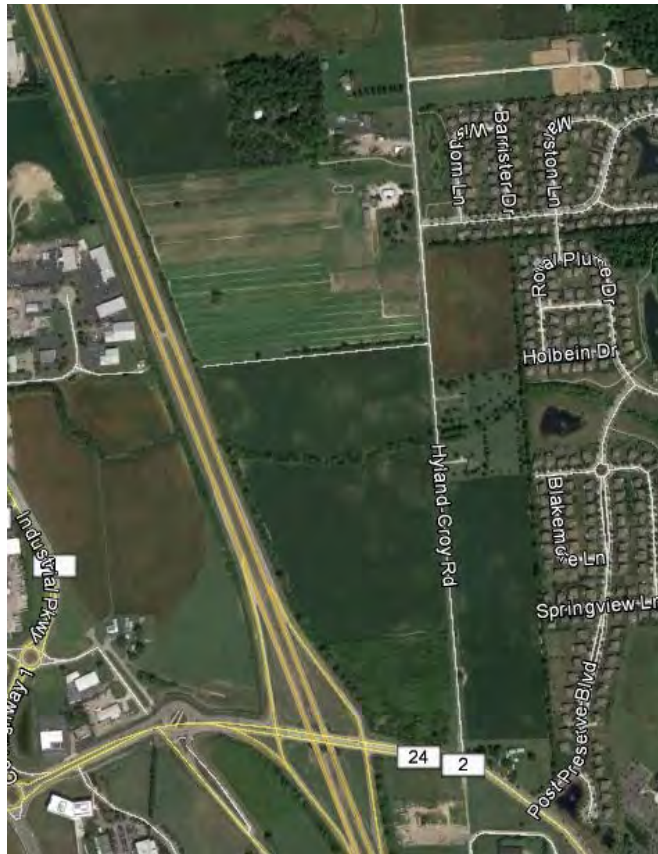


Gorden Development Jacquemin Development

June 16, 2017

Traffic Impact Study



6612 Singletree Drive
Columbus, Ohio 43229
614.656.2424
www.cmtran.com

CARPENTER
MARTY *transportation*

Table of Contents

1.0	INTRODUCTION	1
2.0	PROPOSED DEVELOPMENT	1
2.1	Location	
3.0	AREA CONDITIONS AND STUDY SCOPE	3
3.1	Study Area and Data Collection	
3.2	Existing Conditions	
3.3	Site Plan	
3.3.1	Gorden Site	
3.3.2	Jacquemin Site	
4.0	PROJECTED TRAFFIC.....	5
4.1	Background and No Build Traffic	
4.2	Site Traffic	
4.2.1	Trip Generation	
4.2.2	Trip Distribution & Assignment	
4.3	Build Traffic	
5.0	TRAFFIC ANALYSIS	10
5.1	Turn Lanes	
5.2	Signal Warrant Analysis	
5.3	Capacity & Level of Service (LOS)	
5.4	Sight Distance Analysis	
6.0	RESULTS	11
6.1	Turn Lane Warrant Analysis	
6.2	Signal Warrant Analysis	
6.3	Capacity Analysis	
6.4	Sight Distance Analysis	
7.0	SITE TRAFFIC PERCENTAGES.....	15

8.0	RECOMMENDATIONS.....	16
9.0	APPENDICES	21

List of Figures

Figure 1 – Proposed Site Location in Central Ohio	1
Figure 2 - Location of the Proposed Site, Access Drives, and Study Intersections	2

List of Tables

Table 1 - Area Development Background Traffic.....	6
Table 2 – Gorden Site Trip Generation Summary	7
Table 3 - Jacquemin Phase 1 Trip Generation Summary.....	8
Table 4 - Jacquemin Phase 2 Trip Generation Summary.....	8
Table 5 – Turn Lane Warrant and Signal Warrant Results	12
Table 6 - AM and PM Peak Capacity Results (LOS/ delay)	13
Table 7 – Noted Intersection Improvements.....	14
Table 8 - Gorden Development Improvements	18
Table 9 - Jacquemin Farms Phase 1 Development Improvements	19
Table 10 - Jacquemin Farms Phase 2 Development Improvements	20

List of Appendices

Appendix A – Memorandum of Understanding
Appendix B – Count Data
Appendix C – Conceptual Site Plans
Appendix D – Volume Development
Appendix E – Trip Generation
Appendix F – Turn Lane & Signal Warrant Analysis
Appendix G - Capacity Analysis
Appendix H - Sight Distance Analysis

1.0 Introduction

Two separate mixed-use developments are proposed to be built along Hyland-Croy Road in Ohio, Union County. The first development is Hyland-Croy Gateway East and is located at the northeast intersection of Hyland-Croy Road and Post Road. For purposes of this report, the first development is referred to as “*Gorden Development*.” The second development is Hyland-Croy Gateway West and is located at the northwest intersection of Hyland-Croy Road and Weldon Road. For purposes of this report, the second development is referred to as “*Jacquemin Farms Development*.” This traffic analysis and report will document, on an individual basis for each development, the potential traffic impacts that the Gorden Development and the Jacquemin Farms Development will have upon surrounding intersections. This study and report are being requested and reviewed by the City of Dublin and Union County. A Memorandum of Understanding, approved by the City of Dublin and Union County, can be found in Appendix A.

2.0 Proposed Development

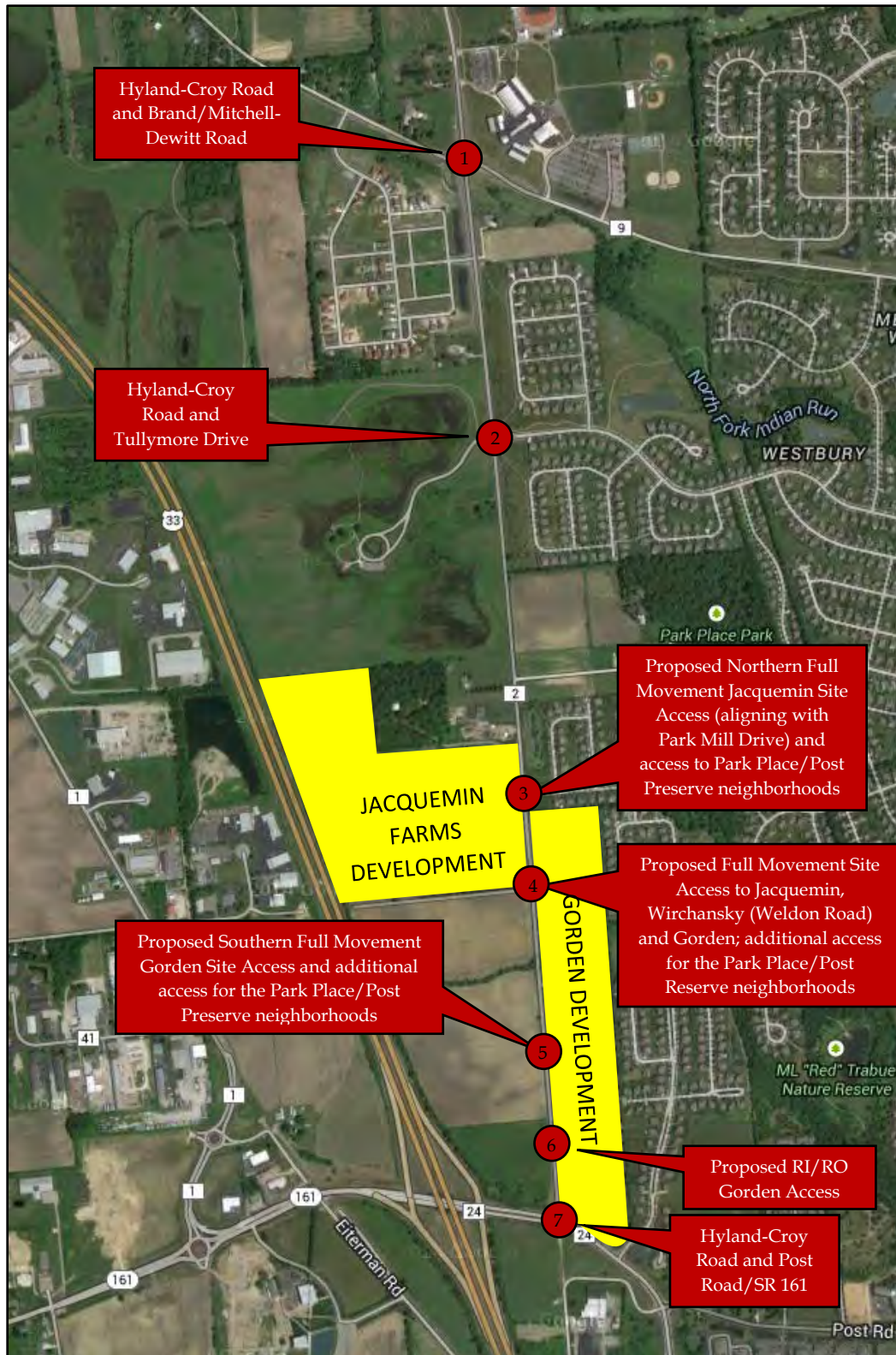
2.1 Location

The Gorden and Jacquemin Farms properties are both located in Union County, Ohio, along Hyland-Croy Road. Figure 1 shows the general location of both the Gorden Property and the proposed site in Central Ohio. Figure 2 shows the property site locations along Hyland-Croy Road as well as the intersections under study.

Figure 1 – Proposed Site Location in Central Ohio



Figure 2 - Location of the Proposed Site, Access Drives, and Study Intersections



3.0 Area Conditions and Study Scope

3.1 Study Area and Data Collection

The intersections under study are as follows (numbers correspond to Figure 2):

1. Hyland-Croy Road and Brand/Mitchell-Dewitt Road
2. Hyland-Croy Road and Tullymore Drive
3. Proposed Northern Jacquemin Farms Development Site Access and Park Mill Drive; access to the Park Place/Post Preserve neighborhoods
4. Proposed Southern Jacquemin Farms Development Site Access, future northern Wirchansky access (Weldon Road) and Northern Gorden Site Access and additional access for the Park Place/Post Preserve neighborhoods (through the Gorden property)
5. Proposed Southern Gorden Development Full Movement Access and additional access for the Park Place/Post Preserve neighborhoods (through the Gorden property)
6. Proposed Right-In, Right-Out Gorden Access
7. Hyland-Croy Road and Post Road

AM (7-9) and PM (4-6) peak hour turning movement counts were collected at the following intersections: Hyland-Croy Road with Tullymore Drive, Park Mill Drive, Post Road, and Mitchell-Dewitt Road in May of 2017. These counts can be found in Appendix B.

3.2 Existing Conditions

Hyland-Croy Road is currently a two-lane roadway with a speed limit of 45 miles per hour. The east side of Hyland-Croy Road, within the Gorden development area, consists almost entirely of farm land. There are two, single-family homes that will be removed for the proposed Gorden Development. The west side of Hyland-Croy Road also consists of almost entirely farm land. The Jacquemin Development Farm Market will remain for the unforeseen future. The rest of the property will be developed for the Jacquemin Development.

3.3 Site Plan

3.3.1 Gorden Property

Proposed Development #1, The Gorden Development is located on the northeast corner of Hyland-Croy Road and Post Road. The Gorden Development is proposed to be a mixed-use residential community that includes senior adult living facilities, single-family homes, and twin-family attached homes. The proposed Gorden Development will consist of the following uses:

Subarea A – Senior Retirement Community

- 100 independent living units
- 150 assisted living beds

Subareas B & C – Residential Community

- 62 single family detached homes (Subarea B)
- 48 twin-family attached age restricted homes (Subarea C)

The entire Gorden Development will be constructed during Phase 1 of the development. A conceptual site plan for the Gorden Development can be found in Appendix C.

Three site access drives are proposed for the Gorden Development on Hyland-Croy Road. The first site access drive is intersection #4, a full-service movement at Weldon Road, which will also provide replacement access to the Park Place/Post Preserve neighborhoods through a roadway connection to the existing Holbein Drive. The second site access is intersection #5, a full-service access drive that will also provide replacement access for the Park Place/Post Preserve neighborhoods through a roadway connection to both Stillhouse Lane and Springview Lane. The third site access is intersection #6, a right-in, right-out access north of Post Road. Please note that the exact location of intersection #6 will be coordinated with Union County. The goal is to align intersection #6 to properly provide site access for the Gorden Site (east side of Hyland-Croy Road) and the Hawkins property (west side of Hyland-Croy Road).

3.3.2 Jacquemin Farms Property

Proposed Development #2, the Jacquemin Farms Development, is located on the northwest corner of Weldon Road and Hyland-Croy Road. The first phase of the Jacquemin Farms Development is proposed to be a mixed-use community with the

existing Jacquemin Farmers' Market, senior adult living facilities, and a luxury multi-family rental community. It will consist of 224 multi-family residences, the existing Jacquemin Farms - Farm Market, and approximately 250 senior adult housing units. Phase 2 will include the neighborhood retail/small office portion of the development as a replacement use for the existing 11-acre farmers' market. A conceptual site plan for the Jacquemin Farm Development can be found in Appendix C.

Two site access drives are proposed for the Jacquemin Farms Development on Hyland-Croy Road: a full-movement access drive aligning with Park Mill Drive (intersection #3) and a full-movement access drive via utilizing Weldon Road (intersection #4).

4.0 Projected Traffic

4.1 Background and No Build Traffic

Proposed Development #1, the Gorden Development, is expected to be constructed in one phase and be completed in 2019. Proposed Development #2, the Jacquemin Farms Development, is expected to be completed in two phases. Phase 1 includes all proposed uses except for the neighborhood retail/small office and is expected to be completed in 2019. The Phase 2 development will occur, if it occurs, at an undetermined future date. The Phase 2 development consists of neighborhood retail/small office as a replacement use to the existing Jacquemin Farm - Farm Market. For both the Gorden Development and Jacquemin Farm Development, 2019 was used as the *Opening Year* in this study and 2029 was used as the *Horizon Year*.

A traffic impact study titled *Autumn Rose TIS* completed for a proposed single-family residential development located along Hyland-Croy Road was provided by the City of Dublin. The study included the following off site developments in the Background Traffic analysis:

- 1) Riviera
- 2) Oak Park
- 3) Tartan Ridge
- 4) Celtic Crossing
- 5) Jerome Village

The development progress assumptions for the above off-site developments are provided in Table 1 below. The Autumn Rose development is included in the table. These site

trips were added to the study network as background traffic using distributions and trip generation assumptions from the respective studies of each development as approved in the MOU. Relevant volumes of said off-site developments can be found in Appendix D.

Table 1 - Area Development Background Traffic

Development	Existing (captured in counts)	2019 Projection	2029 Projection
Riviera	0%	137 Lots	100% Build
Oak Park	40% residential only	75% residential only	100% Build (residential and commercial)
Tartan Ridge	75% residential only	80% residential only	100% Build (residential and commercial)
Celtic Crossing	40%	50%	100%
Jerome Village	416 residential units developed	700 units developed	100% (residential and commercial)
Autumn Rose Woods	0%	50%	100%

The *Autumn Rose TIS* utilized an assumed 1.0% growth rate to project count data to the Opening Day and Horizon Year. This growth rate was also utilized in the *Gorden/Jacquemin TIS* to project 2017 count data to 2019 Opening Day and 2029 Horizon Year. Surrounding area development was added to the Background Traffic to produce No Build Traffic for the Opening Day and Horizon Year.

In addition to the added Background traffic shown in Table 1, the intersection of Post Preserve Boulevard and Post Road will be reconfigured prior to the Horizon Year of this development (Post Preserve Boulevard will close at Post Road). Post Preserve Boulevard services the Post Preserve and Park Mill neighborhoods. As part of the Horizon Year analysis for this proposed development, neighborhood traffic that would typically use the Post Preserve Boulevard and Post Road intersection was redistributed to other existing neighborhood access points as well as the new, proposed access points connected to the Gorden Development. The distribution of rerouted traffic was based on the *Post Preserve Access Relocation Traffic Analysis* completed by Burgess & Niple in 2009.

4.2 Site Traffic

4.2.1 Trip Generation

Site traffic for the proposed Gorden Development and Jacquemin Farms Development Phase 1 was generated using standard Institute of Transportation Engineers (ITE) practices and the *Trip Generation Manual*, 9th edition, data via the OTISS program¹. Trips for the proposed Gorden development were generated using ITE Land Use Codes 252 – *Senior Adult Housing (Attached)*, 254 – *Assisted Living*, and 210 – *Single-Family Detached Housing*. Pass-by and internal capture are not applicable to these land uses. Table 2 summarizes the trip generation for the Gorden Development.

Table 2 – Gorden Site Trip Generation Summary

Community	Subarea	Land Use	Size	AM Peak		PM Peak	
				Entry	Exit	Entry	Exit
Senior Retirement	A	252 – Senior Adult Housing <i>Independent Living</i>	100 Dwelling Units	7	13	14	11
Senior Retirement	A	254 – Assisted Living <i>Senior Retirement Community Assisted Living</i>	150 Beds	14	7	15	18
Residential	B	210 - Single Family Detached Housing	62 Units	13	40	43	25
Residential	C	252 - Senior Adult Housing <i>Twin-family attached age restricted homes</i>	48 Units	3	7	6	6
TOTAL				37	67	78	60

Trips for Phase 1 of the Jacquemin Farms Development were generated using ITE Land Use Codes 220 – *Apartment* and 252 – *Senior Adult Housing (Attached)*. Phase 2 will involve a combination of neighborhood retail and small office space. The existing farmers' market will be maintained throughout the construction of the Gorden and Jacquemin Phase 1 development.

Table 3 summarizes the trip generation for Phase 1 of the Jacquemin Farms Development. Internal capture is only applied to the portions of the analysis that include both Phase 1 and Phase 2 of the Jacquemin development. The full trip generation information can be seen in Appendix E.

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

Table 3 - Jacquemin Phase 1 Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
220 - Apartment	224 Dwelling Units	23	90	92	49
252 - Senior Adult Housing	250 Dwelling Units	17	33	34	29
TOTAL		40	123	126	78

Trips for Phase 2 of the Jacquemin Farms Development were determined by collecting AM and PM peak count data at similar, representative developments (approved by Dublin and Union County) to the proposed Jacquemin Farms Phase 2 Development. The counts were collected in May of 2017 while school was still in session. The representative developments were reviewed and approved by the City of Dublin and Union County. Trips in and out of the representative developments were proportionally scaled, up or down, to represent the 10,000 SF/acre assumed for the Jacquemin Development Phase 2 site based on the square footage of the counted development. The average ITE pass-by rate of 34% was used for the retail portion of the Jacquemin Development. Pass-by entry and exit trips were divided evenly to balance volumes on Hyland-Croy Road. Internal capture between the proposed uses on the Jacquemin Development site was determined by using standard ITE internal capture rates between residential, retail, and office uses. Table 4 shows the representative development trip generation results. The detailed representative development trip generation calculations can be seen in Appendix E.

Table 4 - Jacquemin Phase 2 Trip Generation Summary

Land Use	Size		AM Peak		PM Peak	
			Entry	Exit	Entry	Exit
Representative Office Developments	Scaled to 55,000 SF		58	6	9	56
Representative Retail Developments	Scaled to 55,000 SF	Non-Pass-By	37	18	81	59
		Pass-By	0	0	36	36
TOTAL			95	24	126	151

4.2.2 Trip Distribution & Assignment

Non-Pass-By trips for the residential portion of the Gorden Development and Jacquemin Farms Development were distributed based on the distributions found in the Autumn Rose TIS, count data, engineering judgment, and knowledge of the study area. The following Non-Pass-By distribution was determined and utilized as approved in the MOU:

- 43% To/From North

- o 19% to/from Hyland-Croy Road north of Mitchell-Dewitt Road/Brand Road
- o 19% to/from Brand Road east of Hyland-Croy Road
- o 5% to/from Mitchell-Dewitt Road west of Hyland-Croy Road
- 57% To/From South
 - o 20% via Post Road (east)
 - o 37% via Post Road (west)

Non-Pass-By trips for the retail and office portion of the Jacquemin Farms Development were distributed based on the commercial distributions in the Hall's Corner TIS, count data, engineering judgment, and knowledge of the study area. The following Non-Pass-By distribution was determined:

- 30% To/From North
 - o 14% to/from Hyland-Croy Road north of Mitchell-Dewitt Road/Brand Road
 - o 14% to/from Brand Road east of Hyland-Croy Road
 - o 2% to/from Mitchell-Dewitt Road west of Hyland-Croy Road
- 70% To/From South
 - o 25% via Post Road (east)
 - o 45% via Post Road (west)

Pass-By trips for Phase 2 of the Jacquemin Farms Development was distributed based on the current NB/SB distribution along Hyland-Croy Road for the PM Peak which was determined from the count data.

The following Pass-By distribution along Hyland-Croy Road was determined:

- 66% Northbound
- 34% Southbound

Internal capture for the Jacquemin Farms Development was only applied to the Phase 1 and Phase 2 combined analysis.

4.3 Build Traffic

Build traffic was determined by adding site traffic to the No Build traffic for the AM and PM peaks in the Opening and Horizon Years. Build traffic was determined for the Gorden Development only, the Gorden Development and Jacquemin Farms Phase 1

Development only, and the Gorden Development, Jacquemin Farms Phase 1 Development, and Jacquemin Phase 2 Development combined². These volumes can be seen in Appendix D.

5.0 Traffic Analysis

5.1 Turn Lanes

Turn lane warrant analyses were conducted at each of the unsignalized intersections in the study area unless an intersection warranted a signal in a scenario. ODOT Turn Lane Warrants were used to determine where left and right turn lanes were required. If a turn lane was required, the length of the lane was also calculated based on the procedure outlined in the ODOT L&D Manual. Hyland-Croy Road has a speed limit of 45 miles per hour. Therefore, a design speed of 45 miles per hour was used in the turn lane warrant and length calculations per the ODOT L&D Manual.

5.2 Signal Warrant Analysis

Planning-level 8-Hour signal warrants were run at intersections #2, #3, #4, #5, and #7 using peak hour count data. AM and PM Peak Hour data was projected to other hours of the day using ODOT's graph for Hourly Percentage by Vehicle Type for the proper functional classes. If an intersection met the signal warrant in any scenario, it was represented as such in the capacity analysis.

5.3 Capacity & Level of Service

The HCM module of Synchro 9 software was used to analyze capacity at signalized and stop-controlled intersections. Sidra 6.0 was used to analyze capacity at roundabouts. The roundabout Level of Service (LOS) was calculated using the Sidra Standard method with the same delay criteria as for sign control intersections. A minimum LOS D for both the overall intersection as well as individual movements was required at the intersection of Hyland-Croy Road and Brand Road/Mitchell-Dewitt Road, which is under the jurisdiction of the City of Dublin. For all remaining intersections, which are currently under Union County jurisdiction, a minimum LOS C for the intersection and LOS D for

² The Build scenario of Gorden, Jacquemin Phase 1, and Jacquemin Phase 2 combined was only analyzed in the Horizon Year as Jacquemin Phase 2 will not be constructed for Opening Day.

each individual movement was required. If an intersection did not meet the LOS criteria, mitigation strategies were developed to bring each movement or intersection back to an acceptable LOS.

5.4 Sight Distance Analysis

Sight distance was analyzed at all proposed site drives based on the criteria and procedure in the ODOT L&D Manual. If it was determined that there were sight distance issues at any of the site drives, it was documented in the report along with possible solutions.

6.0 Results

6.1 Turn Lane Warrant Analysis

Table 5 shows the summarized results of the turn lane warrant analysis. All turn lane lengths are inclusive of a 50' diverging taper. The turn lane warrant graphs and length calculations that were used to produce these results can be seen in Appendix F.

6.2 Signal Warrant Analysis

Results of the signal warrant analysis can also be seen in Table 5. The full signal warrant analyses can be found in Appendix F.

Table 5 – Turn Lane Warrant and Signal Warrant Results

Turn Lane Warrant and Signal Warrant Summary		Opening Year			Horizon Year			
		No Build	Build		No Build	Build		
			Gorden Only	Gorden + Jacquemin Ph1		Gorden Only	Gorden + Jacquemin Ph1	Gorden + Jacquemin Ph2
Intersection	1 (Hyland-Croy Road and Brand/Mitchell-Dewitt Road)	Existing Roundabout	Existing Roundabout	Existing Roundabout	Existing Roundabout	Existing Roundabout	Existing Roundabout	Existing Roundabout
	2 (Hyland-Croy Road and Tullymore Drive)	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted
	3 (Hyland-Croy and Northern Jacquemin Site Access/ Park Mill Dive)	SBL(175'), NBR(175')	SBL(175'), NBR(175')	SBL(175'), NBR(225'), SBR(175'), NBL(175')	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted
	4 (Hyland-Croy and Weldon)	N/A	NBR(175'), SBL(175')	NBR (175'), SBL(175'), NBL(175')	SBL(175'), NBR(175')	SBL(175'), NBR(175')	NBR(175'), NBL(175'), SBL(175')	NBR(175'), SBL(175'), NBL(175'), and SBR(175')
	5 (Hyland-Croy and Southern Gorden Full Movement Access)	N/A	SBL(175')	SBL(175')	NBR(175'), SBL(175')	Signal Warranted	Signal Warranted	Signal Warranted
	6 (Hyland-Croy and the Right-In, Right-Out Gorden Access)	N/A	No Turn Lane Warranted	No Turn Lane Warranted	No Turn Lane Warranted	No Turn Lane Warranted	No Turn Lane Warranted	No Turn Lane Warranted
	7 (Hyland-Croy and Post Road)	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted	Signal Warranted

Red text signifies a triggered turn lane and/or signal

6.3 Capacity Analysis

Table 6 below shows the summarized, overall LOS and delay results for the capacity analysis. Bold text signifies improvements were needed to bring the intersection to an acceptable LOS/delay. Intersection improvements per scenario can be seen in Table 7. The overall delay of unsignalized intersections is represented by the highest approach delay. The full capacity analysis can be seen in Appendix G.

Table 6 - AM and PM Peak Capacity Results (LOS/delay)³

Intersection	Intersection Control	Peak	2019			2029			
			No Build	Build		No Build	Build		
				Gorden Only	Gorden + Jacq. Phase 1		Gorden Only	Gorden + Jacq. Phase 1	Gorden + Jacq. Phase 1 & Phase 2
(1) Hyland-Croy Road & Mitchell-Dewitt/Brand Road	RAB	AM	A/6.4	A/6.6	A/6.8	B/11.0	B/11.4	B/12.0	B/12.8
		PM	A/6.4	A/6.6	A/7.0	B/12.7	B/13.4	B/14.7	C/15.5
(2) Hyland-Croy Road & Tullymoore Drive	Signal	AM	A/8.3	A/8.2	A/8.2	A/9.0	A/9.1	A/9.3	A/9.4
		PM	A/4.5	A/4.5	A/4.5	A/6.3	A/6.5	A/6.9	A/7.3
	RAB	AM							B/11.9
		PM							C/22.6
(3) Hyland-Croy Road & North Jacquemin Access/Park Mill Drive	Stop	AM	C/18.5	C/20.0	C/24.4				
		PM	D/26.6	D/29.9	D/34.9				
	Signal	AM				A/7.8	A/7.8	A/9.1	A/9.4
		PM				A/7.3	A/7.9	B/10.8	B/14.1
	RAB	AM							B/11.8
		PM							A/9.6
(4) Hyland-Croy Road & Weldon Road/North Gorden Access	Stop	AM	A/0.0	C/17.8	C/20.5	D/34.6	E/44.9	F/67.5	F/121.9
		PM	A/0.0	D/29.2	E/35.4	F/93	F/170	F/302.7	F/579.1
(5) Hyland-Croy Road & Main Gorden Access	Stop	AM	A/0.0	C/17.4	C/19.3	F/55.2			
		PM	A/0.0	D/26.8	D/31.7	F/131.8			
	Signal	AM					A/6.5	A/6.9	A/7.0
		PM					B/14.6	C/27.0	A/4.5
	RAB	AM							C/16.6
		PM							A/9.8
(6) Hyland-Croy Road & Right-In, Right-Out Gorden Access	Stop	AM	A/0.0	A/9.3	A/9.4	A/0.0	B/10.0	B/10.1	B/10.4
		PM	A/0.0	B/11.5	B/11.9	A/0.0	B/14.9	C/15.5	C/16.0
(7) Hyland-Croy Road & Post Road	Signal	AM	B/11.8	B/10.8	B/11.7	B/13.3	B/14.8	B/17.2	B/17.5
		PM	C/20.3	B/19.3	C/23.4	C/28.5	C/29.4	C/22.8	C/23.6
	RAB	AM							A/8.5
		PM							A/10.0

³ Intersection improvements and roundabout layouts for scenarios are provided in Table 7. Roundabout analysis was only conducted for the full-build Horizon Year since local practice is to determine impacts proportionally to the volumes in the intersection.

Table 7 – Noted Intersection Improvements

Noted Improvements (includes signal warrants, turn lane warrants, and turn lanes required for capacity)	Opening Year			Horizon Year		
	No Build	Gorden Only	Gorden + Jacquemin Ph1	No Build	Gorden Only	Gorden + Jacquemin Ph1
1 (Hyland-Croy Road and Brand/Mitchell- Dewitt Road)	No improvements necessary	No improvements necessary	No improvements necessary	130' WB RTL	130' WB RTL	130' WB RTL
2 (Hyland-Croy Road and Tullymore Drive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary. Single lane RAB Single lane approaches
3 (Hyland-Croy and Northern Jacquemin Site Access/ Park Mill Dive)	175' SB LTL 175' NB RTL	175' SB LTL 175' NB RTL	175' SB LTL 225' NB RTL 175' SB RTL 175' NB LTL	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary	Signal Warranted 175' NB LTL Single lane RAB Single Lane approaches Add'l NB Through Lane
4 (Hyland-Croy and Weldon Road/North Gorden Access)	N/A	175' SB LTL 175' NB RTL	175' SB LTL 175' NB RTL 175' NB LTL	175' SB LTL 175' NB RTL	175' SB LTL 175' NB RTL 175' NB LTL	(Signal not warranted) 175' SB LTL 175' NB RTL 175' NB LTL
5 (Hyland-Croy and Southern Gorden Full Movement Access)	N/A	175' SB LTL	175' SB LTL	175' SB LTL 175' NB RTL	Signal Warranted, no other improvements necessary	Signal Warranted Add Northbound Through Lane Single lane RAB Single Lane approaches Add'l NB Through Lane
6 (Hyland-Croy and the Right-In, Right-Out Gorden Access)	N/A	No improvements needed	No improvements needed	No improvements needed	No improvements needed	No improvements needed
7 (Hyland-Croy and Post Road)	775' SB RTL 475' SB LTL	775' SB RTL 475' SB LTL	775' SB RTL 475' SB LTL	775' SB RTL 475' SB LTL 525' WB RTL	775' SB RTL 475' SB LTL 525' WB RTL Dual EB LTLs (575', 525')	775' SB RTL 475' SB LTL 525' WB RTL Dual EB LTLs (575', 525') RAB: EB Left, EB Left- Thru, EB Thru, WB Thru, WB Thru-Right, WB Right, SB Right, SB Right-Left

Red text signifies a triggered improvement

6.4 Sight Distance Analysis

The results of the sight distance analysis show that there is appropriate site distance at all five proposed site drives for the Gorden Development and Jacquemin Farms development. The study area is relatively flat, so these results were anticipated. The sight triangle graphs and site photos used to determine these results can be found in Appendix H.

7.0 Site Traffic Percentages

Per the City of Dublin, it is required that the percentage of proposed site traffic for each study intersection be presented. This is for the Horizon Year Full Build scenario, which includes the Gorden Development, the Gorden Development plus the Jacquemin Farms Phase 1 Development, and the Gorden Development plus the Jacquemin Farms Development Phase 1/Phase 2. Site traffic for each intersection in the AM plus PM Peak hours was divided by the total, Full Build site traffic for each intersection in the AM plus PM Peak Hours to determine the peak hour site traffic percentage at each intersection. The site traffic percentage results per development phase are below:

Gordon Development

- 1) Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road - 2.4%
- 2) Hyland-Croy Road & Tullymoore Drive - 3.0%
- 3) Hyland-Croy Road & North Jacquemin Access/Park Mill Drive - 3.0%
- 4) Hyland-Croy Road & Weldon Road/North Gorden Access - 4.8%
- 5) Hyland-Croy Road & Main Gorden Access - 4.8%
- 6) Hyland-Croy Road & Right-In, Right-Out Gorden Access - N/A
- 7) Hyland-Croy Road & Post Road - 2.3%

Gordon Development + Jacquemin Phase 1 Development

- 1) Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road - 5.7%
- 2) Hyland-Croy Road & Tullymoore Drive - 7.2%
- 3) Hyland-Croy Road & North Jacquemin Access/Park Mill Drive - 10.3%
- 4) Hyland-Croy Road & Weldon Road/North Gorden Access - 11.4%
- 5) Hyland-Croy Road & Main Gorden Access - 10.0%
- 6) Hyland-Croy Road & Right-In, Right-Out Gorden Access - N/A
- 7) Hyland-Croy Road & Post Road - 5.7%

Gorden Development + Jacquemin Farms Development - Phase 1/Phase 2

- 1) Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road - 7.4%
- 2) Hyland-Croy Road & Tullymoore Drive - 8.9%
- 3) Hyland-Croy Road & North Jacquemin Access/Park Mill Drive - 13.3%
- 4) Hyland-Croy Road & Weldon Road/North Gorden Access - 16.2%
- 5) Hyland-Croy Road & Main Gorden Access - 14.7%
- 6) Hyland-Croy Road & Right-In, Right-Out Gorden Access - N/A
- 7) Hyland-Croy Road & Post Road - 8.8%

8.0 Recommendations

Based on the results of the analysis, there are numerous improvements necessary to mitigate Build and No Build traffic in the study area. Below is a list of the study intersections, followed by recommended improvements for Opening Day and the Horizon Year.

- 1) Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road
 - a. Opening Day
 - i. No improvements necessary
 - b. Horizon Year
 - i. Install 130' westbound right turn lane
- 2) Hyland-Croy Road & Tullymoore Drive
 - a. Opening Day
 - i. Install Signal or Roundabout
 - b. Horizon Year
 - i. No additional improvements necessary
- 3) Hyland-Croy Road & North Jacquemin Access/Park Mill Drive
 - a. Opening Day
 - i. Install 225' northbound right turn lane
 - ii. Install 175' southbound right turn lane
 - iii. Install 175' northbound left turn lane
 - iv. Install 175 southbound left turn lane
 - b. Horizon Year
 - i. Install Signal or Roundabout
 - ii. If signalized, install 175' northbound left turn lane
- 4) Hyland-Croy Road & Weldon Road/North Gorden Access

- a. Opening Day
 - i. Install 175' northbound right turn lane
 - ii. Install 175' northbound left turn lane
 - iii. Install 175' southbound left turn lane
 - b. Horizon Year
 - i. No additional improvements necessary
- 5) Hyland-Croy Road & Main Gorden Access
- a. Opening Day
 - i. Install 175' southbound left turn lane
 - b. Horizon Year
 - i. Install 175' northbound right turn lane
 - ii. Install signal or roundabout
 - iii. Install additional northbound through lane (Signal or Roundabout)
- 6) Hyland-Croy Road & Right-In, Right-Out Gorden Access
- a. Opening Day
 - i. No improvements necessary
 - b. Horizon Year
 - i. No improvements necessary
- 7) Hyland-Croy Road & Post Road
- a. Opening Day
 - i. Install Signal or Roundabout
 - ii. If signalized, install 775' southbound right turn lane
 - iii. If signalized, install 475' southbound left turn lane
 - b. Horizon Year
 - i. If signalized, install dual eastbound left turn lanes (575', 525')
 - ii. If signalized, install 525' westbound right turn lane

Improvements for each development scenario can be reviewed in Table 7. Additionally, Tables 8, 9, and 10 below show the noted improvements per development as well as the percentage of site traffic for each development per intersection in the Horizon Year.

Table 8 - Gorden Development Improvements

Noted Improvements		Horizon Year		
		No Build	Gorden Development Improvements	Site Traffic Percentage
Intersection	1 (Hyland-Croy Road and Brand/Mitchell-Dewitt Road)	130' WB RTL	130' WB RTL*	2.4%
	2 (Hyland-Croy Road and Tullymore Drive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary.*	3.0%
	3 (Hyland-Croy and Northern Jacquemin Site Access/ Park Mill Dive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary*	3.0%
	4 (Hyland-Croy and Weldon Road/North Gorden Access)	175' SB LTL 175' NB RTL	(Signal not warranted) 175' SB LTL* 175' NB RTL* 175' NB LTL	4.8%
	5 (Hyland-Croy and Southern Gorden Full Movement Access)	175' SB LTL 175' NB RTL	Signal Warranted, no other improvements necessary.	4.8%
	6 (Hyland-Croy and the Right-In, Right-Out Gorden Access)	No improvements needed	No improvements needed	N/A
	7 (Hyland-Croy and Post Road)	775' SB RTL 475' SB LTL 525' WB RTL	775' SB RTL* 475' SB LTL* 525' WB RTL*	2.3%

* No Build Improvements

Table 9 - Jacquemin Farms Phase 1 Development Improvements

Noted Improvements		Horizon Year		
		No Build	Jacquemin Phase 1 Development Improvements	Site Traffic Percentage
Intersection	1 (Hyland-Croy Road and Brand/Mitchell-Dewitt Road)	130' WB RTL	130' WB RTL*	3.3%
	2 (Hyland-Croy Road and Tullymore Drive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary.*	4.2%
	3 (Hyland-Croy and Northern Jacquemin Site Access/ Park Mill Dive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary.*	7.3%
	4 (Hyland-Croy and Weldon Road/North Gorden Access)	175' SB LTL 175' NB RTL	175' SB LTL* 175' NB RTL* 175' NB LTL	6.6%
	5 (Hyland-Croy and Southern Gorden Full Movement Access)	175' SB LTL 50' WB LTL (recommended) 175' NB RTL	Signal Warranted, no other improvements necessary.*	5.2%
	6 (Hyland-Croy and the Right-In, Right-Out Gorden Access)	No improvements needed	No improvements needed	N/A
	7 (Hyland-Croy and Post Road)	775' SB RTL 475' SB LTL 525' WB RTL	775' SB RTL* 475' SB LTL* 525' WB RTL* Dual EB LTLs (575', 525')	3.4%

* No Build Improvements

Table 10 - Jacquemin Farms Phase 2 Development Improvements

Noted Improvements		Horizon Year		
		No Build	Jacquemin Phase 2 Development Improvements	Site Traffic Percentage
Intersection	1 (Hyland-Croy Road and Brand/Mitchell-Dewitt Road)	130' WB RTL	130' WB RTL*	1.7%
	2 (Hyland-Croy Road and Tullymore Drive)	Signal Warranted, no other improvements necessary	Signal Warranted, no other improvements necessary.*	1.7%
	3 (Hyland-Croy and Northern Jacquemin Site Access/ Park Mill Drive)	Signal Warranted, no other improvements necessary	Signal Warranted* 175' NB LTL	3.0%
	4 (Hyland-Croy and Weldon Road/North Gorden Access)	175' SB LTL 175' NB RTL	(Signal not warranted) 175' SB LTL* 175' NB RTL* 175' NB LTL	4.8%
	5 (Hyland-Croy and Southern Gorden Full Movement Access)	175' SB LTL 50' WB LTL (recommended) 175' NB RTL	Signal Warranted Add Northbound Through Lane	4.7%
	6 (Hyland-Croy and the Right-In, Right-Out Gorden Access)	No improvements needed	No improvements needed	N/A
	7 (Hyland-Croy and Post Road)	775' SB RTL 475' SB LTL 525' WB RTL	775' SB RTL* 475' SB LTL* 525' WB RTL* Dual EB LTLs (575', 525')	3.1%

* No Build Improvements

9.0 Appendices

Appendix A - Memorandum of Understanding

Appendix B - Count Data

Appendix C - Conceptual Site Plans

Appendix D - Volume Development

Appendix E - Trip Generation

Appendix F - Turn Lane & Signal Warrant Analysis

Appendix G - Capacity Analysis

Appendix H - Sight Distance Analysis

Appendix A Memorandum of Understanding





MEMORANDUM OF UNDERSTANDING

April 26, 2017

BETWEEN:

Union County, the City of Dublin, ODOT District 6, and Carpenter Marty Transportation, Inc.

REGARDING:

Scope for a Traffic Impact Study pertaining to the Proposed Gorden and Jacquemin Property Developments on Hyland-Croy Road

I. Purpose

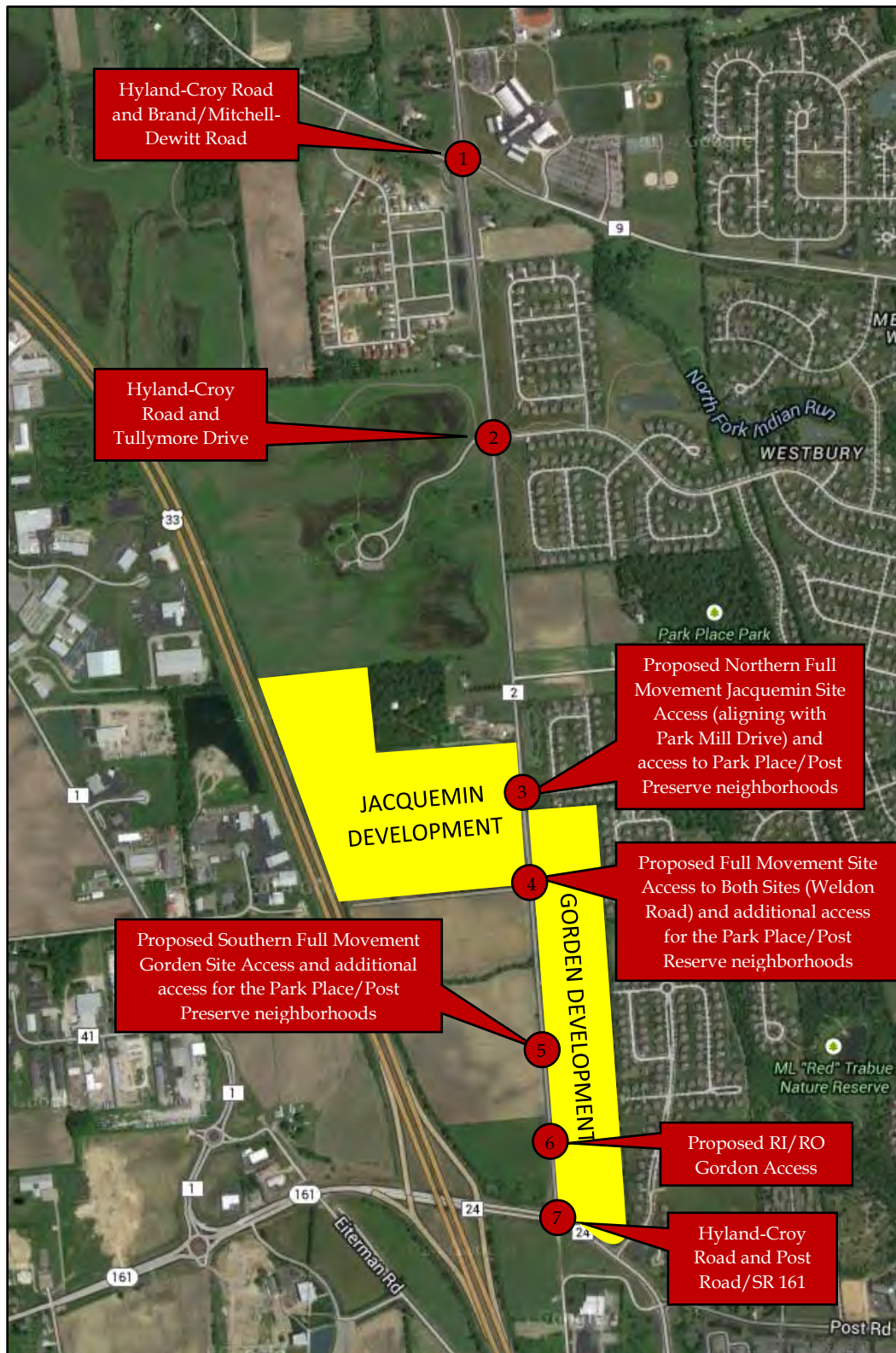
The purpose of this Memorandum of Understanding (MOU) is to establish a mutually agreeable Scope for a Traffic Impact Study (TIS) covering the proposed Gorden and Jacquemin developments shown in Figure 1. Figure 1 also shows the proposed site access drives and study intersections.

II. Study Area

The intersections under study are as follows (numbers correspond to Figure 1):

1. Hyland-Croy Road and Brand/Mitchell-Dewitt Road
2. Hyland-Croy Road and Tullymore Drive
3. Proposed Northern Jacquemin Site Access and Park Mill Drive; access to the Park Place/Post Preserve neighborhoods
4. Proposed Southern Jacquemin Site Access (Weldon Road) and Northern Gorden Site Access and additional access for the Park Place/Post Preserve neighborhoods
5. Proposed Southern Gordon Full Movement Access and additional access for the Park Place/Post Preserve neighborhoods
6. Proposed Right-In, Right-Out Gorden Access
7. Hyland-Croy Road and Post Road

Figure 1 – Location of the Proposed Site, Access Drives, and Study Intersections



III. Proposed Development

Gorden Site: The Gorden site is located on the northeast corner of Hyland-Croy Road and Post Road. The development is proposed to be a mixed-use residential project that includes senior adult living facilities, single family homes, and twin family attached homes. The proposed development will consist of the following uses:

Subarea A – Senior Retirement Community

- 100 independent living units
- 150 assisted living beds

Subareas B & C – Residential Community

- 62 single family detached homes (Subarea B)
- 48 twin-family attached age restricted homes (Subarea C)

The entire Gorden development will be constructed during Phase 1 of the development. A conceptual site plan for Gorden can be found in Attachment A.

Three site access drives are proposed for the Gorden site on Hyland-Croy Road. The first site access drive is intersection #4, a full-service movement at Weldon Road, which will also provide additional access to the Park Place/Post Preserve neighborhoods through a roadway connection to the existing Holbein Drive. The second site access is intersection #5, a full-service access drive that will also provide additional access for the Park Place/Post Preserve neighborhoods through a roadway connection to both Stillhouse Lane and Springview Lane. The third site access is intersection #6, a right-in, right-out access north of Post Road. Please note that the exact location of intersection #6 will be coordinated with Union County. The goal is to align intersection #6 to properly provide site access for the Gorden Site (east side of Hyland-Croy Road) and the Hawkins property (west side of Hyland-Croy Road).

Jacquemin Site: The Jacquemin site is located on the northwest corner of Weldon Road and Hyland-Croy Road. The first phase of the Jacquemin site development is proposed to be a mixed-use site with a farmers' market, senior adult living facilities, and a luxury multi-family rental community. Phase 1 of the development will consist of 224 multifamily residences, a farmers' market, and approximately 250 senior adult housing units. Phase 2 will include the neighborhood retail/small office portion of the development as a replacement use for the 11 acre farmers' market. A conceptual site plan for the Jacquemin parcel can be found in Attachment A.

Two site access drives are proposed for the Jacquemin site on Hyland-Croy Road: a full-movement access drive aligning with Park Mill Drive and a full-movement access drive utilizing Weldon Road.

IV. Data Collection

AM (7-9) and PM (4-6) peak turning movement counts will be collected at the following intersections: Hyland-Croy Road with Tullymore Drive, Park Mill Drive, Post Road, and Mitchell-Dewitt Road.

V. Traffic Volume Development

Proposed Development #1, the Gorden Site, is expected to be constructed in one phase and be completed in 2019. Proposed Development #2, the Jacquemin Site, is expected to be completed in two phases. Phase 1 includes all proposed uses except for the neighborhood retail/small office and is expected to be completed in 2019. The Phase 2 development will potentially occur at an undetermined future date. The Phase 2 development consists of neighborhood retail/small office as a replacement use to the existing Jacquemin Farm Market. For both the Gorden and Jacquemin Sites, 2019 will be used as the *Opening Year* in this study and 2029 will be used as the *Horizon Year*.

A traffic impact study titled *Autumn Rose TIS* completed for a proposed single-family residential development located along Hyland-Croy Road was provided by the City of Dublin. The study included the following off site developments in the Background Traffic analysis:

- 1) Riviera
- 2) Oak Park
- 3) Tartan Ridge
- 4) Celtic Crossing
- 5) Jerome Village

The development progress assumptions for the above off-site developments are provided in Table 1 below. The Autumn Rose development is included in the table. These site trips will be added to the study network as background traffic using distributions and trip generation assumptions from the respective studies of each development.

Table 1 - Area Development Background Traffic¹

Development	Existing (captured in counts)	2019 Projection	2029 Projection
Riviera	0%	137 Lots	100% Build
Oak Park	40% residential only	75% residential only	100% Build (residential and commercial)
Tartan Ridge	75% residential only	80% residential only	100% Build (residential and commercial)
Celtic Crossing	40%	50%	100%
Jerome Village	416 residential units developed	700 units developed	100% (residential and commercial)
Autumn Rose Woods	0%	50%	100%

The *Autumn Rose TIS* utilized an assumed 1.0% growth rate to project count data to the Opening Day and Horizon Year. This growth rate will also be utilized in the *Gordon/Jacquemin TIS* to project 2017 count data to 2019 Opening Day and 2029 Horizon Year. Surrounding area development will be added to the Background Traffic to produce No Build Traffic for the Opening Day and both Horizon Years.

In addition to the added Background traffic shown in Table 1, the intersection of Post Preserve Boulevard and Post Road will be reconfigured prior to the Horizon Year of this development. Post Preserve Boulevard services the Post Preserve and Park Mill neighborhoods. As part of the Horizon Year analysis for this proposed development, neighborhood traffic that would typically use the Post Preserve Boulevard & Post Road intersection will be redistributed to other existing neighborhood access points as well as the new proposed access points connected to the *Gorden Development*. The distribution of rerouted traffic will be based on the *Post Preserve Access Relocation Traffic Analysis*

¹ Relevant segments of traffic studies for surrounding area development will be included with the full report.

completed by Burgess & Niple in 2009, knowledge of the study area, and engineering judgment.

Site traffic for the proposed Gorden and Jacquemin Phase 1 properties was generated using standard Institute of Transportation Engineers (ITE) practices and the *Trip Generation Manual*, 9th edition, data via the OTISS program². Trips for the proposed Gorden development will be generated using ITE Land Use Codes 252 – *Senior Adult Housing (Attached)*, 254 – *Assisted Living*, and 210 – *Single-Family Detached Housing*. Pass-by and internal capture are not applicable to these land uses. Table 2 summarizes the trip generation for the Gorden development.

Table 2 –Gorden Site Trip Generation Summary

Community	Subarea	Land Use	Size	AM Peak		PM Peak	
				Entry	Exit	Entry	Exit
Senior Retirement	A	252 – Senior Adult Housing <i>Independent Living</i>	100 Dwelling Units	7	13	14	11
Senior Retirement	A	254 – Assisted Living <i>Senior Retirement Community Assisted Living</i>	150 Beds	14	7	15	18
Residential	B	210 – Single Family Detached Housing	62 Units	13	40	43	25
Residential	C	252 – Senior Adult Housing <i>Twin-family attached age restricted homes</i>	48 Units	3	7	6	6
		TOTAL		37	67	78	60

Trips for Phase 1 of the Jacquemin development will be generated using ITE Land Use Codes 220 – *Apartment* and 252 – *Senior Adult Housing (Attached)*. Phase 2 will involve a combination of neighborhood retail and small office space. The farmers’ market is currently on the property and will be maintained throughout the construction of the new development.

Table 3 summarizes the trip generation for Phase 1 of the development. Internal capture will only be applied to the portions of the analysis that include both Phase 1 and Phase 2 of the Jacquemin development. The full trip generation information can be seen in Attachment B.

² Online Traffic Impact Study Software developed by ITE and Transoft Solutions.

Table 3 – Jacquemin Phase 1 Trip Generation Summary

Land Use	Size	AM Peak		PM Peak	
		Entry	Exit	Entry	Exit
220 - Apartment	224 Dwelling Units	23	90	92	49
252 - Senior Adult Housing	250 Dwelling Units	17	33	34	29
TOTAL		40	123	126	78

Trips for Phase 2 of the Jacquemin development will be determined by collecting AM and PM peak count data at similar “Representative Development(s)” to the proposed Jacquemin Phase 2 development. The Representative Development(s) will be reviewed and approved by the City of Dublin and Union County. Trips in and out of the Representative Development(s) will be proportionally scaled, up or down, to represent the 10,000 SF/acre assumed for the Jacquemin Phase 2 site based on the square footage of the counted development. The average ITE pass-by rate of 34% will be used for the retail portion of the Jacquemin Development. Pass-by entry and exit trips will be divided evenly to balance volumes on Hyland-Croy Road. Internal capture between the proposed uses on the Jacquemin site will be determined after the “Representative Development(s)” have been decided and counted. This will be coordinated with the City of Dublin and Union County.

Site traffic will be added to No Build traffic to produce Build traffic. Phase 1 of the development will be analyzed in the Opening Year and Horizon Years. Phases 1 and 2 combined will be analyzed only in the Horizon Year.

Non-Pass-By trips for the residential portion of the Gorden & Jacquemin development will be distributed based on the distributions found in the Autumn Rose TIS, count data, engineering judgment, and knowledge of the study area. The following Non-Pass-By distribution was determined:

- 43% To/From North
 - o 19% to/from Hyland-Croy Road north of Mitchell-Dewitt Road/Brand Road
 - o 19% to/from Brand Road east of Hyland-Croy Road
 - o 5% to/from Mitchell-Dewitt Road west of Hyland-Croy Road
- 57% To/From South
 - o 20% via Post Road (east)
 - o 37% via Post Road (west)

Non-Pass-By trips for the retail and office portion of the Jacquemin development, as well as the assisted living portion of the Gordon development, will be distributed based on the commercial distributions in the Hall's Corner TIS, count data, engineering judgment, and knowledge of the study area. The following Non-Pass-By distribution was determined:

- 30% To/From North
 - o 14% to/from Hyland-Croy Road north of Mitchell-Dewitt Road/Brand Road
 - o 14% to/from Brand Road east of Hyland-Croy Road
 - o 2% to/from Mitchell-Dewitt Road west of Hyland-Croy Road
- 70% To/From South
 - o 25% via Post Road (east)
 - o 45% via Post Road (west)

Pass-By trips for Phase 2 of the Jacquemin development will be distributed based on the current NB/SB distribution along Hyland-Croy Road which will be determined from the count data. Internal capture for the Jacquemin development will only be applied to the Phase 1 and Phase 2 combined analysis.

Site traffic will be assigned to the five proposed site access drives and carried through the study intersections per the distribution assumptions shown above. Relevant portions of the *Autumn Rose TIS* and *Halls Corner TIS* can be found in Attachment C.

VI. Analysis

Section I - Gorden Development

Section I of the analysis will determine the surrounding roadway impacts of the Gordon Development only.

Traffic signal warrants (peak hour) will be conducted as a part of this study. Signal warrant analyses will be conducted at study intersections 2, 3, 4 and 5 to determine if a signal is a warranted improvement. If warrants are met, the capacity analysis of the intersection in that scenario will be conducted as a signal and as a roundabout. If it does not warrant, only stop control will be analyzed. If acceptable level of service cannot be obtained in a stop-controlled capacity analysis, the intersection will be analyzed as a roundabout.

The HCM module of Synchro 9 software will be used to analyze capacity at signalized and stop-controlled intersections. Sidra 6.0 will be used to analyze capacity at roundabouts. The roundabout Level of Service (LOS) will be calculated using the Sidra Standard method with the same delay criteria as for sign control intersections. A minimum LOS D for both the overall intersection as well as individual movements will be required at the intersection of Hyland-Croy Road and Brand Road/Mitchell-Dewitt Road, which is under the jurisdiction of the City of Dublin. For all remaining intersections, which are currently under Union County jurisdiction, a minimum LOS C for the intersection and LOS D for each individual movement will be required. If an intersection does not meet the LOS criteria, mitigation strategies will be developed to bring each movement or intersection back to an acceptable LOS.

The analysis of stop-control study intersections will include turn lane analyses using the ODOT L&D turn lane warrant graphs. The turn lane lengths for any scenario meeting this warrant will be calculated. Additionally, lengths will be calculated for any turn lanes required for capacity at signalized intersections and roundabouts. ODOT L&D calculations will be used to determine turn lane lengths at non-roundabout intersections. Turn lane lengths at roundabouts will be designed to accommodate the Horizon Year 95th percentile queues. The four proposed site drives will also be evaluated to determine if there is adequate site distance available using City of Dublin criteria.

Section II - Jacquemin Development - Phase 1 and Phase 2

Section II of the analysis will determine the surrounding roadway impacts of the Jacquemin Development Phase 1 and then the Jacquemin Development Phase 1 and Phase 2 combined. Both will include the fully built out Gorden development. Traffic impacts and the resulting mitigation will be calculated for the Phase 1 development and the Phase 2 development.

The same terms for signal warrants, capacity analysis, and turn lane warrants from the above Section 1 will apply to the Jacquemin Development.

Summary

Access Points

Determination of access points, locations, spacing and coordination with adjacent development access will be noted and addressed in the final report.

Traffic Impacts

Traffic Impacts for the seven (7) Study Intersections (Figure 2) shall be expressed as a percentage and will be calculated for each intersection by taking the average of AM and PM Peaks for the Horizon Year divided by the total average of the AM and PM Peak traffic for the Horizon Year. Traffic Impacts will be calculated for the Gordon Development and the Jacquemin Development on a separate basis with each development to be studied against all seven (7) study intersections.

VII. Report

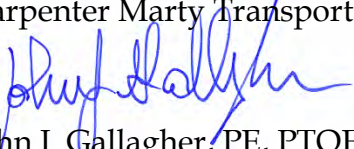
Traffic volume calculations, including count data and distributions, will be provided to the City of Dublin and Union County for preliminary review, prior to the completion of any analysis.

A report will be produced that includes tables, figures, appendices, etc. This report will document the analysis, results, and recommendations for the public roadway system surrounding the development. These recommendations will be divided into both Build and No Build improvements required to mitigate the anticipated traffic volumes. The percentage of site traffic compared to the overall total traffic entering each intersection will be calculated and included in the report.

Please signify your concurrence with the TIS scope outlined above by signing below. If you have any questions or comments, please contact me anytime at 614-286-0822 or jgallagher@cmtran.com.

Sincerely,

Carpenter Marty Transportation Inc.


John J. Gallagher, PE, PTOE
Director of Traffic Services

Union County (or their Representative):

Signature: Bill Narducci, PE

Date: 5/4/17

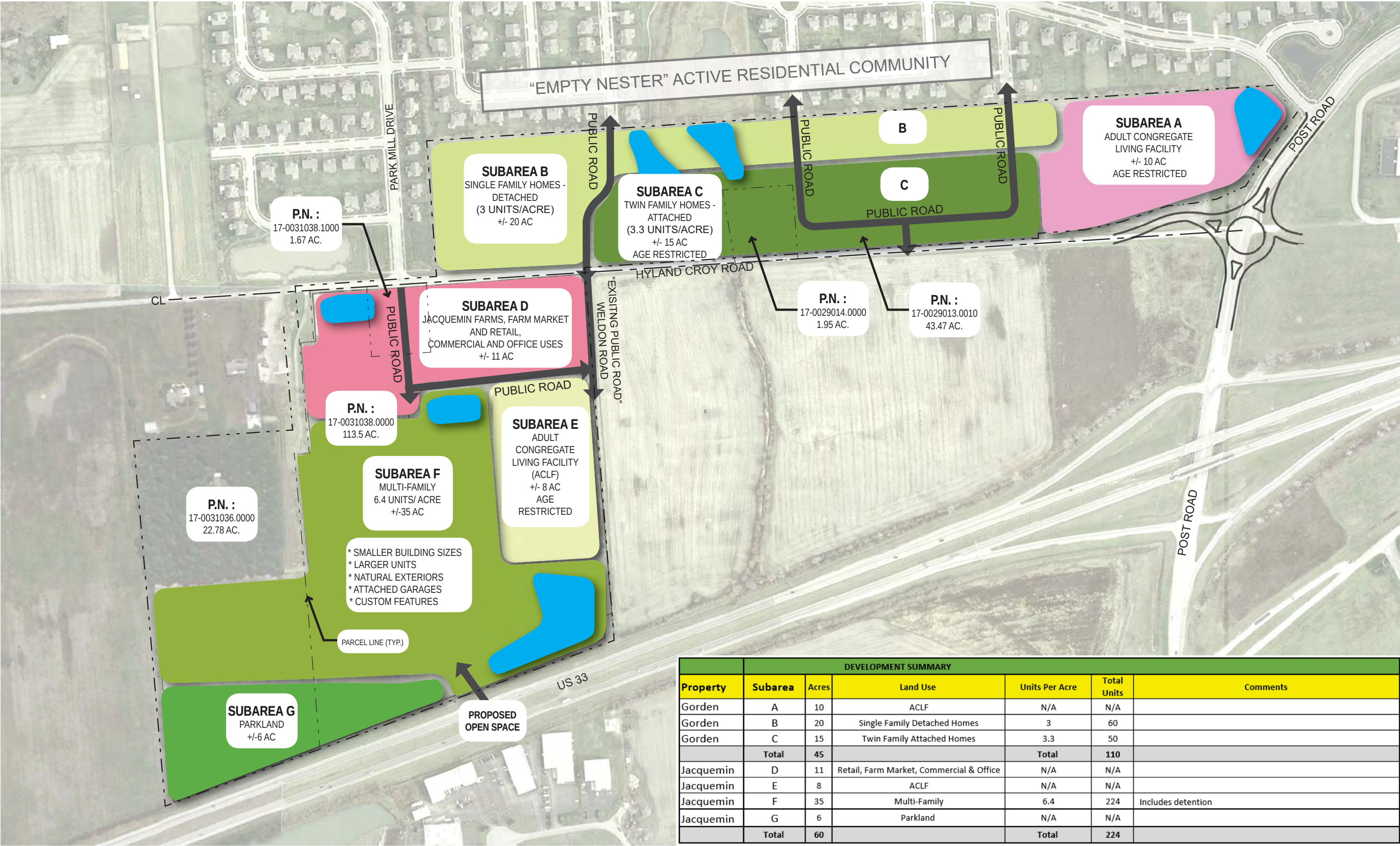
City of Dublin (or their Representative):

Signature: Tina Wawszkiewicz, PE

Date: 5/3/2017

MOU Attachment A Site Plans





Site Data

Gross Site Area:	± 45.0 ac.
Right-Of-Way Dedication: (Hyland-Croy Road)	± 3.0 ac.
Net Site Area:	± 42.0 ac.

Subarea A
Adult Congregate Living Facility

Site Area:	± 9.0 ac.
Independent Living:	75 units
Assisted Living:	50 units

Subarea B

Site Area:	± 19.0 ac.
Fee Simple Homes Single Family Lots:	Up to 60 permitted

Subarea C

Site Area:	± 14.0 ac.
Twin Single Family Lots:	Up to 50 permitted

Total Homes (Subarea B+C):	110 d.u.
Net Density (of 33.0 ac.):	3.33 d.u./ac.

Note: Acreage may shift between the Senior Housing site and the Empty-Nester site depending on final layout and design.

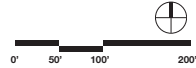


Site Data

Gross Site Area:	± 60.4 ac.
Right-Of-Way Dedication: (Hyland-Croy Road)	± 2.1 ac.
Net Site Area:	± 58.3 ac.
Subarea D1 & D2	
Site Area:	± 11.0 ac.
Farmer's Market, Neighborhood Retail, and Office	
Subarea E: Adult Congregate Living Facility	
Site Area:	± 8.0 ac.
Subarea F: Rental Community	
Site Area:	± 35.0 ac.
"B" Building: 8 bldgs. x 10 du. = 80 du All one floor designs with garage.	
"E" Building: 12 bldgs. x 6 du. = 72 du Custom 2-story homes with garage/porch.	
"D" Building: 18 bldgs. x 4 du. = 72 du All ranch homes with 1 and 2 car garages.	
Total Rental Residences:	224 d.u.
Subarea Density:	6.4d.u./ac.
Subarea G: Parkland to be Dedicated	
Site Area:	± 6.0ac.



- AMENITIES KEY: #**
- 1.Clubhouse
 - 2.Centralized Mail/Utility/Compactor Building
 - 3.Pool and Deck
 - 4.Patio/Entertainment Space
 - 5.Community Garden/ Flowers and Vegetables
 - 6.Dog Park
 - 7.Community Entrance Features- Rural Character/ 4-Rail Black Horse Fence
 - 8.Pathway Connection to Jacquemin Market
 - 9.Pathway Connection to Glacier Ridge Metro Park
 - 10. Golf Putting Green



MOU Attachment B

Trip Generation



PERIOD SETTING

Analysis Name :	AM Peak	No :	
Project Name :	Gordon 2017	City:	
Date:	2/13/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:			

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing	Dwelling Units	62	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) $T = 0.7 (X) + 9.74$	13 25%	40 75%	53
252 - Senior Adult Housing - Attached	Dwelling Units	100	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	7 35%	13 65%	20
254 - Assisted Living	Beds	150	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.14	14 67%	7 33%	21
252 - Senior Adult Housing - Attached - 1	Dwelling Units	48	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	3 30%	7 70%	10

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	13	0 %	40
252 - Senior Adult Housing - Attached	0 %	7	0 %	13
254 - Assisted Living	0 %	14	0 %	7
252 - Senior Adult Housing - Attached - 1	0 %	3	0 %	7

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached

Demand Entry: % (0) Entry 7

Demand Exit: % (0) Exit 13

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 14

Demand Exit: % (0) Exit 7

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

252 - Senior Adult Housing - Attached

Exit 13 Demand Exit: % (0) Balanced: 0

Entry 7 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 14

Demand Exit: % (0) Exit 7

252 - Senior Adult Housing - Attached

Exit 13 Demand Exit: % (0) Balanced: 0

Entry 7 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

254 - Assisted Living

Exit 7 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

210 - Single-Family Detached Housing

	Total Trips	Internal Trips			Total	External Trips
		252 - Senior Adult Housing - Attached	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (100%)
Exit	40 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)
Total	53 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	53 (100%)

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips			Total	External Trips
		210 - Single-Family Detached Housing	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Exit	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (100%)
Total	20 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	20 (100%)

254 - Assisted Living

Total Trips	Internal Trips				External Trips

		210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	252 - Senior Adult Housing - Attached - 1	Total	
Entry	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)
Exit	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Total	21 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	21 (100%)

252 - Senior Adult Housing - Attached - 1

		Internal Trips				
	Total Trips	210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	254 - Assisted Living	Total	External Trips
Entry	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Exit	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Total	10 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	53	0 %	0	53
252 - Senior Adult Housing - Attached	20	0 %	0	20
254 - Assisted Living	21	0 %	0	21
252 - Senior Adult Housing - Attached - 1	10	0 %	0	10

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Landuse No deviations from ITE.

Methods 252 - Senior Adult Housing - Attached - 1
The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.

External Trips 210 - Single-Family Detached Housing
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

254 - Assisted Living
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached - 1
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	37
Total Exiting	67
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	37
Total Exiting Non-Pass-by Trips	67

PERIOD SETTING

Analysis Name :	PM Peak	No :	
Project Name :	Gordon 2017	City:	
Date:	2/13/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:			

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing	Dwelling Units	62	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) $\ln(T) = 0.9\ln(X) + 0.51$	43 63%	25 37%	68
252 - Senior Adult Housing - Attached	Dwelling Units	100	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	14 56%	11 44%	25
254 - Assisted Living	Beds	150	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.22	15 45%	18 55%	33
252 - Senior Adult Housing - Attached - 1	Dwelling Units	48	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	6 50%	6 50%	12

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	43	0 %	25
252 - Senior Adult Housing - Attached	0 %	14	0 %	11
254 - Assisted Living	0 %	15	0 %	18
252 - Senior Adult Housing - Attached - 1	0 %	6	0 %	6

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached

Demand Entry: % (0) Entry 14

Demand Exit: % (0) Exit 11

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 15

Demand Exit: % (0) Exit 18

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 6

Demand Exit: % (0) Exit 6

252 - Senior Adult Housing - Attached

Exit 11 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 15

Demand Exit: % (0) Exit 18

252 - Senior Adult Housing - Attached

Exit 11 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 6

Demand Exit: % (0) Exit 6

254 - Assisted Living

Exit 18 Demand Exit: % (0) Balanced: 0

Entry 15 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 6

Demand Exit: % (0) Exit 6

210 - Single-Family Detached Housing

	Total Trips	Internal Trips			Total	External Trips
		252 - Senior Adult Housing - Attached	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	43 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	43 (100%)
Exit	25 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (100%)
Total	68 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	68 (100%)

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips			Total	External Trips
		210 - Single-Family Detached Housing	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)
Exit	11 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (100%)
Total	25 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (100%)

254 - Assisted Living

Total Trips	Internal Trips				External Trips

		210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	252 - Senior Adult Housing - Attached - 1	Total	
Entry	15 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	15 (100%)
Exit	18 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	18 (100%)
Total	33 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	33 (100%)

252 - Senior Adult Housing - Attached - 1

		Internal Trips				
Total Trips		210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	254 - Assisted Living	Total	External Trips
Entry	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Exit	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Total	12 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	12 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	68	0 %	0	68
252 - Senior Adult Housing - Attached	25	0 %	0	25
254 - Assisted Living	33	0 %	0	33
252 - Senior Adult Housing - Attached - 1	12	0 %	0	12

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse No deviations from ITE.

Methods 252 - Senior Adult Housing - Attached - 1
The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.

External Trips 210 - Single-Family Detached Housing
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

254 - Assisted Living
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached - 1
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	78
Total Exiting	60
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	78
Total Exiting Non-Pass-by Trips	60

PERIOD SETTING

Analysis Name :	AM Peak	No :	
Project Name :	Jacquemin - Phase 1	City:	
Date:	4/3/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:	AML		

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
220 - Apartment	Dwelling Units	224	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) T = 0.49 (X)+3.73	23 20%	90 80%	113
252 - Senior Adult Housing - Attached	Dwelling Units	250	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	17 34%	33 66%	50

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
220 - Apartment	0 %	23	0 %	90
252 - Senior Adult Housing - Attached	0 %	17	0 %	33

INTERNAL TRIPS

220 - Apartment

Exit	90	Demand Exit:	0 % (0)	Balanced:	0
Entry	23	Demand Entry:	0 % (0)	Balanced:	0

252 - Senior Adult Housing - Attached

Demand Entry:	0 % (0)	Entry	17
Demand Exit:	0 % (0)	Exit	33

220 - Apartment

Total Trips		Internal Trips		External Trips	
		252 - Senior Adult Housing - Attached	Total		
Entry	23 (100%)	0 (0%)	0 (0%)	23 (100%)	
Exit	90 (100%)	0 (0%)	0 (0%)	90 (100%)	
Total	113 (100%)	0 (0%)	0 (0%)	113 (100%)	

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips		External Trips
		220 - Apartment	Total	
Entry	17 (100%)	0 (0%)	0 (0%)	17 (100%)
Exit	33 (100%)	0 (0%)	0 (0%)	33 (100%)
Total	50 (100%)	0 (0%)	0 (0%)	50 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
220 - Apartment	113	0 %	0	113
252 - Senior Adult Housing - Attached	50	0 %	0	50

ITE DEVIATION DETAILS**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.**

Landuse No deviations from ITE.

Methods No deviations from ITE.

External Trips 220 - Apartment
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	40
Total Exiting	123
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	40
Total Exiting Non-Pass-by Trips	123

PERIOD SETTING

Analysis Name :	PM Peak	No :	
Project Name :	Jacquemin - Phase 1	City:	
Date:	4/3/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:	AML		

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
220 - Apartment	Dwelling Units	224	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.55 (X)+17.65	92 65%	49 35%	141
252 - Senior Adult Housing - Attached	Dwelling Units	250	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	34 54%	29 46%	63

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
220 - Apartment	0 %	92	0 %	49
252 - Senior Adult Housing - Attached	0 %	34	0 %	29

INTERNAL TRIPS

220 - Apartment

Exit	49	Demand Exit:	0 % (0)	Balanced:	0
Entry	92	Demand Entry:	0 % (0)	Balanced:	0

252 - Senior Adult Housing - Attached

Demand Entry:	0 % (0)	Entry	34
Demand Exit:	0 % (0)	Exit	29

220 - Apartment

Total Trips		Internal Trips	Total	External Trips
		252 - Senior Adult Housing - Attached		
Entry	92 (100%)	0 (0%)	0 (0%)	92 (100%)
Exit	49 (100%)	0 (0%)	0 (0%)	49 (100%)
Total	141 (100%)	0 (0%)	0 (0%)	141 (100%)

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips		External Trips
		220 - Apartment	Total	
Entry	34 (100%)	0 (0%)	0 (0%)	34 (100%)
Exit	29 (100%)	0 (0%)	0 (0%)	29 (100%)
Total	63 (100%)	0 (0%)	0 (0%)	63 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
220 - Apartment	141	0 %	0	141
252 - Senior Adult Housing - Attached	63	0 %	0	63

ITE DEVIATION DETAILS**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.**

Landuse No deviations from ITE.

Methods No deviations from ITE.

External Trips 220 - Apartment
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	126
Total Exiting	78
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	126
Total Exiting Non-Pass-by Trips	78

MOU Attachment C Autumn Rose TIS & Halls Corner TIS



EXECUTIVE SUMMARY

Pulte Homes is proposing to develop a site with 73 single family homes. The site is located on the east side of Hyland-Croy Road between Tullymore Drive and Park Mill Drive. A full access is proposed on Hyland-Croy Road. There are also connections to the subdivision to the north (via Mill Springs Drive) and the subdivision to the south (via Barrister Drive).

As part of permitting access, a traffic impact study (TIS) is required. Both the City of Dublin and the Union County Engineer's Office (UCEO) are reviewers of the study. The scope included analysis at the proposed access on Hyland-Croy Road and the following off site intersections:

- Hyland-Croy Road & Mitchell Dewitt Road/Brand Road
- Hyland-Croy Road & Tullymore Drive
- Hyland-Croy Road & Park Mill Drive
- Post Road & Hyland-Croy Road

As part of the project, turning movement counts were taken at the intersections of Hyland-Croy Road & Mitchell Dewitt Road/Brand Road and Post Road & Hyland-Croy Road. Existing 2015 peak hour turning movement counts (7-9 AM & 4-6 PM) were the basis of the existing traffic at the intersections of Hyland-Croy Road & Tullymore Drive and Hyland-Croy Road & Park Mill Drive. The peak hours of each study area intersection were used as the existing traffic in the study.

The site traffic was computed using *Trip Generation Manual, 9th Edition*, published by the Institute of Transportation Engineers (ITE). The land use is "Single Family Detached Housing" (ITE Code #210). The site traffic was applied to the existing street network based on the following distribution:

- 43% to/from north
 - 20% to/from Hyland-Croy Rd. north of Mitchell-Dewitt Rd./Brand Road Rd.
 - 20% to/from Brand Rd. east of Hyland-Croy Rd.
 - 3% to/from Mitchell-Dewitt Rd. west of Hyland-Croy Rd
- 57% to/from south
 - 37% to/from Post Rd. west of Hyland-Croy Rd.
 - 20% to/from Post Rd. east of Hyland-Croy Rd.

Because of the required connections to the subdivisions to the north and south, there is anticipated to be some interaction between the site and the adjacent subdivisions. With the connections, it is anticipated that the existing lots near the connections would be the ones that would benefit from using a different access. Traffic from proposed lots using existing streets is reflected in the assignment of site traffic. Diverted traffic which is traffic from existing streets using the proposed streets was assigned based upon potential tributary lots for certain movements.

A 10-year design horizon is required for this development. Opening day is anticipated to be in 2016 which makes the design year 2026. Per the Memo of Understanding (MOU), the development of background traffic included traffic using study area intersections from the undeveloped portions of the Riviera, Oak Park, Tartan Ridge, Celtic Crossing, and Jerome Village developments and a 1% annual linear growth rate applied to all non-subdivision movements.

The 2016 and 2026 'No Build' (Background) and 'Build' volumes developed in the study were used in the turn lane warrant analyses and capacity analyses. Mitigation that would be required

2016 AND 2026 TRAFFIC

A 10-year design horizon is required for this development. Opening day is anticipated to be in 2016 which makes the design year 2026. Per the Memo of Understanding (MOU), a 1% annual linear growth rate is applied to all non-subdivision movements. Table 3 shows the annual growth rate and the corresponding factors applied to the existing counts

Segment	Linear Annual Growth Rate	2015 to 2016 Factor	2015 to 2026 Factor
All Study Area Segments	1.0%	1.011	1.110

TABLE 3 –Growth Rate Assumptions in Study

Figures 5 and 6 show the components of the 2016 ‘Build’ traffic. Figures 7 and 8 show the components of the 2026 ‘Build’ traffic. To assist with the review, exhibits showing the 2016 and 2026 ‘No Build’ volumes have been provided in Appendix D.

development trips⁶. Using this process, 2015 and 2035 background traffic volumes were developed for each study intersection. The step-by-step growth and background traffic calculations can be found in Appendix D (pages D7-D70).

4.2 Site Traffic

4.2.1 Trip Generation

Trips for the proposed site were generated⁷ using the Institute of Transportation Engineer's (ITE) OTISS software which uses the latest data (Volume 9 of *Trip Generation* and the 2nd Edition of *Trip Generation Handbook*). Pass-by and internal capture rates were applied per ITE standard procedures. Table 2 on Page 10 of this report provides the detailed trip generation for the proposed site.

4.2.2 Trip Distribution & Assignment

All non-pass-by trips for the proposed site were distributed using the average of the AM, PM, and Saturday peak directional distributions of Hyland-Croy road. A small percentage of traffic was also assigned to the proposed Gordon development access drive. This gives:

- 25% to/from the north via Hyland-Croy Road
- 70% to/from the south via Hyland-Croy Road
- 5% to/from the east via the Gordon Access Drive

Pass-by trips were distributed using the directional distribution of Hyland-Croy Road only, which gives:

- 40% will pass-by southbound on Hyland-Croy Road
- 60% will pass-by northbound on Hyland-Croy Road

The trip distribution for the proposed site can be found in Appendix D (pages D71-D80).

⁶ Since Saturday trip generation is unavailable for some off-site development land uses, it was necessary to estimate future Saturday turn percentages. It was assumed that turn percentages for Saturday volumes would change by the same amount that PM turn percentages change throughout the analysis period.

⁷ Trips were generated according to the land use assumptions outlined in Section 2.2.2.

Appendix B Count Data



Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 1

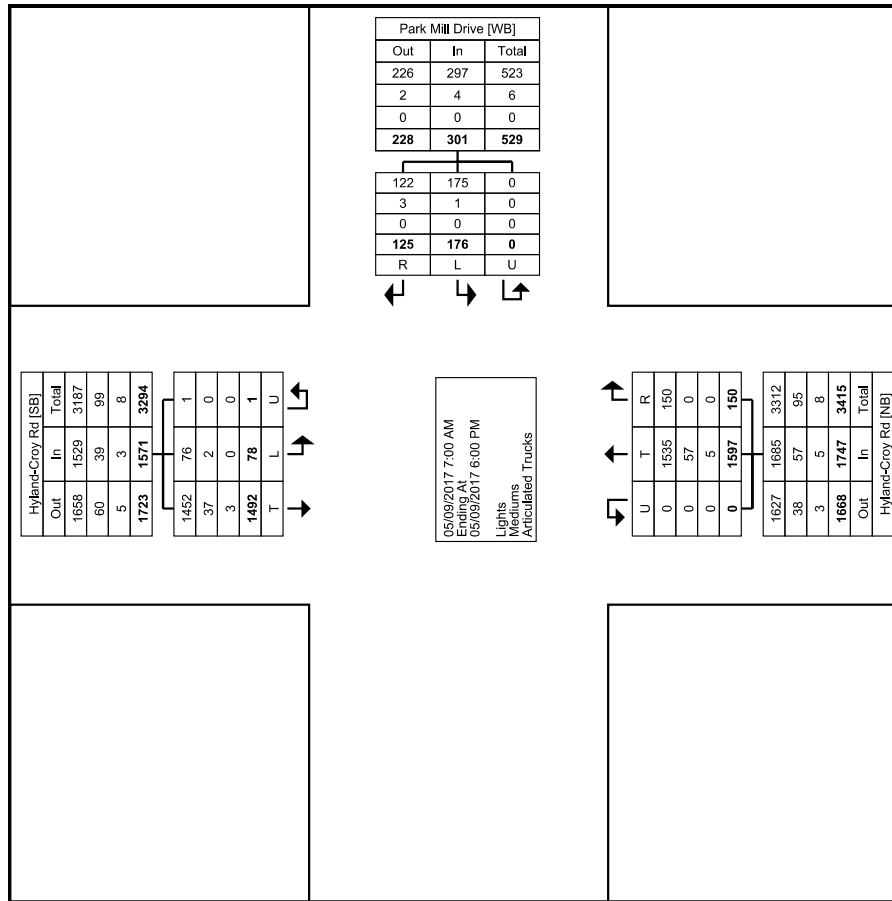
Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Start Time	Hyland-Croy Rd Southbound				Park Mill Drive Westbound				Hyland-Croy Rd Northbound				
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
7:00 AM	119	0	0	119	5	12	0	17	1	66	0	67	203
7:15 AM	103	7	0	110	18	11	0	29	1	51	0	52	191
7:30 AM	113	8	1	122	42	10	0	52	4	75	0	79	253
7:45 AM	143	15	0	158	14	13	0	27	1	67	0	68	253
Hourly Total	478	30	1	509	79	46	0	125	7	259	0	266	900
8:00 AM	107	2	0	109	4	16	0	20	1	73	0	74	203
8:15 AM	96	2	0	98	5	20	0	25	2	50	0	52	175
8:30 AM	92	1	0	93	1	20	0	21	1	49	0	50	164
8:45 AM	135	0	0	135	5	19	0	24	4	65	0	69	228
Hourly Total	430	5	0	435	15	75	0	90	8	237	0	245	770
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	72	3	0	75	4	6	0	10	11	92	0	103	188
4:15 PM	74	4	0	78	2	6	0	8	10	102	0	112	198
4:30 PM	66	4	0	70	3	11	0	14	13	127	0	140	224
4:45 PM	72	9	0	81	2	6	0	8	14	152	0	166	255
Hourly Total	284	20	0	304	11	29	0	40	48	473	0	521	865
5:00 PM	80	5	0	85	3	4	0	7	16	147	0	163	255
5:15 PM	85	7	0	92	4	8	0	12	24	150	0	174	278
5:30 PM	61	6	0	67	7	5	0	12	24	161	0	185	264
5:45 PM	74	5	0	79	6	9	0	15	23	170	0	193	287
Hourly Total	300	23	0	323	20	26	0	46	87	628	0	715	1084
Grand Total	1492	78	1	1571	125	176	0	301	150	1597	0	1747	3619
Approach %	95.0	5.0	0.1	-	41.5	58.5	0.0	-	8.6	91.4	0.0	-	-
Total %	41.2	2.2	0.0	43.4	3.5	4.9	0.0	8.3	4.1	44.1	0.0	48.3	-
Lights	1452	76	1	1529	122	175	0	297	150	1535	0	1685	3511
% Lights	97.3	97.4	100.0	97.3	97.6	99.4	-	98.7	100.0	96.1	-	96.5	97.0
Mediums	37	2	0	39	3	1	0	4	0	57	0	57	100
% Mediums	2.5	2.6	0.0	2.5	2.4	0.6	-	1.3	0.0	3.6	-	3.3	2.8
Articulated Trucks	3	0	0	3	0	0	0	0	0	5	0	5	8
% Articulated Trucks	0.2	0.0	0.0	0.2	0.0	0.0	-	0.0	0.0	0.3	0	0.3	0.2

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 2



Turning Movement Data Plot

Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 3

Columbus, Ohio, United States 43229
614 656 2419 dlaurant@cmtran.com

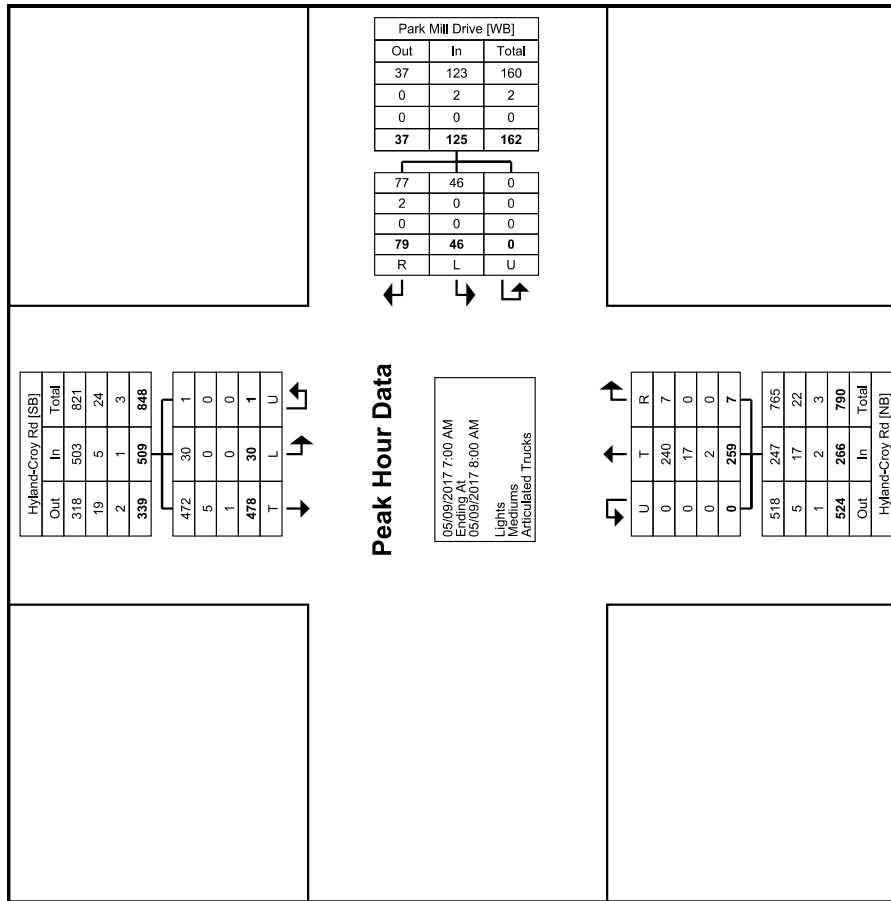
Turning Movement Peak Hour Data (7:00 AM)

Start Time	Hyland-Croy Rd Southbound				Park Mill Drive Westbound				Hyland-Croy Rd Northbound				
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
7:00 AM	119	0	0	119	5	12	0	17	1	66	0	67	203
7:15 AM	103	7	0	110	18	11	0	29	1	51	0	52	191
7:30 AM	113	8	1	122	42	10	0	52	4	75	0	79	253
7:45 AM	143	15	0	158	14	13	0	27	1	67	0	68	253
Total	478	30	1	509	79	46	0	125	7	259	0	266	900
Approach %	93.9	5.9	0.2	-	63.2	36.8	0.0	-	2.6	97.4	0.0	-	-
Total %	53.1	3.3	0.1	56.6	8.8	5.1	0.0	13.9	0.8	28.8	0.0	29.6	-
PHF	0.836	0.500	0.250	0.805	0.470	0.250	0.000	0.601	0.438	0.863	0.000	0.842	0.889
Lights	472	30	1	503	77	46	0	123	7	240	0	247	873
% Lights	98.7	100.0	100.0	98.8	97.5	100.0	-	98.4	100.0	92.0	-	92.9	97.0
Mediums	5	0	0	5	2	0	0	2	0	17	0	17	24
% Mediums	1.0	0.0	0.0	1.0	2.5	0.0	-	1.6	0.0	6.6	-	6.4	2.7
Articulated Trucks	1	0	0	1	0	0	0	0	0	2	0	2	3
% Articulated Trucks	0.2	0.0	0.0	0.2	0.0	0.0	-	0.0	0.0	0.8	-	0.8	0.3

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 4



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

Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 5

Site Code:
Start Date: 05/09/2017
Page No: 5

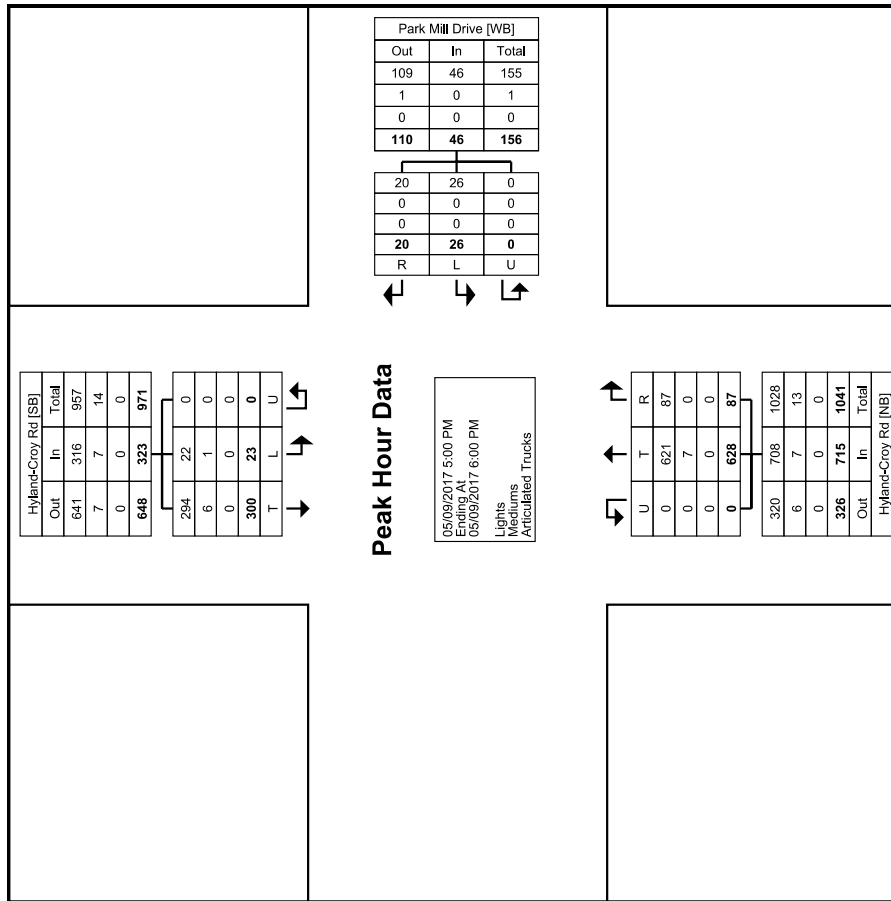
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Hyland-Croy Rd Southbound				Park Mill Drive Westbound				Hyland-Croy Rd Northbound				
	Thru	Left	U-Turn	App. Total	Right	Left	U-Turn	App. Total	Right	Thru	U-Turn	App. Total	Int. Total
5:00 PM	80	5	0	85	3	4	0	7	16	147	0	163	255
5:15 PM	85	7	0	92	4	8	0	12	24	150	0	174	278
5:30 PM	61	6	0	67	7	5	0	12	24	161	0	185	264
5:45 PM	74	5	0	79	6	9	0	15	23	170	0	193	287
Total	300	23	0	323	20	26	0	46	87	628	0	715	1084
Approach %	92.9	7.1	0.0	-	43.5	56.5	0.0	-	12.2	87.8	0.0	-	-
Total %	27.7	2.1	0.0	29.8	1.8	2.4	0.0	4.2	8.0	57.9	0.0	66.0	-
PHF	0.882	0.821	0.000	0.878	0.714	0.722	0.000	0.767	0.906	0.924	0.000	0.926	0.944
Lights	294	22	0	316	20	26	0	46	87	621	0	708	1070
% Lights	98.0	95.7	-	97.8	100.0	100.0	-	100.0	100.0	98.9	-	99.0	98.7
Mediums	6	1	0	7	0	0	0	0	0	7	0	7	14
% Mediums	2.0	4.3	-	2.2	0.0	0.0	-	0.0	0.0	1.1	-	1.0	1.3
Articulated Trucks	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

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Park Mill
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 6



Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: Hyland-Croy Road & Tullymore
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 1

