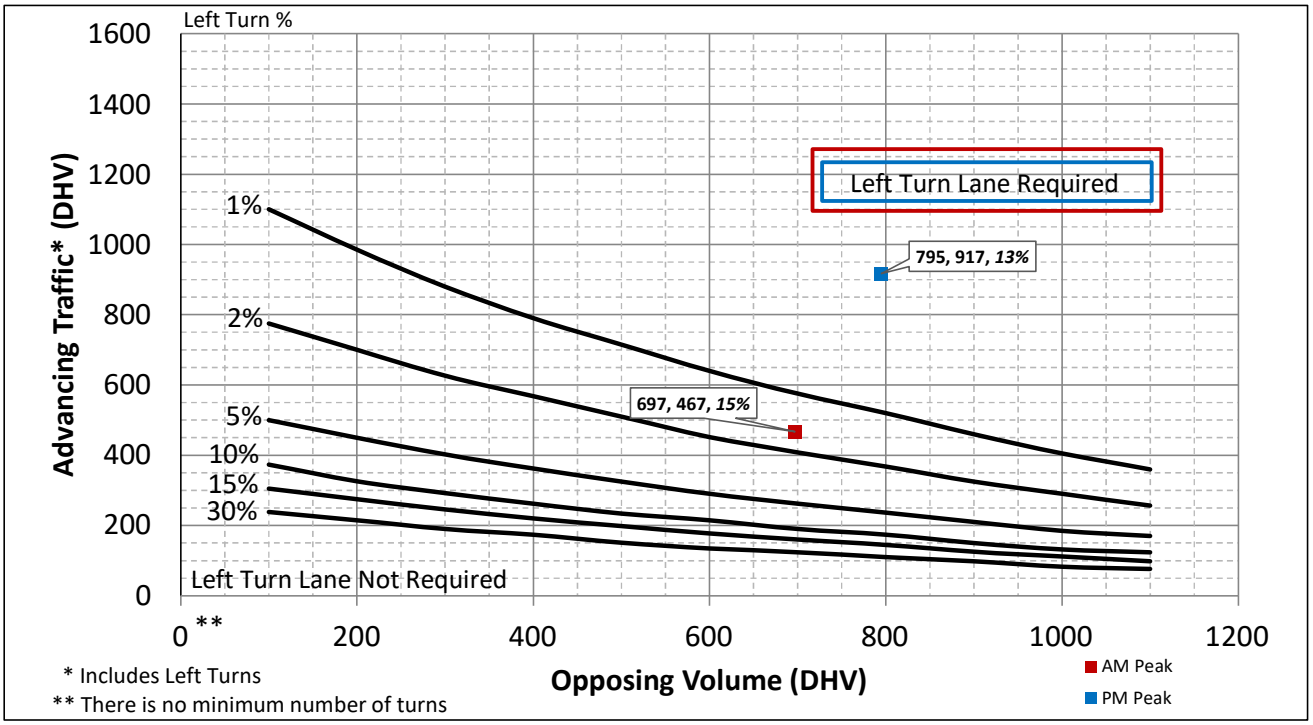
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	10	VPH
	Advancing Traffic	524	VPH
	Opposing Volume	795	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	51	VPH
	Advancing Traffic	1063	VPH
	Opposing Volume	912	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	See Above

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

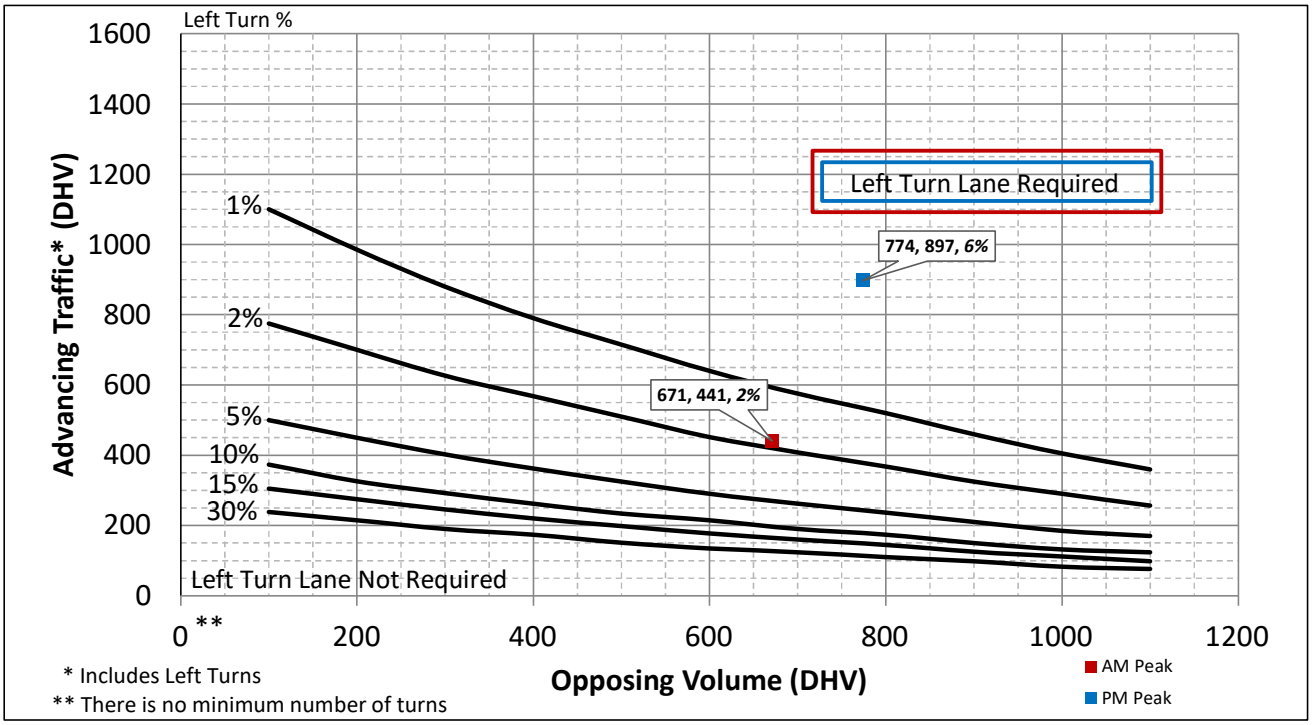


Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	71	VPH
	Advancing Traffic	467	VPH
	Opposing Volume	697	VPH
	Left Turn Percentage	15%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	119	VPH
	Advancing Traffic	917	VPH
	Opposing Volume	795	VPH
	Left Turn Percentage	13%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

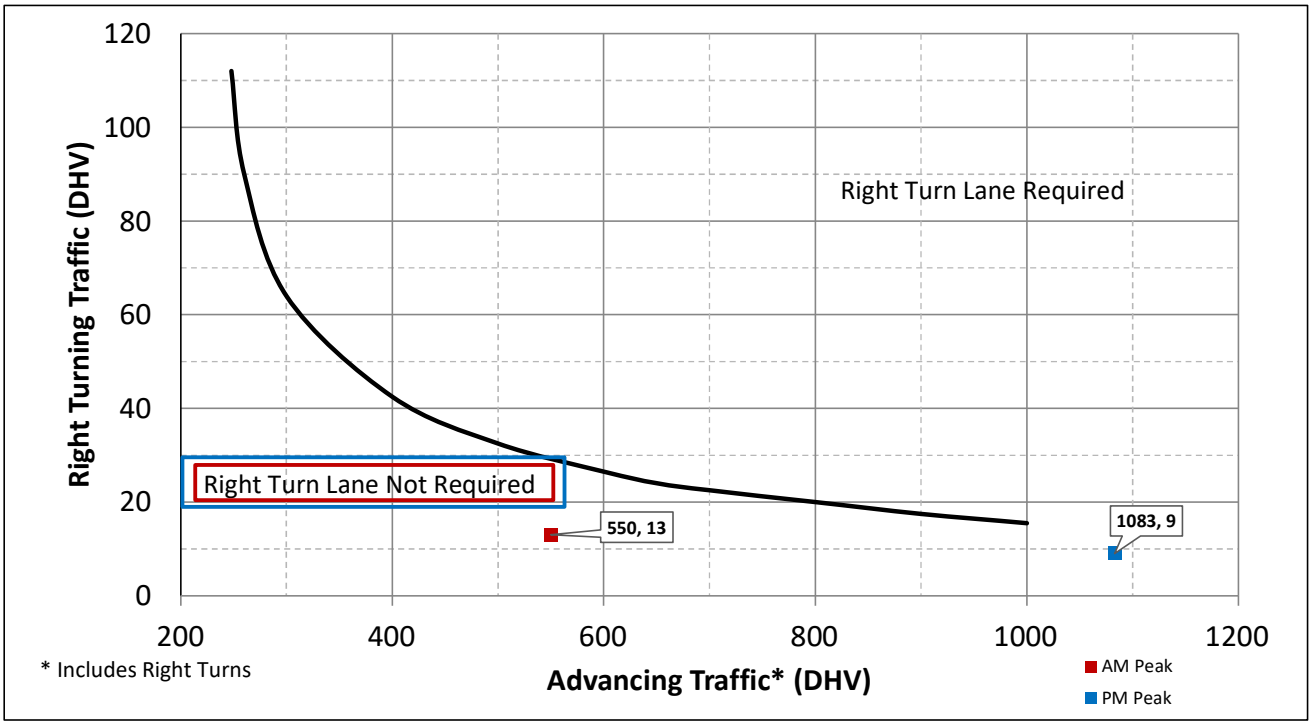


Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	10	VPH
	Advancing Traffic	441	VPH
	Opposing Volume	671	VPH
	Left Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	51	VPH
	Advancing Traffic	897	VPH
	Opposing Volume	774	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

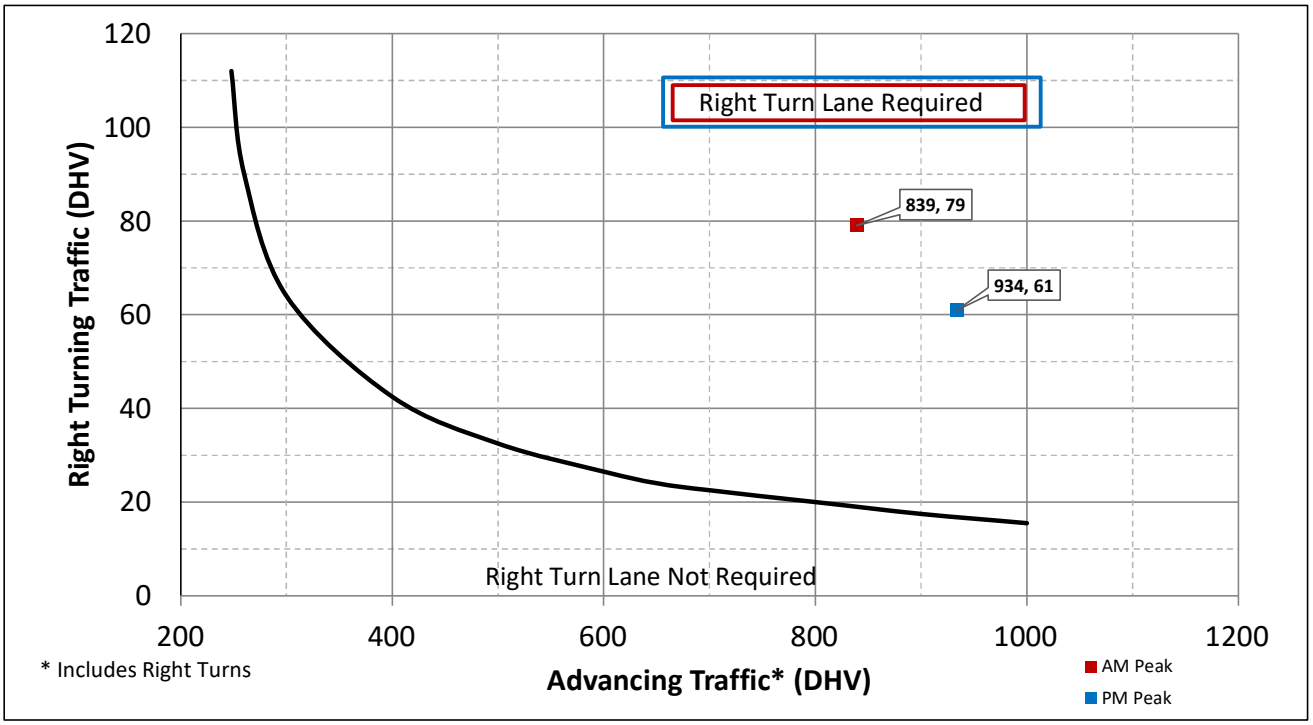
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	13	VPH
	Advancing Traffic	550	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	9	VPH
	Advancing Traffic	1083	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		No	No Right Turn Lane Required

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

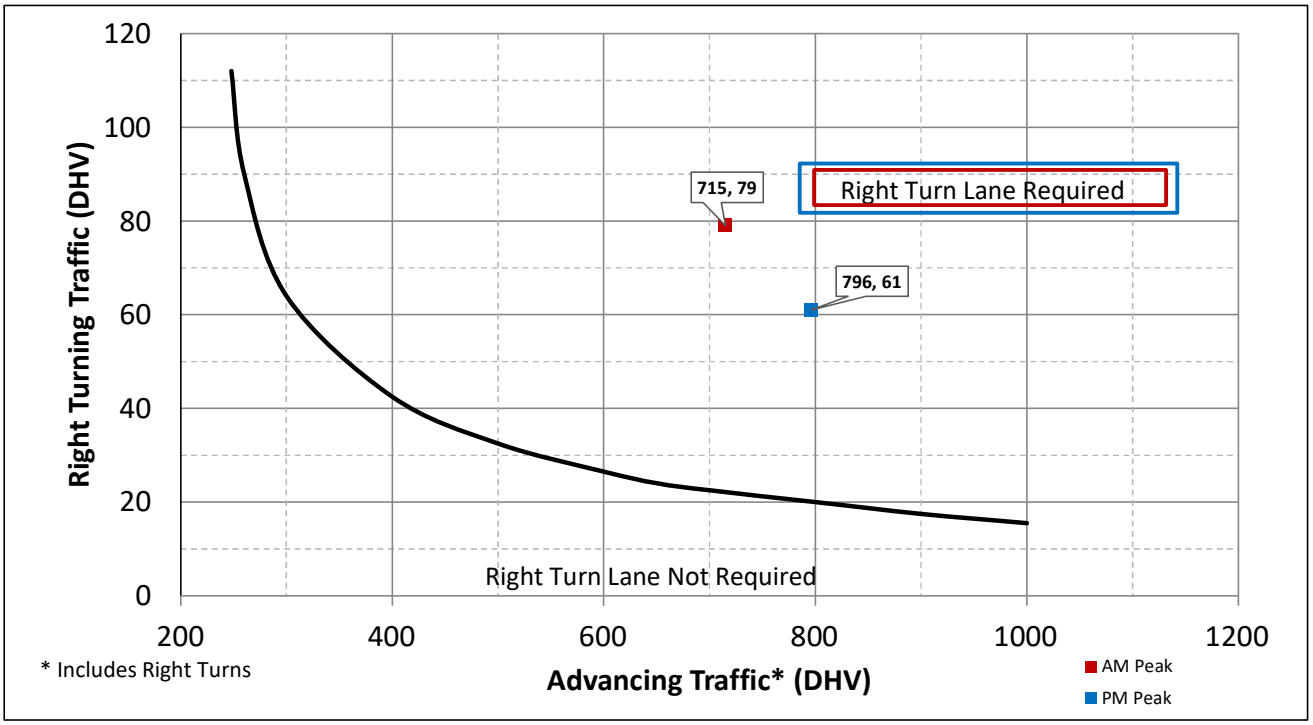
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	79	VPH
	Advancing Traffic	839	VPH
	Right Turn Percentage	9%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	2	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	61	VPH
	Advancing Traffic	934	VPH
	Right Turn Percentage	7%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	2	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

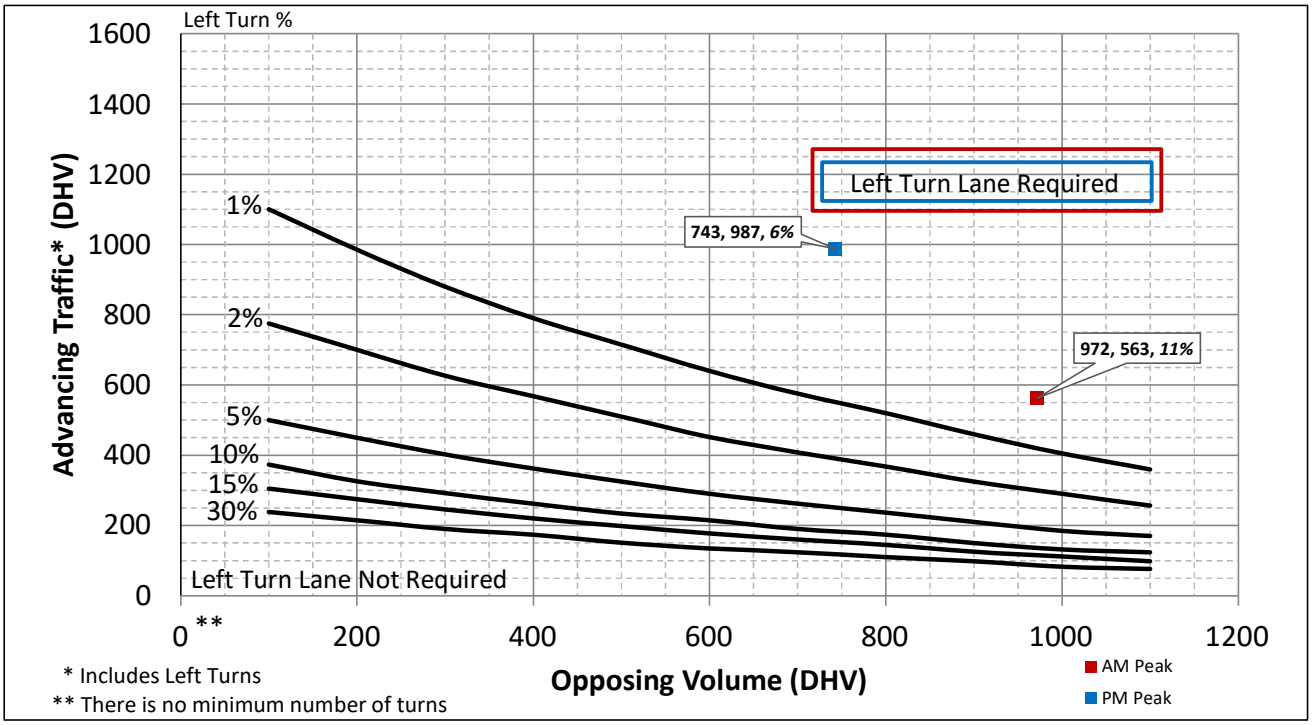
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	79	VPH
	Advancing Traffic	715	VPH
	Right Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	61	VPH
	Advancing Traffic	796	VPH
	Right Turn Percentage	8%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	2	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