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

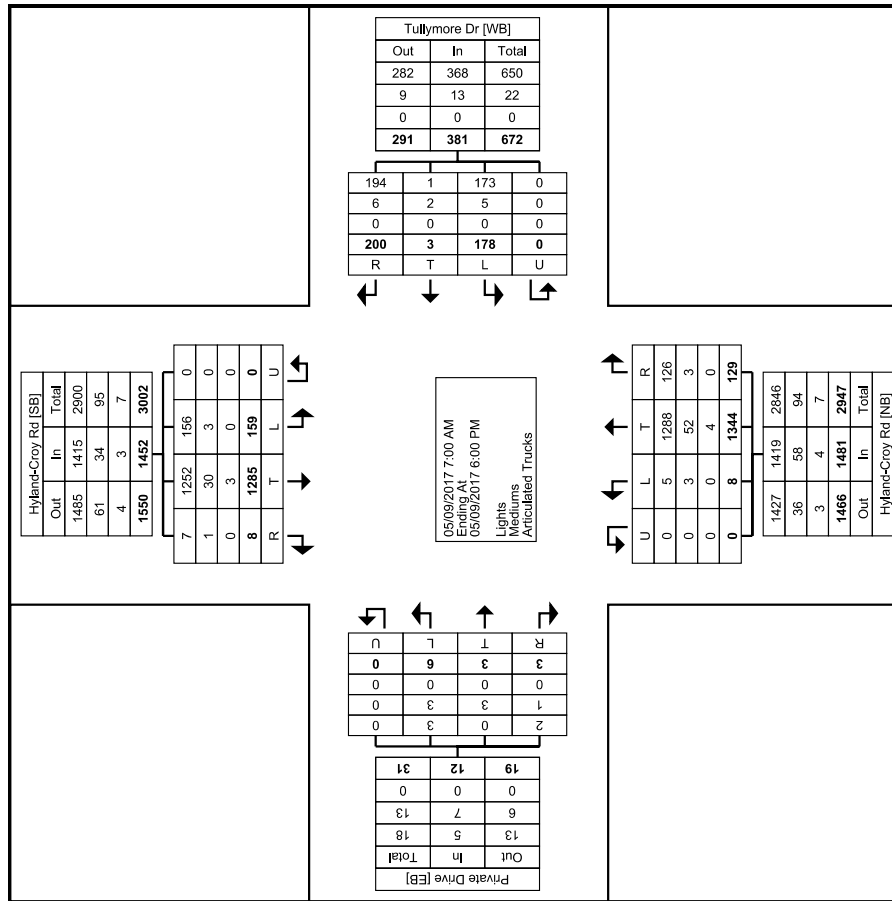
Turning Movement Data

Start Time	Hyland-Croy Rd Southbound					Tullymore Dr Westbound					Hyland-Croy Rd Northbound					Private Drive Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
7:00 AM	0	100	2	0	102	10	0	20	0	30	3	62	0	0	65	0	0	0	0	0	197
7:15 AM	1	92	3	0	96	14	0	10	0	24	4	61	0	0	65	0	0	1	0	1	186
7:30 AM	0	102	19	0	121	50	0	15	0	65	0	111	2	0	113	0	0	0	0	0	299
7:45 AM	2	147	42	0	191	26	0	15	0	41	6	72	1	0	79	0	1	1	0	2	313
Hourly Total	3	441	66	0	510	100	0	60	0	160	13	306	3	0	322	0	1	2	0	3	995
8:00 AM	0	84	6	0	90	10	0	18	0	28	3	78	0	0	81	1	1	1	0	3	202
8:15 AM	0	88	4	0	92	8	2	12	0	22	5	49	0	0	54	0	0	0	0	0	168
8:30 AM	0	77	3	0	80	6	0	14	0	20	2	53	0	0	55	0	1	0	0	1	156
8:45 AM	1	113	6	0	120	18	0	24	0	42	3	64	0	0	67	1	0	2	0	3	232
Hourly Total	1	362	19	0	382	42	2	68	0	112	13	244	0	0	257	2	2	3	0	7	758
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	63	11	0	74	7	0	10	0	17	11	80	0	0	91	0	0	0	0	0	182
4:15 PM	0	73	10	0	83	6	0	4	0	10	19	91	0	0	110	0	0	0	0	0	203
4:30 PM	1	67	9	0	77	5	0	4	0	9	9	112	1	0	122	1	0	0	0	1	209
4:45 PM	0	75	13	0	88	9	0	9	0	18	15	131	3	0	149	0	0	1	0	1	256
Hourly Total	1	278	43	0	322	27	0	27	0	54	54	414	4	0	472	1	0	1	0	2	850
5:00 PM	2	72	10	0	84	19	0	8	0	27	17	145	1	0	163	0	0	0	0	0	274
5:15 PM	1	83	15	0	99	6	0	9	0	15	13	124	0	0	137	0	0	0	0	0	251
5:30 PM	0	49	6	0	55	6	1	6	0	13	19	111	0	0	130	0	0	0	0	0	198
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hourly Total	3	204	31	0	238	31	1	23	0	55	49	380	1	0	430	0	0	0	0	0	723
Grand Total	8	1285	159	0	1452	200	3	178	0	381	129	1344	8	0	1481	3	3	6	0	12	3326
Approach %	0.6	88.5	11.0	0.0	-	52.5	0.8	46.7	0.0	-	8.7	90.7	0.5	0.0	-	25.0	25.0	50.0	0.0	-	-
Total %	0.2	38.6	4.8	0.0	43.7	6.0	0.1	5.4	0.0	11.5	3.9	40.4	0.2	0.0	44.5	0.1	0.1	0.2	0.0	0.4	-
Lights	7	1252	156	0	1415	194	1	173	0	368	126	1288	5	0	1419	2	0	3	0	5	3207
% Lights	87.5	97.4	98.1	-	97.5	97.0	33.3	97.2	-	96.6	97.7	95.8	62.5	-	95.8	66.7	0.0	50.0	-	41.7	96.4
Mediums	1	30	3	0	34	6	2	5	0	13	3	52	3	0	58	1	3	3	0	7	112
% Mediums	12.5	2.3	1.9	-	2.3	3.0	66.7	2.8	-	3.4	2.3	3.9	37.5	-	3.9	33.3	100.0	50.0	-	58.3	3.4
Articulated Trucks	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
% Articulated Trucks	0.0	0.2	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	-	0.3	0.0	0.0	0.0	-	0.0	0.2

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Tullymore
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 2



Turning Movement Data Plot

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Tullymore
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 3

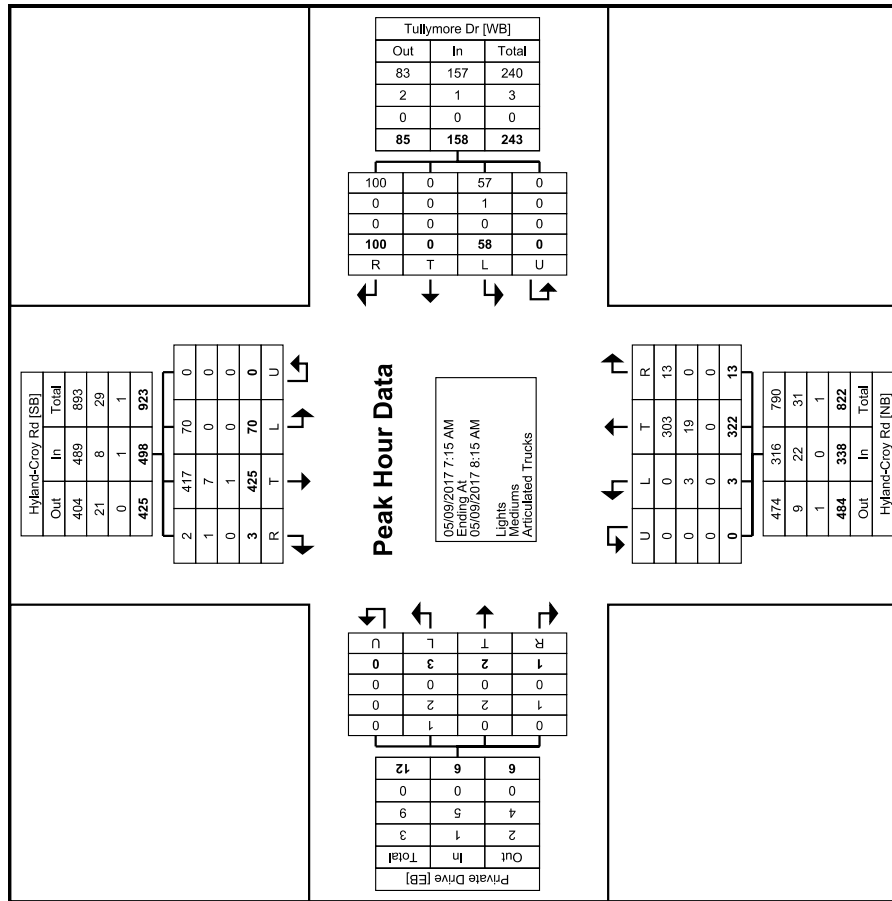
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hyland-Croy Rd Southbound					Tullymore Dr Westbound					Hyland-Croy Rd Northbound					Private Drive Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
7:15 AM	1	92	3	0	96	14	0	10	0	24	4	61	0	0	65	0	0	1	0	1	186
7:30 AM	0	102	19	0	121	50	0	15	0	65	0	111	2	0	113	0	0	0	0	0	299
7:45 AM	2	147	42	0	191	26	0	15	0	41	6	72	1	0	79	0	1	1	0	2	313
8:00 AM	0	84	6	0	90	10	0	18	0	28	3	78	0	0	81	1	1	1	0	3	202
Total	3	425	70	0	498	100	0	58	0	158	13	322	3	0	338	1	2	3	0	6	1000
Approach %	0.6	85.3	14.1	0.0	-	63.3	0.0	36.7	0.0	-	3.8	95.3	0.9	0.0	-	16.7	33.3	50.0	0.0	-	-
Total %	0.3	42.5	7.0	0.0	49.8	10.0	0.0	5.8	0.0	15.8	1.3	32.2	0.3	0.0	33.8	0.1	0.2	0.3	0.0	0.6	-
PHF	0.375	0.723	0.417	0.000	0.652	0.500	0.000	0.806	0.000	0.608	0.542	0.725	0.375	0.000	0.748	0.250	0.500	0.750	0.000	0.500	0.799
Lights	2	417	70	0	489	100	0	57	0	157	13	303	0	0	316	0	0	1	0	1	963
% Lights	66.7	98.1	100.0	-	98.2	100.0	-	98.3	-	99.4	100.0	94.1	0.0	-	93.5	0.0	0.0	33.3	-	16.7	96.3
Mediums	1	7	0	0	8	0	0	1	0	1	0	19	3	0	22	1	2	2	0	5	36
% Mediums	33.3	1.6	0.0	-	1.6	0.0	-	1.7	-	0.6	0.0	5.9	100.0	-	6.5	100.0	100.0	66.7	-	83.3	3.6
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	0.2	0.0	-	0.2	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road & Tullymore
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 4



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

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: Hyland-Croy Road & Tullymore
Drive TMC
Site Code:
Start Date: 05/09/2017
Page No: 5

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Hyland-Croy Rd Southbound					Tullymore Dr Westbound					Northbound Hyland-Croy Rd					Private Drive Eastbound						
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total	
4:30 PM	1	67	9	0	77	5	0	4	0	9	9	112	1	0	122	1	0	0	0	1	209	
4:45 PM		0	75	13	0	88	9	0	9	0	18	15	131	3	0	149	0	0	1	0	1	256
5:00 PM	2	72	10	0	84	19	0	8	0	27	17	145	1	0	163	0	0	0	0	0	274	
5:15 PM	1	83	15	0	99	6	0	9	0	15	13	124	0	0	137	0	0	0	0	0	251	
Total	4	297	47	0	348	39	0	30	0	69	54	512	5	0	571	1	0	1	0	2	990	
Approach %	1.1	85.3	13.5	0.0	-	56.5	0.0	43.5	0.0	-	9.5	89.7	0.9	0.0	-	50.0	0.0	50.0	0.0	-	-	
Total %	0.4	30.0	4.7	0.0	35.2	3.9	0.0	3.0	0.0	7.0	5.5	51.7	0.5	0.0	57.7	0.1	0.0	0.1	0.0	0.2	-	
PHF	0.500	0.895	0.783	0.000	0.879	0.513	0.000	0.833	0.000	0.639	0.794	0.883	0.417	0.000	0.876	0.250	0.000	0.250	0.000	0.500	0.903	
Lights	4	283	47	0	334	39	0	30	0	69	54	509	5	0	568	1	0	1	0	2	973	
% Lights	100.0	95.3	100.0	-	96.0	100.0	-	100.0	-	100.0	100.0	99.4	100.0	-	99.5	100.0	-	100.0	-	100.0	98.3	
Mediums	0	13	0	0	13	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	16	
% Mediums	0.0	4.4	0.0	-	3.7	0.0	-	0.0	-	0.0	0.0	0.6	0.0	-	0.5	0.0	-	0.0	-	0.0	1.6	
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	0.3	0.0	-	0.3	0.0	-	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.0	-	0.0	-	0.0	0.1	

Private Drive [EB]

Out	In	Total
9	11	20
0	0	0
0	0	0
0	0	0
1	1	2

Tullymore Dr [WB]

Out	In	Total
101	69	170
0	0	0
0	0	0
0	0	0
101	69	170

Hyland-Croy Rd [SB]

Out	In	Total
549	334	883
3	13	16
0	1	1
552	348	900

Peak Hour Data

05/09/2017 4:30 PM
 05/09/2017 5:30 PM
 Lights
 Mediums
 Articulated Trucks

Hyland-Croy Rd [NB]

Out	In	Total
328	571	899
1	0	1
13	3	16
314	568	882

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

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: Hyland-Croy Road and Mitchell-Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 1

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

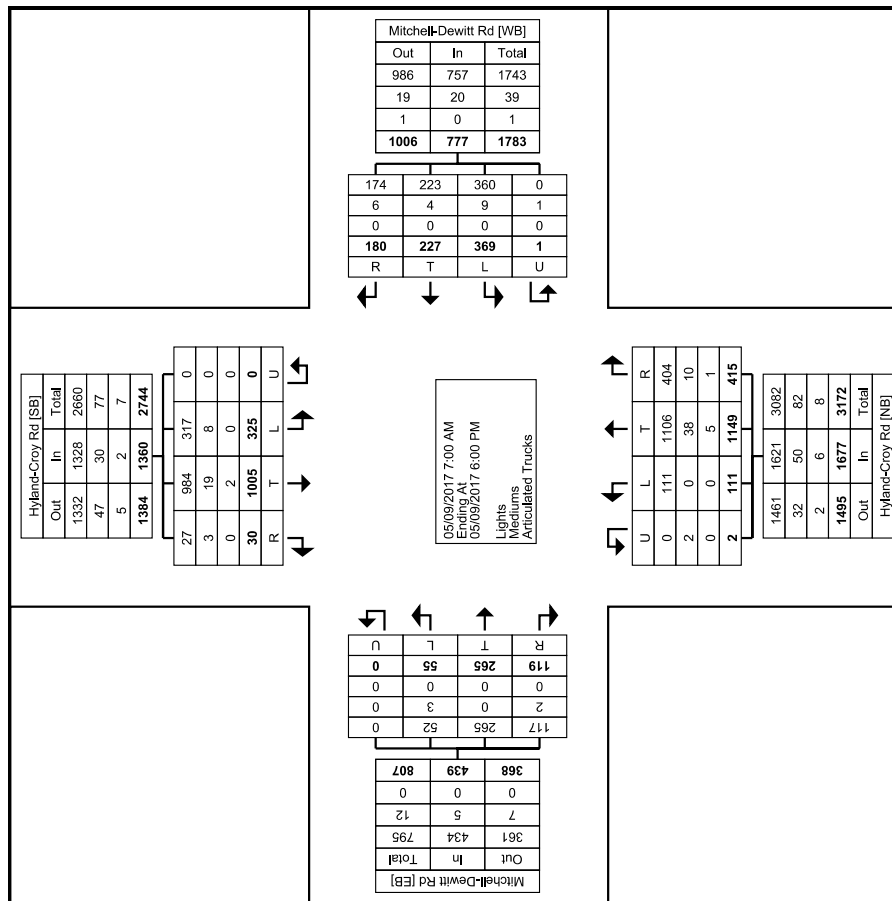
Turning Movement Data

Start Time	Hyland-Croy Rd Southbound					Mitchell-Dewitt Rd Westbound					Hyland-Croy Rd Northbound					Mitchell-Dewitt Rd Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	0	77	10	0	87	5	18	13	0	36	16	50	3	1	70	9	7	4	0	20	213
7:15 AM	2	73	13	0	88	9	18	20	0	47	34	36	2	0	72	4	11	7	0	22	229
7:30 AM	1	69	84	0	154	16	8	55	1	80	83	48	4	0	135	5	18	6	0	29	398
7:45 AM	6	108	75	0	189	17	11	56	0	84	54	65	9	0	128	13	17	5	0	35	436
Hourly Total	9	327	182	0	518	47	55	144	1	247	187	199	18	1	405	31	53	22	0	106	1276
8:00 AM	2	67	16	0	85	9	14	12	0	35	20	65	6	0	91	9	8	4	0	21	232
8:15 AM	1	63	4	0	68	5	18	12	0	35	9	42	3	0	54	5	8	1	0	14	171
8:30 AM	0	63	12	0	75	5	16	10	0	31	12	41	2	0	55	3	9	1	0	13	174
8:45 AM	3	83	4	0	90	5	6	18	0	29	19	62	5	0	86	10	9	2	0	21	226
Hourly Total	6	276	36	0	318	24	54	52	0	130	60	210	16	0	286	27	34	8	0	69	803
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	3	48	11	0	62	7	15	19	0	41	7	65	8	0	80	8	14	0	0	22	205
4:15 PM	4	56	12	0	72	4	14	16	0	34	19	69	8	0	96	9	15	0	0	24	226
4:30 PM	2	52	12	0	66	14	14	17	0	45	24	78	9	0	111	3	26	3	0	32	254
4:45 PM	4	55	23	0	82	21	13	25	0	59	24	107	11	0	142	7	16	6	0	29	312
Hourly Total	13	211	58	0	282	46	56	77	0	179	74	319	36	0	429	27	71	9	0	107	997
5:00 PM	0	52	14	0	66	20	17	19	0	56	23	107	13	0	143	10	28	7	0	45	310
5:15 PM	0	65	8	0	73	19	22	20	0	61	22	96	6	0	124	13	27	6	0	46	304
5:30 PM	1	40	15	0	56	14	10	22	0	46	22	112	10	1	145	6	26	3	0	35	282
5:45 PM	1	34	12	0	47	10	13	35	0	58	27	106	12	0	145	5	26	0	0	31	281
Hourly Total	2	191	49	0	242	63	62	96	0	221	94	421	41	1	557	34	107	16	0	157	1177
Grand Total	30	1005	325	0	1360	180	227	369	1	777	415	1149	111	2	1677	119	265	55	0	439	4253
Approach %	2.2	73.9	23.9	0.0	-	23.2	29.2	47.5	0.1	-	24.7	68.5	6.6	0.1	-	27.1	60.4	12.5	0.0	-	-
Total %	0.7	23.6	7.6	0.0	32.0	4.2	5.3	8.7	0.0	18.3	9.8	27.0	2.6	0.0	39.4	2.8	6.2	1.3	0.0	10.3	-
Lights	27	984	317	0	1328	174	223	360	0	757	404	1106	111	0	1621	117	265	52	0	434	4140
% Lights	90.0	97.9	97.5	-	97.6	96.7	98.2	97.6	0.0	97.4	97.3	96.3	100.0	0.0	96.7	98.3	100.0	94.5	-	98.9	97.3
Mediums	3	19	8	0	30	6	4	9	1	20	10	38	0	2	50	2	0	3	0	5	105
% Mediums	10.0	1.9	2.5	-	2.2	3.3	1.8	2.4	100.0	2.6	2.4	3.3	0.0	100.0	3.0	1.7	0.0	5.5	-	1.1	2.5
Articulated Trucks	0	2	0	0	2	0	0	0	0	0	1	5	0	0	6	0	0	0	0	0	8
% Articulated Trucks	0.0	0.2	0.0	-	0.1	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.4	0.0	0.0	0.0	-	0.0	0.2

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road and Mitchell-
Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 2



Turning Movement Data Plot

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: Hyland-Croy Road and Mitchell-Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 3

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Approach Data

Start Time	Southbound Street			Westbound Street			Northbound Street			Eastbound Street		
	Circulating	Out	In	Circulating	Out	In	Circulating	Out	In	Circulating	Out	In
7:00 AM	33	58	89	57	32	35	20	97	70	106	22	20
7:15 AM	40	53	88	44	58	47	30	96	72	107	22	22
7:30 AM	69	69	162	57	181	81	108	121	137	225	13	33
7:45 AM	79	88	180	80	150	85	98	186	127	221	25	31
Hourly Total	221	268	519	238	421	248	256	500	406	659	82	106
8:00 AM	31	78	87	75	44	34	30	88	92	98	22	23
8:15 AM	31	50	65	45	21	33	13	82	53	75	23	13
8:30 AM	31	47	77	46	32	32	21	75	57	86	16	13
8:45 AM	28	71	91	70	33	28	16	112	87	106	14	22
Hourly Total	121	246	320	236	130	127	80	357	289	365	75	71
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	40	72	62	73	33	40	25	75	80	78	26	22
4:15 PM	41	72	73	78	45	36	28	80	97	85	25	26
4:30 PM	39	93	66	90	62	45	42	72	111	80	25	32
4:45 PM	49	133	83	123	61	59	46	86	142	107	28	30
Hourly Total	169	370	284	364	201	180	141	313	430	350	104	110
5:00 PM	49	135	66	123	65	56	51	83	141	85	31	45
5:15 PM	52	122	73	105	57	62	42	97	123	93	27	47
5:30 PM	42	128	57	127	62	46	43	67	146	79	21	35
5:45 PM	61	116	46	117	67	59	39	77	144	77	26	30
Hourly Total	204	501	242	472	251	223	175	324	554	334	105	157
Grand Total	715	1385	1365	1310	1003	778	652	1494	1679	1708	366	444
Approach %	16.0	31.0	30.5	40.0	30.7	23.8	16.6	38.0	42.7	61.4	13.2	16.0
Total %	4.9	9.6	9.4	9.1	6.9	5.4	4.5	10.3	11.6	11.8	2.5	3.1
Lights	701	1331	1332	1258	982	759	638	1458	1619	1666	360	437
% Lights	98.0	96.1	97.6	96.0	97.9	97.6	97.9	97.6	96.4	97.5	98.4	98.4
Mediums	14	50	29	44	20	19	14	31	51	38	6	7
% Mediums	2.0	3.6	2.1	3.4	2.0	2.4	2.1	2.1	3.0	2.2	1.6	1.6
Articulated Trucks	0	4	4	8	1	0	0	5	9	4	0	0
% Articulated Trucks	0.0	0.3	0.3	0.6	0.1	0.0	0.0	0.3	0.5	0.2	0.0	0.0

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road and Mitchell-Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 4

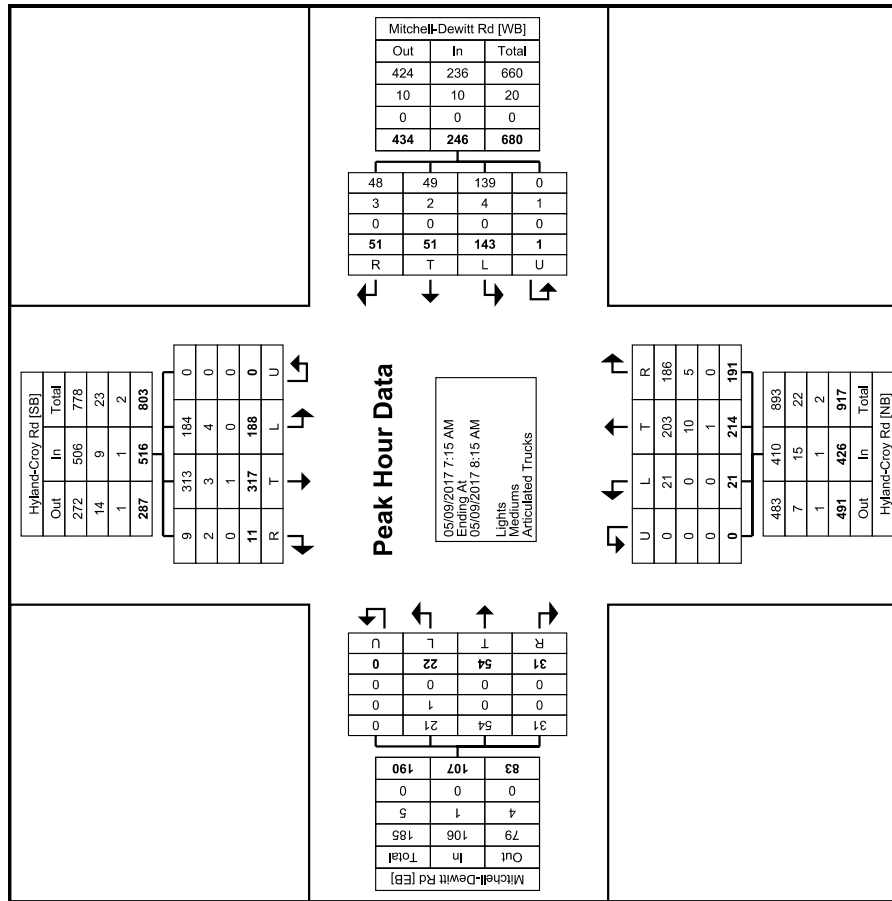
Turning Movement Peak Hour Data (7:15 AM)

Start Time	Hyland-Croy Rd Southbound					Mitchell-Dewitt Rd Westbound					Northbound Hyland-Croy Rd					Mitchell-Dewitt Rd Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:15 AM	2	73	13	0	88	9	18	20	0	47	34	36	2	0	72	4	11	7	0	22	229
7:30 AM	1	69	84	0	154	16	8	55	1	80	83	48	4	0	135	5	18	6	0	29	398
7:45 AM	6	108	75	0	189	17	11	56	0	84	54	65	9	0	128	13	17	5	0	35	436
8:00 AM	2	67	16	0	85	9	14	12	0	35	20	65	6	0	91	9	8	4	0	21	232
Total	11	317	188	0	516	51	51	143	1	246	191	214	21	0	426	31	54	22	0	107	1295
Approach %	2.1	61.4	36.4	0.0	-	20.7	20.7	58.1	0.4	-	44.8	50.2	4.9	0.0	-	29.0	50.5	20.6	0.0	-	-
Total %	0.8	24.5	14.5	0.0	39.8	3.9	3.9	11.0	0.1	19.0	14.7	16.5	1.6	0.0	32.9	2.4	4.2	1.7	0.0	8.3	-
PHF	0.458	0.734	0.560	0.000	0.683	0.750	0.708	0.638	0.250	0.732	0.575	0.823	0.583	0.000	0.789	0.596	0.750	0.786	0.000	0.764	0.743
Lights	9	313	184	0	506	48	49	139	0	236	186	203	21	0	410	31	54	21	0	106	1258
% Lights	81.8	98.7	97.9	-	98.1	94.1	96.1	97.2	0.0	95.9	97.4	94.9	100.0	-	96.2	100.0	100.0	95.5	-	99.1	97.1
Mediums	2	3	4	0	9	3	2	4	1	10	5	10	0	0	15	0	0	1	0	1	35
% Mediums	18.2	0.9	2.1	-	1.7	5.9	3.9	2.8	100.0	4.1	2.6	4.7	0.0	-	3.5	0.0	0.0	4.5	-	0.9	2.7
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Articulated Trucks	0.0	0.3	0.0	-	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	-	0.2	0.0	0.0	0.0	-	0.0	0.2

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road and Mitchell-
Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 5



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

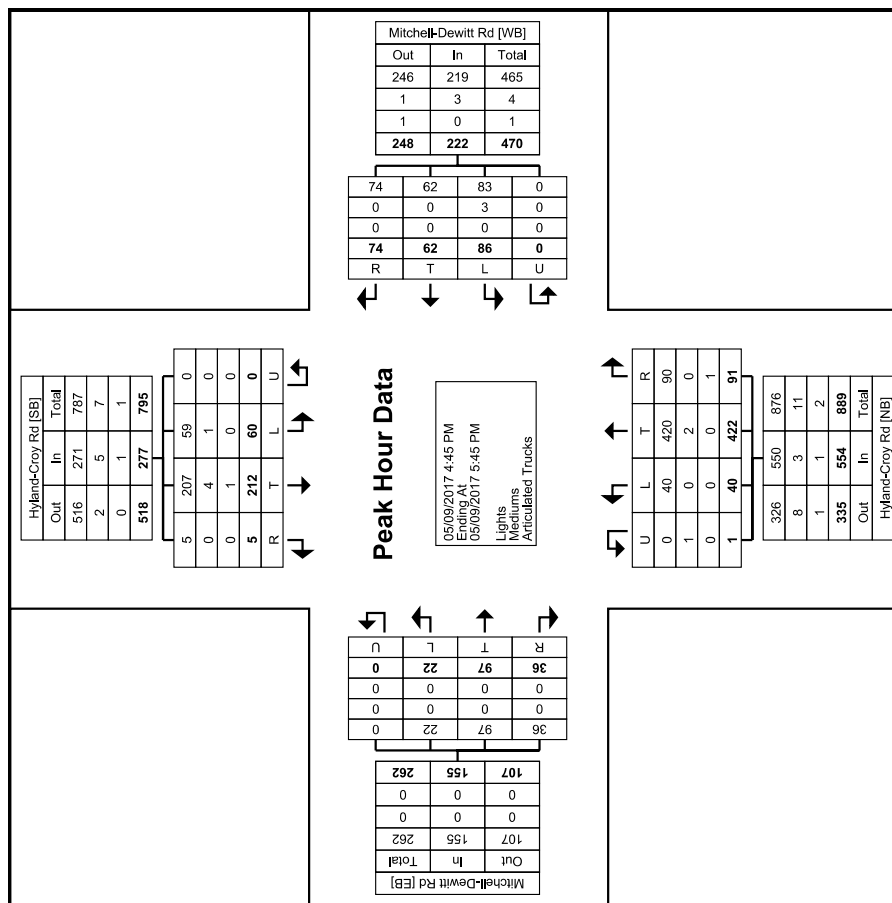
Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: Hyland-Croy Road and Mitchell-Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No: 6

Turning Movement Peak Hour Data (4:45 PM)

Start Time	Hyland-Croy Rd Southbound					Mitchell-Dewitt Rd Westbound					Hyland-Croy Rd Northbound					Mitchell-Dewitt Rd Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:45 PM	4	55	23	0	82	21	13	25	0	59	24	107	11	0	142	7	16	6	0	29	312
5:00 PM	0	52	14	0	66	20	17	19	0	56	23	107	13	0	143	10	28	7	0	45	310
5:15 PM	0	65	8	0	73	19	22	20	0	61	22	96	6	0	124	13	27	6	0	46	304
5:30 PM	1	40	15	0	56	14	10	22	0	46	22	112	10	1	145	6	26	3	0	35	282
Total	5	212	60	0	277	74	62	86	0	222	91	422	40	1	554	36	97	22	0	155	1208
Approach %	1.8	76.5	21.7	0.0	-	33.3	27.9	38.7	0.0	-	16.4	76.2	7.2	0.2	-	23.2	62.6	14.2	0.0	-	-
Total %	0.4	17.5	5.0	0.0	22.9	6.1	5.1	7.1	0.0	18.4	7.5	34.9	3.3	0.1	45.9	3.0	8.0	1.8	0.0	12.8	-
PHF	0.313	0.815	0.652	0.000	0.845	0.881	0.705	0.860	0.000	0.910	0.948	0.942	0.769	0.250	0.955	0.692	0.866	0.786	0.000	0.842	0.968
Lights	5	207	59	0	271	74	62	83	0	219	90	420	40	0	550	36	97	22	0	155	1195
% Lights	100.0	97.6	98.3	-	97.8	100.0	100.0	96.5	-	98.6	98.9	99.5	100.0	0.0	99.3	100.0	100.0	100.0	-	100.0	98.9
Mediums	0	4	1	0	5	0	0	3	0	3	0	2	0	1	3	0	0	0	0	0	11
% Mediums	0.0	1.9	1.7	-	1.8	0.0	0.0	3.5	-	1.4	0.0	0.5	0.0	100.0	0.5	0.0	0.0	0.0	-	0.0	0.9
Articulated Trucks	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
% Articulated Trucks	0.0	0.5	0.0	-	0.4	0.0	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0	0.2	0.0	0.0	0.0	-	0.0	0.2



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

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive
Columbus, Ohio, United States 43229
614 656 2419 laurent@cmtran.com

Count Name: Hyland-Croy Road and Mitchell-
Dewitt Road Roundabout
Site Code:
Start Date: 05/09/2017
Page No.: 8

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 1

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

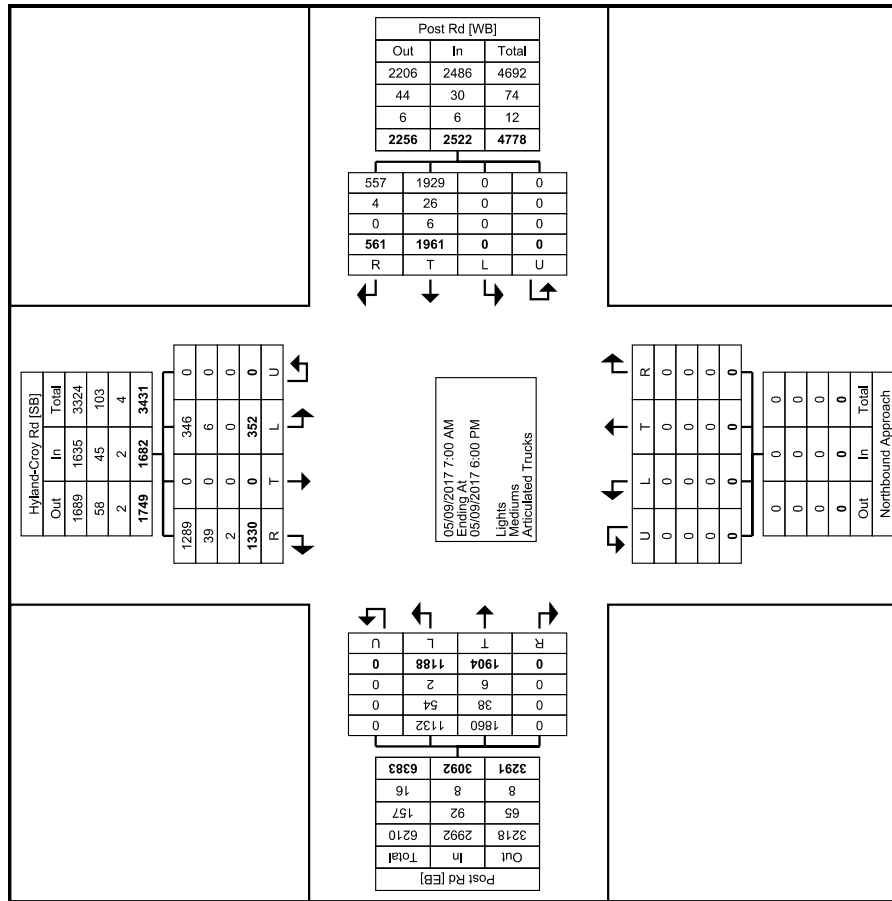
Turning Movement Data

Start Time	Hyland-Croy Rd Southbound					Post Rd Westbound					Northbound Approach					Post Rd Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
7:00 AM	111	0	24	0	135	21	79	0	0	100	0	0	0	0	0	0	68	43	0	111	346
7:15 AM	88	0	24	0	112	21	79	0	0	100	0	0	0	0	0	0	122	37	0	159	371
7:30 AM	81	0	39	0	120	27	106	0	0	133	0	0	0	0	0	0	200	54	0	254	507
7:45 AM	107	0	50	0	157	15	107	0	0	122	0	0	0	0	0	0	165	54	0	219	498
Hourly Total	387	0	137	0	524	84	371	0	0	455	0	0	0	0	0	0	555	188	0	743	1722
8:00 AM	88	0	36	0	124	18	91	0	0	109	0	0	0	0	0	0	113	50	0	163	396
8:15 AM	83	0	35	0	118	10	93	0	0	103	0	0	0	0	0	0	125	46	0	171	392
8:30 AM	88	0	16	0	104	10	77	0	0	87	0	0	0	0	0	0	103	41	0	144	335
8:45 AM	110	0	45	0	155	16	89	0	0	105	0	0	0	0	0	0	105	50	0	155	415
Hourly Total	369	0	132	0	501	54	350	0	0	404	0	0	0	0	0	0	446	187	0	633	1538
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	73	0	21	0	94	41	183	0	0	224	0	0	0	0	0	0	104	62	0	166	484
4:15 PM	65	0	14	0	79	35	166	0	0	201	0	0	0	0	0	0	84	76	0	160	440
4:30 PM	69	0	10	0	79	57	153	0	0	210	0	0	0	0	0	0	99	91	0	190	479
4:45 PM	66	0	7	0	73	54	144	0	0	198	0	0	0	0	0	0	113	112	0	225	496
Hourly Total	273	0	52	0	325	187	646	0	0	833	0	0	0	0	0	0	400	341	0	741	1899
5:00 PM	78	0	7	0	85	47	172	0	0	219	0	0	0	0	0	0	128	112	0	240	544
5:15 PM	84	0	14	0	98	67	148	0	0	215	0	0	0	0	0	0	103	104	0	207	520
5:30 PM	59	0	6	0	65	61	150	0	0	211	0	0	0	0	0	0	137	128	0	265	541
5:45 PM	80	0	4	0	84	61	124	0	0	185	0	0	0	0	0	0	135	128	0	263	532
Hourly Total	301	0	31	0	332	236	594	0	0	830	0	0	0	0	0	0	503	472	0	975	2137
Grand Total	1330	0	352	0	1682	561	1961	0	0	2522	0	0	0	0	0	0	1904	1188	0	3092	7296
Approach %	79.1	0.0	20.9	0.0	-	22.2	77.8	0.0	0.0	-	NaN	NaN	NaN	NaN	-	0.0	61.6	38.4	0.0	-	-
Total %	18.2	0.0	4.8	0.0	23.1	7.7	26.9	0.0	0.0	34.6	0.0	0.0	0.0	0.0	0.0	0.0	26.1	16.3	0.0	42.4	-
Lights	1289	0	346	0	1635	557	1929	0	0	2486	0	0	0	0	0	0	1860	1132	0	2992	7113
% Lights	96.9	-	98.3	-	97.2	99.3	98.4	-	-	98.6	-	-	-	-	-	-	97.7	95.3	-	96.8	97.5
Mediums	39	0	6	0	45	4	26	0	0	30	0	0	0	0	0	0	38	54	0	92	167
% Mediums	2.9	-	1.7	-	2.7	0.7	1.3	-	-	1.2	-	-	-	-	-	-	2.0	4.5	-	3.0	2.3
Articulated Trucks	2	0	0	0	2	0	6	0	0	6	0	0	0	0	0	0	6	2	0	8	16
% Articulated Trucks	0.2	-	0.0	-	0.1	0.0	0.3	-	-	0.2	-	-	-	-	-	-	0.3	0.2	-	0.3	0.2

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 2



Turning Movement Data Plot

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 3

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

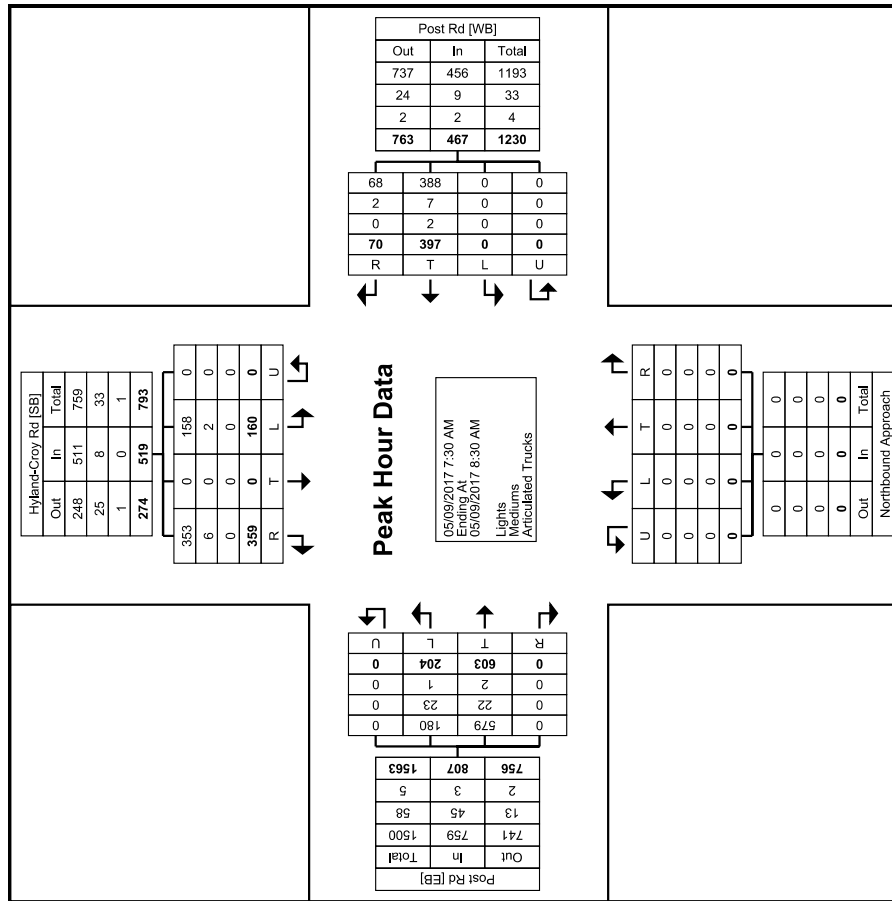
Turning Movement Peak Hour Data (7:30 AM)

Start Time	Hyland-Croy Rd					Post Rd					Northbound Approach					Post Rd					Int. Total
	Southbound					Westbound					Northbound					Eastbound					
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:30 AM	81	0	39	0	120	27	106	0	0	133	0	0	0	0	0	0	200	54	0	254	507
7:45 AM	107	0	50	0	157	15	107	0	0	122	0	0	0	0	0	0	165	54	0	219	498
8:00 AM	88	0	36	0	124	18	91	0	0	109	0	0	0	0	0	0	113	50	0	163	396
8:15 AM	83	0	35	0	118	10	93	0	0	103	0	0	0	0	0	0	125	46	0	171	392
Total	359	0	160	0	519	70	397	0	0	467	0	0	0	0	0	0	603	204	0	807	1793
Approach %	69.2	0.0	30.8	0.0	-	15.0	85.0	0.0	0.0	-	NaN	NaN	NaN	NaN	-	0.0	74.7	25.3	0.0	-	-
Total %	20.0	0.0	8.9	0.0	28.9	3.9	22.1	0.0	0.0	26.0	0.0	0.0	0.0	0.0	0.0	0.0	33.6	11.4	0.0	45.0	-
PHF	0.839	0.000	0.800	0.000	0.826	0.648	0.928	0.000	0.000	0.878	0.000	0.000	0.000	0.000	0.000	0.000	0.754	0.944	0.000	0.794	0.884
Lights	353	0	158	0	511	68	388	0	0	456	0	0	0	0	0	0	579	180	0	759	1726
% Lights	98.3	-	98.8	-	98.5	97.1	97.7	-	-	97.6	-	-	-	-	-	-	96.0	88.2	-	94.1	96.3
Mediums	6	0	2	0	8	2	7	0	0	9	0	0	0	0	0	0	22	23	0	45	62
% Mediums	1.7	-	1.3	-	1.5	2.9	1.8	-	-	1.9	-	-	-	-	-	-	3.6	11.3	-	5.6	3.5
Articulated Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	1	0	3	5
% Articulated Trucks	0.0	-	0.0	-	0.0	0.0	0.5	-	-	0.4	-	-	-	-	-	-	0.3	0.5	-	0.4	0.3

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 4



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

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 5

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

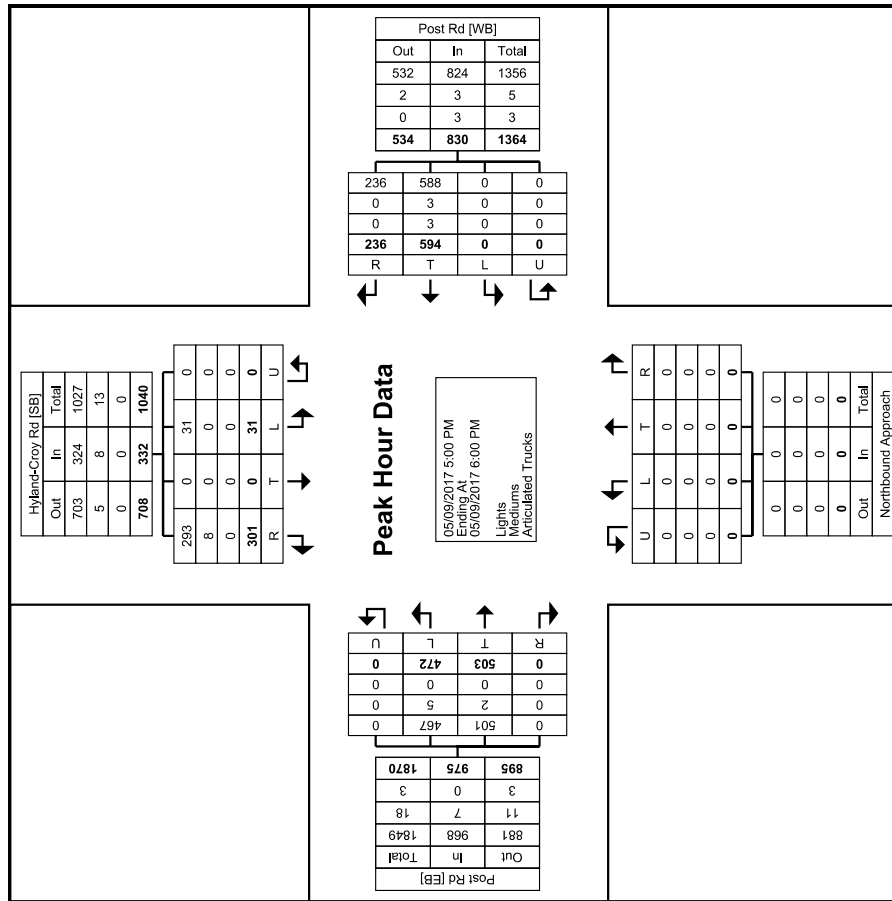
Turning Movement Peak Hour Data (5:00 PM)

Start Time	Hyland-Croy Rd Southbound					Post Rd Westbound					Northbound Approach					Post Rd Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
5:00 PM	78	0	7	0	85	47	172	0	0	219	0	0	0	0	0	0	128	112	0	240	544
5:15 PM	84	0	14	0	98	67	148	0	0	215	0	0	0	0	0	0	103	104	0	207	520
5:30 PM	59	0	6	0	65	61	150	0	0	211	0	0	0	0	0	0	137	128	0	265	541
5:45 PM	80	0	4	0	84	61	124	0	0	185	0	0	0	0	0	0	135	128	0	263	532
Total	301	0	31	0	332	236	594	0	0	830	0	0	0	0	0	0	503	472	0	975	2137
Approach %	90.7	0.0	9.3	0.0	-	28.4	71.6	0.0	0.0	-	NaN	NaN	NaN	NaN	-	0.0	51.6	48.4	0.0	-	-
Total %	14.1	0.0	1.5	0.0	15.5	11.0	27.8	0.0	0.0	38.8	0.0	0.0	0.0	0.0	0.0	0.0	23.5	22.1	0.0	45.6	-
PHF	0.896	0.000	0.554	0.000	0.847	0.881	0.863	0.000	0.000	0.947	0.000	0.000	0.000	0.000	0.000	0.000	0.918	0.922	0.000	0.920	0.982
Lights	293	0	31	0	324	236	588	0	0	824	0	0	0	0	0	0	501	467	0	968	2116
% Lights	97.3	-	100.0	-	97.6	100.0	99.0	-	-	99.3	-	-	-	-	-	-	99.6	98.9	-	99.0	99.0
Medians	8	0	0	0	8	0	3	0	0	3	0	0	0	0	0	0	2	5	0	7	18
% Medians	2.7	-	0.0	-	2.4	0.0	0.5	-	-	0.4	-	-	-	-	-	-	0.4	1.1	-	0.7	0.8
Articulated Trucks	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
% Articulated Trucks	0.0	-	0.0	-	0.0	0.0	0.5	-	-	0.4	-	-	-	-	-	-	0.0	0.0	-	0.0	0.1

Carpenter Marty (CM) Transportation Inc.
6612 Singletree Drive

Columbus, Ohio, United States 43229
614 656 2419 dlaurent@cmtran.com

Count Name: SR-161 and Hyland-Croy Road
TMC
Site Code:
Start Date: 05/09/2017
Page No: 6

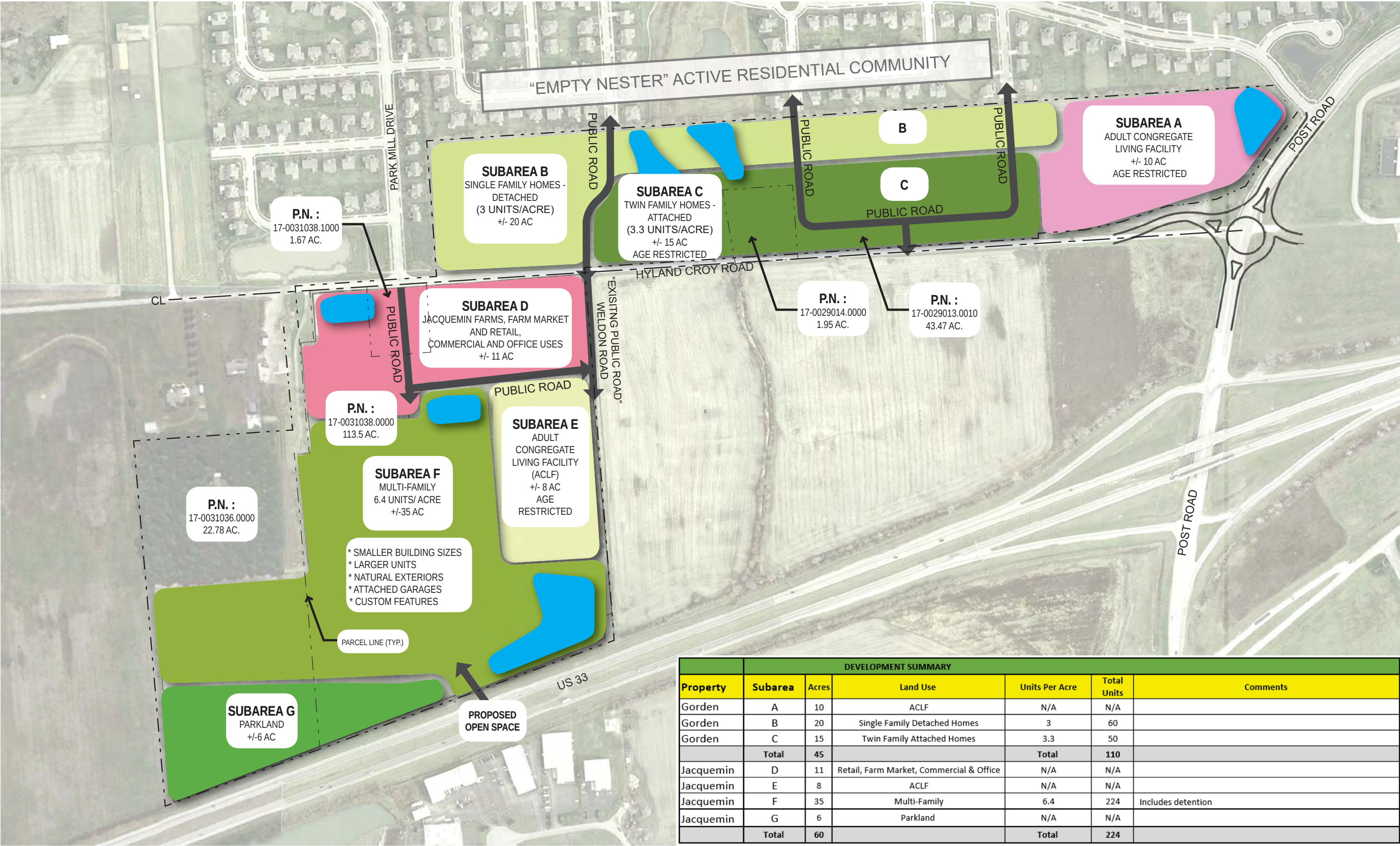


Turning Movement Peak Hour Data Plot (5:00 PM)

Appendix C

Conceptual Site Plans





Site Data

Gross Site Area:	± 45.0 ac.
Right-Of-Way Dedication: (Hyland-Croy Road)	± 3.0 ac.
Net Site Area:	± 42.0 ac.

Subarea A
Adult Congregate Living Facility

Site Area:	± 9.0 ac.
Independent Living:	75 units
Assisted Living:	50 units

Subarea B

Site Area:	± 19.0 ac.
Fee Simple Homes Single Family Lots:	Up to 60 permitted

Subarea C

Site Area:	± 14.0 ac.
Twin Single Family Lots:	Up to 50 permitted

Total Homes (Subarea B+C):	110 d.u.
Net Density (of 33.0 ac.):	3.33 d.u./ac.

Note: Acreage may shift between the Senior Housing site and the Empty-Nester site depending on final layout and design.



Site Data

Gross Site Area:	± 60.4 ac.
Right-Of-Way Dedication: (Hyland-Croy Road)	± 2.1 ac.
Net Site Area:	± 58.3 ac.
Subarea D1 & D2	
Site Area:	± 11.0 ac.
Farmer's Market, Neighborhood Retail, and Office	
Subarea E: Adult Congregate Living Facility	
Site Area:	± 8.0 ac.
Subarea F: Rental Community	
Site Area:	± 35.0 ac.
"B" Building: 8 bldgs. x 10 du. = 80 du All one floor designs with garage.	
"E" Building: 12 bldgs. x 6 du. = 72 du Custom 2-story homes with garage/porch.	
"D" Building: 18 bldgs. x 4 du. = 72 du All ranch homes with 1 and 2 car garages.	
Total Rental Residences:	224 d.u.
Subarea Density:	6.4d.u./ac.
Subarea G: Parkland to be Dedicated	
Site Area:	± 6.0ac.



AMENITIES KEY: #

- 1.Clubhouse
- 2.Centralized Mail/Utility/Compactor Building
- 3.Pool and Deck
- 4.Patio/Entertainment Space
- 5.Community Garden/ Flowers and Vegetables
- 6.Dog Park
- 7.Community Entrance Features- Rural Character/ 4-Rail Black Horse Fence
- 8.Pathway Connection to Jacquemin Market
- 9.Pathway Connection to Glacier Ridge Metro Park
10. Golf Putting Green



Appendix D

Volume Development

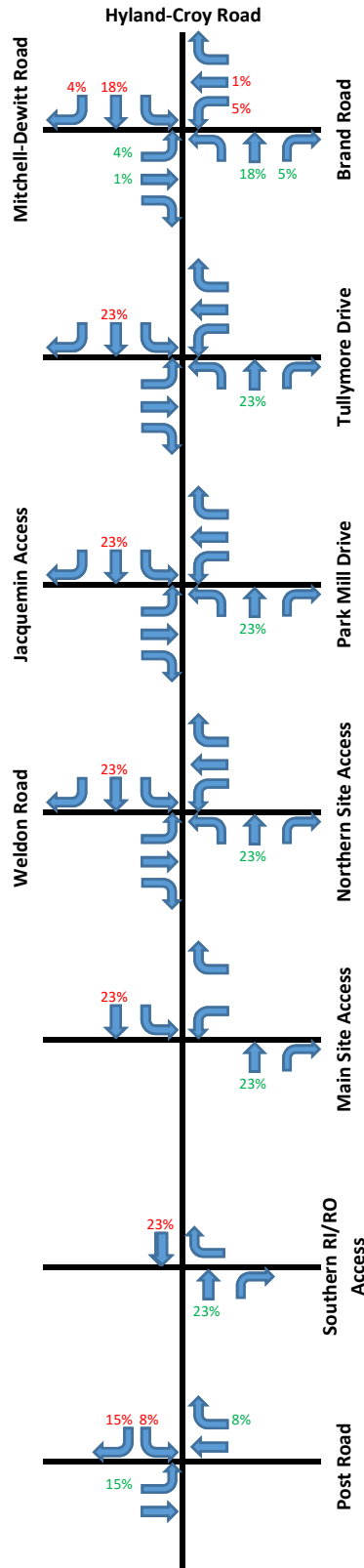


Gorden-Jacquemin TIS
Traffic Volume Calculations

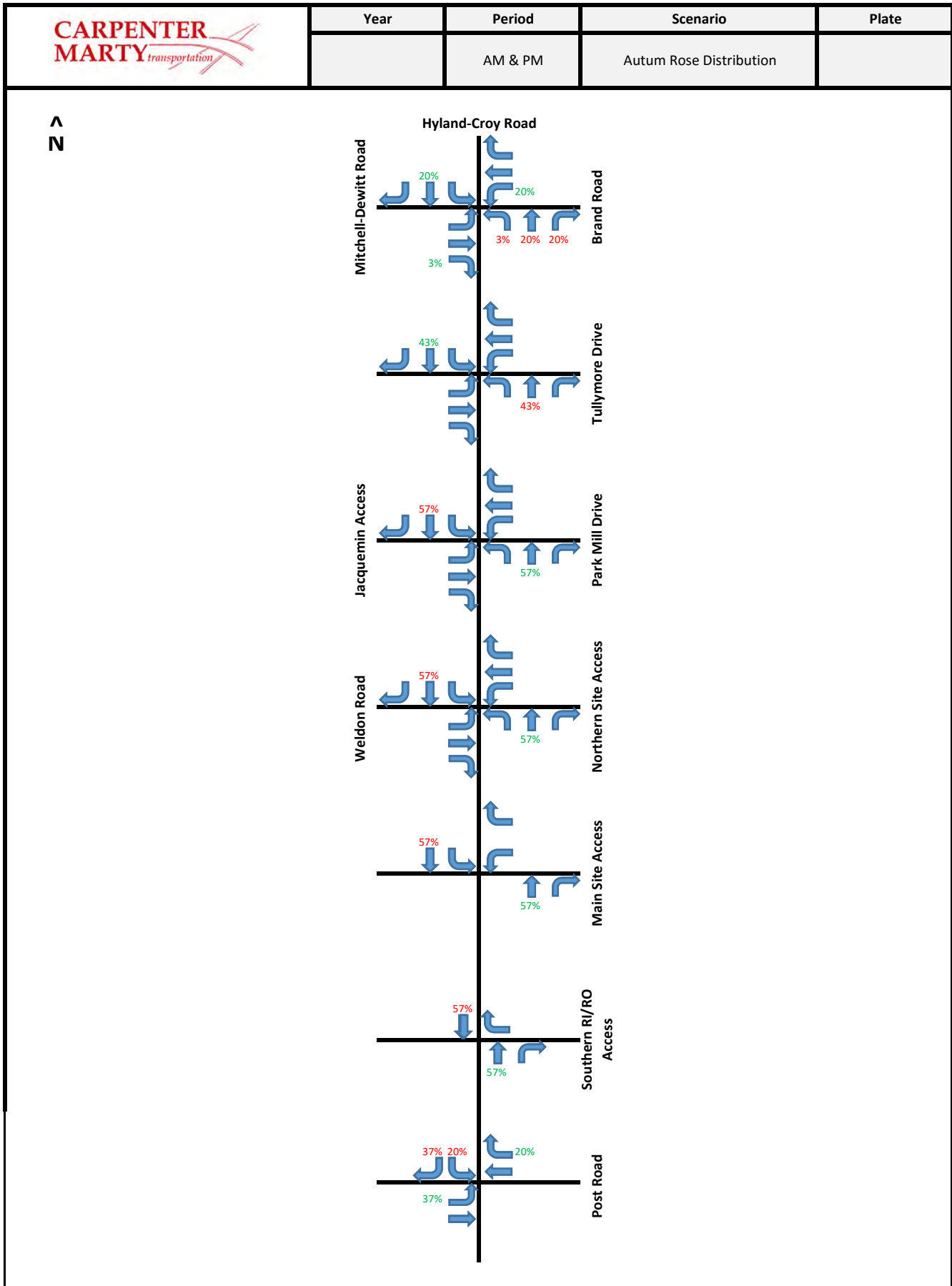


Year	Period	Scenario	Plate
	AM & PM	Riviera Distribution	

^
N



Gorden-Jacquemin TIS
Traffic Volume Calculations

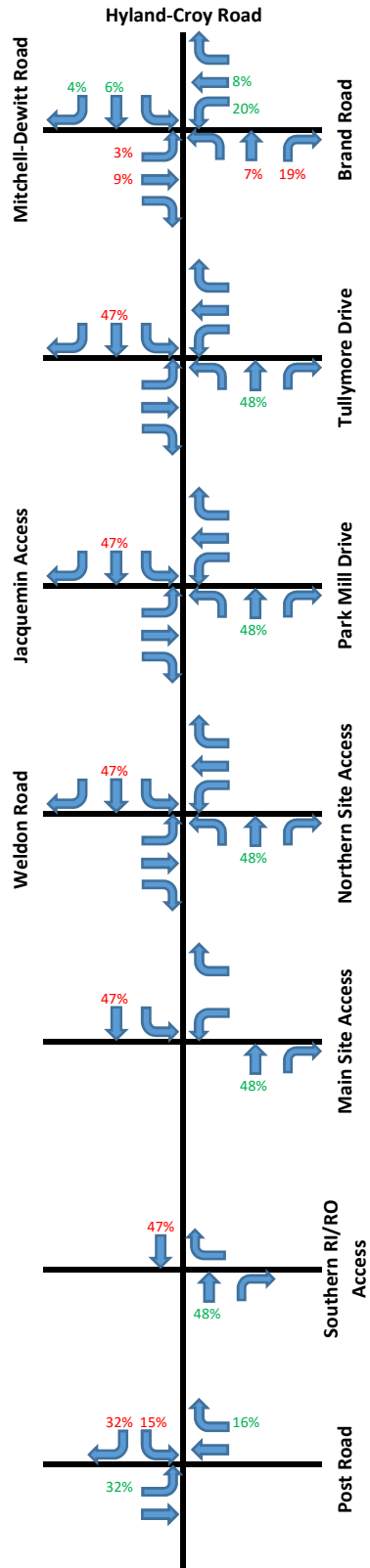


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
	AM	Oak Park Distribution	

^
N

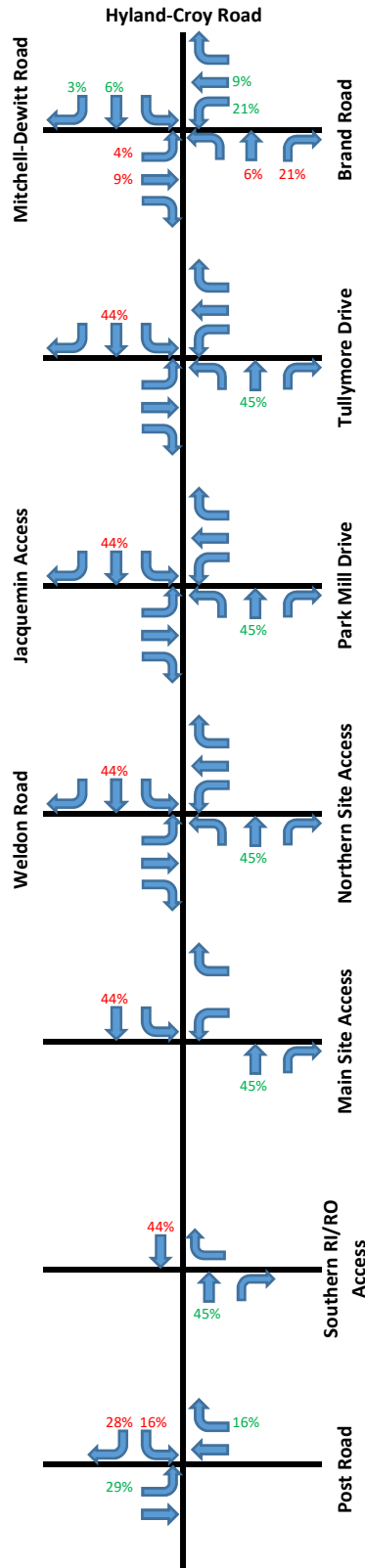


Gorden-Jacquemin TIS
Traffic Volume Calculations

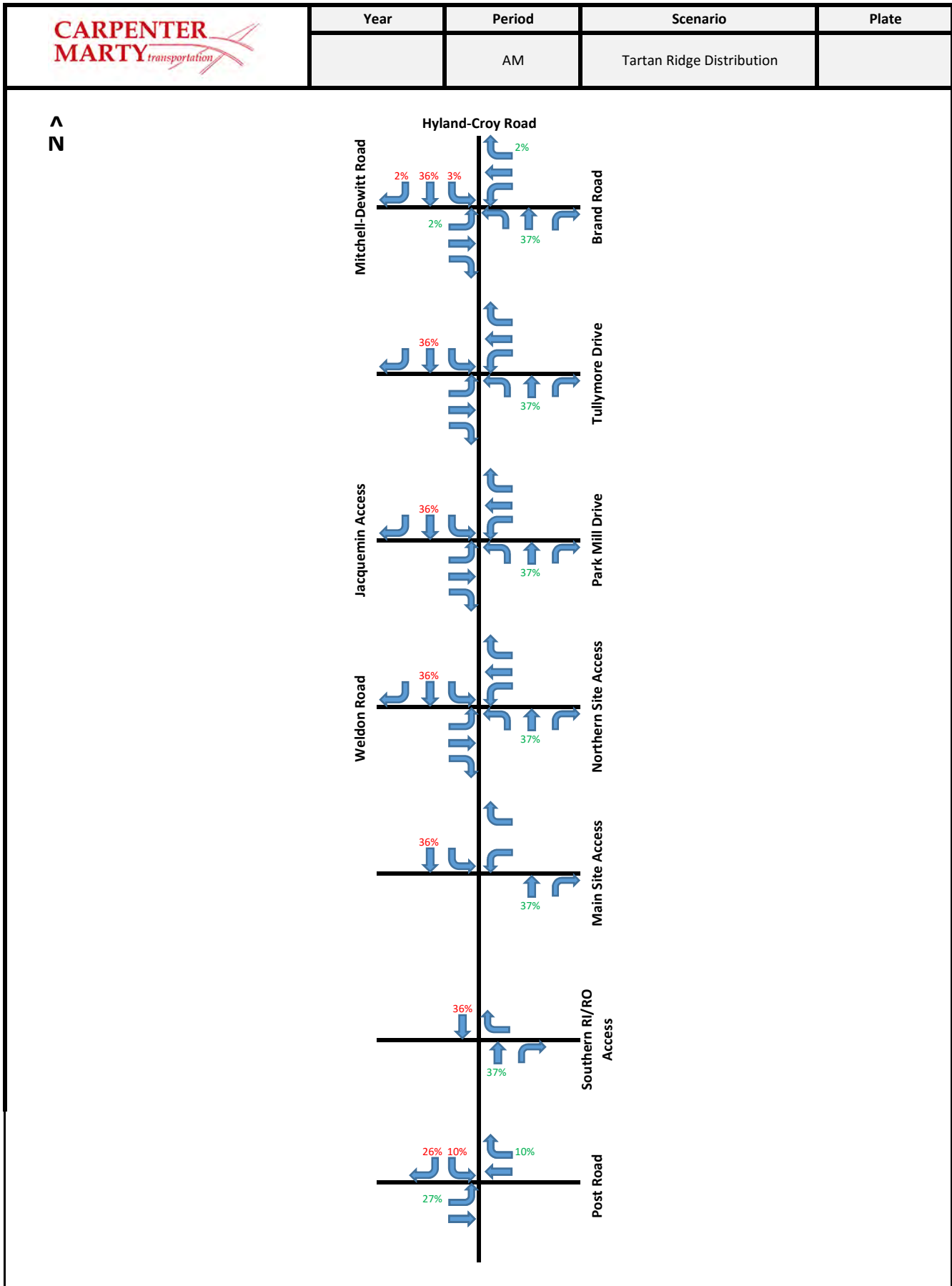


Year	Period	Scenario	Plate
	PM	Oak Park Distribution	

^
N



Gorden-Jacquemin TIS
Traffic Volume Calculations

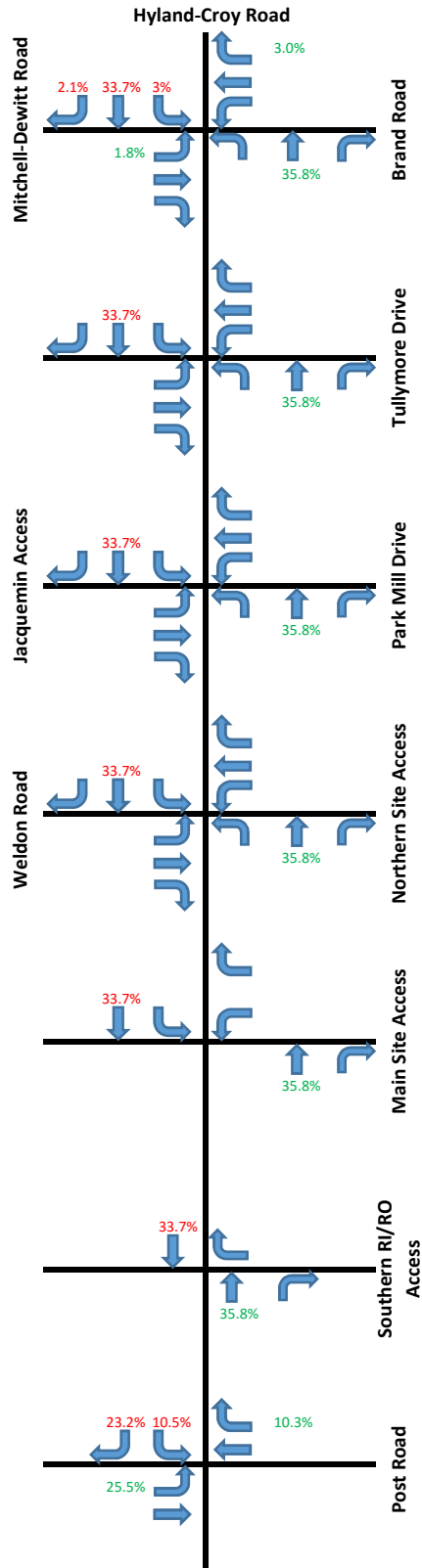


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
	PM	Tartan Ridge Distribution	

^
N

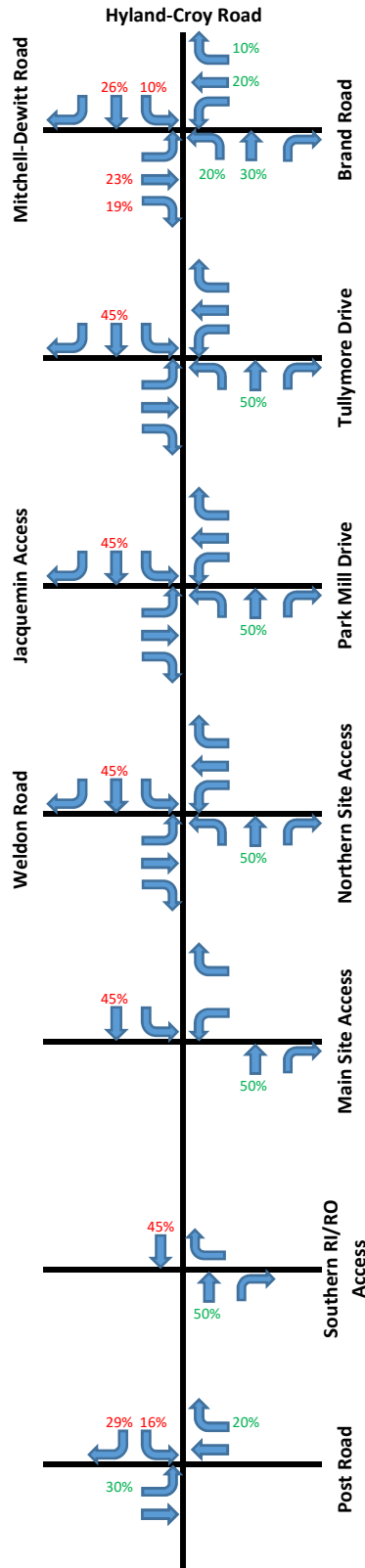


Gorden-Jacquemin TIS
Traffic Volume Calculations

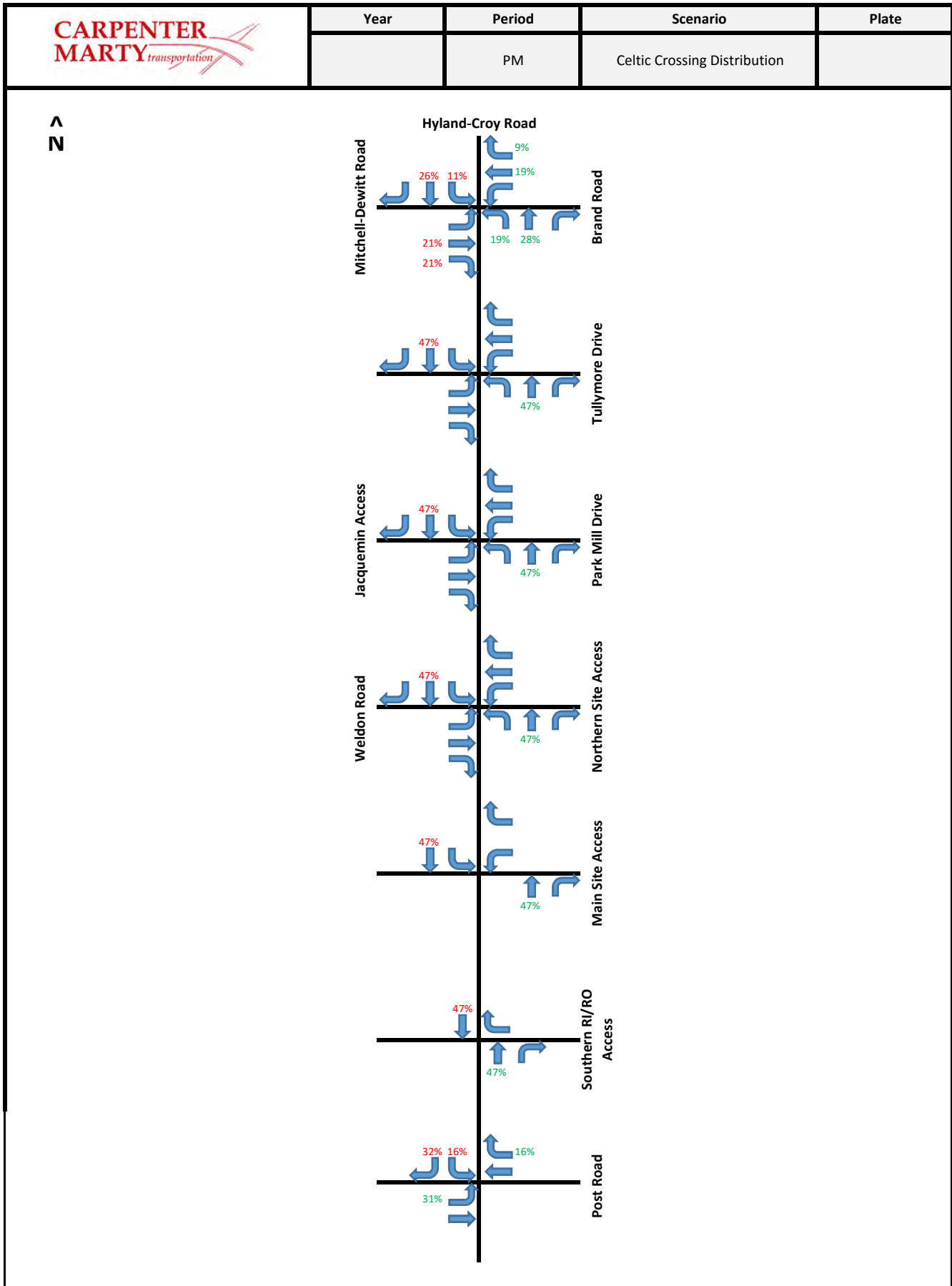


Year	Period	Scenario	Plate
	AM	Celtic Crossing Distribution	

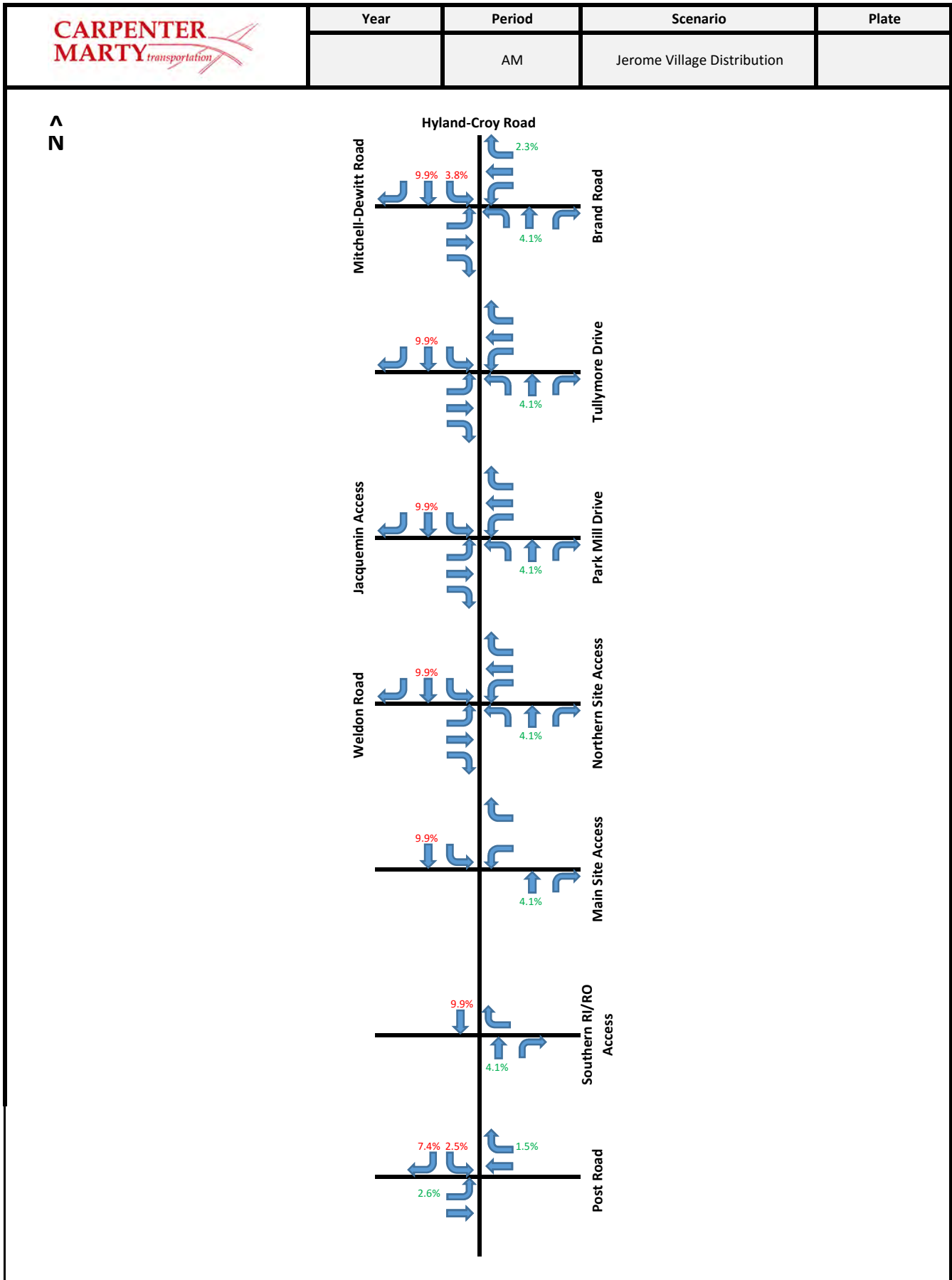
^
N



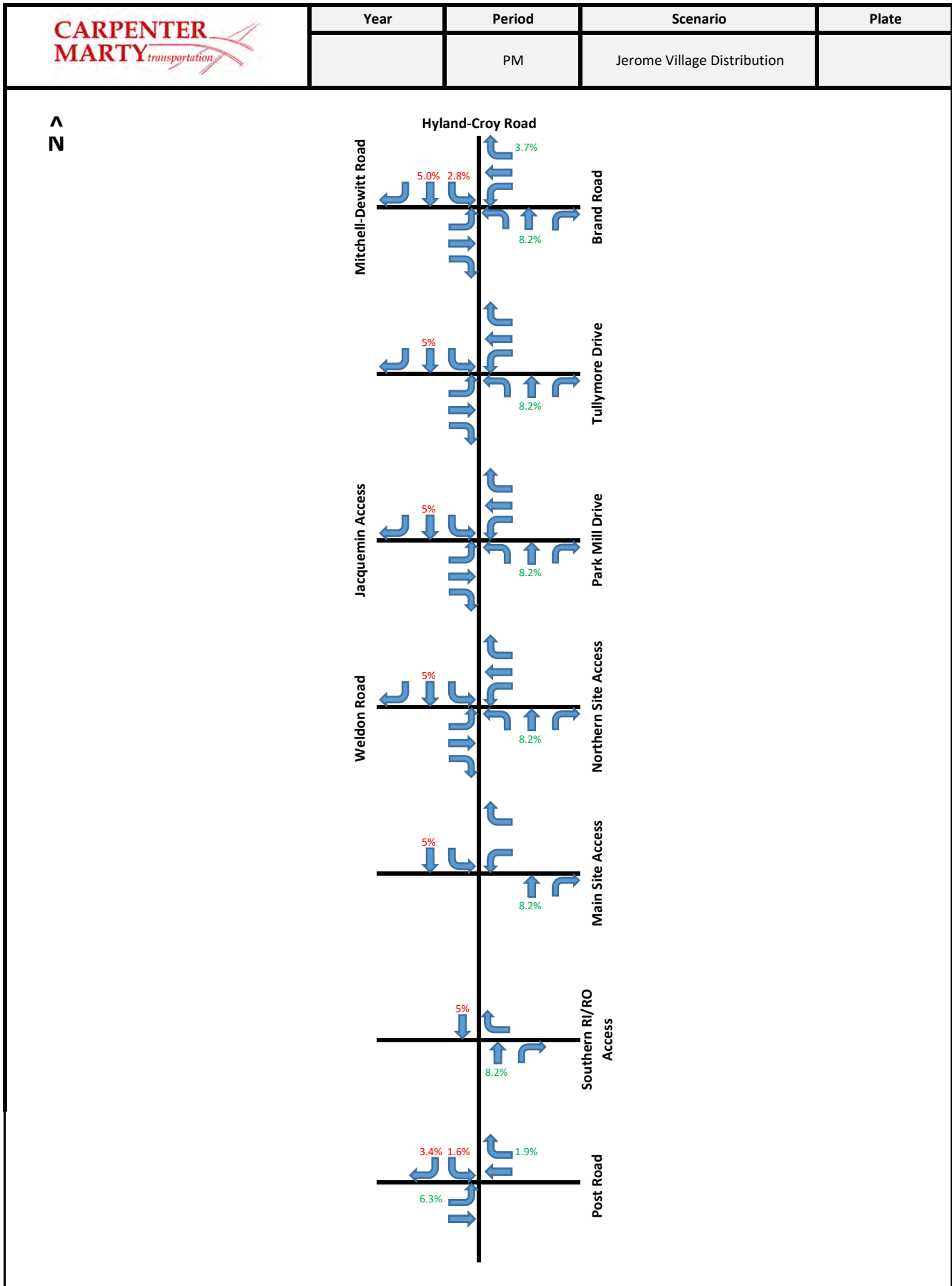
Gorden-Jacquemin TIS
Traffic Volume Calculations



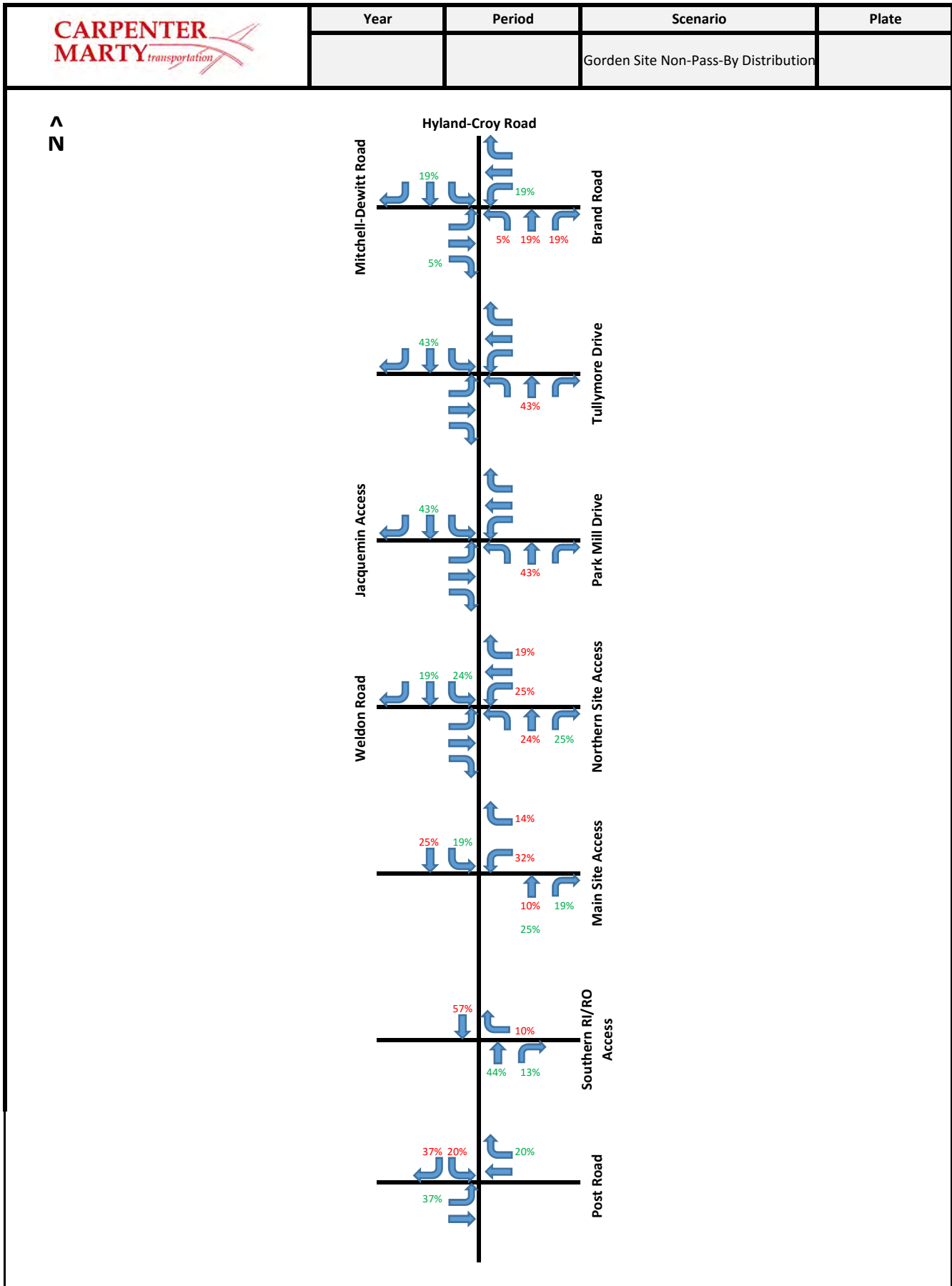
Gorden-Jacquemin TIS
Traffic Volume Calculations



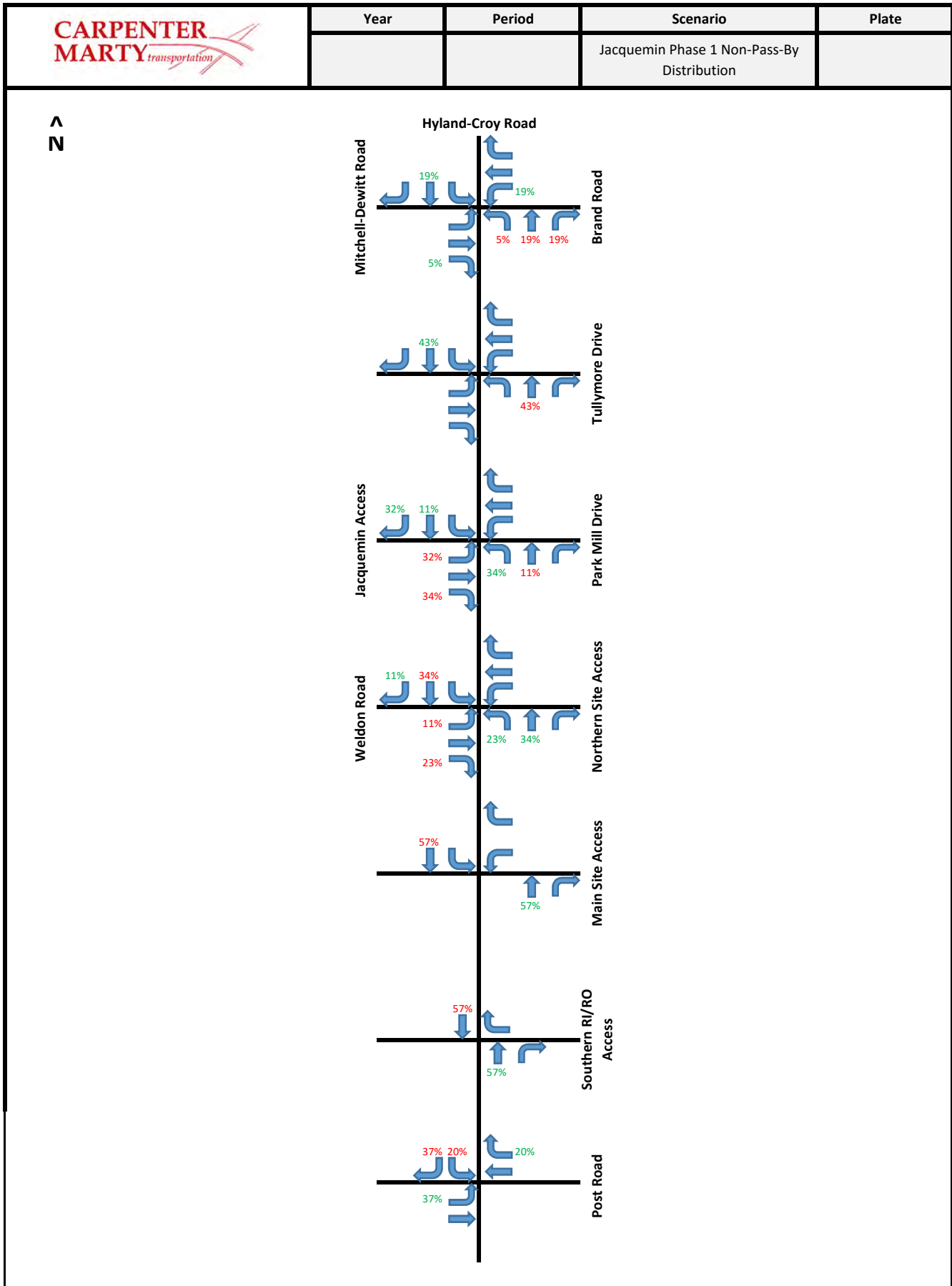
Gorden-Jacquemin TIS
Traffic Volume Calculations



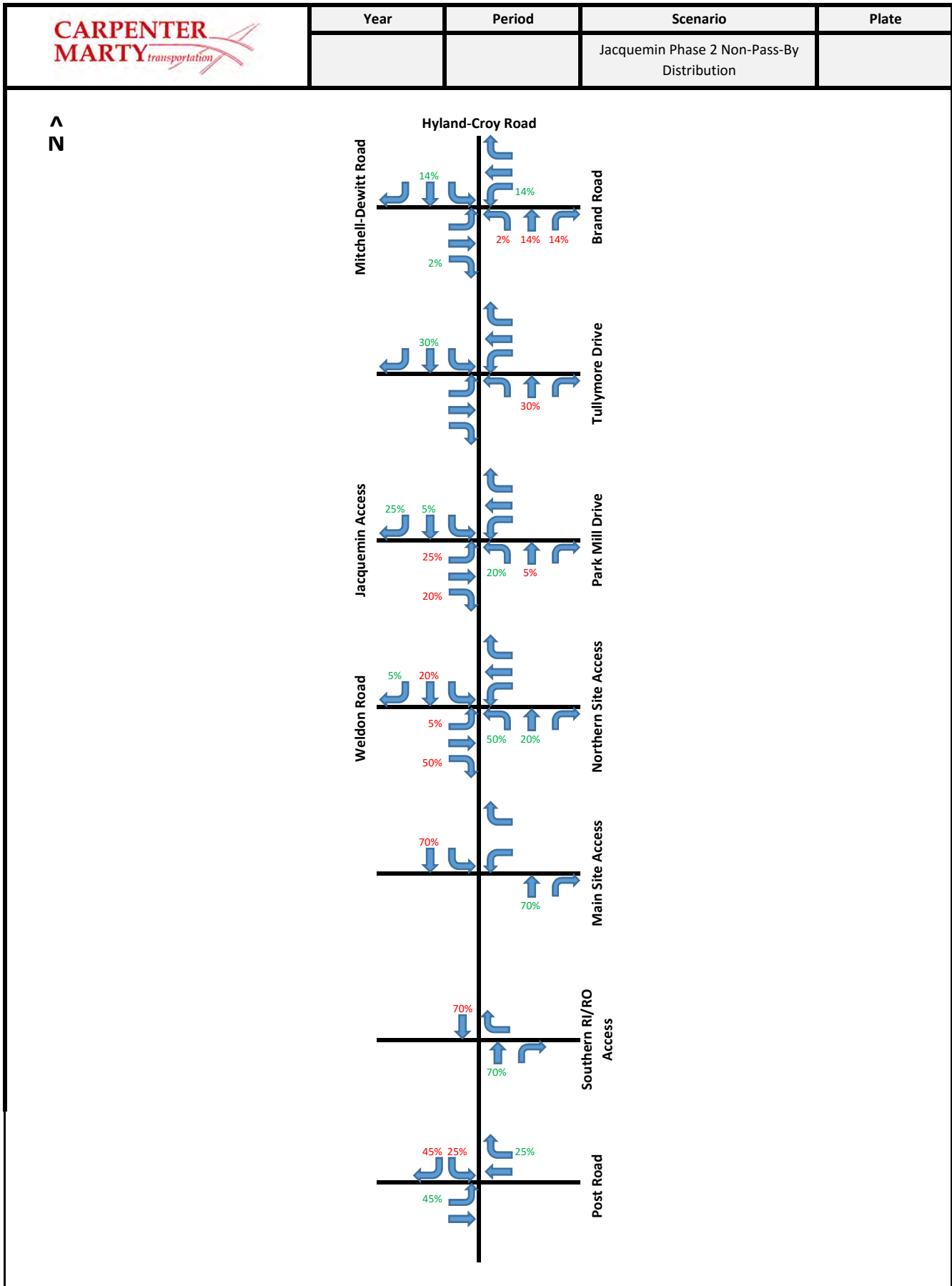
Gorden-Jacquemin TIS
Traffic Volume Calculations



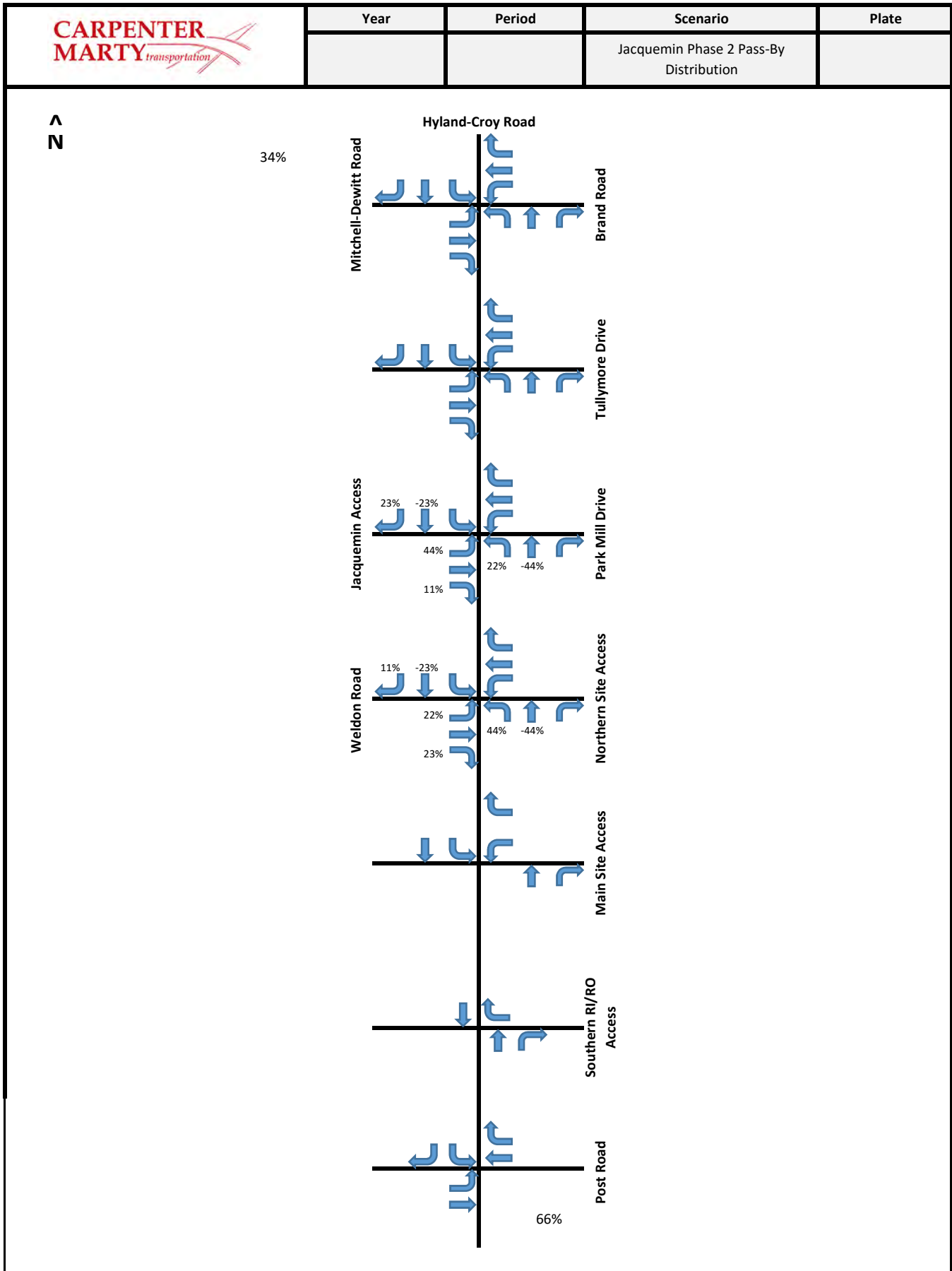
Gorden-Jacquemin TIS
Traffic Volume Calculations