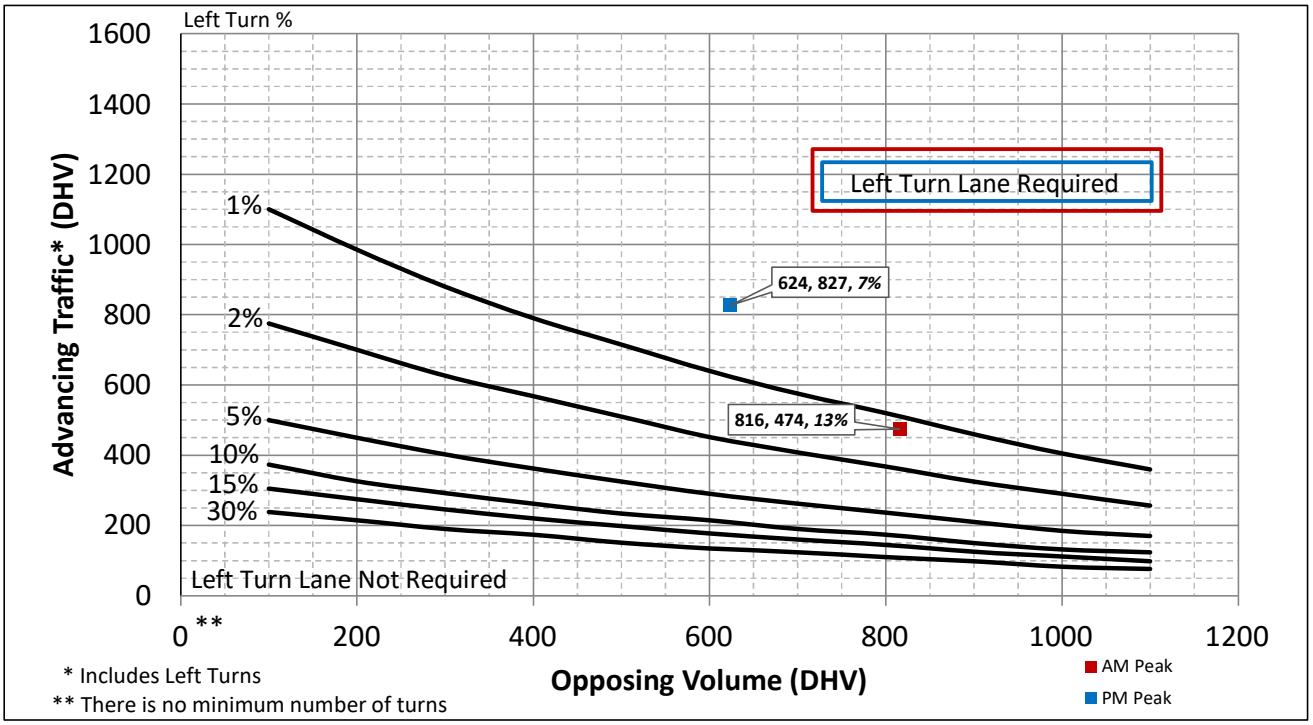


Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	61	VPH
	Advancing Traffic	563	VPH
	Opposing Volume	972	VPH
	Left Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	60	VPH
	Advancing Traffic	987	VPH
	Opposing Volume	743	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Left Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)

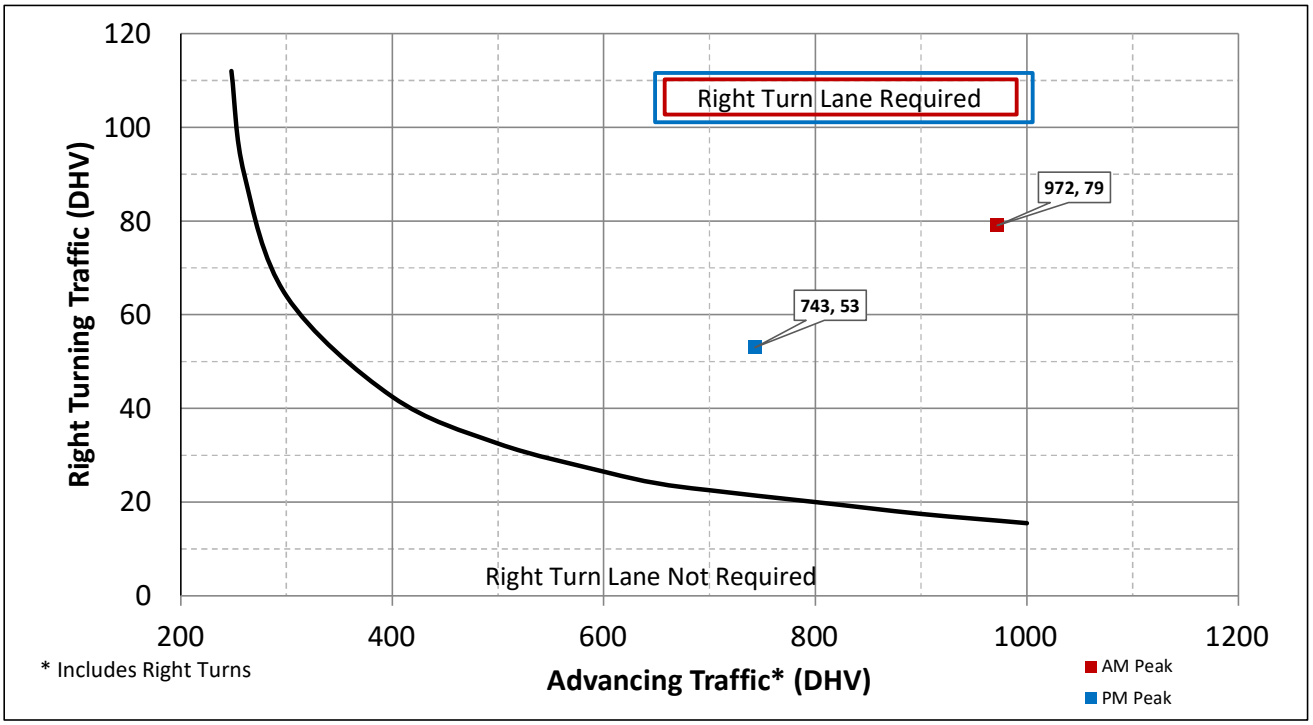


Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	61	VPH
	Advancing Traffic	474	VPH
	Opposing Volume	816	VPH
	Left Turn Percentage	13%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	60	VPH
	Advancing Traffic	827	VPH
	Opposing Volume	624	VPH
	Left Turn Percentage	7%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
	Approach Taper	405	
Is Left Turn Warrant Met		Yes	**See Above**

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

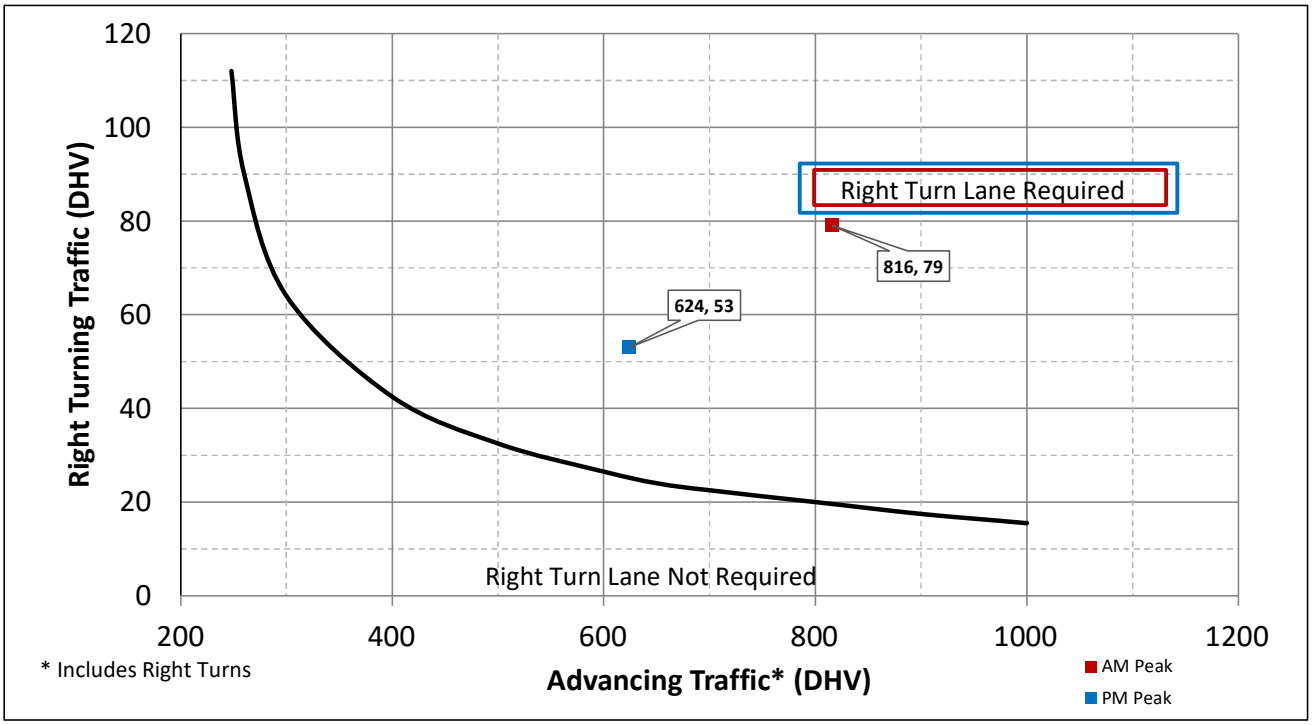
AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	79	VPH
	Advancing Traffic	972	VPH
	Right Turn Percentage	8%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	2	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	*Assume 60*
	Turn Lane Volume	53	VPH
	Advancing Traffic	743	VPH
	Right Turn Percentage	7%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
Is Right Turn Warrant Met		Yes	**See Above**

** Turn Lane Length includes 50 ft diverging taper*

** Turn Lane Length includes 50 ft diverging taper*

2-Lane Highway Right Turn Lane Warrant

(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	79	VPH	
	Advancing Traffic	816	VPH	
	Right Turn Percentage	10%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	2		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
PM Peak	Design Speed	45	mph	
	Traffic Control	Unsignalized		
	Cycle Length	Unsignalized		
	Cycles Per Hour	60	*Assume 60*	
	Turn Lane Volume	53	VPH	
	Advancing Traffic	624	VPH	
	Right Turn Percentage	8%		
	Location Type	Through Road		
	Condition	B		
	Vehicles/Cycle	1		
	Turn Lane Length	175		* Turn Lane Length includes 50 ft diverging taper
Is Right Turn Warrant Met		Yes	**See Above**	

Appendix F
Signal Warrant Analysis

CARPENTER MARTY transportation

Appendix F

STUDY AND ANALYSIS INFORMATION

Municipality:	Gahanna	**Traffic Volumes Obtained By:**	CMTran
County:	Franklin	**Analysis Date:**	
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	CMTran

Analysis Information

Data Collection Date:	2/10/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	No
Total Number of Approaches at Intersection:	4

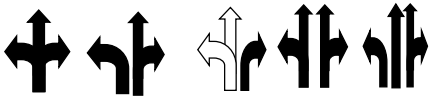
Major Street Information

Major Street Name and Route Number:	Morse Road	
Major Street Approach Direction:	E-Bound W-Bound	
Number of Thru Lanes on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	45	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Albany Chase Road	
Minor Street Approach Configuration:	2	N-Bound
	2	S-Bound



Number of Thru Lanes on Each Minor Street Approach:	2	**LANE(S)**
Apply Right Turn Lane Reduction*:	Yes	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**		
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**		
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 7:15 AM 8:15 AM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 5:00 PM 6:00 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-10	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Do Not Install New Traffic Signal

Notes:

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

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

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

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+	X		500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
1:30 AM	0	0																
1:45 AM	0	0																
2:00 AM	0	0																
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4:00 AM	0	0																
4:15 AM	0	0																
4:30 AM	0	0																
4:45 AM	0	0																
5:00 AM	0	0																
5:15 AM	57	9																
5:30 AM	126	14																
5:45 AM	238	24																
6:00 AM	374	34			1										1			
6:15 AM	474	34									1						1	
6:30 AM	608	43	1						1				1					
6:45 AM	745	52																
7:00 AM	871	57			1		1								1			
7:15 AM	927	61									1						1	1
7:30 AM	961	51	1						1				1					
7:45 AM	897	45																
8:00 AM	838	42			1		1								1			
8:15 AM	822	40									1						1	
8:30 AM	753	45	1						1				1					
8:45 AM	762	41																
9:00 AM	714	35			1										1			
9:15 AM	704	28									1						1	
9:30 AM	712	25	1						1				1					
9:45 AM	705	21																
10:00 AM	747	19			1										1			
10:15 AM	759	20					1				1						1	
10:30 AM	816	16	1						1				1					
10:45 AM	868	16																
11:00 AM	892	16			1										1			
11:15 AM	952	19					1				1						1	
11:30 AM	950	23	1						1				1					
11:45 AM	991	28																
12:00 PM	1024	31			1										1			
12:15 PM	1021	28					1				1						1	
12:30 PM	1024	27	1						1				1					
12:45 PM	989	25																
1:00 PM	960	22			1										1			
1:15 PM	944	23					1				1						1	
1:30 PM	931	25	1						1				1					
1:45 PM	925	21																
2:00 PM	943	22			1										1			
2:15 PM	993	18					1				1						1	
2:30 PM	1046	17	1						1				1					
2:45 PM	1098	19																
3:00 PM	1122	18			1										1			
3:15 PM	1138	20					1				1						1	
3:30 PM	1178	24	1						1				1					
3:45 PM	1189	28																
4:00 PM	1243	34			1										1			
4:15 PM	1280	36					1				1						1	
4:30 PM	1359	40	1						1				1					
4:45 PM	1409	46																
5:00 PM	1444	44			1										1			
5:15 PM	1394	48					1				1						1	
5:30 PM	1292	40	1						1				1					
5:45 PM	1201	37																
6:00 PM	1091	34			1										1			
6:15 PM	798	22					1				1						1	
6:30 PM	507	15	1															
6:45 PM	246	7																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
7:45 PM	0	0																
8:00 PM	0	0																
8:15 PM	0	0																
8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			**13**	**0**	**13**	**0**	**11**	**0**	**12**	**0**	**13**	**0**	**12**	**0**	**13**	**0**	**13**	**1**
WARRANT SATISFIED?			**NO**		**NO**		**NO**		**NO**		**NO**				**NO**			

Warrant Met: No

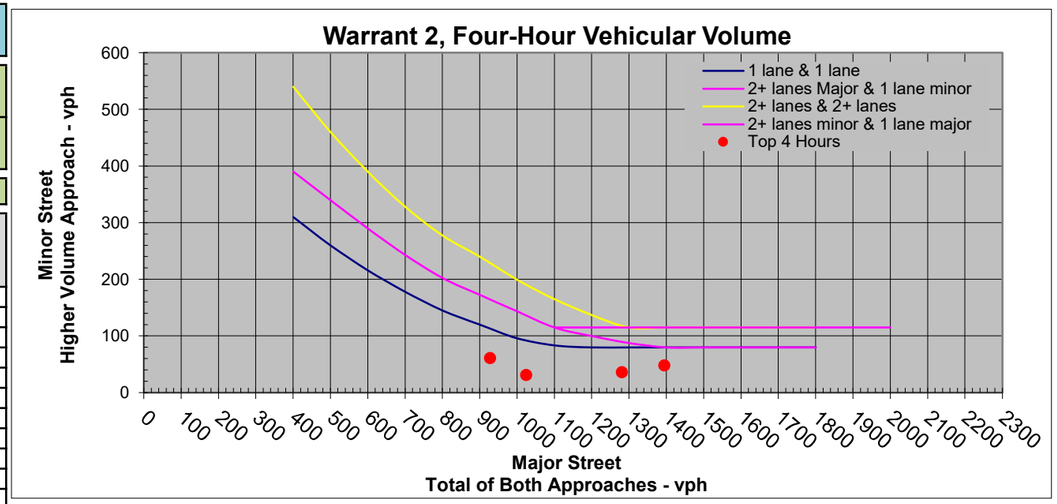
Notes:

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	0
Major street:	1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	0
Minor Street:	2 or More Lanes		

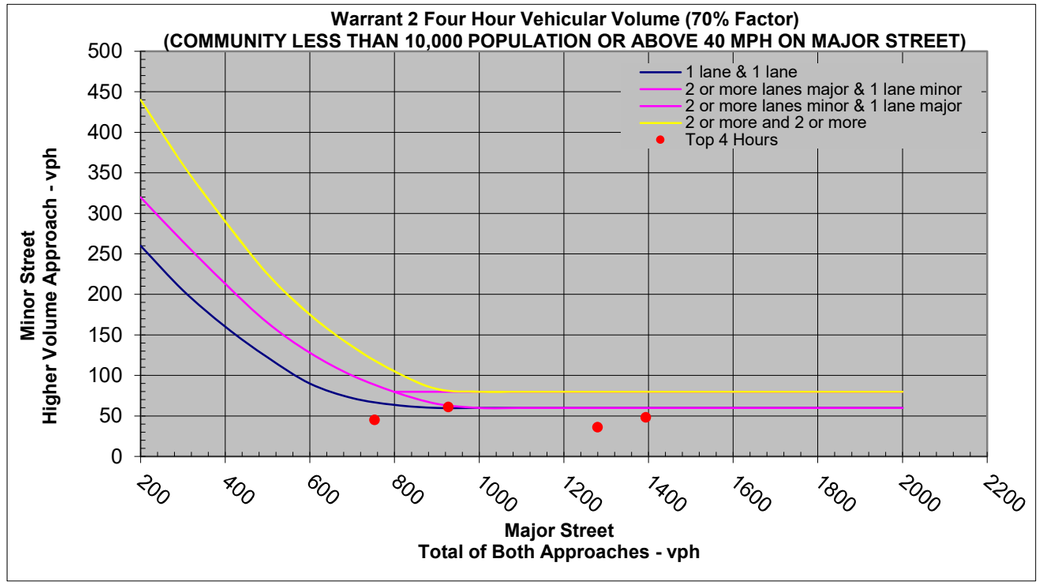
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street? Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Minor - Albany Chase Road		Major - Morse Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	34	2	183	191	374	34		
6:15 AM	34	3	214	260	474	34		
6:30 AM	43	3	260	348	608	43		
6:45 AM	52	6	279	466	745	52		
7:00 AM	57	9	316	555	871	57		
7:15 AM	61	14	360	567	927	61		
7:30 AM	51	19	381	580	961	51		
7:45 AM	45	20	371	526	897	45		
8:00 AM	42	17	349	489	838	42		
8:15 AM	40	18	345	477	822	40		
8:30 AM	45	12	307	446	753	45		
8:45 AM	41	9	324	438	762	41		
9:00 AM	35	11	317	397	714	35		
9:15 AM	28	5	288	416	704	28		
9:30 AM	25	5	303	409	712	25		
9:45 AM	21	7	306	399	705	21		
10:00 AM	19	6	311	436	747	19		
10:15 AM	20	7	326	433	759	20		
10:30 AM	16	11	333	483	816	16		
10:45 AM	16	10	355	513	868	16		
11:00 AM	16	9	382	510	892	16		
11:15 AM	19	8	409	543	952	19		
11:30 AM	23	3	436	514	950	23		
11:45 AM	28	3	474	517	991	28		
12:00 PM	31	5	507	517	1024	31		
12:15 PM	28	9	540	481	1021	28		
12:30 PM	27	11	568	456	1024	27		
12:45 PM	25	11	551	438	989	25		
1:00 PM	22	13	547	413	960	22		
1:15 PM	23	10	534	410	944	23		
1:30 PM	25	12	512	419	931	25		
1:45 PM	21	15	511	414	925	21		
2:00 PM	22	12	499	444	943	22		
2:15 PM	18	12	515	478	993	18		
2:30 PM	17	10	522	524	1046	17		
2:45 PM	19	8	533	565	1098	19		
3:00 PM	18	8	567	555	1122	18		
3:15 PM	20	11	572	566	1138	20		
3:30 PM	24	10	593	585	1178	24		
3:45 PM	28	12	605	584	1189	28		
4:00 PM	34	13	623	620	1243	34		
4:15 PM	36	13	681	599	1280	36		
4:30 PM	40	19	734	625	1359	40		
4:45 PM	46	19	772	637	1409	46		
5:00 PM	44	18	775	669	1444	44		
5:15 PM	48	15	709	685	1394	48		
5:30 PM	40	8	672	620	1292	40		
5:45 PM	37	4	628	573	1201	37		
6:00 PM	34	3	599	492	1091	34		
6:15 PM	22	2	454	344	798	22		
6:30 PM	15	1	286	221	507	15		
6:45 PM	7	1	144	102	246	7		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	7:15 AM	8:15 AM	927	61
2nd Highest Hour	5:15 PM	6:15 PM	1394	48
3rd Highest Hour	4:15 PM	5:15 PM	1280	36
4th Highest Hour	12:00 PM	1:00 PM	1024	31

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	7:15 AM	8:15 AM	927	61
2nd Highest Hour	5:15 PM	6:15 PM	1394	48
3rd Highest Hour	8:30 AM	9:30 AM	753	45
4th Highest Hour	4:15 PM	5:15 PM	1280	36



Are the requirements for Warrant 2 met?: No

OMUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	7:15 AM
Major Street:	1 Lane	Peak Hour End Time	8:15 AM
Minor Street:	2 or More Lanes		

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

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

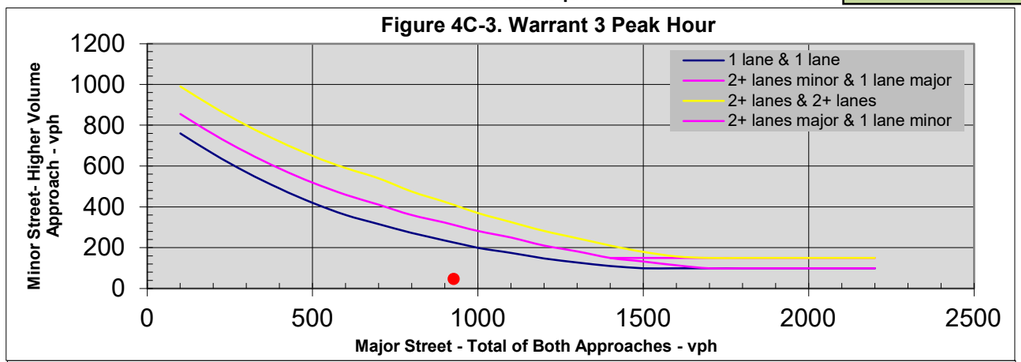
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

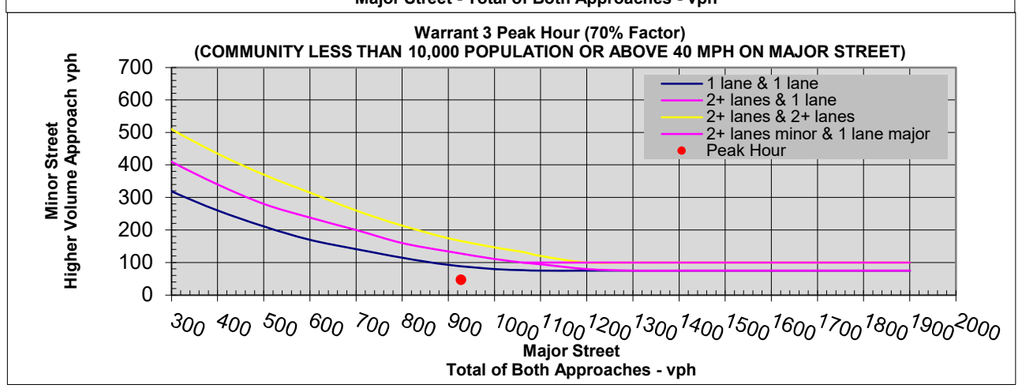
Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

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

Are the requirements for Warrant 3 met?: No

Figure 4C-3. Warrant 3 Peak Hour





Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
6:00 AM	374	34	408	410
6:15 AM	474	34	508	511
6:30 AM	608	43	651	654
6:45 AM	745	52	797	803
7:00 AM	871	57	928	937
7:15 AM	927	61	988	1002
7:30 AM	961	51	1012	1031
7:45 AM	897	45	942	962
8:00 AM	838	42	880	897
8:15 AM	822	40	862	880
8:30 AM	753	45	798	810
8:45 AM	762	41	803	812
9:00 AM	714	35	749	760
9:15 AM	704	28	732	737
9:30 AM	712	25	737	742
9:45 AM	705	21	726	733
10:00 AM	747	19	766	772
10:15 AM	759	20	779	786
10:30 AM	816	16	832	843
10:45 AM	868	16	884	894
11:00 AM	892	16	908	917
11:15 AM	952	19	971	979
11:30 AM	950	23	973	976
11:45 AM	991	28	1019	1022
12:00 PM	1024	31	1055	1060
12:15 PM	1021	28	1049	1058
12:30 PM	1024	27	1051	1062
12:45 PM	989	25	1014	1025
1:00 PM	960	22	982	995
1:15 PM	944	23	967	977
1:30 PM	931	25	956	968
1:45 PM	925	21	946	961
2:00 PM	943	22	965	977
2:15 PM	993	18	1011	1023
2:30 PM	1046	17	1063	1073
2:45 PM	1098	19	1117	1125
3:00 PM	1122	18	1140	1148
3:15 PM	1138	20	1158	1169
3:30 PM	1178	24	1202	1212
3:45 PM	1189	28	1217	1229
4:00 PM	1243	34	1277	1290
4:15 PM	1280	36	1316	1329
4:30 PM	1359	40	1399	1418
4:45 PM	1409	46	1455	1474
5:00 PM	1444	44	1488	1506
5:15 PM	1394	48	1442	1457
5:30 PM	1292	40	1332	1340
5:45 PM	1201	37	1238	1242
6:00 PM	1091	34	1125	1128
6:15 PM	798	22	820	822
6:30 PM	507	15	522	523
6:45 PM	246	7	253	254
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
927	48	150	115.2227

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach						NOTES:
	Southbound						Westbound						Nouthbound						Eastbound						
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	
12:00 AM						0						0						0						0	It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.
12:15 AM						0						0						0						0	
12:30 AM						0						0						0						0	
12:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM						0						0						0						0	
1:15 AM						0						0						0						0	
1:30 AM						0						0						0						0	
1:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM						0						0						0						0	
2:15 AM						0						0						0						0	
2:30 AM						0						0						0						0	
2:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM						0						0						0						0	
3:15 AM						0						0						0						0	
3:30 AM						0						0						0						0	
3:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM						0						0						0						0	
4:15 AM						0						0						0						0	
4:30 AM						0						0						0						0	
4:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM						0						0						0						0	
5:15 AM						0						0						0						0	
5:30 AM						0						0						0						0	
5:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0			0	0	27	1			28	6	0	6			12	0	29	0			29	
6:15 AM	1	0	0			1	0	40	0			40	9	0	2			11	0	29	0			29	
6:30 AM	0	0	0			0	0	53	1			54	5	0	8			13	1	57	0			58	
6:45 AM	0	0	1			1	0	59	2			61	8	0	6			14	2	70	3			75	
Hourly Total	1	0	1	0	0	2	0	179	4	0	0	183	28	0	22	0	0	50	3	185	3	0	0	191	
7:00 AM	0	0	1			1	0	56	3			59	9	0	5			14	3	94	1			98	
7:15 AM	0	0	1			1	2	80	4			86	13	0	10			23	4	110	3			117	
7:30 AM	0	1	2			3	1	69	3			73	17	0	9			26	0	170	6			176	
7:45 AM	0	0	4			4	2	93	3			98	8	0	9			17	1	152	11			164	
Hourly Total	0	1	8	0	0	9	5	298	13	0	0	316	47	0	33	0	0	80	8	526	21	0	0	555	
8:00 AM	0	0	6			6	4	98	1			103	8	0	10			18	1	94	15			110	
8:15 AM	1	0	5			6	4	101	2			107	5	0	4			9	0	124	6			130	
8:30 AM	0	0	4			4	1	60	2			63	11	0	6			17	2	116	4			122	
8:45 AM	0	0	1			1	1	71	4			76	10	0	6			16	0	118	9			127	
Hourly Total	1	0	16	0	0	17	10	330	9	0	0	349	34	0	26	0	0	60	3	452	34	0	0	489	
9:00 AM	0	1	6			7	4	88	7			99	13	0	6			19	5	89	4			98	
9:15 AM	0	0	0			0	0	64	5			69	11	1	5			17	4	93	2			99	
9:30 AM	1	0	0			1	1	75	4			80	5	1	4			10	3	109	2			114	
9:45 AM	1	1	1			3	0	67	2			69	9	0	2			11	3	80	3			86	
Hourly Total	2	2	7	0	0	11	5	294	18	0	0	317	38	2	17	0	0	57	15	371	11	0	0	397	
10:00 AM	0	0	1			1	0	68	2			70	6	0	1			7	2	113	2			117	
10:15 AM	0	0	0			0	0	78	6			84	5	0	5			10	0	91	1			92	
10:30 AM	2	0	2			4	1	80	2			83	2	0	4			6	1	102	1			104	
10:45 AM	1	0	1			2	0	70	4			74	7	0	0			7	3	120	0			123	
Hourly Total	3	0	4	0	0	7	1	296	14	0	0	311	20	0	10	0	0	30	6	426	4	0	0	436	
11:00 AM	1	0	2			3	0	81	4			85	5	0	2			7	1	111	2			114	
11:15 AM	3	0	3			6	0	84	7			91	4	0	1			5	3	138	1			142	
11:30 AM	1	0	1			2	0	101	4			105	9	0	0			9	2	130	2			134	
11:45 AM	1	0	0			1	0	98	3			101	5	0	1			6	2	117	1			120	
Hourly Total	6	0	6	0	0	12	0	364	18	0	0	382	23	0	4	0	0	27	8	496	6	0	0	510	
12:00 PM	0	0	1			1	1	109	2			112	7	0	4			11	3	144	0			147	
12:15 PM	0	0	0			0	0	111	7			118	5	0	5			10	2	111	0			113	
12:30 PM	0	0	1			1	3	131	9			143	7	0	6			13	6	130	1			137	
12:45 PM	1	1	1			3	0	134	0			134	7	1	2			10	3	115	2			120	
Hourly Total	1	1	3	0	0	5	4	485	18	0	0	507	26	1	17	0	0	44	14	500	3	0	0	517	
1:00 PM	0	0	5			5	1	141	3			145	5	0	3			8	2	109	0			111	
1:15 PM	1	0	1			2	2	141	3			146	2	0	5			7	2	85	1			88	
1:30 PM	0	0	1			1	2	121	3			126	10	0	3			13	5	112	2			119	
1:45 PM	0	0	5			5	1	124	5			130	7	0	0			7	2	92	1			95	
Hourly Total	1	0	12	0	0	13	6	527	14	0	0	547	24	0	11	0	0	35	11	398	4	0	0	413	
2:00 PM	2	0	1			3	0	124	8			132	7	0	4			11	4	103	1			108	
2:15 PM	2	0	3			5	2	114	8			124	5	0	4			9	3	93	1			97	
2:30 PM	3	0	2			5	0	120	5			125	3	0	3			6	2	109	3			114	
2:45 PM	1	0	2			3	0	115	3			118	4	0	2			6	4	120	1			125	
Hourly Total	8	0	8	0	0	16	2	473	24	0	0	499	19	0	13	0	0	32	13	425	6	0	0	444	
3:00 PM	2	0	1			3	1	140	7			148	5	1	0			6	5	136	1			142	
3:15 PM	2	0	1			3	0	127	4			131	6	0	2			8	4	138	1			143	
3:30 PM	2	0	0			2	0	129	7			136	4	0	4			8	8	142	5			155	
3:45 PM	1	0	2			3	2	140	10			152	3	0	2			5	1	113	1			115	
Hourly Total	7	0	4	0	0	11	3	536	28	0	0	567	18	1	8	0	0	27	18	529	8	0	0	555	
4:00 PM	2	0	4			6	0	147	6			153	4	0	3			7	6	142	5			153	
4:15 PM	1	0	1			2	2	136	14			152	4	0	7			11	8	149	5			162	
4:30 PM	1	1	1			3	3	134	11			148	10	0	5			15	10	137	7			154	
4:45 PM	1	0	3			4	1	154	15			170	9	0	5			14	4	138	9			151	
Hourly Total	5	1	9	0	0	15	6	571	46	0	0	623	27	0	20	0	0	47	28	566	26	0	0	620	
5:00 PM	0	0	4			4	4	198	9			211	10	0	2			12	11	108	13			132	
5:15 PM	1	0	7			8	2	192	11			205	14	0	6			20	10	167	11			188	
5:30 PM	1	0	3			4	2	171	13			186	18	0	4			22	10	153	3			166	
5:45 PM	0	0	2			2	0	162	11			173	8	0	4			12	8	175	0			183	
Hourly Total	2	0	16	0	0	18	8	723	44	0	0	775	50	0	16	0	0	66	39	603	27	0	0	669	
6:00 PM	0	0	1			1	0	133	12			145	8	0	7			15	9	139	0			148	
6:15 PM	0	0	1			1	0	159	9			168	14	0	1			15	6	116	1			123	
6:30 PM	0	0	0			0	0	128	14			142	11	0	4			15	2	116	1			119	
6:45 PM	0	0	1			1	0	135	9			144	4	0	5			9	2	99	1			102	
Hourly Total	0	0	3	0	0	3	0	555	44	0	0	599	37	0	17	0	0	54	19	470	3	0	0	492	
7:00 PM						0						0						0						0	
7:15 PM						0						0						0						0	
7:30 PM						0						0						0						0	
7:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM						0						0						0						0	
8:15 PM						0						0						0						0	
8:30 PM						0						0						0						0	
8:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM						0						0						0						0	
9:15 PM						0						0						0						0	
9:30 PM						0						0						0						0	
9:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM						0						0						0						0	
10:15 PM						0						0						0						0	
10:30 PM						0						0						0						0	
10:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM						0						0						0						0	
11:15 PM						0						0						0						0	
11:30 PM						0						0						0						0	
11:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Count Data