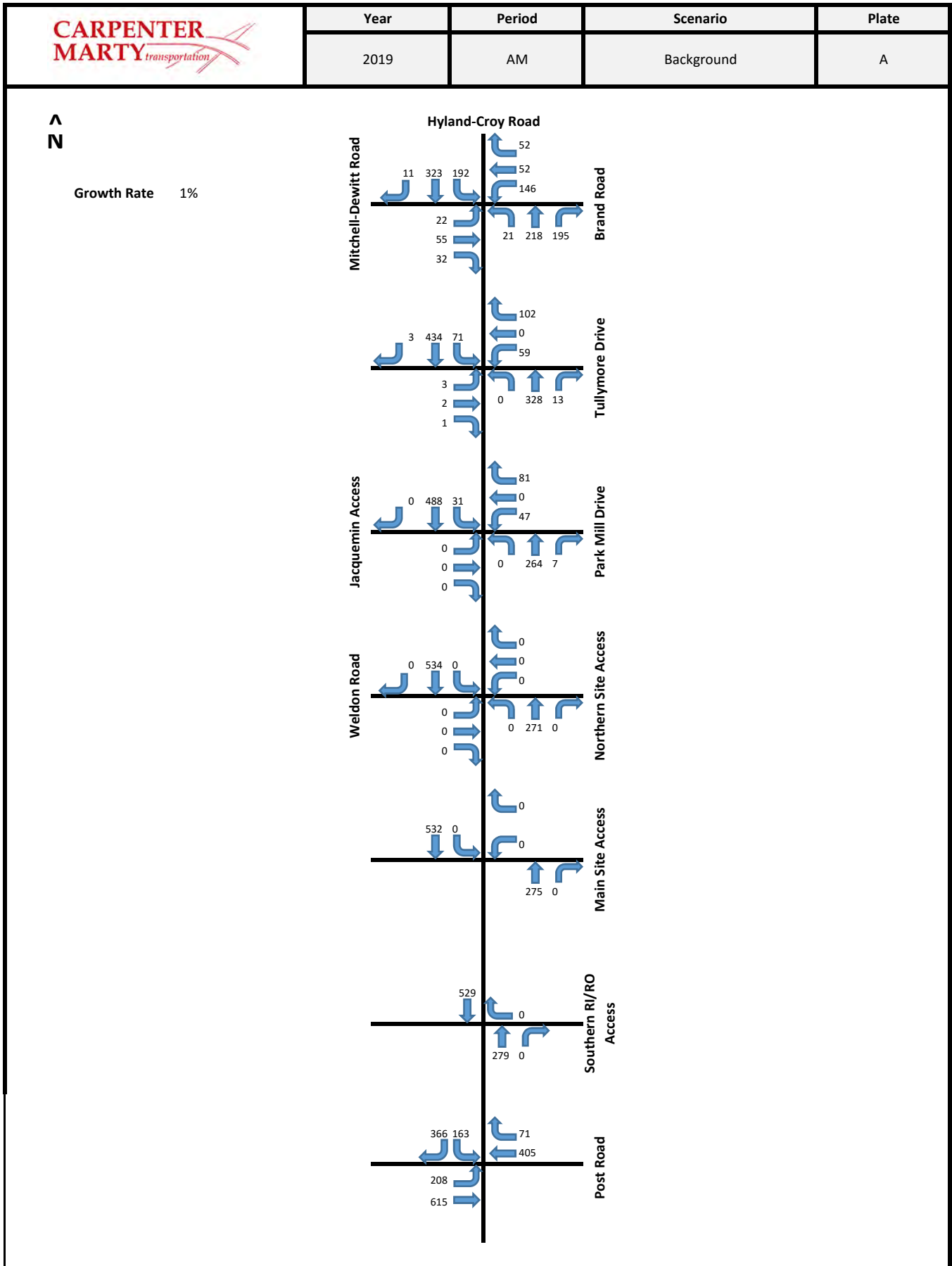
Gorden-Jacquemin TIS
Traffic Volume Calculations



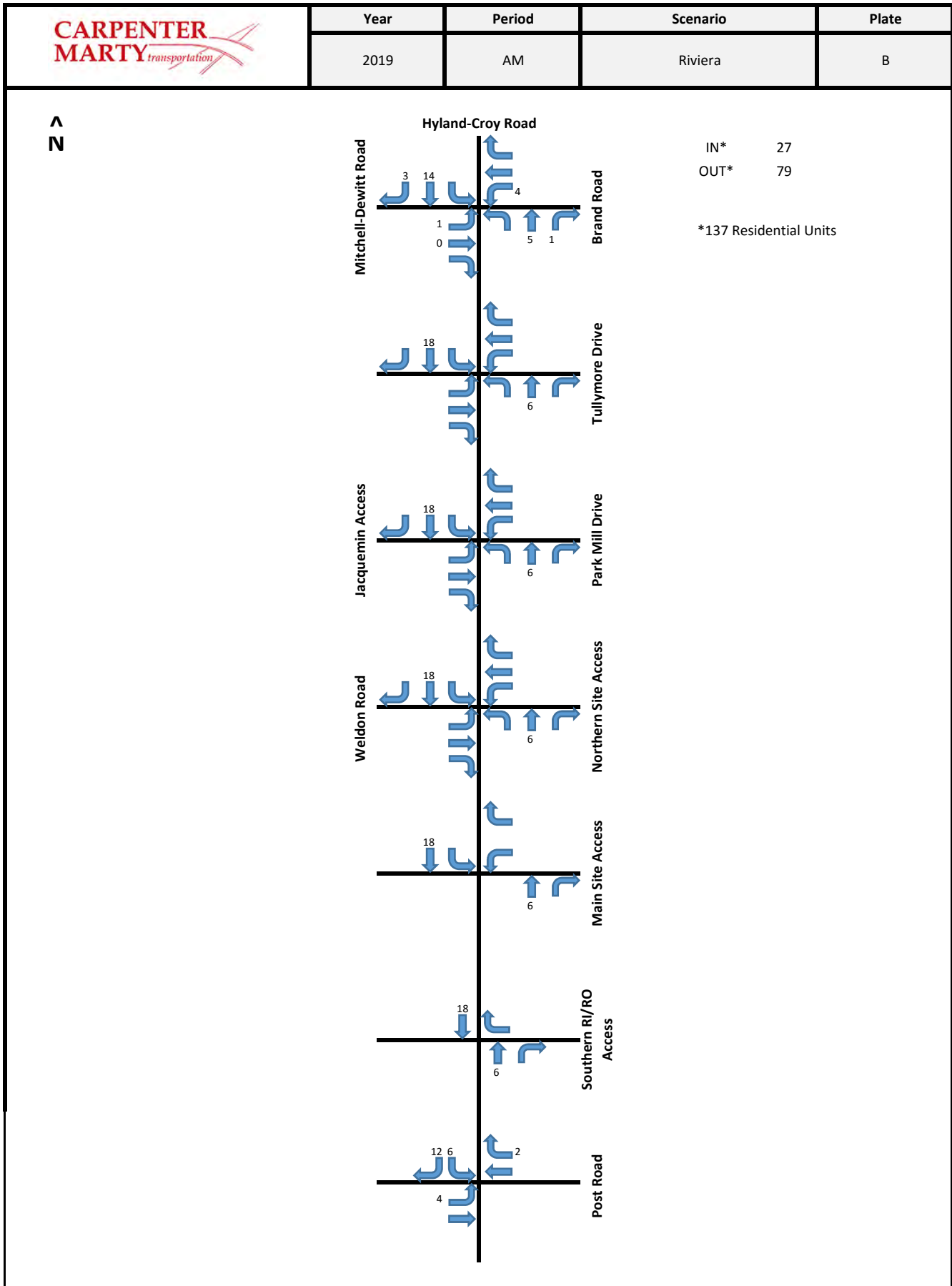
Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations

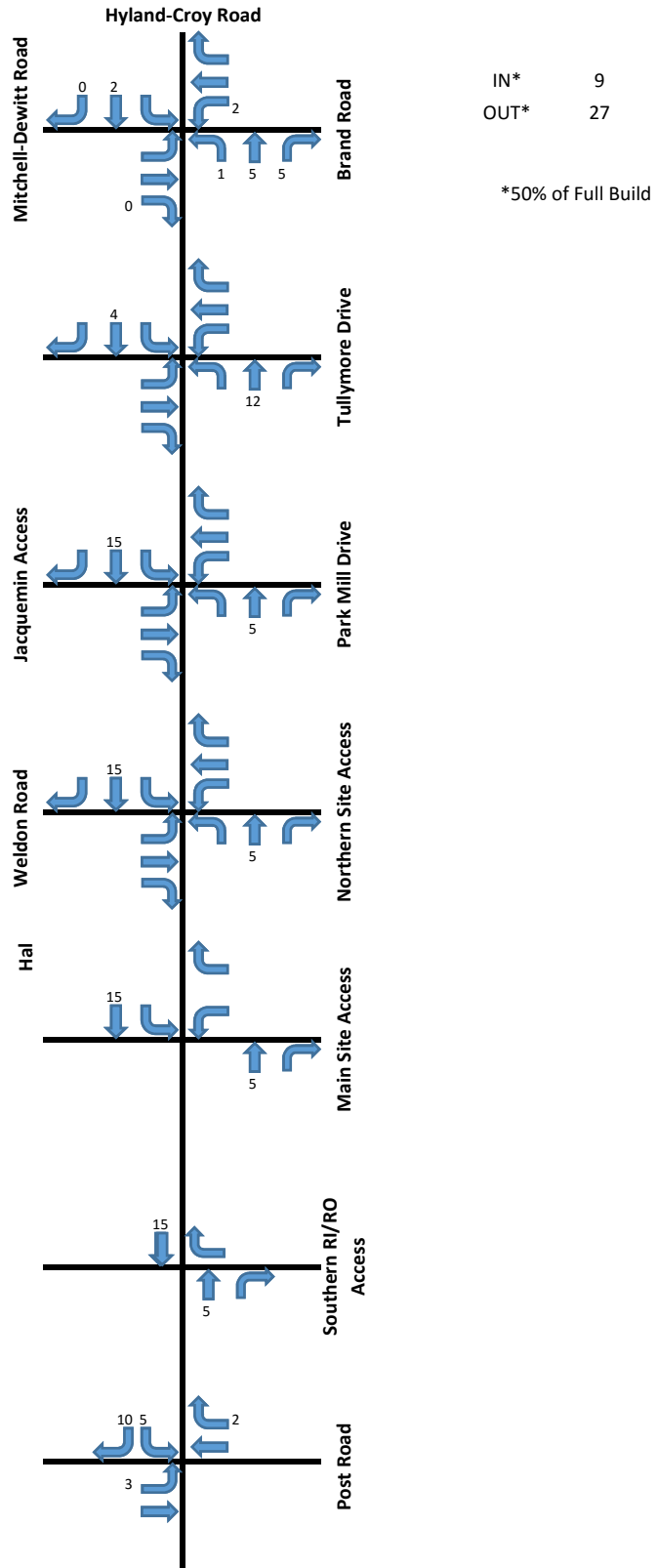


Gorden-Jacquemin TIS
Traffic Volume Calculations

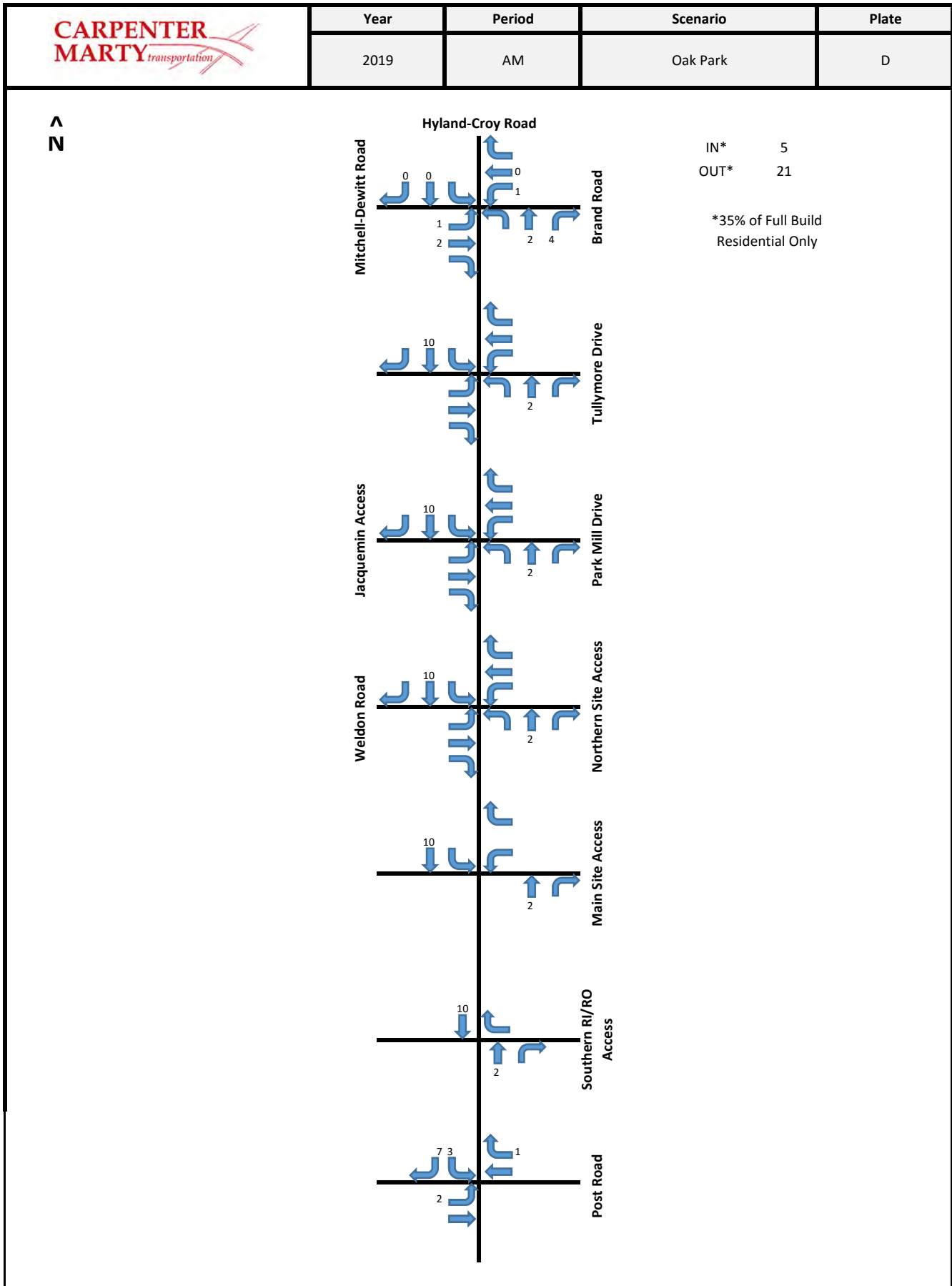


Year	Period	Scenario	Plate
2019	AM	Autum Rose	C

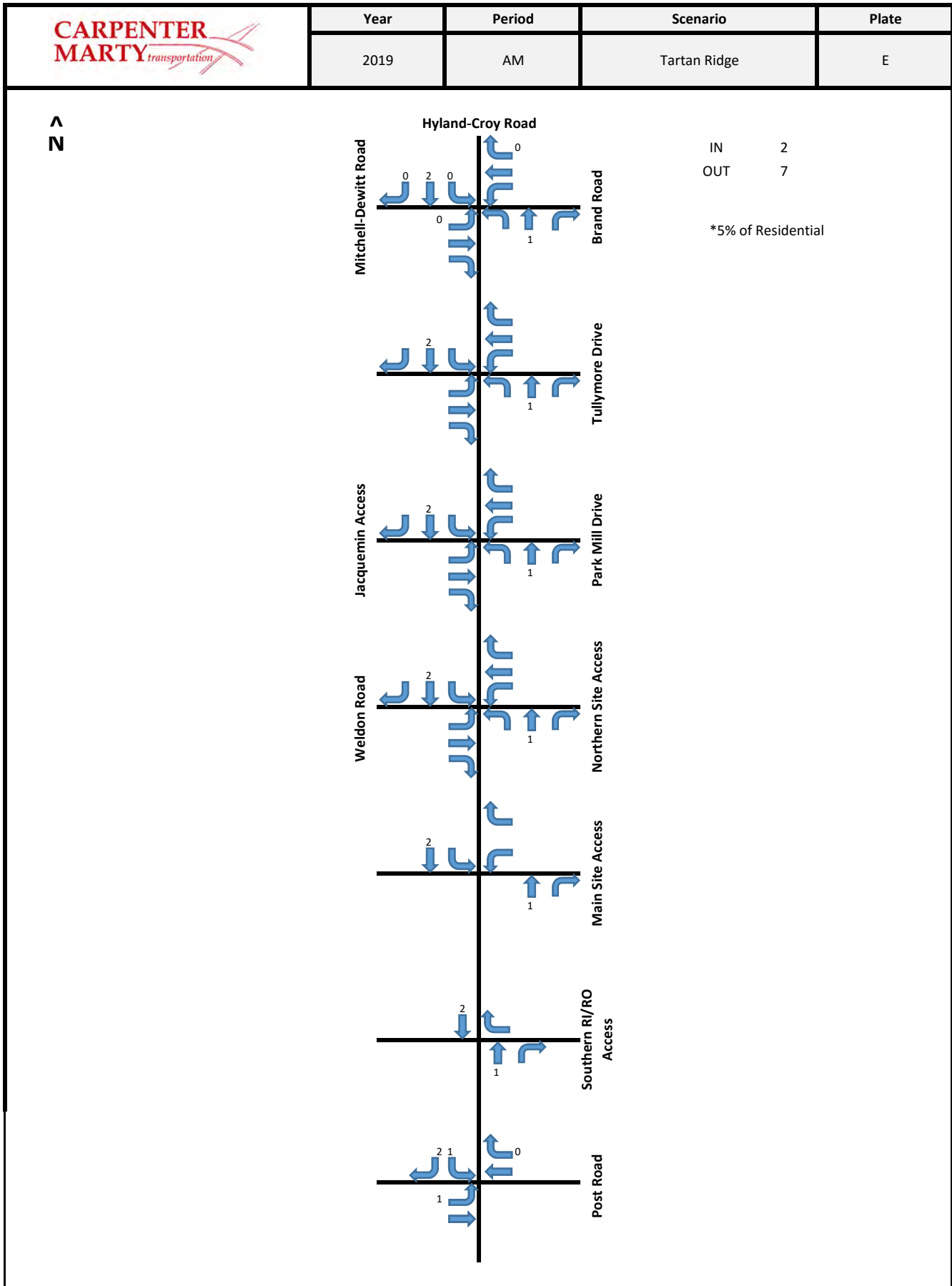
^
N



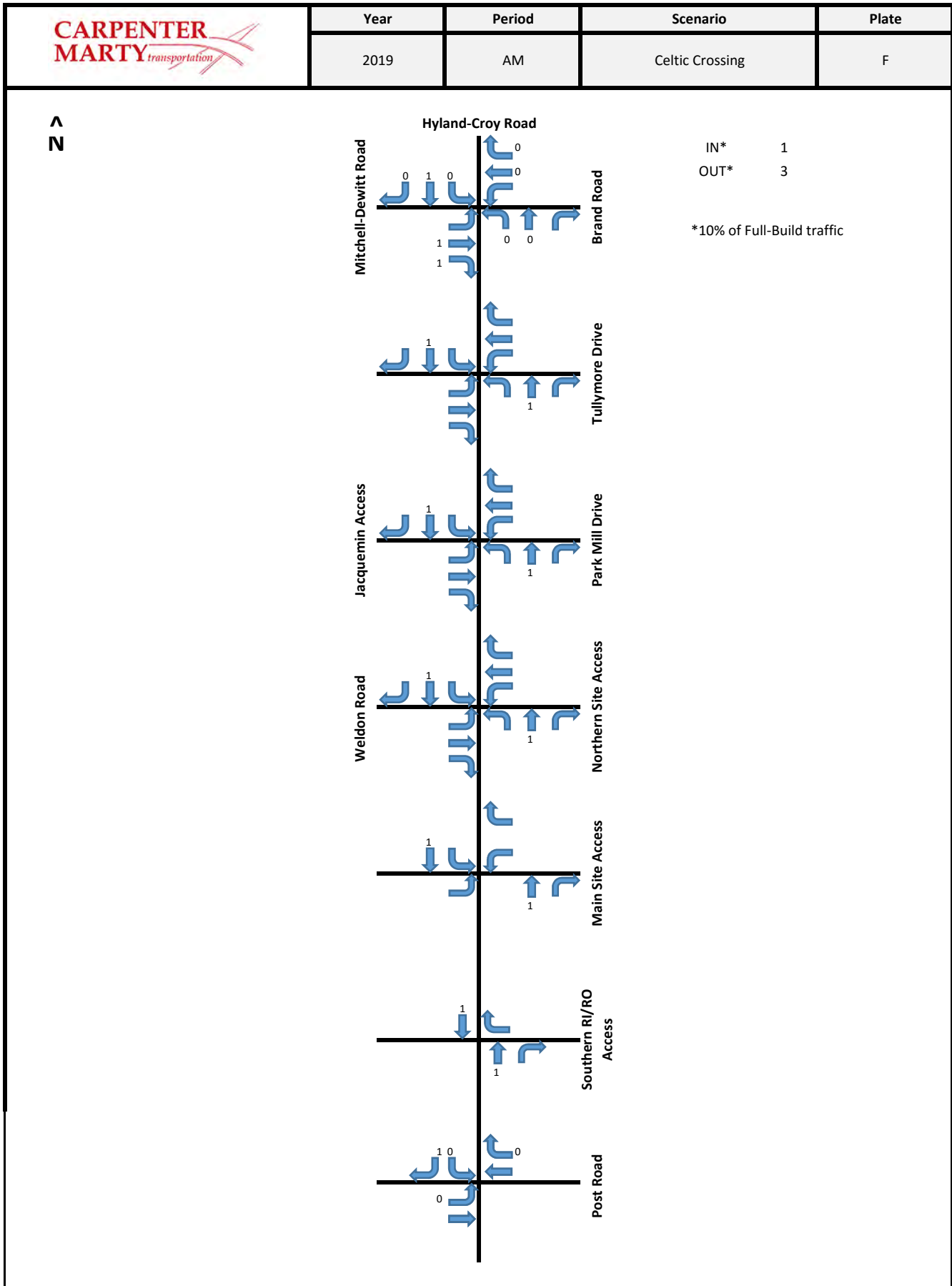
Gorden-Jacquemin TIS
Traffic Volume Calculations



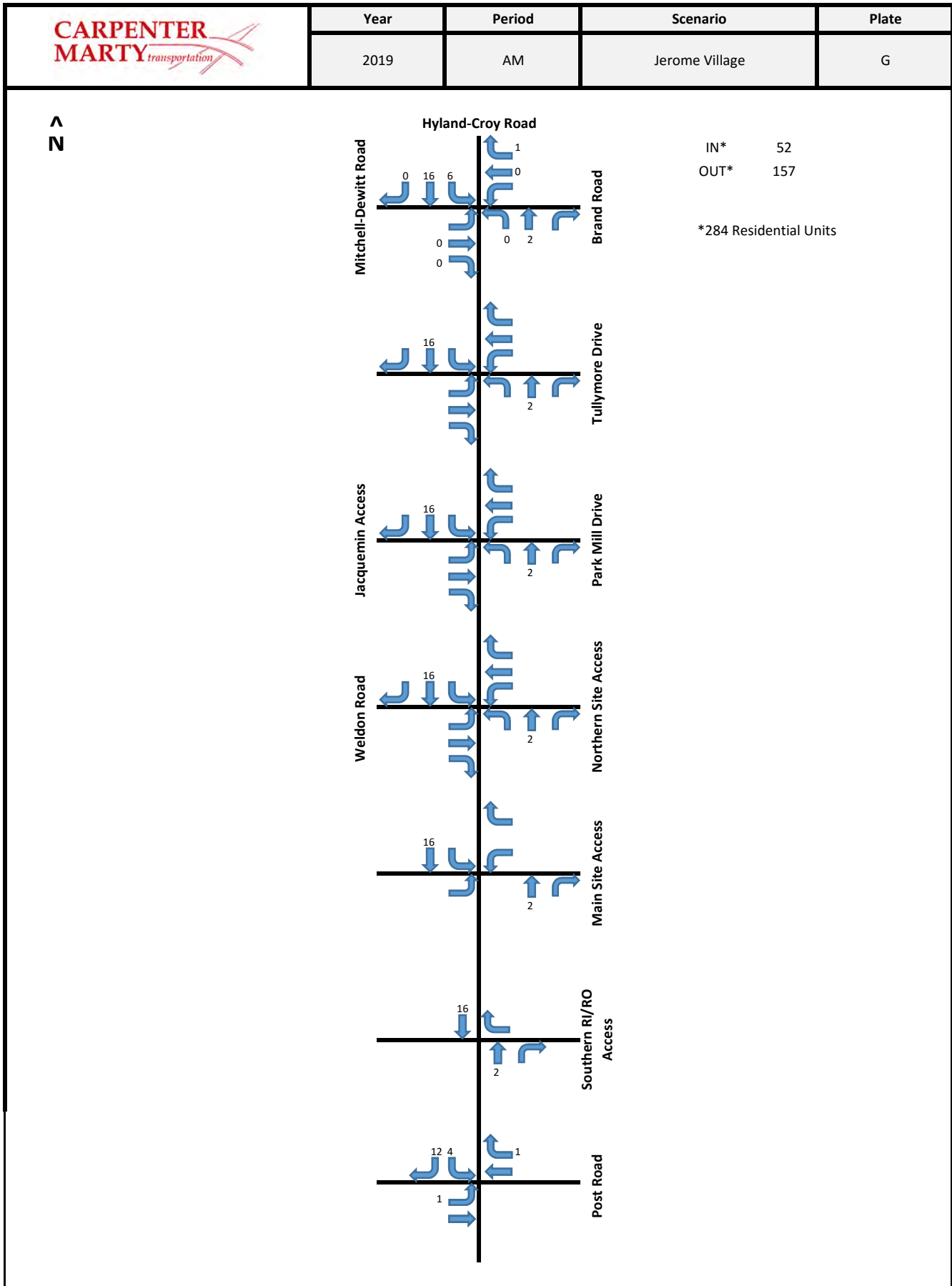
Gorden-Jacquemin TIS
Traffic Volume Calculations



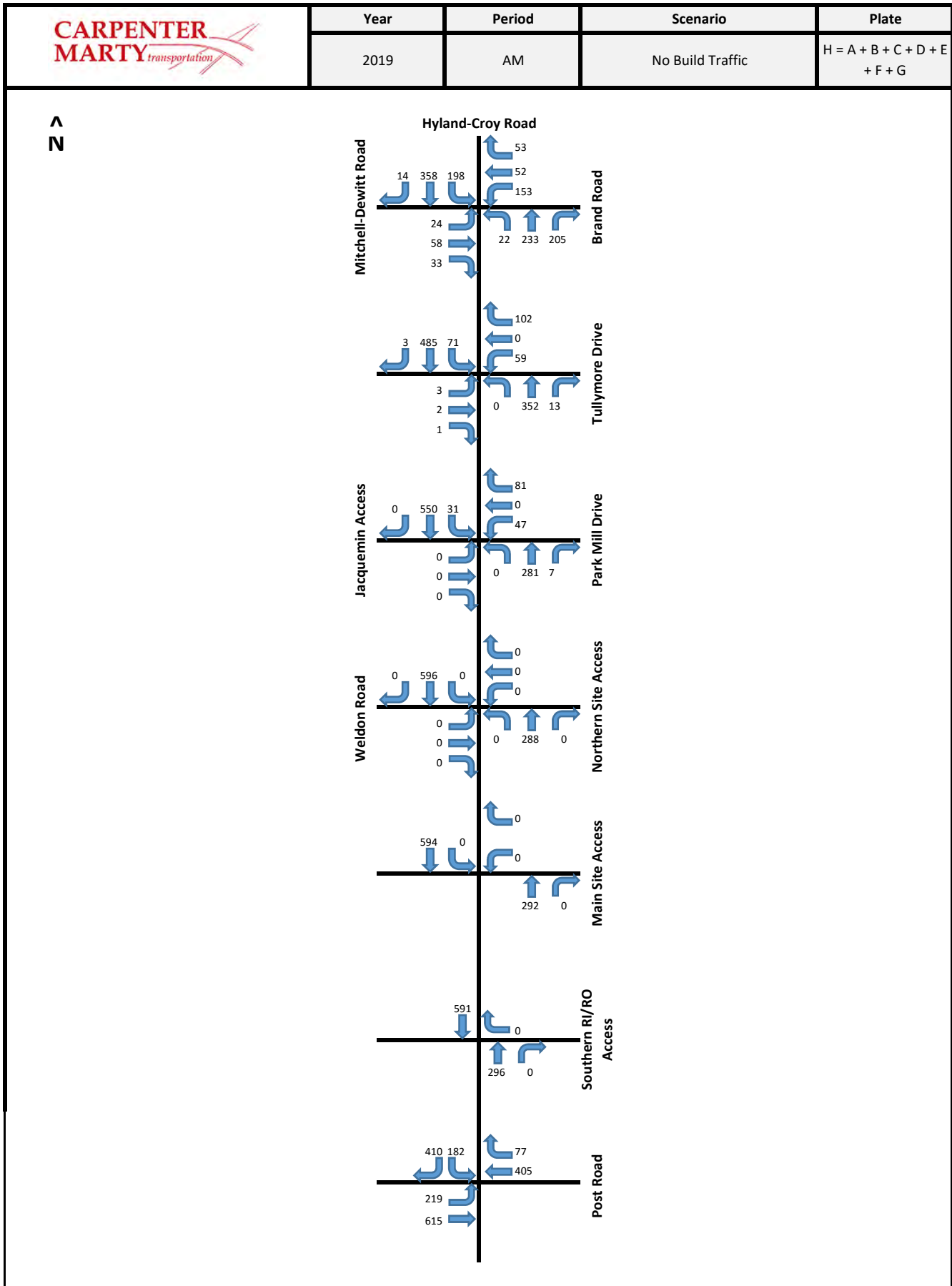
Gorden-Jacquemin TIS
Traffic Volume Calculations



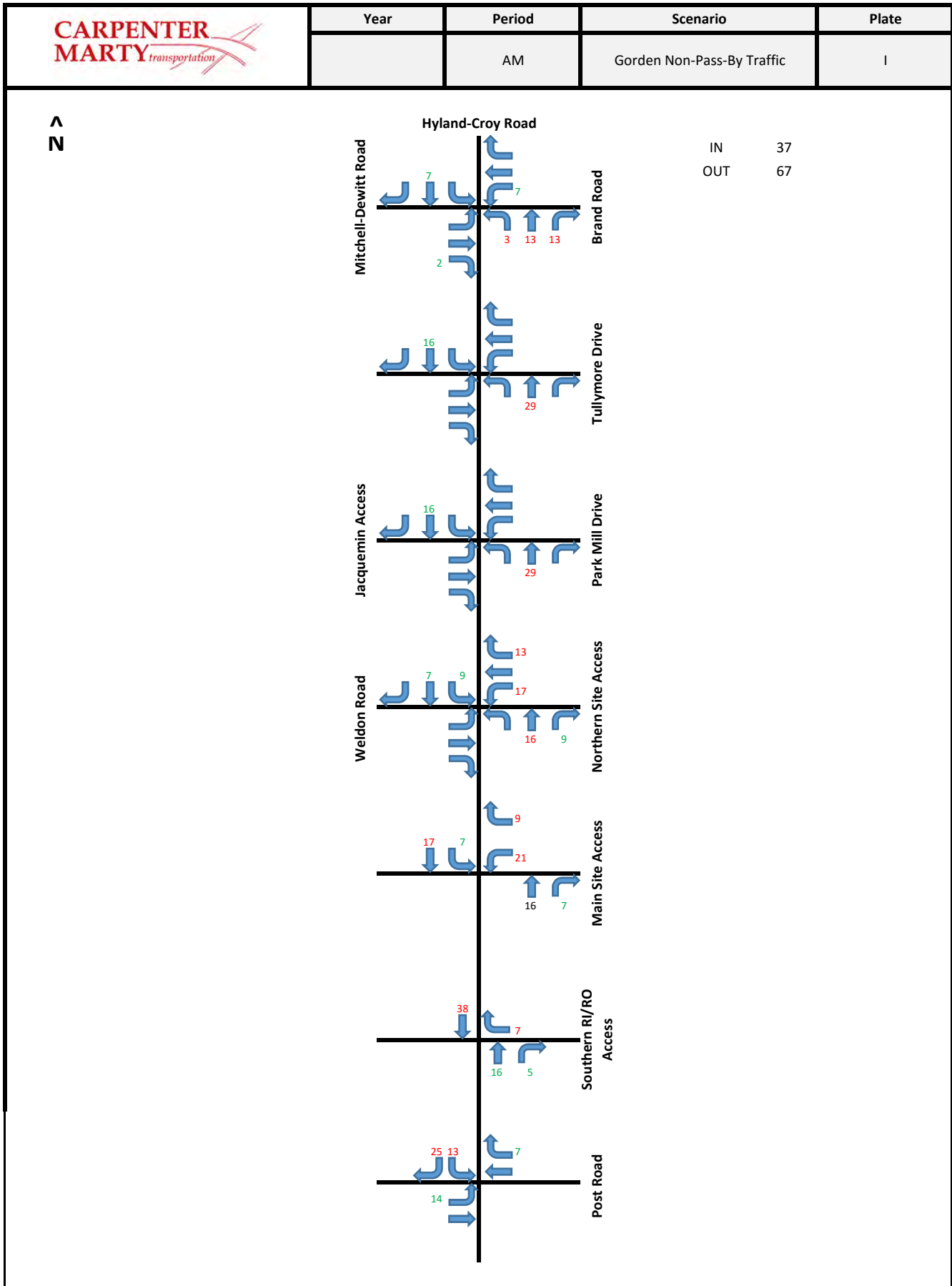
Gorden-Jacquemin TIS
Traffic Volume Calculations



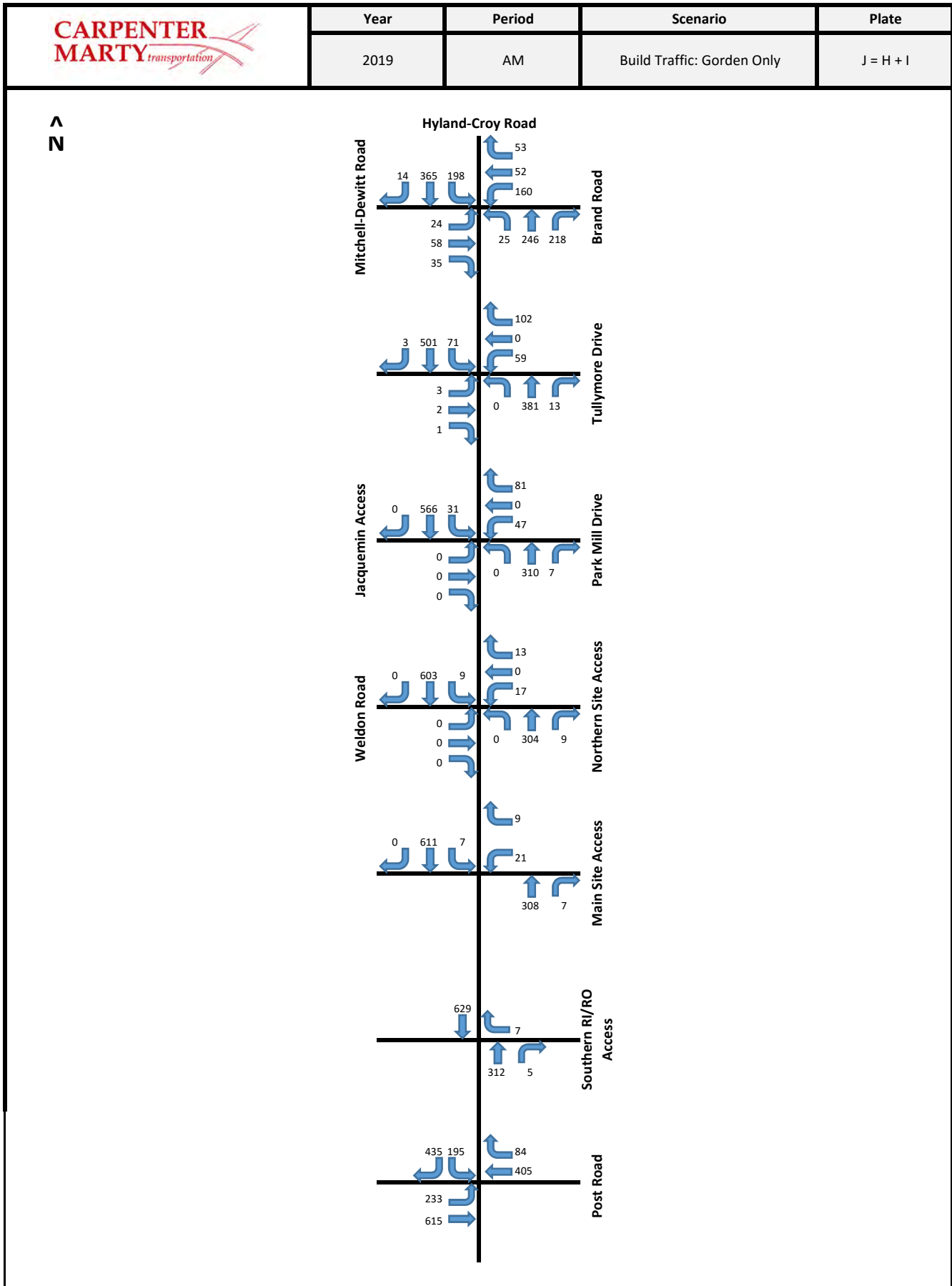
Gorden-Jacquemin TIS
Traffic Volume Calculations



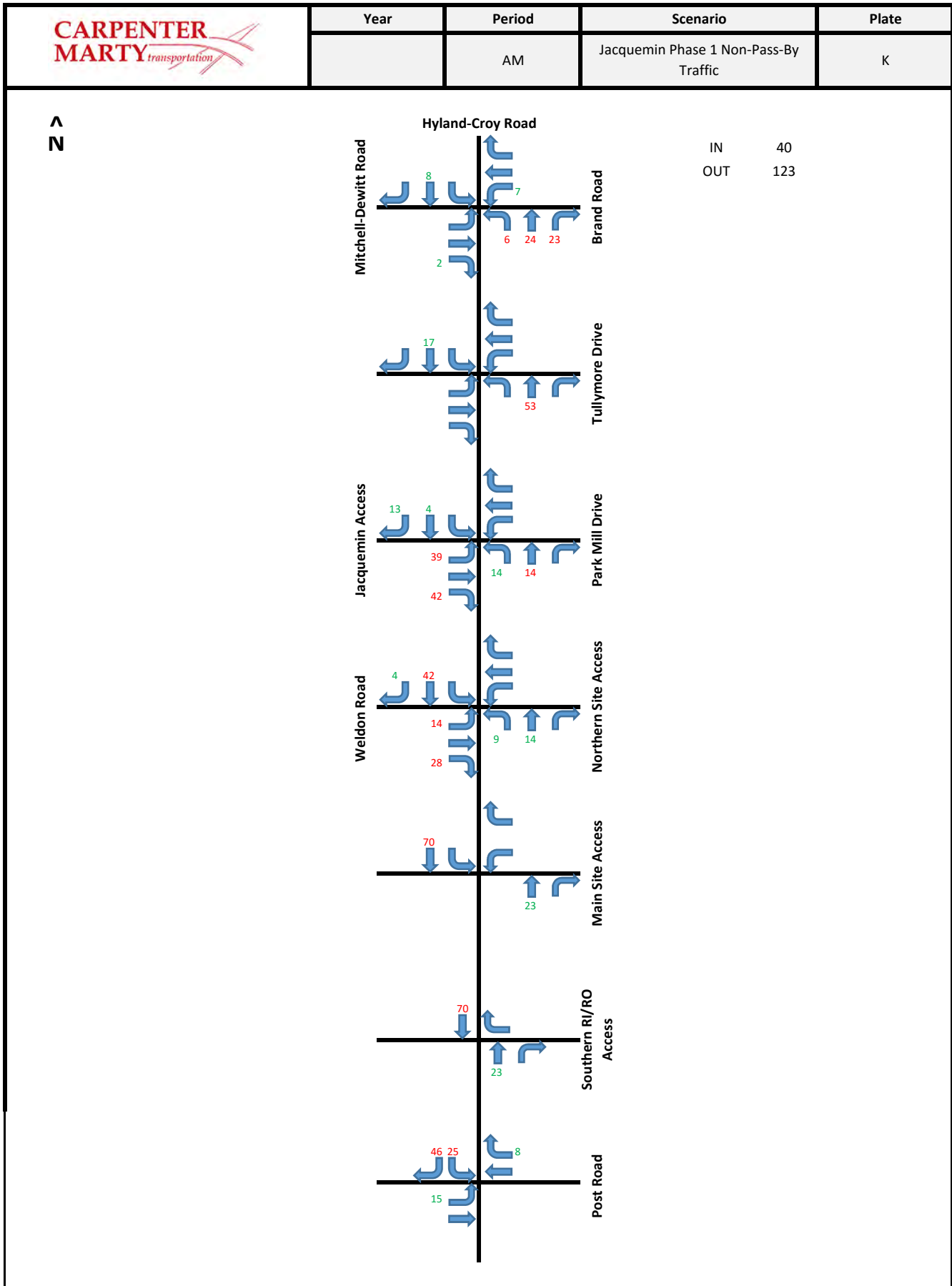
Gorden-Jacquemin TIS
Traffic Volume Calculations



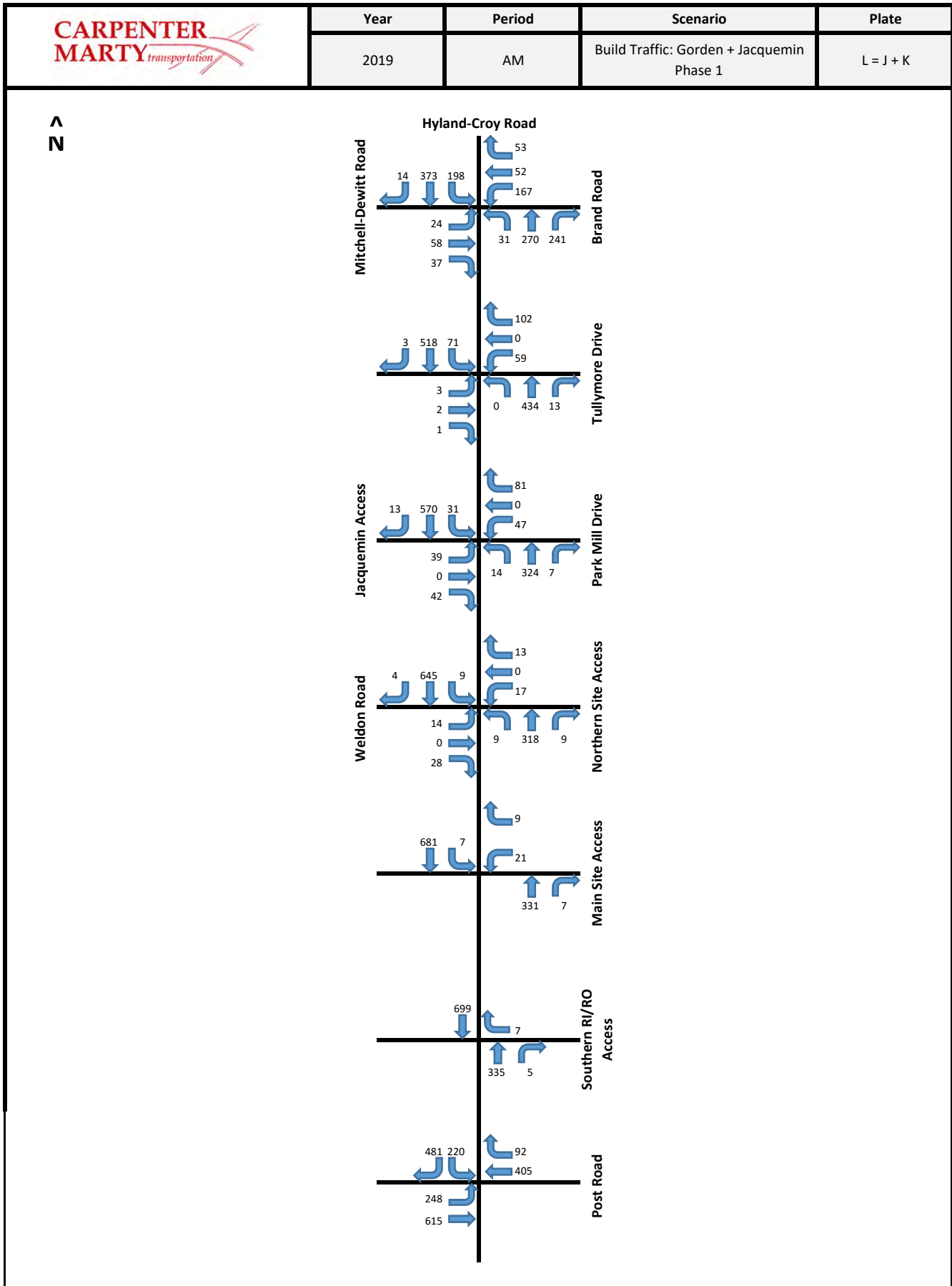
Gorden-Jacquemin TIS
Traffic Volume Calculations



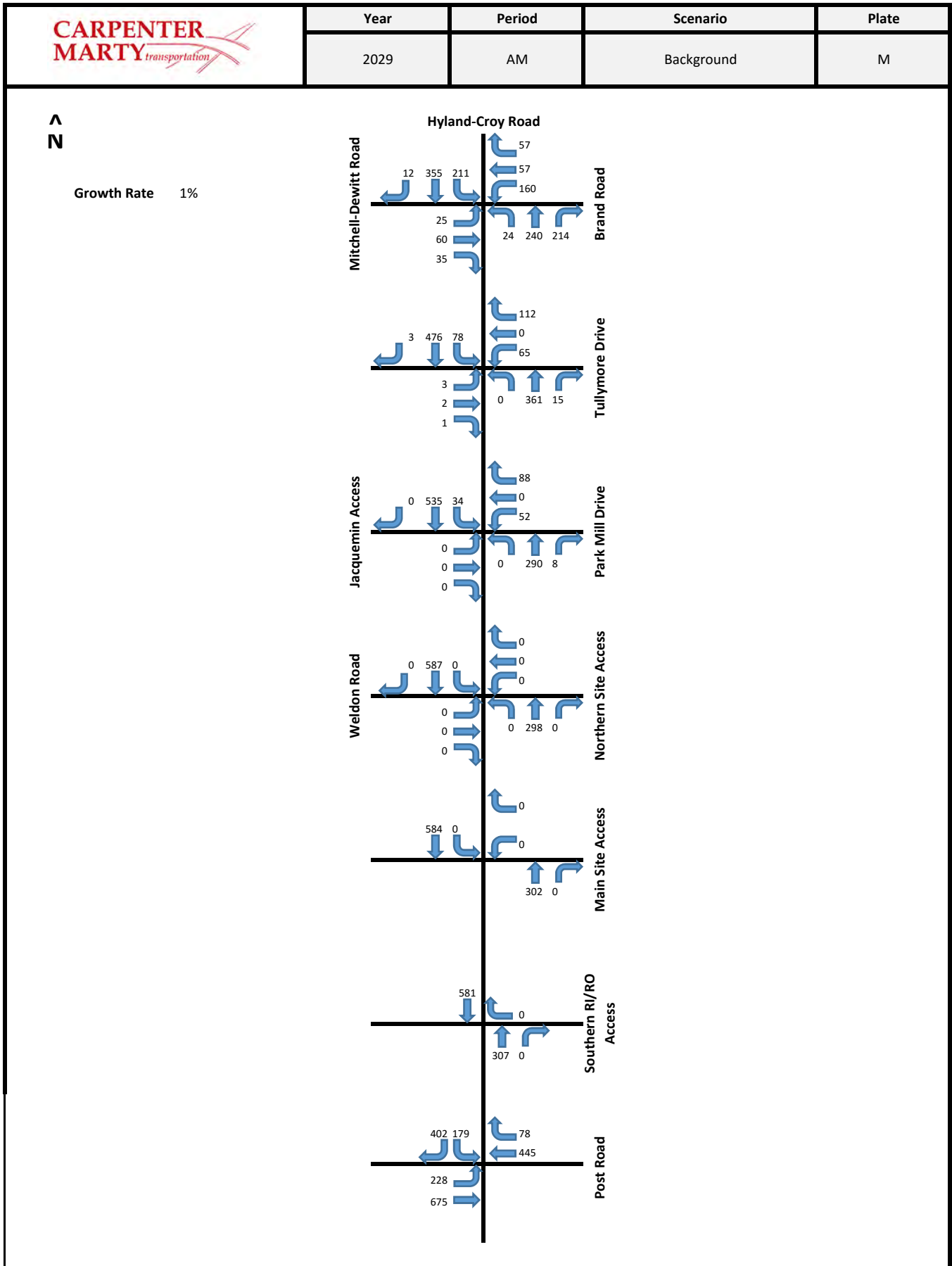
Gorden-Jacquemin TIS
Traffic Volume Calculations



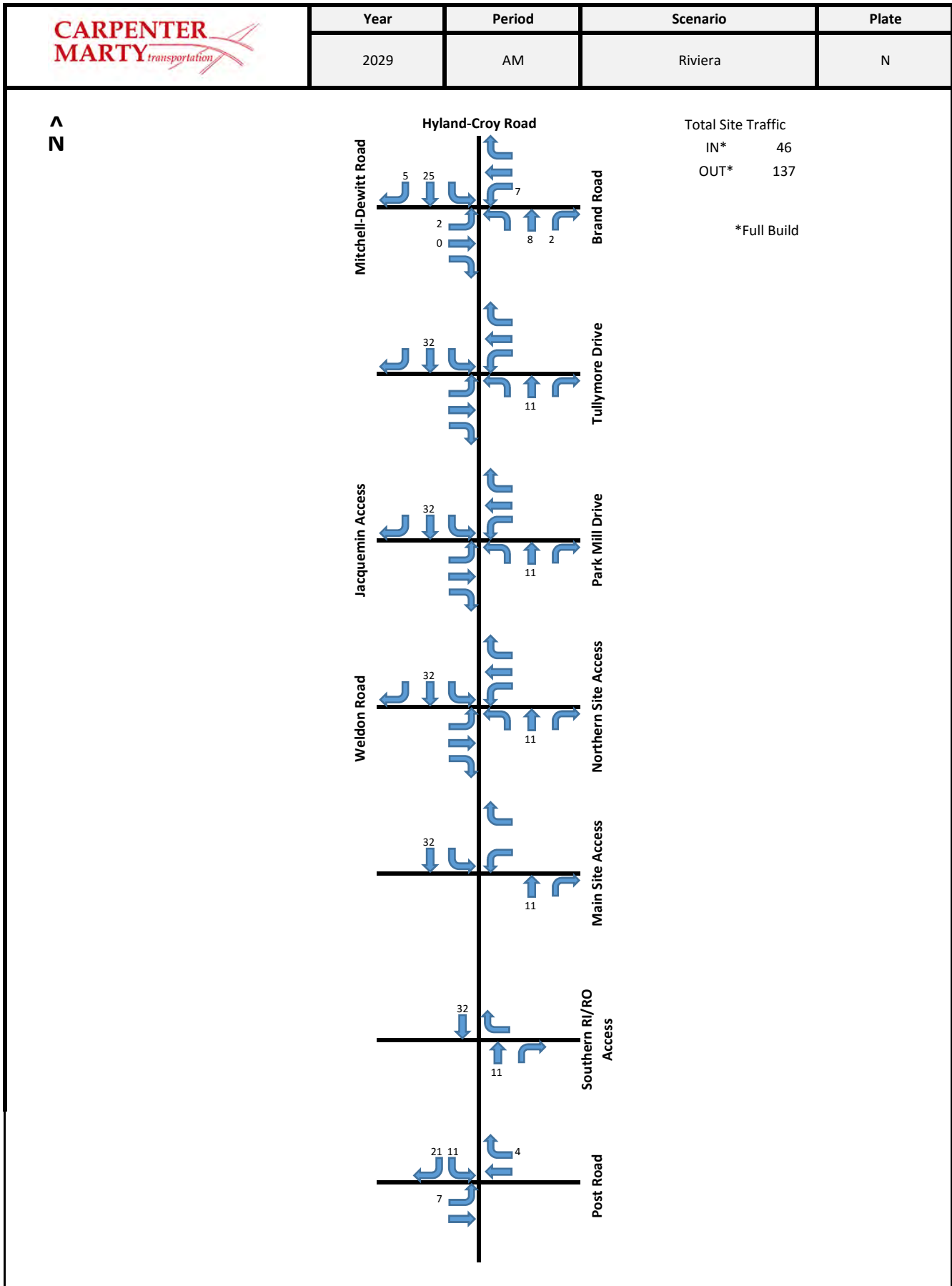
Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations

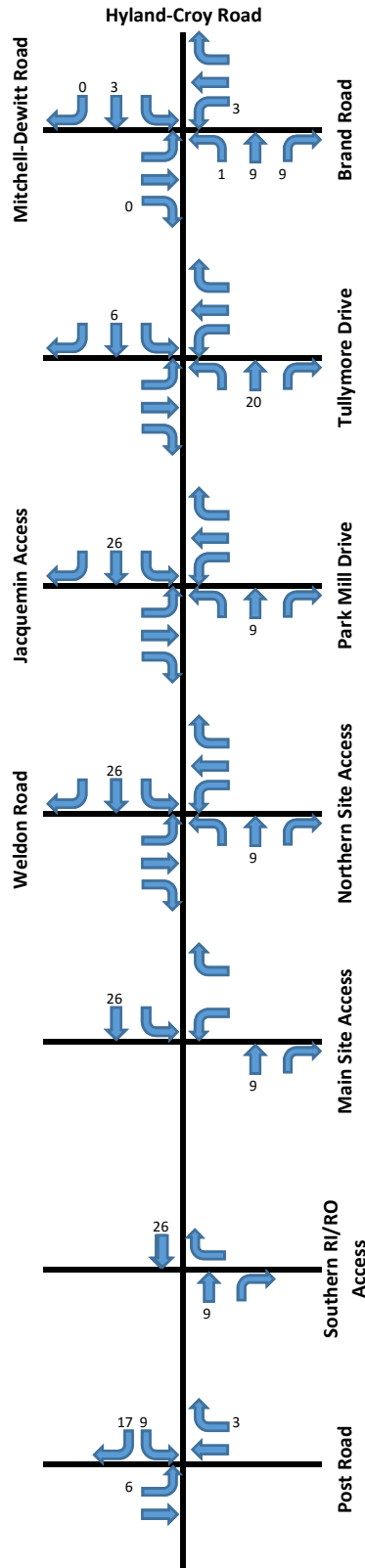


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2029	AM	Autum Rose	O

^
N



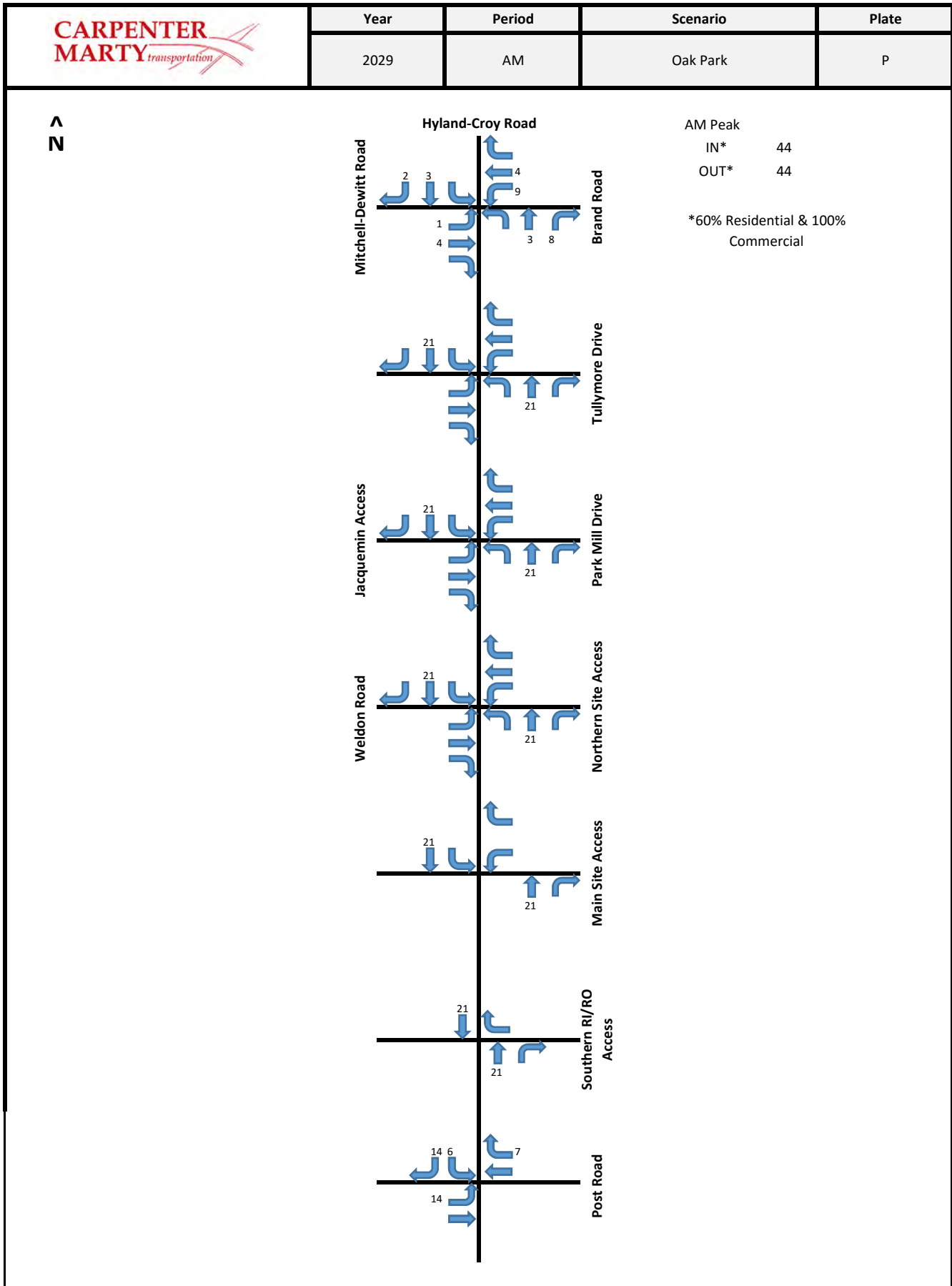
Total Site Traffic

IN* 15

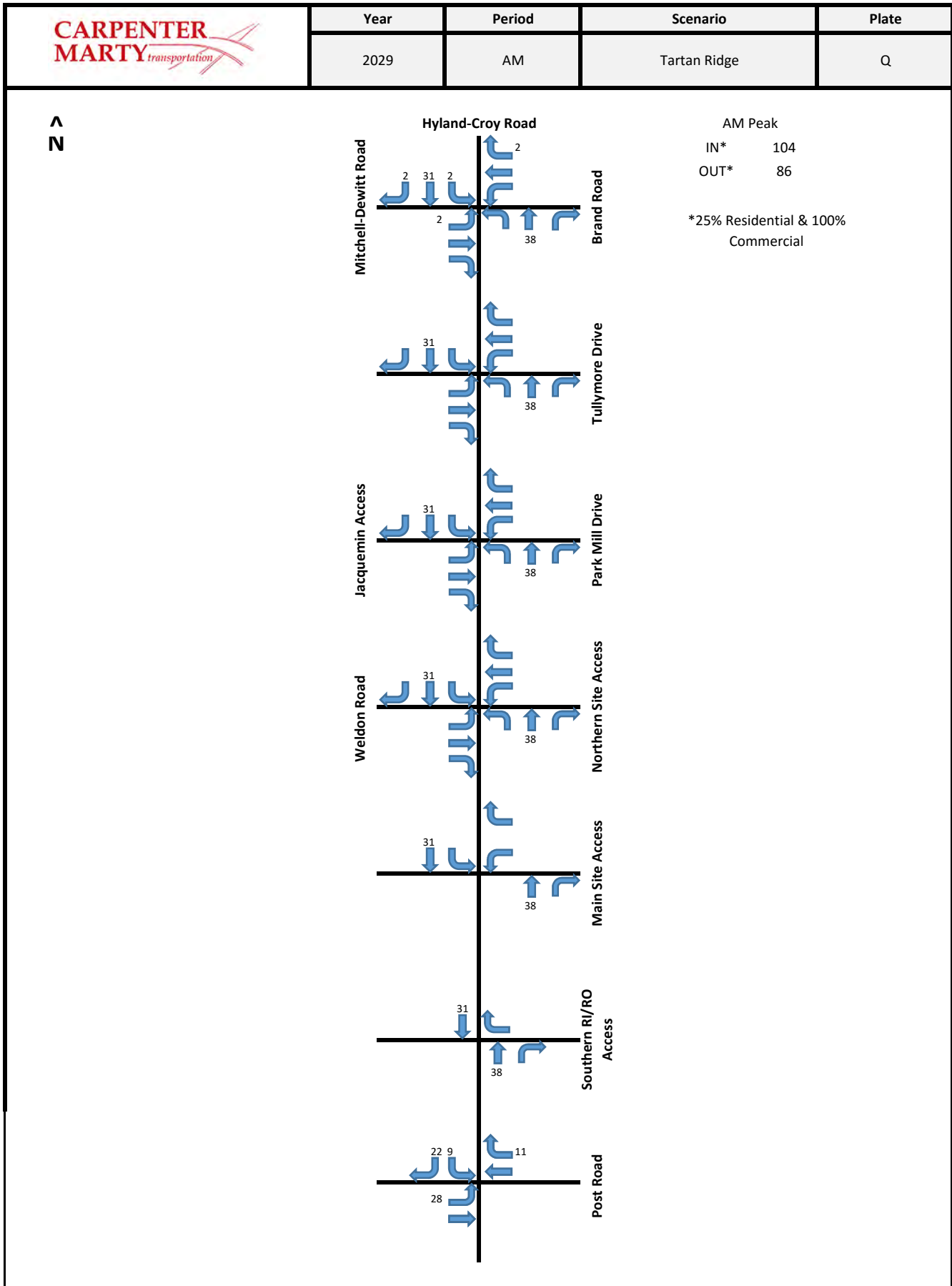
OUT* 46

*Full Build

Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations

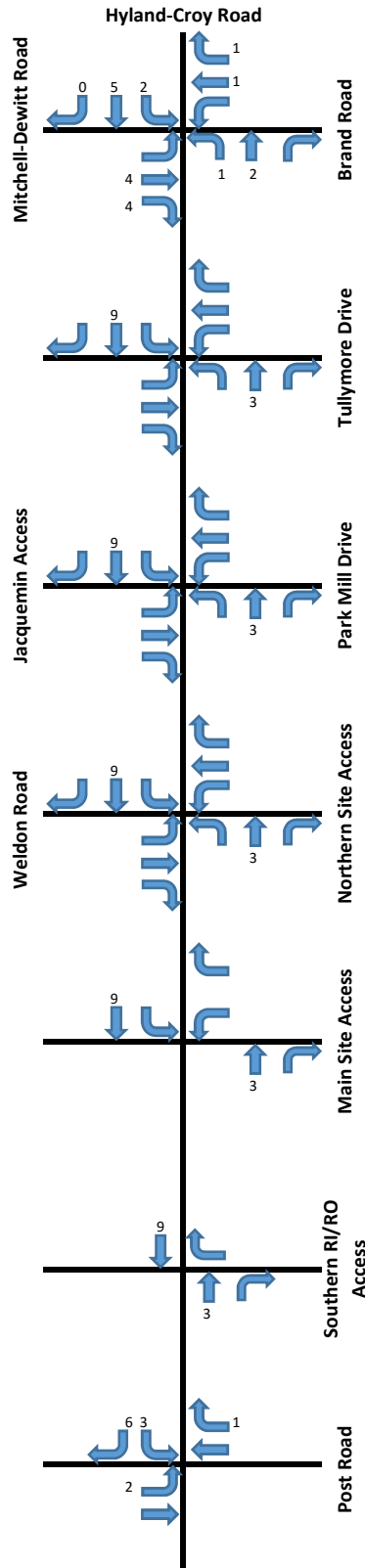


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2029	AM	Celtic	R

^
N



AM Peak
IN* 6
OUT* 19

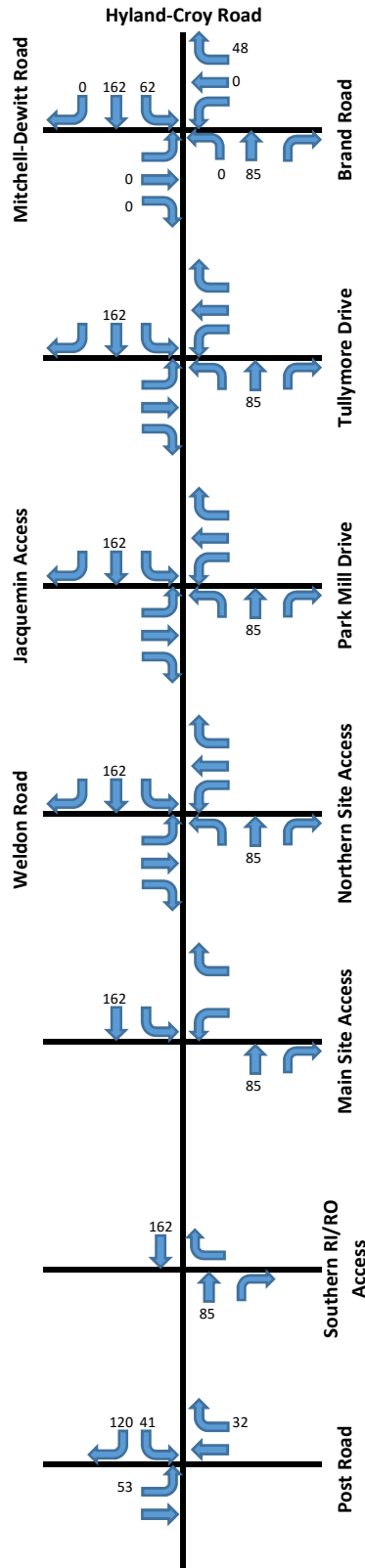
*60% of Full Build Traffic

Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2029	AM	Jerome Village	S

^
N



AM Peak
IN* 2080
OUT* 1633

*Full Build minus 416
residential units

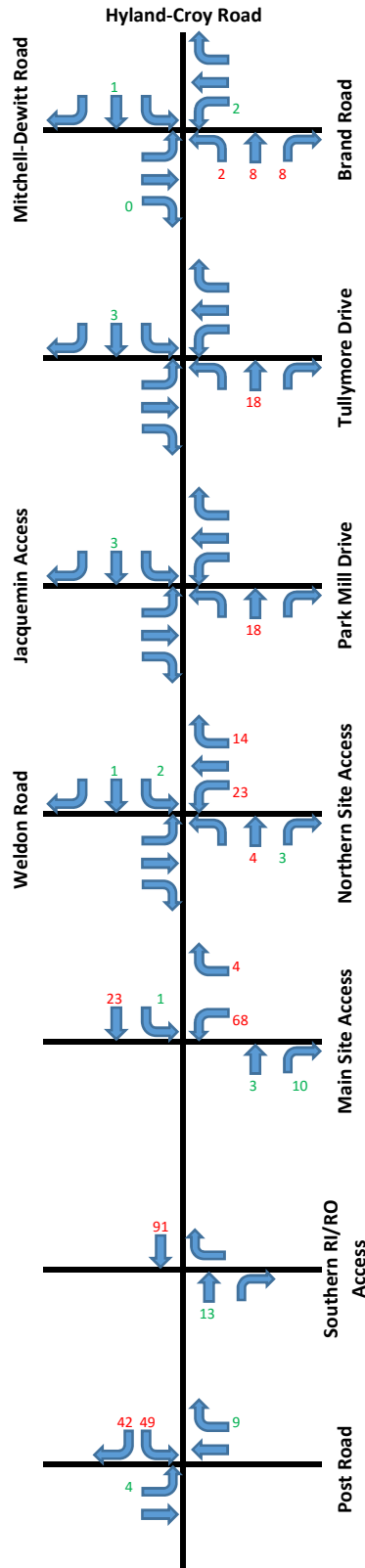
Gorden-Jacquemin TIS
Traffic Volume Calculations



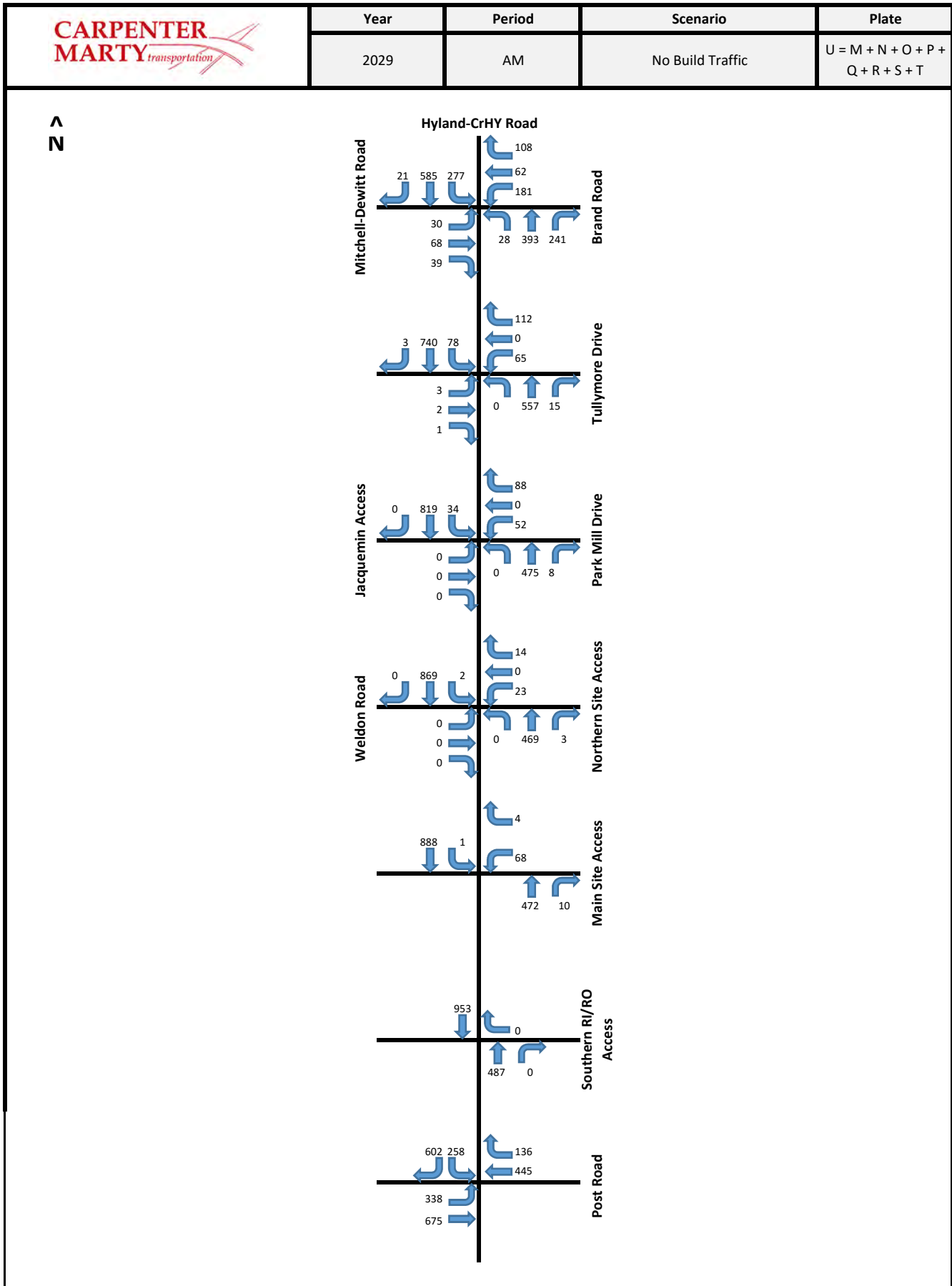
Year	Period	Scenario	Plate
2029	AM	Post Preserve*	T

^
N

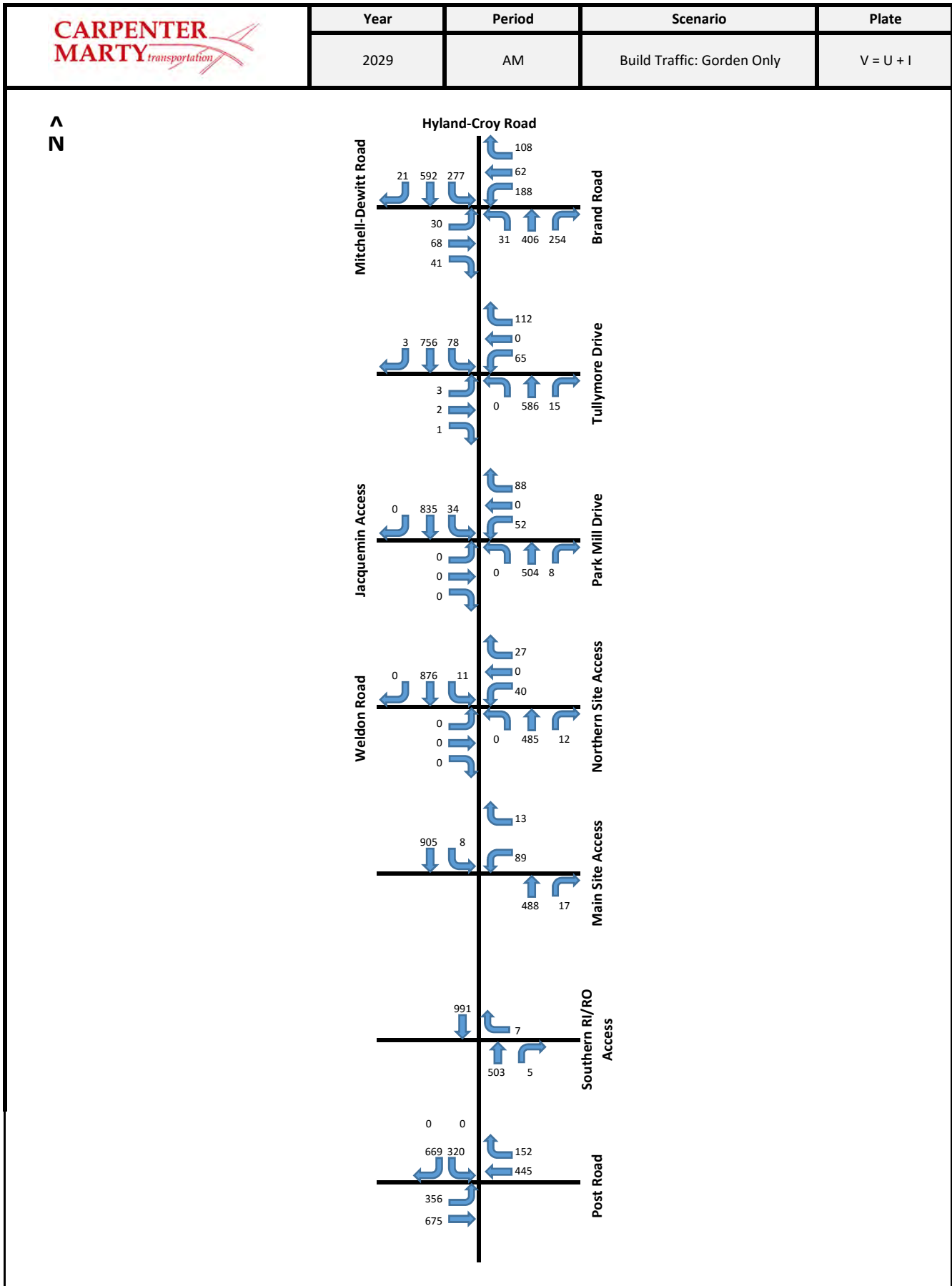
*Based on the Post Preserve Acces Relocation Traffic Analysis completed by Burgess & Niple in 2009. Volumes carried through the study intersections based on residential non-pass-by distribution in this study.



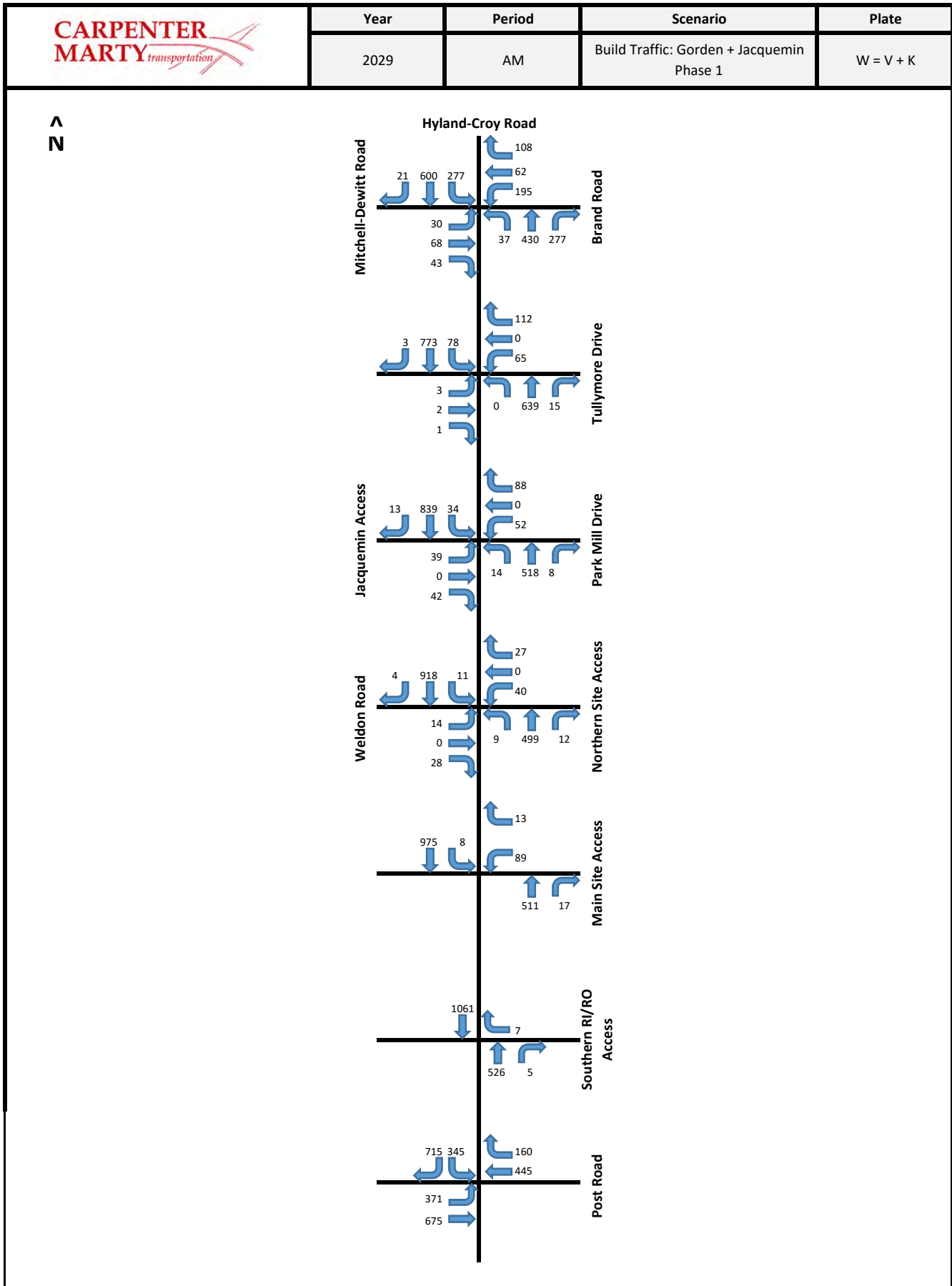
Gorden-Jacquemin TIS
Traffic Volume Calculations



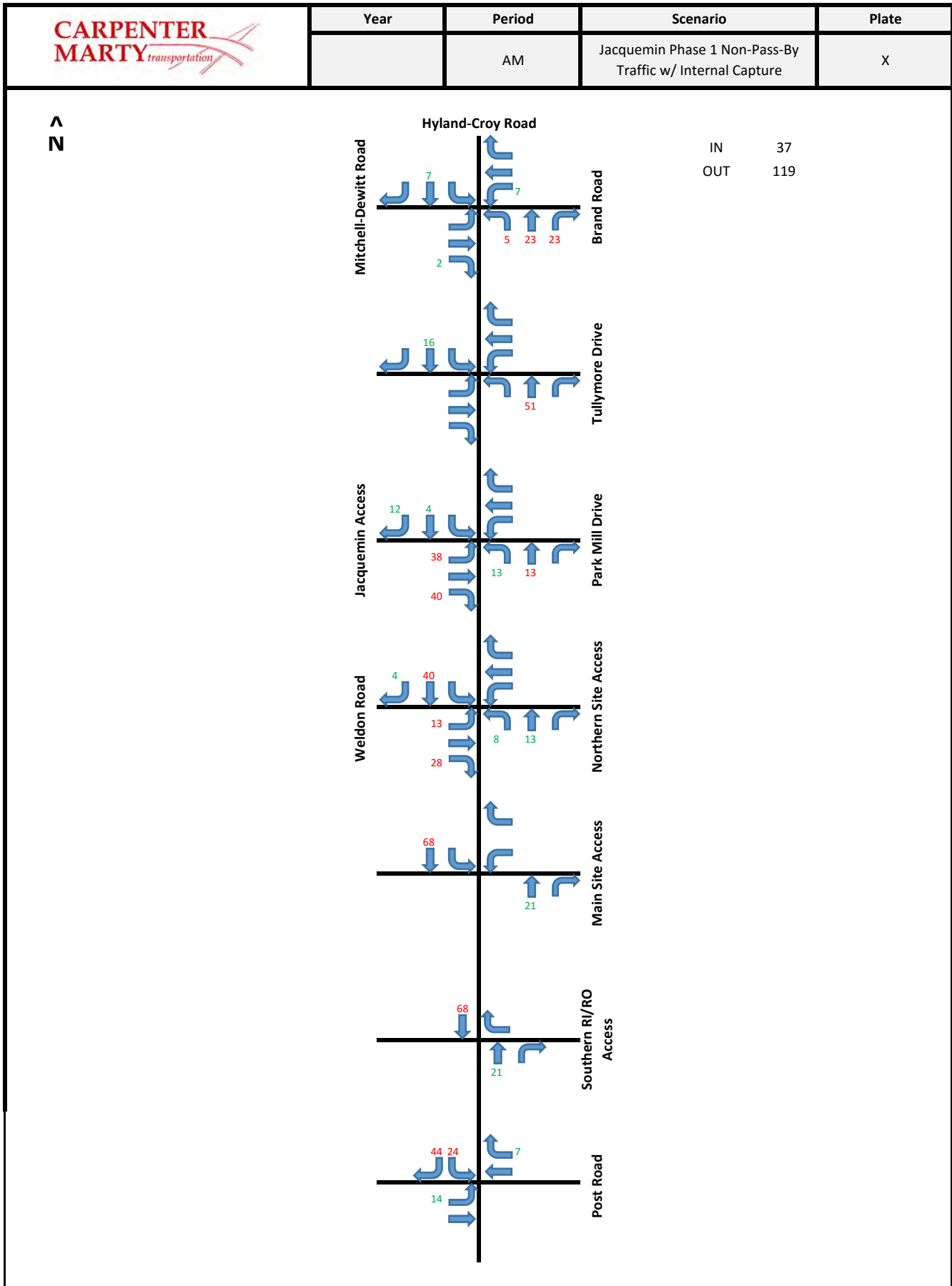
Gorden-Jacquemin TIS
Traffic Volume Calculations



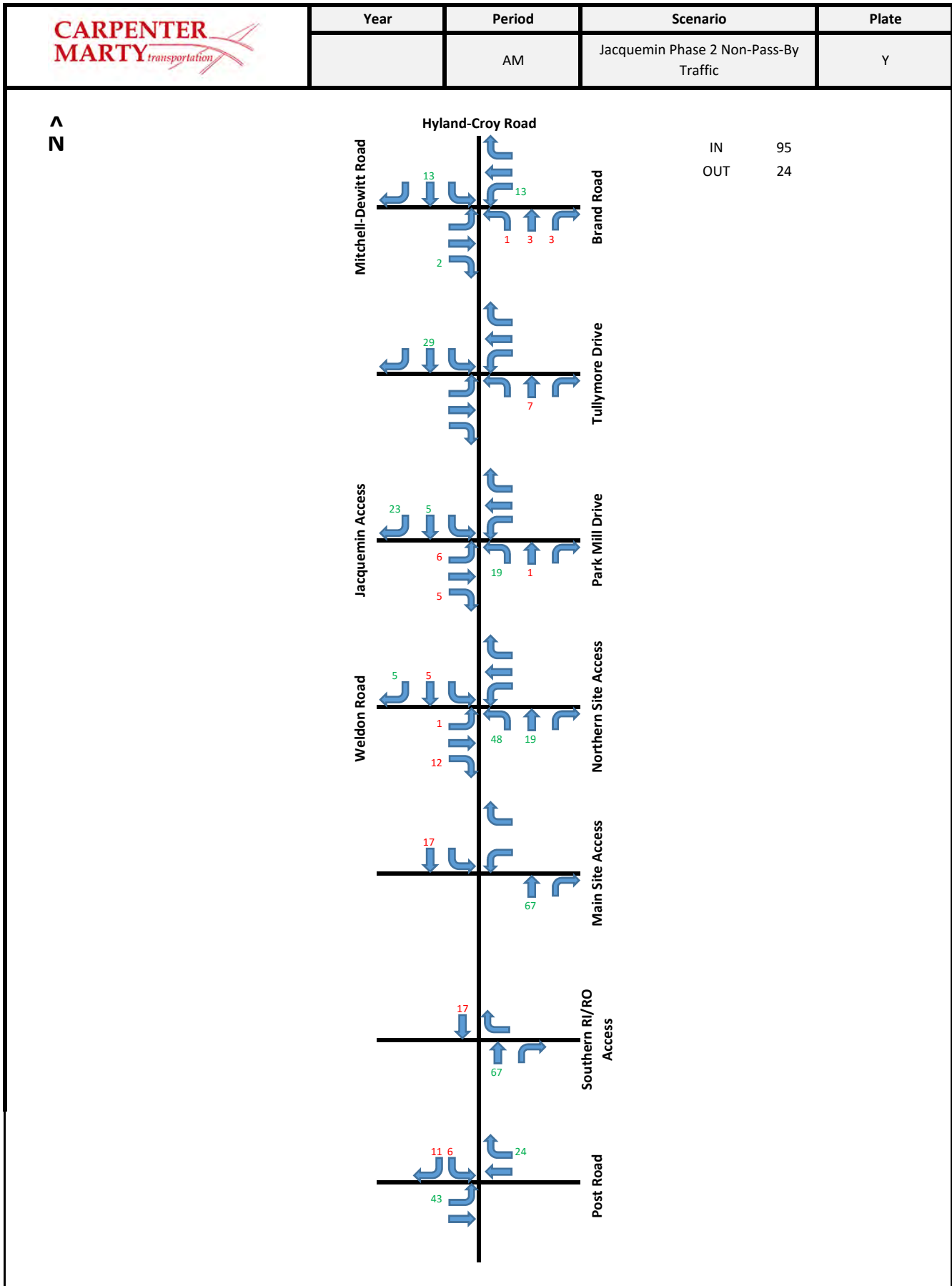
Gorden-Jacquemin TIS
Traffic Volume Calculations



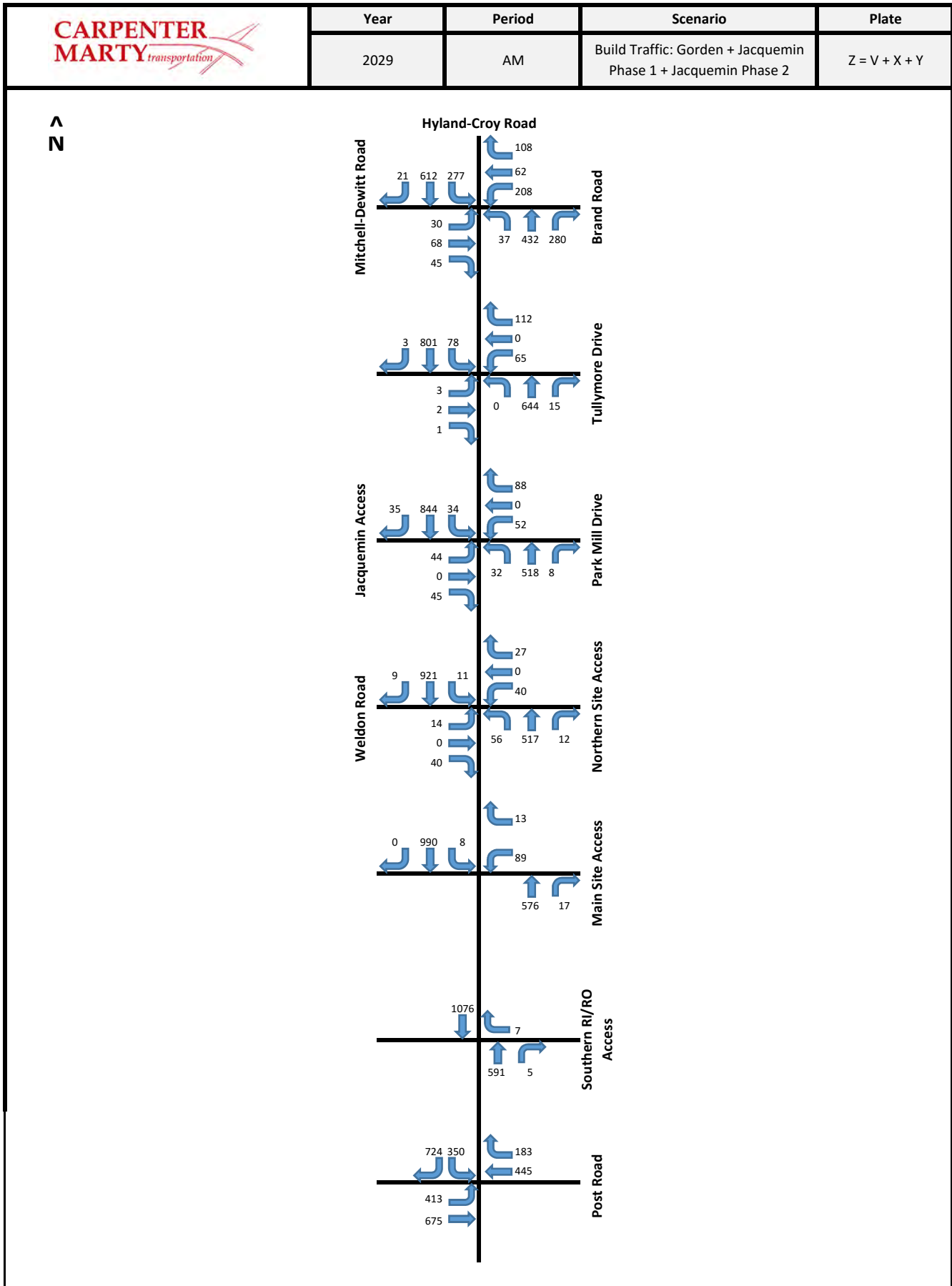
Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



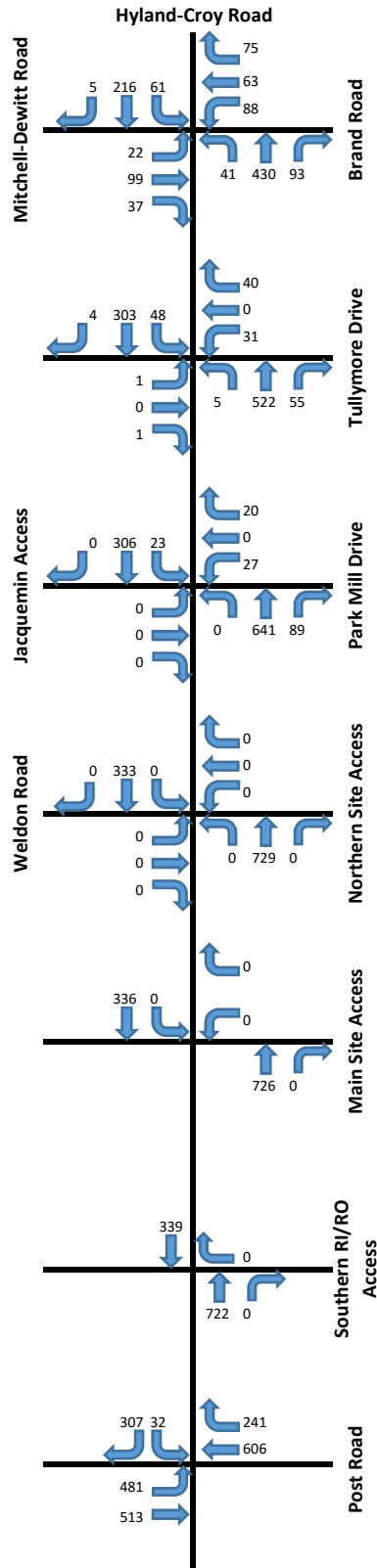
Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Background	A