	Albany Chase Road						Morse Road						Private Drive						Morse Road		
	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
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5:45																					
6:00	0	0	0				0	27	1				6	0	6				0	29	0
6:15	1	0	0				0	40	0				9	0	2				0	29	0
6:30	0	0	0				0	52	1				5	0	8				1	56	0
6:45	0	0	1				0	58	2				8	0	6				2	69	3
7:00	0	0	1				0	55	3				9	0	5				3	93	1
7:15	0	0	1				2	79	4				13	0	10				4	109	3
7:30	0	1	2				1	68	3				17	0	9				0	168	6
7:45	0	0	4				2	92	3				8	0	9				1	150	11
8:00	0	0	6				4	97	1				8	0	10				1	93	15
8:15	1	0	5				4	100	2				5	0	4				0	123	6
8:30	0	0	4				1	59	2				11	0	6				2	115	4
8:45	0	0	1				1	70	4				10	0	6				0	117	9
9:00	0	1	6				4	87	7				13	0	6				5	88	4
9:15	0	0	0				0	63	5				11	1	5				4	92	2
9:30	1	0	0				1	74	4				5	1	4				3	108	2
9:45	1	1	1				0	66	2				9	0	2				3	79	3
10:00	0	0	1				0	67	2				6	0	1				2	112	2
10:15	0	0	0				0	77	6				5	0	5				0	90	1
10:30	2	0	2				1	79	2				2	0	4				1	101	1
10:45	1	0	1				0	69	4				7	0	0				3	119	0
11:00	1	0	2				0	80	4				5	0	2				1	110	2
11:15	3	0	3				0	83	7				4	0	1				3	137	1
11:30	1	0	1				0	100	4				9	0	0				2	129	2
11:45	1	0	0				0	97	3				5	0	1				2	116	1
12:00	0	0	1				1	108	2				7	0	4				3	143	0
12:15	0	0	0				0	110	7				5	0	5				2	110	0
12:30	0	0	1				3	130	9				7	0	6				6	129	1
12:45	1	1	1				0	133	0				7	1	2				3	114	2
1:00	0	0	5				1	140	3				5	0	3				2	108	0
1:15	1	0	1				2	140	3				2	0	5				2	84	1
1:30	0	0	1				2	120	3				10	0	3				5	111	2
1:45	0	0	5				1	123	5				7	0	0				2	91	1
2:00	2	0	1				0	123	8				7	0	4				4	102	1
2:15	2	0	3				2	113	8				5	0	4				3	92	1
2:30	3	0	2				0	119	5				3	0	3				2	108	3
2:45	1	0	2				0	114	3				4	0	2				4	119	1
3:00	2	0	1				1	139	7				5	1	0				5	135	1
3:15	2	0	1				0	126	4				6	0	2				4	137	1
3:30	2	0	0				0	128	7				4	0	4				8	141	5
3:45	1	0	2				2	139	10				3	0	2				1	112	1
4:00	2	0	4				0	146	6				4	0	3				6	141	5
4:15	1	0	1				2	135	14				4	0	7				8	148	5
4:30	1	1	1				3	133	11				10	0	5				10	136	7
4:45	1	0	3				1	152	15				9	0	5				4	137	9
5:00	0	0	4				4	196	9				10	0	2				11	107	13
5:15	1	0	7				2	190	11				14	0	6				10	165	11
5:30	1	0	3				2	169	13				18	0	4				10	151	3
5:45	0	0	2				0	160	11				8	0	4				8	173	0
6:00	0	0	1				0	132	12				8	0	7				9	138	0
6:15	0	0	1				0	157	9				14	0	1				6	115	1
6:30	0	0	0				0	127	14				11	0	4				2	115	1
6:45	0	0	1				0	134	9				4	0	5				2	98	1
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Count Data Grown

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
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6:00	0	0	0				0	27	1				6	0	6				0	29	0
6:15	1	0	0				0	40	0				9	0	2				0	29	0
6:30	0	0	0				0	53	1				5	0	8				1	57	0
6:45	0	0	1				0	59	2				8	0	6				2	70	3
7:00	0	0	1				0	56	3				9	0	5				3	94	1
7:15	0	0	1				2	80	4				13	0	10				4	110	3
7:30	0	1	2				1	69	3				17	0	9				0	170	6
7:45	0	0	4				2	93	3				8	0	9				1	152	11
8:00	0	0	6				4	98	1				8	0	10				1	94	15
8:15	1	0	5				4	101	2				5	0	4				0	124	6
8:30	0	0	4				1	60	2				11	0	6				2	116	4
8:45	0	0	1				1	71	4				10	0	6				0	118	9
9:00	0	1	6				4	88	7				13	0	6				5	89	4
9:15	0	0	0				0	64	5				11	1	5				4	93	2
9:30	1	0	0				1	75	4				5	1	4				3	109	2
9:45	1	1	1				0	67	2				9	0	2				3	80	3
10:00	0	0	1				0	68	2				6	0	1				2	113	2
10:15	0	0	0				0	78	6				5	0	5				0	91	1
10:30	2	0	2				1	80	2				2	0	4				1	102	1
10:45	1	0	1				0	70	4				7	0	0				3	120	0
11:00	1	0	2				0	81	4				5	0	2				1	111	2
11:15	3	0	3				0	84	7				4	0	1				3	138	1
11:30	1	0	1				0	101	4				9	0	0				2	130	2
11:45	1	0	0				0	98	3				5	0	1				2	117	1
12:00	0	0	1				1	109	2				7	0	4				3	144	0
12:15	0	0	0				0	111	7				5	0	5				2	111	0
12:30	0	0	1				3	131	9				7	0	6				6	130	1
12:45	1	1	1				0	134	0				7	1	2				3	115	2
1:00	0	0	5				1	141	3				5	0	3				2	109	0
1:15	1	0	1				2	141	3				2	0	5				2	85	1
1:30	0	0	1				2	121	3				10	0	3				5	112	2
1:45	0	0	5				1	124	5				7	0	0				2	92	1
2:00	2	0	1				0	124	8				7	0	4				4	103	1
2:15	2	0	3				2	114	8				5	0	4				3	93	1
2:30	3	0	2				0	120	5				3	0	3				2	109	3
2:45	1	0	2				0	115	3				4	0	2				4	120	1
3:00	2	0	1				1	140	7				5	1	0				5	136	1
3:15	2	0	1				0	127	4				6	0	2				4	138	1
3:30	2	0	0				0	129	7				4	0	4				8	142	5
3:45	1	0	2				2	140	10				3	0	2				1	113	1
4:00	2	0	4				0	147	6				4	0	3				6	142	5
4:15	1	0	1				2	136	14				4	0	7				8	149	5
4:30	1	1	1				3	134	11				10	0	5				10	137	7
4:45	1	0	3				1	154	15				9	0	5				4	138	9
5:00	0	0	4				4	198	9				10	0	2				11	108	13
5:15	1	0	7				2	192	11				14	0	6				10	167	11
5:30	1	0	3				2	171	13				18	0	4				10	153	3
5:45	0	0	2				0	162	11				8	0	4				8	175	0
6:00	0	0	1				0	133	12				8	0	7				9	139	0
6:15	0	0	1				0	159	9				14	0	1				6	116	1
6:30	0	0	0				0	128	14				11	0	4				2	116	1
6:45	0	0	1				0	135	9				4	0	5				2	99	1
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11:45																					

Growth Rate	1.00%	0%
Collection Year	2022	
Design Year	2023	

STUDY AND ANALYSIS INFORMATION

Municipality:	Gahanna	**Traffic Volumes Obtained By:**	CMTran
County:	Franklin	**Analysis Date:**	
ODOT Engineering District:	6	**Agency/ Company Name Performing Warrant Analysis:**	CMTran

Analysis Information

Data Collection Date:	2/10/2022
Day of the Week:	Tuesday
Is the intersection in a built-up area of an isolated community of <10,000 population?	No
Existing Traffic Signal at intersection:	No
Total Number of Approaches at Intersection:	4

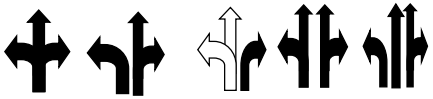
Major Street Information

Major Street Name and Route Number:	Morse Road	
Major Street Approach Direction:	E-Bound W-Bound	
Number of Thru Lanes on Each Major Street Approach:	1	**LANE(S)**
Speed Limit or 85th Percentile Speed on the Major Street*:	45	**MPH**

*Unknown assumes below 45 mph

Minor Street Information

Minor Street Name and Route Number:	Albany Chase Road	
Minor Street Approach Configuration:	2	N-Bound
	2	S-Bound



1 2 3 4 5

Number of Thru Lanes on Each Minor Street Approach:	2	**LANE(S)**
Apply Right Turn Lane Reduction*:	Yes	

*Right Turn Lane Reduction Shall be used for Warrants 1, 2, & 3 for New ODOT Signals. Please refer to TEM 402-3.2 for clarification and criteria under which Right Turn Reduction is not required.

TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

	Applicable?	Warrant Satisfied?	Notes and Comments:	
Warrant 1, Eight-Hour Vehicular Volume	Yes	**No**	Condition B (70%) was met. Combination of A/B (56%) was met.*	
Warrant 2, Four-Hour Vehicular Volume	Yes	**No**	Figure 4C-2 (70% Factor)	
Warrant 3, Peak Hour	Yes	**No**	Signals installed under Warrant 3 should be traffic actuated.	**Peak Hour** 7:15 AM 8:15 AM
For Warrants 1-3, new ODOT signals must be based off of 100% volume thresholds (TEM 402-3.2)				
Warrant 4, Pedestrian Volume	No		If this warrant is met, and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E of the OMUTCD.	**Peak Hour** 5:00 PM 6:00 PM
Warrant 5, School Crossing	No		N/A	
Warrant 6, Coordinated Signal System	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 7, Crash Experience	No		If this is the sole warrant, signal must be semi-actuated with control devices which provide proper coordination if installed at an intersection within a coordinated system and normally should be fully traffic actuated if installed at an isolated intersection.	
Warrant 8, Roadway Network	No		(Shall not be used as the sole warrant in the analysis)	
Warrant 9, Intersection Near a Grade Crossing	No		Figure 4C-10	
Multi-Way Stop Warrant	No		May be used as an interim measure if traffic signal warrants are satisfied.	

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

If no warrants are satisfied, additional options may be considered:

1. An engineering study, performed by a firm prequalified by ODOT for signal design, if approved by the ODOT district, may be used to justify a new signal installation or retention of an existing signal that otherwise does not meet the published warrants. An example of such an instance is a traffic signal in proximity to a railroad crossing that serves to reduce queuing across the tracks.
2. According to TEM 402-2, If the actual turning movement counts fail to satisfy a signal warrant, it may be acceptable to use traffic volumes projected to the second year after project completion. The **Modeling and Forecasting Section** should provide the projected traffic volumes.
3. A pedestrian hybrid beacon may be considered for installation to facilitate pedestrian crossings at a location that does not meet traffic signal warrants (see Chapter 4C of TEM) or at a location that meets traffic signal warrants under Sections 4C.05 and/or 4C.06 but a decision is made to not install a traffic control signal. **Please fill inputs on PHB Score Sheet and submit to ODOT.**

Considerations such as geometrics and lack of sight distance generally have not been accepted in lieu of satisfying signal warrants. These considerations may allow an otherwise unwarranted traffic signal to be retained at **100 percent** local cost. Please review TEM 402-4 for details.

Conclusion: Install New Traffic Signal

Notes: Warrant 2 meets with 70% factor applied.

OMUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

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

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

**Only applicable after an adequate trial of other alternatives (See section 4C.02.06 of the 2012 OMUTCD)*

Lanes Major/ Minor	Adjusted Volumes		Condition A				Condition B				Combination A/B*							
											Cond. A		Cond. B		Cond. A		Cond. B	
	Major	Minor	100%		70%		100%		70%		80%		80%		56%		56%	
			Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.	Maj.	Min.
1 / 1			500	150	350	105	750	75	525	53	400	120	600	60	280	84	420	42
2+ / 1			600	150	420	105	900	75	630	53	480	120	720	60	336	84	504	42
2+ / 2+			600	200	420	140	900	100	630	70	480	160	720	80	336	112	504	56
1 / 2+	X		500	200	350	140	750	100	525	70	400	160	600	80	280	112	420	56
12:00 AM	0	0																
12:15 AM	0	0																
12:30 AM	0	0																
12:45 AM	0	0																
1:00 AM	0	0																
1:15 AM	0	0																
1:30 AM	0	0																
1:45 AM	0	0																
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4:00 AM	0	0																
4:15 AM	0	0																
4:30 AM	0	0																
4:45 AM	0	0																
5:00 AM	0	0																
5:15 AM	149	53																
5:30 AM	218	58																
5:45 AM	330	68													1			
6:00 AM	466	78			1						1						1	1
6:15 AM	592	92	1						1	1								
6:30 AM	726	101											1	1				
6:45 AM	863	112					1	1							1	1		
7:00 AM	989	117			1						1						1	1
7:15 AM	1055	127	1						1	1								
7:30 AM	1089	116											1	1				
7:45 AM	1025	108					1	1							1			
8:00 AM	966	106			1						1						1	1
8:15 AM	932	98	1						1	1								
8:30 AM	863	101											1	1				
8:45 AM	872	97					1								1			
9:00 AM	824	93			1						1						1	1
9:15 AM	808	80	1						1	1								
9:30 AM	816	77											1					
9:45 AM	809	74					1								1			
10:00 AM	851	71			1						1						1	1
10:15 AM	873	76	1						1	1								
10:30 AM	930	72											1					
10:45 AM	982	72					1								1			
11:00 AM	1006	72			1						1						1	1
11:15 AM	1082	84	1						1	1								
11:30 AM	1080	88											1	1				
11:45 AM	1121	93					1								1			
12:00 PM	1154	96			1						1						1	1
12:15 PM	1143	87	1						1	1								
12:30 PM	1146	86											1	1				
12:45 PM	1111	83					1								1			
1:00 PM	1082	80			1						1						1	1
1:15 PM	1062	85	1						1	1								
1:30 PM	1049	86											1	1				
1:45 PM	1043	82					1								1			
2:00 PM	1061	83			1						1						1	1
2:15 PM	1127	86	1						1	1								
2:30 PM	1180	84											1	1				
2:45 PM	1232	87					1								1			
3:00 PM	1256	86			1						1						1	1
3:15 PM	1262	85	1						1	1								
3:30 PM	1302	89											1	1				
3:45 PM	1313	93					1								1			
4:00 PM	1367	99			1						1						1	1
4:15 PM	1412	106	1						1	1								
4:30 PM	1491	110											1	1				
4:45 PM	1541	114					1	1							1	1		
5:00 PM	1576	112			1						1						1	1
5:15 PM	1498	103	1						1	1								
5:30 PM	1396	96											1	1				
5:45 PM	1305	92					1								1			
6:00 PM	1195	89			1						1						1	1
6:15 PM	798	22	1						1									
6:30 PM	507	15																
6:45 PM	246	7																
7:00 PM	0	0																
7:15 PM	0	0																
7:30 PM	0	0																
7:45 PM	0	0																
8:00 PM	0	0																
8:15 PM	0	0																
8:30 PM	0	0																
8:45 PM	0	0																
9:00 PM	0	0																
9:15 PM	0	0																
9:30 PM	0	0																
9:45 PM	0	0																
HOURS MET			**13**	**0**	**13**	**0**	**12**	**3**	**13**	**12**	**13**	**0**	**12**	**10**	**13**	**2**	**13**	**13**
WARRANT SATISFIED?			**NO**		**NO**		**NO**		**YES**		**NO**				**YES**			

Warrant Met: No

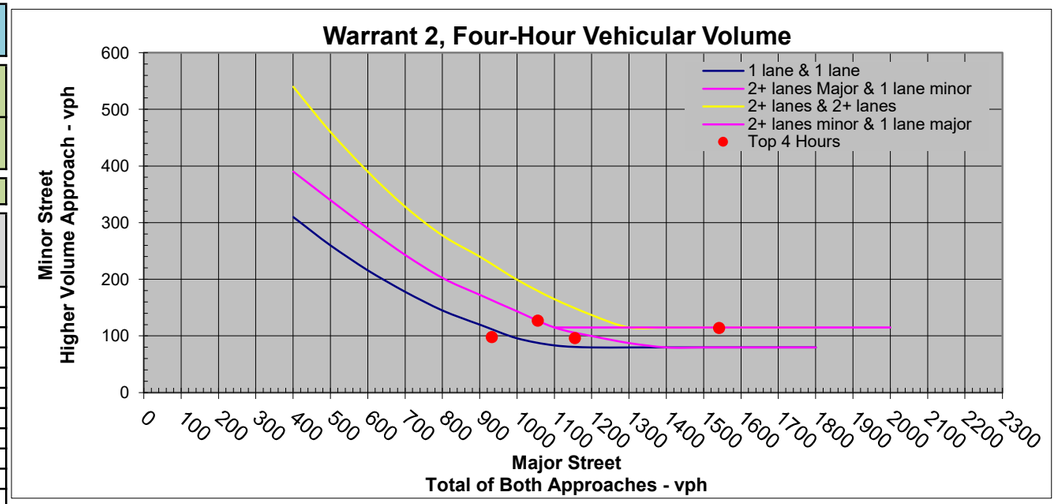
Notes: Condition B (70%) was met. Combination of A/B (56%) was met.*

OMUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

Number of Lanes for Moving Traffic on Each Approach		Total Number of Unique Hours Met on Figure 4C-1	1
Major street:	1 Lane	Total Number of Unique Hours Met on Figure 4C-2 (70% Factor)	10
Minor Street:	2 or More Lanes		

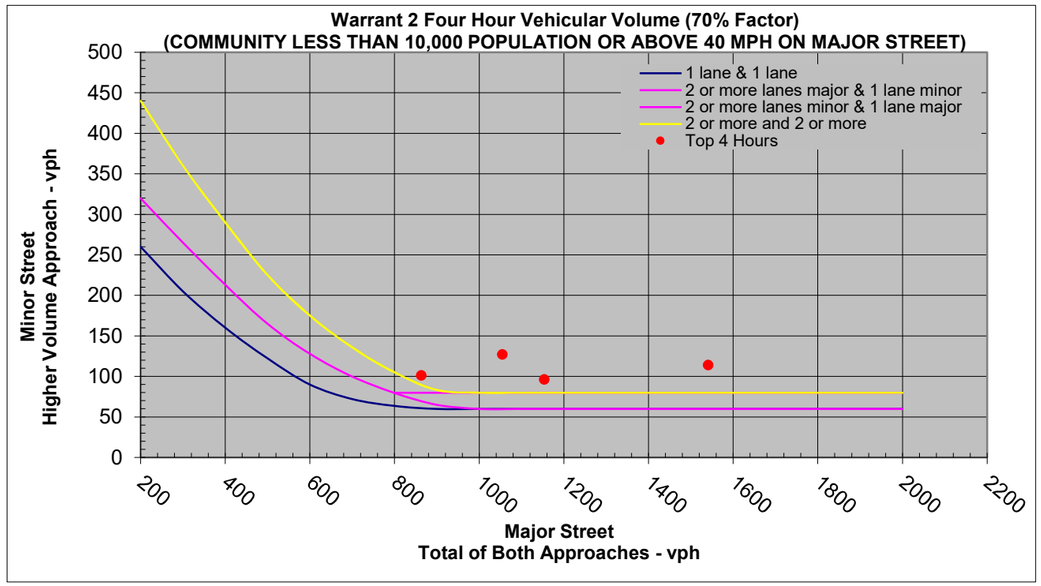
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes

Hour Interval Beginning At	Raw Traffic Counts				Total Major Approach Volumes	Highest Actual Minor Street Approach Volumes	Hour Met?	Hour Met? (70% Factor)
	Minor - Albany Chase Road		Major - Morse Road					
	N-Bound	S-Bound	W-Bound	E-Bound				
6:00 AM	78	2	229	237	466	78		
6:15 AM	92	3	273	319	592	92		
6:30 AM	101	3	319	407	726	101		Met
6:45 AM	112	6	338	525	863	112		
7:00 AM	117	9	375	614	989	117	Met	
7:15 AM	127	14	424	631	1055	127		
7:30 AM	116	19	445	644	1089	116		Met
7:45 AM	108	20	435	590	1025	108		
8:00 AM	106	17	413	553	966	106		
8:15 AM	98	18	400	532	932	98		
8:30 AM	101	12	362	501	863	101		Met
8:45 AM	97	9	379	493	872	97		
9:00 AM	93	11	372	452	824	93		
9:15 AM	80	5	340	468	808	80		
9:30 AM	77	5	355	461	816	77		
9:45 AM	74	7	358	451	809	74		
10:00 AM	71	6	363	488	851	71		
10:15 AM	76	7	383	490	873	76		
10:30 AM	72	11	390	540	930	72		
10:45 AM	72	10	412	570	982	72		
11:00 AM	72	9	439	567	1006	72		
11:15 AM	84	8	474	608	1082	84		Met
11:30 AM	88	3	501	579	1080	88		
11:45 AM	93	3	539	582	1121	93		
12:00 PM	96	5	572	582	1154	96		
12:15 PM	87	9	601	542	1143	87		Met
12:30 PM	86	11	629	517	1146	86		
12:45 PM	83	11	612	499	1111	83		
1:00 PM	80	13	608	474	1082	80		
1:15 PM	85	10	593	469	1062	85		Met
1:30 PM	86	12	571	478	1049	86		
1:45 PM	82	15	570	473	1043	82		
2:00 PM	83	12	558	503	1061	83		
2:15 PM	86	12	582	545	1127	86		Met
2:30 PM	84	10	589	591	1180	84		
2:45 PM	87	8	600	632	1232	87		
3:00 PM	86	8	634	622	1256	86		
3:15 PM	85	11	634	628	1262	85		Met
3:30 PM	89	11	655	647	1302	89		
3:45 PM	93	12	667	646	1313	93		
4:00 PM	99	13	685	682	1367	99		
4:15 PM	106	13	747	665	1412	106		Met
4:30 PM	110	19	800	691	1491	110		
4:45 PM	114	19	838	703	1541	114		
5:00 PM	112	18	841	735	1576	112		
5:15 PM	103	15	761	737	1498	103		Met
5:30 PM	96	8	724	672	1396	96		
5:45 PM	92	4	680	625	1305	92		
6:00 PM	89	3	651	544	1195	89		
6:15 PM	22	2	454	344	798	22		
6:30 PM	15	1	286	221	507	15		
6:45 PM	7	1	144	102	246	7		
7:00 PM	0	0	0	0	0	0		
7:15 PM	0	0	0	0	0	0		
7:30 PM	0	0	0	0	0	0		
7:45 PM	0	0	0	0	0	0		
8:00 PM	0	0	0	0	0	0		



Top Hours for Figure 4C-1	Start Time	End Time	Major Street	Minor Street
Top Hour	7:15 AM	8:15 AM	1055	127
2nd Highest Hour	4:45 PM	5:45 PM	1541	114
3rd Highest Hour	12:00 PM	1:00 PM	1154	96
4th Highest Hour	8:15 AM	9:15 AM	932	98

Top Hours for Figure 4C-2	Start Time	End Time	Major Street	Minor Street
Top Hour	7:15 AM	8:15 AM	1055	127
2nd Highest Hour	4:45 PM	5:45 PM	1541	114
3rd Highest Hour	8:30 AM	9:30 AM	863	101
4th Highest Hour	12:00 PM	1:00 PM	1154	96



Are the requirements for Warrant 2 met?: No

OMUTCD WARRANT 3, PEAK HOUR

Number of Lanes for Moving Traffic on Each Approach		Peak Hour Start time	7:15 AM
Major Street:	1 Lane	Peak Hour End Time	8:15 AM
Minor Street:	2 or More Lanes		

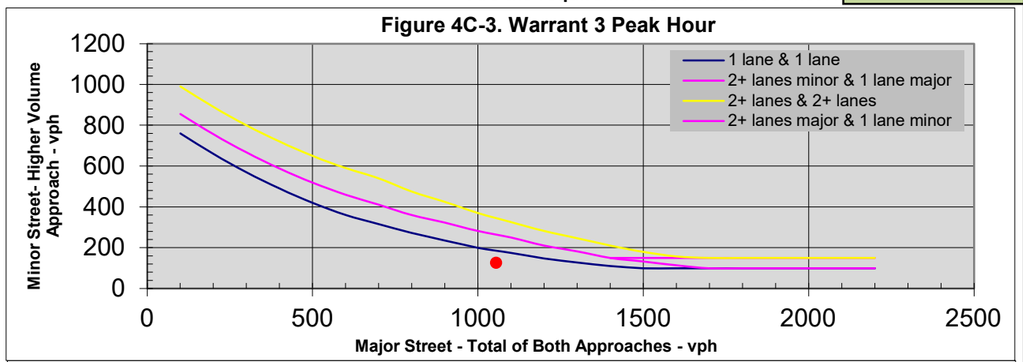
Built up Isolated Community with Less Than 10,000 Population or Above 40 MPH on Major Street?	Yes
Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?	No

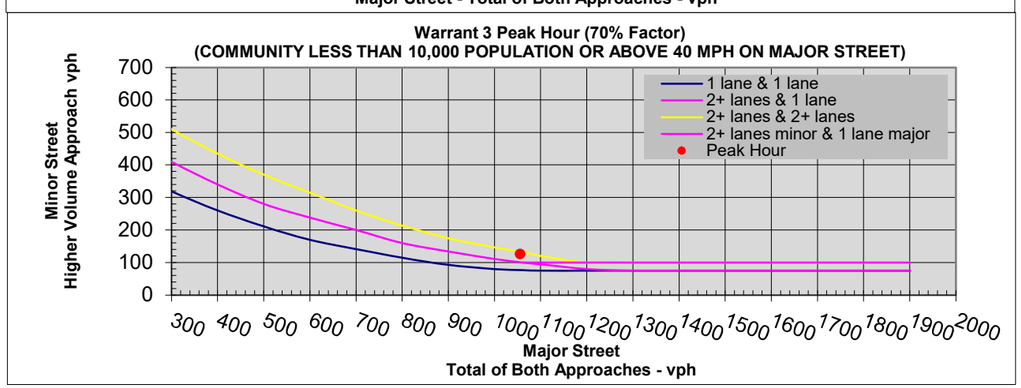
Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*

Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach?	No
Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?	No
Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?	Yes

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

Are the requirements for Warrant 3 met?: No





Hour Interval Beginning At	Major Street Combined Vehicles Per Hour (VPH)	Highest Minor Street Approach Vehicles Per Hour (VPH)	Sum of Major Street and Highest Minor Street	Sum of Major Street and Combined Minor Street
	Hour Vehicular Volume			
6:00 AM	466	78	544	546
6:15 AM	592	92	684	687
6:30 AM	726	101	827	830
6:45 AM	863	112	975	981
7:00 AM	989	117	1106	1115
7:15 AM	1055	127	1182	1196
7:30 AM	1089	116	1205	1224
7:45 AM	1025	108	1133	1153
8:00 AM	966	106	1072	1089
8:15 AM	932	98	1030	1048
8:30 AM	863	101	964	976
8:45 AM	872	97	969	978
9:00 AM	824	93	917	928
9:15 AM	808	80	888	893
9:30 AM	816	77	893	898
9:45 AM	809	74	883	890
10:00 AM	851	71	922	928
10:15 AM	873	76	949	956
10:30 AM	930	72	1002	1013
10:45 AM	982	72	1054	1064
11:00 AM	1006	72	1078	1087
11:15 AM	1082	84	1166	1174
11:30 AM	1080	88	1168	1171
11:45 AM	1121	93	1214	1217
12:00 PM	1154	96	1250	1255
12:15 PM	1143	87	1230	1239
12:30 PM	1146	86	1232	1243
12:45 PM	1111	83	1194	1205
1:00 PM	1082	80	1162	1175
1:15 PM	1062	85	1147	1157
1:30 PM	1049	86	1135	1147
1:45 PM	1043	82	1125	1140
2:00 PM	1061	83	1144	1156
2:15 PM	1127	86	1213	1225
2:30 PM	1180	84	1264	1274
2:45 PM	1232	87	1319	1327
3:00 PM	1256	86	1342	1350
3:15 PM	1262	85	1347	1358
3:30 PM	1302	89	1391	1402
3:45 PM	1313	93	1406	1418
4:00 PM	1367	99	1466	1479
4:15 PM	1412	106	1518	1531
4:30 PM	1491	110	1601	1620
4:45 PM	1541	114	1655	1674
5:00 PM	1576	112	1688	1706
5:15 PM	1498	103	1601	1616
5:30 PM	1396	96	1492	1500
5:45 PM	1305	92	1397	1401
6:00 PM	1195	89	1284	1287
6:15 PM	798	22	820	822
6:30 PM	507	15	522	523
6:45 PM	246	7	253	254
7:00 PM	0	0	0	0
7:15 PM	0	0	0	0
7:30 PM	0	0	0	0
7:45 PM	0	0	0	0
8:00 PM	0	0	0	0

Actual Peak Hour Major Traffic Volume	Actual Peak Hour Minor Traffic Volume	Required Peak Hour Minor Traffic Volume for Fig. 4C-3	Required Peak Hour Minor Traffic Volume for Fig. 4C-4
1055	127	150	100

Start Time	Southbound Approach						Westbound Approach						Northbound Approach						Eastbound Approach						NOTES:
	Southbound						Westbound						Nouthbound						Eastbound						
	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	Right	Thru	Left	U-Turn	Peds	App Total	
12:00 AM						0						0						0						0	It should be noted that if data is copied overtop of the Hourly Totals or Approach Totals, that the 'AutoSum' Formula will be lost. This should not affect the actual totals if the data was copied from a program that performs the calculations for the user.
12:15 AM						0						0						0						0	
12:30 AM						0						0						0						0	
12:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00 AM						0						0						0						0	
1:15 AM						0						0						0						0	
1:30 AM						0						0						0						0	
1:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:00 AM						0						0						0						0	
2:15 AM						0						0						0						0	
2:30 AM						0						0						0						0	
2:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:00 AM						0						0						0						0	
3:15 AM						0						0						0						0	
3:30 AM						0						0						0						0	
3:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 AM						0						0						0						0	
4:15 AM						0						0						0						0	
4:30 AM						0						0						0						0	
4:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 AM						0						0						0						0	
5:15 AM						0						0						0						0	
5:30 AM						0						0						0						0	
5:45 AM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
6:00 AM	0	0	0			0	0	27	47			74	6	0	50			56	0	75	0			75	
6:15 AM	1	0	0			1	0	40	0			40	9	0	2			11	0	29	0			29	
6:30 AM	0	0	0			0	0	53	1			54	5	0	8			13	1	57	0			58	
6:45 AM	0	0	1			1	0	59	2			61	8	0	6			14	2	70	3			75	
Hourly Total	1	0	1	0	0	2	0	179	50	0	0	229	28	0	66	0	0	94	3	231	3	0	0	237	
7:00 AM	0	0	1			1	0	56	62			118	9	0	63			72	3	153	1			157	
7:15 AM	0	0	1			1	2	80	4			86	13	0	10			23	4	110	3			117	
7:30 AM	0	1	2			3	1	69	3			73	17	0	9			26	0	170	6			176	
7:45 AM	0	0	4			4	2	93	3			98	8	0	9			17	1	152	11			164	
Hourly Total	0	1	8	0	0	9	5	298	72	0	0	375	47	0	91	0	0	138	8	585	21	0	0	614	
8:00 AM	0	0	6			6	4	98	65			167	8	0	73			81	1	158	15			174	
8:15 AM	1	0	5			6	4	101	2			107	5	0	4			9	0	124	6			130	
8:30 AM	0	0	4			4	1	60	2			63	11	0	6			17	2	116	4			122	
8:45 AM	0	0	1			1	1	71	4			76	10	0	6			16	0	118	9			127	
Hourly Total	1	0	16	0	0	17	10	330	73	0	0	413	34	0	89	0	0	123	3	516	34	0	0	553	
9:00 AM	0	1	6			7	4	88	62			154	13	0	62			75	5	144	4			153	
9:15 AM	0	0	0			0	0	64	5			69	11	1	5			17	4	93	2			99	
9:30 AM	1	0	0			1	1	75	4			80	5	1	4			10	3	109	2			114	
9:45 AM	1	1	1			3	0	67	2			69	9	0	2			11	3	80	3			86	
Hourly Total	2	2	7	0	0	11	5	294	73	0	0	372	38	2	73	0	0	113	15	426	11	0	0	452	
10:00 AM	0	0	1			1	0	68	54			122	6	0	53			59	2	165	2			169	
10:15 AM	0	0	0			0	0	78	6			84	5	0	5			10	0	91	1			92	
10:30 AM	2	0	2			4	1	80	2			83	2	0	4			6	1	102	1			104	
10:45 AM	1	0	1			2	0	70	4			74	7	0	0			7	3	120	0			123	
Hourly Total	3	0	4	0	0	7	1	296	66	0	0	363	20	0	62	0	0	82	6	478	4	0	0	488	
11:00 AM	1	0	2			3	0	81	61			142	5	0	58			63	1	168	2			171	
11:15 AM	3	0	3			6	0	84	7			91	4	0	1			5	3	138	1			142	
11:30 AM	1	0	1			2	0	101	4			105	9	0	0			9	2	130	2			134	
11:45 AM	1	0	0			1	0	98	3			101	5	0	1			6	2	117	1			120	
Hourly Total	6	0	6	0	0	12	0	364	75	0	0	439	23	0	60	0	0	83	8	553	6	0	0	567	
12:00 PM	0	0	1			1	1	109	67			177	7	0	69			76	3	209	0			212	
12:15 PM	0	0	0			0	0	111	7			118	5	0	5			10	2	111	0			113	
12:30 PM	0	0	1			1	3	131	9			143	7	0	6			13	6	130	1			137	
12:45 PM	1	1	1			3	0	134	0			134	7	1	2			10	3	115	2			120	
Hourly Total	1	1	3	0	0	5	4	485	83	0	0	572	26	1	82	0	0	109	14	565	3	0	0	582	
1:00 PM	0	0	5			5	1	141	64			206	5	0	61			66	2	170	0			172	
1:15 PM	1	0	1			2	2	141	3			146	2	0	5			7	2	85	1			88	
1:30 PM	0	0	1			1	2	121	3			126	10	0	3			13	5	112	2			119	
1:45 PM	0	0	5			5	1	124	5			130	7	0	0			7	2	92	1			95	
Hourly Total	1	0	12	0	0	13	6	527	75	0	0	608	24	0	69	0	0	93	11	459	4	0	0	474	
2:00 PM	2	0	1			3	0	124	67			191	7	0	65			72	4	162	1			167	
2:15 PM	2	0	3			5	2	114	8			124	5	0	4			9	3	93	1			97	
2:30 PM	3	0	2			5	0	120	5			125	3	0	3			6	2	109	3			114	
2:45 PM	1	0	2			3	0	115	3			118	4	0	2			6	4	120	1			125	
Hourly Total	8	0	8	0	0	16	2	473	83	0	0	558	19	0	74	0	0	93	13	484	6	0	0	503	
3:00 PM	2	0	1			3	1	140	74			215	5	1	67			73	5	203	1			209	
3:15 PM	2	0	1			3	0	127	4			131	6	0	2			8	4	138	1			143	
3:30 PM	2	0	0			2	0	129	7			136	4	0	4			8	8	142	5			155	
3:45 PM	1	0	2			3	2	140	10			152	3	0	2			5	1	113	1			115	
Hourly Total	7	0	4	0	0	11	3	536	95	0	0	634	18	1	75	0	0	94	18	596	8	0	0	622	
4:00 PM	2	0	4			6	0	147	68			215	4	0	67			71	6	204	5			215	
4:15 PM	1	0	1			2	2	136	14			152	4	0	7			11	8	149	5			162	
4:30 PM	1	1	1			3	3	134	11			148	10	0	5			15	10	137	7			154	
4:45 PM	1	0	3			4	1	154	15			170	9	0	5			14	4	138	9			151	
Hourly Total	5	1	9	0	0	15	6	571	108	0	0	685	27	0	84	0	0	111	28	628	26	0	0	682	
5:00 PM	0	0	4			4	4	198	75			277	10	0	70			80	11	174	13			198	
5:15 PM	1	0	7			8	2	192	11			205	14	0	6			20	10	167	11			188	
5:30 PM	1	0	3			4	2	171	13			186	18	0	4			22	10	153	3			166	
5:45 PM	0	0	2			2	0	162	11			173	8	0	4			12	8	175	0			183	
Hourly Total	2	0	16	0	0	18	8	723	110	0	0	841	50	0	84	0	0	134	39	669	27	0	0	735	
6:00 PM	0	0	1			1	0	133	64			197	8	0	60			68	9	191	0			200	
6:15 PM	0	0	1			1	0	159	9			168	14	0	1			15	6	116	1			123	
6:30 PM	0	0	0			0	0	128	14			142	11	0	4			15	2	116	1			119	
6:45 PM	0	0	1			1	0	135	9			144	4	0	5			9	2	99	1			102	
Hourly Total	0	0	3	0	0	3	0	555	96	0	0	651	37	0	70	0	0	107	19	522	3	0	0	544	
7:00 PM						0						0						0						0	
7:15 PM						0						0						0						0	
7:30 PM						0						0						0						0	
7:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 PM						0						0						0						0	
8:15 PM						0						0						0						0	
8:30 PM						0						0						0						0	
8:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 PM						0						0						0						0	
9:15 PM						0						0						0						0	
9:30 PM						0						0						0						0	
9:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
10:00 PM						0						0						0						0	
10:15 PM						0						0						0						0	
10:30 PM						0						0						0						0	
10:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
11:00 PM						0						0						0						0	
11:15 PM						0						0						0						0	
11:30 PM						0						0						0						0	
11:45 PM						0						0						0						0	
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Count Data