^
N

Growth Rate 1%

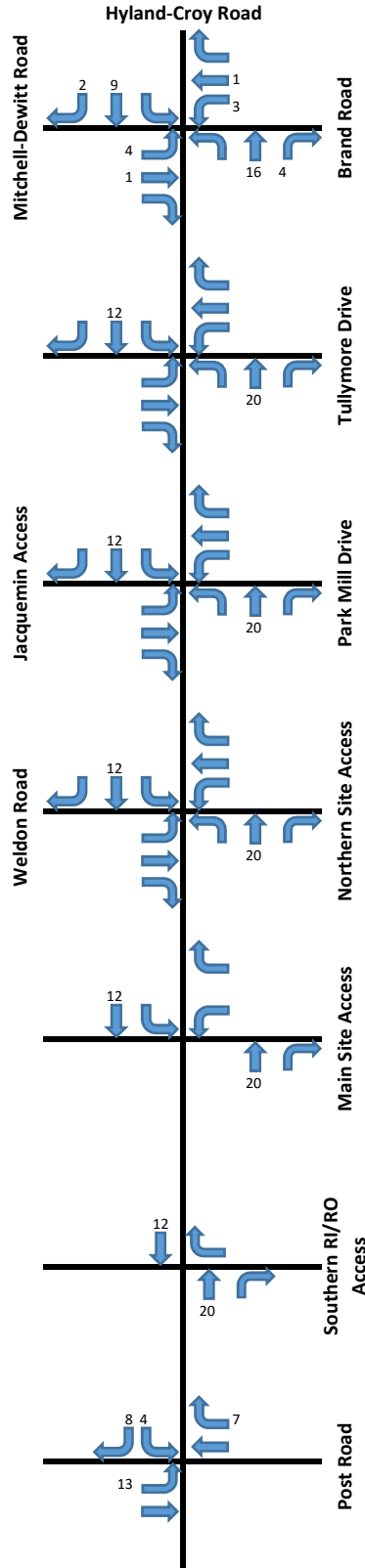


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Riviera	B

^
N



Total Site Traffic

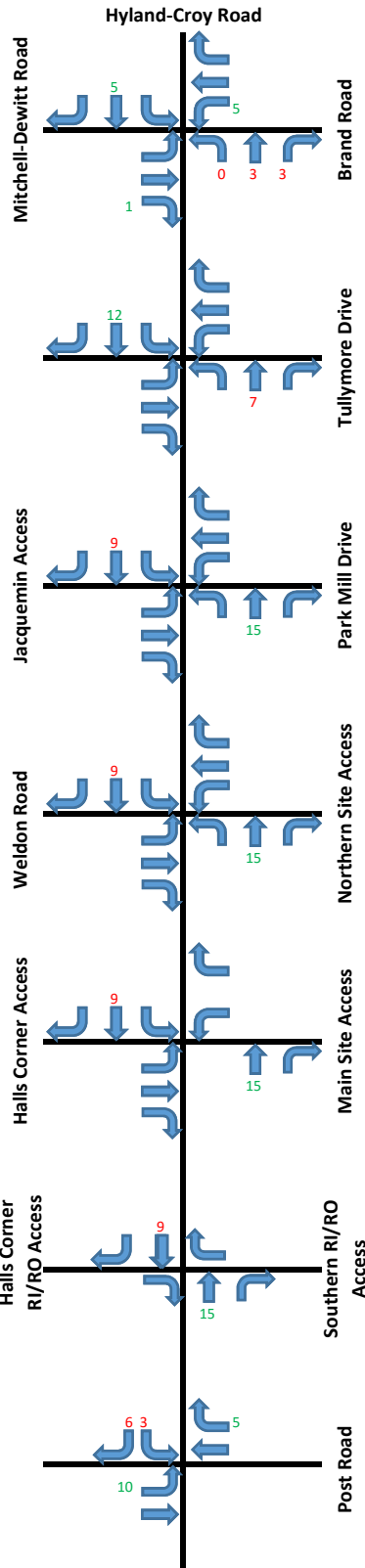
IN	88
OUT	51

Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Autum Rose	C

^
N



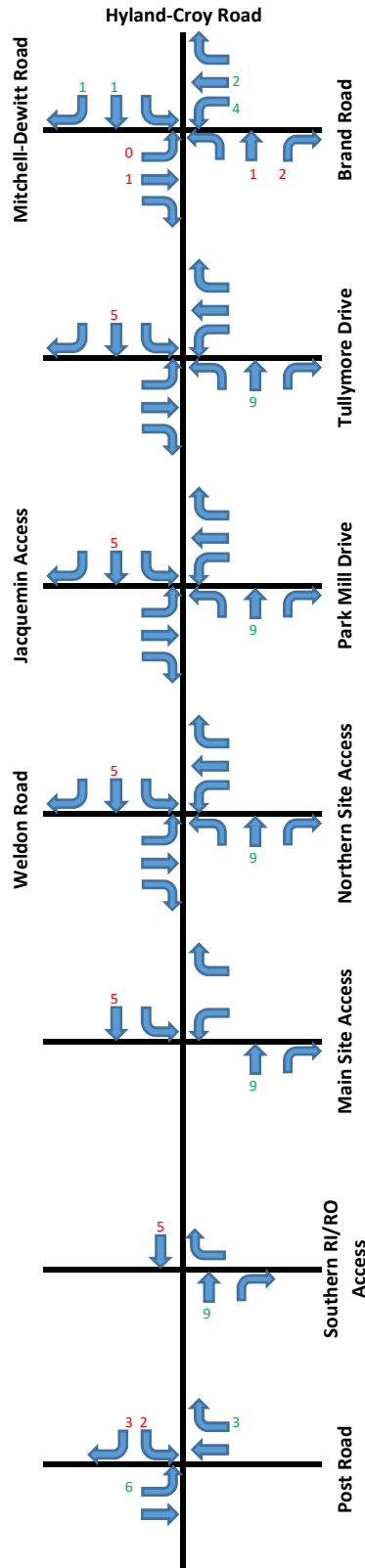
Total Site Traffic
IN 27
OUT 16

Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Oak Ridge	D

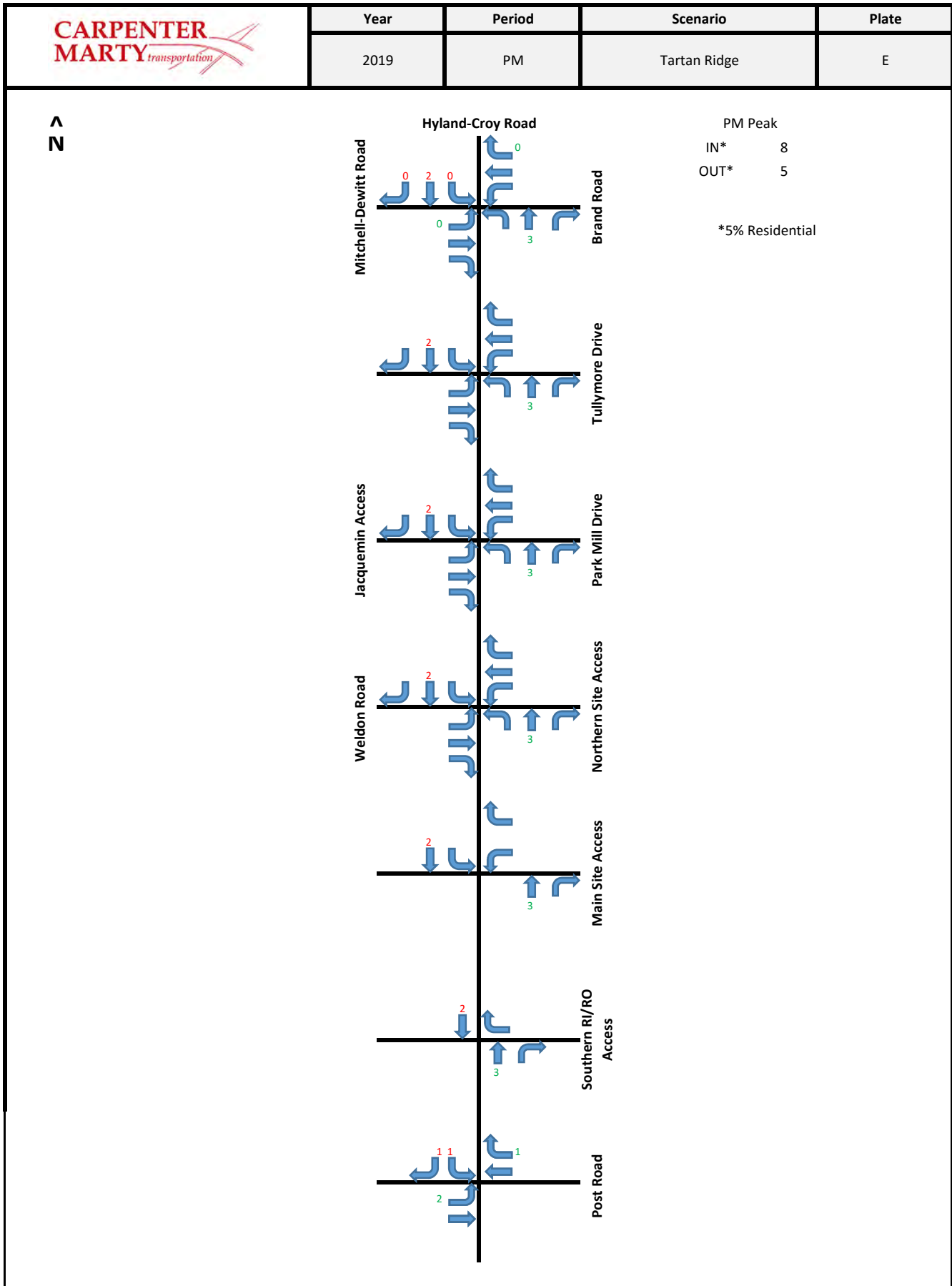
^
N



PM Peak
IN* 20
OUT* 11

*35% of Full Build
Residential Only

Gorden-Jacquemin TIS
Traffic Volume Calculations

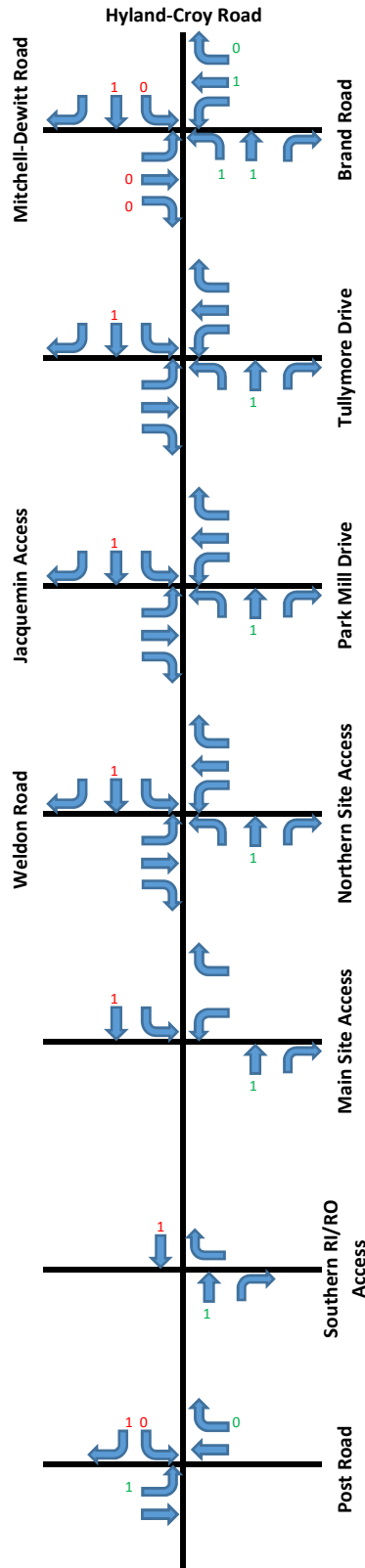


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Celtic Crossing	F

^
N



PM Peak
IN* 3
OUT* 2

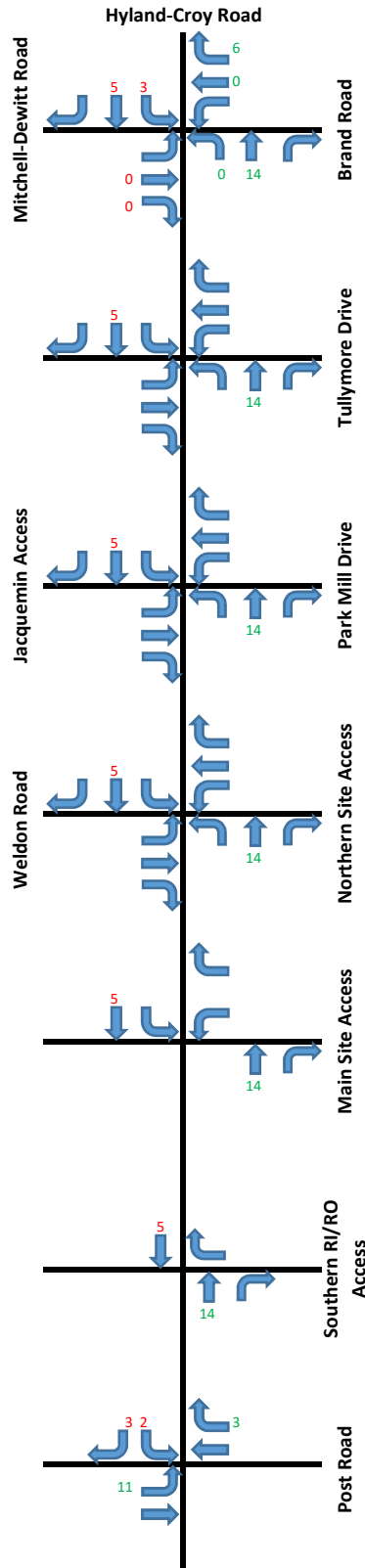
*10% of Full Build traffic

Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2019	PM	Jerome Village	G

^
N

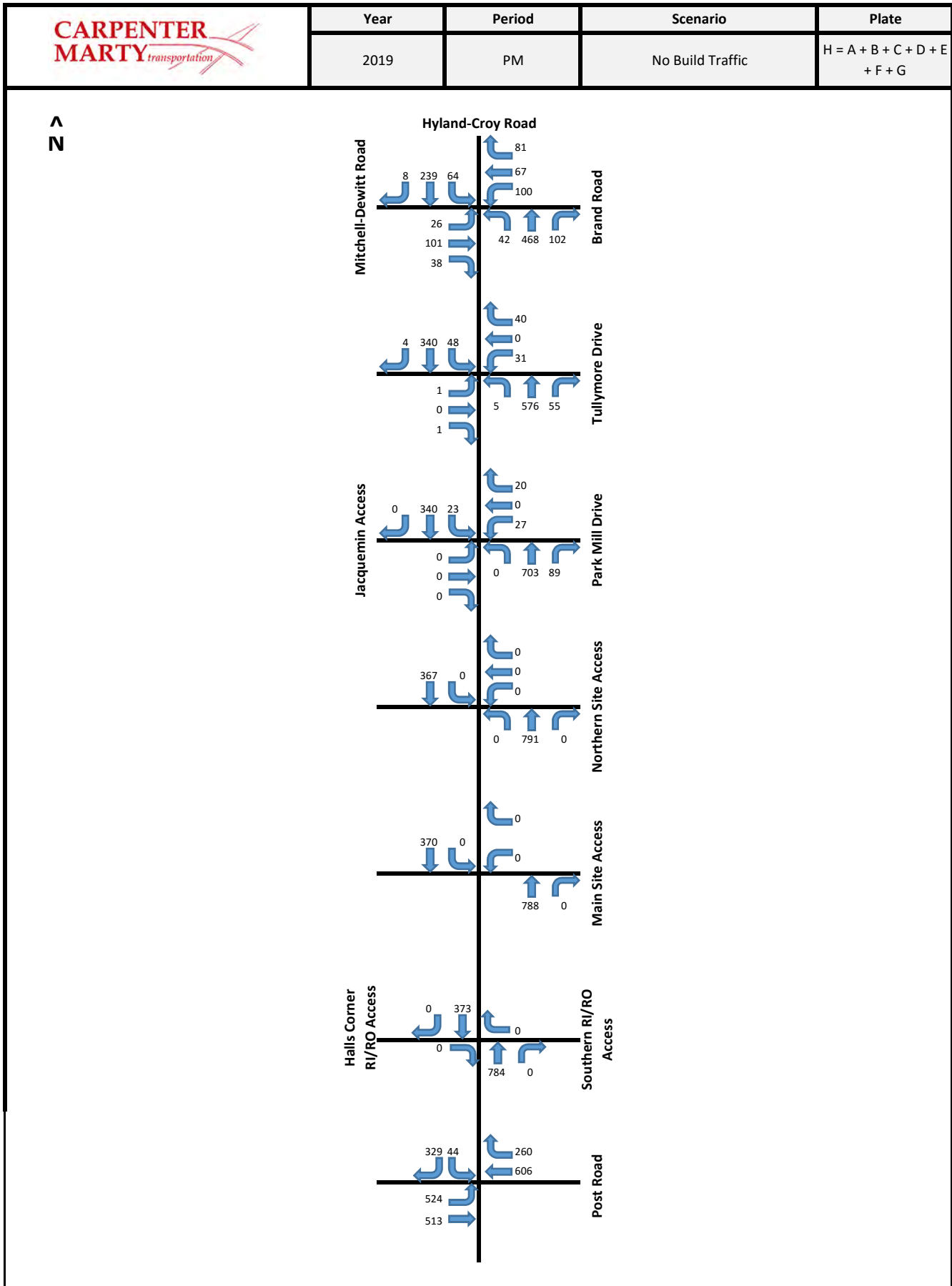


PM Peak

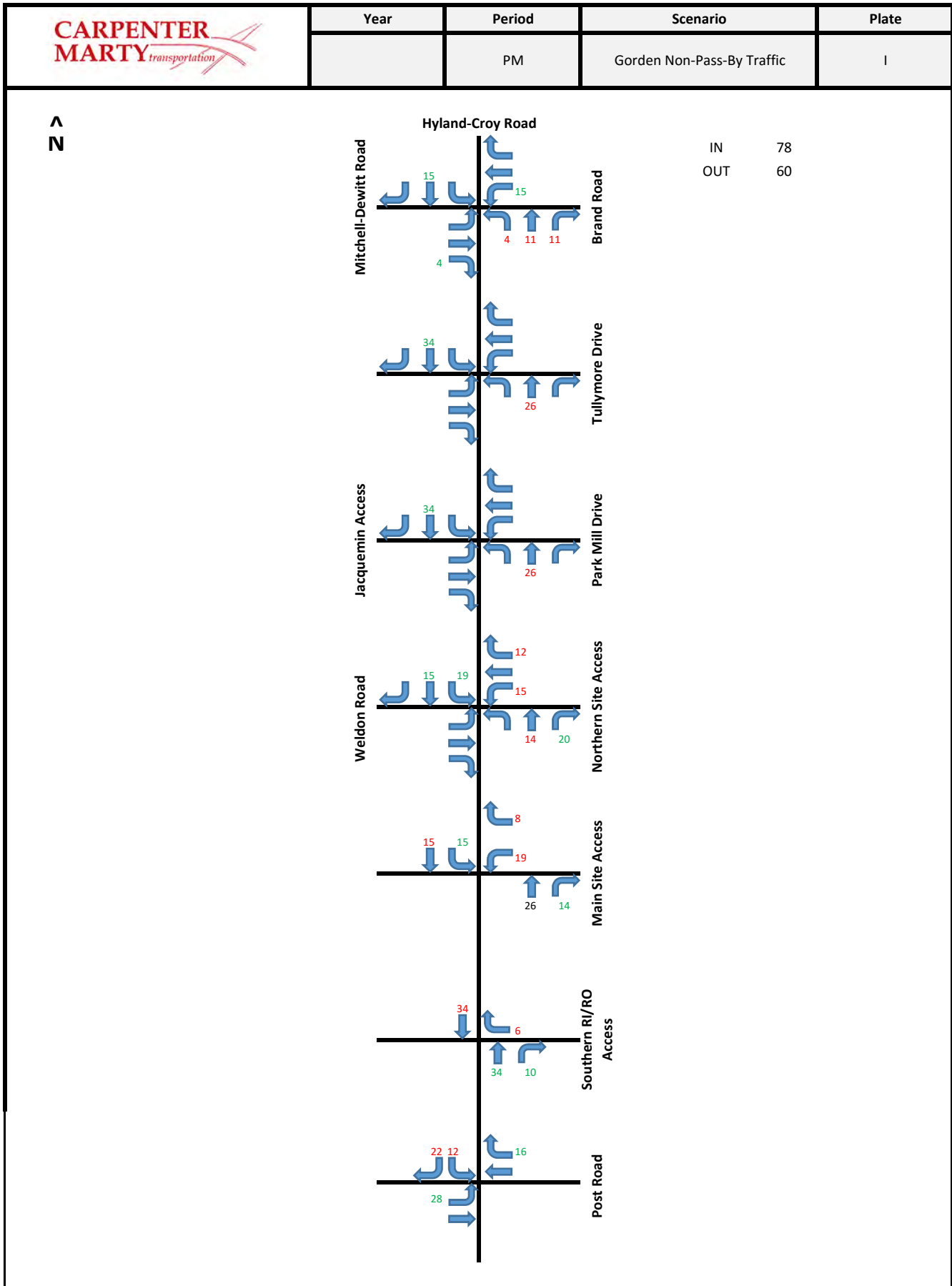
IN* 169
OUT* 100

*284 Residential Units

Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations

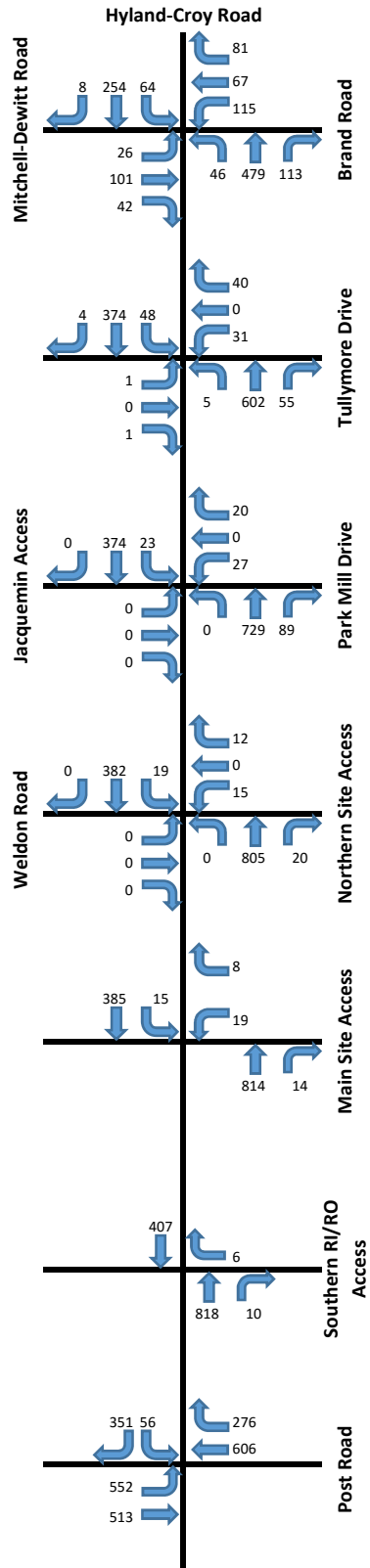


Gorden-Jacquemin TIS
Traffic Volume Calculations

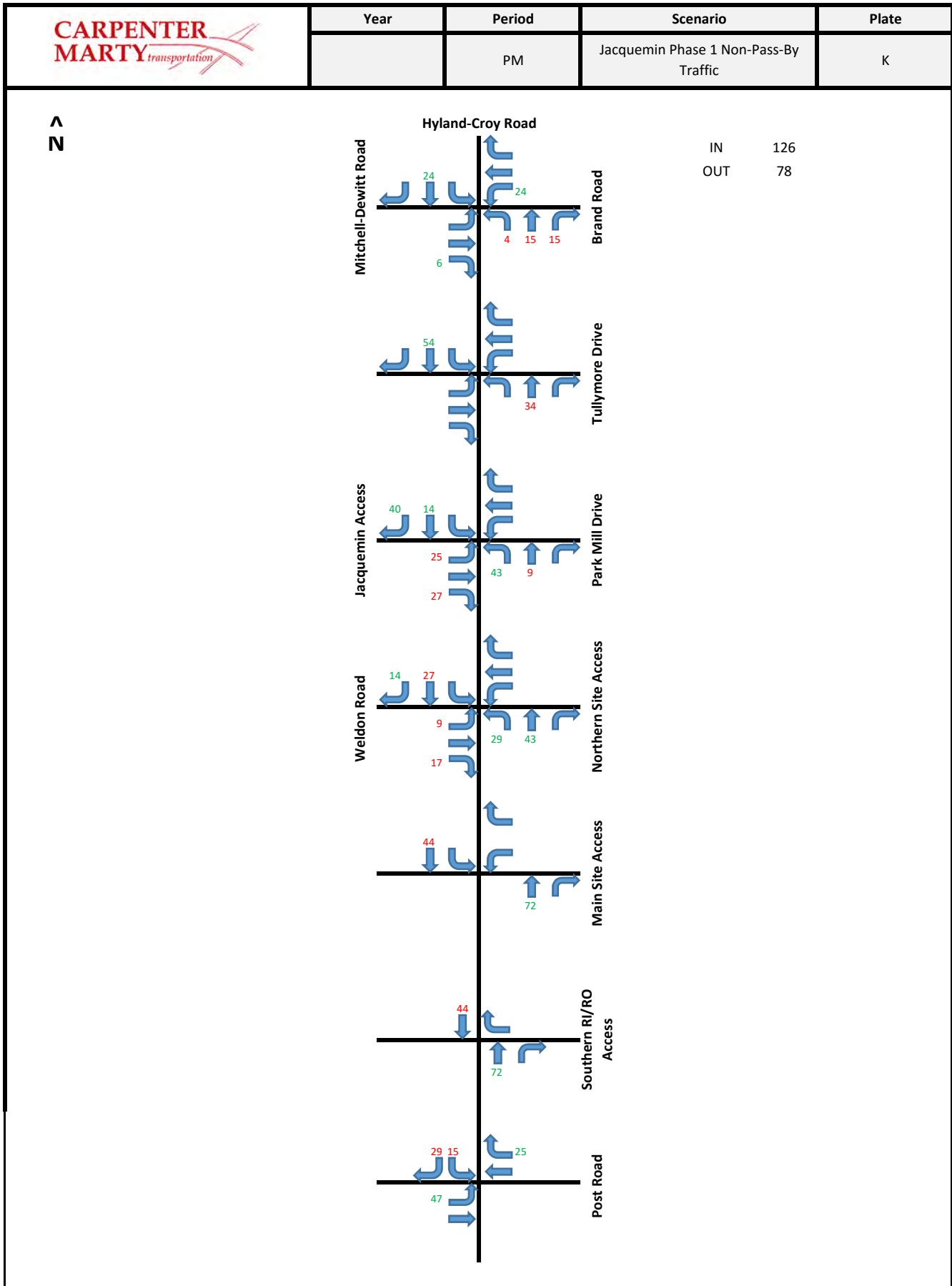


Year	Period	Scenario	Plate
2019	PM	Build Traffic: Gorden Only	J = H + I

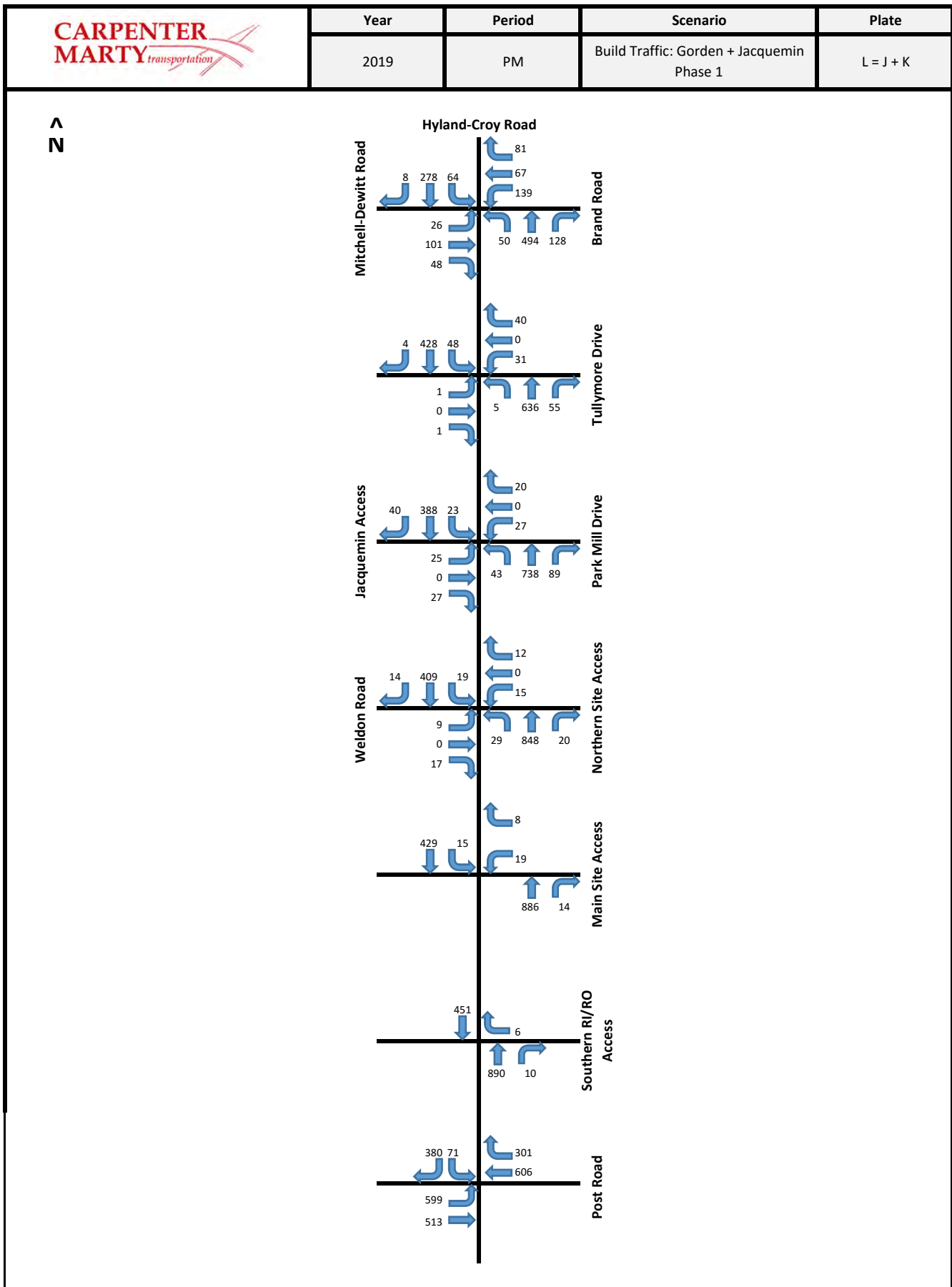
^
N



Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



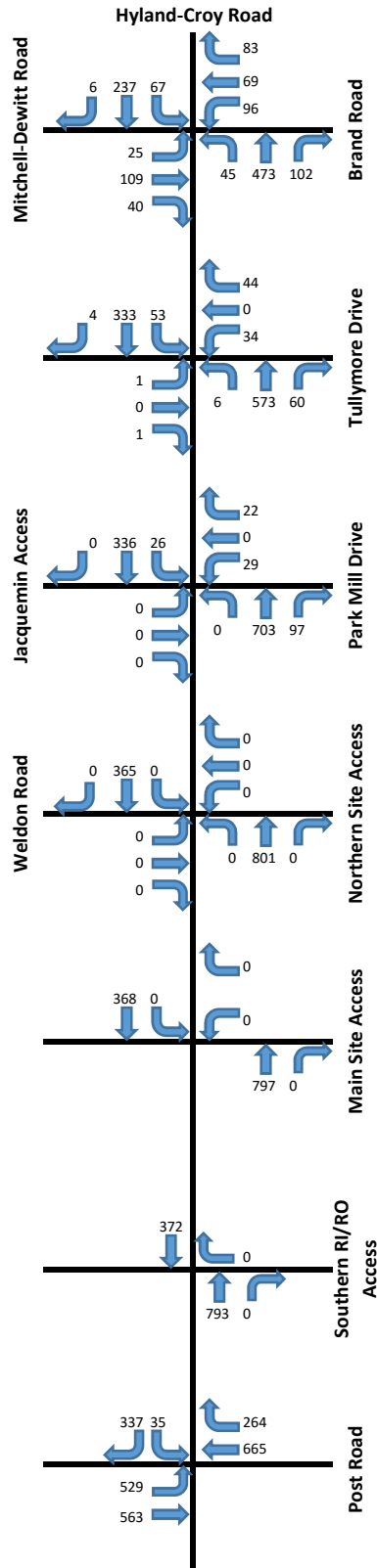
Gorden-Jacquemin TIS
Traffic Volume Calculations



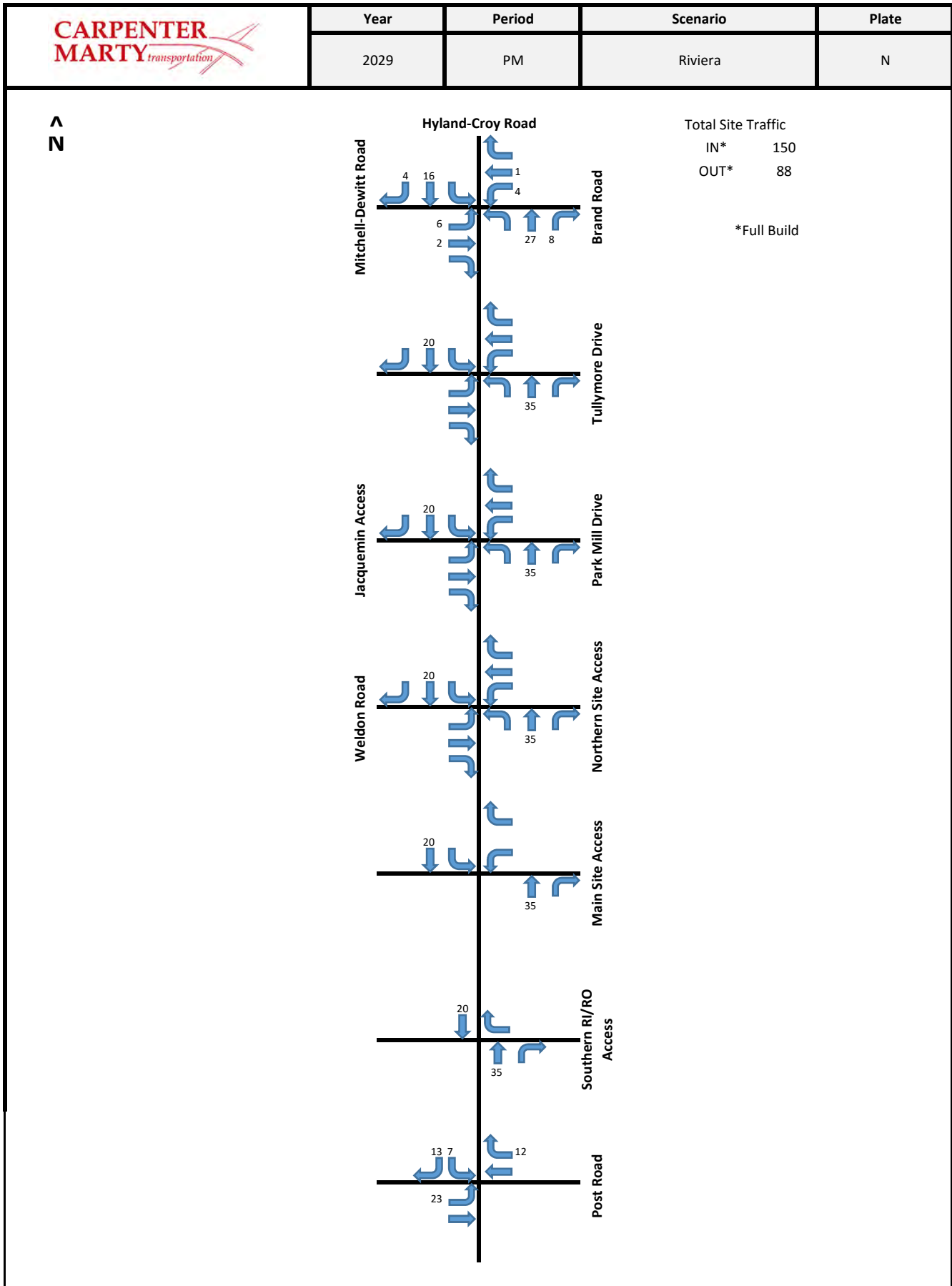
Year	Period	Scenario	Plate
2029	PM	Background	M

^
N

Growth Rate 1%



Gorden-Jacquemin TIS
Traffic Volume Calculations

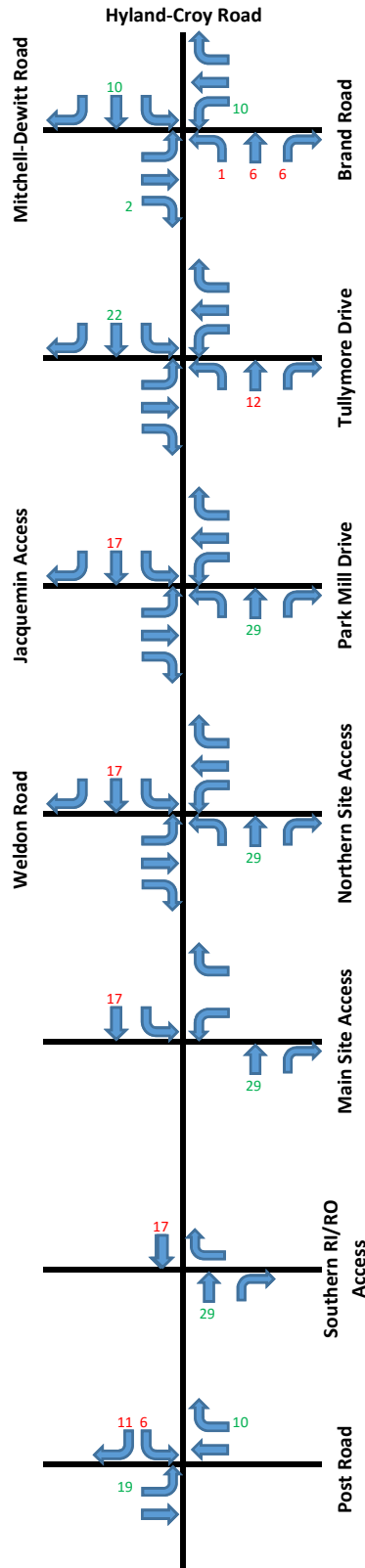


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2029	PM	Autum Rose	O

^
N



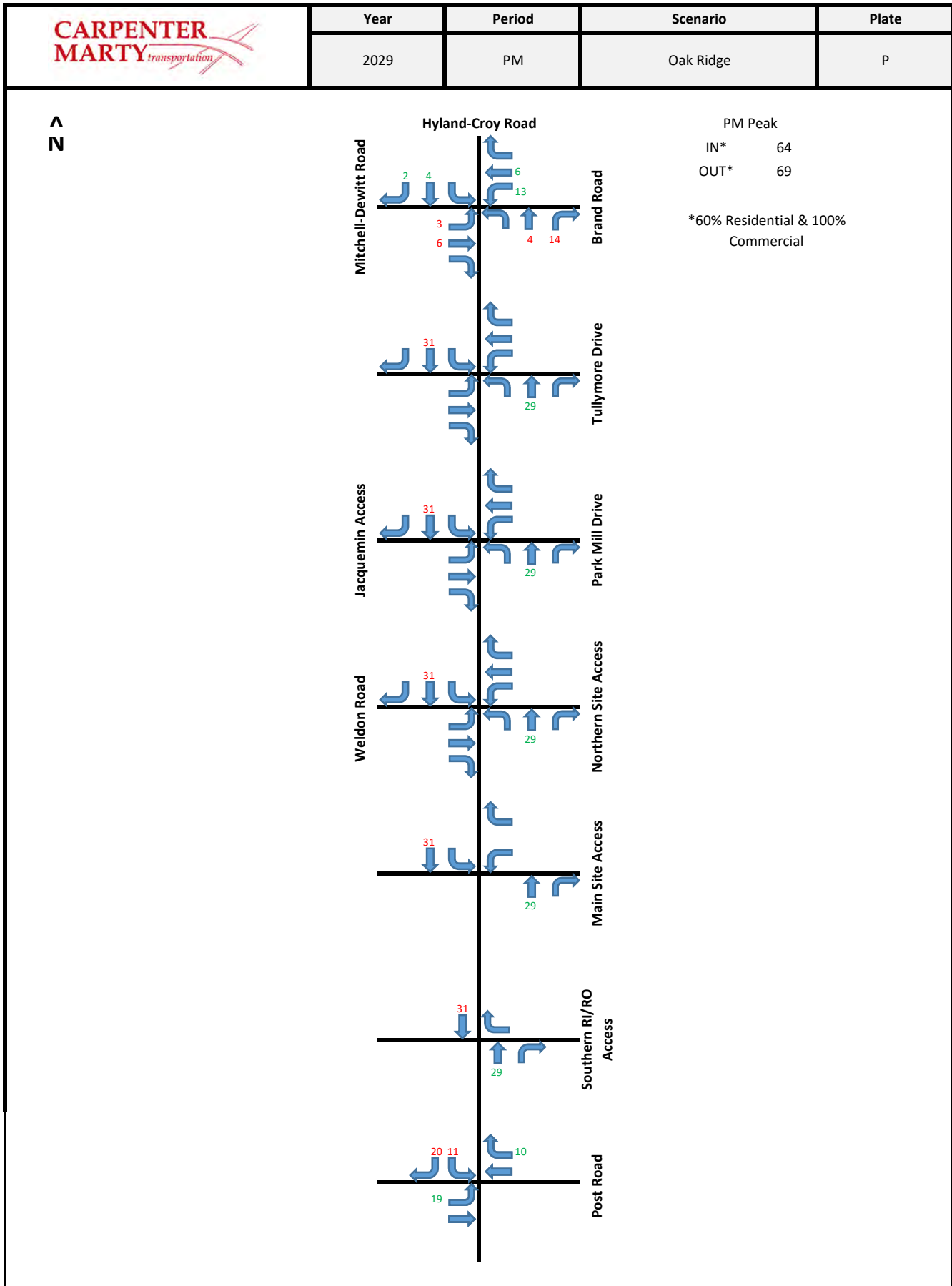
Total Site Traffic

IN* 50

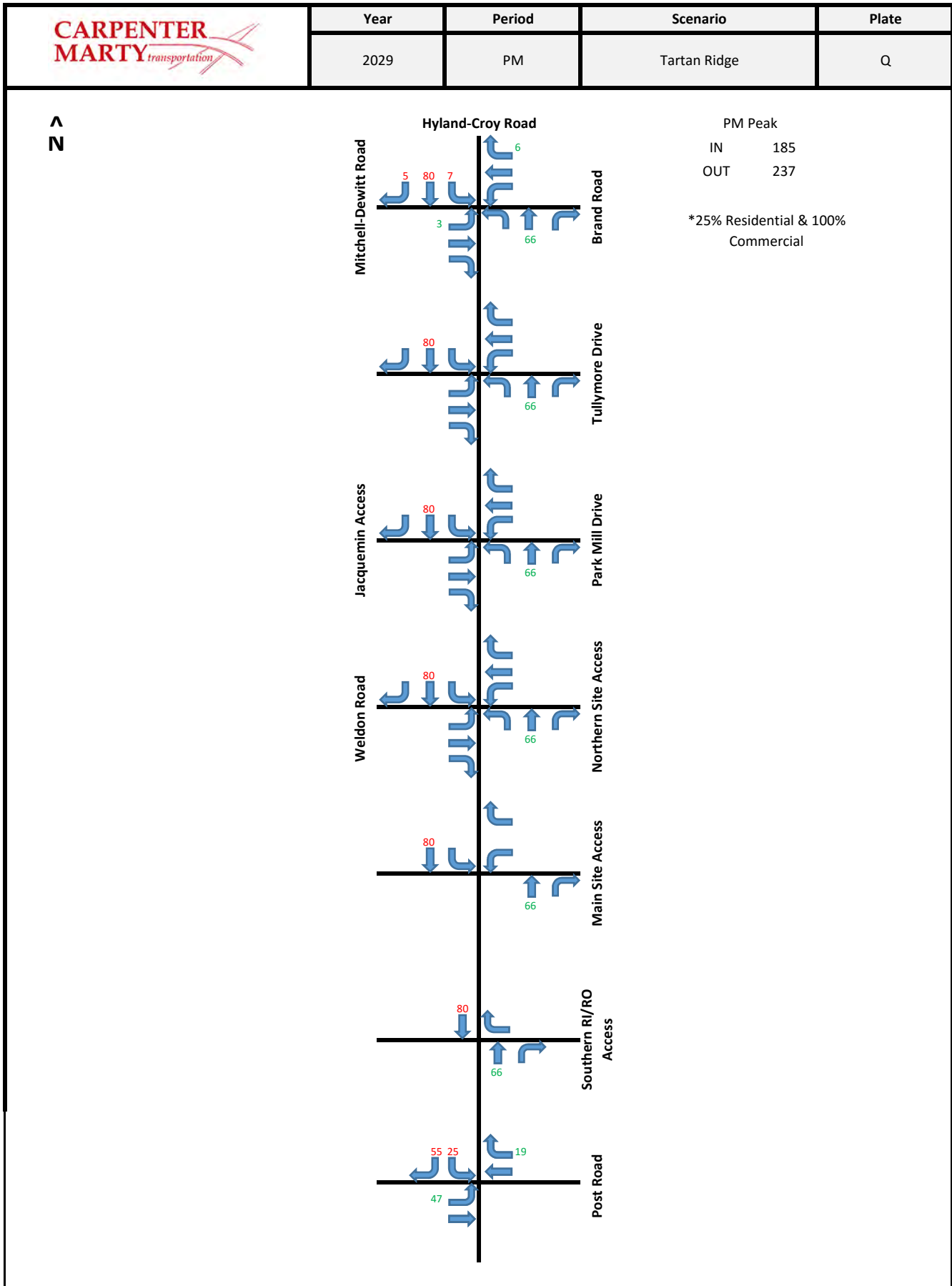
OUT* 29

*Full Build

Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations

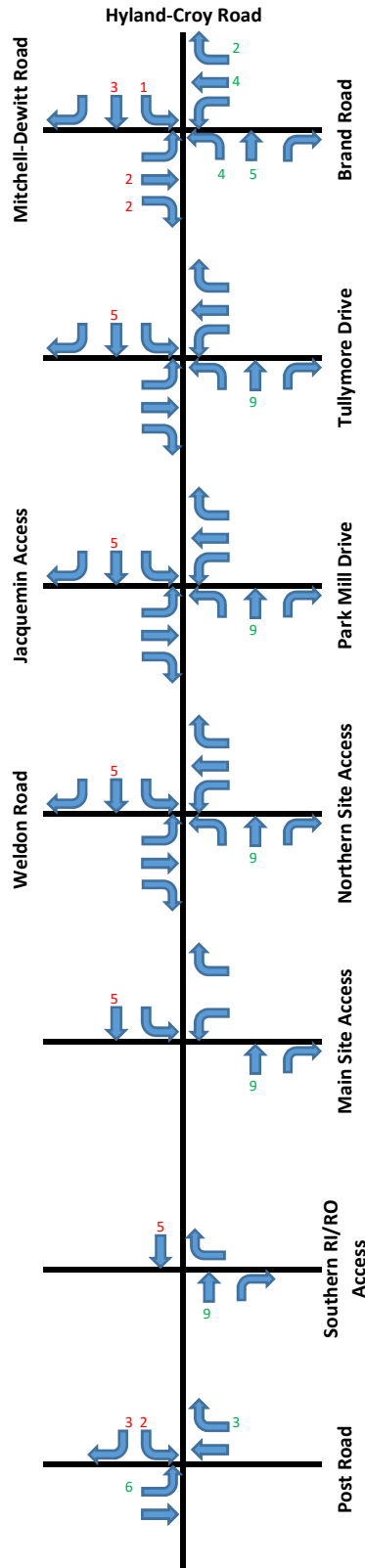


Gorden-Jacquemin TIS
Traffic Volume Calculations



Year	Period	Scenario	Plate
2029	PM	Celtic Crossing	R

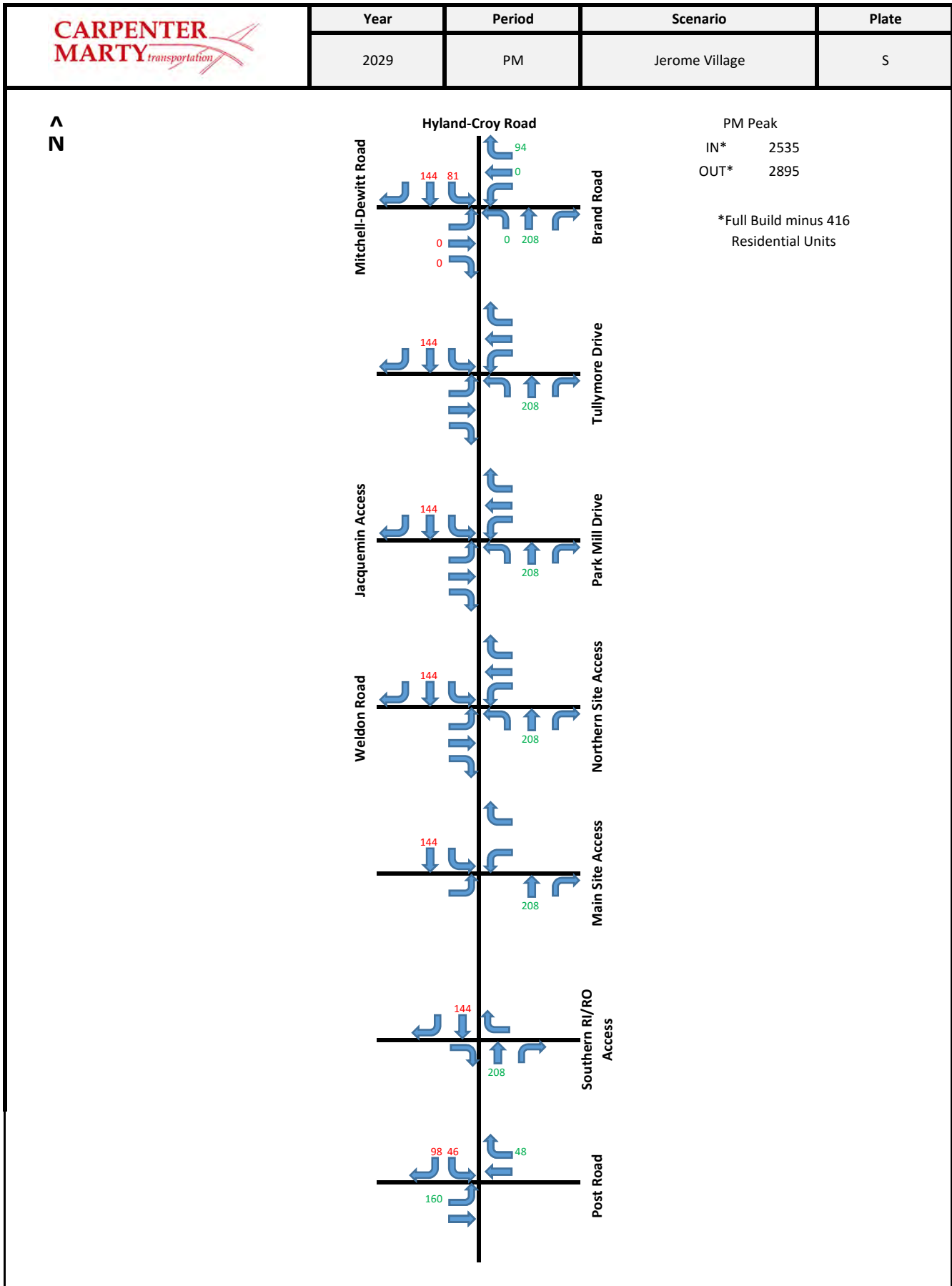
^
N



PM Peak
IN* 19
OUT* 11

*60% of Full Build Traffic

Gorden-Jacquemin TIS
Traffic Volume Calculations



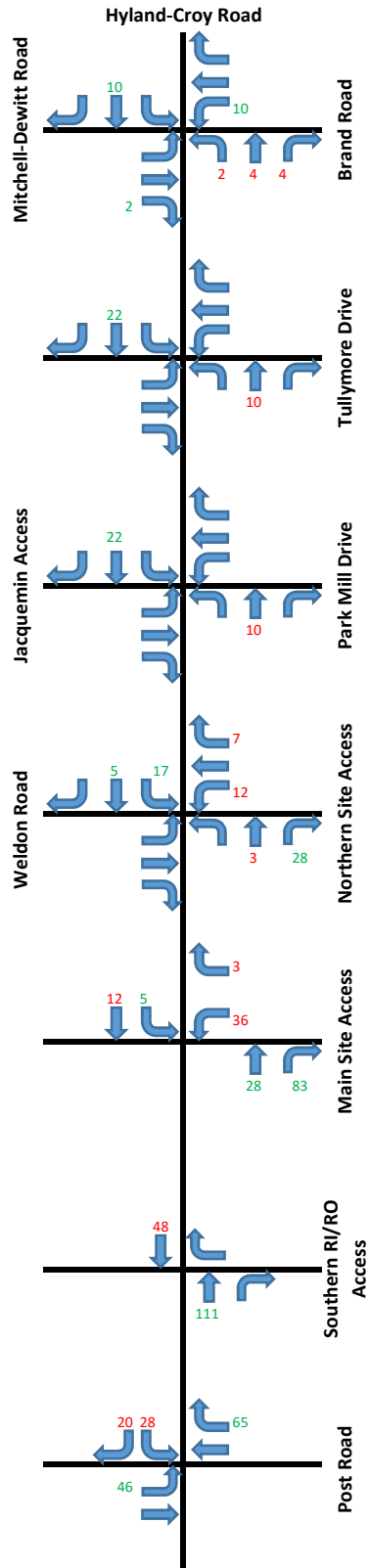
Gorden-Jacquemin TIS
Traffic Volume Calculations



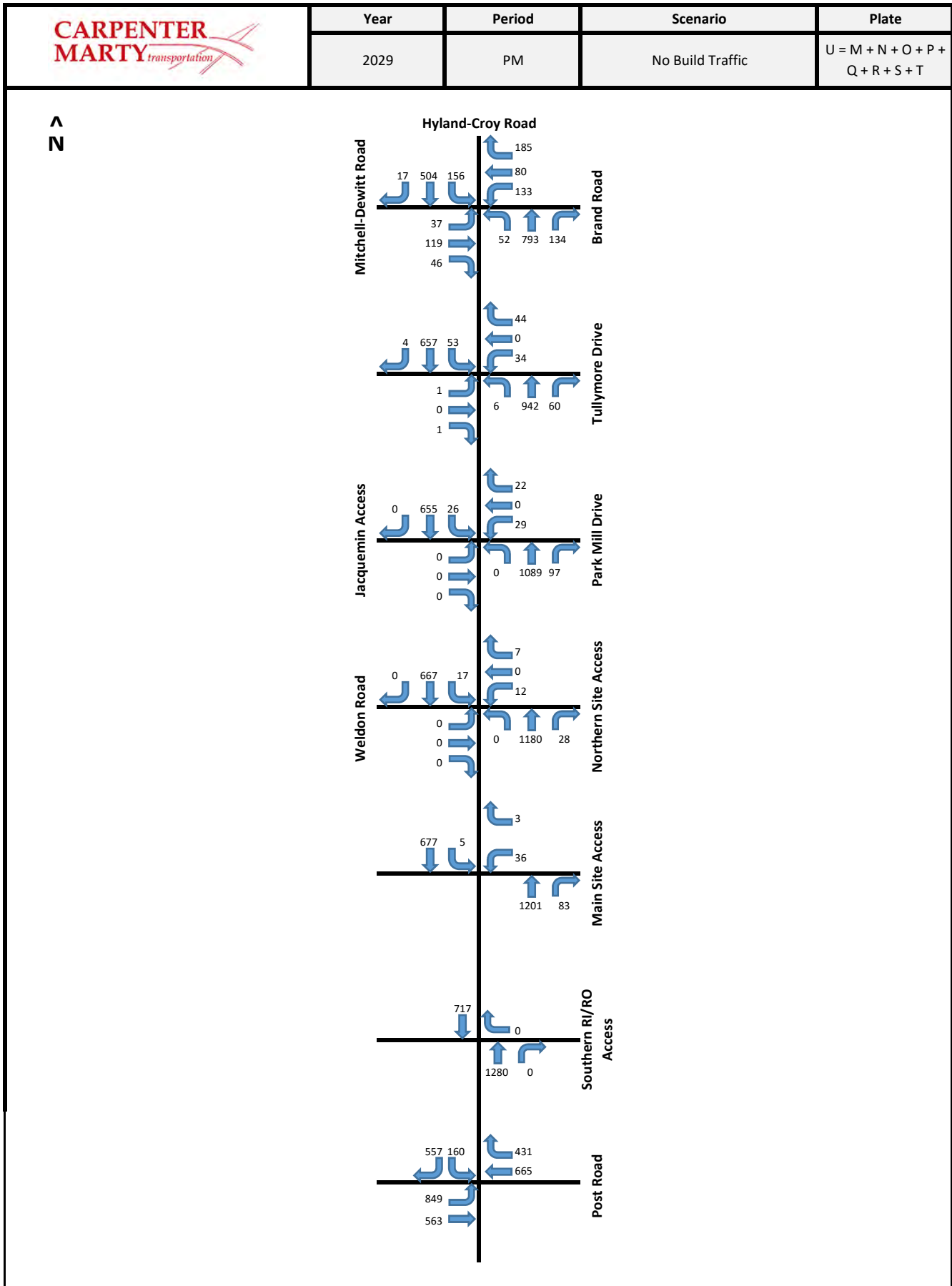
Year	Period	Scenario	Plate
2029	PM	Post Preserve Access Relocation*	T

^
N

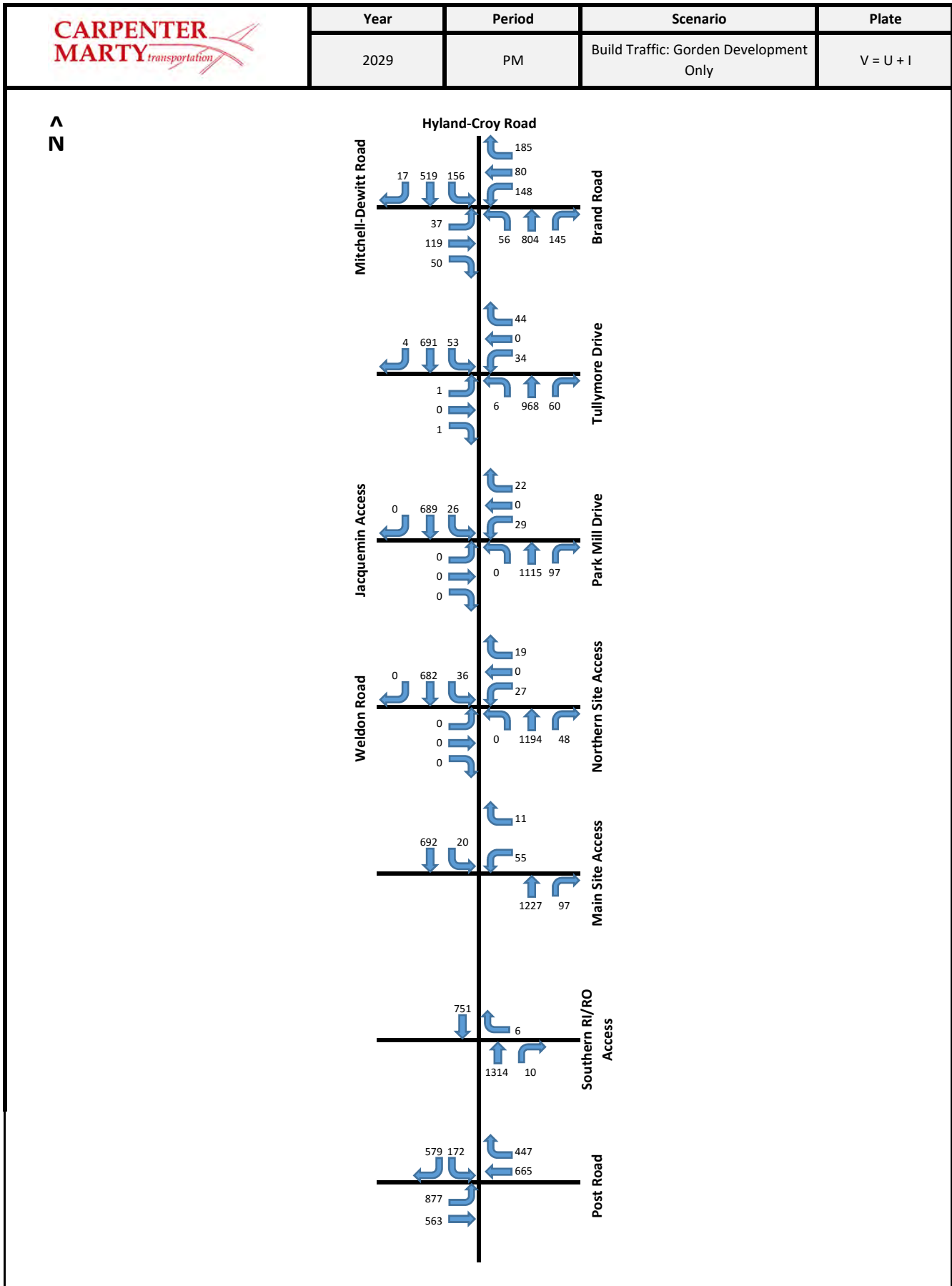
*Based on the Post Preserve Acces Relocation Traffic Analysis completed by Burgess & Niple in 2009. Volumes carried through the study intersections based on residential non-pass-by distribution in this study.



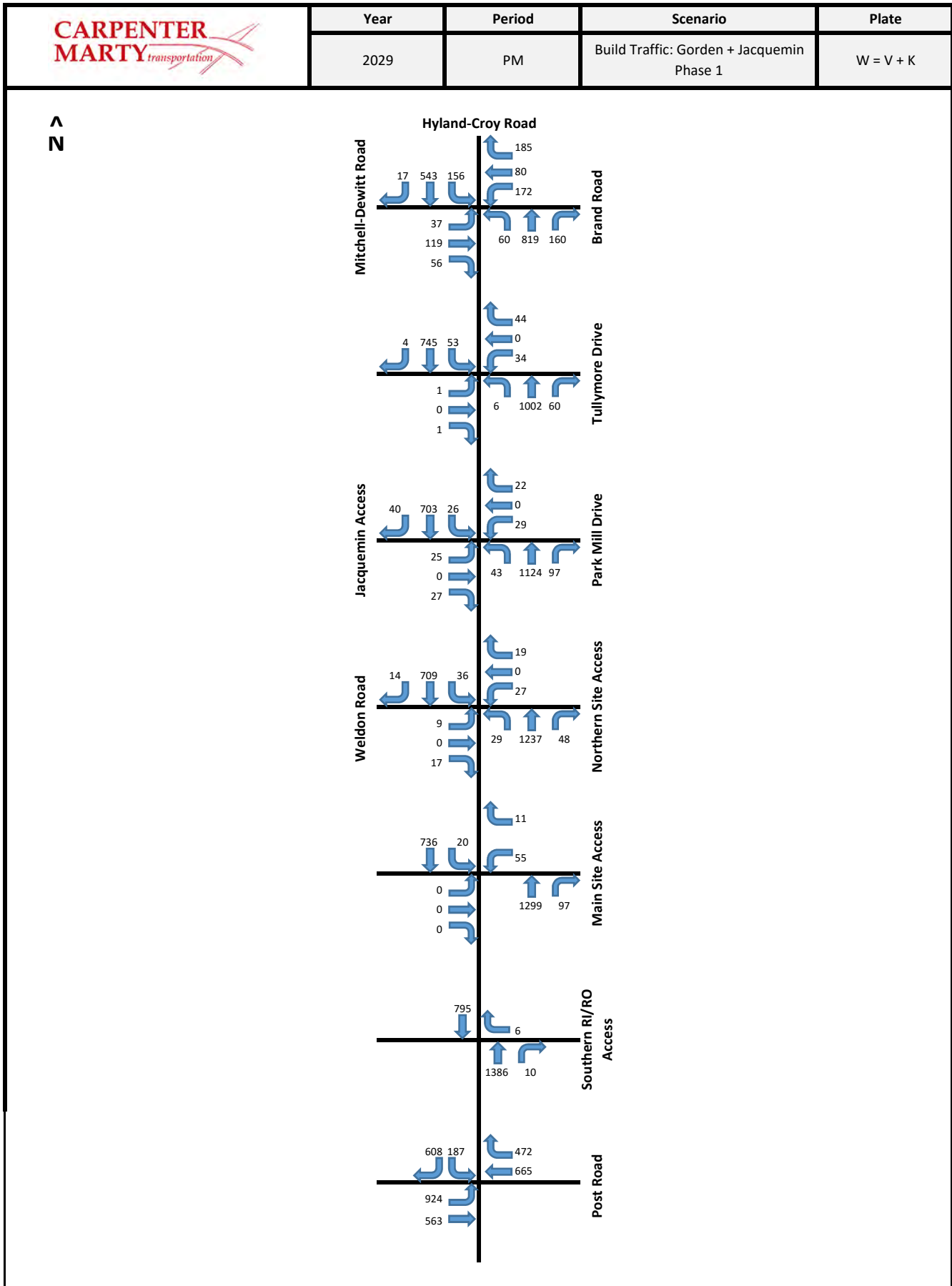
Gorden-Jacquemin TIS
Traffic Volume Calculations



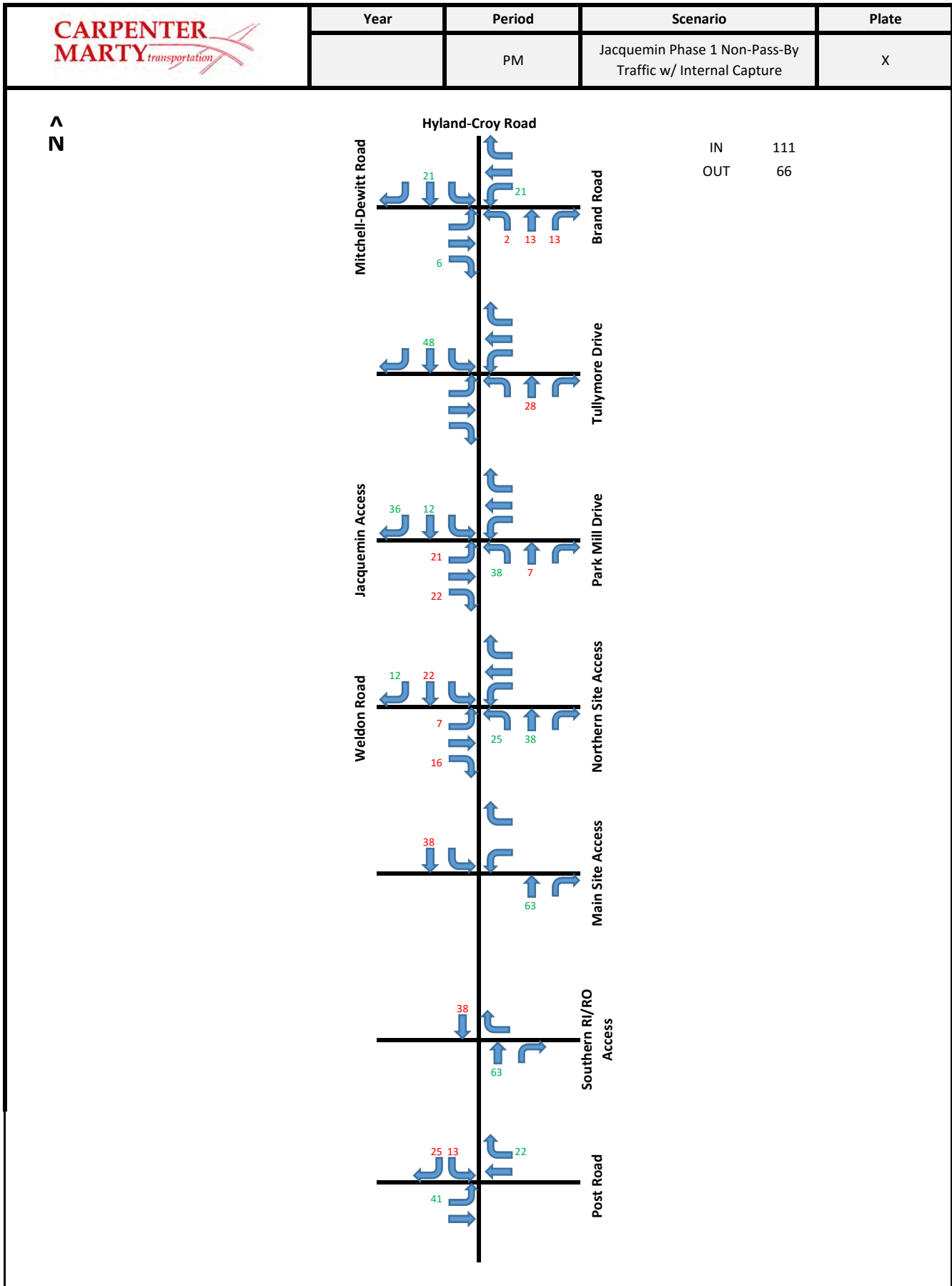
Gorden-Jacquemin TIS
Traffic Volume Calculations



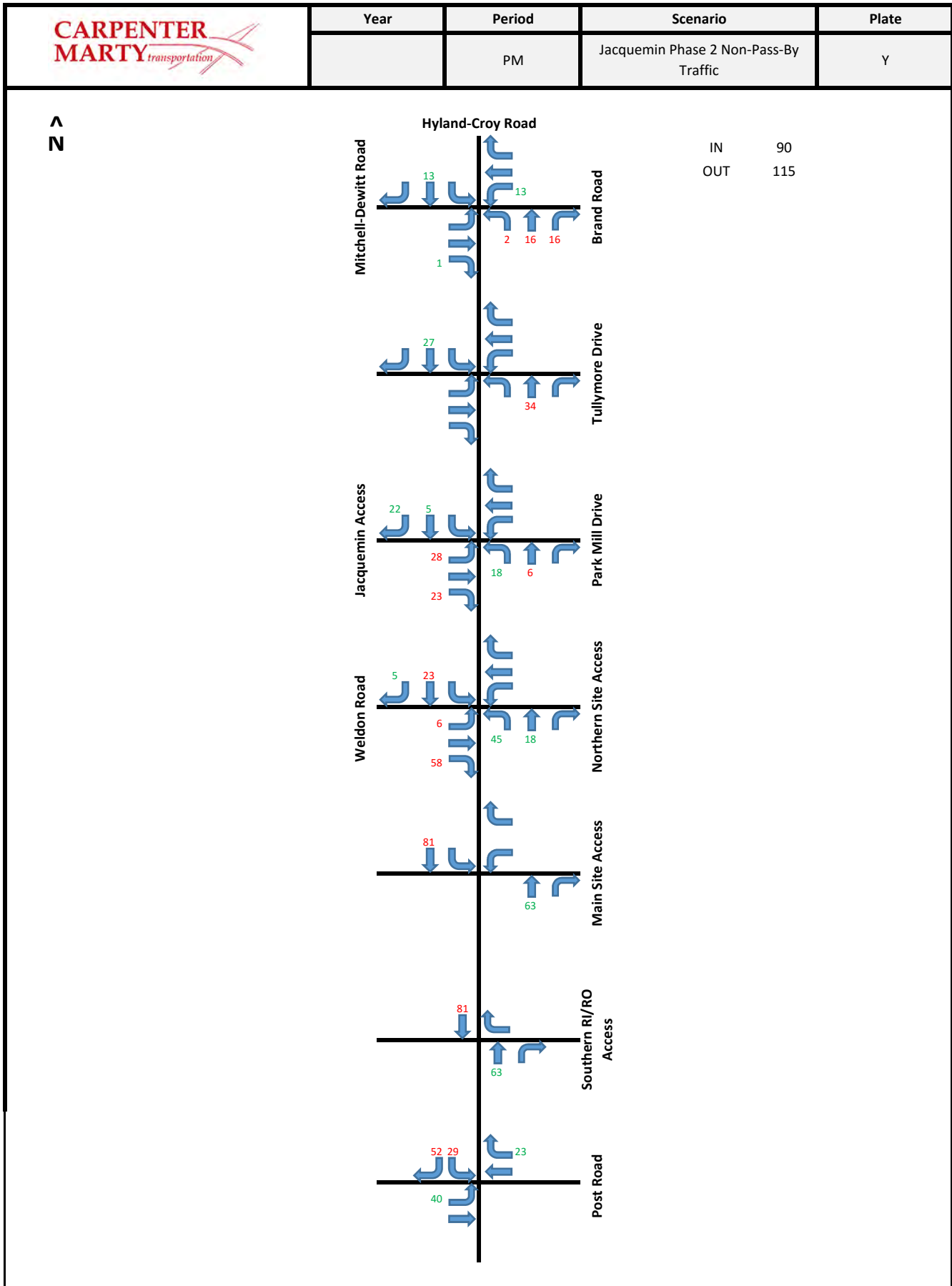
Gorden-Jacquemin TIS
Traffic Volume Calculations



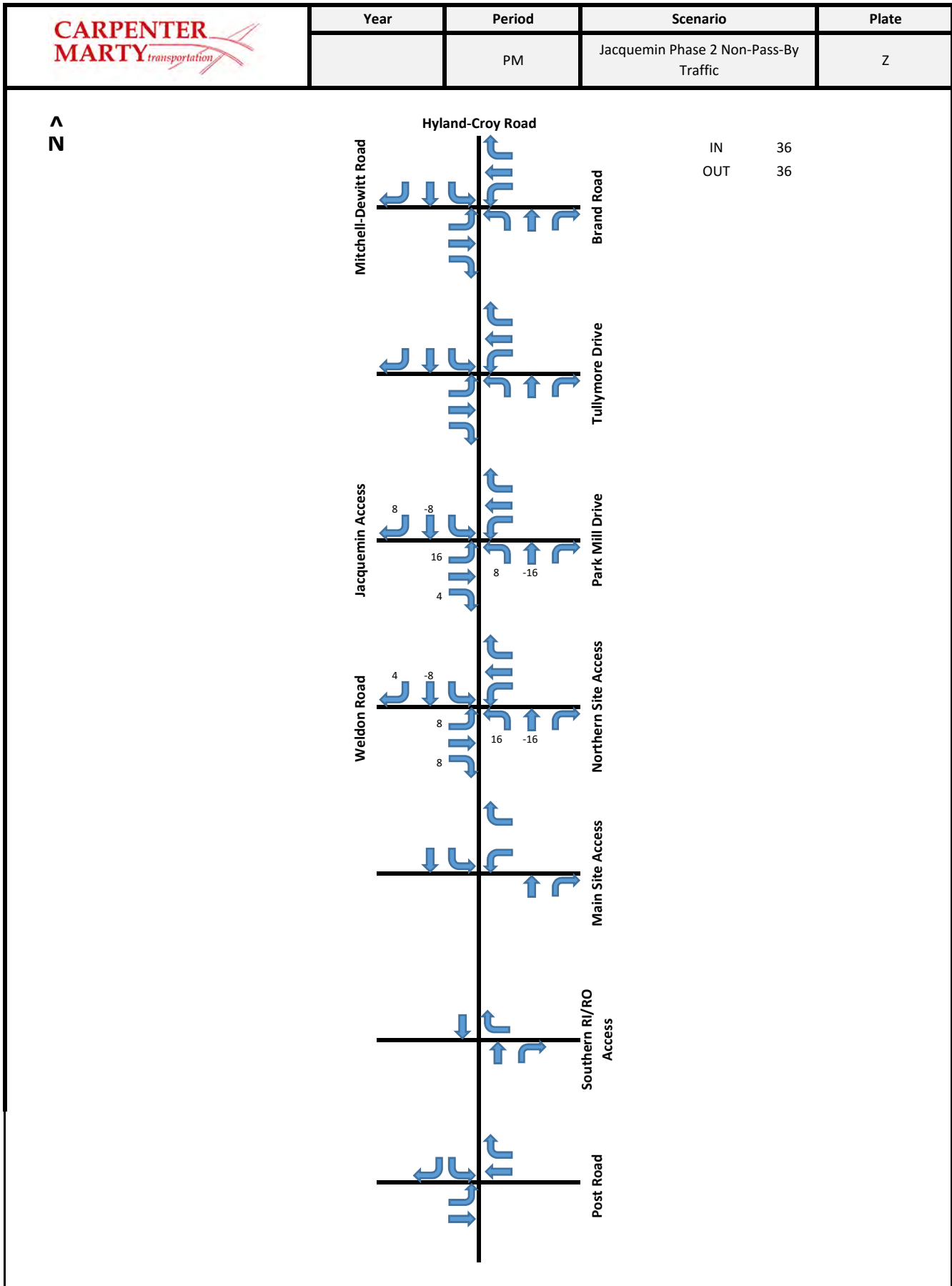
Gorden-Jacquemin TIS
Traffic Volume Calculations



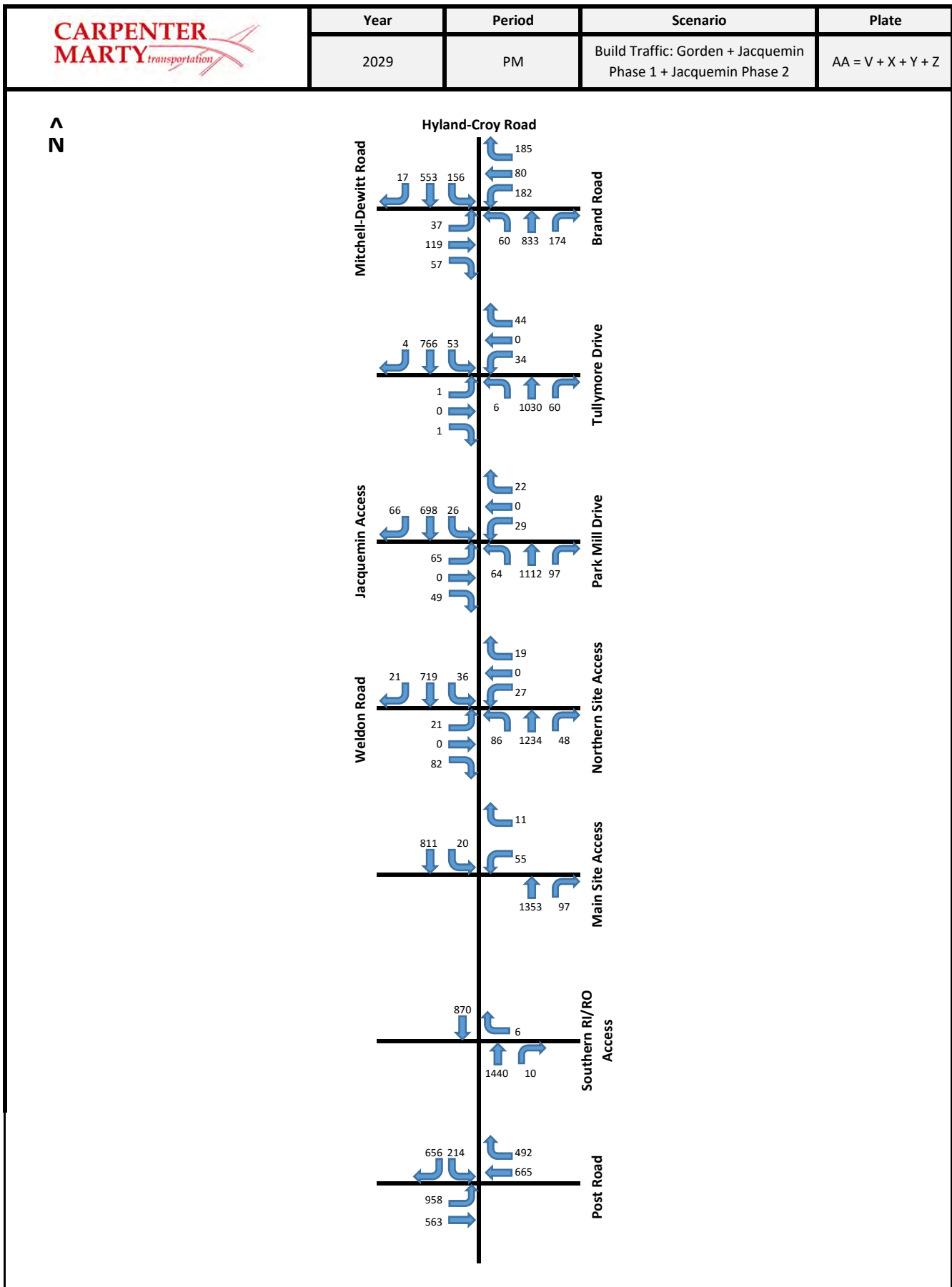
Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



Gorden-Jacquemin TIS
Traffic Volume Calculations



PROJECTED SITE TRAFFIC

Trip Generation

The site traffic was computed using *Trip Generation Manual, 9th Edition*, published by the Institute of Transportation Engineers (ITE). The land use is “Single Family Detached Housing” (ITE Code #210). Table 1 shows a summary of the trip generation calculations.

Trip Distribution

The general trip distribution is based on the existing AM counts in the peak direction (away from the site) of the site and is as follows:

- 43% to/from north
 - 20% to/from Hyland-Croy Rd. north of Mitchell-Dewitt Rd./Brand Road Rd.
 - 20% to/from Brand Rd. east of Hyland-Croy Rd.
 - 3% to/from Mitchell-Dewitt Rd. west of Hyland-Croy Rd
- 57% to/from south (note 22% enters and exits via Park Mill Road)
 - 37% to/from Post Rd. west of Hyland-Croy Rd.
 - 20% to/from Post Rd. east of Hyland-Croy Rd.

DIVERTED TRAFFIC

Because of the required connections to the subdivisions to the north and south, there is anticipated to be some interaction between the site and the adjacent subdivisions. With the connections, it is anticipated that the existing lots near the connections would be the ones that would benefit from using a different access. Traffic from proposed lots using existing streets is reflected in the assignment of site traffic. Diverted traffic which is traffic from existing streets using the proposed streets was assigned based upon potential tributary lots for certain movements. Table 2 shows the trip generation calculations of the tributary lots for certain movements. The assumptions for each connection are discussed in the following subsections.

Northern Connection – Mill Springs Drive

At the northern connection, it is estimated that there are 24 existing lots that will be closer to the proposed access since the location of the proposed access is on the north side of the property. The assignment of diverted traffic from these 24 lots included all traffic oriented to/from the south and approximately half of the traffic oriented to/from the north.

Southern Connection - Barrister Drive

At the southern connection, existing lots near the connection are approximately the same distance to the existing access as the proposed so diversion of existing traffic to the proposed access is dependent on their ultimate north-south orientation. It is estimated that there are 10 existing lots that traffic oriented north would use the proposed access.

Totals to Proposed Access

Referencing Table 3 and the resulting diverted volumes on Figures 5-8, below are the calculations of the diverted traffic to the proposed access as described above:

•SB LT	AM = 3 = 21%*(7) + 43%*(4)	PM = 7 = 21%*(18) + 43%*(8)
•NB RT	AM = 4 = 57%*(7)	PM = 10 = 57%*(18)
•WB RT	AM = 10 = 21%*(20) + 43%*(13)	PM = 4 = 21%*(11) + 43%*(5)
•WB LT	AM = 11 = 57%*(20)	PM = 6 = 57%*(11)

Traffic Study Subarea	Land Use	Time of Day	Data Set from: Trip Generation Manual, 9th Edition (Unless noted Otherwise)	Override with Average	Regression Equation from: Trip Generation Manual 9th Edition	Total Trips	Entering		Exiting	
							%	Total Trips	%	Total Trips
1 Page D70 of 93	Single-Family Detached Housing (ITE Code #210) Ind. Variable (X) = 73 Dwelling Units	Daily	Weekday	☐	$\ln(T)=0.92\ln(X)+2.72$	786	50%	393	50%	393
		AM Peak	Peak Hour of Adj. Street Traffic, One Hour between 7 & 9 AM	☐	$T=0.70(X)+9.74$	61	25%	15	75%	46
		PM Peak	Peak Hour of Adj. Street Traffic, One Hour between 4 & 6 PM	☐	$\ln(T)=0.90\ln(X)+0.51$	79	63%	50	37%	29
				☐						
				☐						
TOTALS			Daily	☐		786		393		393
			AM Peak			61		15		46
			PM Peak			79		50		29

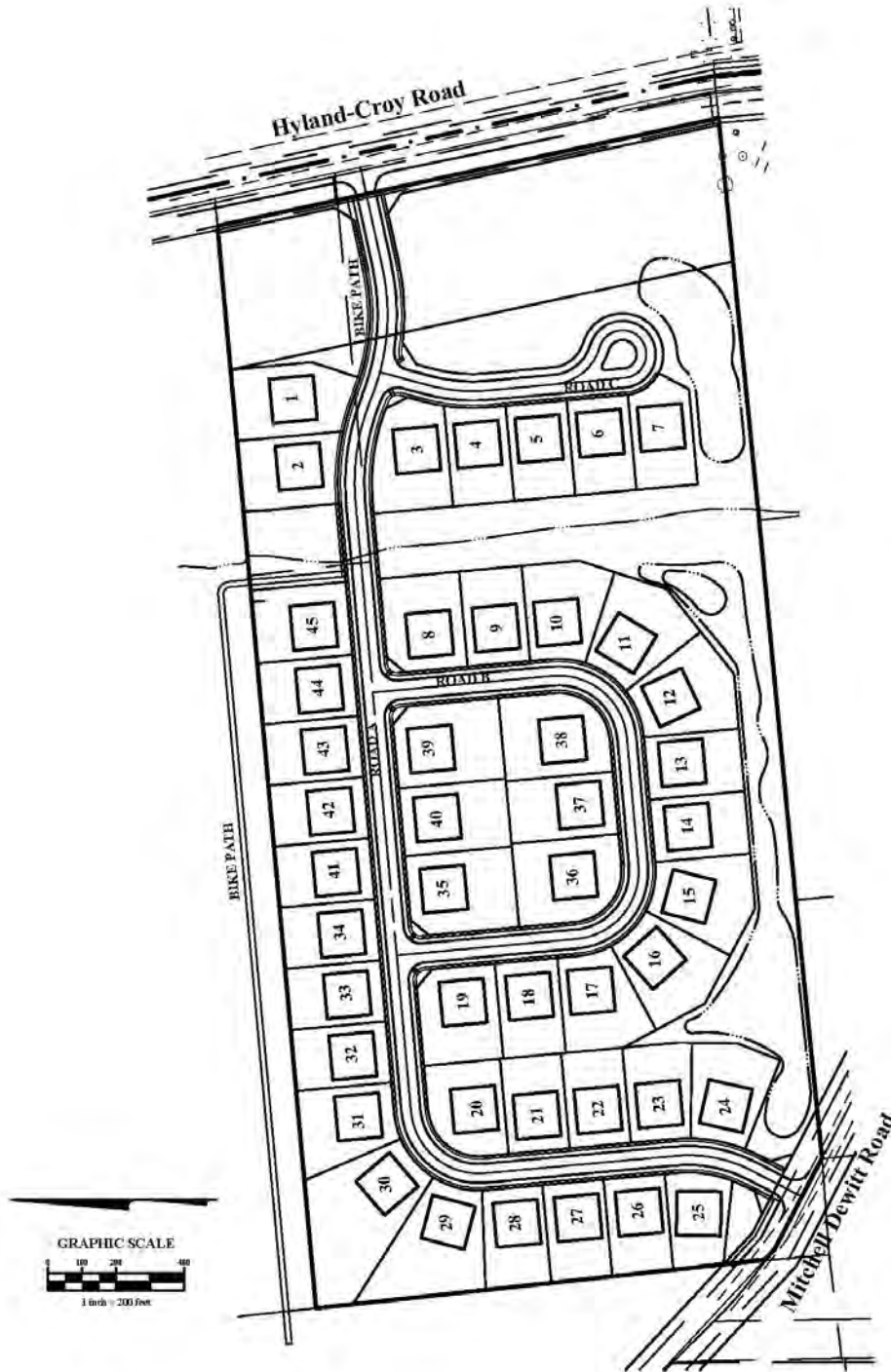
Autumn Rose Traffic Study - 5/2016

TABLE 1 - SITE TRIP GENERATION SUMMARY

FIGURE 1
Site Location Map



FIGURE 2
Site Plan



73+1=74
385+0=385
3+0=3

6+0=6
18+0=18
10+0=10

116+3=119
12+0=12
83+2=85

24+1=25
116+0=116
0+0=0

45+0=45
71+2=79

90+0=90
43+0=43

McKittrick Road

8+0=8
157+5=162
0+4=4
0+1=1
0+1=1
0+1=1
129+0=129

Site Drive #1

SITE

Site Drive #2

Mitchell-Dewitt Road

602+0=602
0+1=1
0+3=3
0+11=11
143+3=146
455+8=463
4+0=4

433+0=433
0+4=4

59+1=60
86+2=88
168+0=168

119+0=119
253+0=253
112+1=113

Avery Road

68+0=68
253+1=254
62+0=62

11+0=11
87+7=94
30+6=36

Brand Road

181+0=181
363+3=366
39+2=41

96+2=98
252+4=256
86+3=89

127+0=127
147+0=147
48+1=49

Hyland-Croy Road

309+5=314
510+9+519

162+2+164
367+0=367

Post Road

379+3=382
717+0=717

LEGEND

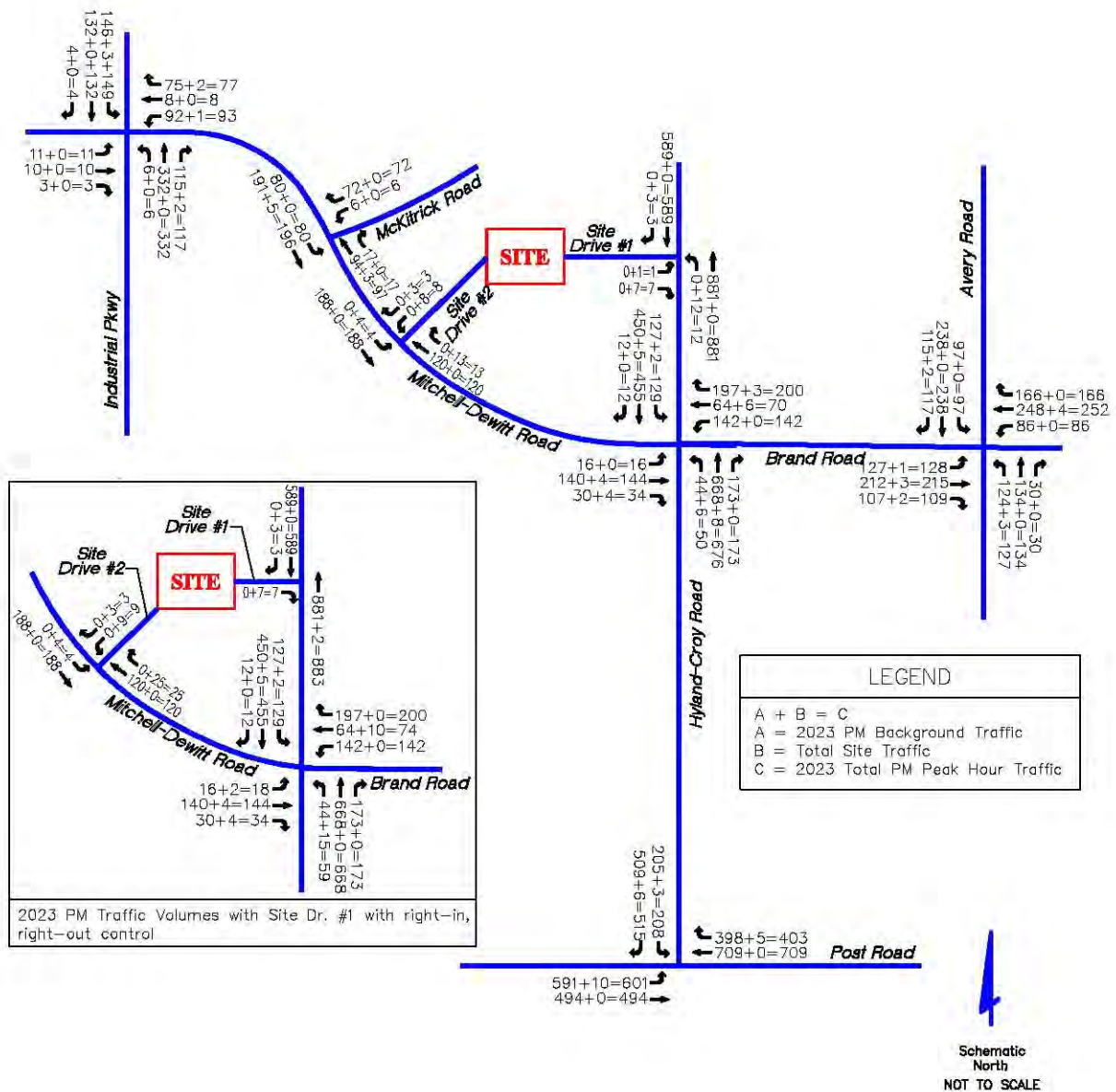
A + B = C
A = 2023 AM Background Traffic
B = Total Site Traffic
C = 2023 Total AM Peak Hour Traffic

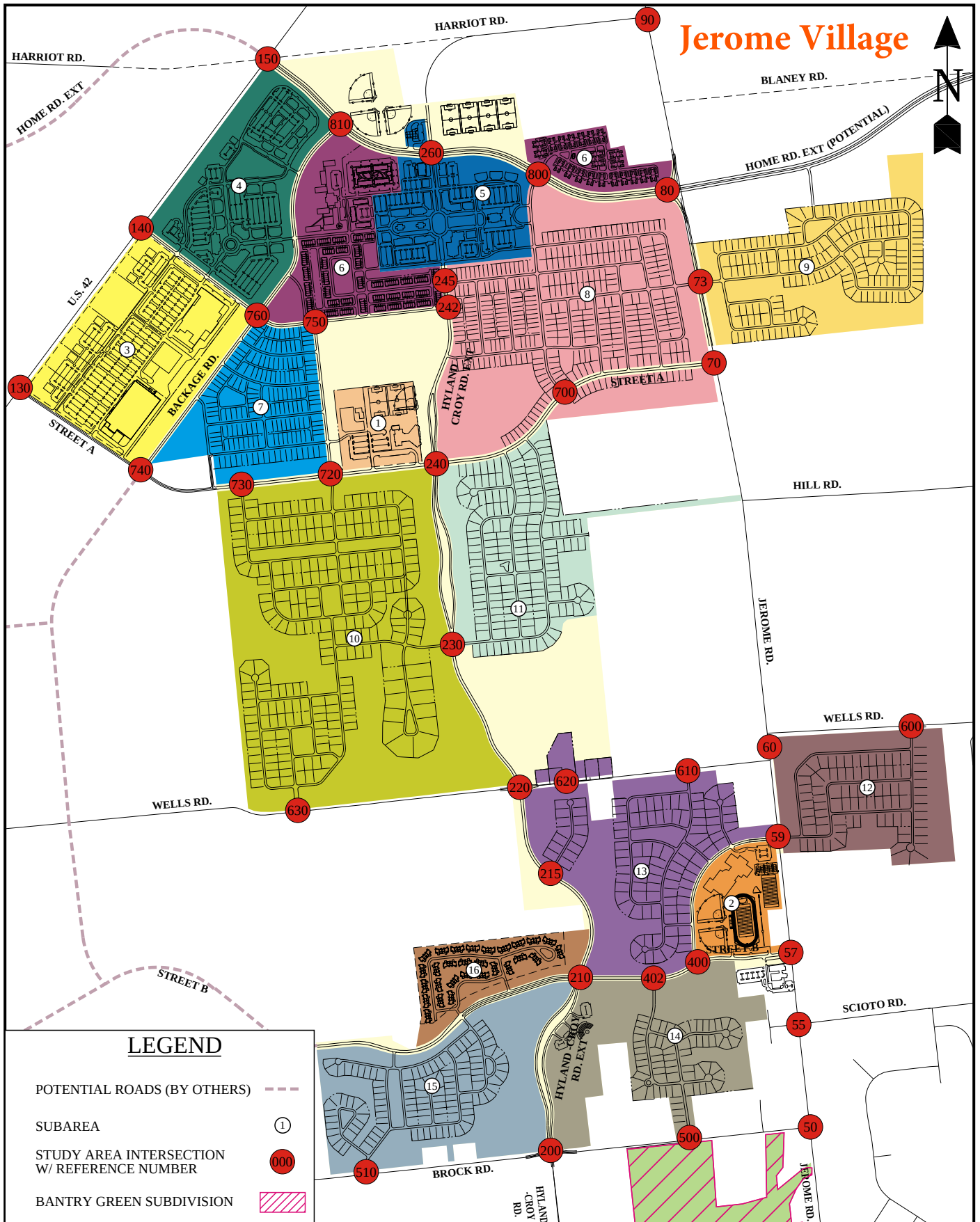
2023 PM Traffic Volumes with Site Dr. #1 with right-in, right-out control

Schematic North

NOT TO SCALE

FIGURE 8
2023 Traffic Volumes - PM Peak Hour





JEROME VILLAGE TRAFFIC IMPACT STUDY

PREPARED BY:



2/2007

FIGURE 3

STUDY AREA

Traffic Study Sub Area	ITE Land Use #	Description
1	520	600 Students of Elementary School
2	522	1000 Students of Middle School/Junior High School
3	820	518600 SF Gross Floor Area of Shopping Center
4	710	528000 SF Gross Floor Area of General Office Building
5	NA	1 Each of Jerome Town Center
6	NA	1 Each of Town Center Area Multi Family
7	210	173 Dwelling Units of Single-Family Detached Housing
8	210	410 Dwelling Units of Single-Family Detached Housing
9	210	190 Dwelling Units of Single-Family Detached Housing
10	210	257 Dwelling Units of Single-Family Detached Housing
11	210	162 Dwelling Units of Single-Family Detached Housing
12	210	90 Dwelling Units of Single-Family Detached Housing
13	210	120 Dwelling Units of Single-Family Detached Housing
14	210	68 Dwelling Units of Single-Family Detached Housing
15	210	130 Dwelling Units of Single-Family Detached Housing
16	230	116 Dwelling Units of Residential Condominium/Townhouse

TABLE 1A - LAND USE SUMMARY

Traffic Study Sub Area	Rate (Trips/In d Var.)	Total (Trips)	Internal Capture (%)	Pass-By % (%)	Entering						Exiting					
					%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips	%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips
1	1.29	774	0.0%	NA	50%	387	0	387	NA	387	50%	387	0	387	NA	387
2	1.62	1620	0.0%	NA	50%	810	0	810	NA	810	50%	810	0	810	NA	810
3	38.17	19796	0.0%	NA	50%	9898	0	9898	NA	9898	50%	9898	0	9898	NA	9898
4	11.01	5813	0.0%	NA	50%	2907	0	2907	NA	2907	50%	2907	0	2907	NA	2907
5	13228.00	13228	0.0%	NA	50%	6614	0	6614	NA	6614	50%	6614	0	6614	NA	6614
6	3497.00	3497	0.0%	NA	50%	1749	0	1749	NA	1749	50%	1749	0	1749	NA	1749
7	9.57	1656	0.0%	NA	50%	828	0	828	NA	828	50%	828	0	828	NA	828
8	9.57	3924	0.0%	NA	50%	1962	0	1962	NA	1962	50%	1962	0	1962	NA	1962
9	9.57	1818	0.0%	NA	50%	909	0	909	NA	909	50%	909	0	909	NA	909
10	9.57	2459	0.0%	NA	50%	1230	0	1230	NA	1230	50%	1230	0	1230	NA	1230
11	9.57	1550	0.0%	NA	50%	775	0	775	NA	775	50%	775	0	775	NA	775
12	9.57	861	0.0%	NA	50%	431	0	431	NA	431	50%	431	0	431	NA	431
13	9.57	1148	0.0%	NA	50%	574	0	574	NA	574	50%	574	0	574	NA	574
14	9.57	651	0.0%	NA	50%	325	0	325	NA	325	50%	325	0	325	NA	325
15	9.57	1244	0.0%	NA	50%	622	0	622	NA	622	50%	622	0	622	NA	622
16	5.86	680	0.0%	NA	50%	340	0	340	NA	340	50%	340	0	340	NA	340
TOTALS		60720				30360	0	30360	NA	30360		30360	0	30360	NA	30360

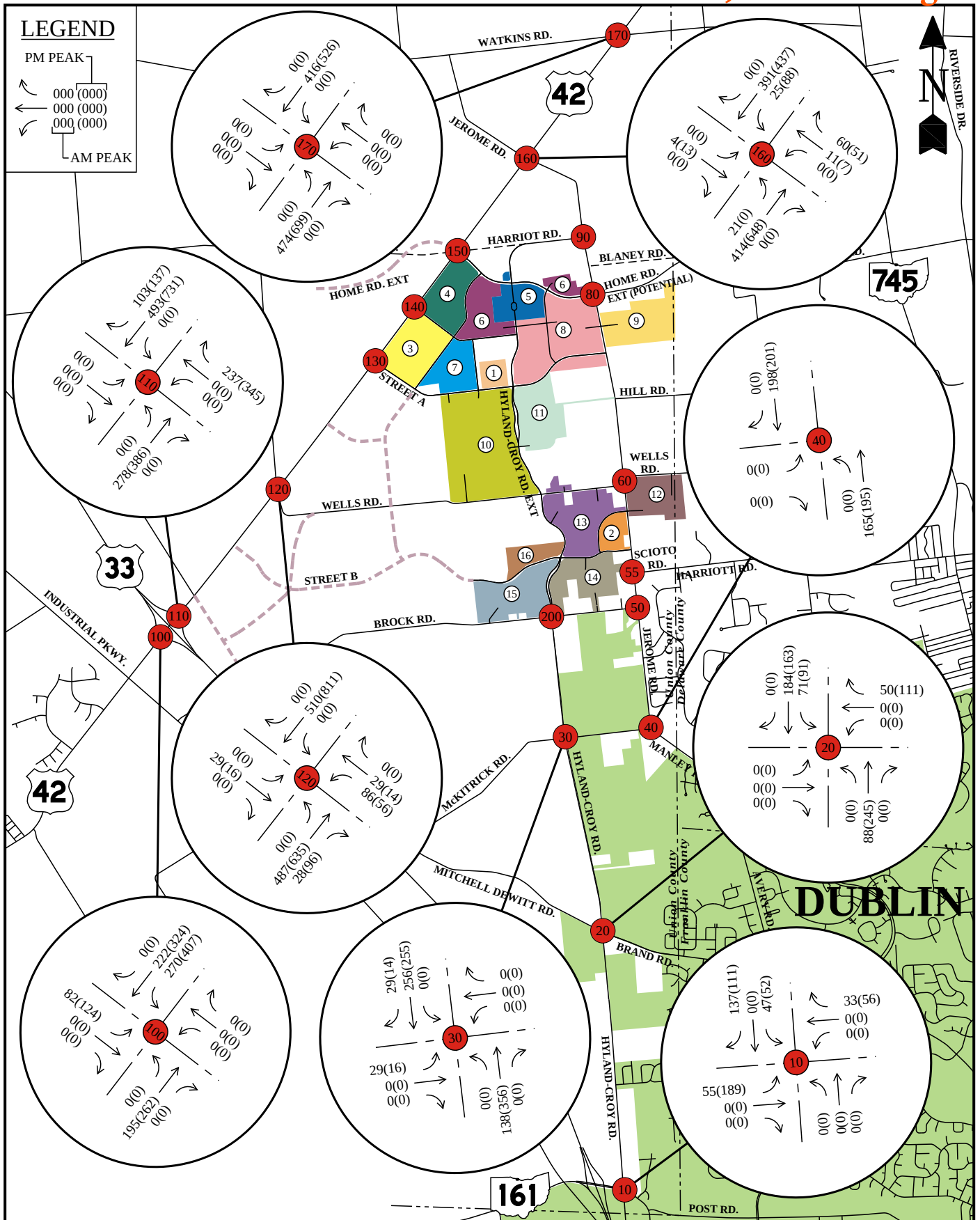
TABLE 1B - SITE TRIP GENERATION SUMMARY - DAILY

Traffic Study Sub Area	Rate (Trips/In d Var.)	Total (Trips)	Internal Capture (%)	Pass-By % (%)	Entering						Exiting					
					%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips	%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips
1	0.36	215	NA	0%	55%	118	NA	118	0	118	45%	97	NA	97	0	97
2	0.53	530	NA	0%	55%	292	NA	292	0	292	45%	239	NA	239	0	239
3	0.81	420	NA	0%	61%	256	NA	256	0	256	39%	164	NA	164	0	164
4	1.55	818	NA	0%	88%	720	NA	720	0	720	12%	98	NA	98	0	98
5	531.00	531	NA	0%	75%	398	NA	398	0	398	25%	133	NA	133	0	133
6	249.00	249	NA	0%	25%	62	NA	62	0	62	75%	187	NA	187	0	187
7	0.75	130	NA	0%	25%	32	NA	32	0	32	75%	97	NA	97	0	97
8	0.75	308	NA	0%	25%	77	NA	77	0	77	75%	231	NA	231	0	231
9	0.75	143	NA	0%	25%	36	NA	36	0	36	75%	107	NA	107	0	107
10	0.75	193	NA	0%	25%	48	NA	48	0	48	75%	145	NA	145	0	145
11	0.75	122	NA	0%	25%	30	NA	30	0	30	75%	91	NA	91	0	91
12	0.75	68	NA	0%	25%	17	NA	17	0	17	75%	51	NA	51	0	51
13	0.75	90	NA	0%	25%	23	NA	23	0	23	75%	68	NA	68	0	68
14	0.75	51	NA	0%	25%	13	NA	13	0	13	75%	38	NA	38	0	38
15	0.75	98	NA	0%	25%	24	NA	24	0	24	75%	73	NA	73	0	73
16	0.44	51	NA	0%	17%	9	NA	9	0	9	83%	42	NA	42	0	42
TOTALS		4015				2155	NA	2155	0	2155		1859	NA	1859	0	1859

TABLE 1C - SITE TRIP GENERATION SUMMARY - AM PEAK

Traffic Study Sub Area	Rate (Trips/In d Var.)	Total (Trips)	Internal Capture (%)	Pass-By % (%)	Entering						Exiting					
					%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips	%	Total Trips	Internal Capture	Sub Total	Pass-By Trips	Primary Trips
1	0.00	0	0.0%	0%	50%	0	0	0	0	0	50%	0	0	0	0	0
2	0.30	300	0.0%	0%	52%	156	0	156	0	156	48%	144	0	144	0	144
3	3.58	1855	0.0%	24%	48%	890	0	890	214	677	52%	965	0	965	232	733
4	1.49	787	0.0%	0%	17%	134	0	134	0	134	83%	653	0	653	0	653
5	1326.00	1326	0.0%	0%	42%	557	0	557	0	557	58%	769	0	769	0	769
6	310.00	310	0.0%	0%	62%	192	0	192	0	192	38%	118	0	118	0	118
7	1.01	175	0.0%	0%	63%	110	0	110	0	110	37%	65	0	65	0	65
8	1.01	414	0.0%	0%	63%	261	0	261	0	261	37%	153	0	153	0	153
9	1.01	192	0.0%	0%	63%	121	0	121	0	121	37%	71	0	71	0	71
10	1.01	260	0.0%	0%	63%	164	0	164	0	164	37%	96	0	96	0	96
11	1.01	164	0.0%	0%	63%	103	0	103	0	103	37%	61	0	61	0	61
12	1.01	91	0.0%	0%	63%	57	0	57	0	57	37%	34	0	34	0	34
13	1.01	121	0.0%	0%	63%	76	0	76	0	76	37%	45	0	45	0	45
14	1.01	69	0.0%	0%	63%	43	0	43	0	43	37%	25	0	25	0	25
15	1.01	131	0.0%	0%	63%	83	0	83	0	83	37%	49	0	49	0	49
16	0.52	60	0.0%	0%	67%	40	0	40	0	40	33%	20	0	20	0	20
TOTALS		6254				2988	0	2988	214	2774		3266	0	3266	232	3035

TABLE 1D - SITE TRIP GENERATION SUMMARY - PM PEAK



JEROME VILLAGE TRAFFIC IMPACT STUDY

PREPARED BY:



2/2007

APPENDIX D

SITE GENERATED TRAFFIC

Oak Park

**FIGURE 1
SITE LOCATION MAP**



**FIGURE 2
SITE PLAN**

Oak Park



Oak Park - 09.06.06 UPDATE
Traffic Impact Study
Trip Generation Rates
Institute of Transportation Engineer, 7th Edition

Oak Park

Land Use	Square Feet or Units	Time Period	ITE Code	ITE Formula	Trips	In	Out		
Single Family-Detached Housing	33 units	ADT	210	$\ln(T)=0.92\ln(x)+2.71$	376	183	188		
		AM Peak	210	$T=0.70(x)+9.43$	33	8	25		
		PM Peak	210	$\ln(T)=0.90\ln(x)+0.53$	40	25	15		
Condo/Townhouse	75 units	ADT	230	$\ln(T)=0.85\ln(x)+2.55$	504	252	252		
		AM Peak	230	$\ln(T)=0.80\ln(x)+0.26$	41	i	34		
		PM Peak	230	$\ln(T)=0.82\ln(x)+0.32$	47	31	16		
RESIDENTIAL TOTAL					ADT 880	440	440		
					AM Primary Trips 74	15	59		
					PM Primary Trips 87	56	31		
Office	18,000 sf	ADT	710	Average Rate = 11.01	198	99	99		
		AM Peak	710	Average Rate = 1.55	28	25	3		
		PM Peak	710	Average Rate = 1.49	27	5	22		
Shopping Center	21,700 sf	ADT	820	Average Rate = 42.94	932	466	466		
		AM Peak	820	Average Rate = 1.03	22	See Below			
		PM Peak	820	Average Rate = 3.75	81	See Below			
			76%	AM Primary Trips	16	10	6		
			24%	AM Pass-By Trips	6	3	3		
			66%	PM Primary Trips	53	25	28		
					34%	PM Pass-By Trips	28	14	14
COMMERCIAL TOTAL					ADT 1,130	565	565		
					AM Primary Trips 44	35	9		
					AM Pass-By Trips 6	3	3		
					AM TOTAL 50	38	12		
					PM Primary Trips 80	30	50		
					PM Pass-By Trips 28	14	14		
					PM TOTAL 108	44	64		
TOTAL SITE					ADT 2,010	1,005	1,005		
					AM Primary Trips 118	50	68		
					AM Pass-By Trips 6	3	3		
					AM TOTAL 124	53	71		
					PM Primary Trips 167	86	81		
					PM Pass-By Trips 28	14	14		
					PM TOTAL 195	100	95		
PREFERRED GROWTH SCENARIO									
Single Family-Detached Housing (1.0 DU/AC)	61 units	ADT	210	$\ln(T)=0.92\ln(x)+2.71$	660	330	330		
		AM Peak	210	$T=0.70(x)+9.43$	52	13	39		
		PM Peak	210	$\ln(T)=0.90\ln(x)+0.53$	69	43	26		
PREFERRED GROWTH SCENARIO COMPARISON									
Proposed Oak Park Development - Preferred Growth Scenario =					ADT 1,350	675	675		
					AM Peak 72	40	32		
					PM Peak 126	57	69		

Background Development

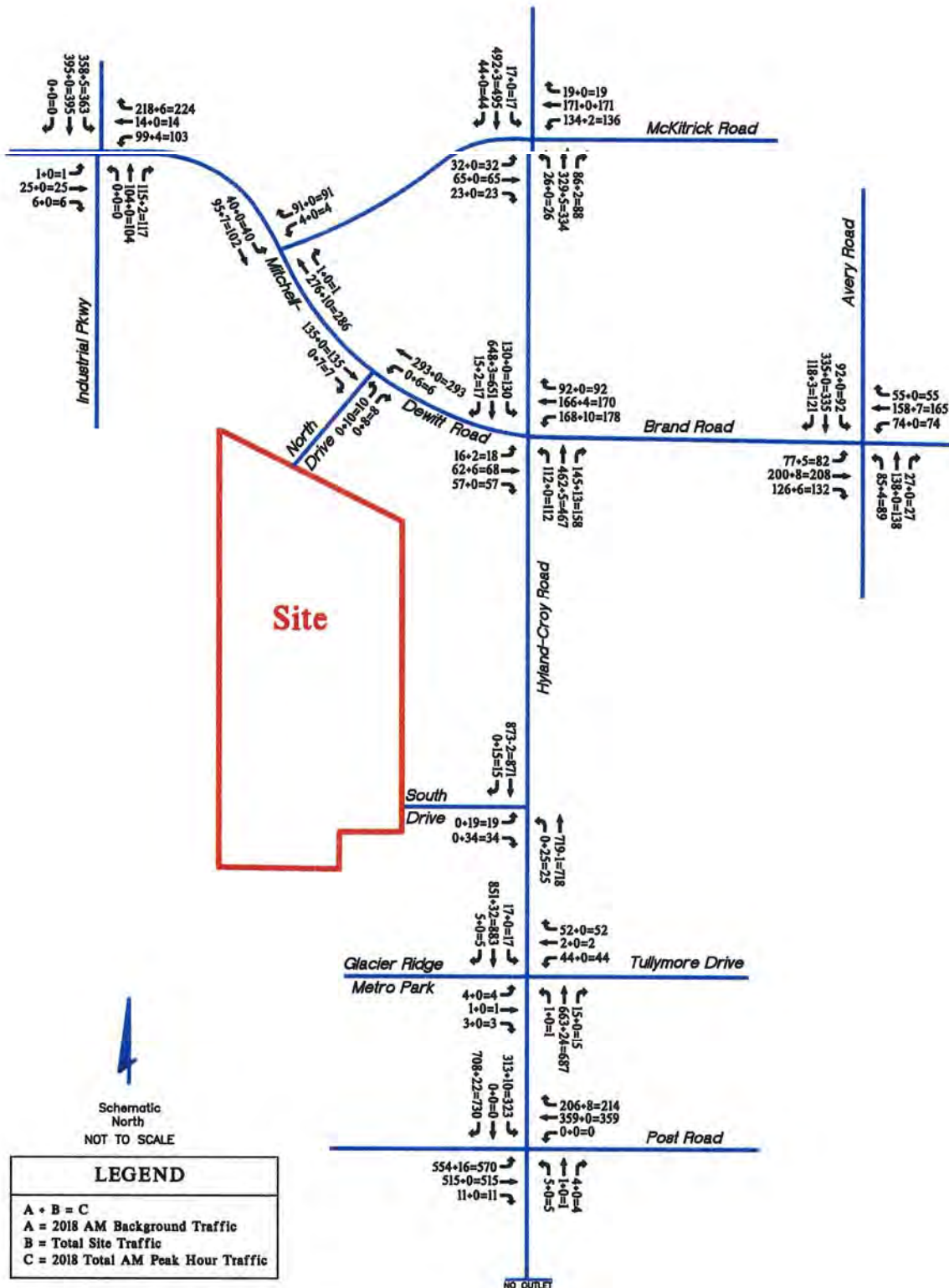
Single Family- Detached Housing (Bishops Run/Crossing)	169 units	ADT AM Peak PM Peak	210 210 210	$\ln(T)=0.92\ln(x)+2.71$ $T=0.70(x)+9.43$ $\ln(T)=0.90\ln(x)+0.53$	1,686 128 172	843 32 108	843 96 64
Single Family- Detached Housing (54 Homes)	54 units	ADT AM Peak PM Peak	210 210 210	$\ln(T)=0.92\ln(x)+2.71$ $T=0.70(x)+9.43$ $\ln(T)=0.90\ln(x)+0.53$	590 47 62	295 12 39	295 35 23
Future Jerome Village Development							
		AM Peak	Southbound on Hyland-Croy Road Northbound on Hyland-Croy Road		216 150		
		PM Peak	Southbound on Hyland-Croy Road Northbound on Hyland-Croy Road		211 237		
<u>Notes:</u> Volumes were provided by "Others" in an email dated Thursday, April 6, 2006.							

Future Development

Single Family-Detached Housing (West Parcel)	25 units	ADT	210	$\ln(T)=0.92\ln(x)+2.71$	290	145	145
		AM Peak	210	$T=0.70(x)+9.43$	27	7	20
		PM Peak	210	$\ln(T)=0.90\ln(x)+0.53$	31	20	11

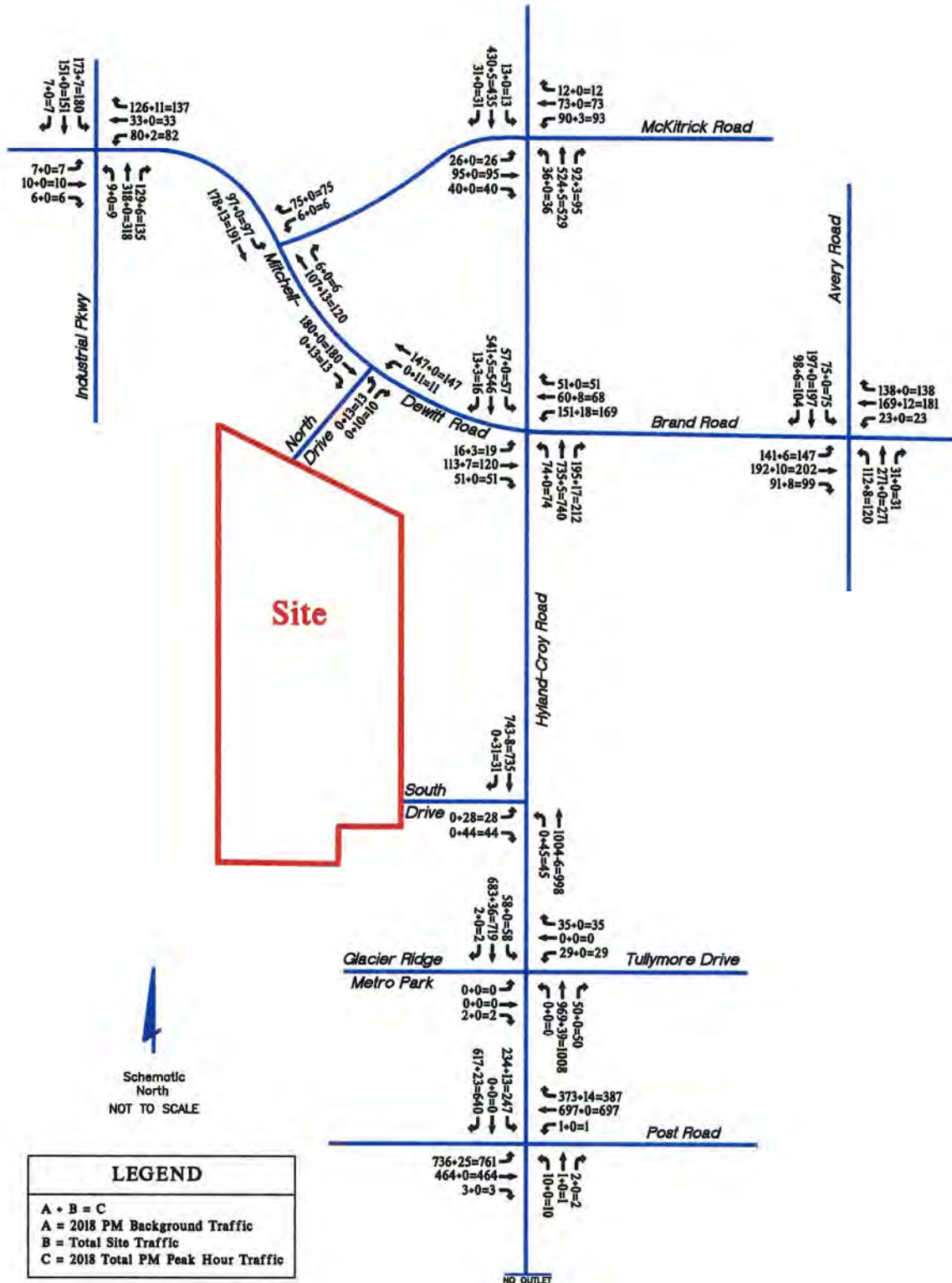
Oak Park

FIGURE 7
2018 TOTAL TRAFFIC VOLUMES
AM PEAK HOUR



Oak Park

FIGURE 8
2018 TOTAL TRAFFIC VOLUMES
PM PEAK HOUR



Riviera
Traffic Impact Study
Trip Generation Calculations
Institute of Transportation Engineers, 9th Edition

Riviera

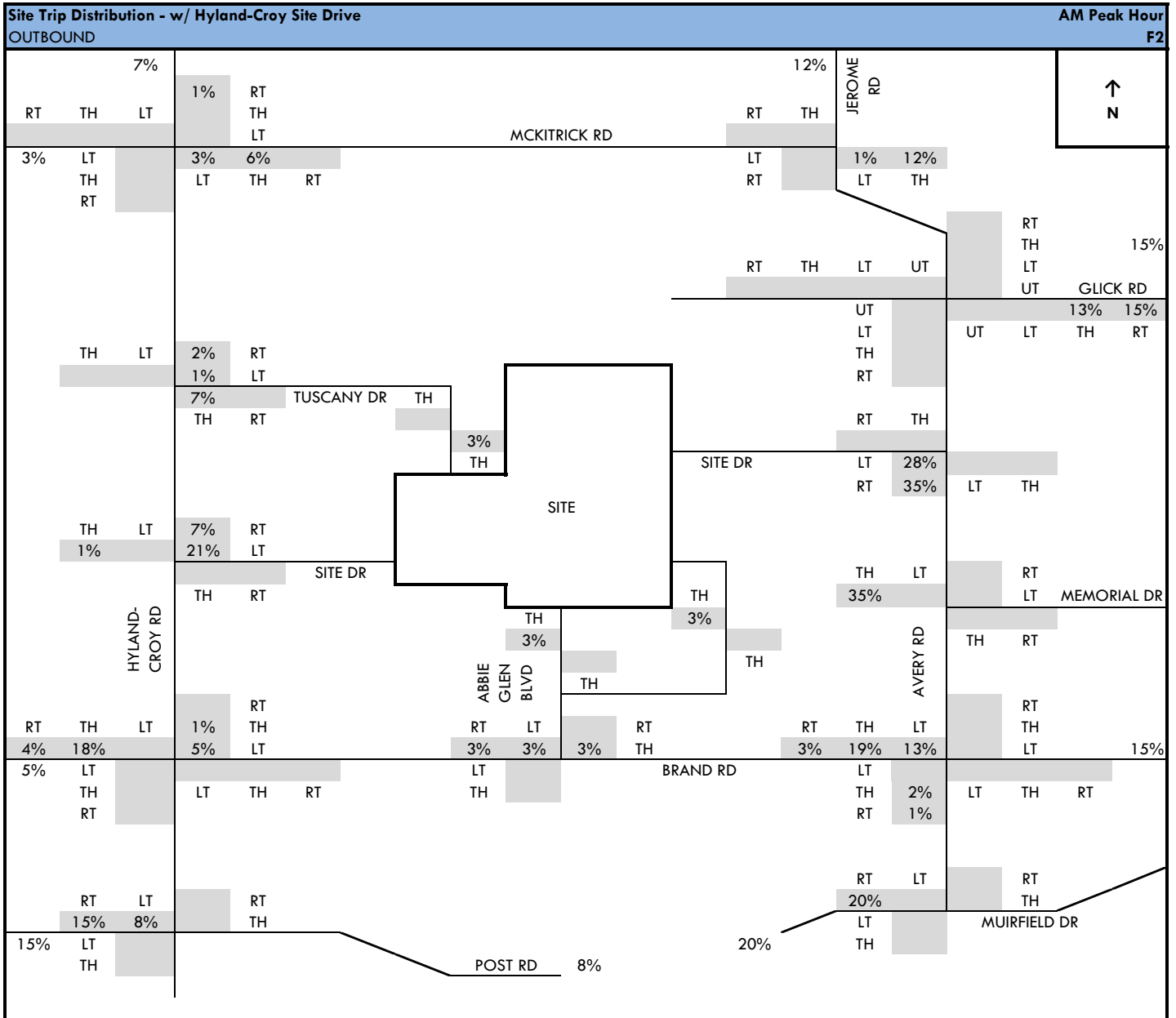
Land Use	Square Feet or Units	ITE Code	Time Period	ITE Formula	Total Trips	Trips Entering	Trips Exiting
<u>Single Family - Detached</u>	248 units	210	ADT	$\ln(T)=0.92\ln(x)+2.72$	2,422	1,211	1,211
			AM Peak	$T=0.70(x)+9.74$	183	46	137
			PM Peak	$\ln(T)=0.90\ln(x)+0.51$	238	150	88

City of Dublin Community Plan Trip Generation

Land Use	Square Feet or Units	ITE Code	Time Period	ITE Formula	Total Trips	Trips Entering	Trips Exiting
<u>Golf Course</u>	18 Holes	430	ADT	Average Rate = 35.74	644	322	322
			AM Peak	Average Rate = 2.06	37	29	8
			PM Peak	Average Rate = 2.92	53	27	26
Comparison to Site Generated Trips				ADT	-1,778	-889	-889
				AM TOTAL	-146	-17	-129
				PM TOTAL	-185	-123	-62

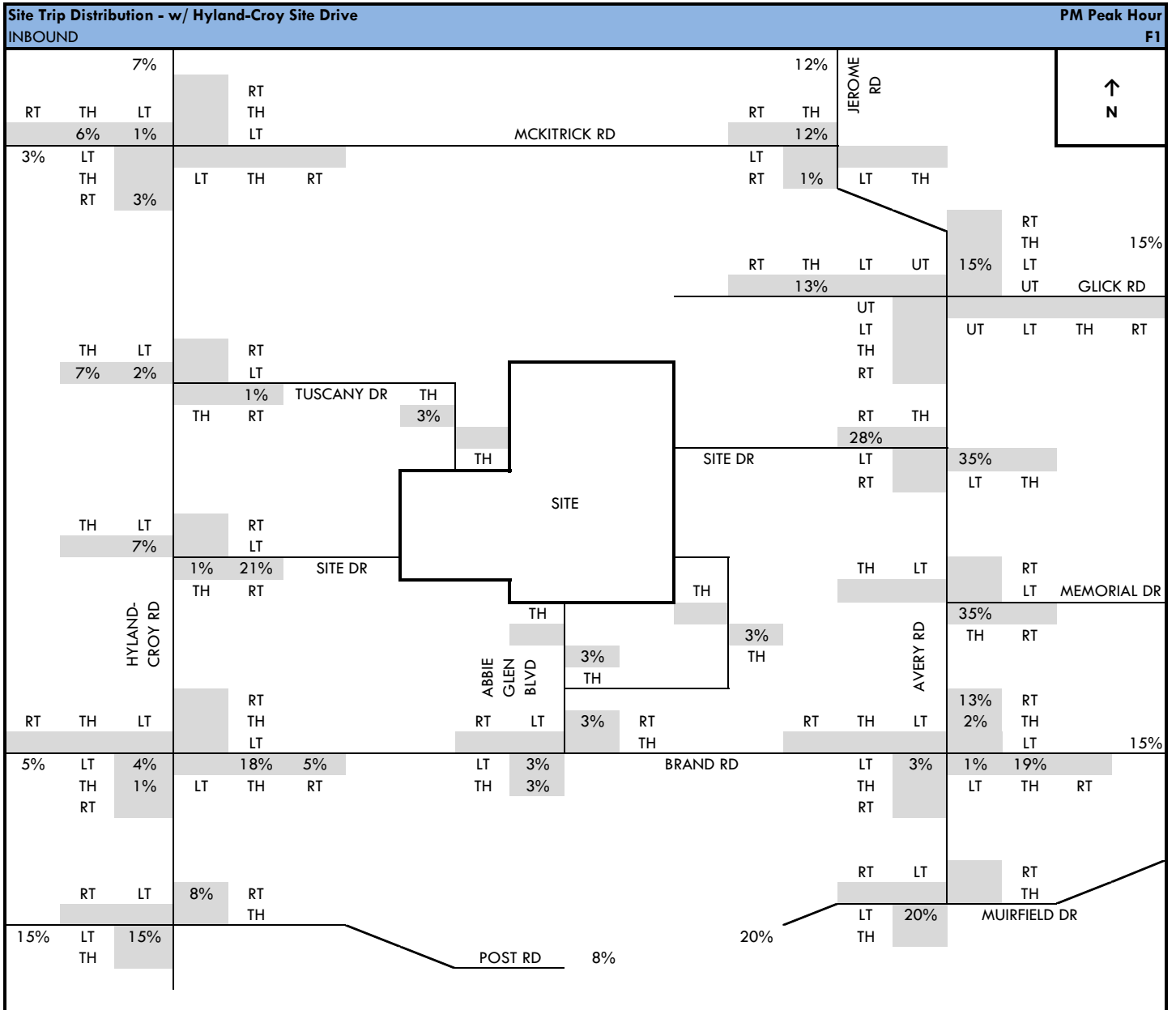
Riviera
Traffic Impact Study
Traffic Volume Calculations

Riviera



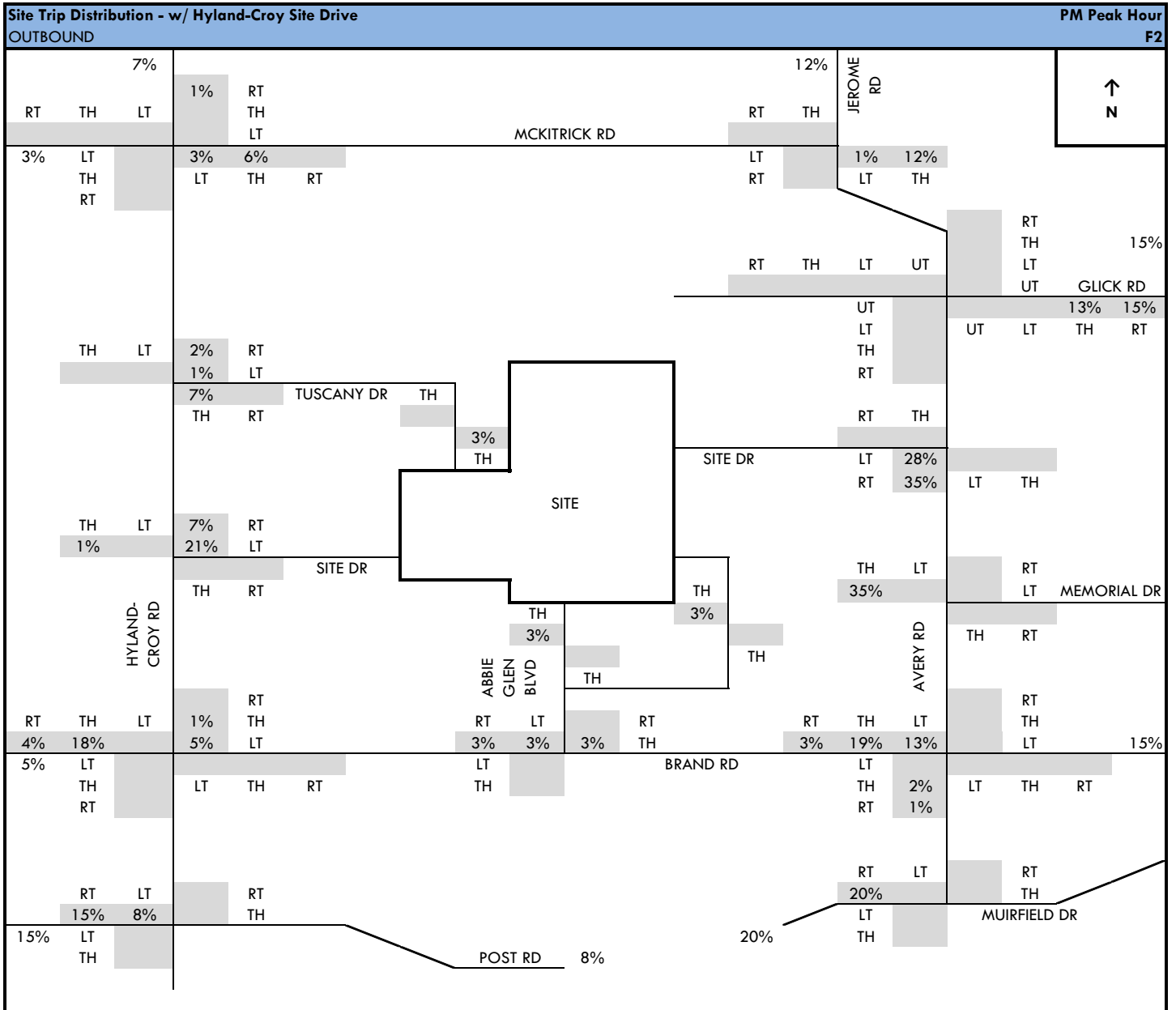
Riviera
Traffic Impact Study
Traffic Volume Calculations

Riviera



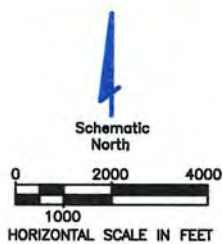
Riviera
Traffic Impact Study
Traffic Volume Calculations

Riviera



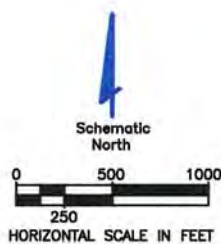
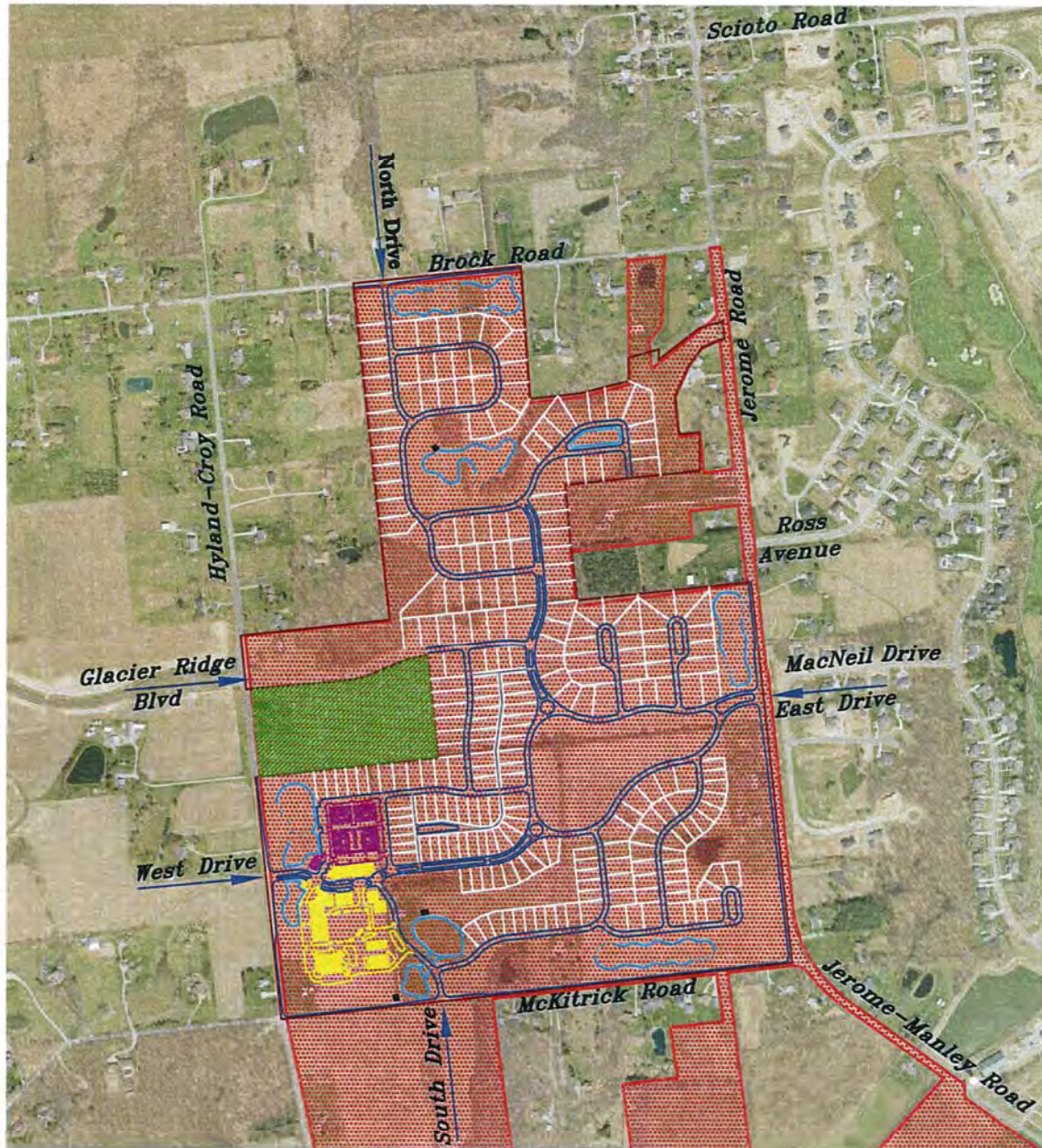
**FIGURE 1
SITE LOCATION MAP**

Tartan Ridge



**FIGURE 2
SITE PLAN**

Tartan Ridge



Legend

- | | |
|------------------------|------------|
| Single-Family | School |
| Townhomes | Commercial |
| Existing Dublin Limits | |

TABLE B1
Proposed Development Trip Generation Calculations

Land Use	Square Feet or Units	Time Period	ITE Code	ITE Formula	Trips	In	Out
Single Family-Detached Housing	246 units	ADT	210	$\ln(T)=0.92\ln(x)+2.71$	2,380	1190	1190
		AM Peak	210	$T=0.70(x)+9.43$	182	46	136
		PM Peak	210	$\ln(T)=0.90\ln(x)+0.53$	241	152	89
Condo/Townhouse	24 units	ADT	230	$\ln(T)=0.85\ln(x)+2.55$	192	96	96
		AM Peak	230	$\ln(T)=0.80\ln(x)+0.26$	16	3	13
		PM Peak	230	$\ln(T)=0.82\ln(x)+0.32$	19	13	6
TOTAL RESIDENTIAL	270 units	ADT	2,572			1,286	1,286
		AM TOTAL	198			49	149
		PM TOTAL	260			165	95
Gas station with Convenience Market	8 fueling positions	ADT	945	Average Rate = 162.78	1,302	651	651
		AM Peak	945	Average Rate = 10.06	80	See Below	
		PM Peak	945	Average Rate = 13.38	107	See Below	
	4,000 sf		38%	AM Primary Trips	30	15	15
			62%	AM Pass-By Trips	50	25	25
			44%	PM Primary Trips	47	24	23
			56%	PM Pass-By Trips	60	30	30
Pharmacy/Drugstore with Drive-Through Window	12,000 sf	ADT	881	Average Rate = 88.16	1,058	529	529
		AM Peak	881	Average Rate = 2.66	32	See Below	
		PM Peak	881	Average Rate = 8.62	103	See Below	
			61%	AM Primary Trips	20	11	9
			39%	AM Pass-By Trips	12	6	6
			16%	PM Primary Trips	53	26	27
			49%	PM Pass-By Trips	50	25	25
Shopping Center	38,500 sf	ADT	820	$\ln(T)=0.65\ln(x)+5.83$	3,652	1826	1826
		AM Peak	820	$\ln(T)=0.60\ln(x)+2.29$	88	See Below	
		PM Peak	820	$\ln(T)=0.660\ln(x)+3.40$	333	See Below	
			59%	AM Primary Trips	52	32	20
			41%	AM Pass-By Trips	36	18	18
			49%	PM Primary Trips	163	78	85
			51%	PM Pass-By Trips	170	85	85
Office	14,000 sf	ADT	710	$\ln(T)=0.77\ln(x)+3.65$	296	148	148
		AM Peak	710	$\ln(T)=0.80\ln(x)+1.55$	39	34	5
		PM Peak	710	$T=1.12(x)+78.81$	94	16	78
TOTAL COMMERCIAL	68,500 sf	ADT	6,308			3,154	3,154
		AM Primary Trips	141			92	49
		AM Pass-By Trips	98			49	49
		AM TOTAL	239			141	98
		PM Primary Trips	357			144	213
		PM Pass-By Trips	280			140	140
		PM TOTAL	637			284	353
TOTAL SITE	270 units	ADT	8,880			4,440	4,440
		AM Primary Trips	339			141	198
		AM Pass-By Trips	98			49	49
	68,500 sf	AM TOTAL	437			190	247
		PM Primary Trips	617			309	308
		PM Pass-By Trips	280			140	140
		PM TOTAL	897			449	448

TABLE B2
Background Development Traffic Volumes (Plate E)

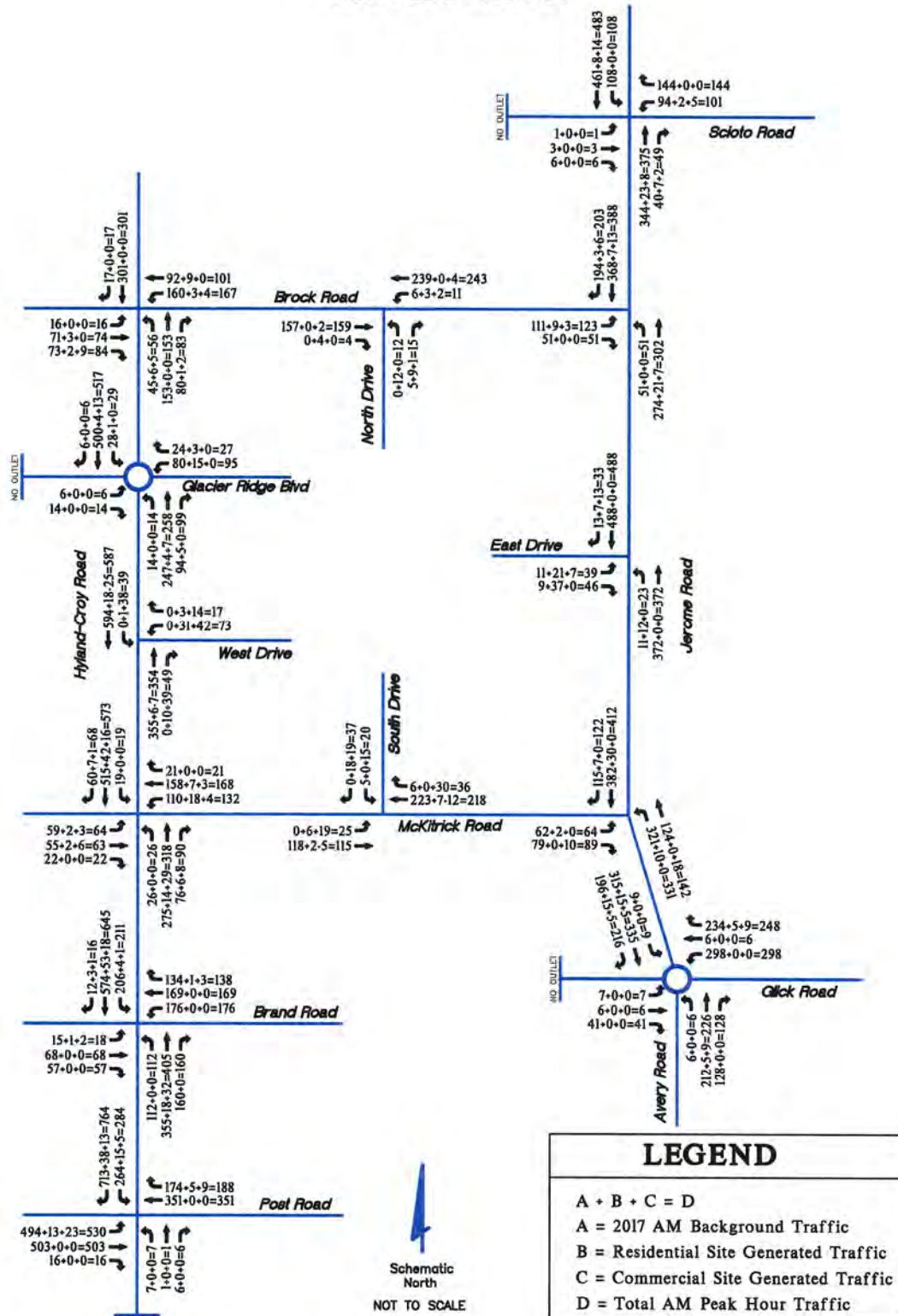
Land Use	Square Feet or Units	Time Period	ITE Code	ITE Formula	Trips	In	Out
Elementary School	70,000 sf	ADT	520	$\ln(T)=0.99\ln(x)+2.59$	894	447	447
		AM Peak	520	$\ln(T)=1.11\ln(x)+0.96$	292	158	134
		PM Peak	520	$\ln(T)=0.89\ln(x)+1.49$	195	84	111

TABLE B3
Preferred Growth Scenario

Land Use	Square Feet or Units	Time Period	ITE Code	ITE Formula	Trips	In	Out
Single Family-Detached Housing (189.6 acres)	379 units @ 2 units/acre	ADT	210	$\ln(T)=0.92\ln(x)+2.71$	3,542	1771	1771
		AM Peak	210	$T=0.70(x)+9.43$	275	69	206
		PM Peak	210	$\ln(T)=0.90\ln(x)+0.53$	356	224	132

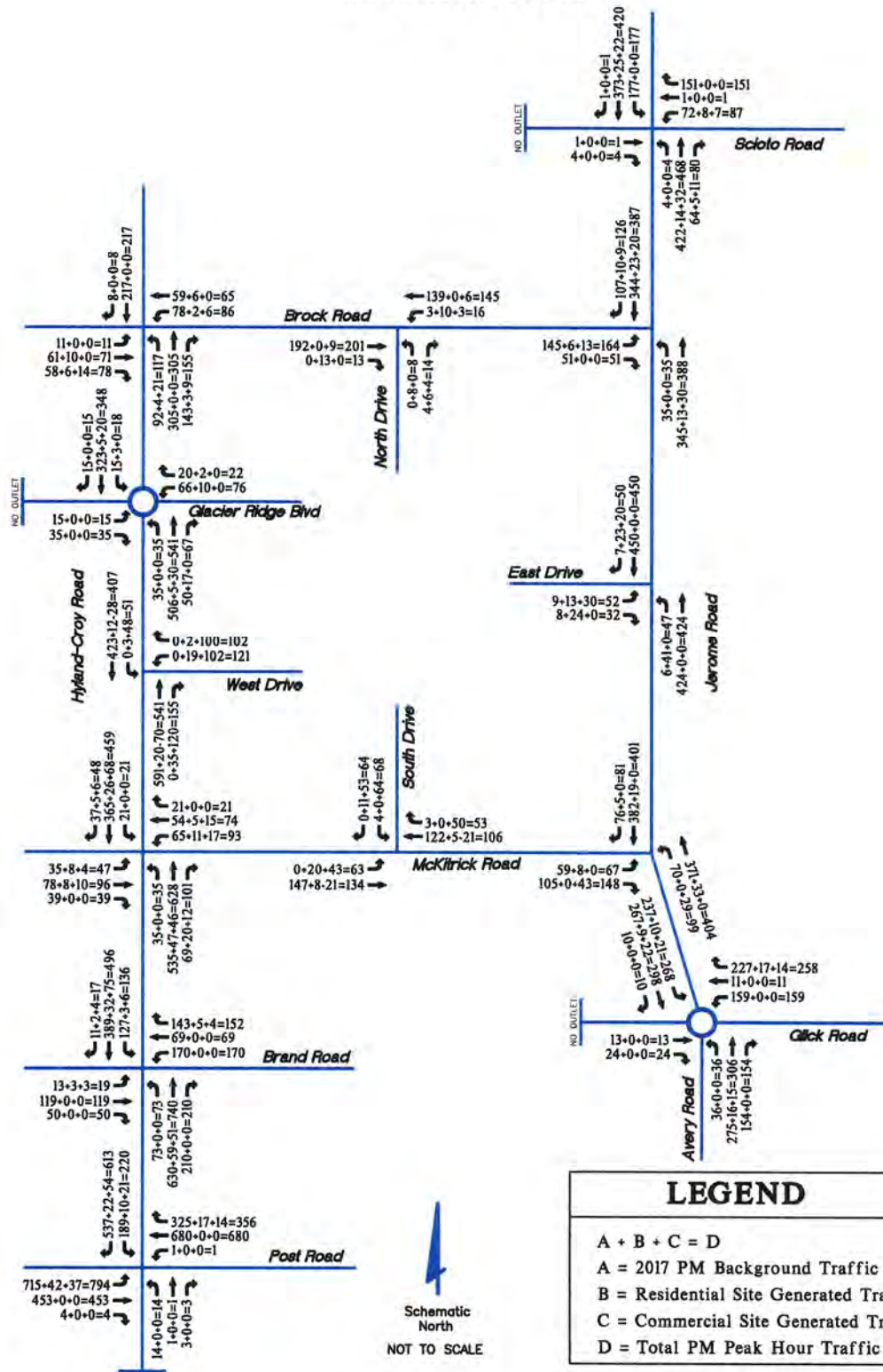
FIGURE 5
2017 FULL BUILD TRAFFIC VOLUMES
AM PEAK HOUR

Tartan Ridge



Tartan Ridge

FIGURE 6
2017 FULL BUILD TRAFFIC VOLUMES
PM PEAK HOUR



Appendix E

Trip Generation



PERIOD SETTING

Analysis Name :	AM Peak	No :	
Project Name :	Gordon 2017	City:	
Date:	2/13/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:			

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing	Dwelling Units	62	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) $T = 0.7 (X) + 9.74$	13 25%	40 75%	53
252 - Senior Adult Housing - Attached	Dwelling Units	100	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	7 35%	13 65%	20
254 - Assisted Living	Beds	150	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.14	14 67%	7 33%	21
252 - Senior Adult Housing - Attached - 1	Dwelling Units	48	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	3 30%	7 70%	10

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	13	0 %	40
252 - Senior Adult Housing - Attached	0 %	7	0 %	13
254 - Assisted Living	0 %	14	0 %	7
252 - Senior Adult Housing - Attached - 1	0 %	3	0 %	7

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached

Demand Entry: % (0) Entry 7

Demand Exit: % (0) Exit 13

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 14

Demand Exit: % (0) Exit 7

210 - Single-Family Detached Housing

Exit 40 Demand Exit: % (0) Balanced: 0

Entry 13 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

252 - Senior Adult Housing - Attached

Exit 13 Demand Exit: % (0) Balanced: 0

Entry 7 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) Entry 14

Demand Exit: % (0) Exit 7

252 - Senior Adult Housing - Attached

Exit 13 Demand Exit: % (0) Balanced: 0

Entry 7 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

254 - Assisted Living

Exit 7 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) Entry 3

Demand Exit: % (0) Exit 7

210 - Single-Family Detached Housing

	Total Trips	Internal Trips			Total	External Trips
		252 - Senior Adult Housing - Attached	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (100%)
Exit	40 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)
Total	53 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	53 (100%)

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips			Total	External Trips
		210 - Single-Family Detached Housing	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Exit	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (100%)
Total	20 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	20 (100%)

254 - Assisted Living

Total Trips	Internal Trips				External Trips

		210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	252 - Senior Adult Housing - Attached - 1	Total	
Entry	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)
Exit	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Total	21 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	21 (100%)

252 - Senior Adult Housing - Attached - 1

		Internal Trips				
	Total Trips	210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	254 - Assisted Living	Total	External Trips
Entry	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (100%)
Exit	7 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)
Total	10 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	53	0 %	0	53
252 - Senior Adult Housing - Attached	20	0 %	0	20
254 - Assisted Living	21	0 %	0	21
252 - Senior Adult Housing - Attached - 1	10	0 %	0	10

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Landuse No deviations from ITE.

Methods 252 - Senior Adult Housing - Attached - 1
The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.

External Trips 210 - Single-Family Detached Housing
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

254 - Assisted Living
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached - 1
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	37
Total Exiting	67
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	37
Total Exiting Non-Pass-by Trips	67

PERIOD SETTING

Analysis Name :	PM Peak	No :	
Project Name :	Gordon 2017	City:	
Date:	2/13/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:			

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing	Dwelling Units	62	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) $\ln(T) = 0.9\ln(X) + 0.51$	43 63%	25 37%	68
252 - Senior Adult Housing - Attached	Dwelling Units	100	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	14 56%	11 44%	25
254 - Assisted Living	Beds	150	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.22	15 45%	18 55%	33
252 - Senior Adult Housing - Attached - 1	Dwelling Units	48	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	6 50%	6 50%	12

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	43	0 %	25
252 - Senior Adult Housing - Attached	0 %	14	0 %	11
254 - Assisted Living	0 %	15	0 %	18
252 - Senior Adult Housing - Attached - 1	0 %	6	0 %	6

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached

Demand Entry: % (0) **Entry** 14

Demand Exit: % (0) **Exit** 11

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) **Entry** 15

Demand Exit: % (0) **Exit** 18

210 - Single-Family Detached Housing

Exit 25 Demand Exit: % (0) Balanced: 0

Entry 43 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) **Entry** 6

Demand Exit: % (0) **Exit** 6

252 - Senior Adult Housing - Attached

Exit 11 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

254 - Assisted Living

Demand Entry: % (0) **Entry** 15

Demand Exit: % (0) **Exit** 18

252 - Senior Adult Housing - Attached

Exit 11 Demand Exit: % (0) Balanced: 0

Entry 14 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) **Entry** 6

Demand Exit: % (0) **Exit** 6

254 - Assisted Living

Exit 18 Demand Exit: % (0) Balanced: 0

Entry 15 Demand Entry: % (0) Balanced: 0

252 - Senior Adult Housing - Attached - 1

Demand Entry: % (0) **Entry** 6

Demand Exit: % (0) **Exit** 6

210 - Single-Family Detached Housing

	Total Trips	Internal Trips			Total	External Trips
		252 - Senior Adult Housing - Attached	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	43 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	43 (100%)
Exit	25 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (100%)
Total	68 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	68 (100%)

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips			Total	External Trips
		210 - Single-Family Detached Housing	254 - Assisted Living	252 - Senior Adult Housing - Attached - 1		
Entry	14 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	14 (100%)
Exit	11 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (100%)
Total	25 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	25 (100%)

254 - Assisted Living

Total Trips	Internal Trips				External Trips

		210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	252 - Senior Adult Housing - Attached - 1	Total	
Entry	15 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	15 (100%)
Exit	18 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	18 (100%)
Total	33 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	33 (100%)

252 - Senior Adult Housing - Attached - 1

		Internal Trips				
	Total Trips	210 - Single-Family Detached Housing	252 - Senior Adult Housing - Attached	254 - Assisted Living	Total	External Trips
Entry	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Exit	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Total	12 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	12 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	68	0 %	0	68
252 - Senior Adult Housing - Attached	25	0 %	0	25
254 - Assisted Living	33	0 %	0	33
252 - Senior Adult Housing - Attached - 1	12	0 %	0	12

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse No deviations from ITE.

Methods 252 - Senior Adult Housing - Attached - 1
The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.

External Trips 210 - Single-Family Detached Housing
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

254 - Assisted Living
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached - 1
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	78
Total Exiting	60
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	78
Total Exiting Non-Pass-by Trips	60

PERIOD SETTING

Analysis Name :	AM Peak	No :	
Project Name :	Jacquemin - Phase 1	City:	
Date:	4/3/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:	AML		

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
220 - Apartment	Dwelling Units	224	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) T = 0.49 (X)+3.73	23 20%	90 80%	113
252 - Senior Adult Housing - Attached	Dwelling Units	250	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.2	17 34%	33 66%	50

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
220 - Apartment	0 %	23	0 %	90
252 - Senior Adult Housing - Attached	0 %	17	0 %	33

INTERNAL TRIPS

220 - Apartment

Exit	90	Demand Exit:	0 % (0)	Balanced:	0
Entry	23	Demand Entry:	0 % (0)	Balanced:	0

252 - Senior Adult Housing - Attached

Demand Entry:	0 % (0)	Entry	17
Demand Exit:	0 % (0)	Exit	33

220 - Apartment

Total Trips		Internal Trips		External Trips	
		252 - Senior Adult Housing - Attached	Total		
Entry	23 (100%)	0 (0%)	0 (0%)	23 (100%)	
Exit	90 (100%)	0 (0%)	0 (0%)	90 (100%)	
Total	113 (100%)	0 (0%)	0 (0%)	113 (100%)	

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips		External Trips
		220 - Apartment	Total	
Entry	17 (100%)	0 (0%)	0 (0%)	17 (100%)
Exit	33 (100%)	0 (0%)	0 (0%)	33 (100%)
Total	50 (100%)	0 (0%)	0 (0%)	50 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
220 - Apartment	113	0 %	0	113
252 - Senior Adult Housing - Attached	50	0 %	0	50

ITE DEVIATION DETAILS**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.**

Landuse No deviations from ITE.

Methods No deviations from ITE.

External Trips 220 - Apartment
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	40
Total Exiting	123
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	40
Total Exiting Non-Pass-by Trips	123

PERIOD SETTING

Analysis Name :	PM Peak	No :	
Project Name :	Jacquemin - Phase 1	City:	
Date:	4/3/2017	Zip/Postal Code:	
State/Province:		Client Name:	
Country:		Edition:	ITE-TGM 9th Edition
Analyst's Name:	AML		

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
220 - Apartment	Dwelling Units	224	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.55 (X)+17.65	92 65%	49 35%	141
252 - Senior Adult Housing - Attached	Dwelling Units	250	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.25	34 54%	29 46%	63

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
220 - Apartment	0 %	92	0 %	49
252 - Senior Adult Housing - Attached	0 %	34	0 %	29

INTERNAL TRIPS

220 - Apartment

Exit	49	Demand Exit:	0 %	(0)	Balanced:	0
Entry	92	Demand Entry:	0 %	(0)	Balanced:	0

252 - Senior Adult Housing - Attached

Demand Entry:	0 %	(0)	Entry	34
Demand Exit:	0 %	(0)	Exit	29

220 - Apartment

Total Trips		Internal Trips		External Trips	
		252 - Senior Adult Housing - Attached	Total		
Entry	92 (100%)	0 (0%)	0 (0%)	92 (100%)	
Exit	49 (100%)	0 (0%)	0 (0%)	49 (100%)	
Total	141 (100%)	0 (0%)	0 (0%)	141 (100%)	

252 - Senior Adult Housing - Attached

	Total Trips	Internal Trips		External Trips
		220 - Apartment	Total	
Entry	34 (100%)	0 (0%)	0 (0%)	34 (100%)
Exit	29 (100%)	0 (0%)	0 (0%)	29 (100%)
Total	63 (100%)	0 (0%)	0 (0%)	63 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
220 - Apartment	141	0 %	0	141
252 - Senior Adult Housing - Attached	63	0 %	0	63

ITE DEVIATION DETAILS**Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.**

Landuse No deviations from ITE.

Methods No deviations from ITE.

External Trips 220 - Apartment
ITE does not recommend a particular pass-by% for this case.

252 - Senior Adult Housing - Attached
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	126
Total Exiting	78
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	126
Total Exiting Non-Pass-by Trips	78

Representative Development Count Data Summary Sheet

AM PEAK															
LOCATION		TUESDAY		WEDNESDAY		THURSDAY		AVERAGE		SCALED TO 55,000 SF		AVERAGE OFFICE			
		PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	IN	OUT		
5970 Venture Drive (Office)	DRIVE 1	56	3	53	5	58	4								
	DRIVE 2	22	2	20	2	20	2								
	Square Feet	48,000		78	5	73	7	78	6	76	6	77	7		
	TOTAL														
3944 N. Hampton Drive (Office)	DRIVE 1	12	4	13	2	13	7								
	DRIVE 2	18	0			16	2								
	Square Feet	55,000		30	4	32	7	30	7	30	7				
	TOTAL														
10249 Sawmill Pkwy (Retail)	DRIVE 1	12	16	11	9	12	10								
	DRIVE 2	7	1	8	1	11	0								
	Square Feet	36,000		19	17	19	10	23	10	20	12	31	18		
	TOTAL														
3608 Main Street (Retail)	DRIVE 1	14	14	20	16	12	10								
	DRIVE 2	11	1	23	3	18	16								
	Square Feet	65,000		40	18	48	10	53	13	61	29	52	25		
	TOTAL														
												AVERAGE RETAIL			
												IN	OUT		

PM PEAK													
LOCATION		TUESDAY		WEDNESDAY		THURSDAY		AVERAGE		SCALED TO 55,000 SF		AVERAGE OFFICE	
		PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	PEAK IN	PEAK OUT	IN	OUT
5970 Venture Drive (Office)	DRIVE 1	3	50	13	47	11	38					13	60
	DRIVE 2	3	27	2	24	2	27						
	TOTAL	6	77	15	71	13	65	11	71	13	61		
3944 N. Hampton Drive (Office)	DRIVE 1	9	24	8	19	5	22						
	DRIVE 2	11	19	6	15	1	16						
	TOTAL	20	43	14	34	6	38	13	38	13	36		
10249 Sawmill Pkwy (Retail)	DRIVE 1	73	64	56	74	45	55					IN	OUT
	DRIVE 2	48	13	45	8	36	9						
	TOTAL	121	77	101	82	81	64	101	74	104	113		
3608 Main Street (Retail)	DRIVE 1	19	51	18	53	25	53					132	113
	DRIVE 2	59	37	65	52	67	33						
	DRIVE 3	45	47	45	37	47	40						
Square Feet	TOTAL	123	135	128	142	139	126	130	134	110	113		

Internal Capture Calculations											
AM Peak											
Office				Retail							
Exit	7	Demand Exit	23%	Balanced	1	Demand Entry	2%	Entry	42		
Entry	59	Demand Entry	31%	Balanced	1	Demand Exit	3%	Exit	22		
AM Office				AM Retail							
Entry	-1			Entry	-1						
Exit	-1			Exit	-1						

Residential											
<-- From OTSS (Jacq. Ph.1)											
Exit	123	Demand Exit	53%	Balanced	4	Demand Entry	9%	Entry	42		
Entry	40	Demand Entry	31%	Balanced	3	Demand Exit	12%	Exit	22		
AM Residential				AM Retail							
Entry	-1			Entry	-4						
Exit	-4			Exit	-3						

Residential											
<-- From OTSS (Jacq. Ph.1)											
Exit	123	Demand Exit	0%	Balanced	0	Demand Entry	0%	Entry	59		
Entry	40	Demand Entry	2%	Balanced	0	Demand Exit	2%	Exit	17		
AM Residential				AM Retail							
Entry	0			Entry	0						
Exit	0			Exit	0						
AM Residential				AM Office							
Entry	37			Entry	18			Entry	37		
Exit	115			Exit	16			Exit	18		

PM Peak											
Exit	60	Demand Exit	23%	Balanced	3	Demand Entry	2%	Entry	132		
Entry	13	Demand Entry	31%	Balanced	5	Demand Exit	3%	Exit	113		
PM Office				PM Retail							
Entry	-4			Entry	-3						
Exit	-3			Exit	-4						

Residential											
<-- From OTSS (Jacq. Ph.1)											
Exit	78	Demand Exit	53%	Balanced	12	Demand Entry	9%	Entry	132		
Entry	126	Demand Entry	31%	Balanced	14	Demand Exit	12%	Exit	113		
PM Residential				PM Retail							
Entry	-14			Entry	-12						
Exit	-12			Exit	-14						

Residential											
<-- From OTSS (Jacq. Ph.1)											
Exit	78	Demand Exit	0%	Balanced	0	Demand Entry	0%	Entry	13		
Entry	126	Demand Entry	2%	Balanced	1	Demand Exit	2%	Exit	60		
PM Residential				PM Retail							
Entry	-1			Entry	0						
Exit	0			Exit	-1						
PM Residential				PM Office							
Entry	111			Entry	9			Entry	117	Pass-By	34%
Exit	60			Exit	26			Exit	60	Pass-By	36%
								TOTAL			
								223			

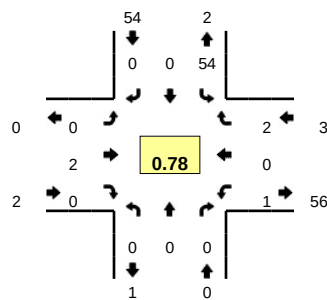
Non-Pass-By				Pass-By	
Entry	81			36	
Exit	58			36	

ONLY FOR HORIZON YEAR JACQUEMIN PHASE 2

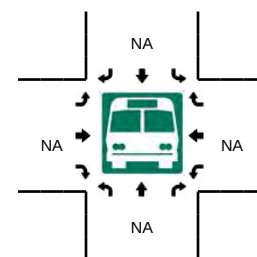
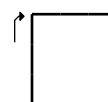
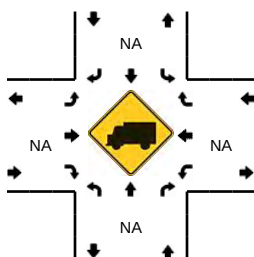
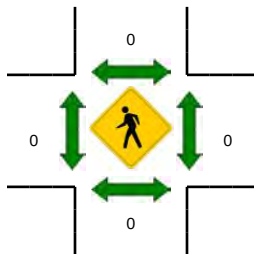
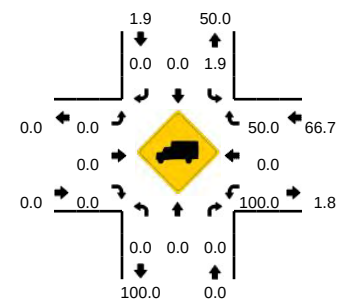
ONLY FOR HORIZON YEAR JACQUEMIN PHASE 2

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424403
DATE: Tue, May 23 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:15 AM -- 8:30 AM

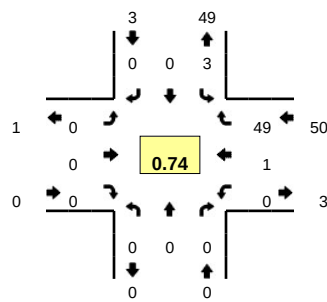


15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North Dwy (Eastbound)				Perimeter Office Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	
7:15 AM	0	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0	8	
7:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
7:45 AM	0	0	0	0	12	0	0	0	0	1	0	0	0	0	1	0	14	26
8:00 AM	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	11	35
8:15 AM	0	0	0	0	17	0	0	0	0	1	0	0	0	0	1	0	19	46
8:30 AM	0	0	0	0	14	0	0	0	0	0	0	0	1	0	0	0	15	59
8:45 AM	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	12	57
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	68	0	0	0	0	4	0	0	0	0	4	0	76	
Heavy Trucks	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

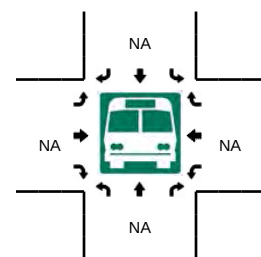
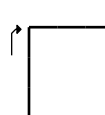
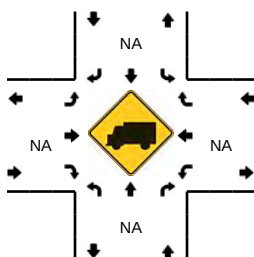
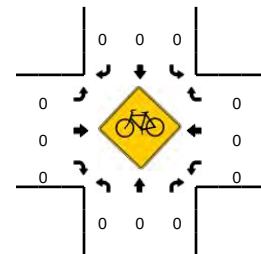
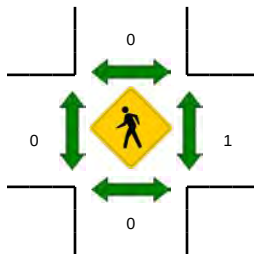
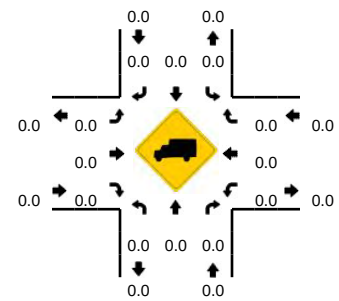
Comments:

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424404
DATE: Tue, May 23 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

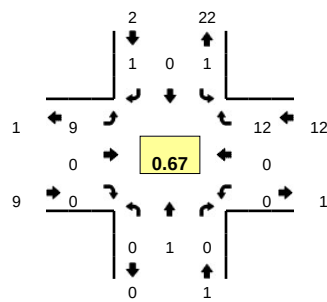


15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North Dwy (Eastbound)				Perimeter Office Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	2	2	0	6	
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	6	
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	0	7	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	14	0	16	35
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	17	0	18	47
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	0	9	50
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	53
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0	7	44
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	0	68	0	72	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

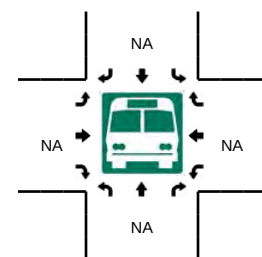
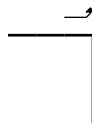
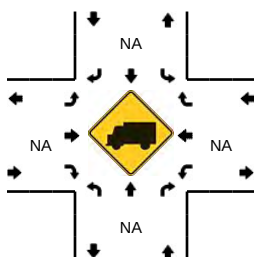
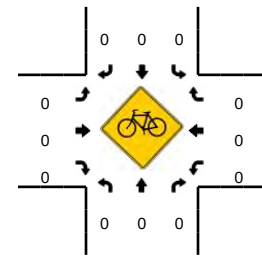
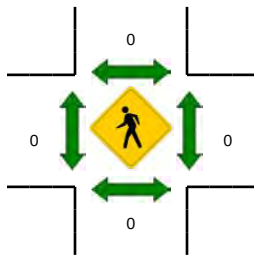
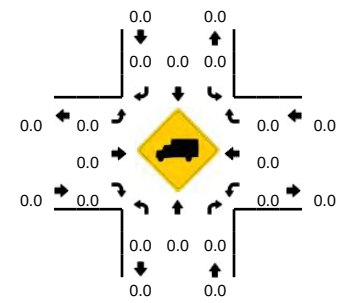
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424409
DATE: Tue, May 23 2017



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

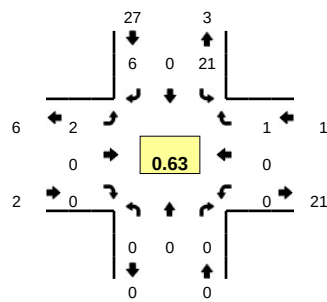


15-Min Counting Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	
7:15 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	6	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
7:45 AM	0	1	0	0	0	0	1	0	5	0	0	0	0	0	2	0	9	21
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	22
8:15 AM	0	0	0	0	1	0	0	0	3	0	0	0	0	0	4	0	8	24
8:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	22
8:45 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	3	16
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	4	0	0	0	0	4	0	20	0	0	0	0	0	8	0	36	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

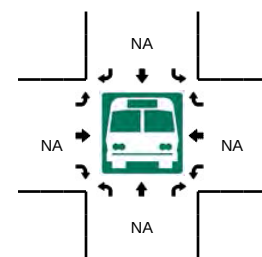
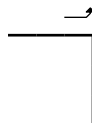
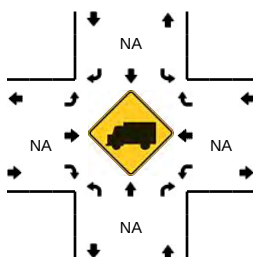
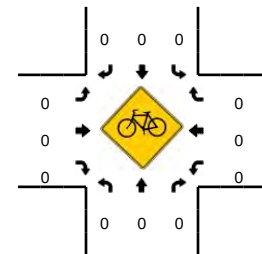
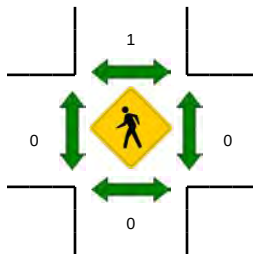
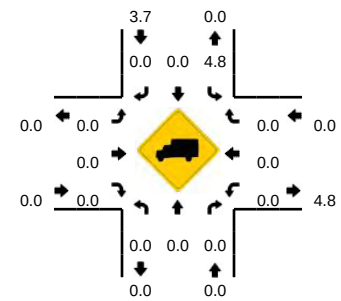
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424410
DATE: Tue, May 23 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

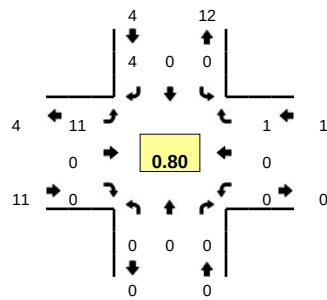


15-Min Counting Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	5	0	2	0	0	0	0	0	0	0	0	0	7	
4:15 PM	0	0	0	0	2	0	1	0	1	0	0	0	0	0	0	0	4	
4:30 PM	0	0	0	0	10	0	1	0	1	0	0	0	0	0	0	0	12	
4:45 PM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	1	0	5	28
5:00 PM	0	0	0	0	7	0	2	0	0	0	0	0	0	0	0	0	9	30
5:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	28
5:30 PM	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	4	20
5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	16
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	40	0	4	0	4	0	0	0	0	0	0	0	48	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

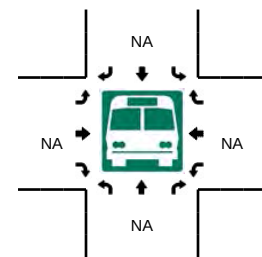
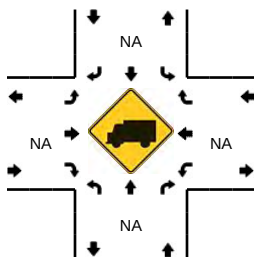
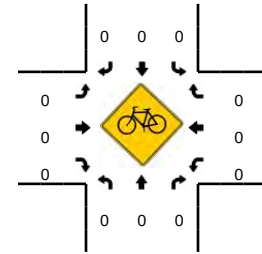
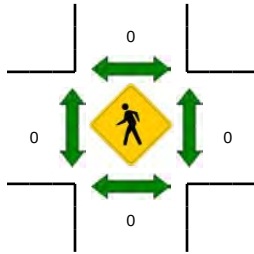
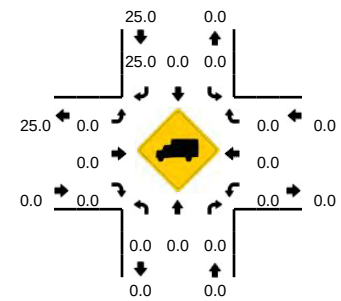
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424415
DATE: Tue, May 23 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

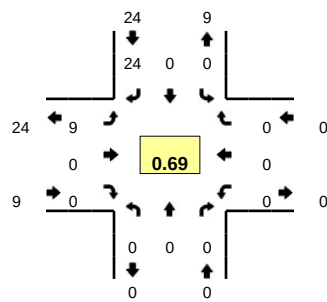


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:45 AM	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	5	9
8:00 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	3	10
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	12
8:30 AM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	5	16
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	12
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	4	0	16	0	0	0	0	0	0	0	20	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

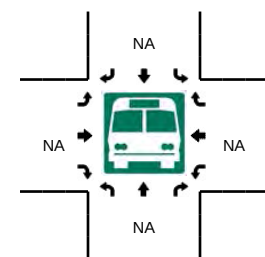
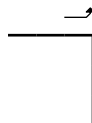
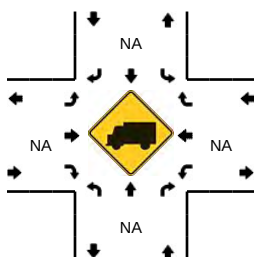
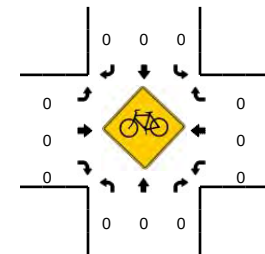
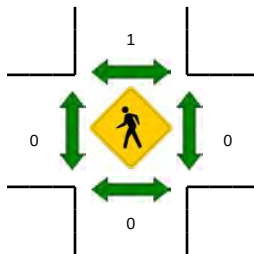
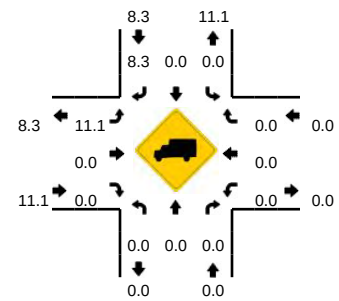
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424416
DATE: Tue, May 23 2017



Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

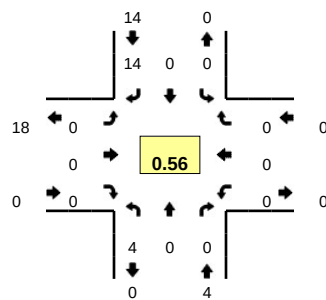


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	9	0	3	0	0	0	0	0	0	0	12	
4:15 PM	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	5	
4:30 PM	0	0	0	0	0	0	3	0	2	0	0	0	0	0	0	0	5	
4:45 PM	0	0	0	0	0	0	8	0	3	0	0	0	0	0	0	0	11	33
5:00 PM	0	0	0	0	0	0	7	0	1	0	0	0	0	0	0	0	8	29
5:15 PM	0	0	0	0	2	0	2	0	2	0	0	0	0	0	1	0	7	31
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	27
5:45 PM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	4	20
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	36	0	12	0	0	0	0	0	0	0	48	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

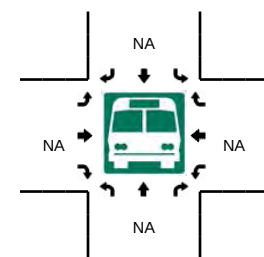
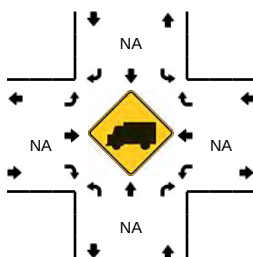
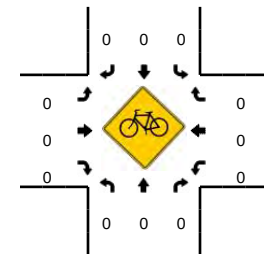
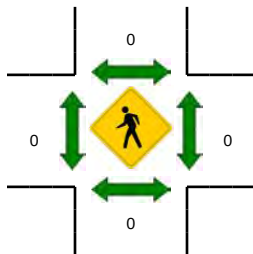
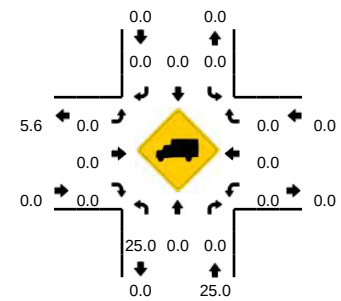
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424421
DATE: Tue, May 23 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

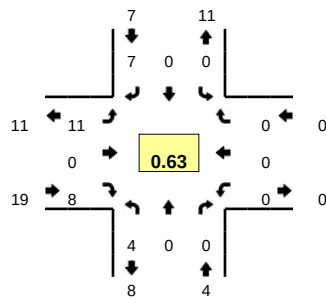


15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
7:15 AM	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	2	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	8	12
8:00 AM	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	14
8:15 AM	1	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	14
8:30 AM	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	4	18
8:45 AM	3	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	7	17
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

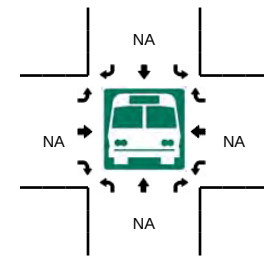
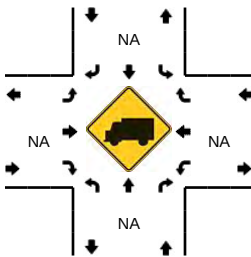
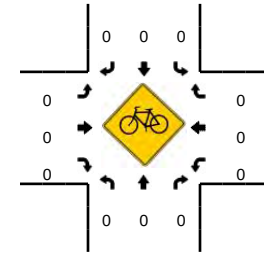
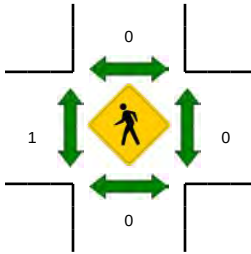
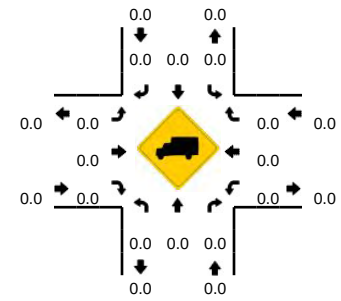
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424422
DATE: Tue, May 23 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



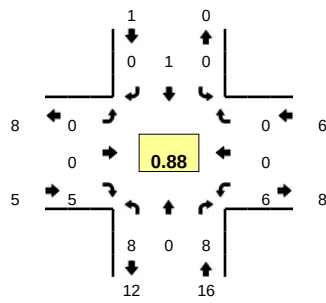
15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North (Westbound)				DwyTotal	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	2	0	4	0	0	0	0	0	0	0	8	28
4:15 PM	1	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	6	
4:30 PM	0	0	0	0	0	0	1	0	2	0	6	0	0	0	0	0	9	
4:45 PM	2	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	5	
5:00 PM	1	0	0	0	0	0	0	0	3	0	5	0	0	0	0	0	9	29
5:15 PM	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3	26
5:30 PM	1	0	0	0	0	0	3	0	7	0	1	0	0	0	0	0	12	29
5:45 PM	1	0	0	0	0	0	3	0	1	0	1	0	0	0	0	0	6	30

[illegible]

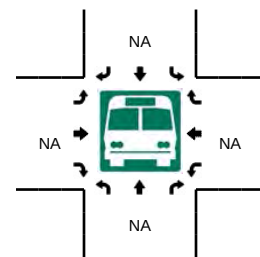
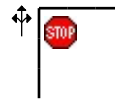
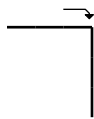
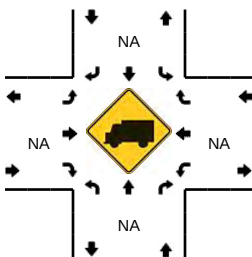
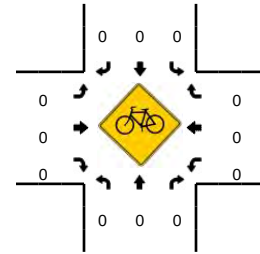
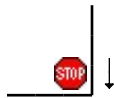
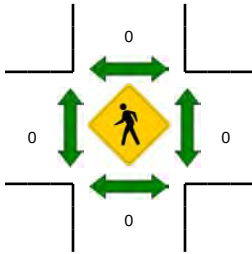
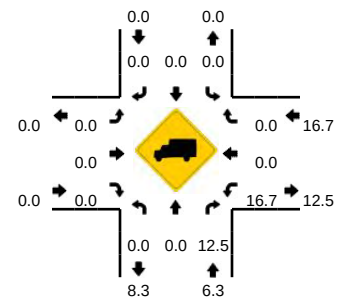
Comments:

LOCATION: GoYoga Dwy -- Presidential Pkwy
CITY/STATE: Powell, OH

QC JOB #: 14424427
DATE: Tue, May 23 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

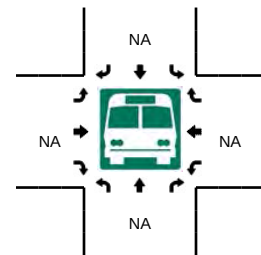
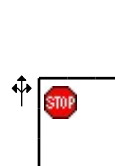
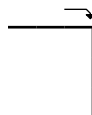
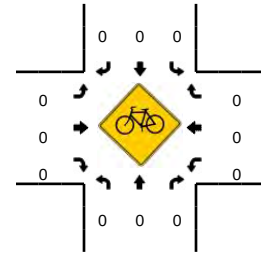
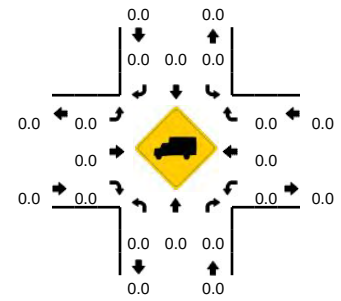


15-Min Count Period Beginning At	GoYoga Dwy (Northbound)				GoYoga Dwy (Southbound)				Presidential Pkwy (Eastbound)				Presidential Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	8	16
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
7:45 AM	0	0	0	0	0	1	0	0	0	0	2	0	2	0	0	0	5	
8:00 AM	3	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	7	15
8:15 AM	1	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	5	19
8:30 AM	1	0	1	0	0	0	0	0	0	0	3	0	3	0	0	0	8	25
8:45 AM	3	0	1	0	0	1	0	0	0	0	2	0	1	0	0	0	8	28

[illegible]

Comments:

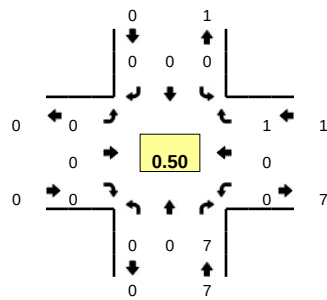
QC JOB #: 14424428
DATE: Tue, May 23 2017

[illegible]

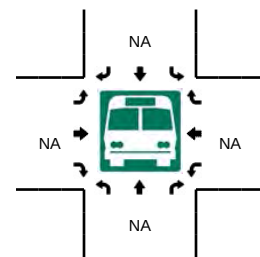
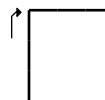
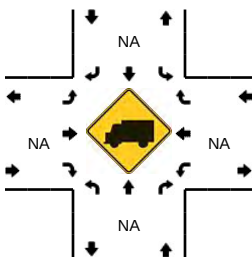
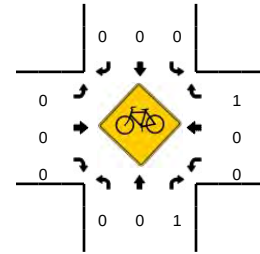
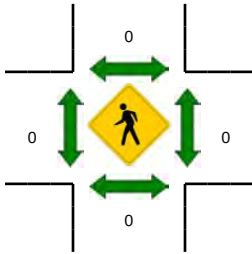
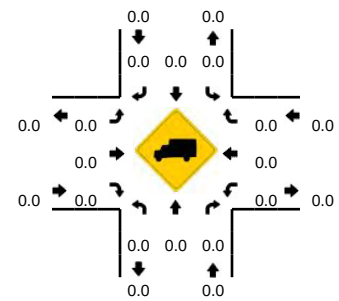
Page E26 of 70

LOCATION: Sawmill Pkwy -- Be Fit Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424433
DATE: Tue, May 23 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

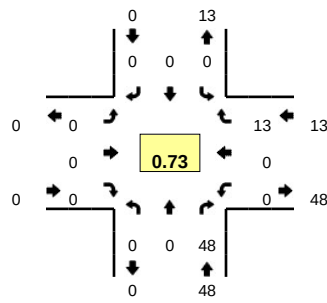


15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Be Fit Dwy (Eastbound)				Be Fit Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	4	8
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	12	0	0	0	0	0	0	0	0	0	0	0	4	0	16	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

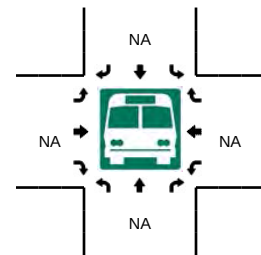
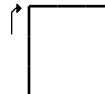
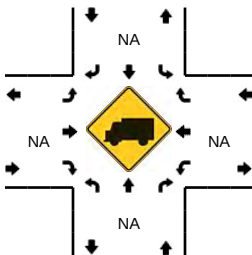
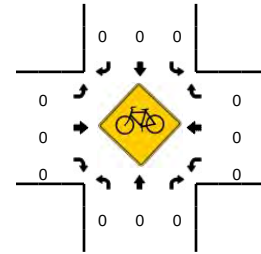
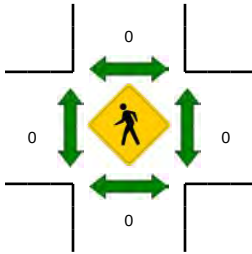
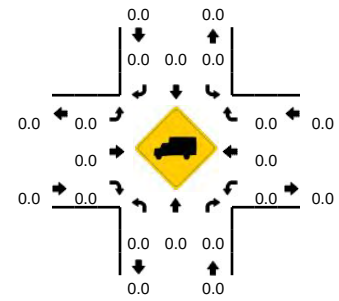
Comments:

LOCATION: Sawmill Pkwy -- Be Fit Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424434
DATE: Tue, May 23 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



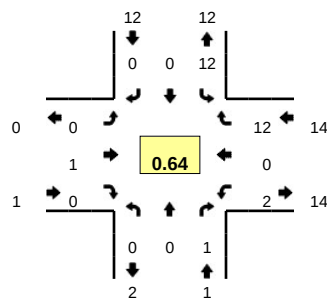
15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Be Fit Dwy (Eastbound)				Be Fit Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	3	0	11	
4:15 PM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	1	0	6	
4:30 PM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
4:45 PM	0	0	12	0	0	0	0	0	0	0	0	0	0	0	3	0	15	39
5:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6	0	9	37
5:15 PM	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	0	13	44
5:30 PM	0	0	17	0	0	0	0	0	0	0	0	0	0	0	4	0	21	58
5:45 PM	0	0	16	0	0	0	0	0	0	0	0	0	0	0	2	0	18	61

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	68	0	0	0	0	0	0	0	0	0	0	0	16	0	84
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians			0				0				0				0		0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

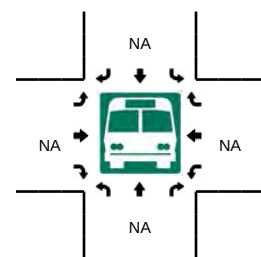
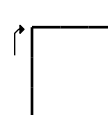
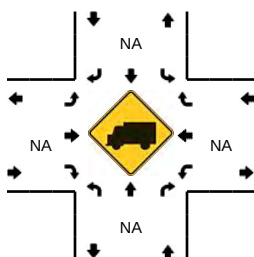
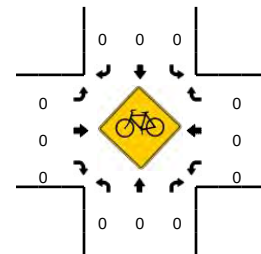
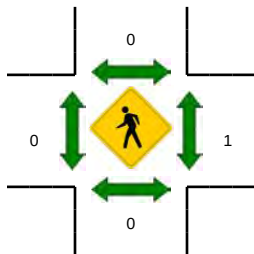
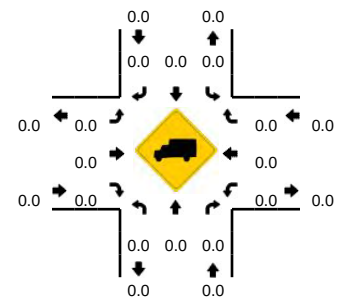
Comments:

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424439
DATE: Tue, May 23 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

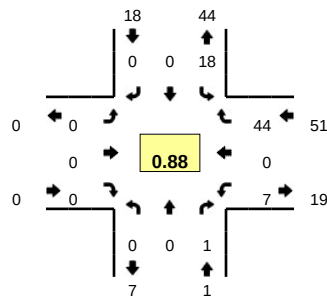


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	
7:15 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	4	
7:30 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	0	6	
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	5	0	7	20
8:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	3	20
8:15 AM	0	0	0	0	2	0	0	0	0	1	0	0	0	0	5	0	8	24
8:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	6	24
8:45 AM	0	0	0	0	7	0	0	0	0	0	0	0	1	0	3	0	11	28
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	0	0	28	0	0	0	0	0	0	0	4	0	12	0	44	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

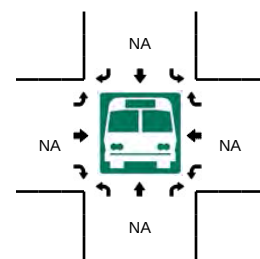
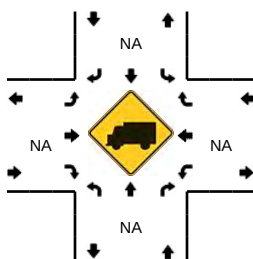
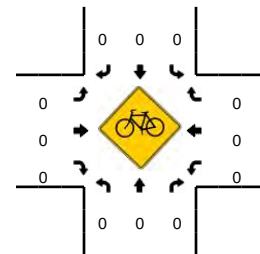
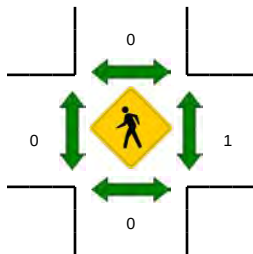
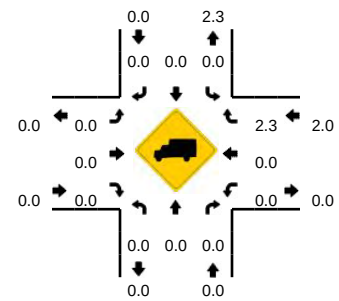
Comments:

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424440
DATE: Tue, May 23 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



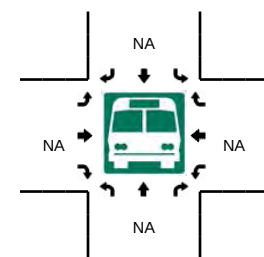
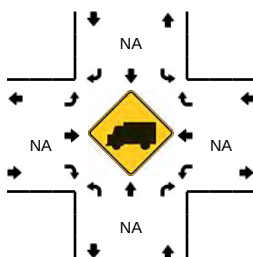
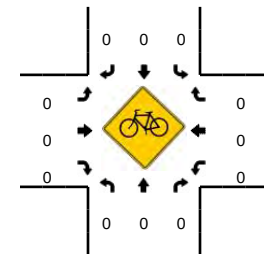
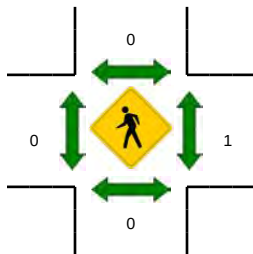
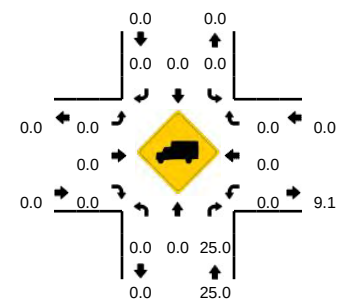
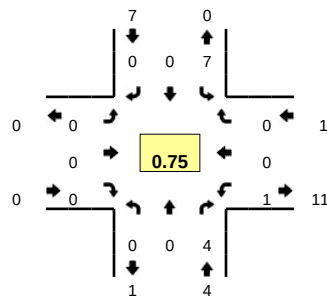
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Dwy Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	7	0	0	0	0	0	0	0	1	0	5	0	14	
4:15 PM	0	0	0	0	5	0	0	0	0	0	0	0	1	0	3	0	9	
4:30 PM	0	0	3	0	1	0	0	0	0	0	0	0	1	0	9	0	14	
4:45 PM	0	0	0	0	7	0	0	0	0	0	0	0	0	0	9	0	16	53
5:00 PM	0	0	0	0	4	0	0	0	0	0	0	0	1	0	10	0	15	54
5:15 PM	0	0	0	0	8	0	0	0	0	0	0	0	1	0	8	0	17	62
5:30 PM	0	0	1	0	3	0	0	0	0	0	0	0	1	0	13	0	18	66
5:45 PM	0	0	0	0	3	0	0	0	0	0	0	0	4	0	13	0	20	70
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	0	0	12	0	0	0	0	0	0	0	16	0	52	0	80	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424445
DATE: Tue, May 23 2017

Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

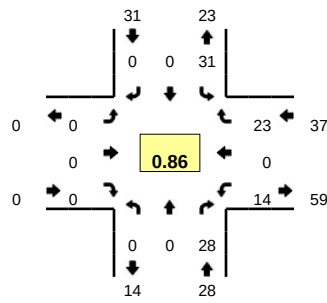


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle Dwy (Eastbound)				Hilliard Shopping Center Middle Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
7:15 AM	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	
7:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	10
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	12
8:00 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	3	8
8:45 AM	0	0	1	0	3	0	0	0	0	0	0	0	1	0	0	0	5	11
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	12	0	4	0	0	0	0	0	0	0	0	0	0	0	16	
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

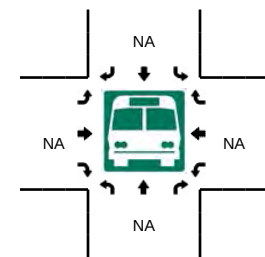
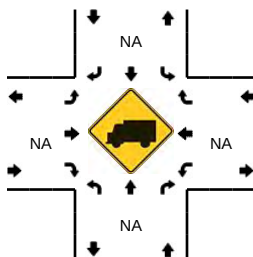
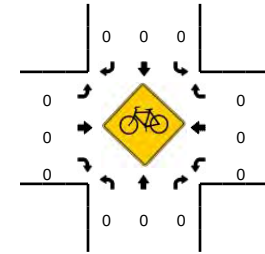
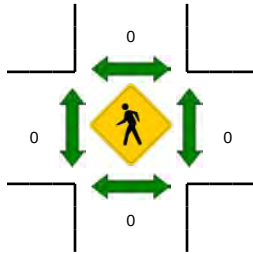
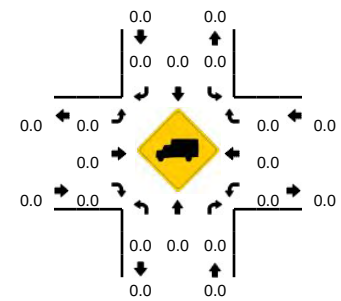
Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424446
DATE: Tue, May 23 2017



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

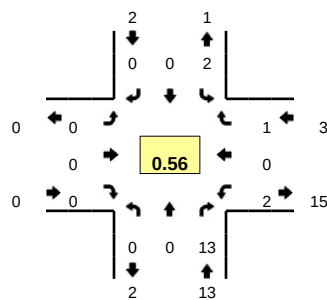


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle Dwy (Eastbound)				Hilliard Shopping Center Middle Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	5	0	4	0	0	0	0	0	0	0	4	0	1	0	14	
4:15 PM	0	0	3	0	8	0	0	0	0	0	0	0	1	0	6	0	18	
4:30 PM	0	0	7	0	11	0	0	0	0	0	0	0	4	0	4	0	26	
4:45 PM	0	0	7	0	4	0	0	0	0	0	0	0	2	0	9	0	22	80
5:00 PM	0	0	10	0	8	0	0	0	0	0	0	0	6	0	4	0	28	94
5:15 PM	0	0	4	0	8	0	0	0	0	0	0	0	2	0	6	0	20	96
5:30 PM	0	0	4	0	8	0	0	0	0	0	0	0	1	0	10	0	23	93
5:45 PM	0	0	7	0	7	0	0	0	0	0	0	0	2	0	0	0	16	87
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	40	0	32	0	0	0	0	0	0	0	24	0	16	0	112	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

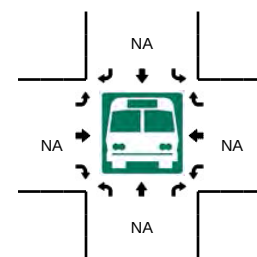
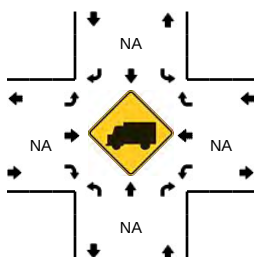
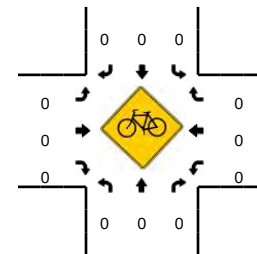
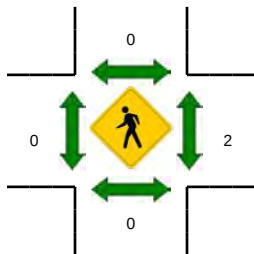
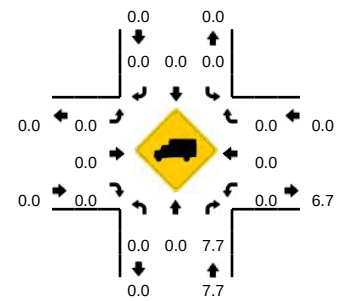
Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424451
DATE: Tue, May 23 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM



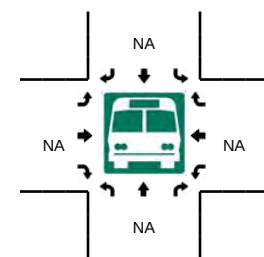
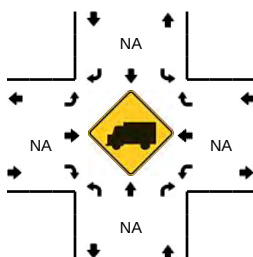
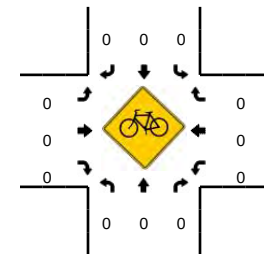
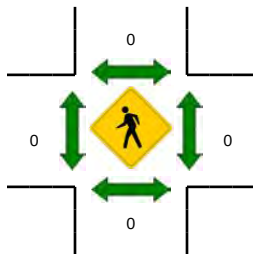
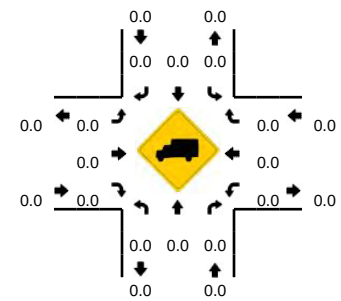
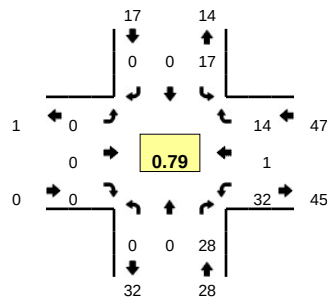
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South Dwy (Eastbound)				Hilliard Shopping Center South Dwy (Westbound)				Daily Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:30 AM	0	0	0	1	2	0	0	0	0	0	0	0	1	0	1	0	5	
7:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	1	0	0	0	4	11
8:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
8:15 AM	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	4	15
8:30 AM	0	0	5	0	1	0	0	0	0	0	0	0	1	0	1	0	8	18
8:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	1	0	1	0	4	18
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	20	0	4	0	0	0	0	0	0	0	4	0	4	0	32	
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4	
Pedestrians			0				0				0				4		4	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424452
DATE: Tue, May 23 2017

Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



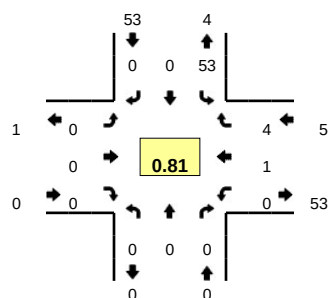
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South (Eastbound)				Hilliard Shopping Center South (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	3	0	1	0	0	0	0	0	0	0	11	0	4	0	19	
4:15 PM	0	0	8	0	1	0	0	0	0	0	0	0	8	0	3	0	20	
4:30 PM	0	0	3	0	1	0	0	0	0	0	0	0	5	0	3	0	12	
4:45 PM	0	0	10	0	0	0	0	0	0	0	0	0	5	0	2	0	17	68
5:00 PM	0	0	5	0	4	0	0	0	0	0	0	0	10	0	3	0	22	71
5:15 PM	0	0	8	0	5	0	0	0	0	0	0	0	0	0	4	0	17	68
5:30 PM	0	0	6	0	5	0	0	0	0	0	0	0	9	0	4	0	24	80
5:45 PM	0	0	9	0	3	0	0	0	0	0	0	0	13	1	3	0	29	92

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	36	0	12	0	0	0	0	0	0	0	52	4	12	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians	0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

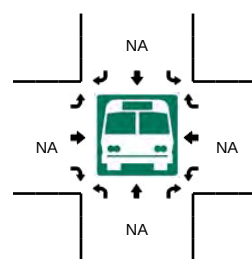
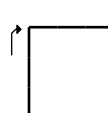
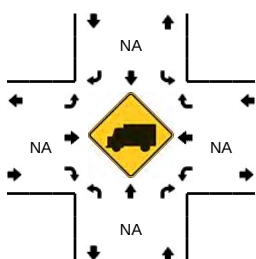
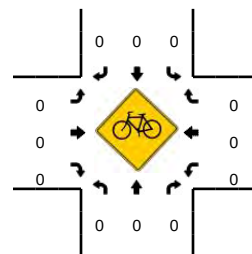
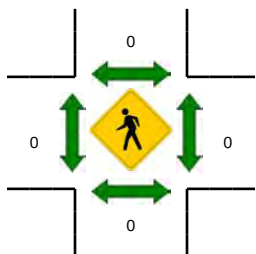
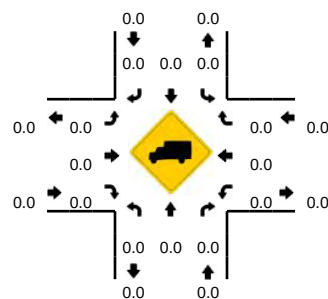
Comments:

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424405
DATE: Wed, May 24 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

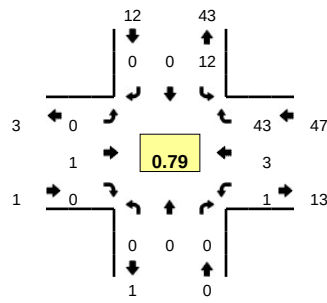


15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North (Eastbound)				Perimeter Office Center North (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	
7:15 AM	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5	
7:30 AM	0	0	0	0	7	0	0	0	0	1	0	0	0	0	0	0	8	
7:45 AM	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	13	28
8:00 AM	0	0	0	0	11	0	0	0	0	0	0	0	0	0	1	0	12	38
8:15 AM	0	0	0	0	12	0	0	0	0	0	0	0	0	0	2	0	14	47
8:30 AM	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	14	53
8:45 AM	0	0	0	0	16	0	0	0	0	0	0	0	0	1	1	0	18	58
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	64	0	0	0	0	0	0	0	0	4	4	0	72	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

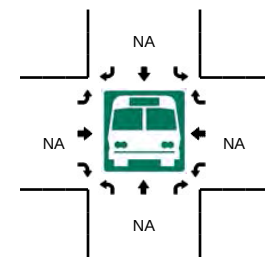
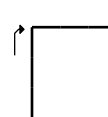
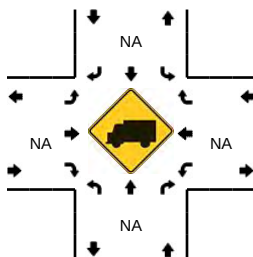
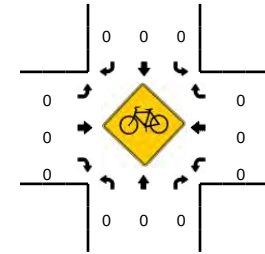
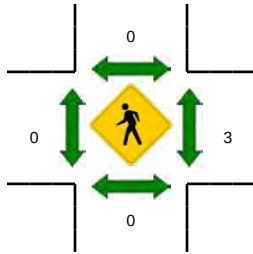
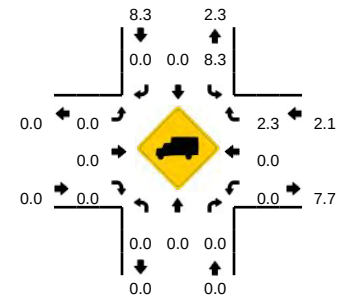
Comments:

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424406
DATE: Wed, May 24 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

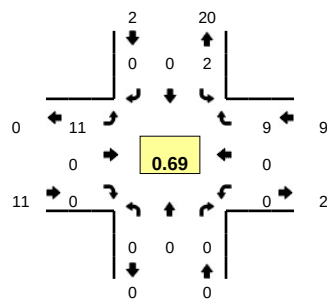


15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North (Eastbound)				Perimeter Office Center North (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	2	7	0	12	
4:15 PM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	10	0	14	
4:30 PM	0	0	0	0	4	0	0	0	0	0	0	0	1	1	9	0	15	
4:45 PM	0	0	0	0	3	0	0	0	0	1	0	0	0	2	6	0	12	53
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	18	0	19	60
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	10	0	11	57
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	49
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	40
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	0	72	0	76	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

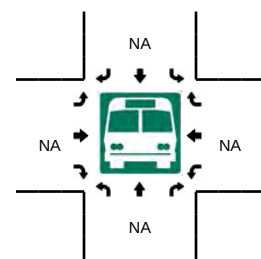
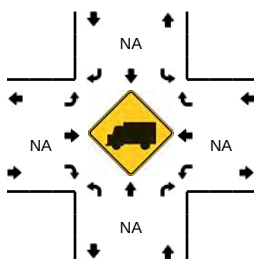
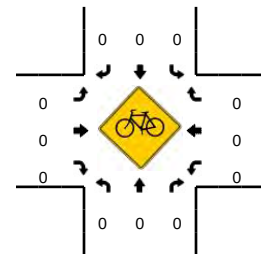
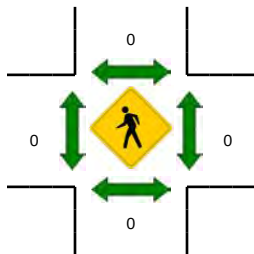
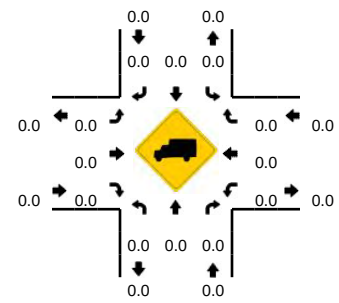
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424411
DATE: Wed, May 24 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

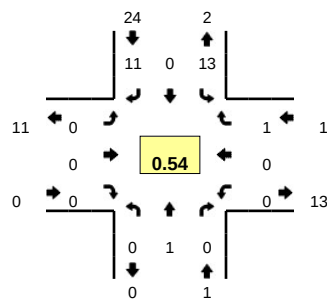


15-Min Count Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:45 AM	0	0	0	0	1	0	0	0	3	0	0	0	0	0	4	0	8	16
8:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	4	18
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	4	17
8:30 AM	0	0	0	0	1	0	0	0	3	0	0	0	0	0	2	0	6	22
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	18
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	12	0	0	0	0	0	16	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

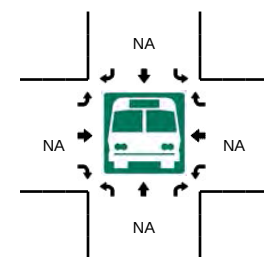
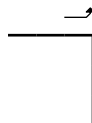
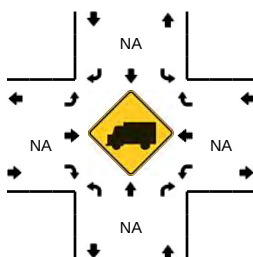
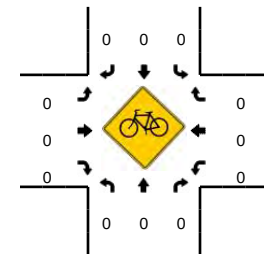
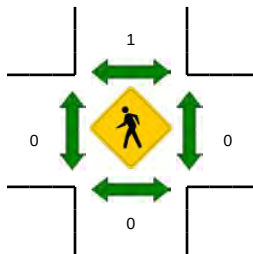
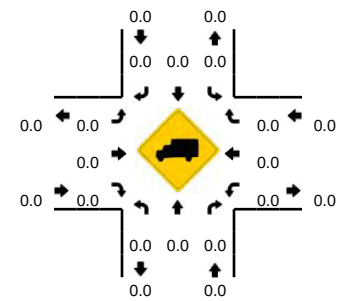
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424412
DATE: Wed, May 24 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

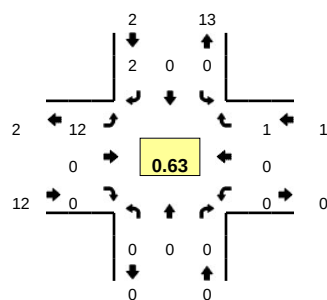


15-Min Counting Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	3	0	1	0	0	0	0	0	2	0	9	
4:15 PM	0	1	0	0	2	0	1	0	0	0	0	0	0	0	0	0	4	
4:30 PM	0	0	0	0	4	0	3	0	0	0	0	0	0	0	0	0	7	
4:45 PM	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	23
5:00 PM	0	0	0	0	6	0	5	0	0	0	0	0	0	0	1	0	12	26
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	23
5:30 PM	0	0	0	0	3	0	3	0	1	0	0	0	0	0	0	0	7	23
5:45 PM	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	4	24
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	24	0	20	0	0	0	0	0	0	0	4	0	48	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

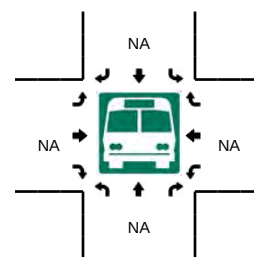
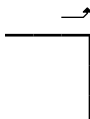
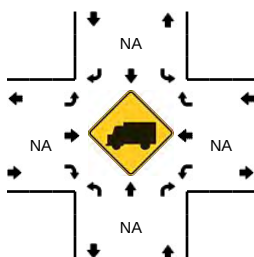
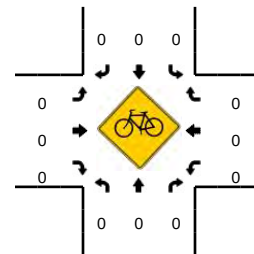
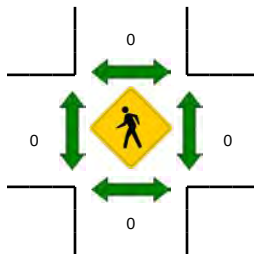
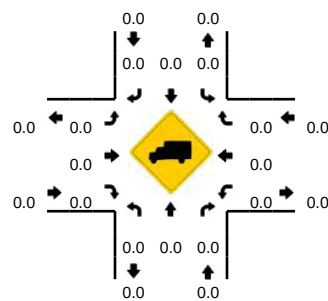
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424417
DATE: Wed, May 24 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

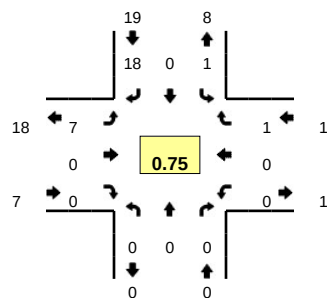


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
7:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	
7:45 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	7
8:00 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	9
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	11
8:30 AM	0	0	0	0	0	0	1	0	4	0	0	0	0	0	1	0	6	15
8:45 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	15
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	4	0	16	0	0	0	0	0	4	0	24	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

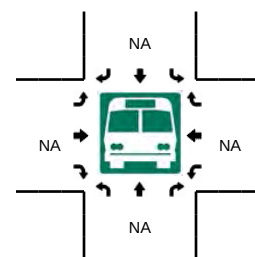
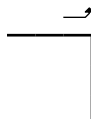
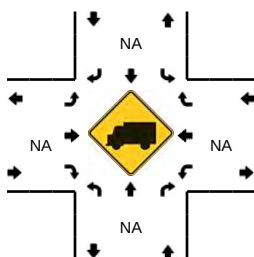
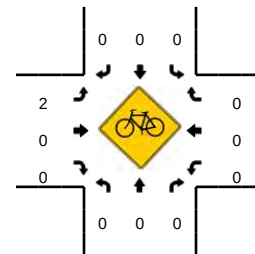
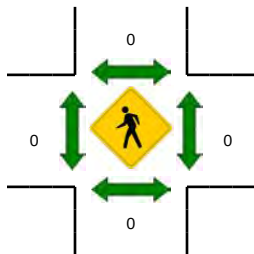
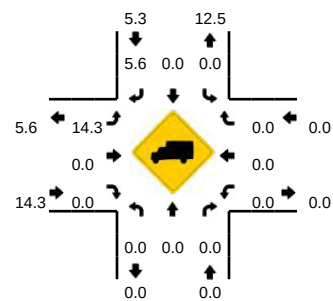
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424418
DATE: Wed, May 24 2017



Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

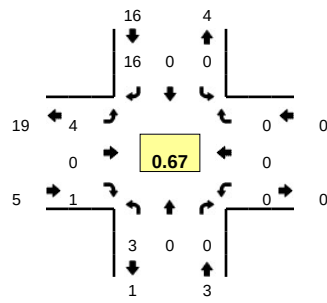


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	5	0	3	0	0	0	0	0	0	0	9	
4:15 PM	0	0	0	0	0	0	3	0	2	0	0	0	0	0	1	0	6	
4:30 PM	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	5	
4:45 PM	0	0	0	0	0	0	5	0	2	0	0	0	0	0	0	0	7	27
5:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	21
5:15 PM	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	3	18
5:30 PM	0	0	0	0	1	0	5	0	3	0	0	0	0	0	0	0	9	22
5:45 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2	17
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	20	0	12	0	0	0	0	0	0	0	36	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

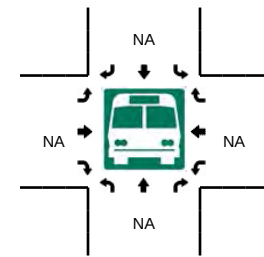
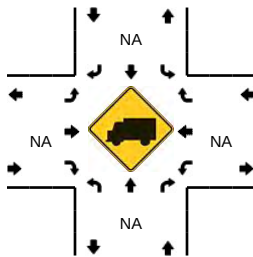
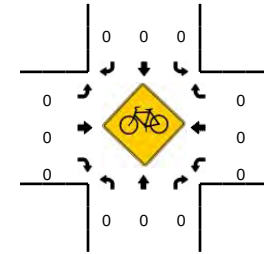
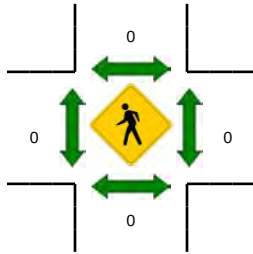
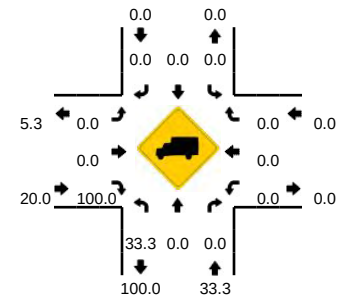
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424423
DATE: Wed, May 24 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

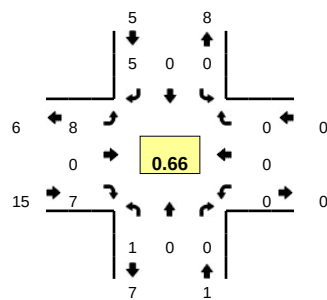


15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	2	0	0	0	0	0	4	0	1	0	0	0	0	0	0	0	7	7
8:00 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	10
8:15 AM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	13
8:30 AM	2	0	0	0	0	0	5	0	2	0	0	0	0	0	0	0	9	22
8:45 AM	1	0	0	0	0	0	5	0	2	0	1	0	0	0	0	0	9	24
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	8	0	0	0	0	0	20	0	8	0	0	0	0	0	0	0	36	
Heavy Trucks	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

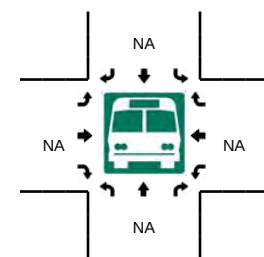
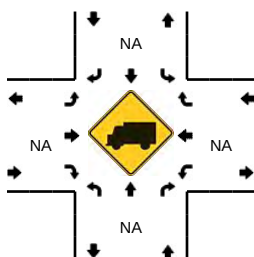
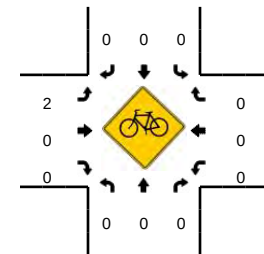
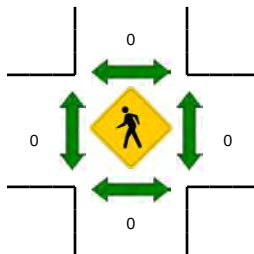
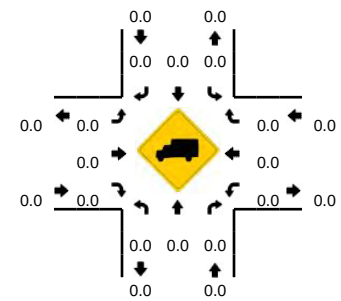
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424424
DATE: Wed, May 24 2017



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

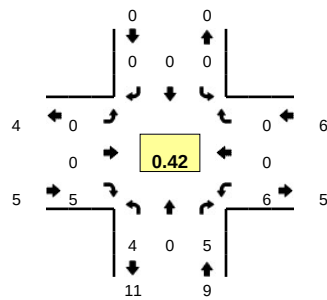


15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	4	
4:15 PM	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	3	
4:30 PM	0	0	0	0	0	0	2	0	3	0	0	0	0	0	0	0	5	
4:45 PM	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	4	16
5:00 PM	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	8	20
5:15 PM	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	4	21
5:30 PM	0	0	0	0	0	0	1	0	2	0	1	0	0	0	0	0	4	20
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	17
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	0	0	0	0	0	0	16	0	16	0	0	0	0	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

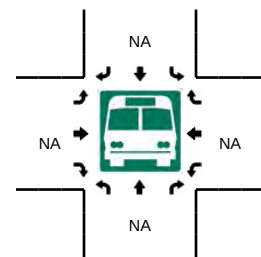
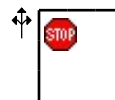
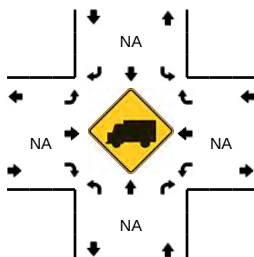
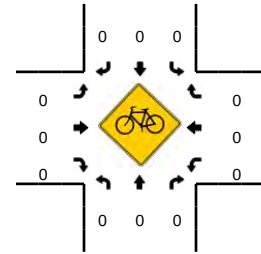
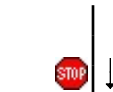
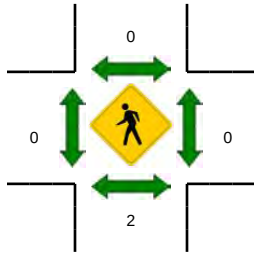
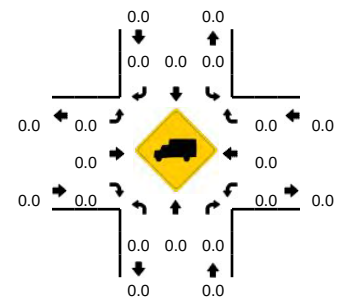
Comments:

LOCATION: GoYoga Dwy -- Presidential Pkwy
CITY/STATE: Powell, OH

QC JOB #: 14424429
DATE: Wed, May 24 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



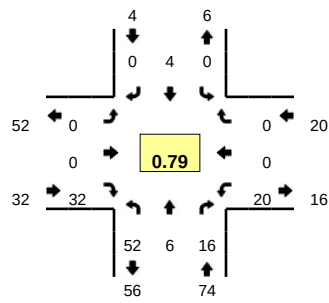
15-Min Count Period Beginning At	GoYoga Dwy (Northbound)				GoYoga Dwy (Southbound)				Presidential Pkwy (Eastbound)				Presidential Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	
7:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	8
8:00 AM	0	0	3	0	0	0	0	0	0	0	0	0	2	0	0	0	5	13
8:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	12
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
8:45 AM	3	0	1	0	0	0	0	0	0	0	5	0	3	0	0	0	12	20

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	0	4	0	0	0	0	0	0	0	20	0	12	0	0	0	48
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

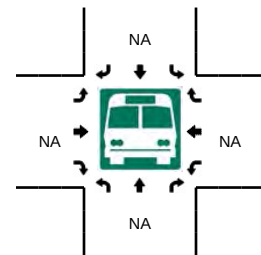
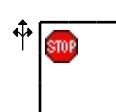
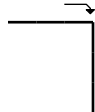
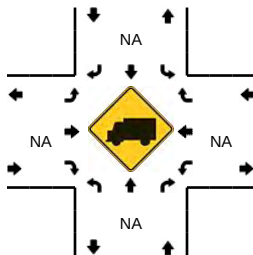
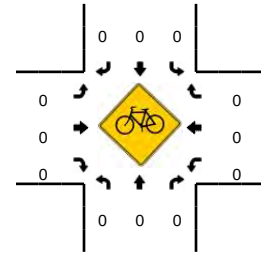
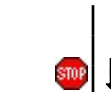
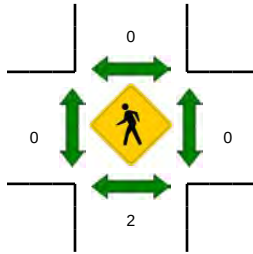
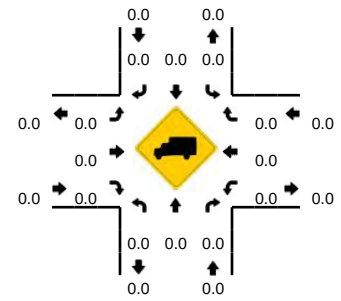
Comments:

LOCATION: GoYoga Dwy -- Presidential Pkwy
CITY/STATE: Powell, OH

QC JOB #: 14424430
DATE: Wed, May 24 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

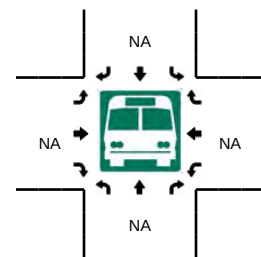
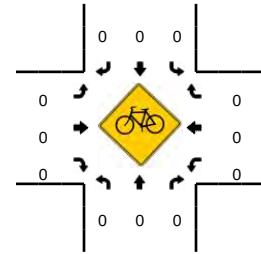
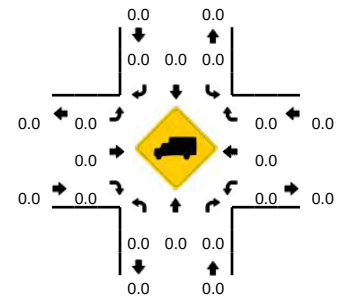


15-Min Count Period Beginning At	GoYoga Dwy (Northbound)				GoYoga Dwy (Southbound)				Presidential Pkwy (Eastbound)				Presidential Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	7	1	5	0	0	0	0	0	0	0	9	0	6	0	0	0	28	
4:15 PM	3	2	2	0	0	0	0	0	0	0	10	0	4	0	0	0	21	
4:30 PM	11	1	2	0	0	1	0	0	0	0	3	0	2	0	0	0	20	
4:45 PM	7	1	4	0	0	1	0	0	0	0	6	0	2	0	0	0	21	90
5:00 PM	12	2	4	0	0	1	0	0	0	0	5	0	6	0	0	0	30	92
5:15 PM	14	1	3	0	0	2	0	0	0	0	3	0	3	0	0	0	26	97
5:30 PM	16	1	4	0	0	0	0	0	0	0	9	0	3	0	0	0	33	110
5:45 PM	10	2	5	0	0	1	0	0	0	0	15	0	8	0	0	0	41	130

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	40	8	20	0	0	4	0	0	0	0	60	0	32	0	0	0	164
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians	0				0				0				0				0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

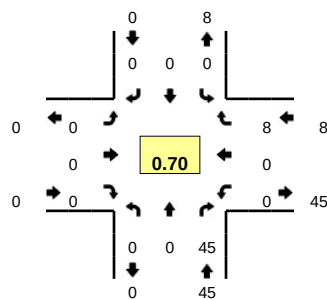
QC JOB #: 14424435
DATE: Wed, May 24 2017

[illegible]

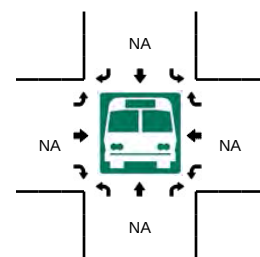
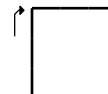
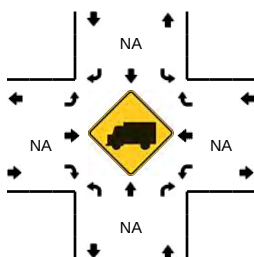
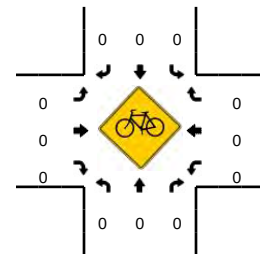
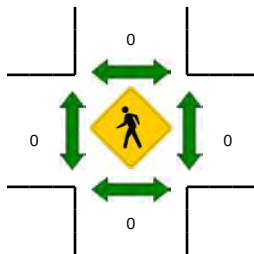
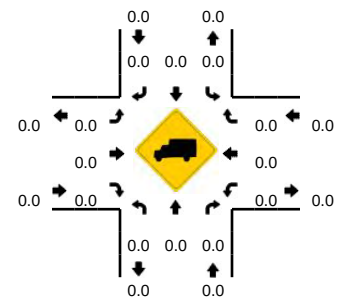
Page E45 of 70

LOCATION: Sawmill Pkwy -- Be Fit Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424436
DATE: Wed, May 24 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

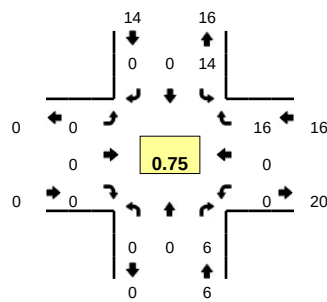


15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Be Fit Dwy (Eastbound)				Be Fit Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	2	0	10	
4:15 PM	0	0	11	0	0	0	0	0	0	0	0	0	0	0	2	0	13	
4:30 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	1	0	9	
4:45 PM	0	0	17	0	0	0	0	0	0	0	0	0	0	0	2	0	19	51
5:00 PM	0	0	9	0	0	0	0	0	0	0	0	0	0	0	3	0	12	53
5:15 PM	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11	51
5:30 PM	0	0	7	0	0	0	0	0	0	0	0	0	0	0	1	0	8	50
5:45 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	2	0	8	39
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	68	0	0	0	0	0	0	0	0	0	0	0	8	0	76	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

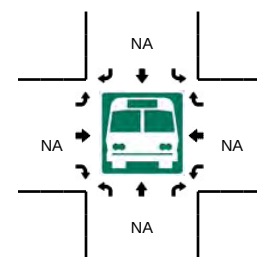
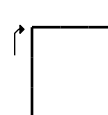
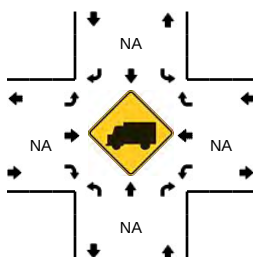
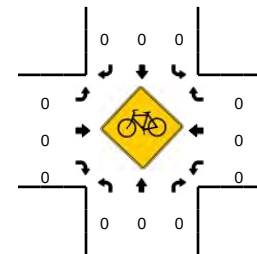
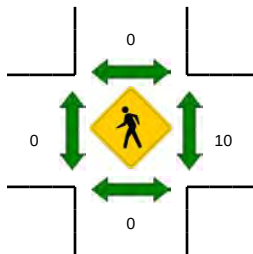
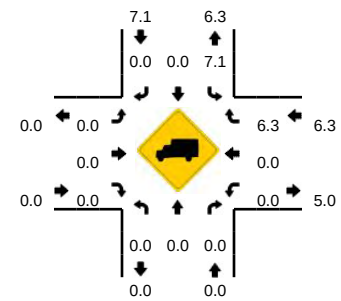
Comments:

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424441
DATE: Wed, May 24 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

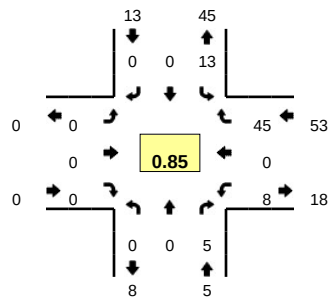


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Dwy Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	
7:15 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4	0	7	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0	5	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	21
8:00 AM	0	0	4	0	2	0	0	0	0	0	0	0	0	0	3	0	9	28
8:15 AM	0	0	1	0	5	0	0	0	0	0	0	0	0	0	2	0	8	29
8:30 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	4	0	7	31
8:45 AM	0	0	0	0	5	0	0	0	0	0	0	0	0	0	7	0	12	36
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	0	0	20	0	0	0	0	0	0	0	0	0	28	0	48	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	8	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

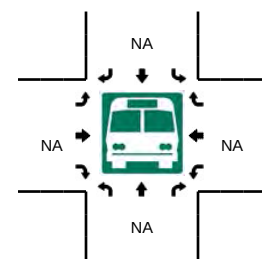
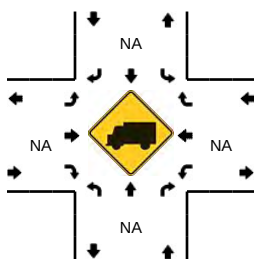
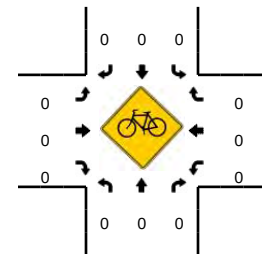
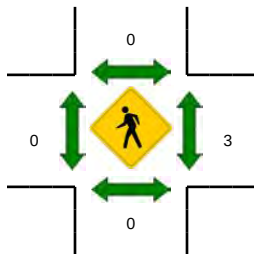
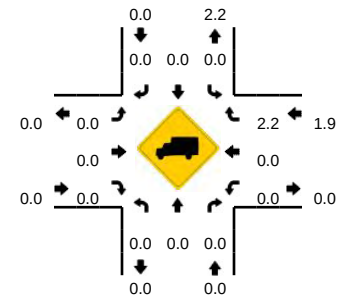
Comments:

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424442
DATE: Wed, May 24 2017



Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

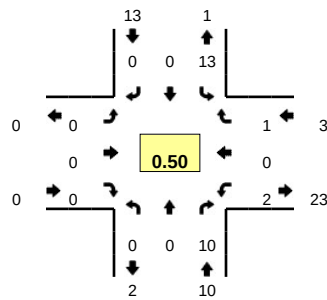


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Dwy Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	7	0	0	0	0	0	0	0	1	0	12	0	20	
4:15 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	12	0	15	
4:30 PM	0	0	1	0	3	0	0	0	0	0	0	0	3	0	12	0	19	69
4:45 PM	0	0	1	0	5	0	0	0	0	0	0	0	2	0	7	0	15	
5:00 PM	0	0	2	0	1	0	0	0	0	0	0	0	1	0	12	0	16	65
5:15 PM	0	0	1	0	4	0	0	0	0	0	0	0	2	0	14	0	21	71
5:30 PM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	8	0	13	65
5:45 PM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	13	0	19	69
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	4	0	16	0	0	0	0	0	0	0	8	0	56	0	84	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

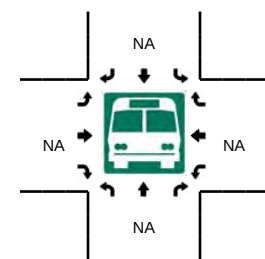
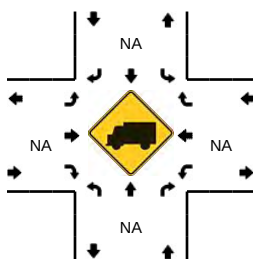
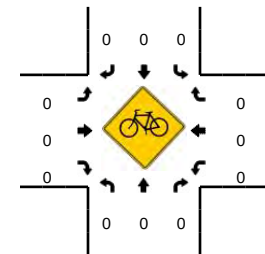
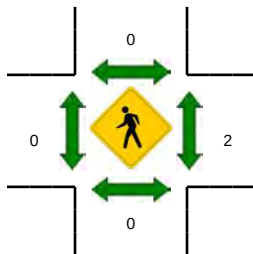
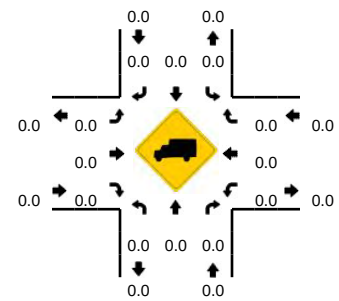
Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424447
DATE: Wed, May 24 2017



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

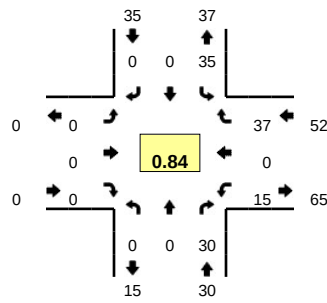


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle Dwy (Eastbound)				Hilliard Shopping Center Middle Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	
7:15 AM	0	0	8	0	4	0	0	0	0	0	0	0	0	0	1	0	13	
7:30 AM	0	0	1	0	4	0	0	0	0	0	0	0	1	0	0	0	6	
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	25
8:00 AM	0	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	4	26
8:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	2	0	5	18
8:30 AM	0	0	1	0	4	0	0	0	0	0	0	0	1	0	3	0	9	21
8:45 AM	0	0	2	0	2	0	0	0	0	0	0	0	1	0	1	0	6	24
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	32	0	16	0	0	0	0	0	0	0	0	0	4	0	52	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

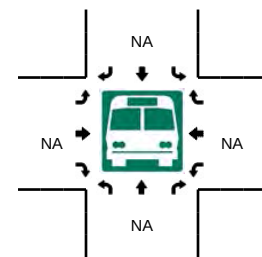
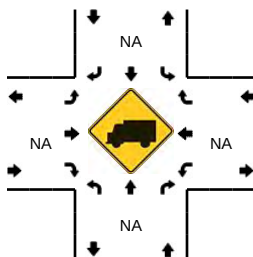
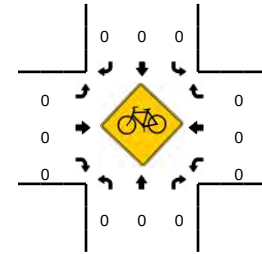
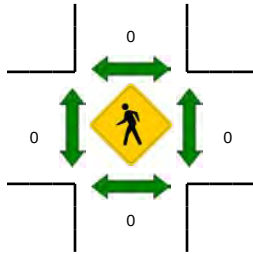
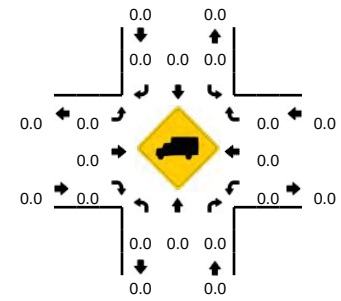
Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424448
DATE: Wed, May 24 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



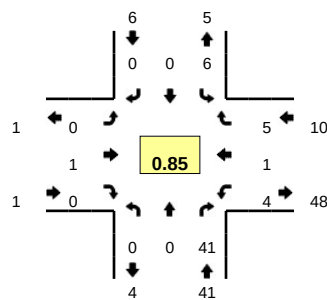
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle (Eastbound)				Hilliard Shopping Center Middle (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	0	0	7	0	9	0	0	0	0	0	0	0	0	1	0	8	0	25	
4:15 PM	0	0	5	0	6	0	0	0	0	0	0	0	0	4	0	2	0	17	
4:30 PM	0	0	5	0	9	0	0	0	0	0	0	0	0	3	0	8	0	25	
4:45 PM	0	0	4	0	9	0	0	0	0	0	0	0	0	3	0	9	0	25	92
5:00 PM	0	0	10	0	4	0	0	0	0	0	0	0	0	5	0	4	0	23	90
5:15 PM	0	0	7	0	12	0	0	0	0	0	0	0	0	5	0	8	0	32	105
5:30 PM	0	0	7	0	11	0	0	0	0	0	0	0	0	2	0	15	0	35	115
5:45 PM	0	0	6	0	8	0	0	0	0	0	0	0	0	3	0	10	0	27	117

[illegible]

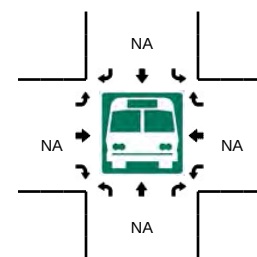
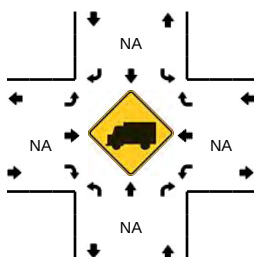
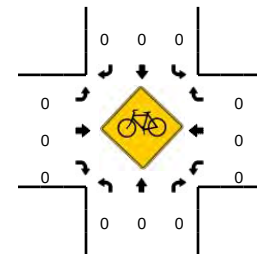
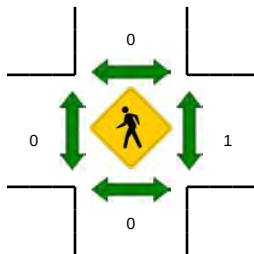
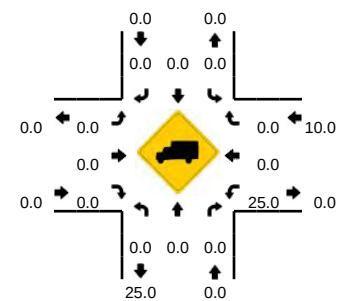
Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424453
DATE: Wed, May 24 2017



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

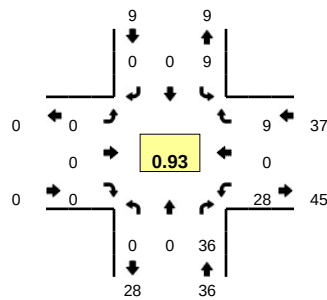


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South (Eastbound)				Hilliard Shopping Center South (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:15 AM	0	0	13	0	1	0	0	0	0	1	0	0	1	0	1	0	17	
7:30 AM	0	0	13	0	1	0	0	0	0	0	0	0	1	1	0	0	16	
7:45 AM	0	0	10	0	3	0	0	0	0	0	0	0	1	0	3	0	17	52
8:00 AM	0	0	5	0	1	0	0	0	0	0	0	0	1	0	1	0	8	58
8:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	44
8:30 AM	0	0	2	0	0	0	0	0	0	0	0	0	4	0	1	0	7	35
8:45 AM	0	0	2	0	2	0	0	0	0	0	0	0	3	0	1	0	8	26
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	52	0	4	0	0	0	0	4	0	0	4	0	4	0	68	
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4	
Pedestrians			0				0				0				0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

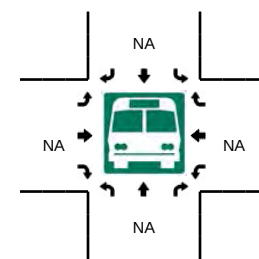
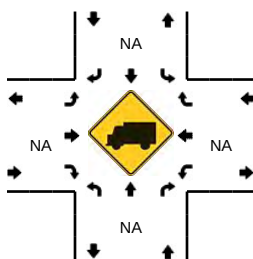
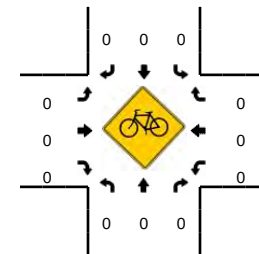
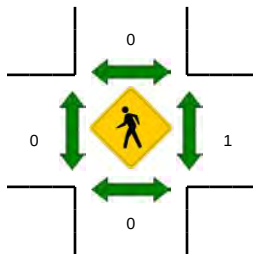
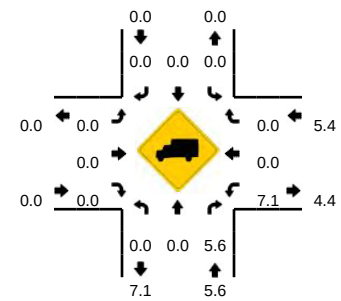
Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424454
DATE: Wed, May 24 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

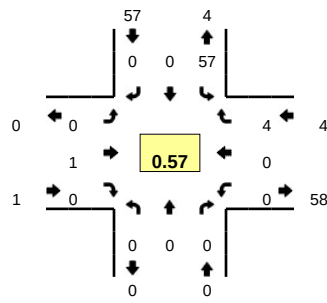


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South Dwy (Eastbound)				Hilliard Shopping Center South Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	8	0	4	0	0	0	0	0	0	0	4	0	6	0	22	
4:15 PM	0	0	5	0	1	0	0	0	0	0	0	0	5	0	3	0	14	
4:30 PM	0	0	1	0	3	0	0	0	0	0	0	0	6	0	1	0	11	
4:45 PM	0	0	11	0	2	0	0	0	0	0	0	0	4	0	3	0	20	67
5:00 PM	0	0	6	0	4	0	0	0	0	0	0	0	10	0	2	0	22	67
5:15 PM	0	0	11	0	1	0	0	0	0	0	0	0	4	0	2	0	18	71
5:30 PM	0	0	8	0	2	0	0	0	0	0	0	0	10	0	2	0	22	82
5:45 PM	0	0	7	0	1	0	0	0	0	0	0	0	7	0	3	0	18	80
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	24	0	16	0	0	0	0	0	0	0	40	0	8	0	88	
Heavy Trucks	0	0	4		0	0	0		0	0	0		4	0	0		8	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

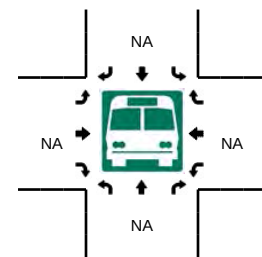
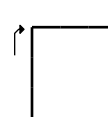
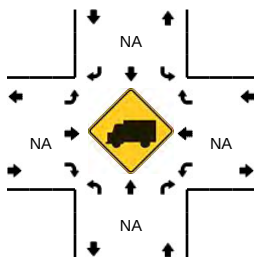
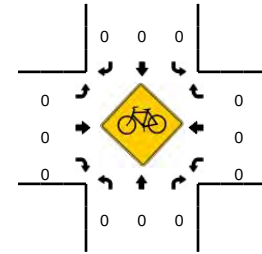
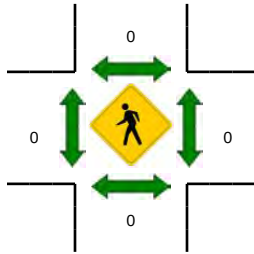
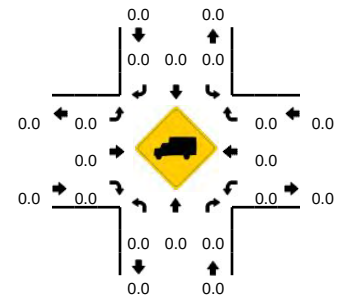
Comments:

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424401
DATE: Thu, May 25 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



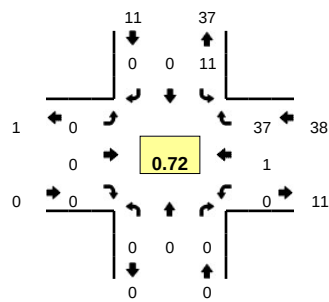
15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North (Eastbound)				Perimeter Office Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3	
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
7:30 AM	0	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	13	
7:45 AM	0	0	0	0	10	0	0	0	0	0	0	0	0	0	3	0	13	31
8:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	4	32
8:15 AM	0	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	14	44
8:30 AM	0	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	17	48
8:45 AM	0	0	0	0	22	0	0	0	0	1	0	0	0	0	4	0	27	62

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	88	0	0	0	0	4	0	0	0	0	16	0	108
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

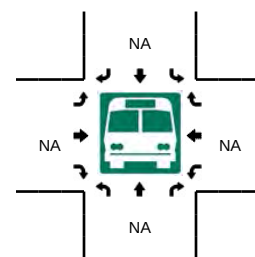
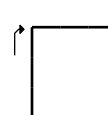
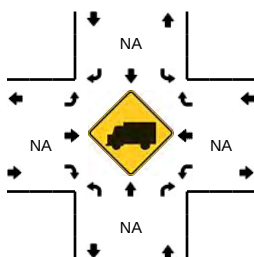
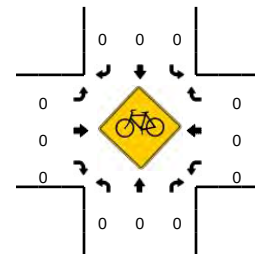
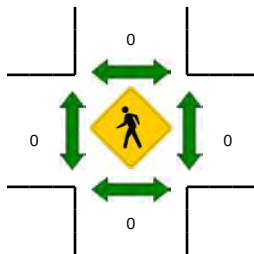
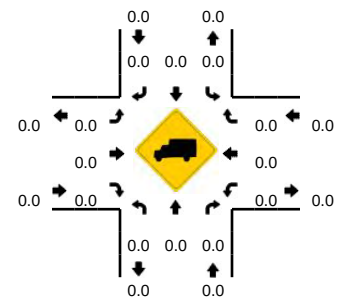
Comments:

LOCATION: Venture Dr -- Perimeter Office Center North Dwy
CITY/STATE: Dublin, OH

QC JOB #: 14424402
DATE: Thu, May 25 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

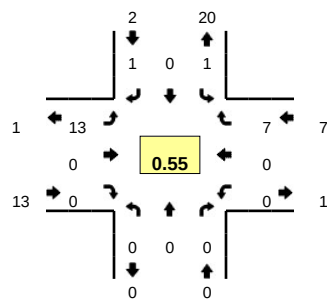


15-Min Count Period Beginning At	Venture Dr (Northbound)				Venture Dr (Southbound)				Perimeter Office Center North Dwy (Eastbound)				Perimeter Office Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	6	0	9	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	6	0	7	32
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	15	0	17	40
5:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0	10	44
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	9	0	10	44
5:45 PM	0	0	0	0	6	0	0	0	0	0	0	0	0	0	6	0	12	49
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	4	0	0	0	0	0	0	0	0	4	60	0	68	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

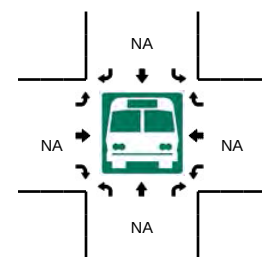
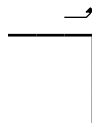
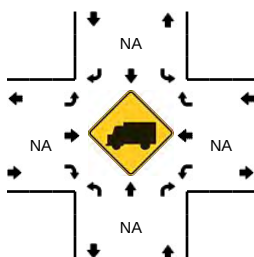
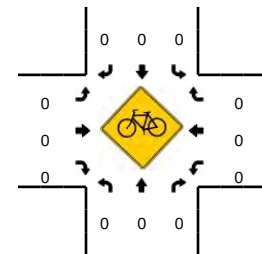
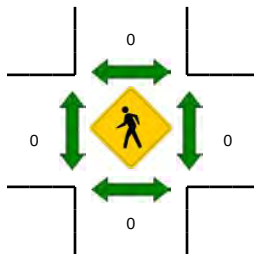
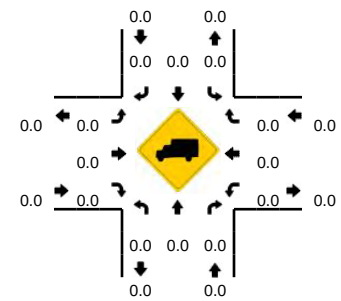
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424407
DATE: Thu, May 25 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



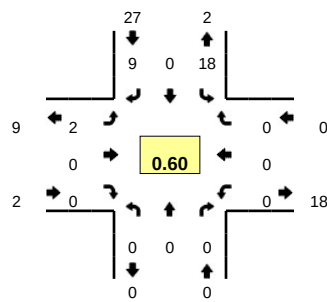
15-Min Counting Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:15 AM	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	0	5	
7:30 AM	0	1	0	0	1	0	0	0	3	0	0	0	0	0	0	0	5	
7:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	5	17
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	3	18
8:15 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	2	0	7	20
8:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	17
8:45 AM	0	0	0	0	1	0	1	0	5	0	0	0	0	0	3	0	10	22

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	4	0	20	0	0	0	0	0	12	0	40
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

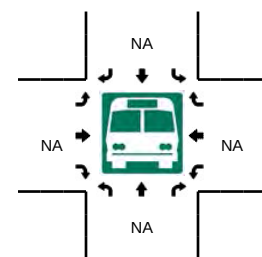
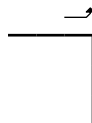
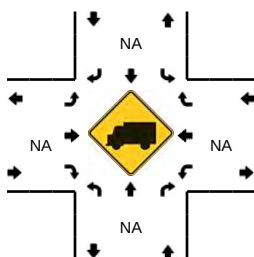
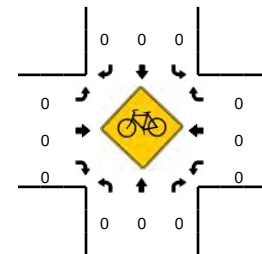
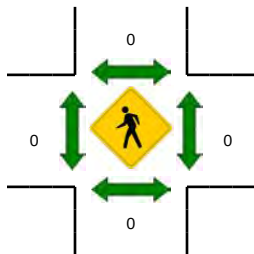
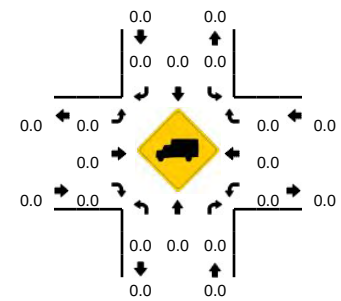
Comments:

LOCATION: Perimeter Office Center South Dwy -- Venture Dr
CITY/STATE: Dublin, OH

QC JOB #: 14424408
DATE: Thu, May 25 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

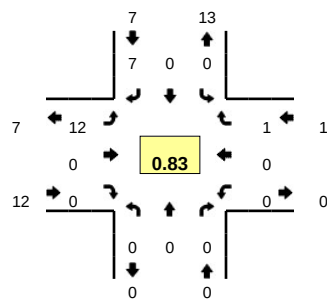


15-Min Counting Period Beginning At	Perimeter Office Center South Dwy (Northbound)				Perimeter Office Center South Dwy (Southbound)				Venture Dr (Eastbound)				Venture Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	6	
4:15 PM	0	0	0	0	2	0	2	0	2	0	0	0	0	0	0	0	6	
4:30 PM	0	0	0	0	9	0	3	0	0	0	0	0	0	0	0	0	12	
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	26
5:00 PM	0	0	0	0	5	0	4	0	0	0	0	0	0	0	0	0	9	29
5:15 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	25
5:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	15
5:45 PM	0	0	0	0	4	0	3	0	1	0	0	0	0	0	0	0	8	21
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	36	0	12	0	0	0	0	0	0	0	0	0	48	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

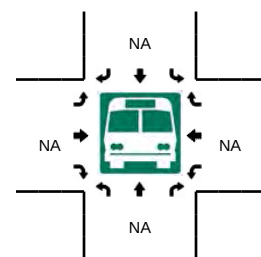
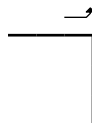
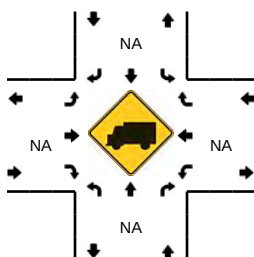
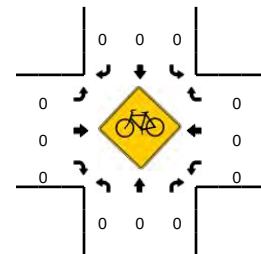
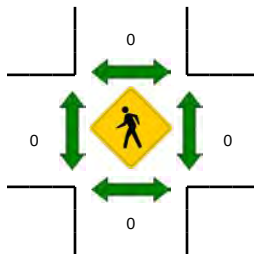
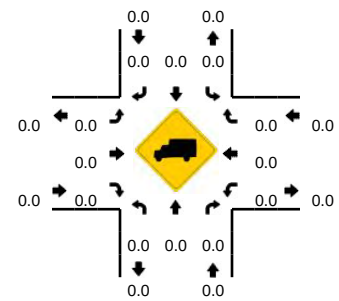
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424413
DATE: Thu, May 25 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

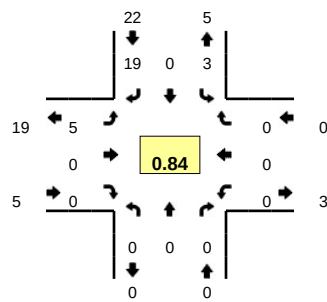


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	3	
7:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	
7:45 AM	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	5	10
8:00 AM	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	6	16
8:15 AM	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	16
8:30 AM	0	0	0	0	0	0	2	0	4	0	0	0	0	0	0	0	6	20
8:45 AM	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5	20
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	12	0	12	0	0	0	0	0	0	0	24	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

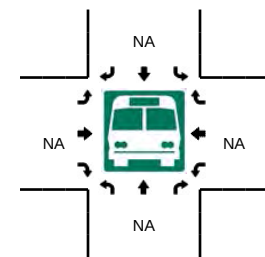
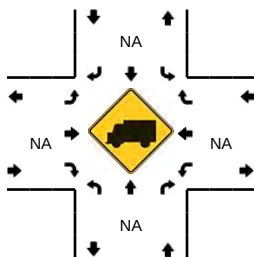
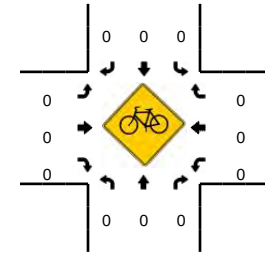
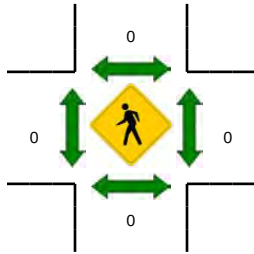
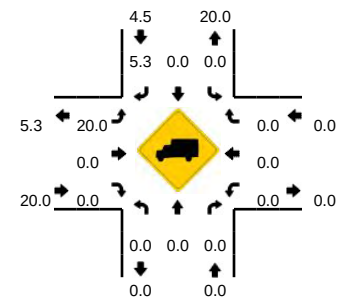
Comments:

LOCATION: Sawmill Business Park South Dwy -- N Hampton Dr
CITY/STATE: Powell, OH

QC JOB #: 14424414
DATE: Thu, May 25 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

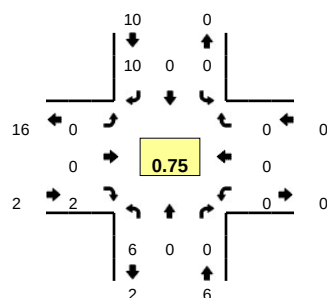


15-Min Count Period Beginning At	Sawmill Business Park South Dwy (Northbound)				Sawmill Business Park South Dwy (Southbound)				N Hampton Dr (Eastbound)				N Hampton Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	
4:15 PM	0	0	0	0	2	0	3	0	3	0	0	0	0	0	0	0	8	
4:30 PM	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	5	
4:45 PM	0	0	0	0	0	0	5	0	2	0	0	0	0	0	0	0	7	23
5:00 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	7	27
5:15 PM	0	0	0	0	1	0	4	0	2	0	0	0	0	0	0	0	7	26
5:30 PM	0	0	0	0	1	0	2	0	1	0	0	0	0	0	1	0	5	26
5:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	21
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	8	0	12	0	12	0	0	0	0	0	0	0	32	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

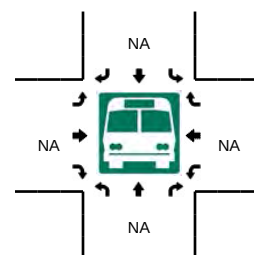
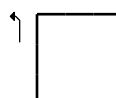
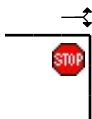
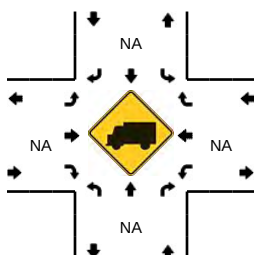
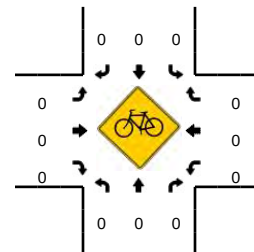
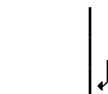
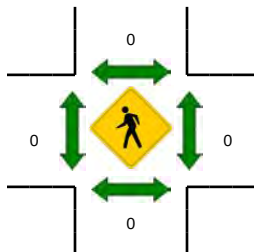
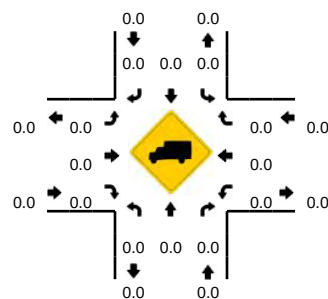
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424419
DATE: Thu, May 25 2017



Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

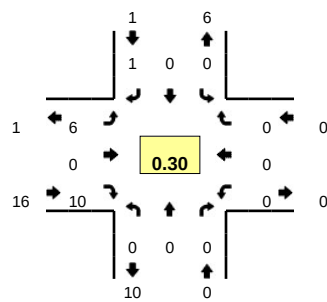


15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	
7:45 AM	4	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6	8
8:00 AM	1	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	4	12
8:15 AM	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	3	15
8:30 AM	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	5	18
8:45 AM	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	6	18
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	24	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

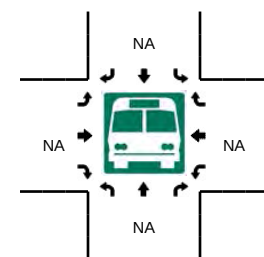
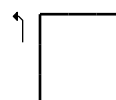
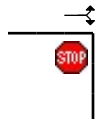
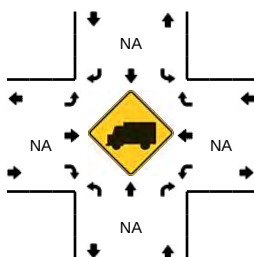
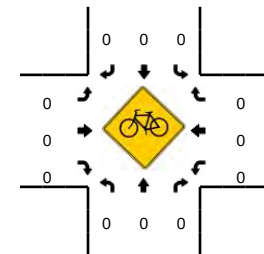
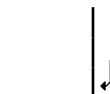
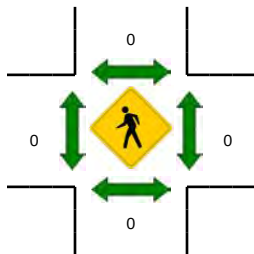
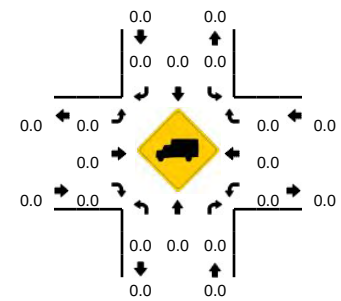
Comments:

LOCATION: Sawmill Rd -- Sawmill Business Park North Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424420
DATE: Thu, May 25 2017



Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

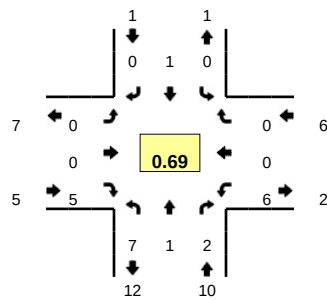


15-Min Count Period Beginning At	Sawmill Rd (Northbound)				Sawmill Rd (Southbound)				Sawmill Business Park North (Eastbound)				Sawmill Business Park North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	4	
4:15 PM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	7
5:00 PM	0	0	0	0	0	0	1	0	5	0	8	0	0	0	0	0	14	17
5:15 PM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	17
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	0	0	4	0	20	0	32	0	0	0	0	0	56	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

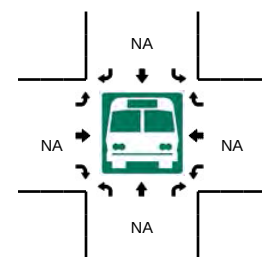
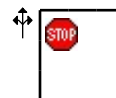
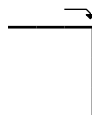
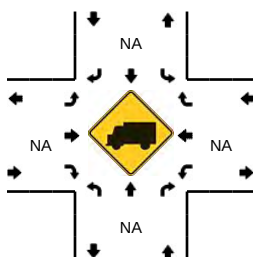
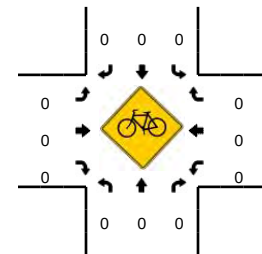
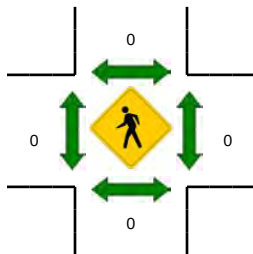
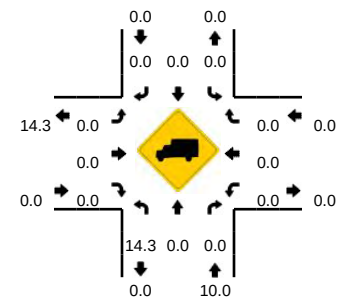
Comments:

LOCATION: GoYoga Dwy -- Presidential Pkwy
CITY/STATE: Powell, OH

QC JOB #: 14424425
DATE: Thu, May 25 2017



Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 8:00 AM -- 8:15 AM

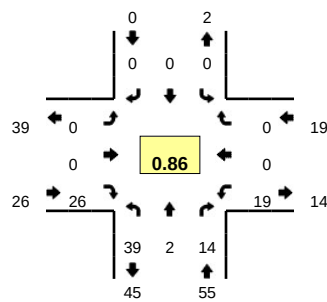


15-Min Count Period Beginning At	GoYoga Dwy (Northbound)				GoYoga Dwy (Southbound)				Presidential Pkwy (Eastbound)				Presidential Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	8	
7:15 AM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
7:30 AM	1	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	4	
7:45 AM	2	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	5	20
8:00 AM	3	1	1	0	0	0	0	0	0	0	1	0	2	0	0	0	8	20
8:15 AM	1	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	5	22
8:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	21
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	3	19
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	4	4	0	0	0	0	0	0	0	4	0	8	0	0	0	32	
Heavy Trucks	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

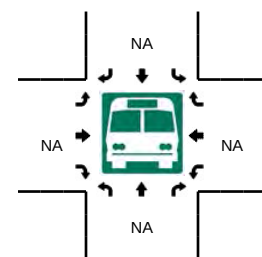
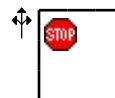
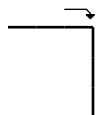
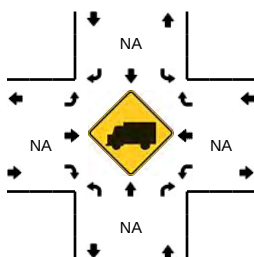
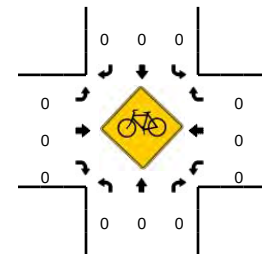
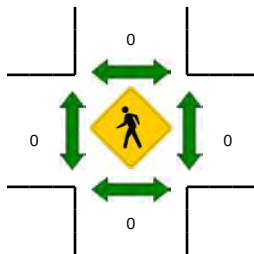
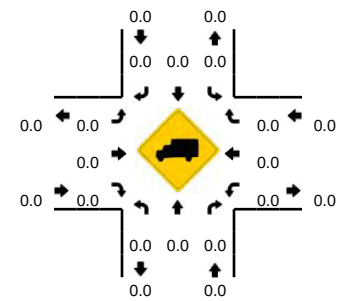
Comments:

LOCATION: GoYoga Dwy -- Presidential Pkwy
CITY/STATE: Powell, OH

QC JOB #: 14424426
DATE: Thu, May 25 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM



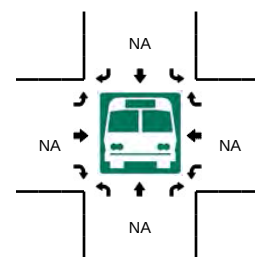
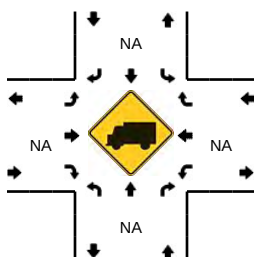
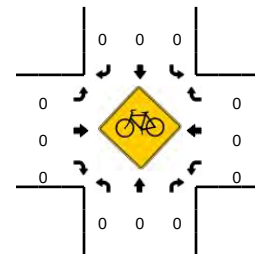
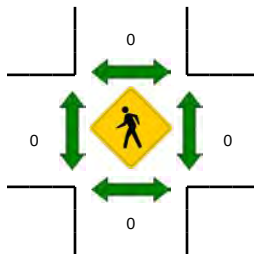
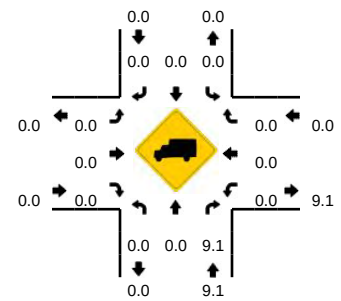
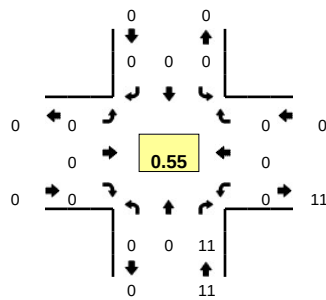
15-Min Count Period Beginning At	GoYoga Dwy (Northbound)				GoYoga Dwy (Southbound)				Presidential Pkwy (Eastbound)				Presidential Pkwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	1	2	0	0	0	0	0	0	0	7	0	2	0	0	0	20	
4:15 PM	10	2	4	0	0	0	0	0	0	0	14	0	1	0	0	0	31	
4:30 PM	2	2	3	0	0	1	0	0	0	0	6	0	1	0	0	0	15	
4:45 PM	4	0	3	0	0	0	0	0	0	0	10	0	9	0	0	0	26	92
5:00 PM	8	1	4	0	0	0	0	0	0	0	6	0	1	0	0	0	20	92
5:15 PM	8	0	5	0	0	0	0	0	0	0	3	0	6	0	0	0	22	83
5:30 PM	16	0	1	0	0	0	0	0	0	0	8	0	4	0	0	0	29	97
5:45 PM	7	1	4	0	0	0	0	0	0	0	9	0	8	0	0	0	29	100
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	64	0	4	0	0	0	0	0	0	0	32	0	16	0	0	0	116	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

LOCATION: Sawmill Pkwy -- Be Fit Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424431
DATE: Thu, May 25 2017

Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:15 AM -- 7:30 AM

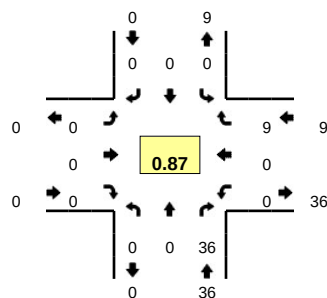


15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Be Fit Dwy (Eastbound)				Be Fit Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:15 AM	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
7:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
7:45 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	11
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
8:30 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	6
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	6
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	20	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

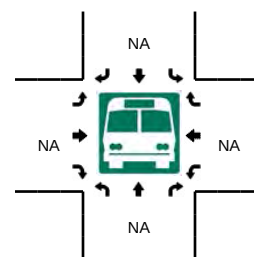
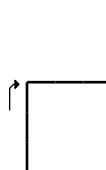
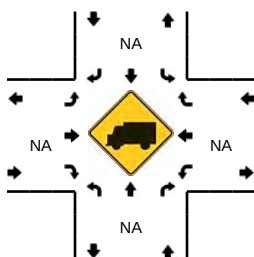
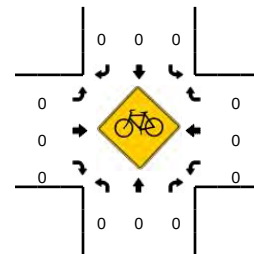
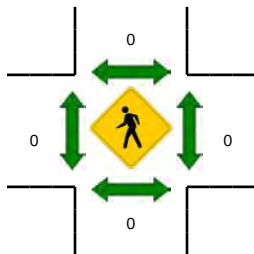
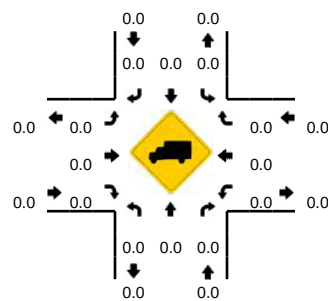
Comments:

LOCATION: Sawmill Pkwy -- Be Fit Dwy
CITY/STATE: Powell, OH

QC JOB #: 14424432
DATE: Thu, May 25 2017



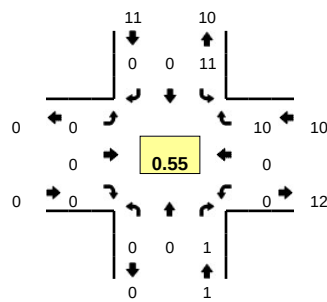
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



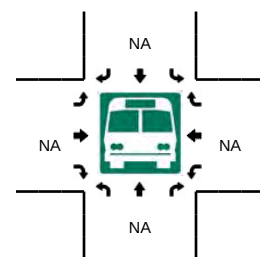
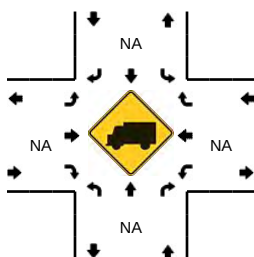
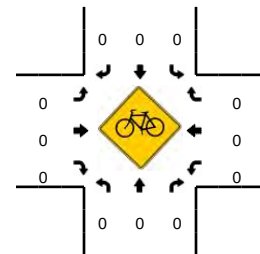
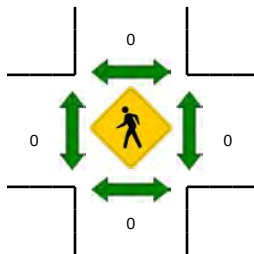
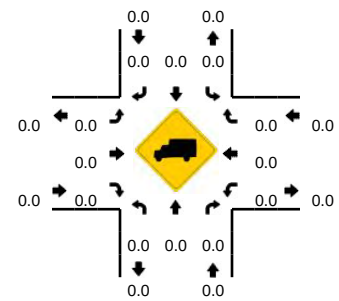
15-Min Count Period Beginning At	Sawmill Pkwy (Northbound)				Sawmill Pkwy (Southbound)				Be Fit Dwy (Eastbound)				Be Fit Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
4:15 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	4	0	10	
4:30 PM	0	0	9	0	0	0	0	0	0	0	0	0	0	0	5	0	14	
4:45 PM	0	0	8	0	0	0	0	0	0	0	0	0	0	0	2	0	10	40
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	1	0	7	41
5:15 PM	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	0	13	44
5:30 PM	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6	0	12	42
5:45 PM	0	0	12	0	0	0	0	0	0	0	0	0	0	0	1	0	13	45
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	48	0	0	0	0	0	0	0	0	0	0	0	4	0	52	
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0	
Pedestrians	0				0				0				0				0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		
Comments:																		

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424437
DATE: Thu, May 25 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM

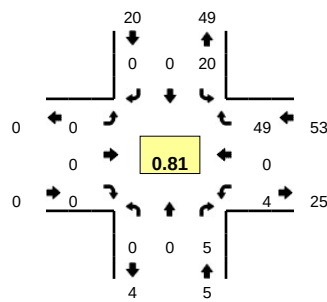


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	3	0	5	
7:15 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	1	0	4	
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	3	
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	14
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	4	13
8:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	4	0	6	15
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	14
8:45 AM	0	0	1	0	6	0	0	0	0	0	0	0	0	0	3	0	10	22
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Total	
All Vehicles	0	0	4	0	24	0	0	0	0	0	0	0	0	0	12	0	40	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

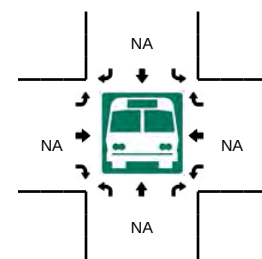
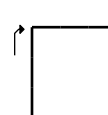
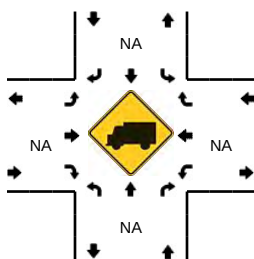
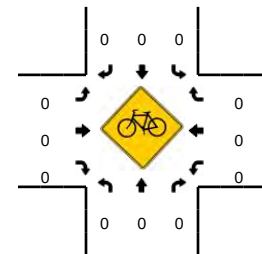
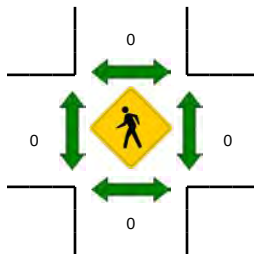
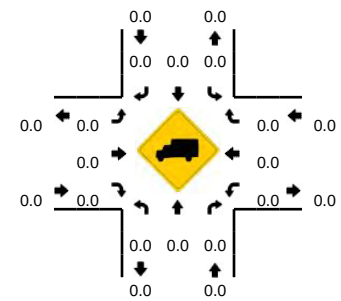
Comments:

LOCATION: Main St -- Hilliard Shopping Center North Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424438
DATE: Thu, May 25 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM

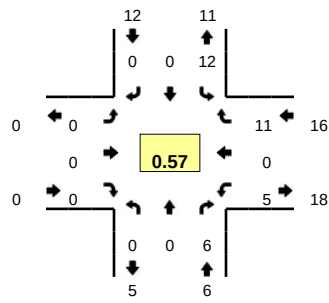


15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center North Dwy (Eastbound)				Hilliard Shopping Center North Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	1	0	10	0	0	0	0	0	0	0	2	0	9	0	22	
4:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	3	0	9	0	14	
4:30 PM	0	0	3	0	5	0	0	0	0	1	0	0	0	0	9	0	18	
4:45 PM	0	0	1	0	5	0	0	0	0	0	0	0	0	0	11	0	17	71
5:00 PM	0	0	1	0	4	0	0	0	0	0	0	0	0	0	11	0	16	65
5:15 PM	0	0	0	0	6	0	0	0	0	0	0	0	2	0	8	0	16	67
5:30 PM	0	0	1	0	6	0	0	0	0	0	0	0	2	0	13	0	22	71
5:45 PM	0	0	3	0	4	0	0	0	0	0	0	0	0	0	17	0	24	78
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	12	0	16	0	0	0	0	0	0	0	0	0	68	0	96	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

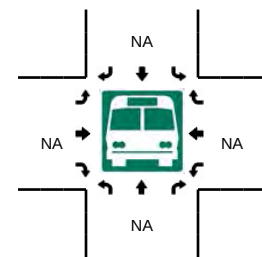
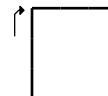
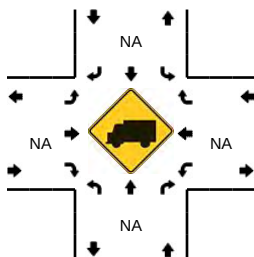
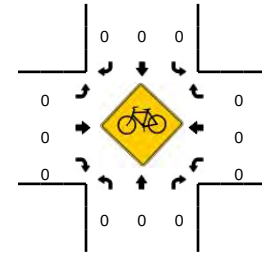
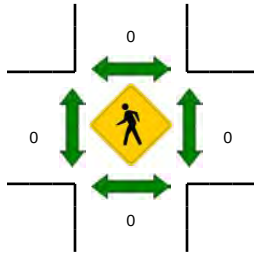
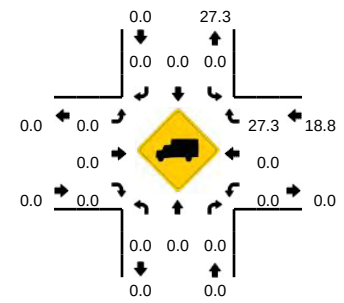
Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424443
DATE: Thu, May 25 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



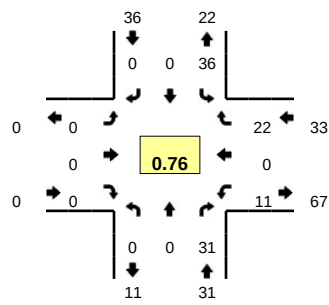
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle Dwy (Eastbound)				Hilliard Shopping Center Middle Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	6	
7:15 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3	
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
7:45 AM	0	0	3	0	1	0	0	0	0	0	0	0	2	0	2	0	8	19
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	1	0	1	0	4	17
8:15 AM	0	0	2	0	3	0	0	0	0	0	0	0	0	0	4	0	9	23
8:30 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3	0	6	27
8:45 AM	0	0	3	0	5	0	0	0	0	0	0	0	4	0	3	0	15	34

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	12	0	20	0	0	0	0	0	0	0	16	0	12	0	60
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

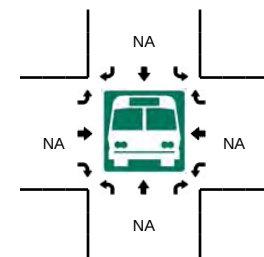
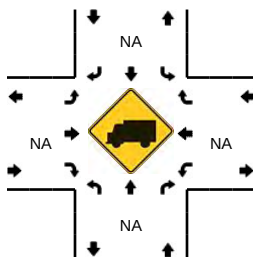
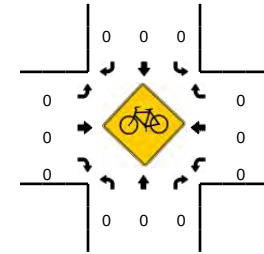
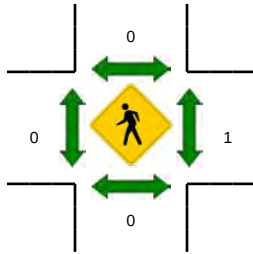
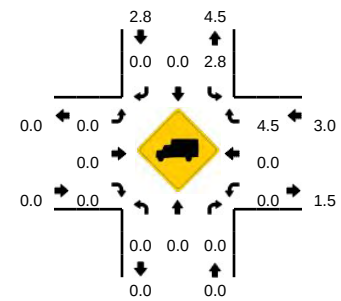
Comments:

LOCATION: Main St -- Hilliard Shopping Center Middle Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424444
DATE: Thu, May 25 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:45 PM -- 6:00 PM



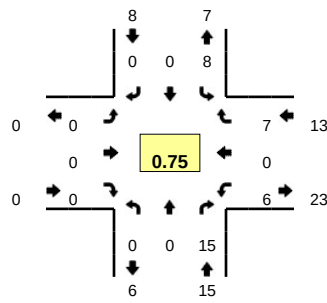
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center Middle Dwy (Eastbound)				Hilliard Shopping Center Middle Dwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	5	0	5	0	0	0	0	0	0	0	1	0	3	0	14	
4:15 PM	0	0	5	0	1	0	0	0	0	0	0	0	7	0	3	0	16	
4:30 PM	0	0	4	0	7	0	0	0	0	0	0	0	5	0	3	0	19	
4:45 PM	0	0	5	0	8	0	0	0	0	0	0	0	6	0	5	0	24	73
5:00 PM	0	0	8	0	6	0	0	0	0	0	0	0	2	0	1	0	17	76
5:15 PM	0	0	9	0	8	0	0	0	0	0	0	0	1	0	8	0	26	86
5:30 PM	0	0	7	0	7	0	0	0	0	0	0	0	3	0	7	0	24	91
5:45 PM	0	0	7	0	15	0	0	0	0	0	0	0	5	0	6	0	33	100

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	28	0	60	0	0	0	0	0	0	0	20	0	24	0	132
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad																	
Stopped Buses																	

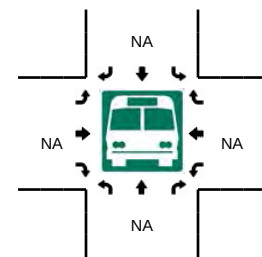
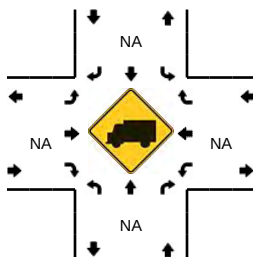
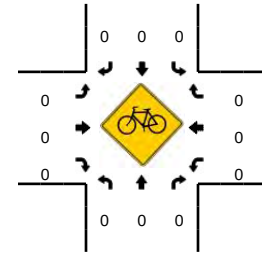
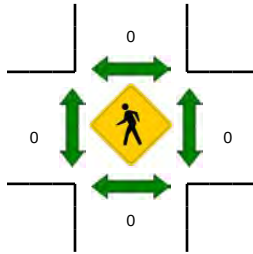
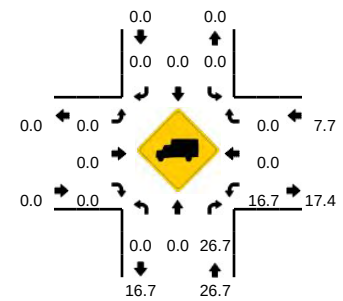
Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424449
DATE: Thu, May 25 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:45 AM -- 9:00 AM



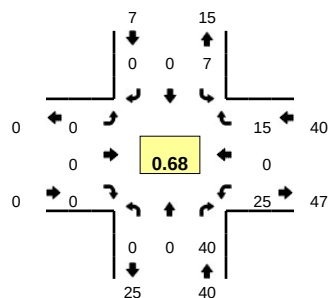
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South (Eastbound)				Hilliard Shopping Center South (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	1	0	0	0	0	0	0	0	1	1	0	0	5	
7:15 AM	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3	
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	
7:45 AM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	2	0	8	19
8:00 AM	0	0	3	0	3	0	0	0	0	0	0	0	1	0	3	0	10	24
8:15 AM	0	0	3	0	1	0	0	0	0	0	0	0	0	0	2	0	6	27
8:30 AM	0	0	4	0	2	0	0	0	0	0	0	0	1	0	1	0	8	32
8:45 AM	0	0	5	0	2	0	0	0	0	0	0	0	4	0	1	0	12	36