	Albany Chase Road						Morse Road						Private Drive						Morse Road		
	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
1:00																					
1:15																					
1:30																					
1:45																					
2:00																					
2:15																					
2:30																					
2:45																					
3:00																					
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3:30																					
3:45																					
4:00																					
4:15																					
4:30																					
4:45																					
5:00																					
5:15																					
5:30																					
5:45																					
6:00	0	0	0				0	27	1				6	0	6				0	29	0
6:15	1	0	0				0	40	0				9	0	2				0	29	0
6:30	0	0	0				0	52	1				5	0	8				1	56	0
6:45	0	0	1				0	58	2				8	0	6				2	69	3
7:00	0	0	1				0	55	3				9	0	5				3	93	1
7:15	0	0	1				2	79	4				13	0	10				4	109	3
7:30	0	1	2				1	68	3				17	0	9				0	168	6
7:45	0	0	4				2	92	3				8	0	9				1	150	11
8:00	0	0	6				4	97	1				8	0	10				1	93	15
8:15	1	0	5				4	100	2				5	0	4				0	123	6
8:30	0	0	4				1	59	2				11	0	6				2	115	4
8:45	0	0	1				1	70	4				10	0	6				0	117	9
9:00	0	1	6				4	87	7				13	0	6				5	88	4
9:15	0	0	0				0	63	5				11	1	5				4	92	2
9:30	1	0	0				1	74	4				5	1	4				3	108	2
9:45	1	1	1				0	66	2				9	0	2				3	79	3
10:00	0	0	1				0	67	2				6	0	1				2	112	2
10:15	0	0	0				0	77	6				5	0	5				0	90	1
10:30	2	0	2				1	79	2				2	0	4				1	101	1
10:45	1	0	1				0	69	4				7	0	0				3	119	0
11:00	1	0	2				0	80	4				5	0	2				1	110	2
11:15	3	0	3				0	83	7				4	0	1				3	137	1
11:30	1	0	1				0	100	4				9	0	0				2	129	2
11:45	1	0	0				0	97	3				5	0	1				2	116	1
12:00	0	0	1				1	108	2				7	0	4				3	143	0
12:15	0	0	0				0	110	7				5	0	5				2	110	0
12:30	0	0	1				3	130	9				7	0	6				6	129	1
12:45	1	1	1				0	133	0				7	1	2				3	114	2
1:00	0	0	5				1	140	3				5	0	3				2	108	0
1:15	1	0	1				2	140	3				2	0	5				2	84	1
1:30	0	0	1				2	120	3				10	0	3				5	111	2
1:45	0	0	5				1	123	5				7	0	0				2	91	1
2:00	2	0	1				0	123	8				7	0	4				4	102	1
2:15	2	0	3				2	113	8				5	0	4				3	92	1
2:30	3	0	2				0	119	5				3	0	3				2	108	3
2:45	1	0	2				0	114	3				4	0	2				4	119	1
3:00	2	0	1				1	139	7				5	1	0				5	135	1
3:15	2	0	1				0	126	4				6	0	2				4	137	1
3:30	2	0	0				0	128	7				4	0	4				8	141	5
3:45	1	0	2				2	139	10				3	0	2				1	112	1
4:00	2	0	4				0	146	6				4	0	3				6	141	5
4:15	1	0	1				2	135	14				4	0	7				8	148	5
4:30	1	1	1				3	133	11				10	0	5				10	136	7
4:45	1	0	3				1	152	15				9	0	5				4	137	9
5:00	0	0	4				4	196	9				10	0	2				11	107	13
5:15	1	0	7				2	190	11				14	0	6				10	165	11
5:30	1	0	3				2	169	13				18	0	4				10	151	3
5:45	0	0	2				0	160	11				8	0	4				8	173	0
6:00	0	0	1				0	132	12				8	0	7				9	138	0
6:15	0	0	1				0	157	9				14	0	1				6	115	1
6:30	0	0	0				0	127	14				11	0	4				2	115	1
6:45	0	0	1				0	134	9				4	0	5				2	98	1
7:00																					
7:15																					
7:30																					
7:45																					
8:00																					
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8:30																					
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9:45																					
10:00																					
10:15																					
10:30																					
10:45																					
11:00																					
11:15																					
11:30																					
11:45																					

Count Data Grown

	Southbound						Westbound						Northbound						Eastbound		
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left
0:00																					
12:15																					
12:30																					
12:45																					
1:00																					
1:15																					
1:30																					
1:45																					
2:00																					
2:15																					
2:30																					
2:45																					
3:00																					
3:15																					
3:30																					
3:45																					
4:00																					
4:15																					
4:30																					
4:45																					
5:00																					
5:15																					
5:30																					
5:45																					
6:00	0	0	0				0	27	1				6	0	6				0	29	0
6:15	1	0	0				0	40	0				9	0	2				0	29	0
6:30	0	0	0				0	53	1				5	0	8				1	57	0
6:45	0	0	1				0	59	2				8	0	6				2	70	3
7:00	0	0	1				0	56	3				9	0	5				3	94	1
7:15	0	0	1				2	80	4				13	0	10				4	110	3
7:30	0	1	2				1	69	3				17	0	9				0	170	6
7:45	0	0	4				2	93	3				8	0	9				1	152	11
8:00	0	0	6				4	98	1				8	0	10				1	94	15
8:15	1	0	5				4	101	2				5	0	4				0	124	6
8:30	0	0	4				1	60	2				11	0	6				2	116	4
8:45	0	0	1				1	71	4				10	0	6				0	118	9
9:00	0	1	6				4	88	7				13	0	6				5	89	4
9:15	0	0	0				0	64	5				11	1	5				4	93	2
9:30	1	0	0				1	75	4				5	1	4				3	109	2
9:45	1	1	1				0	67	2				9	0	2				3	80	3
10:00	0	0	1				0	68	2				6	0	1				2	113	2
10:15	0	0	0				0	78	6				5	0	5				0	91	1
10:30	2	0	2				1	80	2				2	0	4				1	102	1
10:45	1	0	1				0	70	4				7	0	0				3	120	0
11:00	1	0	2				0	81	4				5	0	2				1	111	2
11:15	3	0	3				0	84	7				4	0	1				3	138	1
11:30	1	0	1				0	101	4				9	0	0				2	130	2
11:45	1	0	0				0	98	3				5	0	1				2	117	1
12:00	0	0	1				1	109	2				7	0	4				3	144	0
12:15	0	0	0				0	111	7				5	0	5				2	111	0
12:30	0	0	1				3	131	9				7	0	6				6	130	1
12:45	1	1	1				0	134	0				7	1	2				3	115	2
1:00	0	0	5				1	141	3				5	0	3				2	109	0
1:15	1	0	1				2	141	3				2	0	5				2	85	1
1:30	0	0	1				2	121	3				10	0	3				5	112	2
1:45	0	0	5				1	124	5				7	0	0				2	92	1
2:00	2	0	1				0	124	8				7	0	4				4	103	1
2:15	2	0	3				2	114	8				5	0	4				3	93	1
2:30	3	0	2				0	120	5				3	0	3				2	109	3
2:45	1	0	2				0	115	3				4	0	2				4	120	1
3:00	2	0	1				1	140	7				5	1	0				5	136	1
3:15	2	0	1				0	127	4				6	0	2				4	138	1
3:30	2	0	0				0	129	7				4	0	4				8	142	5
3:45	1	0	2				2	140	10				3	0	2				1	113	1
4:00	2	0	4				0	147	6				4	0	3				6	142	5
4:15	1	0	1				2	136	14				4	0	7				8	149	5
4:30	1	1	1				3	134	11				10	0	5				10	137	7
4:45	1	0	3				1	154	15				9	0	5				4	138	9
5:00	0	0	4				4	198	9				10	0	2				11	108	13
5:15	1	0	7				2	192	11				14	0	6				10	167	11
5:30	1	0	3				2	171	13				18	0	4				10	153	3
5:45	0	0	2				0	162	11				8	0	4				8	175	0
6:00	0	0	1				0	133	12				8	0	7				9	139	0
6:15	0	0	1				0	159	9				14	0	1				6	116	1
6:30	0	0	0				0	128	14				11	0	4				2	116	1
6:45	0	0	1				0	135	9				4	0	5				2	99	1
7:00																					
7:15																					
7:30																					
7:45																					
8:00																					
8:15																					
8:30																					
8:45																					
9:00																					
9:15																					
9:30																					
9:45																					
10:00																					
10:15																					
10:30																					
10:45																					
11:00																					
11:15																					
11:30																					
11:45																					

Growth Rate	1.00%
Collection Year	2022
Design Year	2023

Trip Distribution - Distribution matches the distribution used in the TIS volumes.

	Southbound						Westbound		25% Enter				Northbound		25% Exit				Eastbound		25% Entry	945 - Convenience Market/Gas Station		960 Weekday
	Right	Thru	Left				Right	Thru	Left				Right	Thru	Left				Right	Thru	Left	Entry %	Exit %	Entry/Exit
0:00									12						13						12	1.2%	1.3%	3934
12:15																								
12:30																								
12:45																								
1:00									8						9						8	0.8%	0.9%	
1:15																								
1:30																								
1:45																								
2:00									6						6						6	0.6%	0.6%	
2:15																								
2:30																								
2:45																								
3:00									8						7						8	0.8%	0.7%	
3:15																								
3:30																								
3:45																								
4:00									15						14						15	1.6%	1.5%	
4:15																								
4:30																								
4:45																								
5:00									31						30						31	3.1%	3.0%	
5:15																								
5:30																								
5:45																								
6:00									46						44						46	4.7%	4.5%	
6:15																								
6:30																								
6:45																								
7:00									59						58						59	6.0%	5.9%	
7:15																								
7:30																								
7:45																								
8:00									64						63						64	6.5%	6.4%	
8:15																								
8:30																								
8:45																								
9:00									55						56						55	5.6%	5.7%	
9:15																								
9:30																								
9:45																								
10:00									52						52						52	5.3%	5.3%	
10:15																								
10:30																								
10:45																								
11:00									57						56						57	5.8%	5.7%	
11:15																								
11:30																								
11:45																								
12:00									65						65						65	6.6%	6.6%	
12:15																								
12:30																								
12:45																								
1:00									61						58						61	6.2%	5.9%	
1:15																								
1:30																								
1:45																								
2:00									59						61						59	6.0%	6.2%	
2:15																								
2:30																								
2:45																								
3:00									67						67						67	6.8%	6.8%	
3:15																								
3:30																								
3:45																								
4:00									62						64						62	6.3%	6.5%	
4:15																								
4:30																								
4:45																								
5:00									66						68						66	6.7%	6.9%	
5:15																								
5:30																								
5:45																								
6:00									52						53						52	5.3%	5.4%	
6:15																								
6:30																								
6:45																								
7:00									39						40						39	3.9%	4.0%	
7:15																								
7:30																								
7:45																								
8:00									33						33						33	3.4%	3.4%	
8:15																								
8:30																								
8:45																								
9:00									28						26						28	2.8%	2.7%	
9:15																								
9:30																								
9:45																								
10:00									21						20						21	2.1%	2.1%	
10:15																								
10:30																								
10:45																								
11:00									18						19						18	1.9%	2.0%	
11:15																								
11:30																								
11:45																								

Appendix G
Capacity Analysis

CARPENTER MARTY transportation

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	625	2	10	418	13	37	0	44	20	1	1
Future Vol, veh/h	44	625	2	10	418	13	37	0	44	20	1	1
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	115	-	-	115	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	679	2	11	454	14	40	0	48	22	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	468	0	0	681	0	0	1260	1266	680	1283	1260	461
Stage 1	-	-	-	-	-	-	776	776	-	483	483	-
Stage 2	-	-	-	-	-	-	484	490	-	800	777	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1094	-	-	912	-	-	147	169	451	142	170	600
Stage 1	-	-	-	-	-	-	390	407	-	565	553	-
Stage 2	-	-	-	-	-	-	564	549	-	379	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1094	-	-	912	-	-	140	160	451	122	161	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	160	-	122	161	-
Stage 1	-	-	-	-	-	-	373	389	-	540	546	-
Stage 2	-	-	-	-	-	-	555	542	-	324	389	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.2	26.2	38.8
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	140	451	1094	-	-	912	-	-	122	254
HCM Lane V/C Ratio	0.287	0.106	0.044	-	-	0.012	-	-	0.178	0.009
HCM Control Delay (s)	40.8	13.9	8.4	-	-	9	-	-	40.8	19.3
HCM Lane LOS	E	B	A	-	-	A	-	-	E	C
HCM 95th %tile Q(veh)	1.1	0.4	0.1	-	-	0	-	-	0.6	0

Intersection	
Int Delay, s/veh	13.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	651	2	71	383	13	98	0	44	20	1	1
Future Vol, veh/h	44	651	2	71	383	13	98	0	44	20	1	1
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	115	-	-	175	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	708	2	77	416	14	107	0	48	22	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	430	0	0	710	0	0	1383	1389	709	1406	1383	423
Stage 1	-	-	-	-	-	-	805	805	-	577	577	-
Stage 2	-	-	-	-	-	-	578	584	-	829	806	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1129	-	-	889	-	-	121	142	434	117	144	631
Stage 1	-	-	-	-	-	-	376	395	-	502	502	-
Stage 2	-	-	-	-	-	-	501	498	-	365	395	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1129	-	-	889	-	-	108	124	434	94	126	631
Mov Cap-2 Maneuver	-	-	-	-	-	-	108	124	-	94	126	-
Stage 1	-	-	-	-	-	-	360	378	-	480	458	-
Stage 2	-	-	-	-	-	-	456	455	-	311	378	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.4	112.7	51.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	108	434	1129	-	-	889	-	-	94	210
HCM Lane V/C Ratio	0.986	0.11	0.042	-	-	0.087	-	-	0.231	0.01
HCM Control Delay (s)	156.9	14.3	8.3	-	-	9.4	-	-	54.5	22.3
HCM Lane LOS	F	B	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	6.2	0.4	0.1	-	-	0.3	-	-	0.8	0

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	636	79	0	467	0	79
Future Vol, veh/h	636	79	0	467	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	691	86	0	508	0	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	734
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	420
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	420
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	420	-	-	-
HCM Lane V/C Ratio	0.204	-	-	-
HCM Control Delay (s)	15.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	413	737	79	61	79
Future Vol, veh/h	61	413	737	79	61	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	449	801	86	66	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	887	0	-	0	1425	844
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	581	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	763	-	-	-	149	363
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	763	-	-	-	136	363
Mov Cap-2 Maneuver	-	-	-	-	136	-
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	57.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	763	-	-	-	210
HCM Lane V/C Ratio	0.087	-	-	-	0.725
HCM Control Delay (s)	10.2	-	-	-	57.3
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	4.8

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	698	45	51	837	9	19	0	58	19	0	2
Future Vol, veh/h	31	698	45	51	837	9	19	0	58	19	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	115	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	759	49	55	910	10	21	0	63	21	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	920	0	0	808	0	0	1878	1882	784	1908	1901	915
Stage 1	-	-	-	-	-	-	852	852	-	1025	1025	-
Stage 2	-	-	-	-	-	-	1026	1030	-	883	876	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	742	-	-	817	-	-	54	71	393	52	69	331
Stage 1	-	-	-	-	-	-	354	376	-	284	312	-
Stage 2	-	-	-	-	-	-	283	311	-	340	367	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	742	-	-	817	-	-	49	63	393	40	61	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	49	63	-	40	61	-
Stage 1	-	-	-	-	-	-	338	359	-	271	291	-
Stage 2	-	-	-	-	-	-	262	290	-	272	350	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.6	42.6	152.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	49	393	742	-	-	817	-	-	40	331
HCM Lane V/C Ratio	0.421	0.16	0.045	-	-	0.068	-	-	0.516	0.007
HCM Control Delay (s)	124	15.9	10.1	-	-	9.7	-	-	167.2	15.9
HCM Lane LOS	F	C	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.5	0.6	0.1	-	-	0.2	-	-	1.8	0

Intersection	
Int Delay, s/veh	45.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	719	45	119	789	9	87	0	58	19	0	2
Future Vol, veh/h	31	719	45	119	789	9	87	0	58	19	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	175	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	782	49	129	858	10	95	0	63	21	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	868	0	0	831	0	0	1997	2001	807	2027	2020	863
Stage 1	-	-	-	-	-	-	875	875	-	1121	1121	-
Stage 2	-	-	-	-	-	-	1122	1126	-	906	899	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	776	-	-	801	-	-	~ 45	60	381	43	58	354
Stage 1	-	-	-	-	-	-	344	367	-	250	282	-
Stage 2	-	-	-	-	-	-	250	280	-	331	358	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	776	-	-	801	-	-	~ 38	48	381	30	47	354
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 38	48	-	30	47	-
Stage 1	-	-	-	-	-	-	329	351	-	239	237	-
Stage 2	-	-	-	-	-	-	208	235	-	264	342	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.3	$ 547.7	236.7
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	38	381	776	-	-	801	-	-	30	354
HCM Lane V/C Ratio	2.489	0.165	0.043	-	-	0.161	-	-	0.688	0.006
HCM Control Delay (s)	$ 901.9	16.3	9.8	-	-	10.4	-	-	260	15.2
HCM Lane LOS	F	C	A	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	10.5	0.6	0.1	-	-	0.6	-	-	2.3	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	735	61	0	917	0	61
Future Vol, veh/h	735	61	0	917	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	799	66	0	997	0	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	832
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	369
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	369
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	369	-	-	-
HCM Lane V/C Ratio	0.18	-	-	-
HCM Control Delay (s)	16.9	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.6	-	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	60	767	571	53	60	53
Future Vol, veh/h	60	767	571	53	60	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	834	621	58	65	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	679	0	-	0	1614	650
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	964	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	913	-	-	-	114	469
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	370	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	913	-	-	-	106	469
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	370	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	71.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	913	-	-	-	166
HCM Lane V/C Ratio	0.071	-	-	-	0.74
HCM Control Delay (s)	9.2	-	-	-	71.3
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.2	-	-	-	4.6