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	20	0	8	0	0	0	0	0	0	0	16	0	4	0	48
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	4	0	0	0	8
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

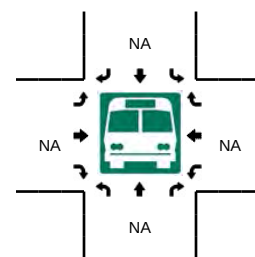
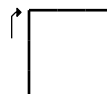
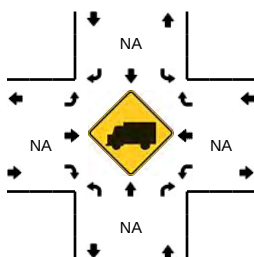
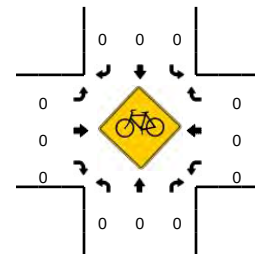
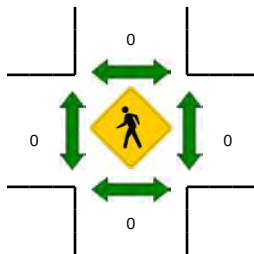
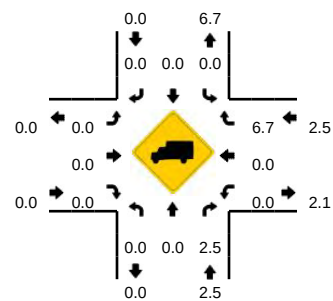
Comments:

LOCATION: Main St -- Hilliard Shopping Center South Dwy
CITY/STATE: Franklin, OH

QC JOB #: 14424450
DATE: Thu, May 25 2017



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



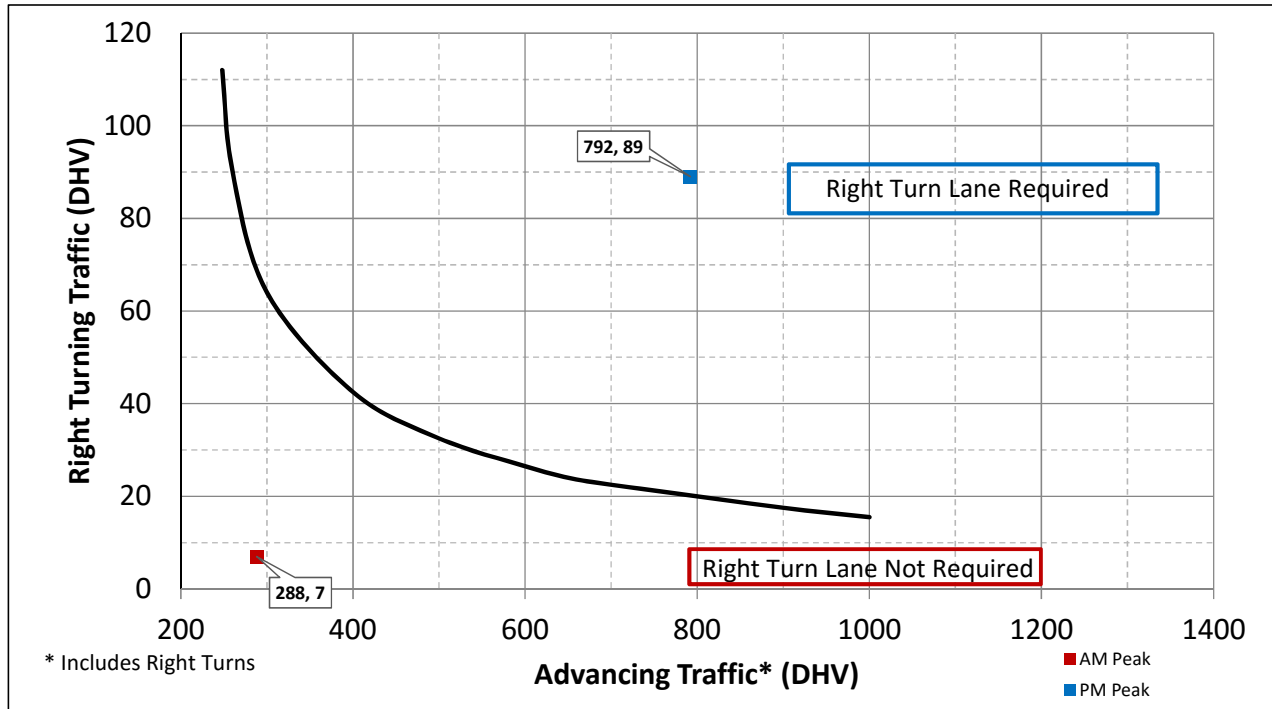
15-Min Count Period Beginning At	Main St (Northbound)				Main St (Southbound)				Hilliard Shopping Center South (Eastbound)				Hilliard Shopping Center South (Westbound)				Daily Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	13	0	2	0	0	0	0	0	0	0	4	0	5	0	24	
4:15 PM	0	0	5	0	2	0	0	0	0	0	0	0	9	0	2	0	18	
4:30 PM	0	0	9	0	0	0	0	0	0	0	0	0	7	1	1	0	18	
4:45 PM	0	0	5	0	3	0	0	0	0	0	0	0	1	1	2	0	12	72
5:00 PM	0	0	6	0	0	0	0	0	0	0	0	0	3	0	5	0	14	62
5:15 PM	0	0	13	0	4	0	0	0	0	0	0	0	9	0	6	0	32	76
5:30 PM	0	0	11	0	2	0	0	0	0	0	0	0	7	0	1	0	21	79
5:45 PM	0	0	10	0	1	0	0	0	0	0	0	0	6	0	3	0	20	87
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	52	0	16	0	0	0	0	0	0	0	36	0	24	0	128	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Comments:

Appendix F Turn Lane & Signal Warrant Analysis



2-Lane Highway Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



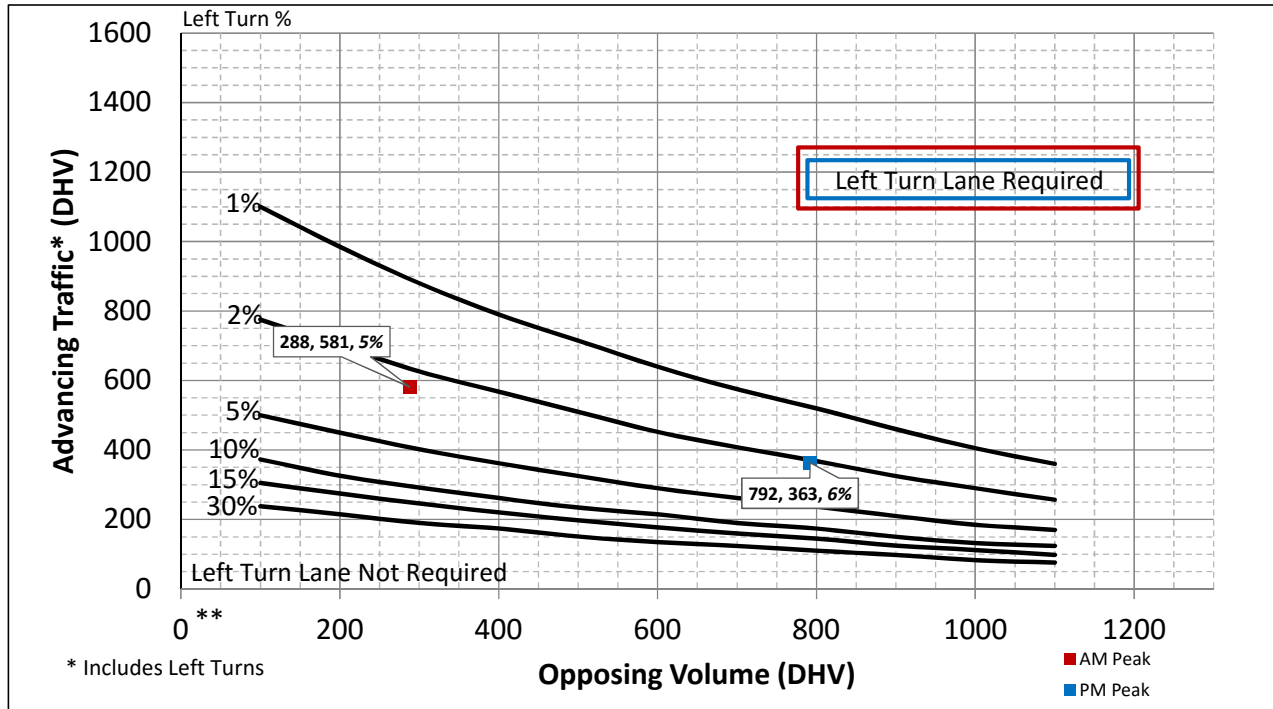
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	288	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	89	VPH
	Advancing Traffic	792	VPH
	Right Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	
Is Right Turn Warrant Met		Yes	See Above

* Turn Lane Length includes 50 ft diverging taper

* Turn Lane Length includes 50 ft diverging taper

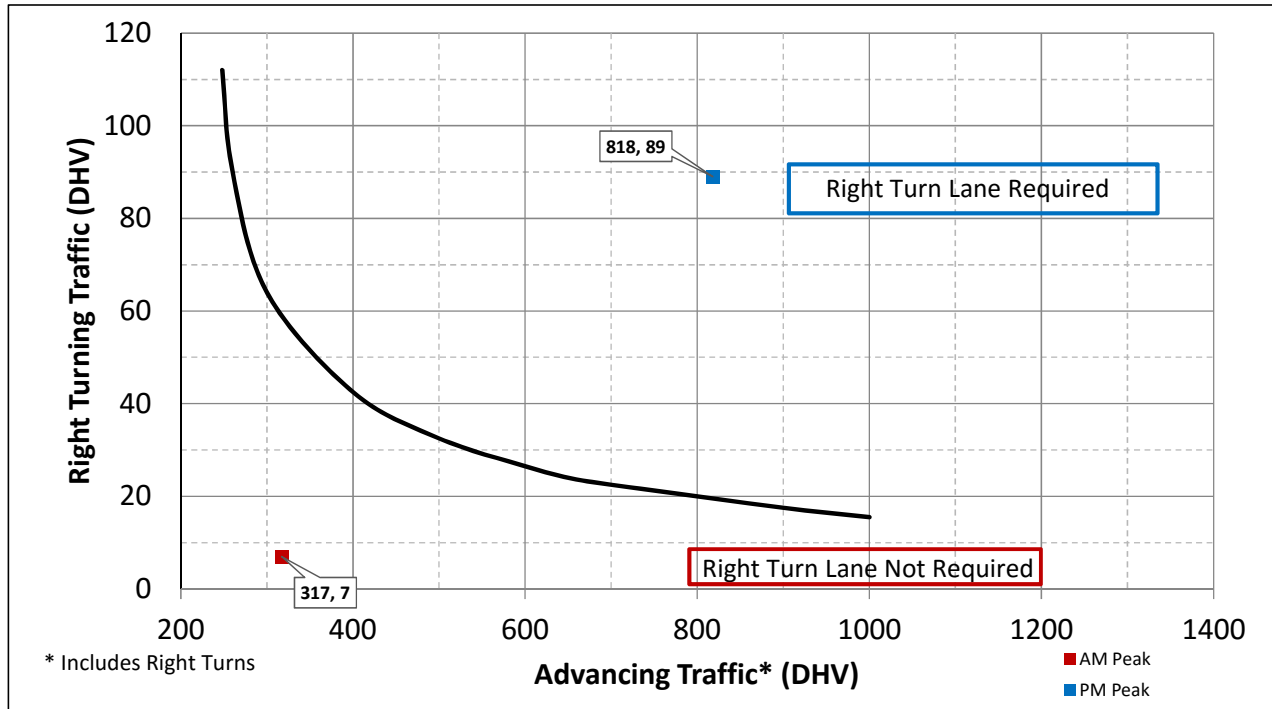
2-Lane Highway Left Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



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	31	VPH
	Advancing Traffic	581	VPH
	Opposing Volume	288	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	23	VPH
	Advancing Traffic	363	VPH
	Opposing Volume	792	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)



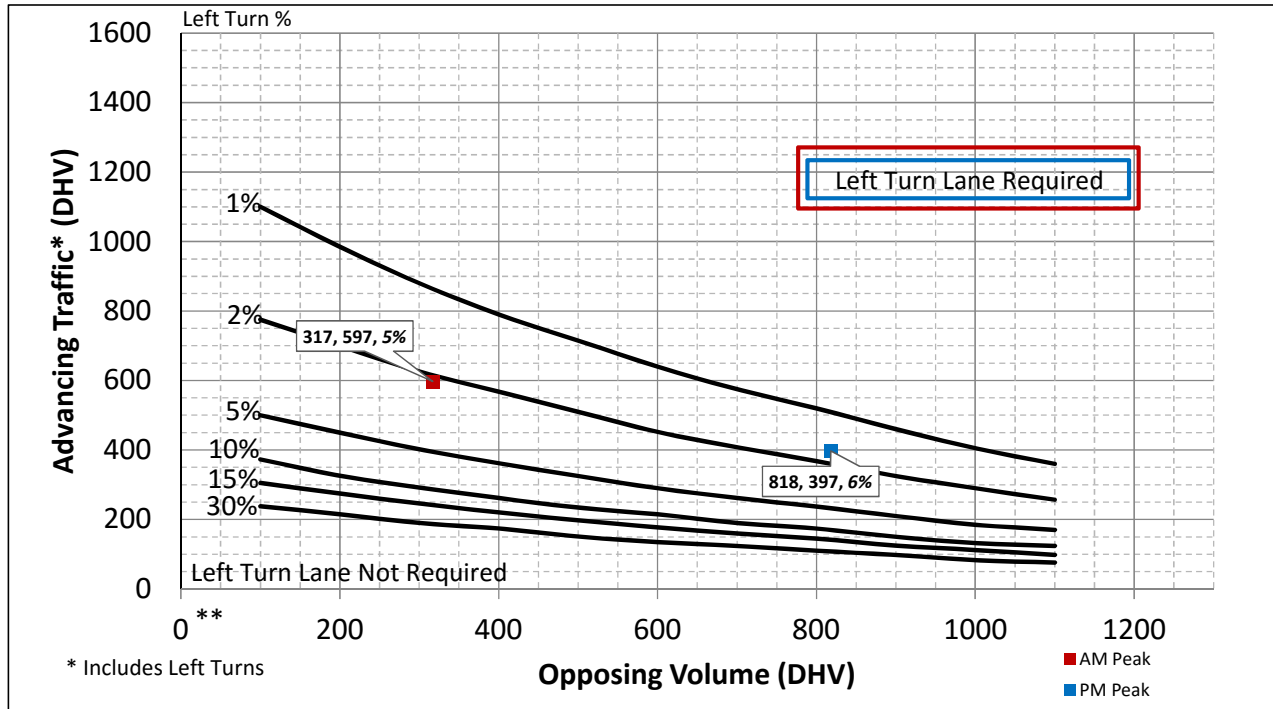
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	317	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	89	VPH
	Advancing Traffic	818	VPH
	Right Turn Percentage	11%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	
Is Right Turn Warrant Met		Yes	See Above

* Turn Lane Length includes 50 ft diverging taper

* Turn Lane Length includes 50 ft diverging taper

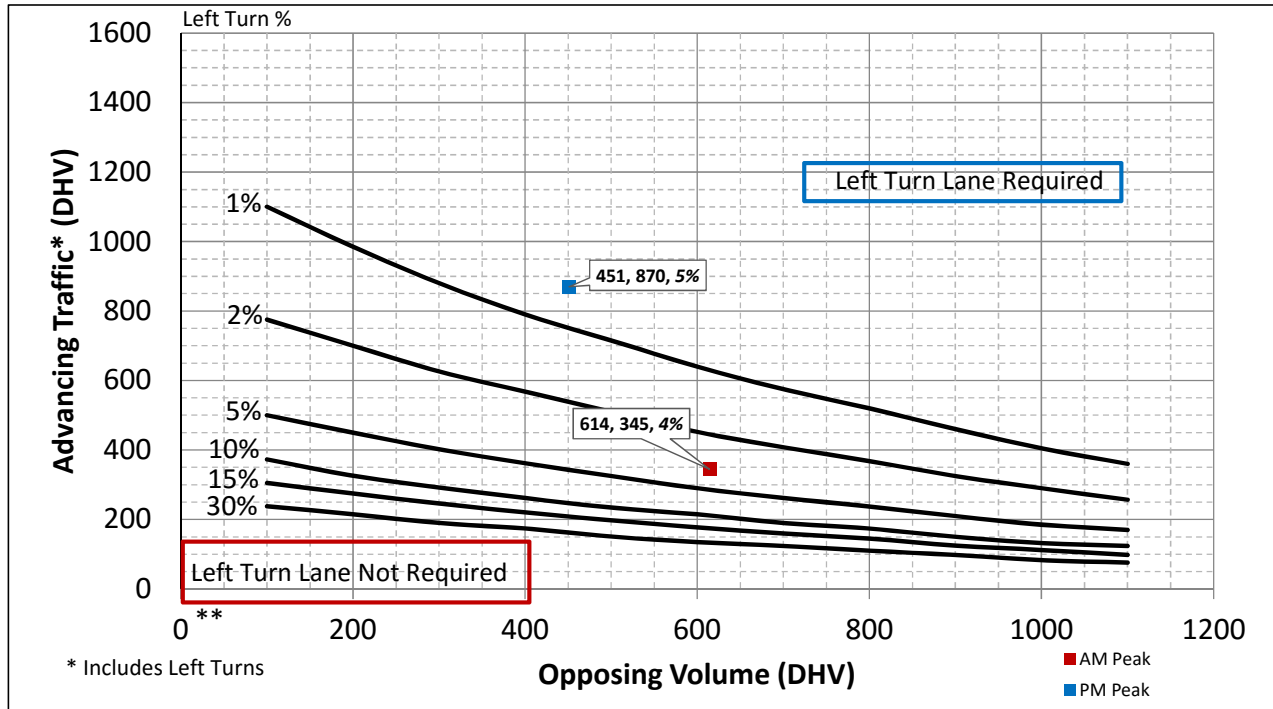
2-Lane Highway Left Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



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	31	VPH
	Advancing Traffic	597	VPH
	Opposing Volume	317	VPH
	Left Turn Percentage	5%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	23	VPH
	Advancing Traffic	397	VPH
	Opposing Volume	818	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

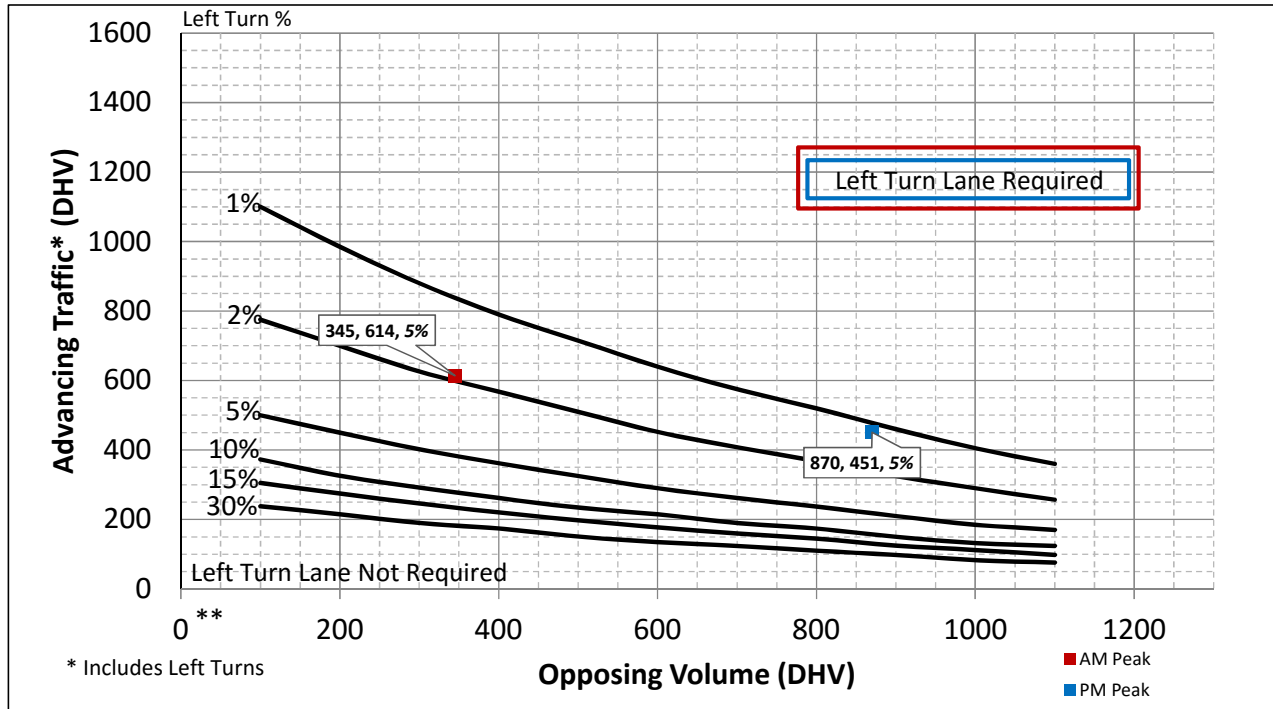
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	14	VPH
	Advancing Traffic	345	VPH
	Opposing Volume	614	VPH
	Left Turn Percentage	4%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	43	VPH
	Advancing Traffic	870	VPH
	Opposing Volume	451	VPH
	Left Turn Percentage	5%	
	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		No	No Left Turn Lane Required

2-Lane Highway Left Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



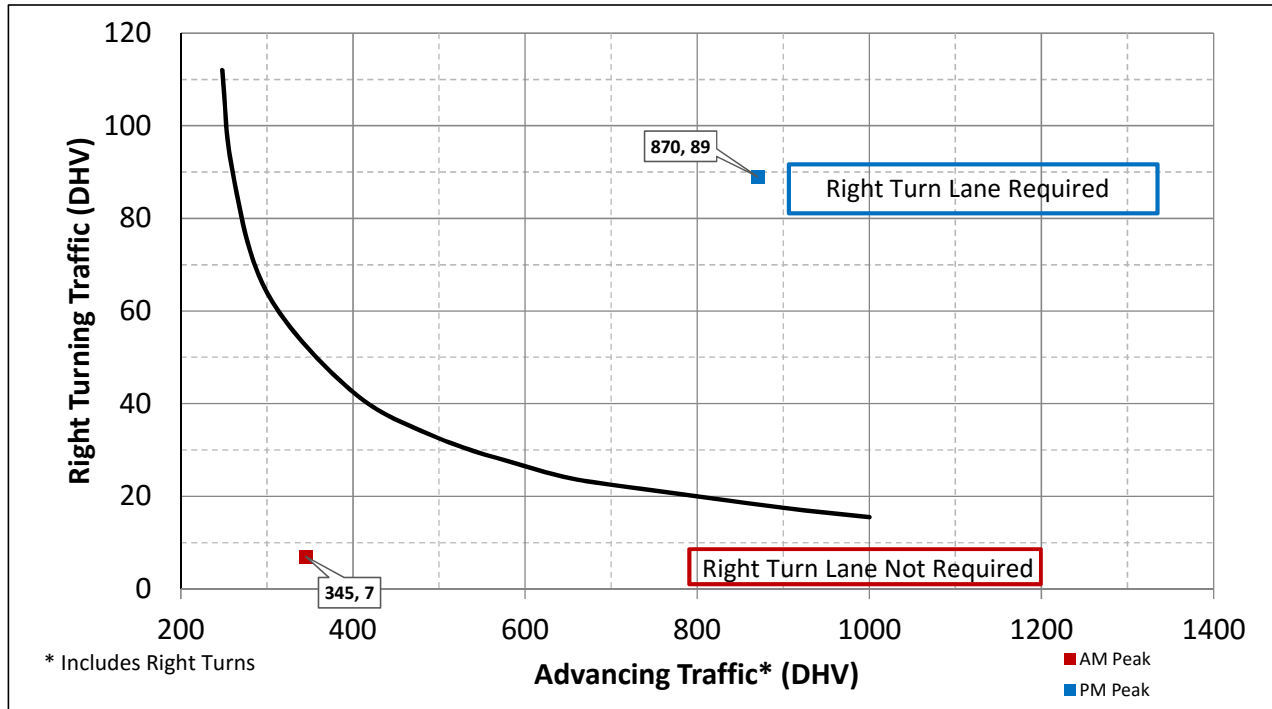
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	31	VPH
	Advancing Traffic	614	VPH
	Opposing Volume	345	VPH
	Left Turn Percentage	5%	
	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	23	VPH
	Advancing Traffic	451	VPH
	Opposing Volume	870	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 Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



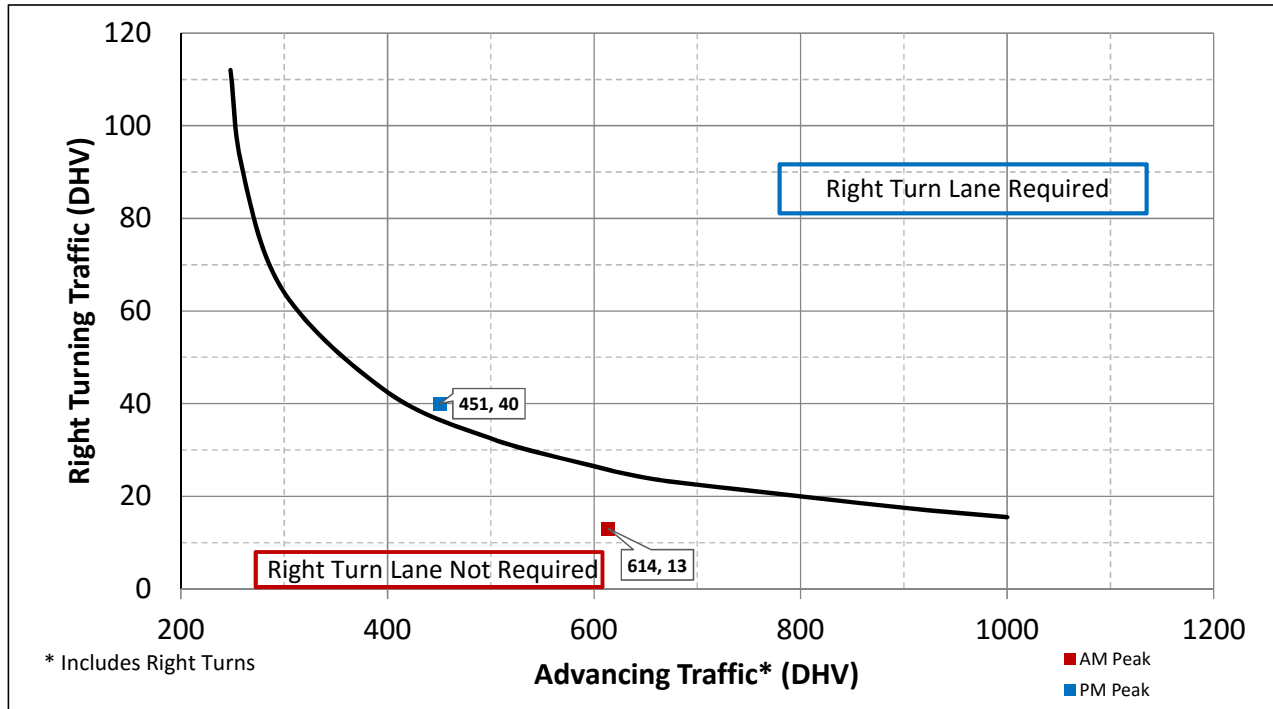
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	345	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	89	VPH
	Advancing Traffic	870	VPH
	Right Turn Percentage	10%	
	Location Type	Through Road	
	Condition	C	
	Vehicles/Cycle	2	
	Turn Lane Length	225	
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)



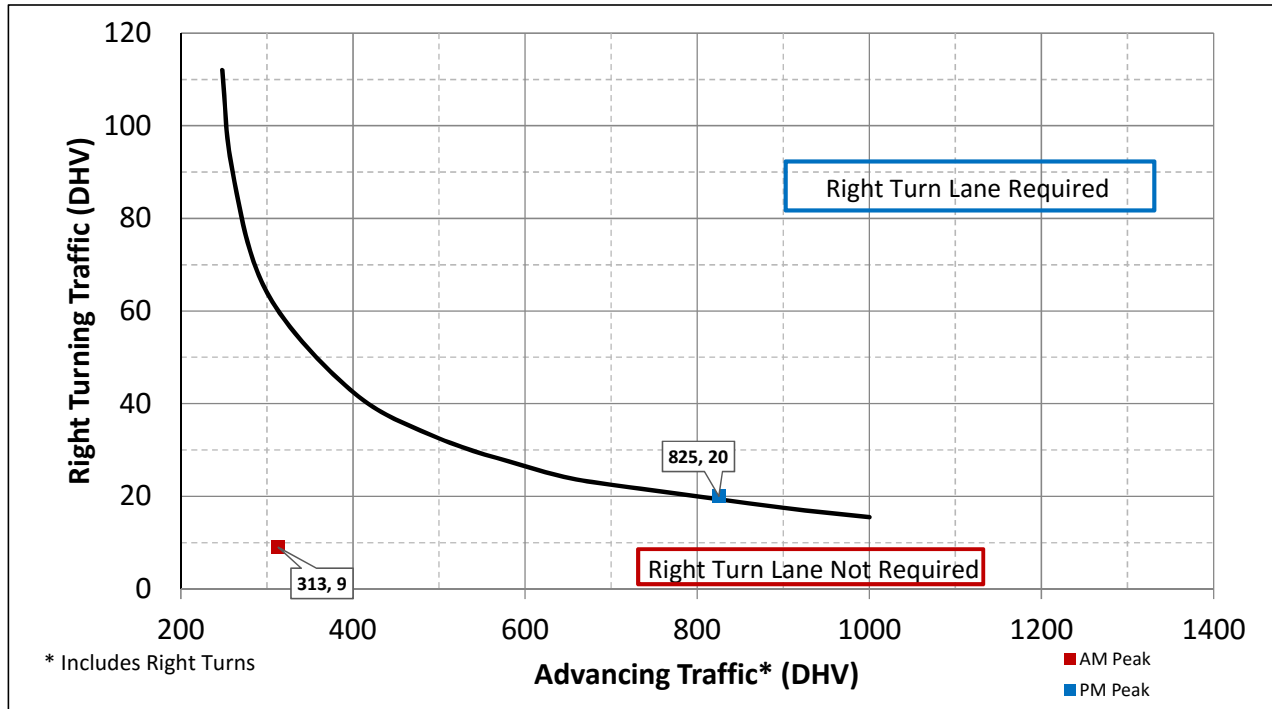
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	13	VPH
	Advancing Traffic	614	VPH
	Right Turn Percentage	2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	40	VPH
	Advancing Traffic	451	VPH
	Right Turn Percentage	9%	
	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)



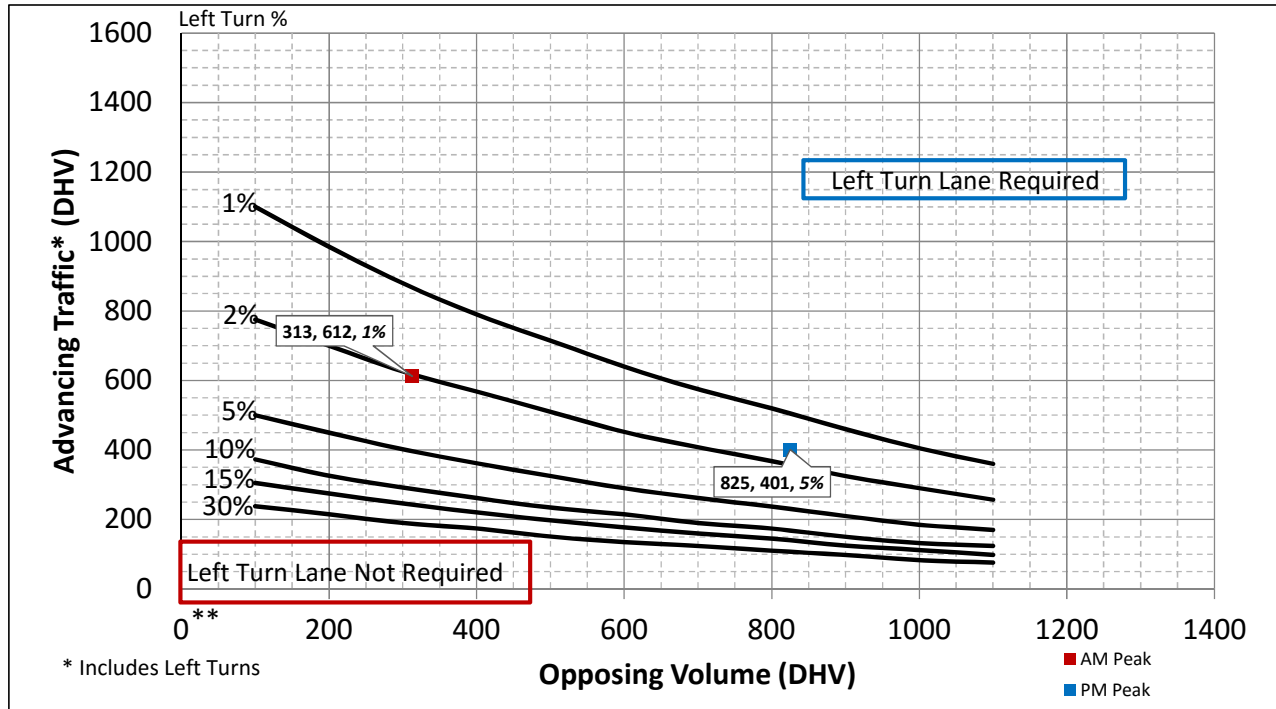
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	9	VPH
	Advancing Traffic	313	VPH
	Right Turn Percentage	3%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	20	VPH
	Advancing Traffic	825	VPH
	Right Turn Percentage	2%	
	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)



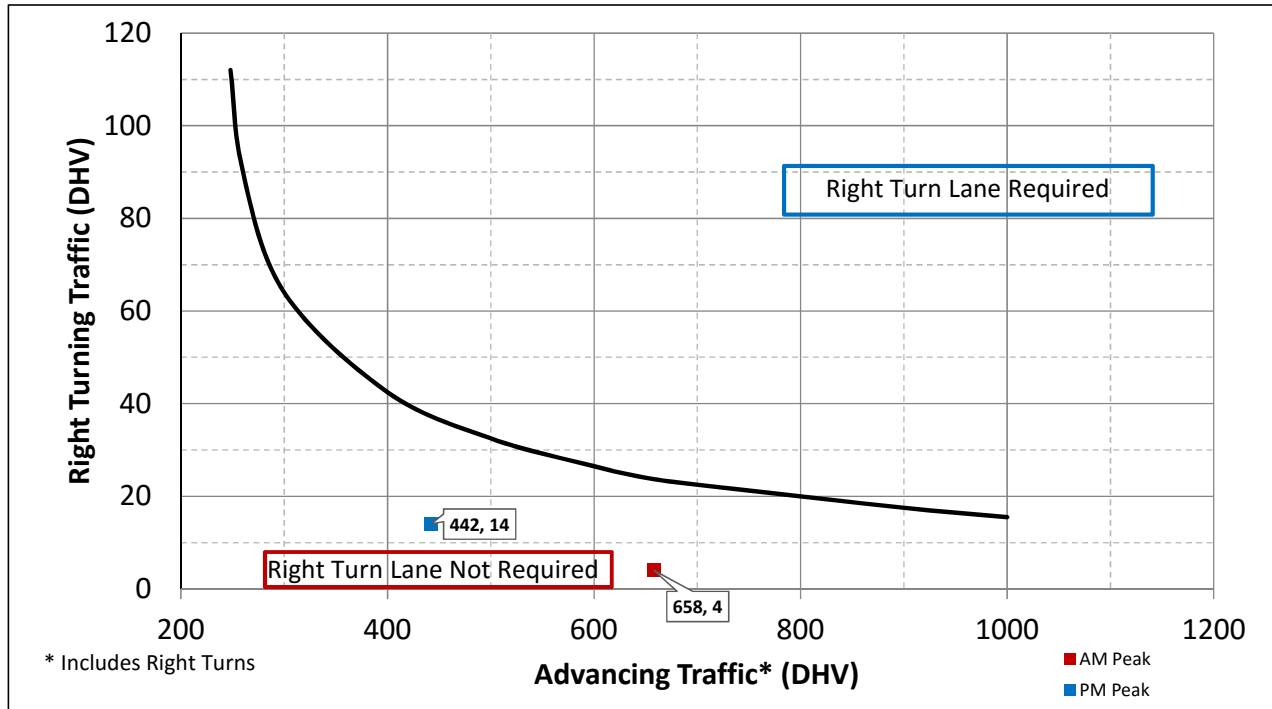
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	9	VPH
	Advancing Traffic	612	VPH
	Opposing Volume	313	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	19	VPH
	Advancing Traffic	401	VPH
	Opposing Volume	825	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 Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



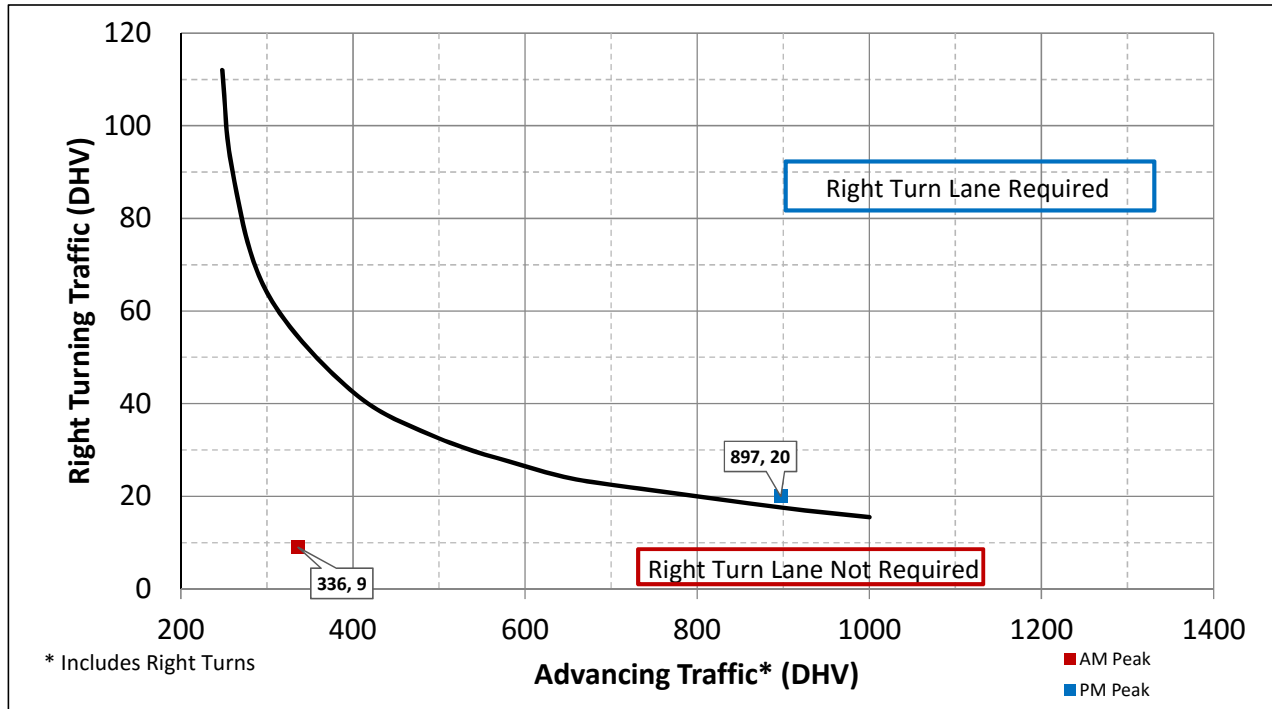
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	4	VPH
	Advancing Traffic	658	VPH
	Right Turn Percentage	1%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	442	VPH
	Right Turn Percentage	3%	
	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)



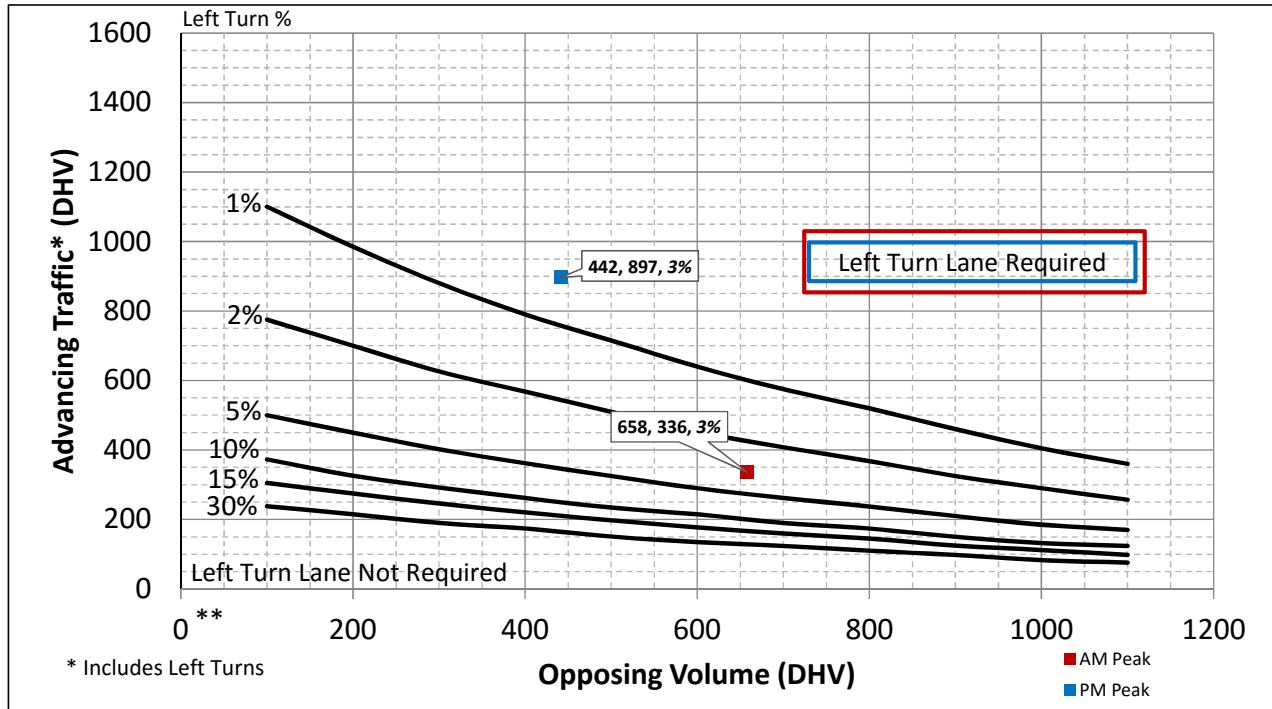
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	9	VPH
	Advancing Traffic	336	VPH
	Right Turn Percentage	3%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	20	VPH
	Advancing Traffic	897	VPH
	Right Turn Percentage	2%	
	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

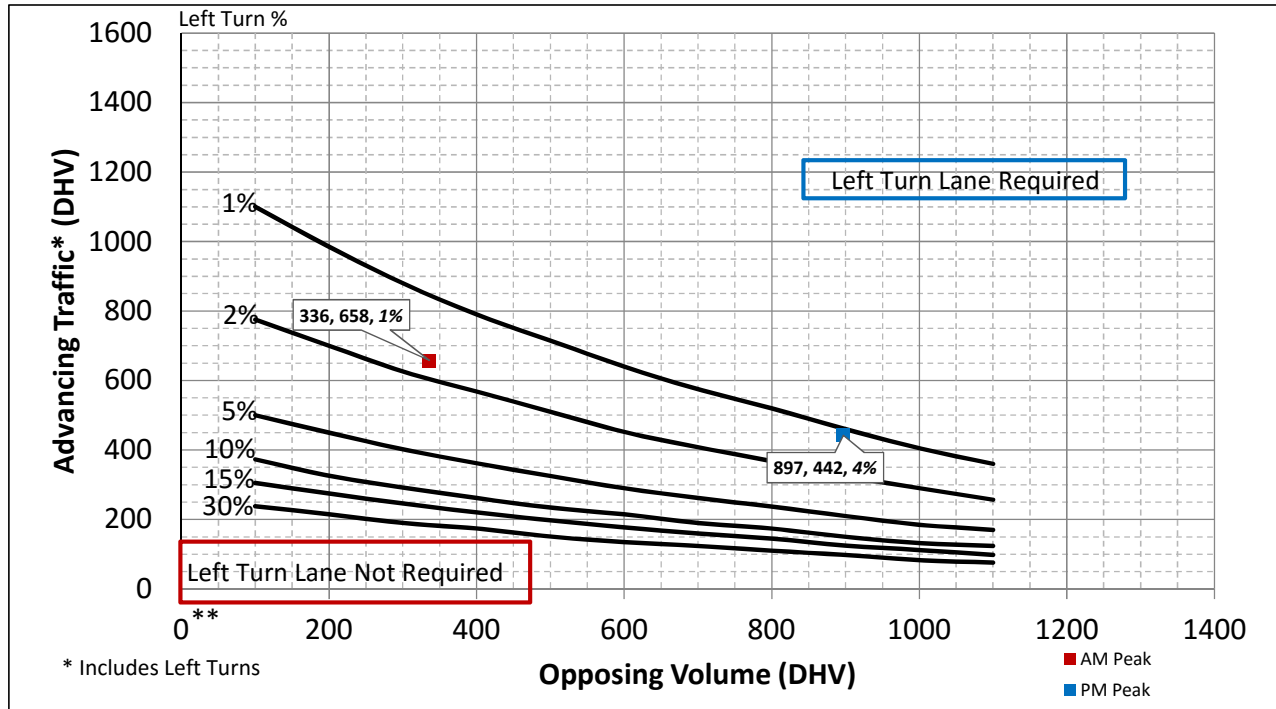
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	9	VPH
	Advancing Traffic	336	VPH
	Opposing Volume	658	VPH
	Left Turn Percentage	3%	
	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	29	VPH
	Advancing Traffic	897	VPH
	Opposing Volume	442	VPH
	Left Turn Percentage	3%	
	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

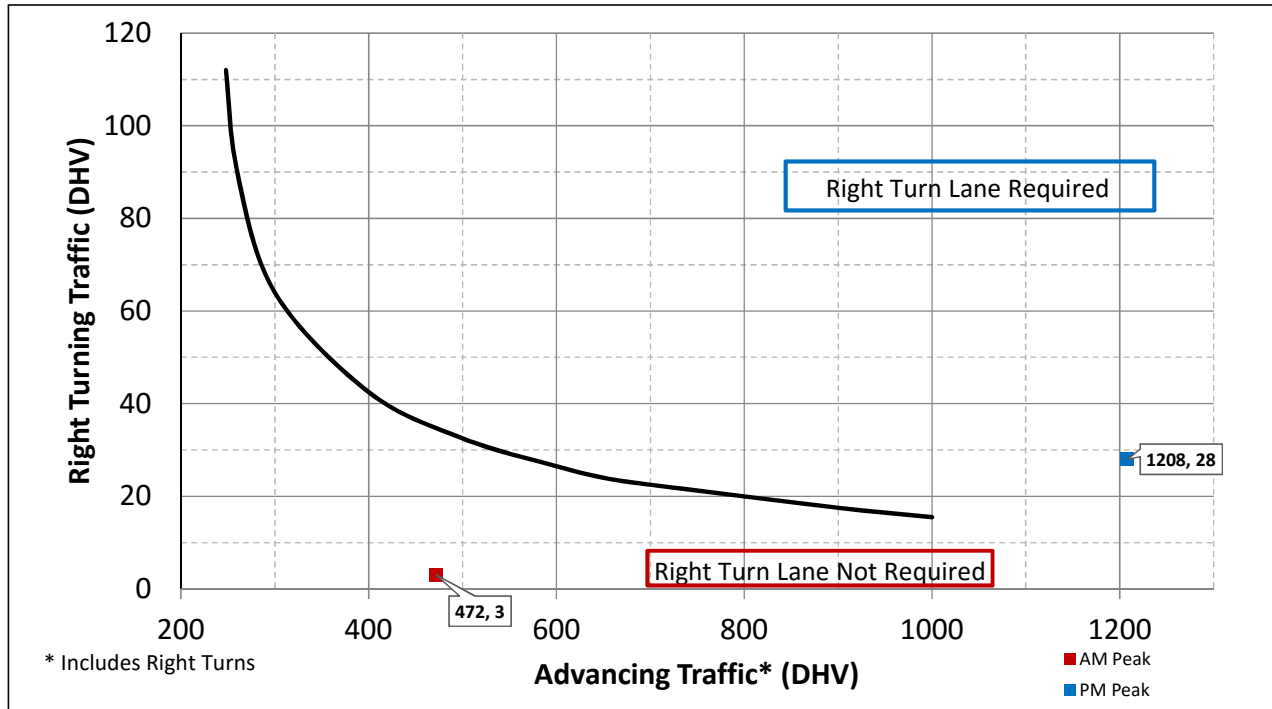
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	9	VPH
	Advancing Traffic	658	VPH
	Opposing Volume	336	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	19	VPH
	Advancing Traffic	442	VPH
	Opposing Volume	897	VPH
	Left Turn Percentage	4%	
	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

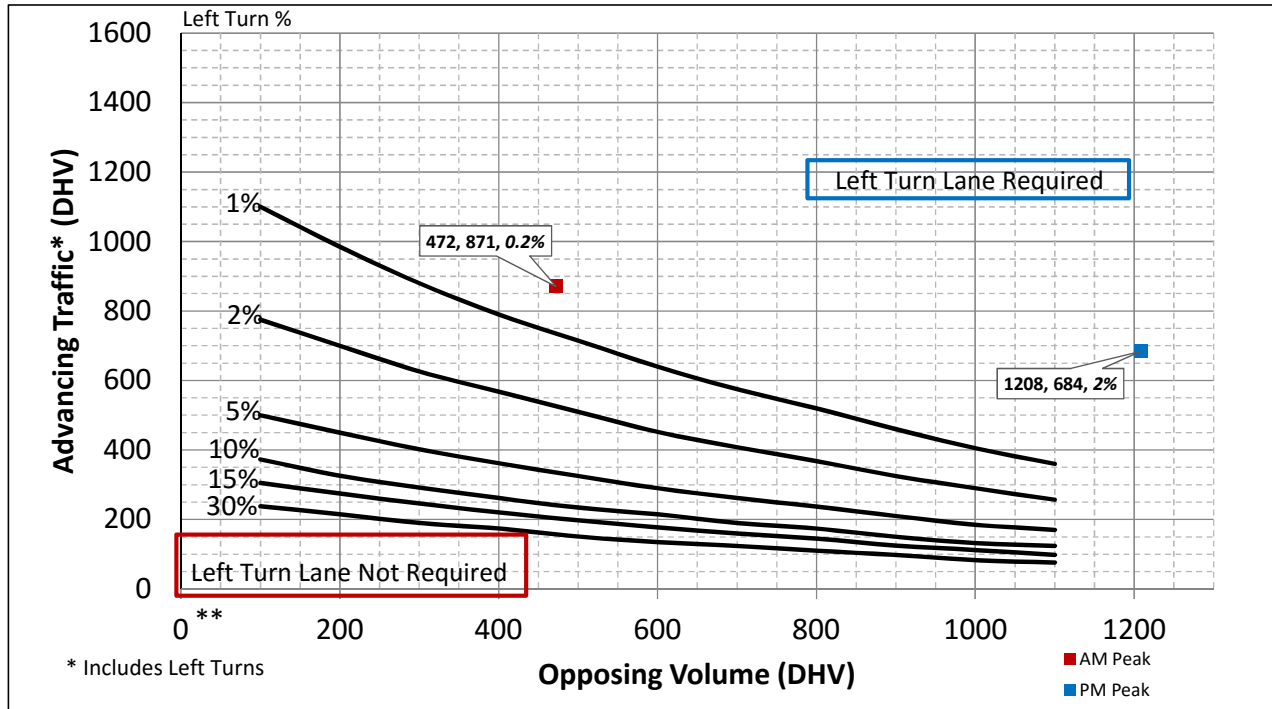
2-Lane Highway Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	3	VPH
	Advancing Traffic	472	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
			* Turn Lane Length includes 50 ft diverging taper
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	28	VPH
	Advancing Traffic	1208	VPH
	Right Turn Percentage	2%	
	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

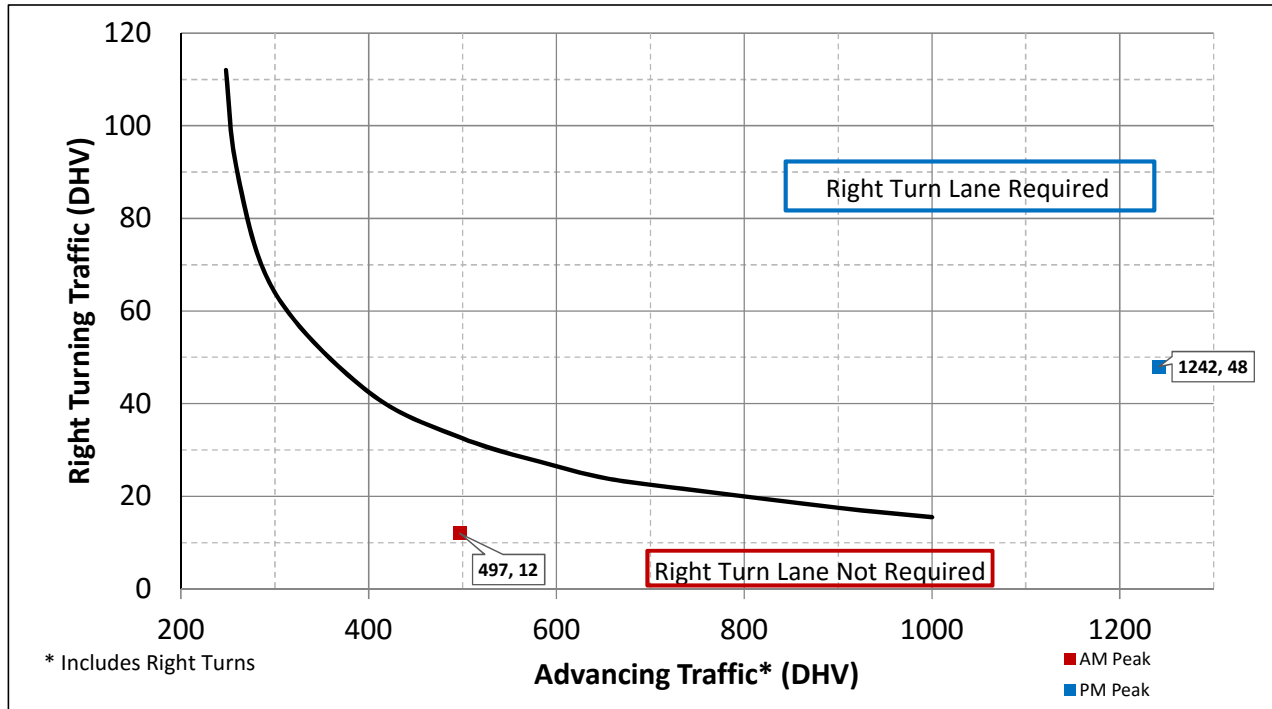
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	2	VPH
	Advancing Traffic	871	VPH
	Opposing Volume	472	VPH
	Left Turn Percentage	0.2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	17	VPH
	Advancing Traffic	684	VPH
	Opposing Volume	1208	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	
Is Left Turn Warrant Met		Yes	See Above

2-Lane Highway Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



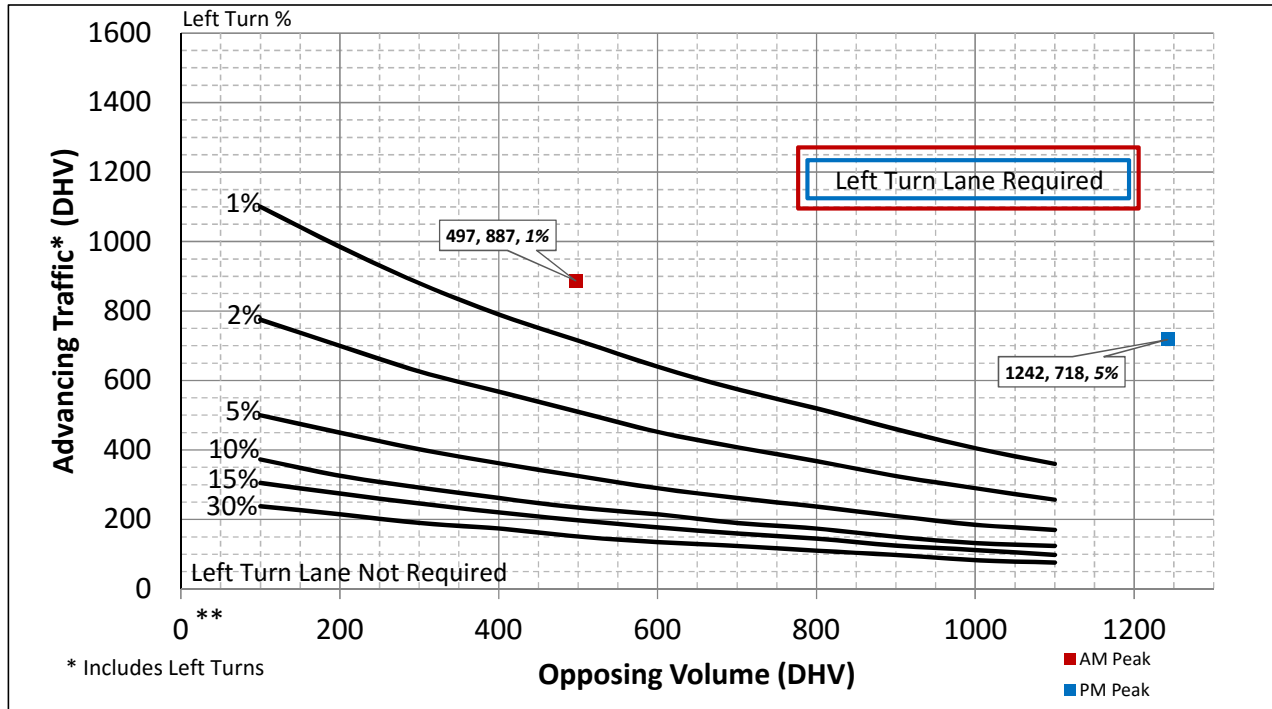
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	12	VPH
	Advancing Traffic	497	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	48	VPH
	Advancing Traffic	1242	VPH
	Right Turn Percentage	4%	
	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

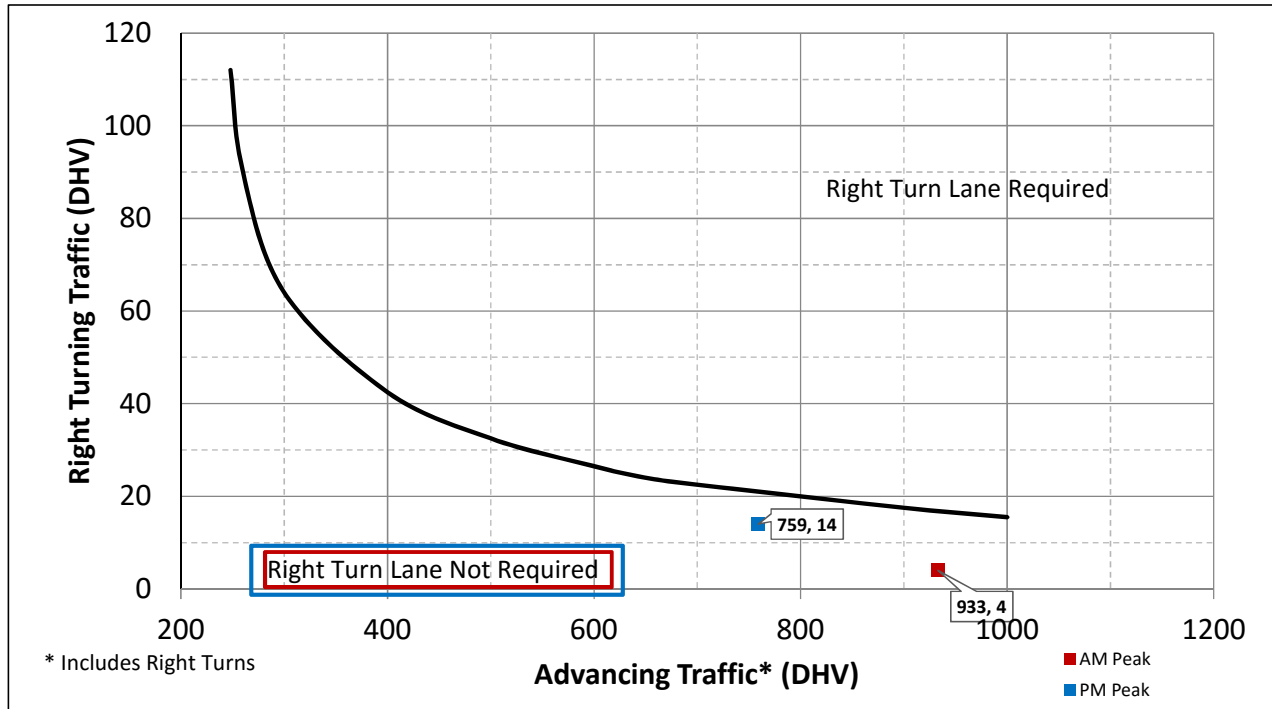
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	11	VPH
	Advancing Traffic	887	VPH
	Opposing Volume	497	VPH
	Left Turn Percentage	1%	
	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	36	VPH
	Advancing Traffic	718	VPH
	Opposing Volume	1242	VPH
	Left Turn Percentage	5%	
	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)



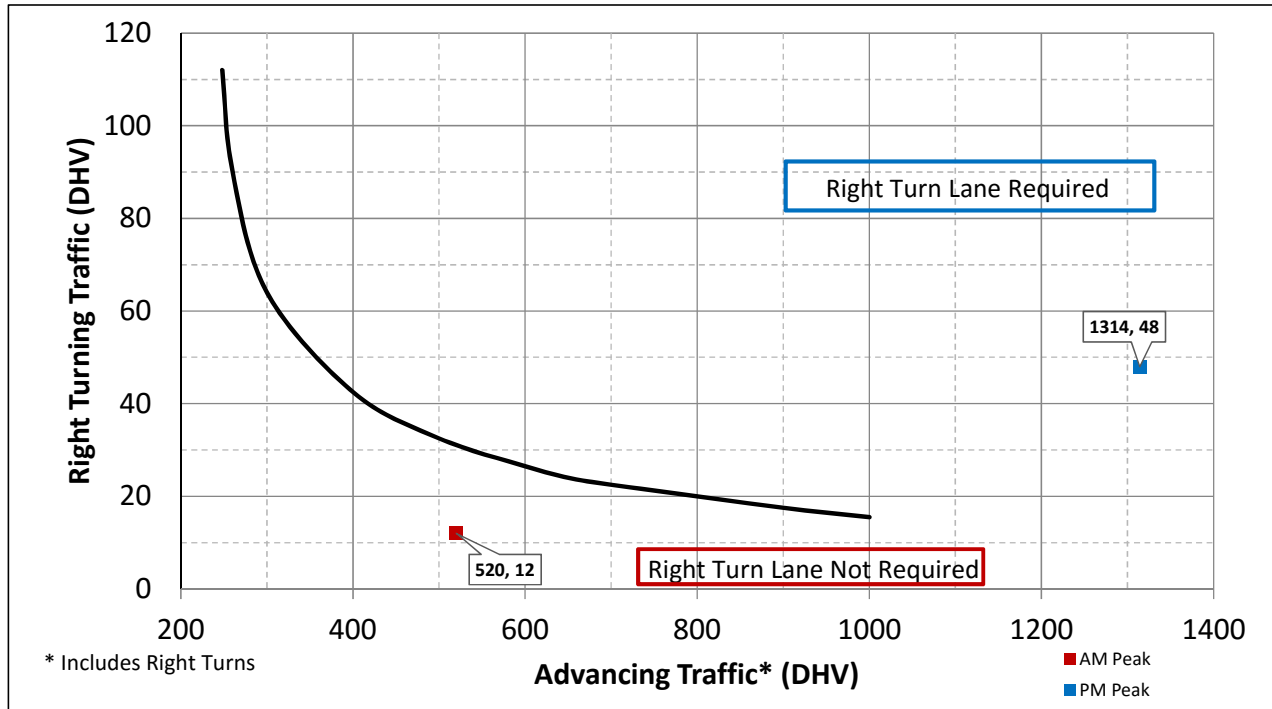
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	4	VPH
	Advancing Traffic	933	VPH
	Right Turn Percentage	0.4%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	759	VPH
	Right Turn Percentage	2%	
	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)



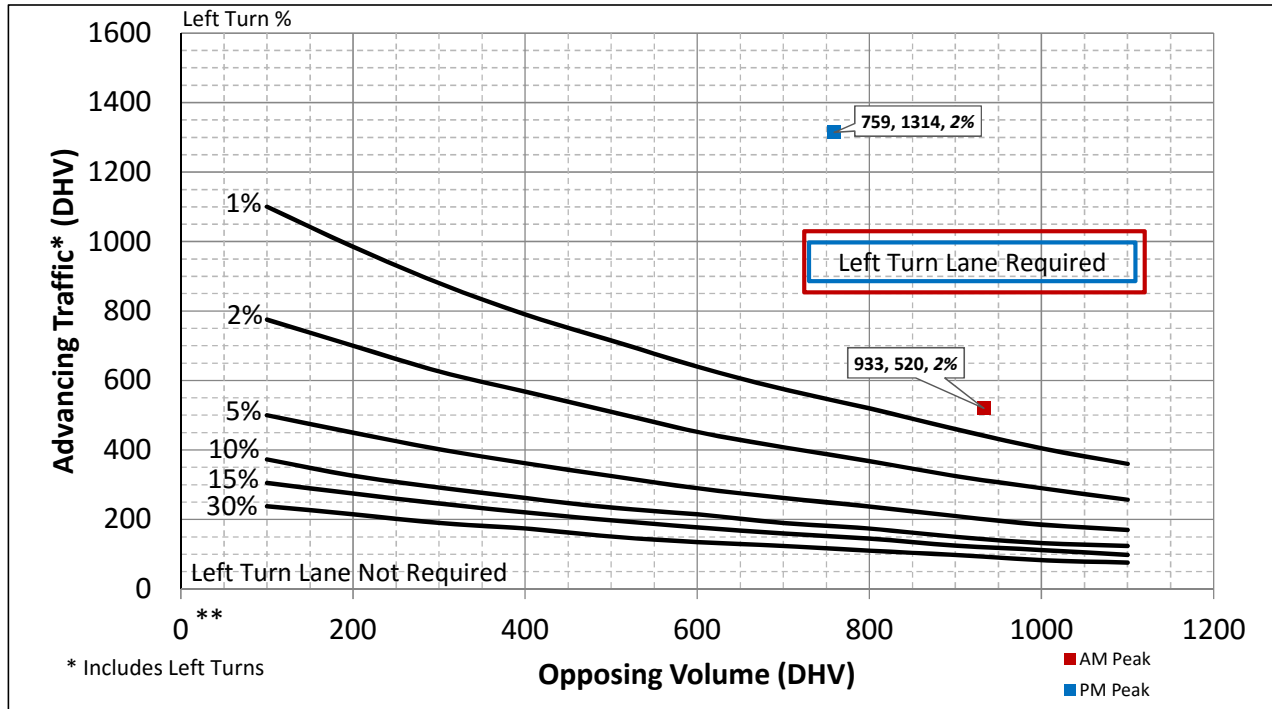
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	12	VPH
	Advancing Traffic	520	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	48	VPH
	Advancing Traffic	1314	VPH
	Right Turn Percentage	4%	
	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

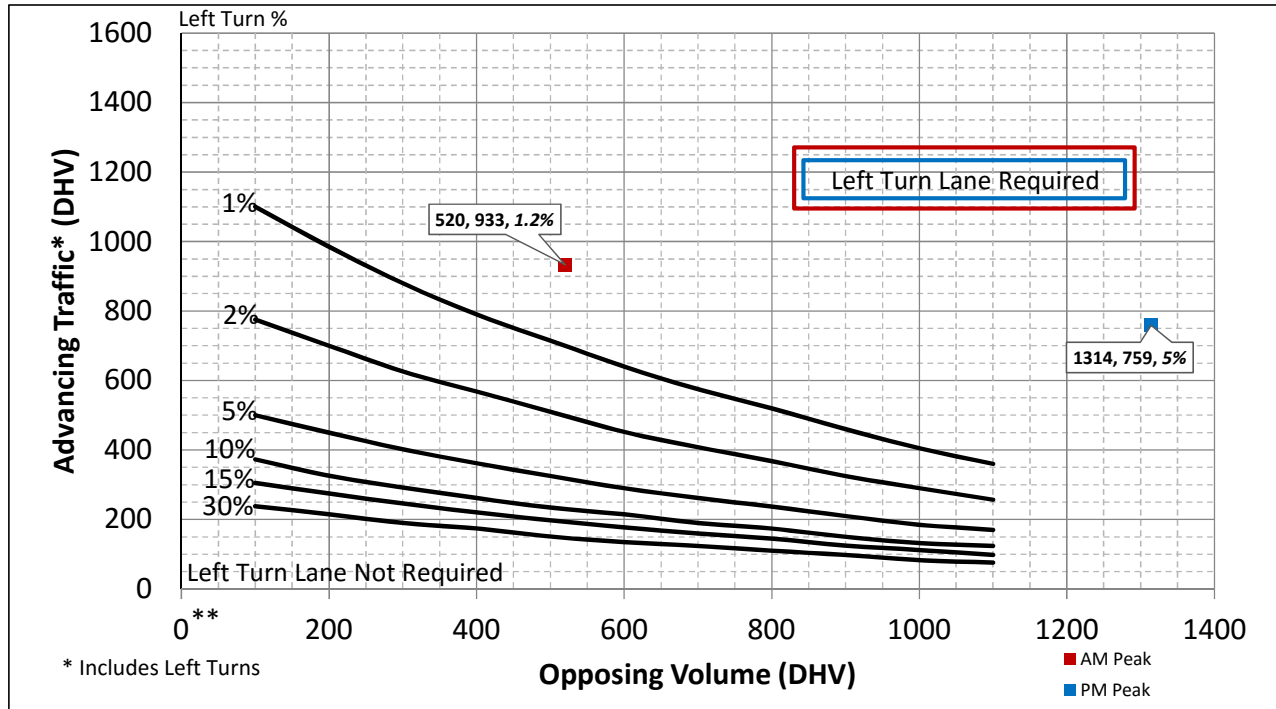
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	9	VPH
	Advancing Traffic	520	VPH
	Opposing Volume	933	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	29	VPH
	Advancing Traffic	1314	VPH
	Opposing Volume	759	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	
Is Left Turn Warrant Met		Yes	See Above

2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



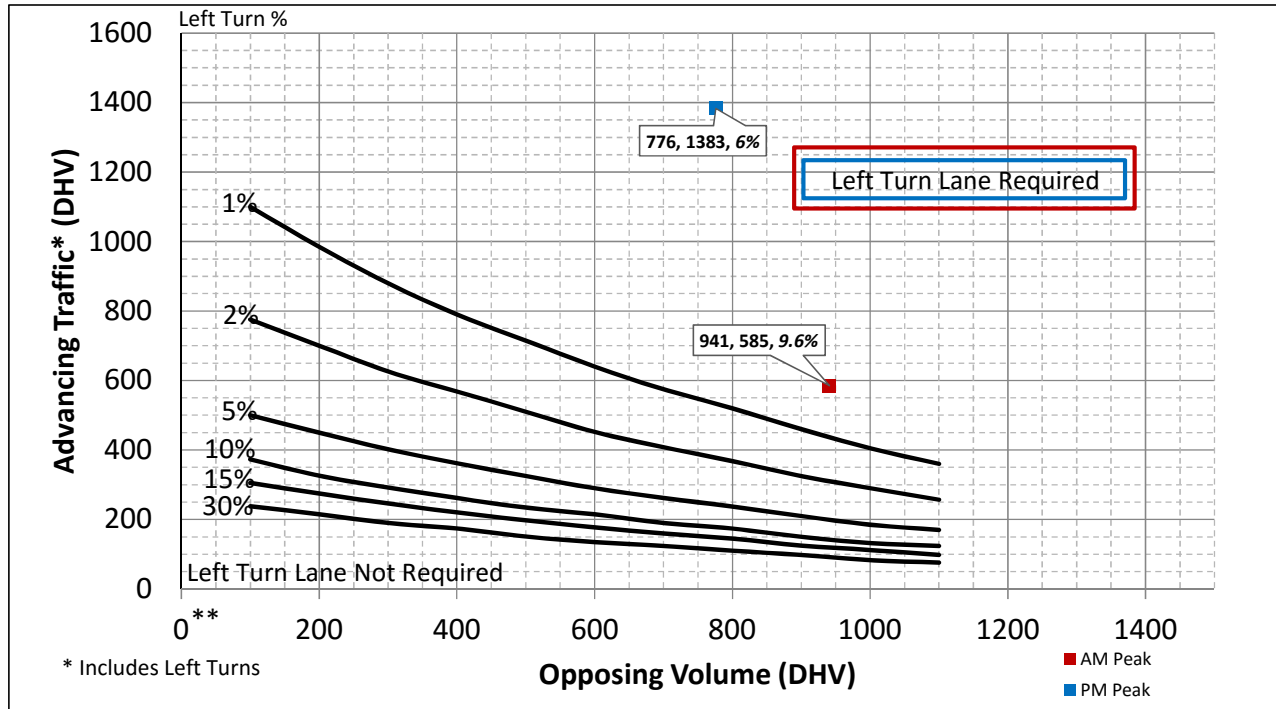
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	11	VPH
	Advancing Traffic	933	VPH
	Opposing Volume	520	VPH
	Left Turn Percentage	1.2%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	36	VPH
	Advancing Traffic	759	VPH
	Opposing Volume	1314	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

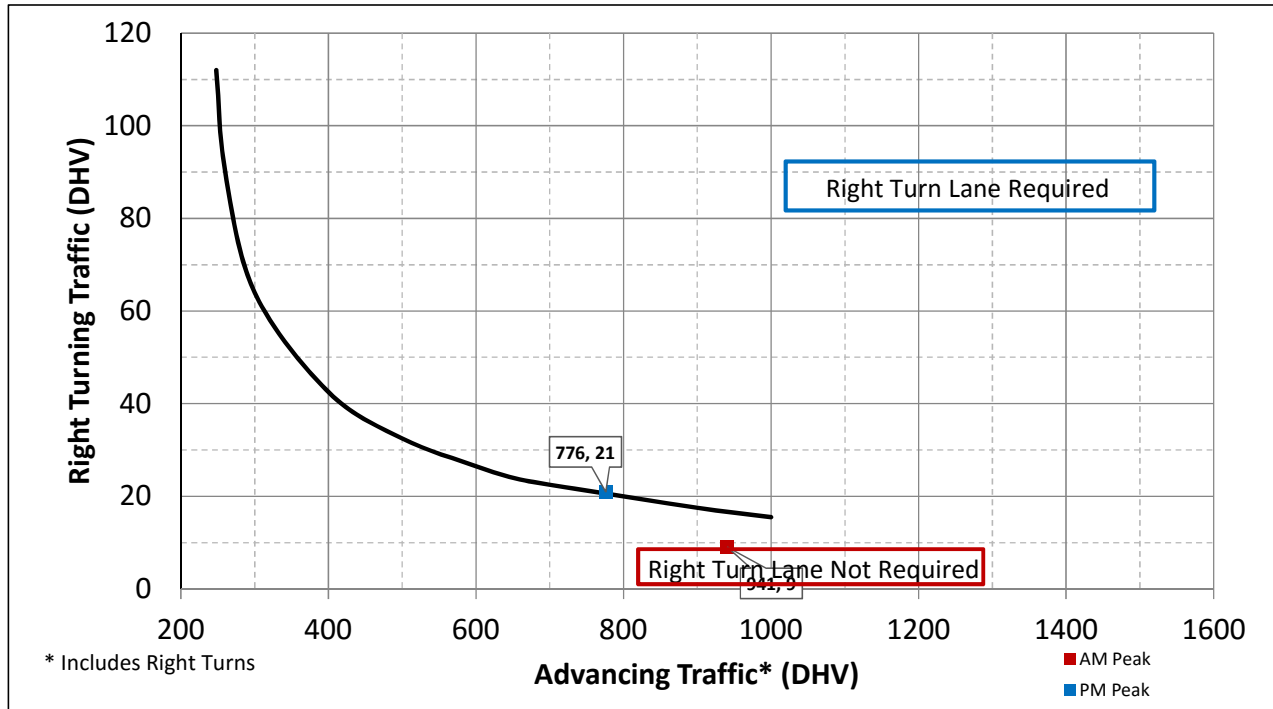
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	56	VPH
	Advancing Traffic	585	VPH
	Opposing Volume	941	VPH
	Left Turn Percentage	9.6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	* Turn Lane Length includes 50 ft diverging taper
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	86	VPH
	Advancing Traffic	1383	VPH
	Opposing Volume	776	VPH
	Left Turn Percentage	6%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	2	
	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)



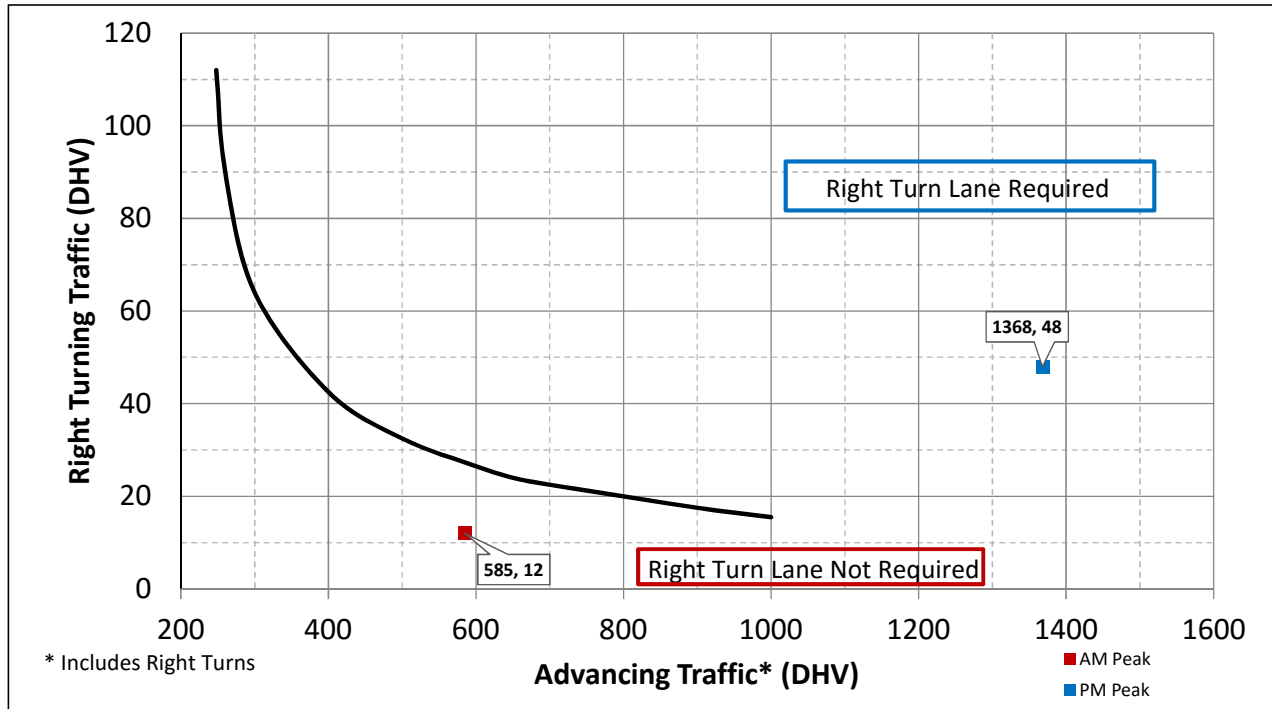
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	9	VPH
	Advancing Traffic	941	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
PM Peak	Turn Lane Length	175	
	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	21	VPH
	Advancing Traffic	776	VPH
	Right Turn Percentage	3%	
	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)



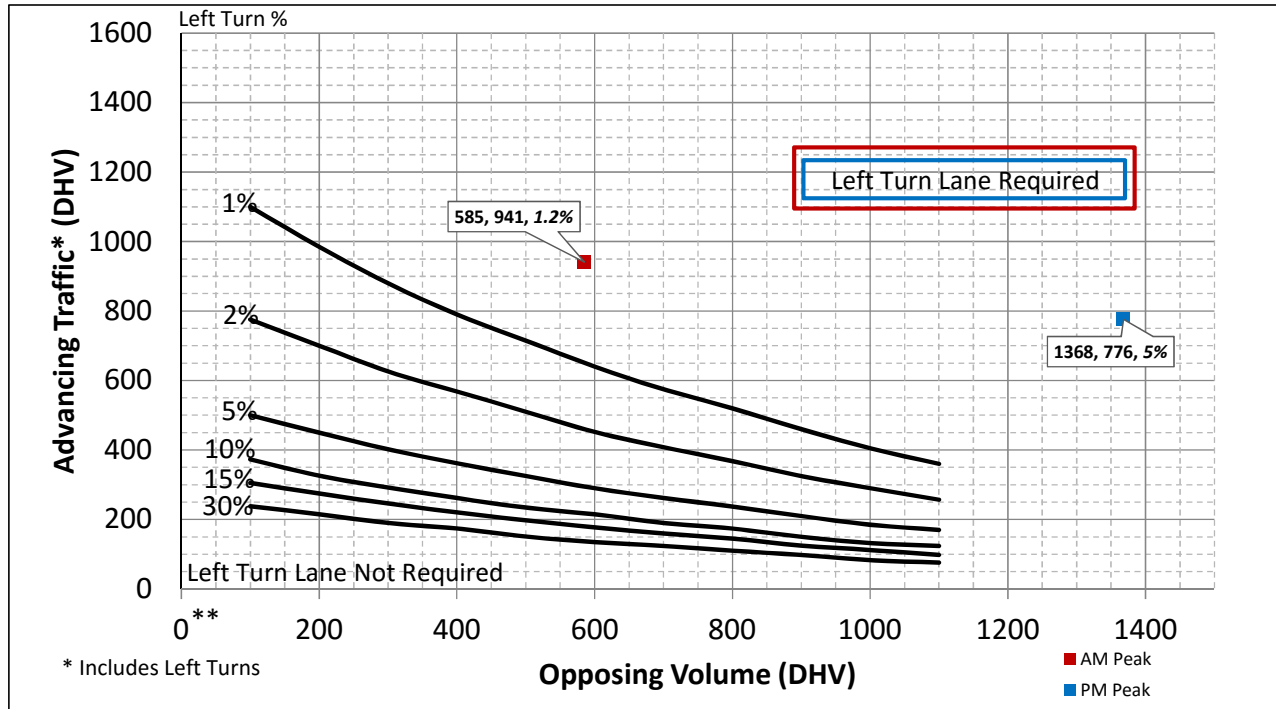
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	12	VPH
	Advancing Traffic	585	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	48	VPH
	Advancing Traffic	1368	VPH
	Right Turn Percentage	4%	
	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)



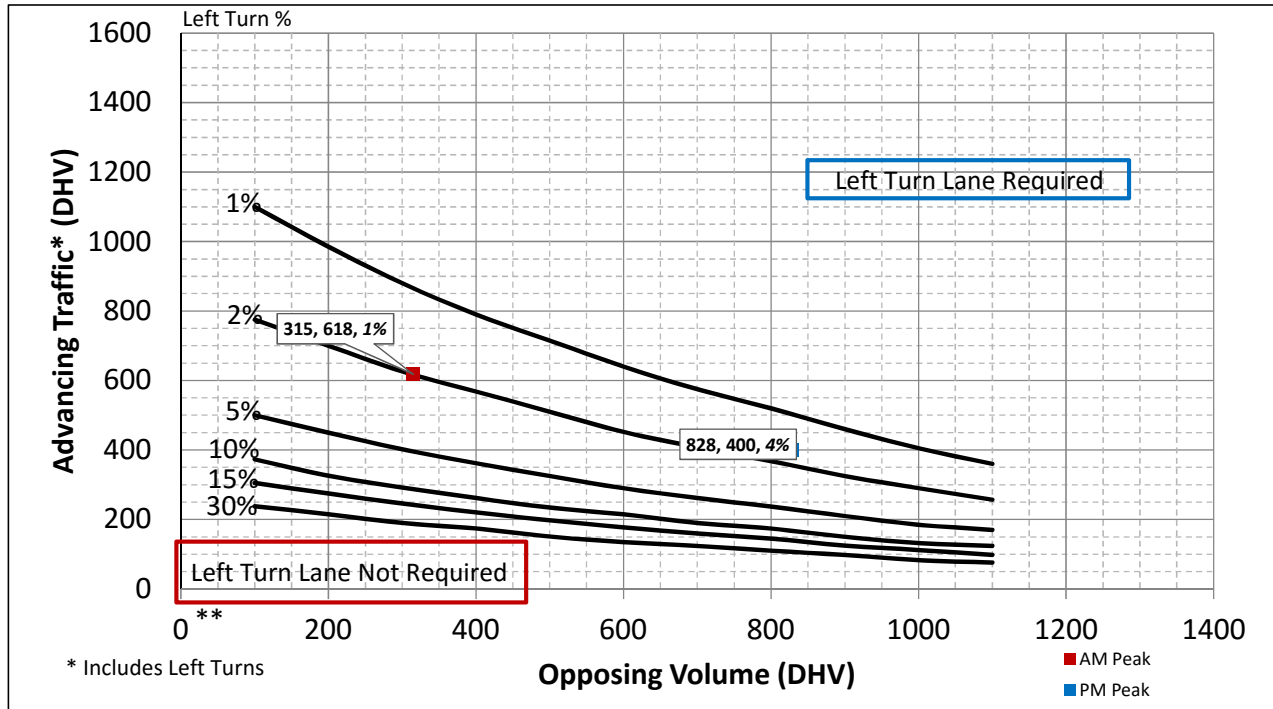
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	11	VPH
	Advancing Traffic	941	VPH
	Opposing Volume	585	VPH
	Left Turn Percentage	1.2%	
	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	36	VPH
	Advancing Traffic	776	VPH
	Opposing Volume	1368	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)



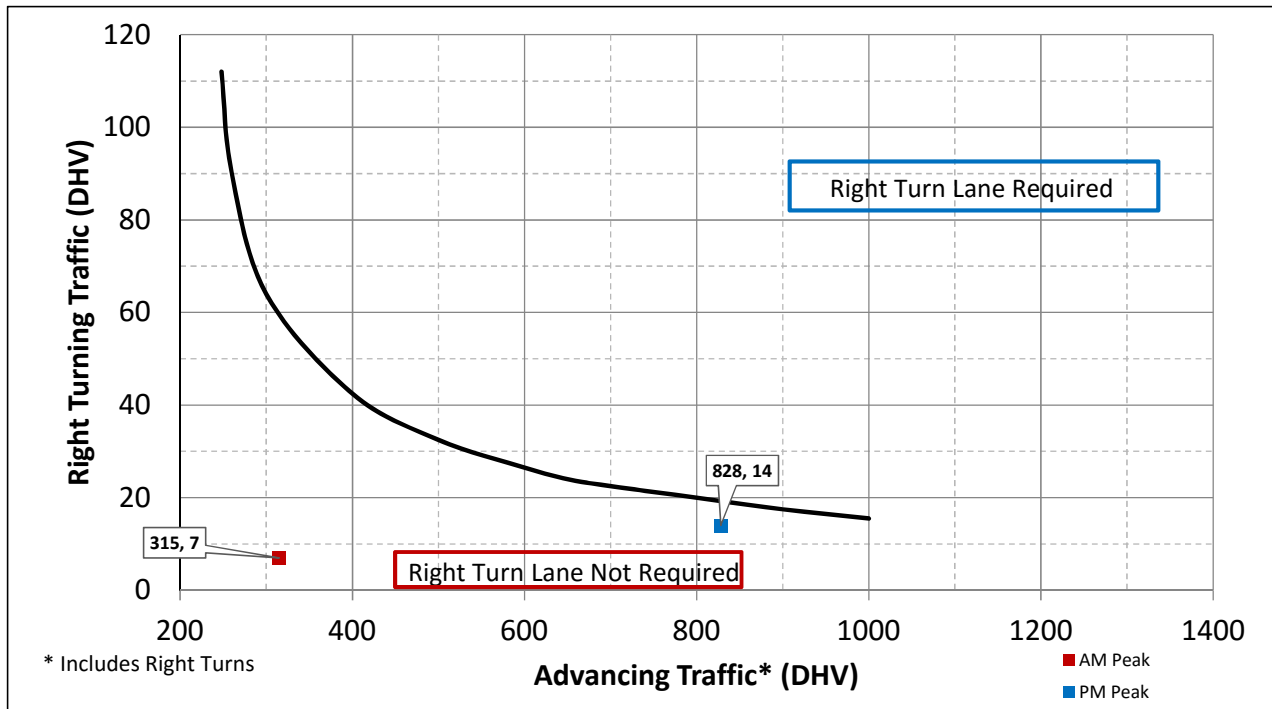
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	618	VPH
	Opposing Volume	315	VPH
	Left Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
	Offset Width	12	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unsignalized	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	15	VPH
	Advancing Traffic	400	VPH
	Opposing Volume	828	VPH
	Left Turn Percentage	4%	
	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 Right Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



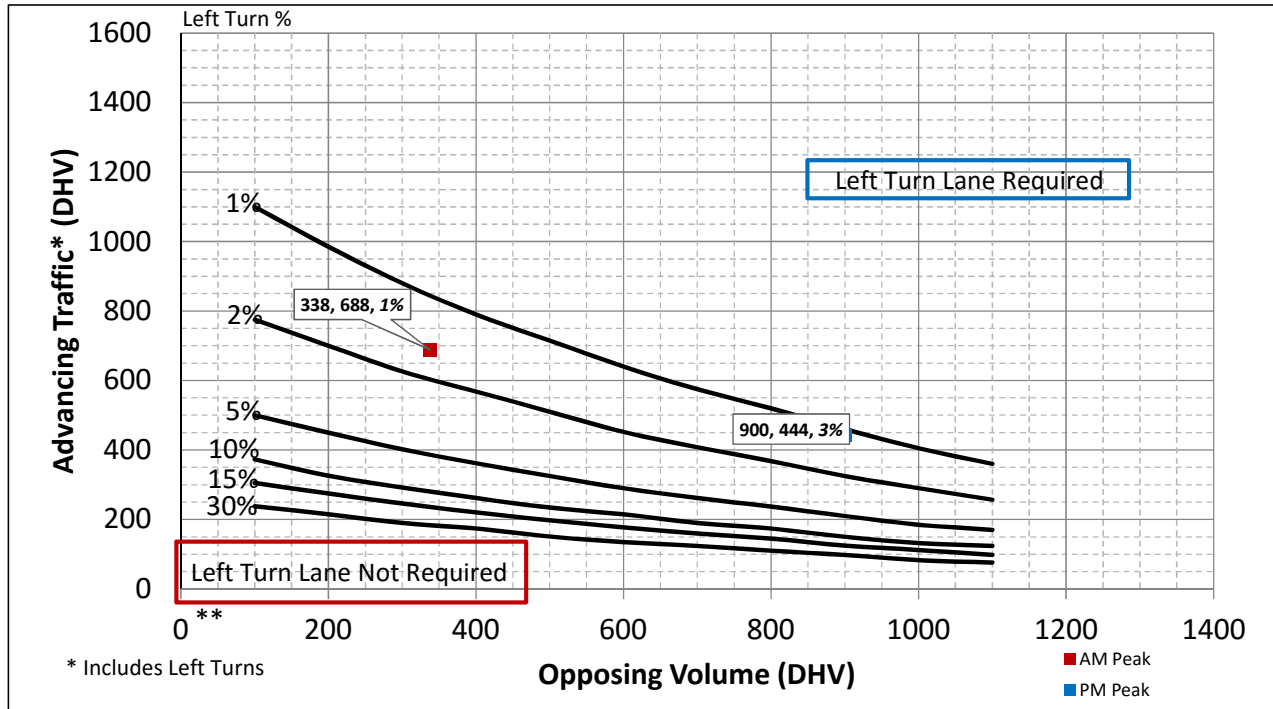
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	315	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	828	VPH
	Right Turn Percentage	2%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
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

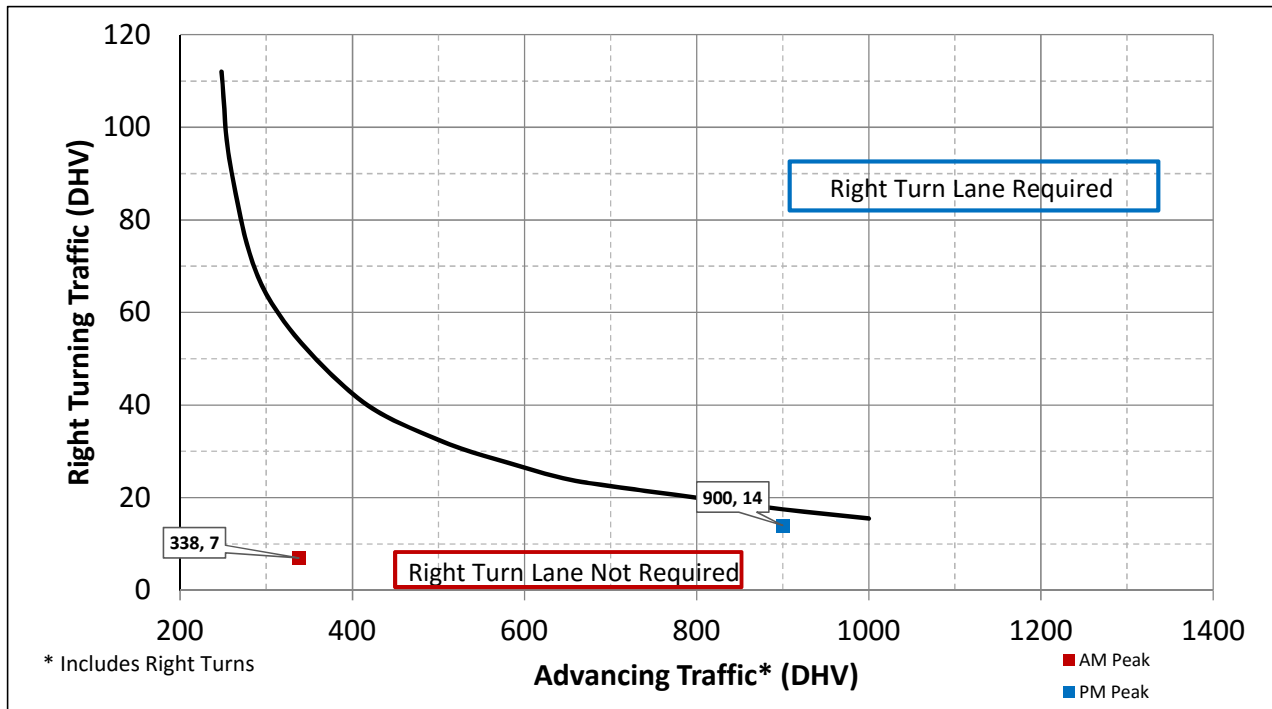
2-Lane Highway Left Turn Lane Warrant (> 40 mph or 70 kph Posted Speed)