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	749	2	10	501	13	37	0	44	20	1	1
Future Vol, veh/h	44	749	2	10	501	13	37	0	44	20	1	1
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	115	-	-	115	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	814	2	11	545	14	40	0	48	22	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	559	0	0	816	0	0	1486	1492	815	1509	1486	552
Stage 1	-	-	-	-	-	-	911	911	-	574	574	-
Stage 2	-	-	-	-	-	-	575	581	-	935	912	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1012	-	-	812	-	-	103	123	377	99	124	533
Stage 1	-	-	-	-	-	-	328	353	-	504	503	-
Stage 2	-	-	-	-	-	-	503	500	-	318	353	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1012	-	-	812	-	-	97	116	377	82	117	533
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	116	-	82	117	-
Stage 1	-	-	-	-	-	-	313	336	-	480	496	-
Stage 2	-	-	-	-	-	-	494	493	-	264	336	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	38.9	60.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	97	377	1012	-	-	812	-	-	82	192
HCM Lane V/C Ratio	0.415	0.127	0.047	-	-	0.013	-	-	0.265	0.011
HCM Control Delay (s)	66.2	15.9	8.7	-	-	9.5	-	-	64	24
HCM Lane LOS	F	C	A	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	1.7	0.4	0.1	-	-	0	-	-	1	0

Intersection	
Int Delay, s/veh	25.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	775	2	71	466	13	98	0	44	20	1	1
Future Vol, veh/h	44	775	2	71	466	13	98	0	44	20	1	1
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	115	-	-	175	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	842	2	77	507	14	107	0	48	22	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	521	0	0	844	0	0	1608	1614	843	1631	1608	514
Stage 1	-	-	-	-	-	-	939	939	-	668	668	-
Stage 2	-	-	-	-	-	-	669	675	-	963	940	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1045	-	-	792	-	-	~ 84	104	364	81	105	560
Stage 1	-	-	-	-	-	-	317	343	-	448	456	-
Stage 2	-	-	-	-	-	-	447	453	-	307	342	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1045	-	-	792	-	-	~ 74	90	364	63	90	560
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 74	90	-	63	90	-
Stage 1	-	-	-	-	-	-	302	327	-	427	412	-
Stage 2	-	-	-	-	-	-	402	409	-	254	326	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	1.3	250.6	84.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	74	364	1045	-	-	792	-	-	63	155
HCM Lane V/C Ratio	1.439	0.131	0.046	-	-	0.097	-	-	0.345	0.014
HCM Control Delay (s)	$ 355.7	16.4	8.6	-	-	10	-	-	89.7	28.6
HCM Lane LOS	F	C	A	-	-	B	-	-	F	D
HCM 95th %tile Q(veh)	8.7	0.4	0.1	-	-	0.3	-	-	1.3	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	760	79	0	550	0	79
Future Vol, veh/h	760	79	0	550	0	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	826	86	0	598	0	86

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	869
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	351
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	351
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	351	-	-	-
HCM Lane V/C Ratio	0.245	-	-	-
HCM Control Delay (s)	18.5	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.9	-	-	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	61	502	893	79	61	79
Future Vol, veh/h	61	502	893	79	61	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	66	546	971	86	66	86

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1057	0	-	0	1692	1014
Stage 1	-	-	-	-	1014	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	659	-	-	-	102	290
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	504	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	659	-	-	-	92	290
Mov Cap-2 Maneuver	-	-	-	-	92	-
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	504	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	137
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	659	-	-	-	150
HCM Lane V/C Ratio	0.101	-	-	-	1.014
HCM Control Delay (s)	11.1	-	-	-	137
HCM Lane LOS	B	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	7.7

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	836	45	51	1003	9	19	0	58	19	0	2
Future Vol, veh/h	31	836	45	51	1003	9	19	0	58	19	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	115	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	909	49	55	1090	10	21	0	63	21	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1100	0	0	958	0	0	2208	2212	934	2238	2231	1095
Stage 1	-	-	-	-	-	-	1002	1002	-	1205	1205	-
Stage 2	-	-	-	-	-	-	1206	1210	-	1033	1026	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	635	-	-	718	-	-	32	44	322	30	43	260
Stage 1	-	-	-	-	-	-	292	320	-	225	257	-
Stage 2	-	-	-	-	-	-	224	255	-	281	312	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	635	-	-	718	-	-	29	38	322	22	38	260
Mov Cap-2 Maneuver	-	-	-	-	-	-	29	38	-	22	38	-
Stage 1	-	-	-	-	-	-	276	303	-	213	237	-
Stage 2	-	-	-	-	-	-	205	235	-	214	295	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	81.9	$ 380.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	29	322	635	-	-	718	-	-	22	260
HCM Lane V/C Ratio	0.712	0.196	0.053	-	-	0.077	-	-	0.939	0.008
HCM Control Delay (s)	274.1	18.9	11	-	-	10.4	-	-	$ 418.1	19
HCM Lane LOS	F	C	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	2.3	0.7	0.2	-	-	0.2	-	-	2.7	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	84.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	857	45	119	955	9	87	0	58	19	0	2
Future Vol, veh/h	31	857	45	119	955	9	87	0	58	19	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	115	-	-	175	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	932	49	129	1038	10	95	0	63	21	0	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1048	0	0	981	0	0	2327	2331	957	2357	2350	1043
Stage 1	-	-	-	-	-	-	1025	1025	-	1301	1301	-
Stage 2	-	-	-	-	-	-	1302	1306	-	1056	1049	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	664	-	-	704	-	-	~ 26	37	313	25	36	279
Stage 1	-	-	-	-	-	-	284	312	-	198	231	-
Stage 2	-	-	-	-	-	-	198	230	-	272	304	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	664	-	-	704	-	-	~ 21	29	313	~ 17	28	279
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 21	29	-	~ 17	28	-
Stage 1	-	-	-	-	-	-	270	296	-	188	189	-
Stage 2	-	-	-	-	-	-	160	188	-	206	288	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	1.2	$ 1177	$ 552.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	21	313	664	-	-	704	-	-	17	279
HCM Lane V/C Ratio	4.503	0.201	0.051	-	-	0.184	-	-	1.215	0.008
HCM Control Delay (s)	$ 1948.8	19.4	10.7	-	-	11.3	-	-	$ 608.8	18
HCM Lane LOS	F	C	B	-	-	B	-	-	F	C
HCM 95th %tile Q(veh)	12.1	0.7	0.2	-	-	0.7	-	-	3	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	873	61	0	1083	0	61
Future Vol, veh/h	873	61	0	1083	0	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	949	66	0	1177	0	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	-	-	-	982
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	-	-	0	-	0	302
Stage 1	-	-	0	-	0	-
Stage 2	-	-	0	-	0	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	-	-	-	302
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	302	-	-	-
HCM Lane V/C Ratio	0.22	-	-	-
HCM Control Delay (s)	20.2	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-

Intersection	
Int Delay, s/veh	12

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	60	927	690	53	60	53
Future Vol, veh/h	60	927	690	53	60	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	125	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	65	1008	750	58	65	58

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	808	0	-	0	1917	779
Stage 1	-	-	-	-	779	-
Stage 2	-	-	-	-	1138	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	817	-	-	-	74	396
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	306	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	817	-	-	-	68	396
Mov Cap-2 Maneuver	-	-	-	-	68	-
Stage 1	-	-	-	-	416	-
Stage 2	-	-	-	-	306	-

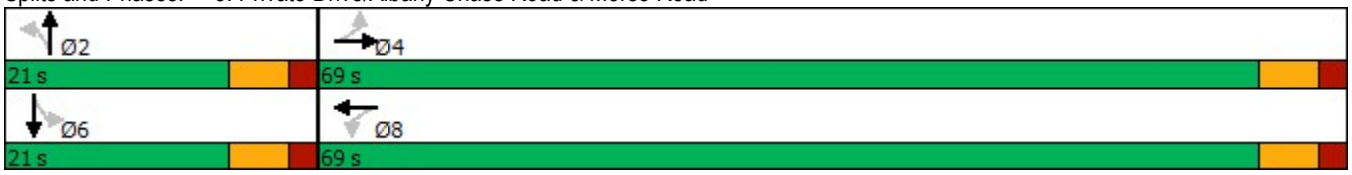
Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	190.7
HCM LOS			F

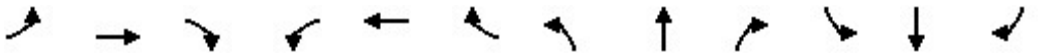
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	817	-	-	-	111
HCM Lane V/C Ratio	0.08	-	-	-	1.107
HCM Control Delay (s)	9.8	-	-	-	190.7
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	7.6

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	21	69	21	69
Maximum Split (%)	23.3%	76.7%	23.3%	76.7%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	21	0	21
End Time (s)	21	0	21	0
Yield/Force Off (s)	15	84	15	84
Yield/Force Off 170(s)	15	84	15	84
Local Start Time (s)	0	21	0	21
Local Yield (s)	15	84	15	84
Local Yield 170(s)	15	84	15	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	45

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	625	2	10	418	13	37	0	44	20	1	1
Future Volume (veh/h)	44	625	2	10	418	13	37	0	44	20	1	1
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	679	2	11	454	14	40	0	48	22	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	507	955	3	361	925	29	438	0	286	394	155	155
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.18	0.00	0.18	0.18	0.18	0.18
Sat Flow, veh/h	925	1864	5	759	1805	56	1415	0	1585	1357	858	858
Grp Volume(v), veh/h	48	0	681	11	0	468	40	0	48	22	0	2
Grp Sat Flow(s),veh/h/ln	925	0	1869	759	0	1860	1415	0	1585	1357	0	1716
Q Serve(g_s), s	1.4	0.0	10.9	0.4	0.0	6.4	0.9	0.0	1.0	0.5	0.0	0.0
Cycle Q Clear(g_c), s	7.8	0.0	10.9	11.3	0.0	6.4	1.0	0.0	1.0	1.5	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	507	0	958	361	0	953	438	0	286	394	0	309
V/C Ratio(X)	0.09	0.00	0.71	0.03	0.00	0.49	0.09	0.00	0.17	0.06	0.00	0.01
Avail Cap(c_a), veh/h	1526	0	3017	1198	0	3003	727	0	609	671	0	659
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	8.7	0.0	7.3	11.6	0.0	6.2	13.5	0.0	13.5	14.2	0.0	13.1
Incr Delay (d2), s/veh	0.1	0.0	1.0	0.0	0.0	0.4	0.1	0.0	0.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.1	0.1	0.0	1.2	0.3	0.0	0.3	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	0.0	8.3	11.7	0.0	6.6	13.6	0.0	13.8	14.2	0.0	13.1
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h		729			479			88			24	
Approach Delay, s/veh		8.3			6.7			13.7			14.1	
Approach LOS		A			A			B			B	

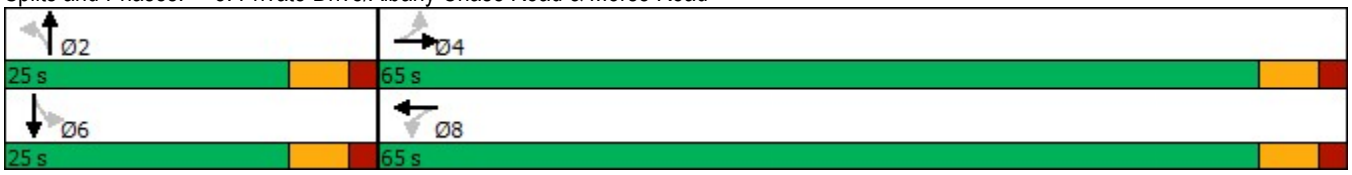
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.0		26.0		13.0		26.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0		63.0		15.0		63.0				
Max Q Clear Time (g_c+I1), s		3.0		12.9		3.5		13.3				
Green Ext Time (p_c), s		0.2		5.2		0.0		3.0				

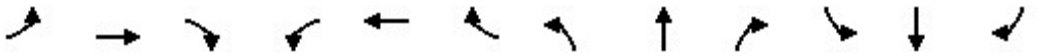
Intersection Summary												
HCM 6th Ctrl Delay			8.2									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	25	65	25	65
Maximum Split (%)	27.8%	72.2%	27.8%	72.2%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	25	0	25
End Time (s)	25	0	25	0
Yield/Force Off (s)	19	84	19	84
Yield/Force Off 170(s)	19	84	19	84
Local Start Time (s)	0	25	0	25
Local Yield (s)	19	84	19	84
Local Yield 170(s)	19	84	19	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	50

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	651	2	71	383	13	98	0	44	20	1	1
Future Volume (veh/h)	44	651	2	71	383	13	98	0	44	20	1	1
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	708	2	77	416	14	107	0	48	22	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	519	956	3	327	922	31	459	0	327	415	177	177
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.21	0.00	0.21	0.21	0.21	0.21
Sat Flow, veh/h	958	1864	5	739	1799	61	1415	0	1585	1357	858	858
Grp Volume(v), veh/h	48	0	710	77	0	430	107	0	48	22	0	2
Grp Sat Flow(s),veh/h/ln	958	0	1869	739	0	1859	1415	0	1585	1357	0	1716
Q Serve(g_s), s	1.4	0.0	12.7	3.9	0.0	6.3	2.8	0.0	1.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	7.7	0.0	12.7	16.6	0.0	6.3	2.8	0.0	1.1	1.6	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	519	0	959	327	0	953	459	0	327	415	0	354
V/C Ratio(X)	0.09	0.00	0.74	0.24	0.00	0.45	0.23	0.00	0.15	0.05	0.00	0.01
Avail Cap(c_a), veh/h	1352	0	2583	970	0	2570	797	0	705	739	0	764
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	9.0	0.0	8.2	14.7	0.0	6.6	14.6	0.0	13.9	14.5	0.0	13.5
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.4	0.0	0.3	0.3	0.0	0.2	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.9	0.5	0.0	1.3	0.8	0.0	0.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	9.3	15.1	0.0	6.9	14.8	0.0	14.1	14.6	0.0	13.5
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h		758			507			155			24	
Approach Delay, s/veh		9.3			8.2			14.6			14.5	
Approach LOS		A			A			B			B	

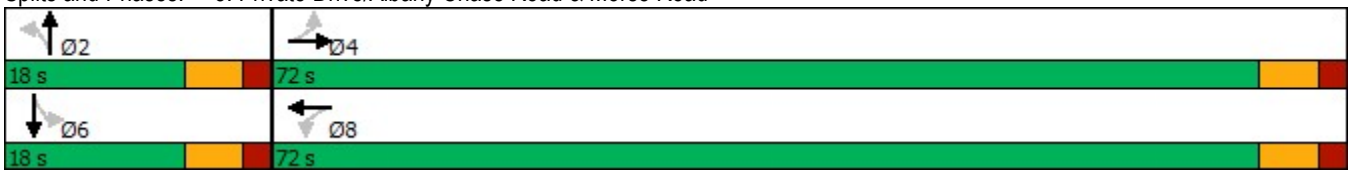
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.8		27.9		14.8		27.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		19.0		59.0		19.0		59.0				
Max Q Clear Time (g_c+I1), s		4.8		14.7		3.6		18.6				
Green Ext Time (p_c), s		0.4		5.4		0.0		3.3				

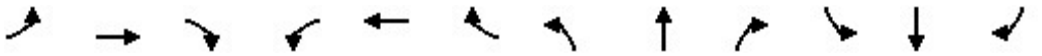
Intersection Summary												
HCM 6th Ctrl Delay			9.6									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	18	72	18	72
Maximum Split (%)	20.0%	80.0%	20.0%	80.0%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	18	0	18
End Time (s)	18	0	18	0
Yield/Force Off (s)	12	84	12	84
Yield/Force Off 170(s)	12	84	12	84
Local Start Time (s)	0	18	0	18
Local Yield (s)	12	84	12	84
Local Yield 170(s)	12	84	12	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	698	45	51	837	9	19	0	58	19	0	2
Future Volume (veh/h)	31	698	45	51	837	9	19	0	58	19	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	759	49	55	910	10	21	0	63	21	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	279	1053	68	346	1119	12	361	0	245	304	0	245
Arrive On Green	0.61	0.61	0.61	0.61	0.61	0.61	0.15	0.00	0.15	0.15	0.00	0.15
Sat Flow, veh/h	607	1738	112	675	1846	20	1415	0	1585	1339	0	1585
Grp Volume(v), veh/h	34	0	808	55	0	920	21	0	63	21	0	2
Grp Sat Flow(s),veh/h/ln	607	0	1850	675	0	1867	1415	0	1585	1339	0	1585
Q Serve(g_s), s	2.3	0.0	15.3	3.1	0.0	19.2	0.6	0.0	1.8	0.7	0.0	0.1
Cycle Q Clear(g_c), s	21.5	0.0	15.3	18.4	0.0	19.2	0.7	0.0	1.8	2.5	0.0	0.1
Prop In Lane	1.00		0.06	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	0	1121	346	0	1131	361	0	245	304	0	245
V/C Ratio(X)	0.12	0.00	0.72	0.16	0.00	0.81	0.06	0.00	0.26	0.07	0.00	0.01
Avail Cap(c_a), veh/h	711	0	2438	827	0	2460	481	0	380	418	0	380
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	16.0	0.0	6.9	13.4	0.0	7.7	18.2	0.0	18.6	19.7	0.0	17.9
Incr Delay (d2), s/veh	0.2	0.0	0.9	0.2	0.0	1.5	0.1	0.0	0.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.1	0.4	0.0	4.0	0.2	0.0	0.6	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.2	0.0	7.8	13.6	0.0	9.1	18.3	0.0	19.2	19.8	0.0	17.9
LnGrp LOS	B	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h		842			975			84			23	
Approach Delay, s/veh		8.1			9.4			19.0			19.7	
Approach LOS		A			A			B			B	

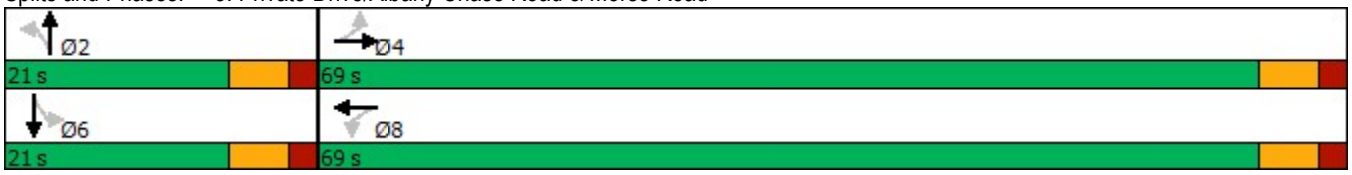
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.7		36.3		13.7		36.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		12.0		66.0		12.0		66.0				
Max Q Clear Time (g_c+I1), s		3.8		23.5		4.5		21.2				
Green Ext Time (p_c), s		0.2		6.8		0.0		8.8				

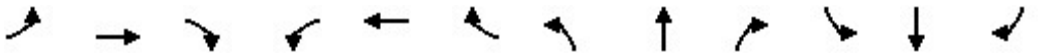
Intersection Summary												
HCM 6th Ctrl Delay			9.4									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	21	69	21	69
Maximum Split (%)	23.3%	76.7%	23.3%	76.7%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	21	0	21
End Time (s)	21	0	21	0
Yield/Force Off (s)	15	84	15	84
Yield/Force Off 170(s)	15	84	15	84
Local Start Time (s)	0	21	0	21
Local Yield (s)	15	84	15	84
Local Yield 170(s)	15	84	15	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	719	45	119	789	9	87	0	58	19	0	2
Future Volume (veh/h)	31	719	45	119	789	9	87	0	58	19	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	782	49	129	858	10	95	0	63	21	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	326	1107	69	346	1173	14	348	0	255	291	0	255
Arrive On Green	0.64	0.64	0.64	0.64	0.64	0.64	0.16	0.00	0.16	0.16	0.00	0.16
Sat Flow, veh/h	638	1742	109	660	1845	22	1415	0	1585	1339	0	1585
Grp Volume(v), veh/h	34	0	831	129	0	868	95	0	63	21	0	2
Grp Sat Flow(s),veh/h/ln	638	0	1851	660	0	1866	1415	0	1585	1339	0	1585
Q Serve(g_s), s	2.3	0.0	17.5	9.5	0.0	18.7	3.6	0.0	2.0	0.8	0.0	0.1
Cycle Q Clear(g_c), s	20.9	0.0	17.5	27.0	0.0	18.7	3.6	0.0	2.0	2.9	0.0	0.1
Prop In Lane	1.00		0.06	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	326	0	1177	346	0	1187	348	0	255	291	0	255
V/C Ratio(X)	0.10	0.00	0.71	0.37	0.00	0.73	0.27	0.00	0.25	0.07	0.00	0.01
Avail Cap(c_a), veh/h	601	0	1977	631	0	1994	480	0	403	416	0	403
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	14.4	0.0	7.1	16.0	0.0	7.3	22.3	0.0	21.6	22.9	0.0	20.8
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.7	0.0	0.9	0.4	0.0	0.5	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.9	1.2	0.0	4.2	1.2	0.0	0.8	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.6	0.0	7.9	16.7	0.0	8.2	22.7	0.0	22.1	23.0	0.0	20.8
LnGrp LOS	B	A	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		865			997			158			23	
Approach Delay, s/veh		8.2			9.3			22.5			22.8	
Approach LOS		A			A			C			C	

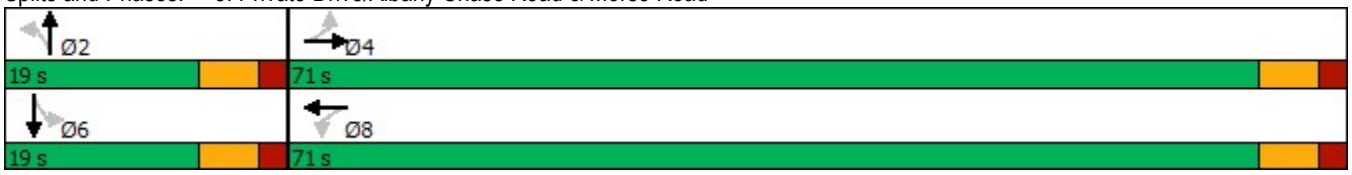
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.5		43.5		15.5		43.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		15.0		63.0		15.0		63.0				
Max Q Clear Time (g_c+I1), s		5.6		22.9		4.9		29.0				
Green Ext Time (p_c), s		0.4		7.1		0.0		8.5				

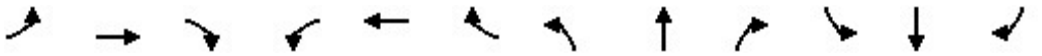
Intersection Summary												
HCM 6th Ctrl Delay			10.0									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	19	71	19	71
Maximum Split (%)	21.1%	78.9%	21.1%	78.9%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	19	0	19
End Time (s)	19	0	19	0
Yield/Force Off (s)	13	84	13	84
Yield/Force Off 170(s)	13	84	13	84
Local Start Time (s)	0	19	0	19
Local Yield (s)	13	84	13	84
Local Yield 170(s)	13	84	13	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	749	2	10	501	13	37	0	44	20	1	1
Future Volume (veh/h)	44	749	2	10	501	13	37	0	44	20	1	1
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	814	2	11	545	14	40	0	48	22	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	472	1030	3	304	1002	26	407	0	271	363	147	147
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.17	0.00	0.17	0.17	0.17	0.17
Sat Flow, veh/h	850	1865	5	670	1815	47	1415	0	1585	1357	858	858
Grp Volume(v), veh/h	48	0	816	11	0	559	40	0	48	22	0	2
Grp Sat Flow(s),veh/h/ln	850	0	1870	670	0	1862	1415	0	1585	1357	0	1716
Q Serve(g_s), s	1.7	0.0	15.0	0.6	0.0	8.3	1.0	0.0	1.1	0.6	0.0	0.0
Cycle Q Clear(g_c), s	10.0	0.0	15.0	15.6	0.0	8.3	1.1	0.0	1.1	1.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	472	0	1032	304	0	1028	407	0	271	363	0	293
V/C Ratio(X)	0.10	0.00	0.79	0.04	0.00	0.54	0.10	0.00	0.18	0.06	0.00	0.01
Avail Cap(c_a), veh/h	1279	0	2805	939	0	2794	589	0	476	538	0	515
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	9.4	0.0	7.7	13.9	0.0	6.2	15.4	0.0	15.4	16.1	0.0	14.9
Incr Delay (d2), s/veh	0.1	0.0	1.4	0.0	0.0	0.4	0.1	0.0	0.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	3.1	0.1	0.0	1.6	0.3	0.0	0.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.5	0.0	9.1	14.0	0.0	6.7	15.5	0.0	15.7	16.2	0.0	14.9
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h		864			570			88			24	
Approach Delay, s/veh		9.1			6.8			15.6			16.1	
Approach LOS		A			A			B			B	

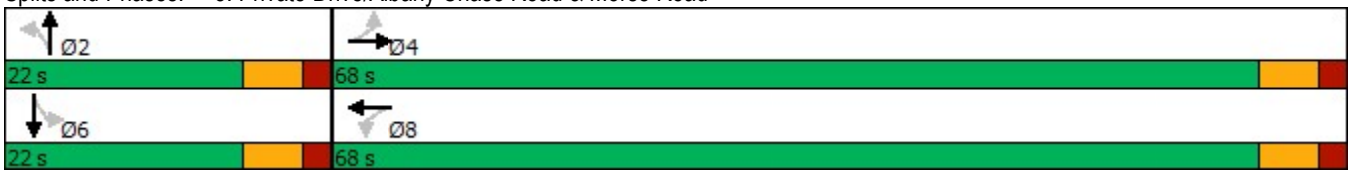
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.4		29.9		13.4		29.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		13.0		65.0		13.0		65.0				
Max Q Clear Time (g_c+I1), s		3.1		17.0		3.7		17.6				
Green Ext Time (p_c), s		0.2		6.9		0.0		3.8				

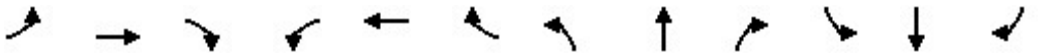
Intersection Summary												
HCM 6th Ctrl Delay			8.7									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	None
Maximum Split (s)	22	68	22	68
Maximum Split (%)	24.4%	75.6%	24.4%	75.6%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	22	0	22
End Time (s)	22	0	22	0
Yield/Force Off (s)	16	84	16	84
Yield/Force Off 170(s)	16	84	16	84
Local Start Time (s)	0	22	0	22
Local Yield (s)	16	84	16	84
Local Yield 170(s)	16	84	16	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	55

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	775	2	71	466	13	98	0	44	20	1	1
Future Volume (veh/h)	44	775	2	71	466	13	98	0	44	20	1	1
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	842	2	77	507	14	107	0	48	22	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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	506	1073	3	292	1042	29	403	0	291	359	158	158
Arrive On Green	0.58	0.58	0.58	0.58	0.58	0.58	0.18	0.00	0.18	0.18	0.18	0.18
Sat Flow, veh/h	881	1865	4	652	1811	50	1415	0	1585	1357	858	858
Grp Volume(v), veh/h	48	0	844	77	0	521	107	0	48	22	0	2
Grp Sat Flow(s),veh/h/ln	881	0	1870	652	0	1861	1415	0	1585	1357	0	1716
Q Serve(g_s), s	1.7	0.0	17.4	5.2	0.0	8.2	3.3	0.0	1.3	0.7	0.0	0.0
Cycle Q Clear(g_c), s	9.9	0.0	17.4	22.6	0.0	8.2	3.4	0.0	1.3	2.0	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.03	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	506	0	1076	292	0	1071	403	0	291	359	0	315
V/C Ratio(X)	0.09	0.00	0.78	0.26	0.00	0.49	0.27	0.00	0.16	0.06	0.00	0.01
Avail Cap(c_a), veh/h	1095	0	2325	728	0	2315	597	0	509	546	0	551
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	9.2	0.0	8.2	16.9	0.0	6.2	18.0	0.0	17.1	17.9	0.0	16.6
Incr Delay (d2), s/veh	0.1	0.0	1.3	0.5	0.0	0.3	0.3	0.0	0.3	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	4.0	0.7	0.0	1.8	1.0	0.0	0.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	9.5	17.4	0.0	6.6	18.4	0.0	17.4	18.0	0.0	16.6
LnGrp LOS	A	A	A	B	A	A	B	A	B	B	A	B
Approach Vol, veh/h		892			598			155			24	
Approach Delay, s/veh		9.5			8.0			18.1			17.9	
Approach LOS		A			A			B			B	

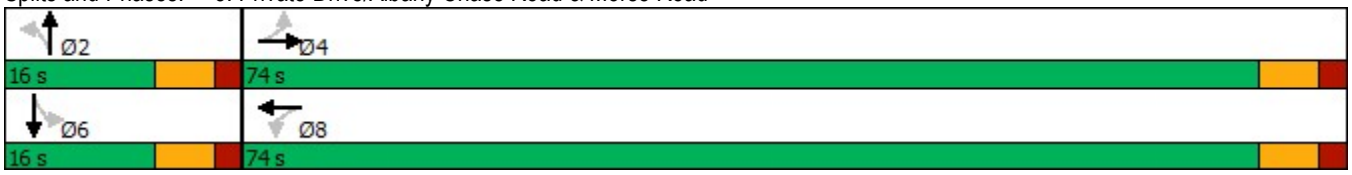
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.2		34.7		15.2		34.7				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		16.0		62.0		16.0		62.0				
Max Q Clear Time (g_c+I1), s		5.4		19.4		4.0		24.6				
Green Ext Time (p_c), s		0.4		7.2		0.0		4.1				

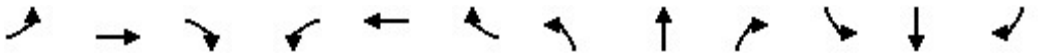
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	16	74	16	74
Maximum Split (%)	17.8%	82.2%	17.8%	82.2%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	16	0	16
End Time (s)	16	0	16	0
Yield/Force Off (s)	10	84	10	84
Yield/Force Off 170(s)	10	84	10	84
Local Start Time (s)	0	16	0	16
Local Yield (s)	10	84	10	84
Local Yield 170(s)	10	84	10	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	836	45	51	1003	9	19	0	58	19	0	2
Future Volume (veh/h)	31	836	45	51	1003	9	19	0	58	19	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	909	49	55	1090	10	21	0	63	21	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	1198	65	311	1260	12	298	0	210	241	0	210
Arrive On Green	0.68	0.68	0.68	0.68	0.68	0.68	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	513	1759	95	586	1850	17	1415	0	1585	1339	0	1585
Grp Volume(v), veh/h	34	0	958	55	0	1100	21	0	63	21	0	2
Grp Sat Flow(s),veh/h/ln	513	0	1853	586	0	1867	1415	0	1585	1339	0	1585
Q Serve(g_s), s	3.5	0.0	22.0	4.4	0.0	29.4	0.8	0.0	2.3	0.9	0.0	0.1
Cycle Q Clear(g_c), s	33.0	0.0	22.0	26.4	0.0	29.4	0.9	0.0	2.3	3.2	0.0	0.1
Prop In Lane	1.00		0.05	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	227	0	1262	311	0	1272	298	0	210	241	0	210
V/C Ratio(X)	0.15	0.00	0.76	0.18	0.00	0.86	0.07	0.00	0.30	0.09	0.00	0.01
Avail Cap(c_a), veh/h	419	0	1958	531	0	1973	330	0	246	272	0	246
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	20.8	0.0	6.8	15.5	0.0	8.0	24.6	0.0	25.2	26.7	0.0	24.3
Incr Delay (d2), s/veh	0.3	0.0	1.0	0.3	0.0	2.7	0.1	0.0	0.8	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	4.6	0.5	0.0	6.7	0.3	0.0	0.9	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.1	0.0	7.7	15.7	0.0	10.6	24.7	0.0	26.0	26.8	0.0	24.3
LnGrp LOS	C	A	A	B	A	B	C	A	C	C	A	C
Approach Vol, veh/h		992			1155			84			23	
Approach Delay, s/veh		8.2			10.9			25.7			26.6	
Approach LOS		A			B			C			C	

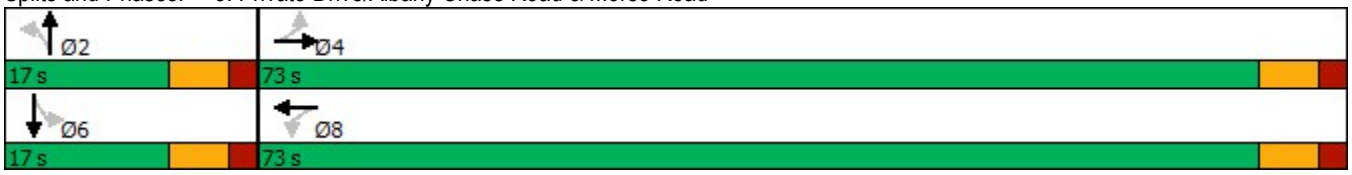
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		14.5		49.8		14.5		49.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		10.0		68.0		10.0		68.0				
Max Q Clear Time (g_c+I1), s		4.3		35.0		5.2		31.4				
Green Ext Time (p_c), s		0.1		8.9		0.0		12.0				

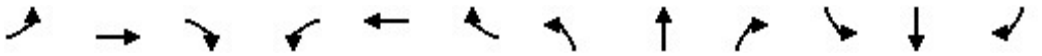
Intersection Summary												
HCM 6th Ctrl Delay			10.4									
HCM 6th LOS			B									

Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	None	Min	None	Min
Maximum Split (s)	17	73	17	73
Maximum Split (%)	18.9%	81.1%	18.9%	81.1%
Minimum Split (s)	16	26	16	26
Yellow Time (s)	4	4	4	4
All-Red Time (s)	2	2	2	2
Minimum Initial (s)	10	20	10	20
Vehicle Extension (s)	3	3	3	3
Minimum Gap (s)	3	3	3	3
Time Before Reduce (s)	0	0	0	0
Time To Reduce (s)	0	0	0	0
Walk Time (s)				
Flash Dont Walk (s)				
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	17	0	17
End Time (s)	17	0	17	0
Yield/Force Off (s)	11	84	11	84
Yield/Force Off 170(s)	11	84	11	84
Local Start Time (s)	0	17	0	17
Local Yield (s)	11	84	11	84
Local Yield 170(s)	11	84	11	84

Intersection Summary	
Cycle Length	90
Control Type	Actuated-Uncoordinated
Natural Cycle	60

Splits and Phases: 5: Private Drive/Albany Chase Road & Morse Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	857	45	119	955	9	87	0	58	19	0	2
Future Volume (veh/h)	31	857	45	119	955	9	87	0	58	19	0	2
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	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	932	49	129	1038	10	95	0	63	21	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	270	1233	65	308	1295	12	288	0	213	231	0	213
Arrive On Green	0.70	0.70	0.70	0.70	0.70	0.70	0.13	0.00	0.13	0.13	0.00	0.13
Sat Flow, veh/h	538	1761	93	574	1849	18	1415	0	1585	1339	0	1585
Grp Volume(v), veh/h	34	0	981	129	0	1048	95	0	63	21	0	2
Grp Sat Flow(s),veh/h/ln	538	0	1854	574	0	1867	1415	0	1585	1339	0	1585
Q Serve(g_s), s	3.3	0.0	24.4	13.4	0.0	27.8	4.5	0.0	2.6	1.0	0.0	0.1
Cycle Q Clear(g_c), s	31.2	0.0	24.4	37.8	0.0	27.8	4.6	0.0	2.6	3.6	0.0	0.1
Prop In Lane	1.00		0.05	1.00		0.01	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	270	0	1298	308	0	1307	288	0	213	231	0	213
V/C Ratio(X)	0.13	0.00	0.76	0.42	0.00	0.80	0.33	0.00	0.30	0.09	0.00	0.01
Avail Cap(c_a), veh/h	390	0	1713	436	0	1725	312	0	240	254	0	240
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	18.1	0.0	6.9	19.0	0.0	7.4	29.2	0.0	28.3	29.9	0.0	27.2
Incr Delay (d2), s/veh	0.2	0.0	1.4	0.9	0.0	2.1	0.7	0.0	0.8	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	5.7	1.6	0.0	6.7	1.6	0.0	1.0	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.3	0.0	8.3	19.9	0.0	9.5	29.9	0.0	29.1	30.1	0.0	27.2
LnGrp LOS	B	A	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1015			1177			158			23	
Approach Delay, s/veh		8.7			10.7			29.5			29.9	
Approach LOS		A			B			C			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		15.7		56.8		15.7		56.8				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		11.0		67.0		11.0		67.0				
Max Q Clear Time (g_c+I1), s		6.6		33.2		5.6		39.8				
Green Ext Time (p_c), s		0.2		9.3		0.0		10.9				

Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									