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	7	VPH
	Advancing Traffic	688	VPH
	Opposing Volume	338	VPH
	Left Turn Percentage	1%	
	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	15	VPH
	Advancing Traffic	444	VPH
	Opposing Volume	900	VPH
	Left Turn Percentage	3%	
	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)



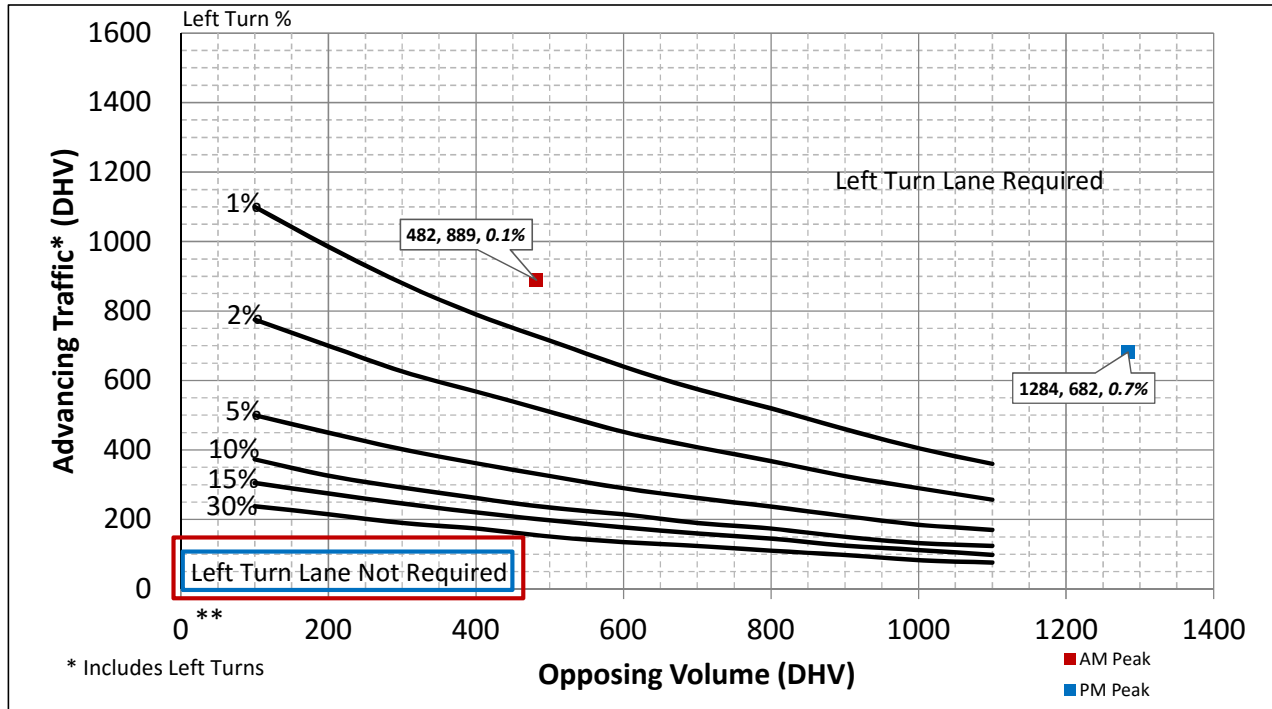
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	7	VPH
	Advancing Traffic	338	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	14	VPH
	Advancing Traffic	900	VPH
	Right Turn Percentage	2%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
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

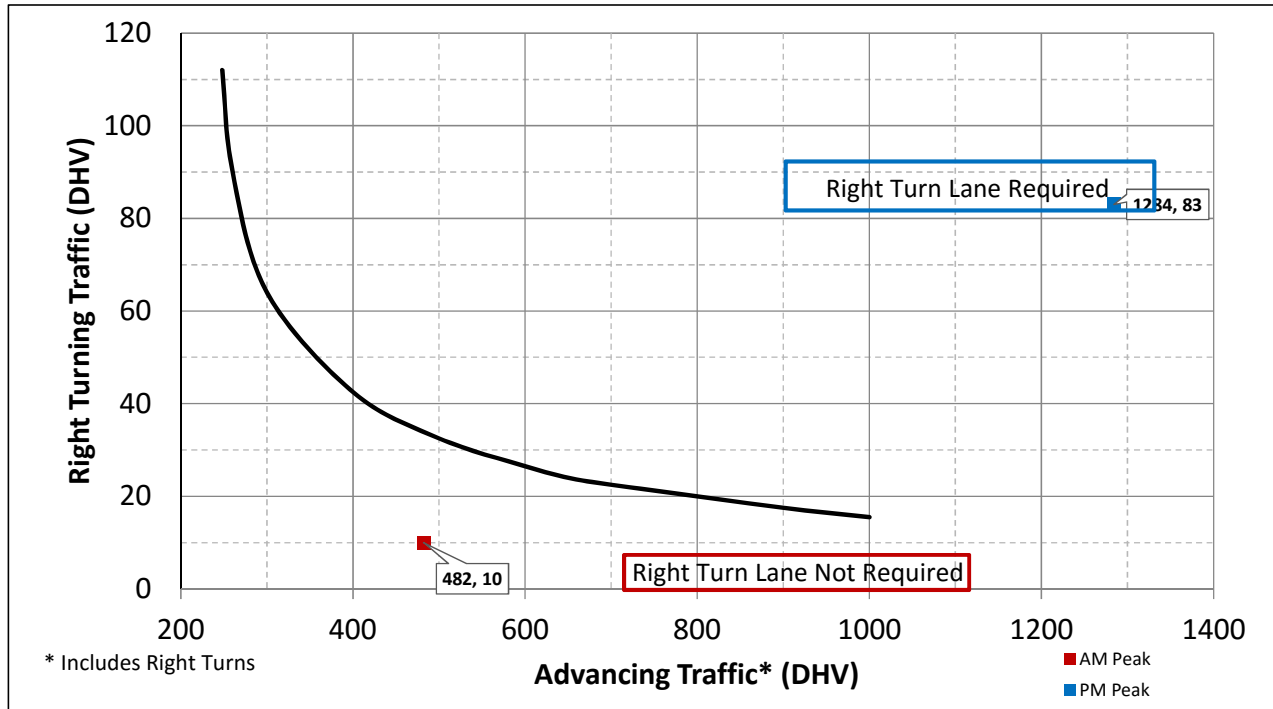
2-Lane Highway Left Turn Lane Warrant
(> 40 mph or 70 kph Posted Speed)



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	1	VPH
	Advancing Traffic	889	VPH
	Opposing Volume	482	VPH
	Left Turn Percentage	0.1%	
	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	5	VPH
	Advancing Traffic	682	VPH
	Opposing Volume	1284	VPH
	Left Turn Percentage	0.7%	
	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)



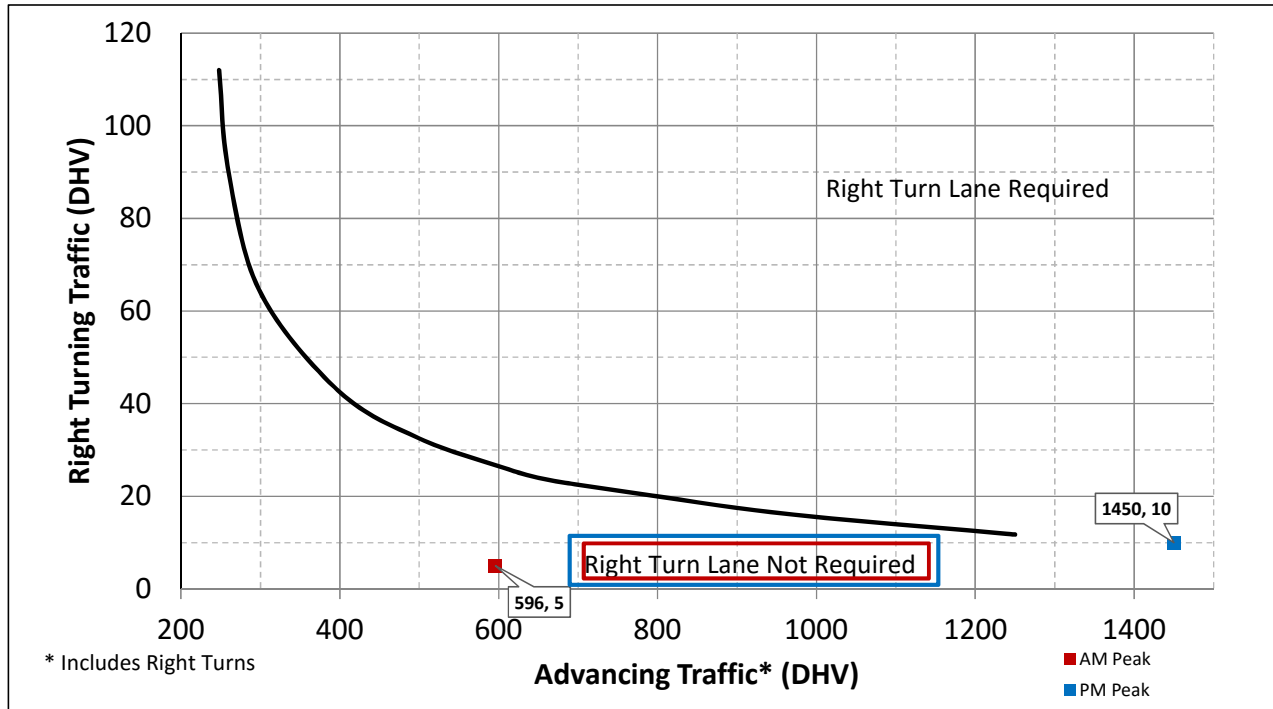
Turn Lane Length Calculations

AM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	482	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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	83	VPH
	Advancing Traffic	1284	VPH
	Right Turn Percentage	6%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	2	
	Turn Lane Length	150	
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	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	5	VPH
	Advancing Traffic	596	VPH
	Right Turn Percentage	1%	
	Location Type	Through Road	
	Condition	B	
	Vehicles/Cycle	1	
	Turn Lane Length	175	
PM Peak	Design Speed	45	mph
	Traffic Control	Unsignalized	
	Cycle Length	Unknown	
	Cycles Per Hour	60	Assume 60
	Turn Lane Volume	10	VPH
	Advancing Traffic	1450	VPH
	Right Turn Percentage	1%	
	Location Type	Intersection	
	Condition	A	
	Vehicles/Cycle	1	
	Turn Lane Length	100	
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

Major Roadway	Hyland-Croy Road
Minor Roadway	Tullymore Drive
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	636
PM SB	392
Total PM NB/SB	1028
PM ADT NB/SB	11682
AM NB	365
AM SB	559
Total AM NB/SB	924
AM ADT NB/SB	13588
Average NB/SB ADT	12635

Tullymore Drive	
Rights Discounted 50%	
PM EB	2
PM WB	51
Greater of PM EB/WB	51
PM ADT EB/WB	580
AM EB	6
AM WB	110
Greater of AM EB/WB	110
AM ADT EB/WB	1618
Average EB/WB ADT	1099

Results	
NB/SB 8th Hour	758
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	66
Meets Condition A (>105)	NO *
Meets Condition B (>53)	YES *
EB/WB 4th Hour	859
NB/SB 4th Hour	75

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Warranted - Meets Condition B

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Park Mill Drive
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1186
PM SB	681
Total PM NB/SB	1867
PM ADT NB/SB	21216
AM NB	483
AM SB	853
Total AM NB/SB	1336
AM ADT NB/SB	19647
Average NB/SB ADT	20431

Park Mill Drive	
Rights Discounted 50%	
PM EB	0
PM WB	40
Greater of PM EB/WB	40
PM ADT EB/WB	455
AM EB	0
AM WB	96
Greater of AM EB/WB	96
AM ADT EB/WB	1412
Average EB/WB ADT	933

Results	
NB/SB 8th Hour	1226
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	56
Meets Condition A (>105)	NO *
Meets Condition B (>53)	YES *
EB/WB 4th Hour	1389
NB/SB 4th Hour	63

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Warranted - Meets Condition B

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Park Mill Drive
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1212
PM SB	715
Total PM NB/SB	1927
PM ADT NB/SB	21898
AM NB	512
AM SB	869
Total AM NB/SB	1381
AM ADT NB/SB	20309
Average NB/SB ADT	21103

Park Mill Drive	
Rights Discounted 50%	
PM EB	0
PM WB	40
Greater of PM EB/WB	40
PM ADT EB/WB	455
AM EB	0
AM WB	96
Greater of AM EB/WB	96
AM ADT EB/WB	1412
Average EB/WB ADT	933

Results	
NB/SB 8th Hour	1266
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	56
Meets Condition A (>105)	NO *
Meets Condition B (>53)	YES *
EB/WB 4th Hour	1435
NB/SB 4th Hour	63

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Warranted - Meets Condition B

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	791
PM SB	367
Total PM NB/SB	1158
PM ADT NB/SB	13159
AM NB	288
AM SB	596
Total AM NB/SB	884
AM ADT NB/SB	13000
Average NB/SB ADT	13080

Northern Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	0
Greater of PM EB/WB	0
PM ADT EB/WB	0
AM EB	0
AM WB	0
Greater of AM EB/WB	0
AM ADT EB/WB	0
Average EB/WB ADT	0

Results	
NB/SB 8th Hour	785
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	0
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	889
NB/SB 4th Hour	0

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	825
PM SB	401
Total PM NB/SB	1226
PM ADT NB/SB	13932
AM NB	313
AM SB	612
Total AM NB/SB	925
AM ADT NB/SB	13603
Average NB/SB ADT	13767

Northern Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	21
Greater of PM EB/WB	21
PM ADT EB/WB	239
AM EB	0
AM WB	24
Greater of AM EB/WB	24
AM ADT EB/WB	353
Average EB/WB ADT	296

Results	
NB/SB 8th Hour	826
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	18
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	936
NB/SB 4th Hour	20

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	897
PM SB	442
Total PM NB/SB	1339
PM ADT NB/SB	15216
AM NB	336
AM SB	658
Total AM NB/SB	994
AM ADT NB/SB	14618
Average NB/SB ADT	14917

Northern Site Access	
Rights Discounted 50%	
PM EB	18
PM WB	21
Greater of PM EB/WB	21
PM ADT EB/WB	239
AM EB	28
AM WB	24
Greater of AM EB/WB	28
AM ADT EB/WB	412
Average EB/WB ADT	325

Results	
NB/SB 8th Hour	895
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	20
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1014
NB/SB 4th Hour	22

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1208
PM SB	684
Total PM NB/SB	1892
PM ADT NB/SB	21500
AM NB	472
AM SB	871
Total AM NB/SB	1343
AM ADT NB/SB	19750
Average NB/SB ADT	20625

Northern Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	16
Greater of PM EB/WB	16
PM ADT EB/WB	182
AM EB	0
AM WB	30
Greater of AM EB/WB	30
AM ADT EB/WB	441
Average EB/WB ADT	311

Results	
NB/SB 8th Hour	1238
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	19
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1403
NB/SB 4th Hour	21

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1242
PM SB	718
Total PM NB/SB	1960
PM ADT NB/SB	22273
AM NB	497
AM SB	887
Total AM NB/SB	1384
AM ADT NB/SB	20353
Average NB/SB ADT	21313

Northern Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	37
Greater of PM EB/WB	37
PM ADT EB/WB	420
AM EB	0
AM WB	54
Greater of AM EB/WB	54
AM ADT EB/WB	794
Average EB/WB ADT	607

Results	
NB/SB 8th Hour	1279
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	36
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1449
NB/SB 4th Hour	41

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1314
PM SB	759
Total PM NB/SB	2073
PM ADT NB/SB	23557
AM NB	520
AM SB	933
Total AM NB/SB	1453
AM ADT NB/SB	21368
Average NB/SB ADT	22462

Northern Site Access	
Rights Discounted 50%	
PM EB	18
PM WB	37
Greater of PM EB/WB	37
PM ADT EB/WB	420
AM EB	28
AM WB	54
Greater of AM EB/WB	54
AM ADT EB/WB	794
Average EB/WB ADT	607

Results	
NB/SB 8th Hour	1348
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	36
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1527
NB/SB 4th Hour	41

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Northern Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1368
PM SB	776
Total PM NB/SB	2144
PM ADT NB/SB	24364
AM NB	585
AM SB	941
Total AM NB/SB	1526
AM ADT NB/SB	22441
Average NB/SB ADT	23402

Northern Site Access	
Rights Discounted 50%	
PM EB	62
PM WB	37
Greater of PM EB/WB	62
PM ADT EB/WB	705
AM EB	34
AM WB	54
Greater of AM EB/WB	54
AM ADT EB/WB	794
Average EB/WB ADT	749

Results	
NB/SB 8th Hour	1404
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	45
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1591
NB/SB 4th Hour	51

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Main Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	788
PM SB	370
Total PM NB/SB	1158
PM ADT NB/SB	13159
AM NB	292
AM SB	594
Total AM NB/SB	886
AM ADT NB/SB	13029
Average NB/SB ADT	13094

Main Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	0
Greater of PM EB/WB	0
PM ADT EB/WB	0
AM EB	0
AM WB	0
Greater of AM EB/WB	0
AM ADT EB/WB	0
Average EB/WB ADT	0

Results	
NB/SB 8th Hour	786
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	0
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	890
NB/SB 4th Hour	0

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Main Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	828
PM SB	400
Total PM NB/SB	1228
PM ADT NB/SB	13955
AM NB	315
AM SB	618
Total AM NB/SB	933
AM ADT NB/SB	13721
Average NB/SB ADT	13838

Main Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	23
Greater of PM EB/WB	23
PM ADT EB/WB	261
AM EB	0
AM WB	26
Greater of AM EB/WB	26
AM ADT EB/WB	382
Average EB/WB ADT	322

Results	
NB/SB 8th Hour	830
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	19
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	941
NB/SB 4th Hour	22

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Main Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	900
PM SB	444
Total PM NB/SB	1344
PM ADT NB/SB	15273
AM NB	338
AM SB	688
Total AM NB/SB	1026
AM ADT NB/SB	15088
Average NB/SB ADT	15180

Main Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	23
Greater of PM EB/WB	23
PM ADT EB/WB	261
AM EB	0
AM WB	26
Greater of AM EB/WB	26
AM ADT EB/WB	382
Average EB/WB ADT	322

Results	
NB/SB 8th Hour	911
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	19
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1032
NB/SB 4th Hour	22

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Main Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1284
PM SB	682
Total PM NB/SB	1966
PM ADT NB/SB	22341
AM NB	482
AM SB	889
Total AM NB/SB	1371
AM ADT NB/SB	20162
Average NB/SB ADT	21251

Main Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	38
Greater of PM EB/WB	38
PM ADT EB/WB	432
AM EB	0
AM WB	70
Greater of AM EB/WB	70
AM ADT EB/WB	1029
Average EB/WB ADT	730

Results	
NB/SB 8th Hour	1275
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	44
Meets Condition A (>105)	NO *
Meets Condition B (>53)	NO *
EB/WB 4th Hour	1445
NB/SB 4th Hour	50

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Not Warranted

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Hyland-Croy Road
Minor Roadway	Main Site Site Access
Functional Class	Urban Collector - FC17
Major Road Direction	North/South
Minor Road Direction	East/West

Hyland-Croy Road	
PM NB	1324
PM SB	712
Total PM NB/SB	2036
PM ADT NB/SB	23136
AM NB	505
AM SB	913
Total AM NB/SB	1418
AM ADT NB/SB	20853
Average NB/SB ADT	21995

Main Site Site Access	
Rights Discounted 50%	
PM EB	0
PM WB	61
Greater of PM EB/WB	61
PM ADT EB/WB	693
AM EB	0
AM WB	96
Greater of AM EB/WB	96
AM ADT EB/WB	1412
Average EB/WB ADT	1053

Results	
NB/SB 8th Hour	1320
Meets Condition A (>350)	YES *
Meets Condition B (>525)	YES *
EB/WB 8th Hour	63
Meets Condition A (>105)	NO *
Meets Condition B (>53)	YES *
EB/WB 4th Hour	1496
NB/SB 4th Hour	72

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.3%
2A-3A	0.3%
3A	0.3%
4A	0.5%
5A	1.5%
6A	3.7%
7A	6.8%
8A	6.0%
9A	4.8%
10A	4.8%
11A-Noon	5.6%
Noon	6.1%
1P-2P	6.0%
2P-3P	6.7%
3P	7.7%
4P	8.4%
5P	8.8%
6P	6.5%
7P	4.9%
8P	4.0%
9P	2.8%
10P-11P	1.8%
11P-Mid	1.1%

AM Peak % of ADT=	6.8%
PM Peak % of ADT=	8.8%
8th Hour % of ADT=	6.0%
4th Hour % of ADT=	6.8%

Signal Warranted - Meets Condition B

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Major Roadway	Post Road
Minor Roadway	Hyland-Croy Road
Functional Class	Urban Minor Arterial - FC16
Major Road Direction	East/West
Minor Road Direction	North/South

Post Road	
PM EB	1037
PM WB	866
Total PM EB/WB	1903
PM ADT EB/WB	22655
AM EB	834
AM WB	482
Total AM EB/WB	1316
AM ADT EB/WB	21226
Average EB/WB ADT	21940

Hyland-Croy Road	
Rights Discounted 50%	
PM NB	0
PM SB	209
Greater of PM NB/SB	209
PM ADT NB/SB	2488
AM NB	0
AM SB	387
Greater of AM NB/SB	387
AM ADT NB/SB	6242
Average NB/SB ADT	4365

Results	
EB/WB 8th Hour	1338
Meets Condition A (>420)	YES *
Meets Condition B (>630)	YES *
NB/SB 8th Hour	266
Meets Condition A (>105)	YES *
Meets Condition B (>53)	YES *
EB/WB 4th Hour	1470
NB/SB 4th Hour	292

Hourly % of ADT	
Hour of Day	% Total
Mid-1A	0.6%
1A-2A	0.4%
2A-3A	0.3%
3A	0.3%
4A	0.6%
5A	1.6%
6A	3.8%
7A	6.2%
8A	5.9%
9A	5.0%
10A	5.1%
11A-Noon	5.7%
Noon	6.2%
1P-2P	6.1%
2P-3P	6.7%
3P	7.6%
4P	8.1%
5P	8.4%
6P	6.4%
7P	4.9%
8P	4.0%
9P	2.9%
10P-11P	1.8%
11P-Mid	1.2%

AM Peak % of ADT=	6.2%
PM Peak % of ADT=	8.4%
8th Hour % of ADT=	6.1%
4th Hour % of ADT=	6.7%

Signal Warranted - Meets Conditions A and B

*Speed on Main Road exceeds 40 mph, volume threshold reduced by 30%



Appendix G

Capacity Analysis



LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2019 AM Peak No Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	277	3.0	1258	0.220	100	4.8	LOS A	1.4	34.8	Full	1600	0.0	0.0
Lane 2	223	3.0	1060	0.210	100	5.4	LOS A	1.2	31.6	Full	1600	0.0	0.0
Approach	500	3.0		0.220		5.0	LOS A	1.4	34.8				
East: Main Gorden Access													
Lane 1 ^d	280	2.6	1017	0.276	100	6.3	LOS A	1.7	43.5	Full	1600	0.0	0.0
Approach	280	2.6		0.276		6.3	LOS A	1.7	43.5				
North: Hyland-Croy Road													
Lane 1 ^d	604	2.6	1306	0.463	100	7.4	LOS A	3.6	92.1	Full	1600	0.0	0.0
Lane 2	15	2.0	863	0.018	100	4.3	LOS A	0.1	2.2	Full	1600	0.0	0.0
Approach	620	2.6		0.463		7.3	LOS A	3.6	92.1				
West: Halls Corner Access													
Lane 1 ^d	125	2.3	657	0.190	100	7.7	LOS A	1.2	30.9	Full	1600	0.0	0.0
Approach	125	2.3		0.190		7.7	LOS A	1.2	30.9				
Intersection	1525	2.7		0.463		6.4	LOS A	3.6	92.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:57:18 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2019 AM Build.sip7

LANE LEVEL OF SERVICE

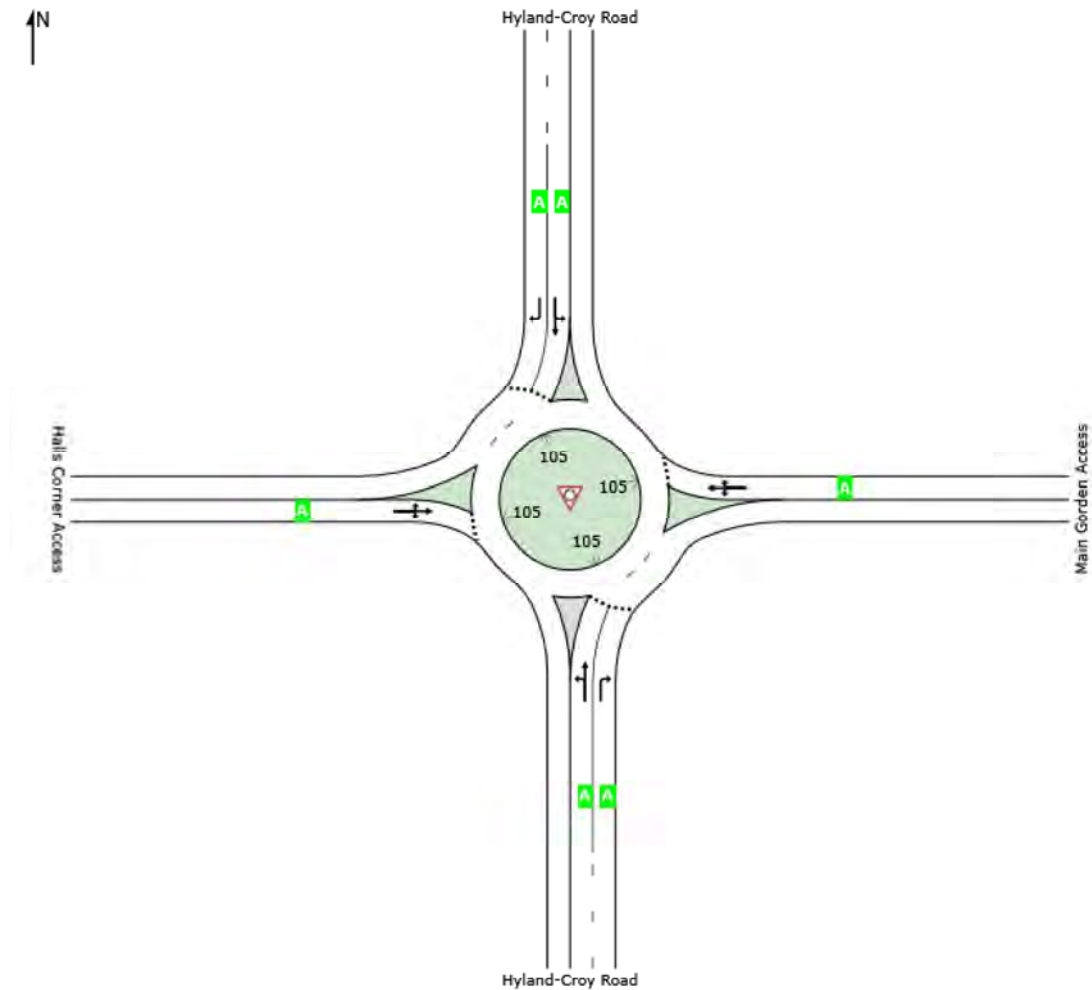
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2019 AM Peak No Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:57:18 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2019 AM Build.sip7

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2019 PM Peak No Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	554	3.0	1349	0.411	100	6.6	LOS A	3.0	76.8	Full	1600	0.0	0.0
Lane 2	111	3.0	889	0.125	100	5.2	LOS A	0.7	16.7	Full	1600	0.0	0.0
Approach	665	3.0		0.411		6.4	LOS A	3.0	76.8				
East: Main Gorden Access													
Lane 1 ^d	270	2.4	793	0.340	100	8.6	LOS A	2.3	57.4	Full	1600	0.0	0.0
Approach	270	2.4		0.340		8.6	LOS A	2.3	57.4				
North: Hyland-Croy Road													
Lane 1 ^d	329	2.8	1315	0.250	100	4.9	LOS A	1.6	42.0	Full	1600	0.0	0.0
Lane 2	9	2.0	873	0.010	100	4.2	LOS A	0.0	1.3	Full	1600	0.0	0.0
Approach	338	2.8		0.250		4.9	LOS A	1.6	42.0				
West: Halls Corner Access													
Lane 1 ^d	179	2.2	922	0.195	100	5.8	LOS A	1.1	28.7	Full	1600	0.0	0.0
Approach	179	2.2		0.195		5.8	LOS A	1.1	28.7				
Intersection	1452	2.7		0.411		6.4	LOS A	3.0	76.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 9:00:22 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2019 PM No Build.sip7

LANE LEVEL OF SERVICE

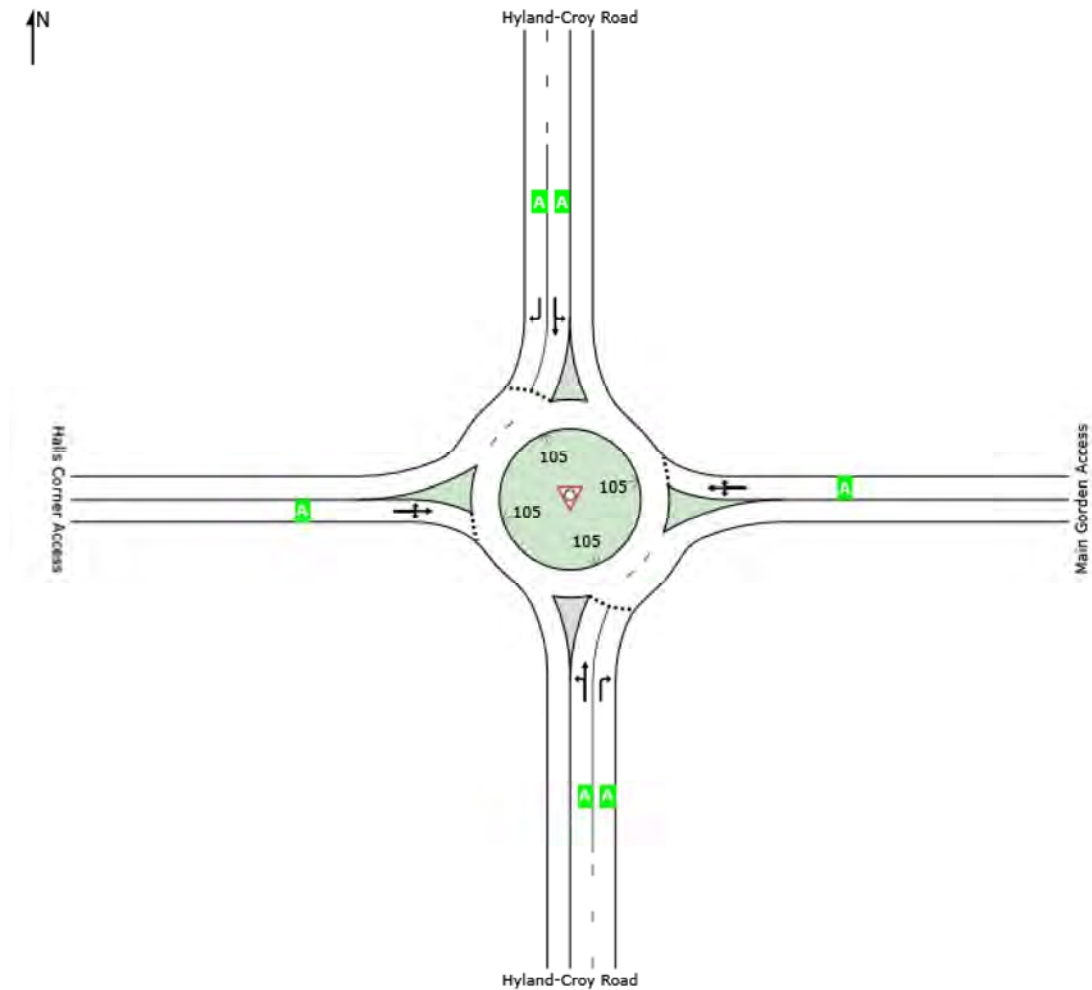
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2019 PM Peak No Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden Only
2019 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	295	3.0	1257	0.234	100	4.9	LOS A	1.5	37.5	Full	1600	0.0	0.0
Lane 2	237	3.0	1059	0.224	100	5.5	LOS A	1.3	34.1	Full	1600	0.0	0.0
Approach	532	3.0		0.234		5.2	LOS A	1.5	37.5				
East: Main Gorden Access													
Lane 1 ^d	288	2.6	1001	0.288	100	6.5	LOS A	1.8	45.9	Full	1600	0.0	0.0
Approach	288	2.6		0.288		6.5	LOS A	1.8	45.9				
North: Hyland-Croy Road													
Lane 1 ^d	612	2.6	1295	0.473	100	7.6	LOS A	3.7	95.1	Full	1600	0.0	0.0
Lane 2	15	2.0	854	0.018	100	4.4	LOS A	0.1	2.2	Full	1600	0.0	0.0
Approach	627	2.6		0.473		7.5	LOS A	3.7	95.1				
West: Halls Corner Access													
Lane 1 ^d	127	2.3	644	0.197	100	7.9	LOS A	1.3	32.4	Full	1600	0.0	0.0
Approach	127	2.3		0.197		7.9	LOS A	1.3	32.4				
Intersection	1574	2.7		0.473		6.6	LOS A	3.7	95.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:54:23 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2019 AM Build.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

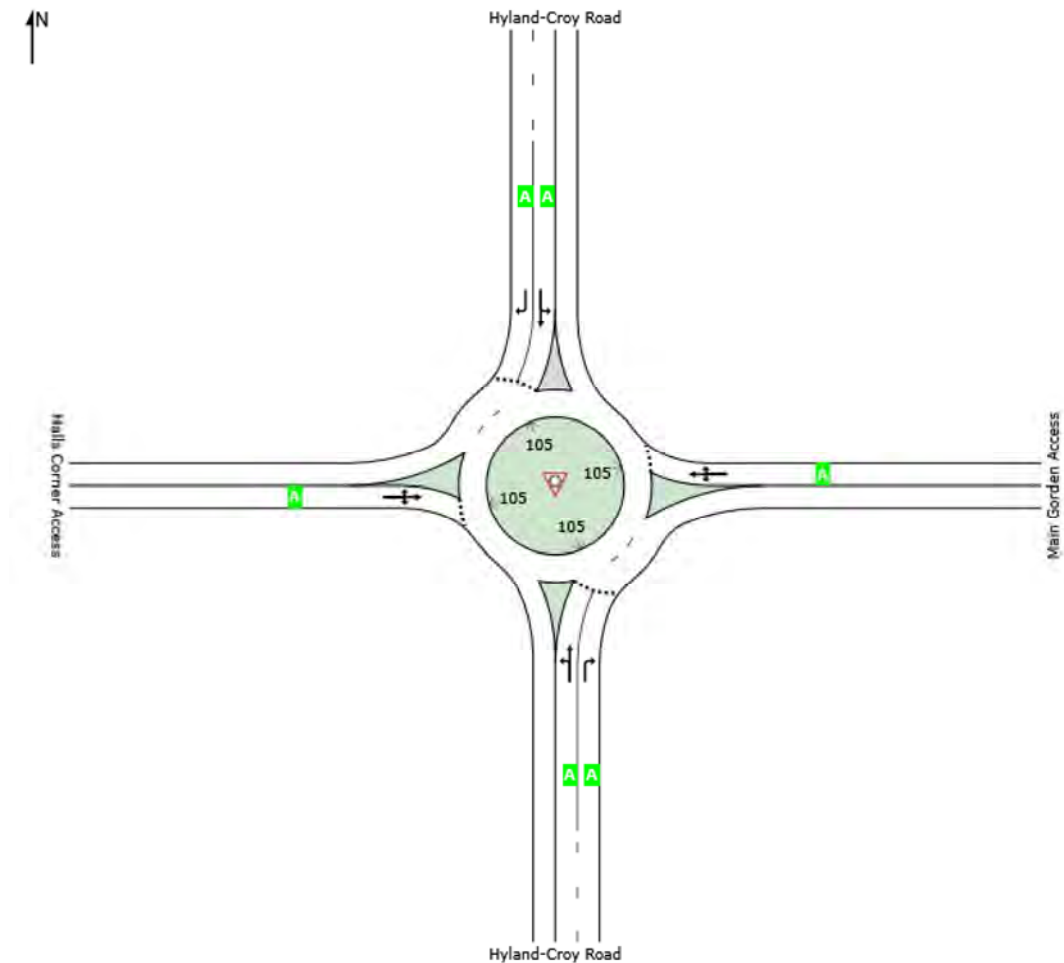


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden Only
2019 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:54:23 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2019 AM

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden Only
2019 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	571	3.0	1348	0.423	100	6.7	LOS A	3.1	80.4	Full	1600	0.0	0.0
Lane 2	123	3.0	888	0.138	100	5.4	LOS A	0.7	18.8	Full	1600	0.0	0.0
Approach	693	3.0		0.423		6.5	LOS A	3.1	80.4				
East: Main Gorden Access													
Lane 1 ^d	286	2.4	778	0.367	100	9.1	LOS A	2.5	63.1	Full	1600	0.0	0.0
Approach	286	2.4		0.367		9.1	LOS A	2.5	63.1				
North: Hyland-Croy Road													
Lane 1 ^d	346	2.8	1293	0.267	100	5.1	LOS A	1.8	45.7	Full	1600	0.0	0.0
Lane 2	9	2.0	856	0.010	100	4.3	LOS A	0.1	1.3	Full	1600	0.0	0.0
Approach	354	2.8		0.267		5.1	LOS A	1.8	45.7				
West: Halls Corner Access													
Lane 1 ^d	184	2.2	895	0.205	100	6.1	LOS A	1.2	30.7	Full	1600	0.0	0.0
Approach	184	2.2		0.205		6.1	LOS A	1.2	30.7				
Intersection	1517	2.8		0.423		6.6	LOS A	3.1	80.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:51:16 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2019 PM Build.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

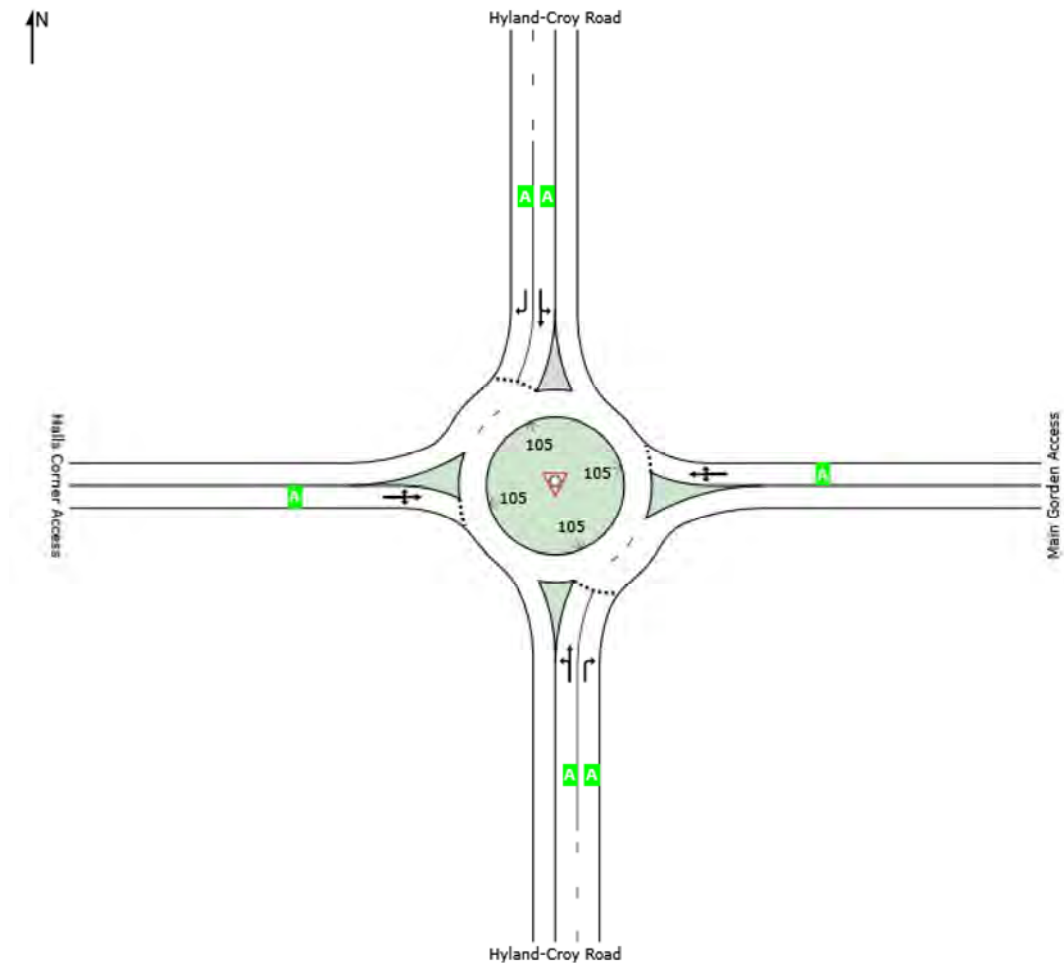


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden Only
2019 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Friday, June 16, 2017 8:51:16 AM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2019 PM

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1
2019 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	327	3.0	1255	0.261	100	5.2	LOS A	1.7	42.7	Full	1600	0.0	0.0
Lane 2	262	3.0	1057	0.248	100	5.8	LOS A	1.5	38.5	Full	1600	0.0	0.0
Approach	589	3.0		0.261		5.4	LOS A	1.7	42.7				
East: Main Gorden Access													
Lane 1 ^d	296	2.6	972	0.304	100	6.8	LOS A	1.9	49.3	Full	1600	0.0	0.0
Approach	296	2.6		0.304		6.8	LOS A	1.9	49.3				
North: Hyland-Croy Road													
Lane 1 ^d	621	2.7	1279	0.485	100	7.9	LOS A	3.9	99.0	Full	1600	0.0	0.0
Lane 2	15	2.0	843	0.018	100	4.4	LOS A	0.1	2.3	Full	1600	0.0	0.0
Approach	636	2.6		0.485		7.8	LOS A	3.9	99.0				
West: Halls Corner Access													
Lane 1 ^d	129	2.3	629	0.206	100	8.2	LOS A	1.3	34.1	Full	1600	0.0	0.0
Approach	129	2.3		0.206		8.2	LOS A	1.3	34.1				
Intersection	1650	2.7		0.485		6.8	LOS A	3.9	99.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:30:24 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2019 AM Build.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

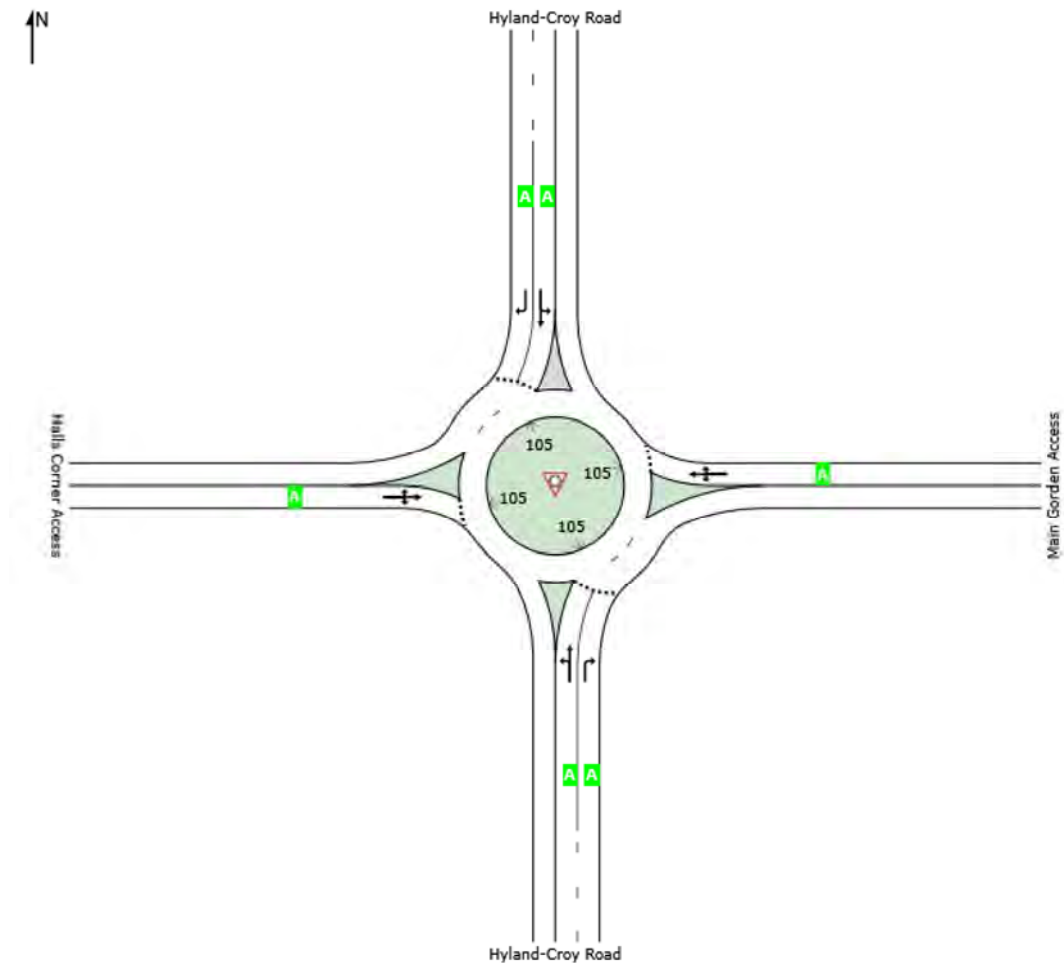


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1
2019 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:30:24 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2019

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1
2019 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	591	3.0	1345	0.440	100	7.0	LOS A	3.3	85.4	Full	1600	0.0	0.0
Lane 2	139	3.0	887	0.157	100	5.6	LOS A	0.8	21.7	Full	1600	0.0	0.0
Approach	730	3.0		0.440		6.7	LOS A	3.3	85.4				
East: Main Gorden Access													
Lane 1 ^d	312	2.5	760	0.411	100	10.1	LOS B	2.9	73.2	Full	1600	0.0	0.0
Approach	312	2.5		0.411		10.1	LOS B	2.9	73.2				
North: Hyland-Croy Road													
Lane 1 ^d	372	2.8	1259	0.295	100	5.5	LOS A	2.0	51.9	Full	1600	0.0	0.0
Lane 2	9	2.0	830	0.010	100	4.4	LOS A	0.1	1.3	Full	1600	0.0	0.0
Approach	380	2.8		0.295		5.5	LOS A	2.0	51.9				
West: Halls Corner Access													
Lane 1 ^d	190	2.3	852	0.223	100	6.5	LOS A	1.3	34.2	Full	1600	0.0	0.0
Approach	190	2.3		0.223		6.5	LOS A	1.3	34.2				
Intersection	1613	2.8		0.440		7.0	LOS A	3.3	85.4				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:37:48 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2019 PM Build.sip7

LANE LEVEL OF SERVICE

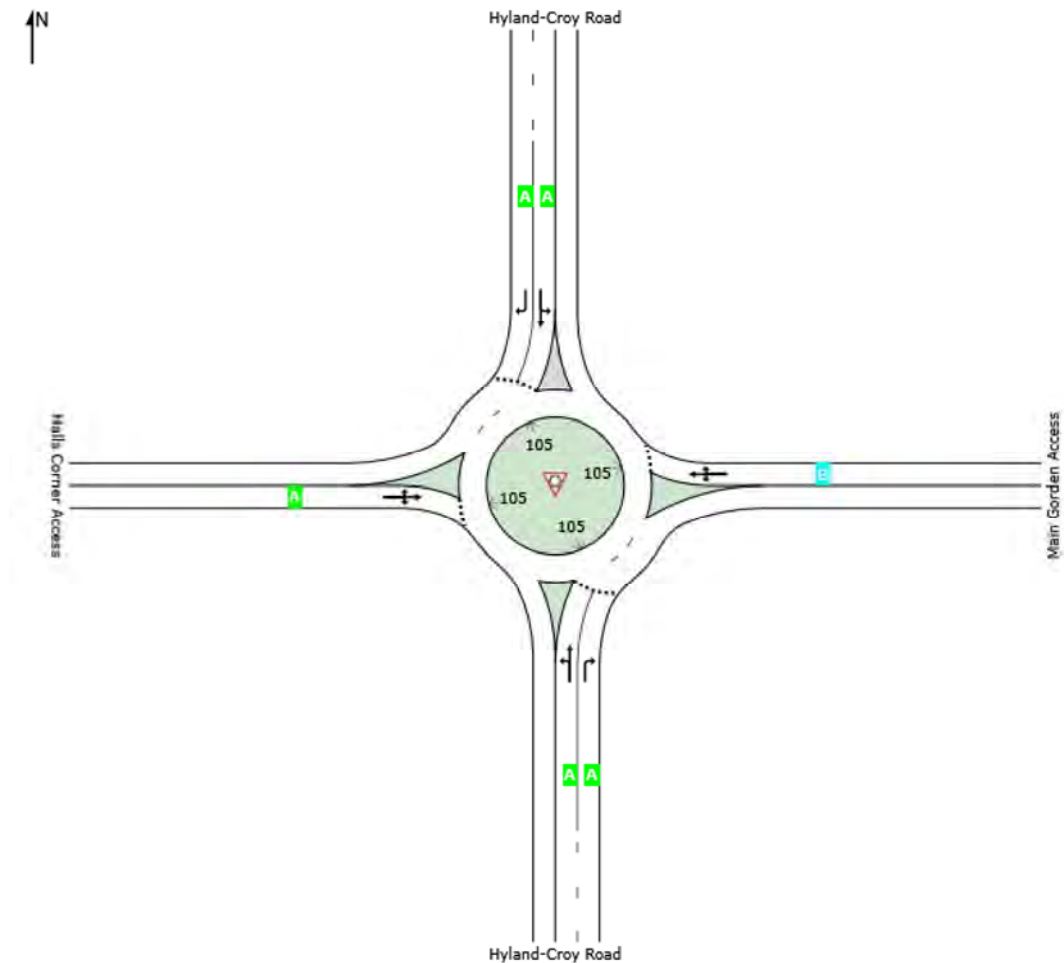
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden + Jacquemin Phase 1
2019 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:37:48 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2019

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2029 AM Peak No Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	458	3.0	1139	0.402	100	7.3	LOS A	3.0	77.3	Full	1600	0.0	0.0
Lane 2	262	3.0	898	0.292	100	7.1	LOS A	1.9	48.1	Full	1600	0.0	0.0
Approach	720	3.0		0.402		7.2	LOS A	3.0	77.3				
East: Main Gorden Access													
Lane 1 ^d	264	2.7	1060	0.249	100	5.8	LOS A	1.7	43.9	Full	1600	0.0	0.0
Lane 2	117	2.0	799	0.147	100	6.0	LOS A	0.9	22.1	Full	1600	0.0	0.0
Approach	382	2.5		0.249		5.8	LOS A	1.7	43.9				
North: Hyland-Croy Road													
Lane 1 ^d	937	2.7	1250	0.750	100	14.7	LOS B	10.3	262.8	Full	1600	0.0	0.0
Lane 2	23	2.0	821	0.028	100	4.6	LOS A	0.1	3.6	Full	1600	0.0	0.0
Approach	960	2.7		0.750		14.5	LOS B	10.3	262.8				
West: Halls Corner Access													
Lane 1 ^d	149	2.3	353	0.422	100	19.6	LOS C	3.4	87.4	Full	1600	0.0	0.0
Approach	149	2.3		0.422		19.6	LOS C	3.4	87.4				
Intersection	2210	2.7		0.750		11.0	LOS B	10.3	262.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:47:05 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2029 AM No Build with Improvements.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

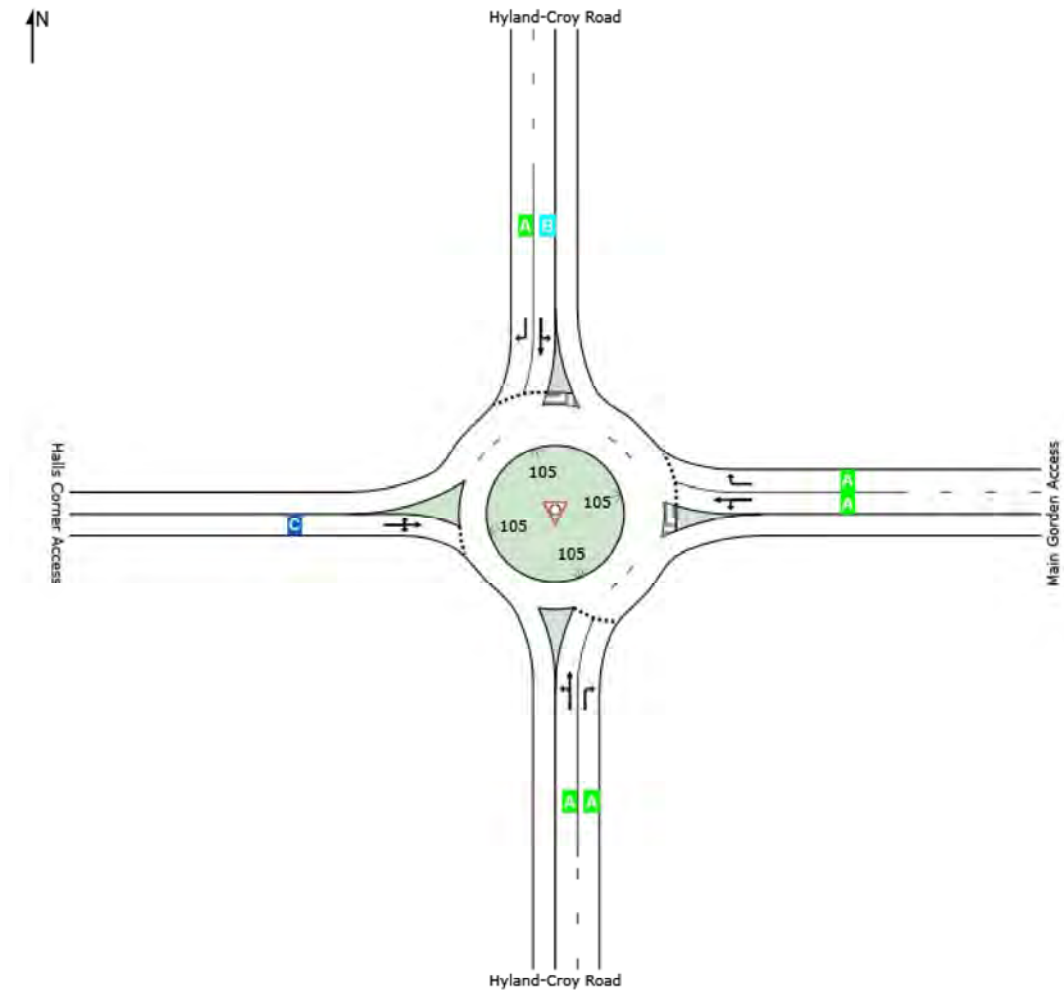


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

2029 AM Peak No Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	B	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:47:05 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2029 AM No Build

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2029 PM Peak No Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	918	3.0	1221	0.752	100	15.0	LOS C	10.4	266.2	Full	1600	0.0	0.0
Lane 2	146	3.0	792	0.184	100	6.5	LOS A	1.0	25.9	Full	1600	0.0	0.0
Approach	1064	3.0		0.752		13.9	LOS B	10.4	266.2				
East: Main Gorden Access													
Lane 1 ^d	232	2.6	571	0.405	100	12.6	LOS B	3.6	91.0	Full	1600	0.0	0.0
Lane 2	201	2.0	435	0.463	100	17.5	LOS C	3.9	98.8	Full	1600	0.0	0.0
Approach	433	2.3		0.463		14.9	LOS B	3.9	98.8				
North: Hyland-Croy Road													
Lane 1 ^d	717	2.8	1235	0.581	100	9.8	LOS A	5.4	137.2	Full	1600	0.0	0.0
Lane 2	18	2.0	813	0.023	100	4.6	LOS A	0.1	3.0	Full	1600	0.0	0.0
Approach	736	2.7		0.581		9.6	LOS A	5.4	137.2				
West: Halls Corner Access													
Lane 1 ^d	220	2.2	558	0.394	100	12.6	LOS B	2.9	74.4	Full	1600	0.0	0.0
Approach	220	2.2		0.394		12.6	LOS B	2.9	74.4				
Intersection	2452	2.7		0.752		12.7	LOS B	10.4	266.2				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 5:22:16 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2029 PM No Build with Improvements.sip7

LANE LEVEL OF SERVICE

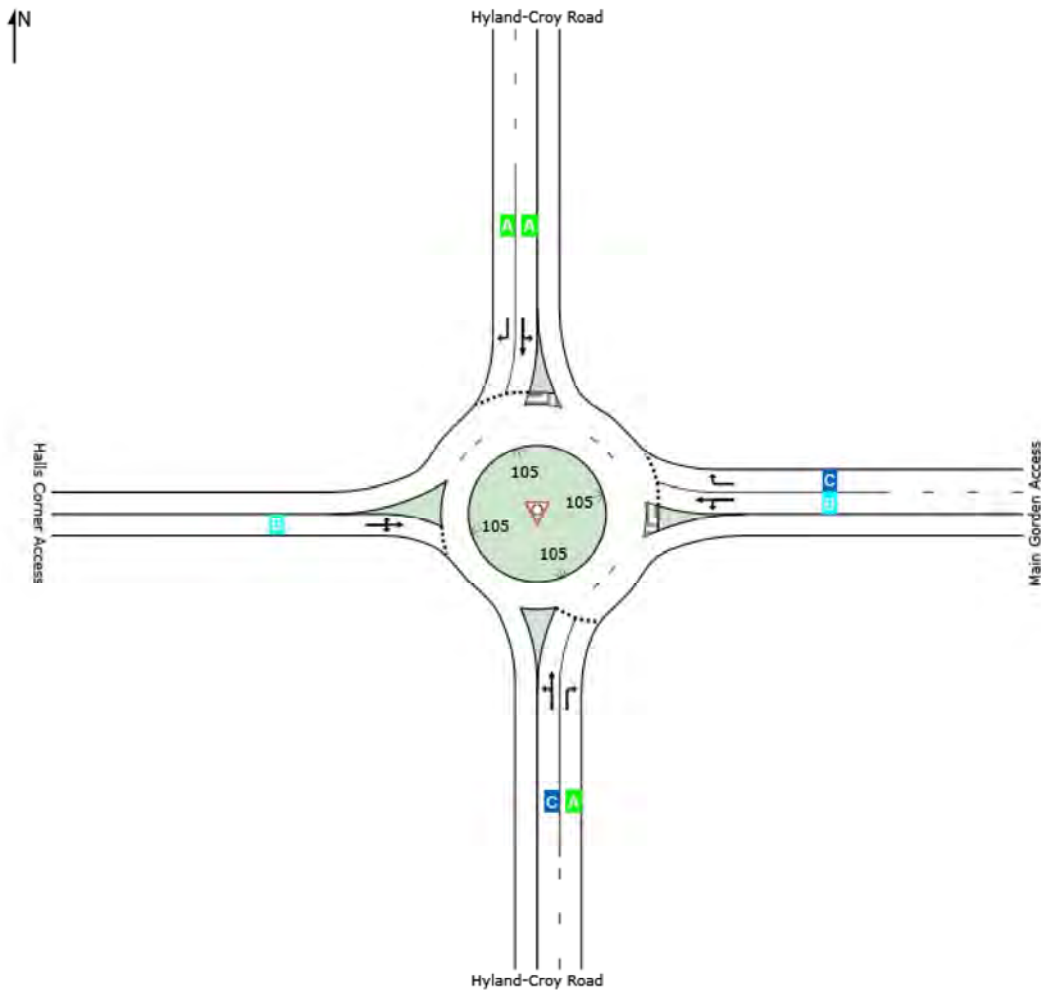
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

2029 PM Peak No Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	B	B	A	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 5:22:16 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\No Build\2029 PM No Build

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden Only
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	475	3.0	1136	0.418	100	7.5	LOS A	3.2	81.7	Full	1600	0.0	0.0
Lane 2	276	3.0	898	0.307	100	7.3	LOS A	2.0	51.4	Full	1600	0.0	0.0
Approach	751	3.0		0.418		7.4	LOS A	3.2	81.7				
East: Main Gorden Access													
Lane 1 ^d	272	2.8	1042	0.261	100	6.0	LOS A	1.8	46.7	Full	1600	0.0	0.0
Lane 2	117	2.0	779	0.151	100	6.2	LOS A	0.9	22.8	Full	1600	0.0	0.0
Approach	389	2.5		0.261		6.0	LOS A	1.8	46.7				
North: Hyland-Croy Road													
Lane 1 ^d	945	2.7	1238	0.763	100	15.4	LOS C	10.9	279.0	Full	1600	0.0	0.0
Lane 2	23	2.0	813	0.028	100	4.7	LOS A	0.1	3.6	Full	1600	0.0	0.0
Approach	967	2.7		0.763		15.1	LOS C	10.9	279.0				
West: Halls Corner Access													
Lane 1 ^d	151	2.3	340	0.444	100	21.0	LOS C	3.7	94.3	Full	1600	0.0	0.0
Approach	151	2.3		0.444		21.0	LOS C	3.7	94.3				
Intersection	2259	2.7		0.763		11.4	LOS B	10.9	279.0				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:41:17 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2029 AM Build with Improvements.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

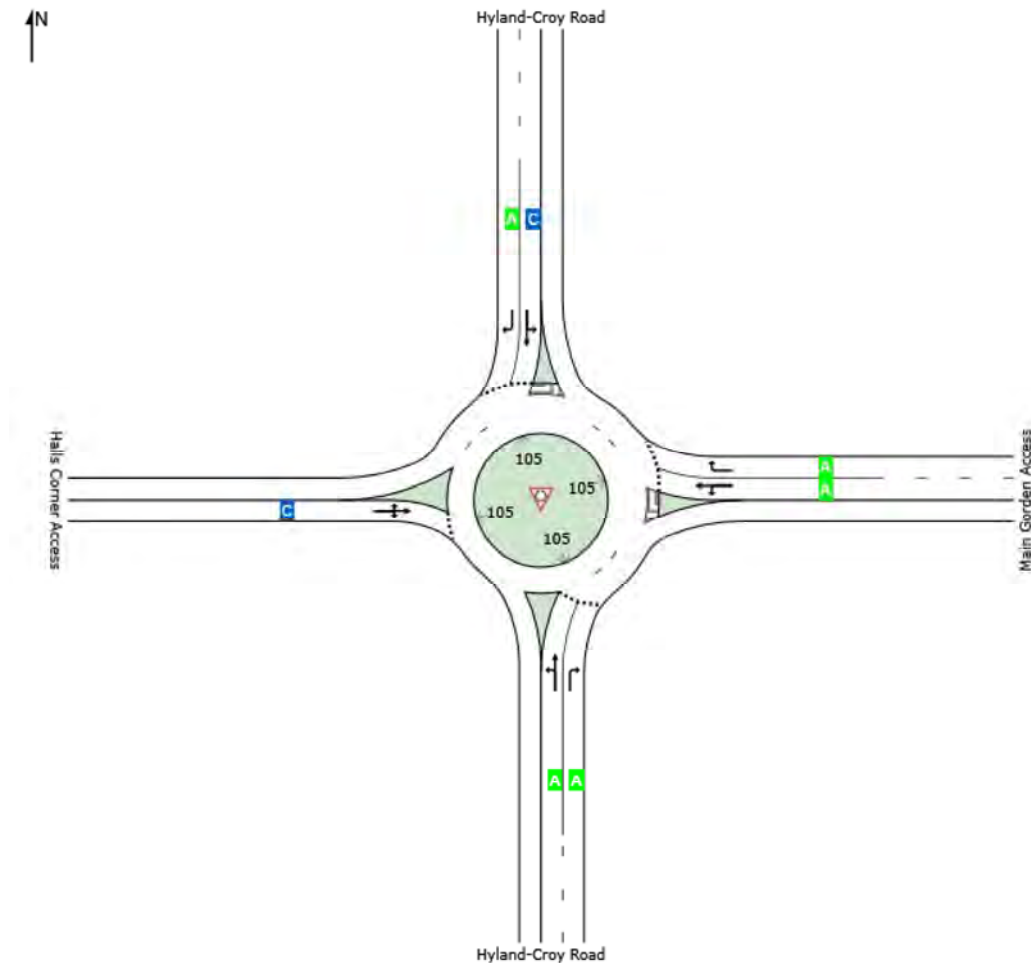


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden Only
2029 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	C	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden Only
2029 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	935	3.0	1219	0.767	100	15.7	LOS C	11.0	282.8	Full	1600	0.0	0.0
Lane 2	158	3.0	791	0.199	100	6.7	LOS A	1.1	28.4	Full	1600	0.0	0.0
Approach	1092	3.0		0.767		14.4	LOS B	11.0	282.8				
East: Main Gorden Access													
Lane 1 ^d	248	2.6	552	0.449	100	14.0	LOS B	4.2	107.2	Full	1600	0.0	0.0
Lane 2	201	2.0	417	0.482	100	18.8	LOS C	4.1	105.0	Full	1600	0.0	0.0
Approach	449	2.4		0.482		16.1	LOS C	4.2	107.2				
North: Hyland-Croy Road													
Lane 1 ^d	734	2.8	1214	0.604	100	10.4	LOS B	5.9	150.8	Full	1600	0.0	0.0
Lane 2	18	2.0	798	0.023	100	4.7	LOS A	0.1	3.1	Full	1600	0.0	0.0
Approach	752	2.8		0.604		10.3	LOS B	5.9	150.8				
West: Halls Corner Access													
Lane 1 ^d	224	2.2	530	0.423	100	13.8	LOS B	3.3	83.9	Full	1600	0.0	0.0
Approach	224	2.2		0.423		13.8	LOS B	3.3	83.9				
Intersection	2517	2.7		0.767		13.4	LOS B	11.0	282.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:44:30 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2029 PM Build with Improvements.sip7

LANE LEVEL OF SERVICE

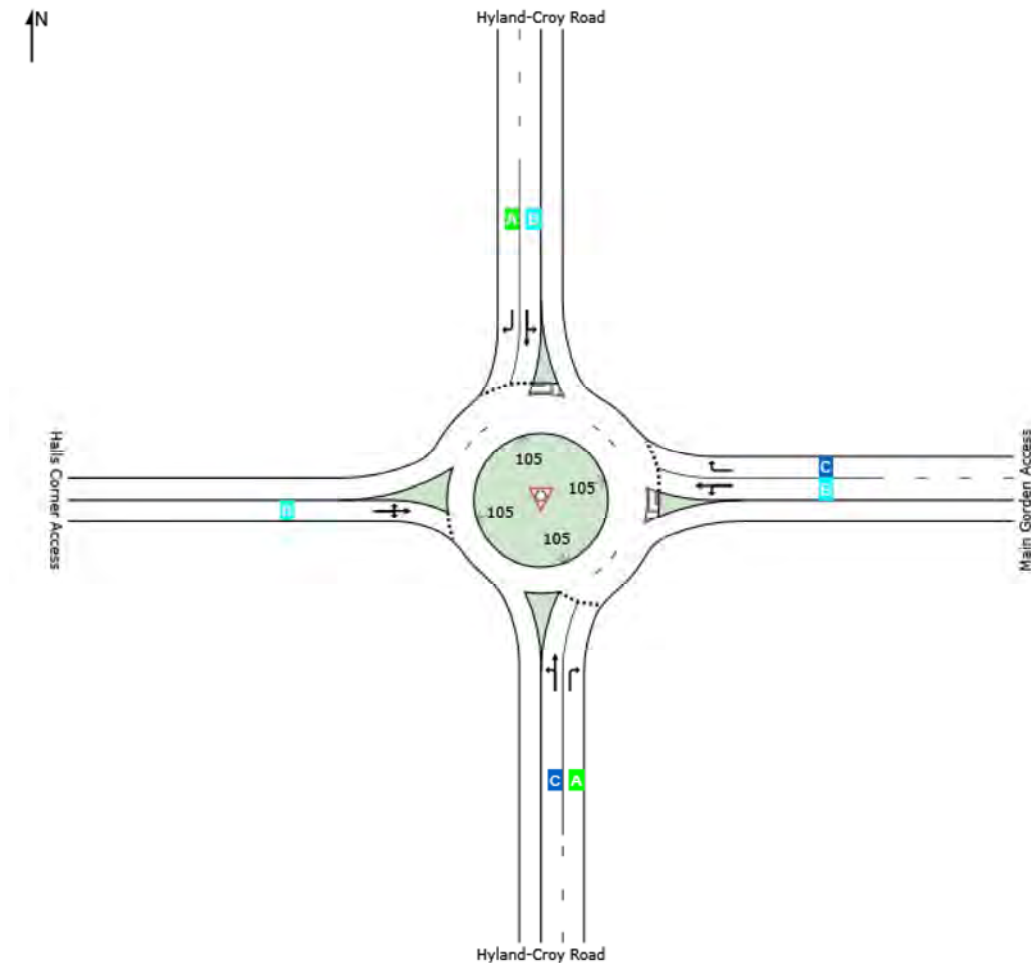
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden Only
2029 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	B	C	B	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:44:30 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden Only\2029 PM Build

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden + Jacquemin Phase 1
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	508	3.0	1133	0.448	100	8.0	LOS A	3.5	89.9	Full	1600	0.0	0.0
Lane 2	301	3.0	899	0.335	100	7.7	LOS A	2.2	57.3	Full	1600	0.0	0.0
Approach	809	3.0		0.448		7.9	LOS A	3.5	89.9				
East: Main Gorden Access													
Lane 1 ^d	279	2.8	1008	0.277	100	6.3	LOS A	2.0	50.8	Full	1600	0.0	0.0
Lane 2	117	2.0	748	0.157	100	6.5	LOS A	0.9	24.1	Full	1600	0.0	0.0
Approach	397	2.5		0.277		6.4	LOS A	2.0	50.8				
North: Hyland-Croy Road													
Lane 1 ^d	953	2.7	1223	0.780	100	16.4	LOS C	11.8	300.9	Full	1600	0.0	0.0
Lane 2	23	2.0	802	0.028	100	4.8	LOS A	0.1	3.7	Full	1600	0.0	0.0
Approach	976	2.7		0.780		16.1	LOS C	11.8	300.9				
West: Halls Corner Access													
Lane 1 ^d	153	2.3	326	0.470	100	22.8	LOS C	4.0	102.7	Full	1600	0.0	0.0
Approach	153	2.3		0.470		22.8	LOS C	4.0	102.7				
Intersection	2335	2.7		0.780		12.0	LOS B	11.8	300.9				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:23:55 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2029 AM Build with Improvements.sip7

LANE LEVEL OF SERVICE

Lane Level of Service

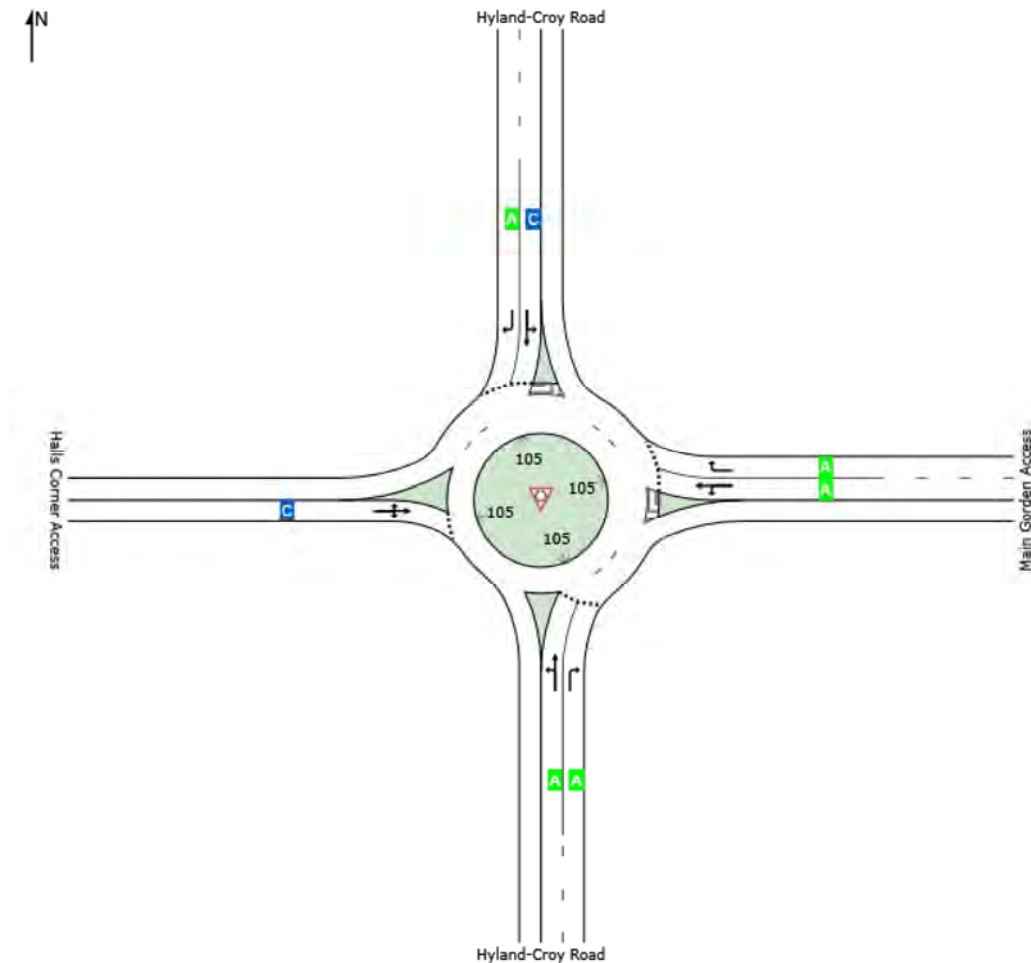


Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1
2029 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	C	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden + Jacquemin Phase 1
2029 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	955	3.0	1217	0.785	100	16.7	LOS C	12.0	306.1	Full	1600	0.0	0.0
Lane 2	174	3.0	790	0.220	100	6.9	LOS A	1.2	31.9	Full	1600	0.0	0.0
Approach	1129	3.0		0.785		15.2	LOS C	12.0	306.1				
East: Main Gorden Access													
Lane 1 ^d	274	2.7	527	0.520	100	16.6	LOS C	5.3	135.8	Full	1600	0.0	0.0
Lane 2	201	2.0	395	0.509	100	20.7	LOS C	4.5	113.8	Full	1600	0.0	0.0
Approach	475	2.4		0.520		18.3	LOS C	5.3	135.8				
North: Hyland-Croy Road													
Lane 1 ^d	760	2.8	1183	0.642	100	11.5	LOS B	7.0	178.2	Full	1600	0.0	0.0
Lane 2	18	2.0	775	0.024	100	4.9	LOS A	0.1	3.2	Full	1600	0.0	0.0
Approach	778	2.8		0.642		11.4	LOS B	7.0	178.2				
West: Halls Corner Access													
Lane 1 ^d	230	2.3	486	0.474	100	16.3	LOS C	4.0	101.6	Full	1600	0.0	0.0
Approach	230	2.3		0.474		16.3	LOS C	4.0	101.6				
Intersection	2613	2.8		0.785		14.7	LOS B	12.0	306.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:28:06 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2029 PM Build with Improvements.sip7

LANE LEVEL OF SERVICE

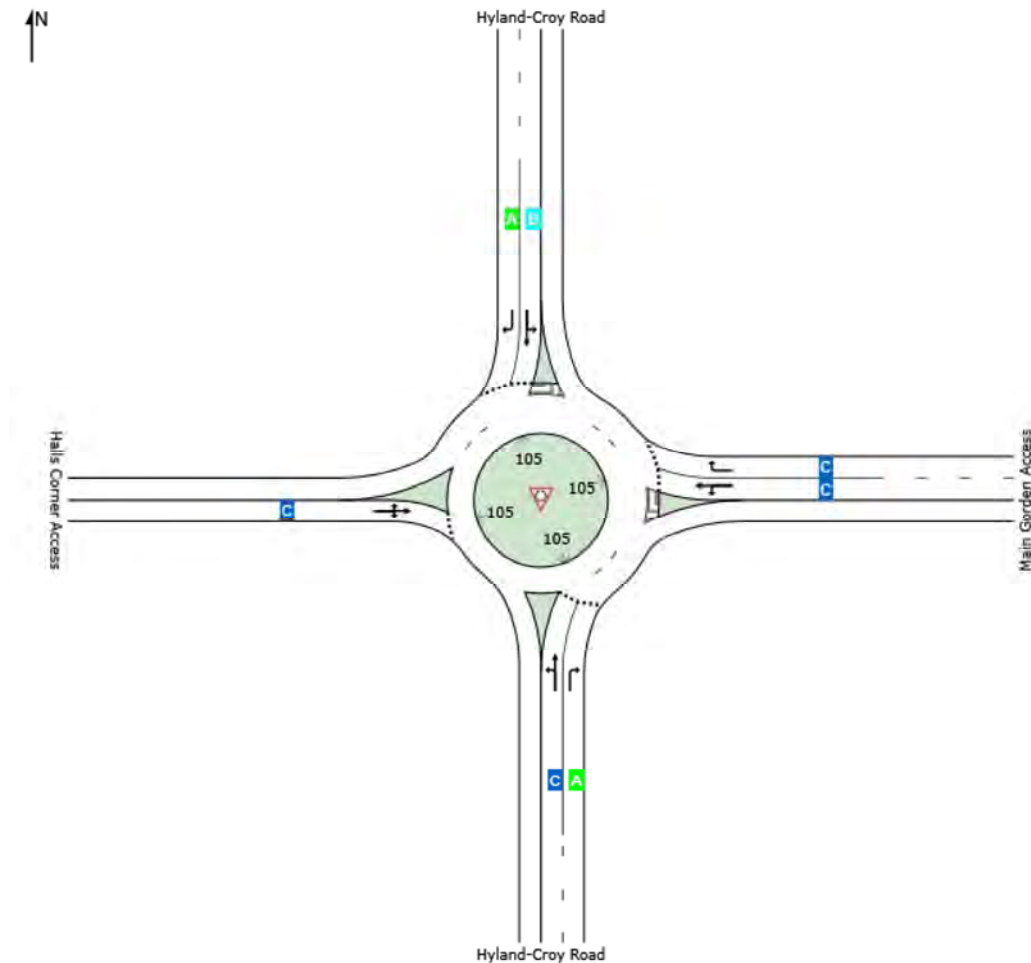
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]**

Gorden + Jacquemin Phase 1
2029 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	C	C	B	C	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:28:06 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1\2029

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	510	3.0	1130	0.451	100	8.0	LOS A	3.6	91.2	Full	1600	0.0	0.0
Lane 2	304	3.0	897	0.339	100	7.8	LOS A	2.3	58.5	Full	1600	0.0	0.0
Approach	814	3.0		0.451		7.9	LOS A	3.6	91.2				
East: Brand Road													
Lane 1 ^d	293	2.8	1004	0.292	100	6.5	LOS A	2.1	54.1	Full	1600	0.0	0.0
Lane 2	117	2.0	738	0.159	100	6.6	LOS A	1.0	24.4	Full	1600	0.0	0.0
Approach	411	2.6		0.292		6.5	LOS A	2.1	54.1				
North: Hyland-Croy Road													
Lane 1 ^d	966	2.7	1208	0.800	100	17.7	LOS C	12.9	329.5	Full	1600	0.0	0.0
Lane 2	23	2.0	791	0.029	100	4.8	LOS A	0.1	3.8	Full	1600	0.0	0.0
Approach	989	2.7		0.800		17.4	LOS C	12.9	329.5				
West: Mitchell-Dewitt Road													
Lane 1 ^d	155	2.3	305	0.509	100	25.9	LOS D	4.5	115.4	Full	1600	0.0	0.0
Approach	155	2.3		0.509		25.9	LOS D	4.5	115.4				
Intersection	2370	2.7		0.800		12.8	LOS B	12.9	329.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:20:26 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1 & 2
2029 AM Build with Improvements.sip7

LANE LEVEL OF SERVICE

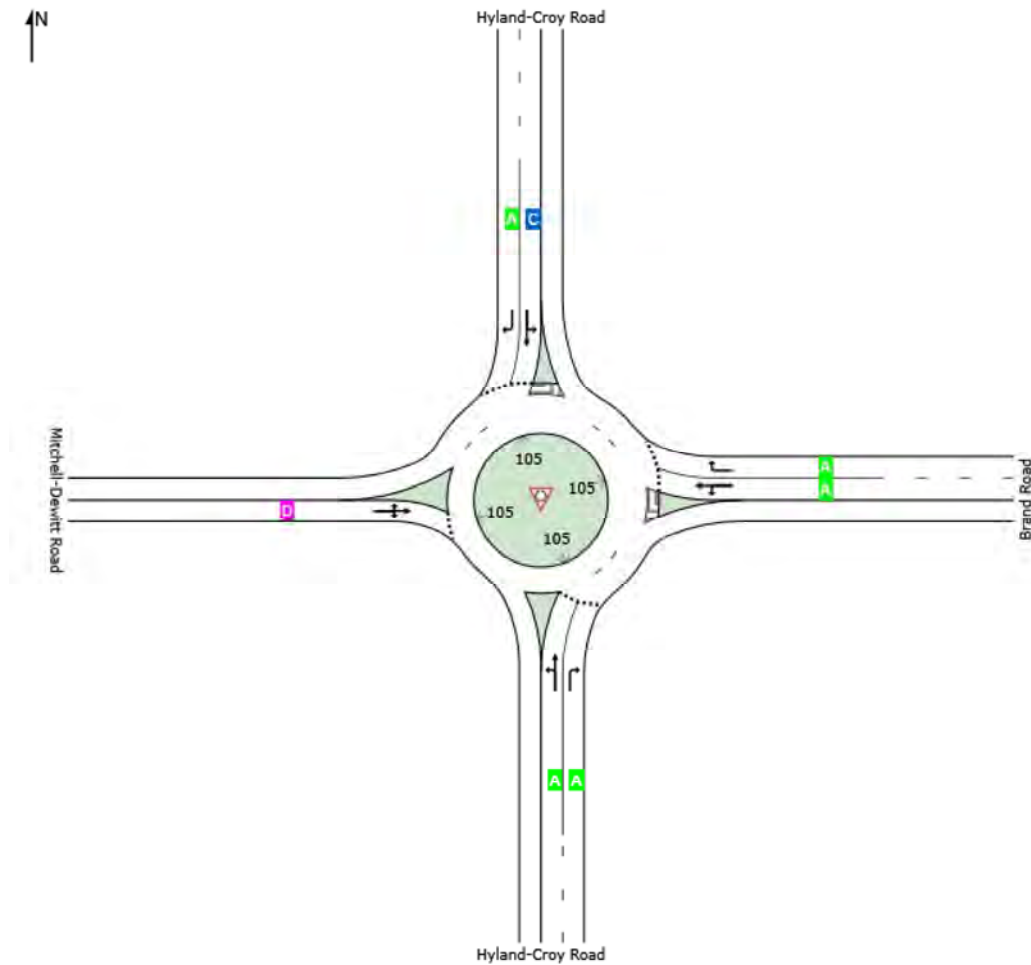
Lane Level of Service

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	C	D	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	971	3.0	1217	0.798	100	17.4	LOS C	12.7	324.1	Full	1600	0.0	0.0
Lane 2	189	3.0	790	0.240	100	7.2	LOS A	1.4	35.3	Full	1600	0.0	0.0
Approach	1160	3.0		0.798		15.8	LOS C	12.7	324.1				
East: Brand Road													
Lane 1 ^d	285	2.7	509	0.560	100	18.5	LOS C	6.0	153.5	Full	1600	0.0	0.0
Lane 2	201	2.0	380	0.529	100	22.2	LOS C	4.7	120.6	Full	1600	0.0	0.0
Approach	486	2.4		0.560		20.0	LOS C	6.0	153.5				
North: Hyland-Croy Road													
Lane 1 ^d	771	2.8	1171	0.658	100	12.1	LOS B	7.4	190.2	Full	1600	0.0	0.0
Lane 2	18	2.0	767	0.024	100	4.9	LOS A	0.1	3.2	Full	1600	0.0	0.0
Approach	789	2.8		0.658		11.9	LOS B	7.4	190.2				
West: Mitchell-Dewitt Road													
Lane 1 ^d	232	2.3	468	0.495	100	17.4	LOS C	4.3	108.8	Full	1600	0.0	0.0
Approach	232	2.3		0.495		17.4	LOS C	4.3	108.8				
Intersection	2666	2.8		0.798		15.5	LOS C	12.7	324.1				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:18:20 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Mitchell Dewitt-Brand Road\Gorden+Jacquemin Ph 1 & 2
2029 PM Build with Improvements.sip7

LANE LEVEL OF SERVICE

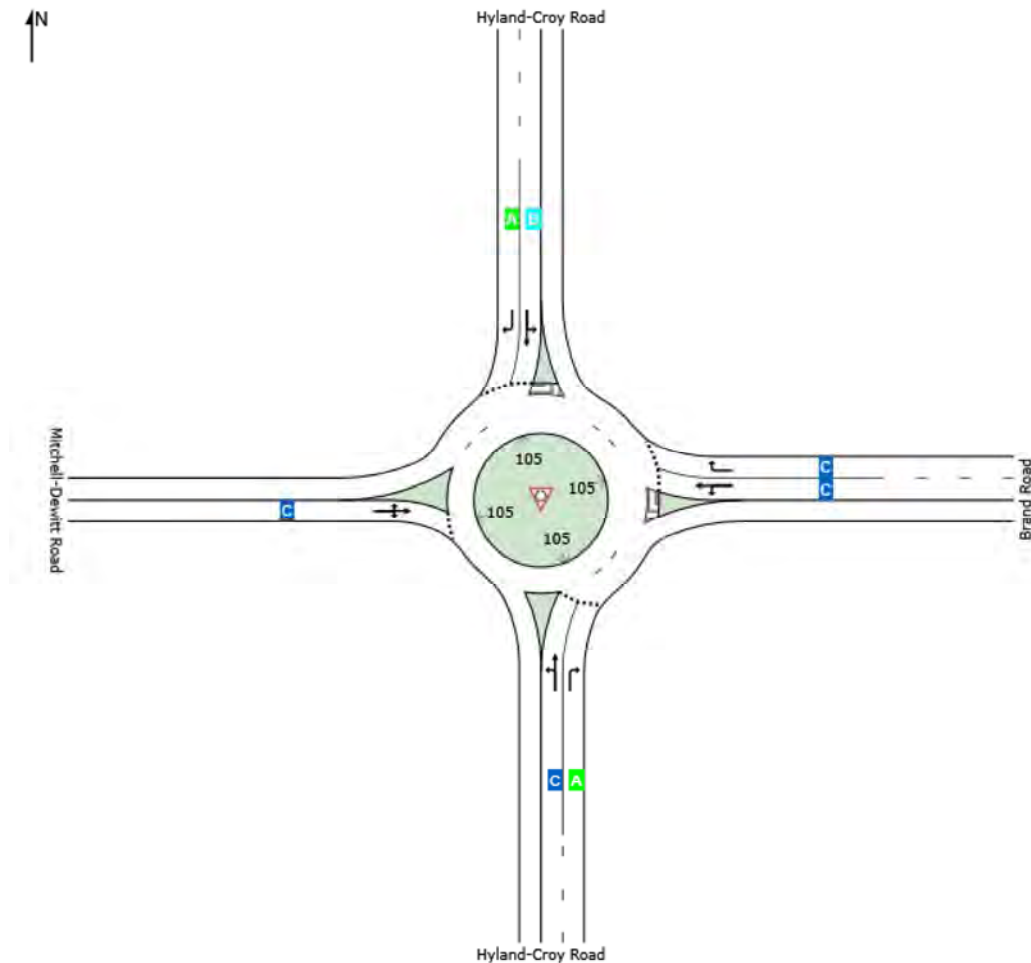
Lane Level of Service

Site: 101 [Hyland-Croy Road & Mitchell-Dewitt Road/Brand Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	C	C	B	C	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	59	0	102	0	352	13	71	485	3
Future Volume (veh/h)	3	2	1	59	0	102	0	352	13	71	485	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	64	0	111	0	383	14	77	527	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	161	98	37	132	15	141	96	1337	49	765	1385	8
Arrive On Green	0.14	0.14	0.14	0.14	0.00	0.14	0.00	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	612	681	258	458	106	978	870	1786	65	983	1850	11
Grp Volume(v), veh/h	6	0	0	175	0	0	0	0	397	77	0	530
Grp Sat Flow(s),veh/h/ln	1551	0	0	1542	0	0	870	0	1851	983	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	5.1	2.0	0.0	7.5
Cycle Q Clear(g_c), s	0.2	0.0	0.0	8.1	0.0	0.0	0.0	0.0	5.1	7.2	0.0	7.5
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.04	1.00		0.01
Lane Grp Cap(c), veh/h	296	0	0	288	0	0	96	0	1386	765	0	1393
V/C Ratio(X)	0.02	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.29	0.10	0.00	0.38
Avail Cap(c_a), veh/h	597	0	0	596	0	0	96	0	1386	765	0	1393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	0.0	30.8	0.0	0.0	0.0	0.0	3.0	4.2	0.0	3.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.5	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	2.7	0.6	0.0	4.1
LnGrp Delay(d),s/veh	27.5	0.0	0.0	32.8	0.0	0.0	0.0	0.0	3.5	4.4	0.0	4.1
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			175			397			607	
Approach Delay, s/veh		27.5			32.8			3.5			4.1	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		14.8		60.0		14.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		7.1		2.2		9.5		10.1				
Green Ext Time (p_c), s		6.8		1.1		6.8		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			8.3									
HCM 2010 LOS			A									

No Build 2019 - AM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	40

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	219	615	0	0	405	77	0	0	0	182	0	410
Future Volume (veh/h)	219	615	0	0	405	77	0	0	0	182	0	410
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	238	668	0	0	440	84				198	0	446
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	527	1802	0	0	894	170				592	622	733
Arrive On Green	0.13	0.51	0.00	0.00	0.30	0.30				0.33	0.00	0.33
Sat Flow, veh/h	1774	3632	0	0	3063	563				1774	1863	1583
Grp Volume(v), veh/h	238	668	0	0	261	263				198	0	446
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1763				1774	1863	1583
Q Serve(g_s), s	4.2	5.8	0.0	0.0	6.2	6.2				4.3	0.0	10.7
Cycle Q Clear(g_c), s	4.2	5.8	0.0	0.0	6.2	6.2				4.3	0.0	10.7
Prop In Lane	1.00		0.00	0.00		0.32				1.00		1.00
Lane Grp Cap(c), veh/h	527	1802	0	0	533	531				592	622	733
V/C Ratio(X)	0.45	0.37	0.00	0.00	0.49	0.50				0.33	0.00	0.61
Avail Cap(c_a), veh/h	1447	4517	0	0	973	970				592	622	733
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	7.6	0.0	0.0	14.6	14.6				12.7	0.0	10.2
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.7	0.7				1.5	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.8	0.0	0.0	3.1	3.1				2.3	0.0	0.8
LnGrp Delay(d),s/veh	9.8	7.7	0.0	0.0	15.3	15.3				14.2	0.0	13.9
LnGrp LOS	A	A			B	B				B		B
Approach Vol, veh/h		906			524						644	
Approach Delay, s/veh		8.2			15.3						14.0	
Approach LOS		A			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				29.9		21.0	10.6	19.3				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				65.0		17.0	33.0	28.0				
Max Q Clear Time (g_c+I1), s				7.8		12.7	6.2	8.2				
Green Ext Time (p_c), s				8.9		1.0	0.6	7.1				
Intersection Summary												
HCM 2010 Ctrl Delay			11.8									
HCM 2010 LOS			B									

No Build 2019 - AM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	4	6	7	8
Movement	EBTL	SBTL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	None	Max	None	None
Maximum Split (s)	69	21	37	32
Maximum Split (%)	76.7%	23.3%	41.1%	35.6%
Minimum Split (s)	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	21	0	21	58
End Time (s)	0	21	58	0
Yield/Force Off (s)	86	17	54	86
Yield/Force Off 170(s)	75	6	54	75
Local Start Time (s)	21	0	21	58
Local Yield (s)	86	17	54	86
Local Yield 170(s)	75	6	54	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	50

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	47	0	81	0	281	7	31	550	0
Future Vol, veh/h	0	0	0	47	0	81	0	281	7	31	550	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	51	0	88	0	305	8	34	598	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1014	970	598	970	970	305	598	0	0	305	0	0
Stage 1	665	665	-	305	305	-	-	-	-	-	-	-
Stage 2	349	305	-	665	665	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	217	253	502	233	253	735	979	-	-	1256	-	-
Stage 1	449	458	-	705	662	-	-	-	-	-	-	-
Stage 2	667	662	-	449	458	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	187	246	502	228	246	735	979	-	-	1256	-	-
Mov Cap-2 Maneuver	187	246	-	228	246	-	-	-	-	-	-	-
Stage 1	449	446	-	705	662	-	-	-	-	-	-	-
Stage 2	587	662	-	437	446	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			18.5			0			0.4		
HCM LOS	A			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	979	-	-	-	405	1256	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.344	0.027	-	-				
HCM Control Delay (s)	0	-	-	0	18.5	7.9	-	-				
HCM Lane LOS	A	-	-	A	C	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	1.5	0.1	-	-				

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	288	0	0	596	0
Future Vol, veh/h	0	0	0	0	0	0	0	288	0	0	596	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	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	0	0	0	0	0	0	0	313	0	0	648	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	961	961	648	961	961	313	648	0	0	313	0	0
Stage 1	648	648	-	313	313	-	-	-	-	-	-	-
Stage 2	313	313	-	648	648	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	236	256	470	236	256	727	938	-	-	1247	-	-
Stage 1	459	466	-	698	657	-	-	-	-	-	-	-
Stage 2	698	657	-	459	466	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	236	256	470	236	256	727	938	-	-	1247	-	-
Mov Cap-2 Maneuver	236	256	-	236	256	-	-	-	-	-	-	-
Stage 1	459	466	-	698	657	-	-	-	-	-	-	-
Stage 2	698	657	-	459	466	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	938	-	-	-	-	1247	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	-	0	-	-				

Intersection

Int Delay, s/veh 0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	292	0	0	594	0
Future Vol, veh/h	0	0	0	0	0	0	0	292	0	0	594	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	0	0	0	0	317	0	0	646	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	963	963	317	646	0	0	317	0	0
Stage 1	317	317	-	-	-	-	-	-	-
Stage 2	646	646	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	284	256	724	939	-	-	1243	-	-
Stage 1	738	654	-	-	-	-	-	-	-
Stage 2	522	467	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	284	0	724	939	-	-	1243	-	-
Mov Cap-2 Maneuver	284	0	-	-	-	-	-	-	-
Stage 1	738	0	-	-	-	-	-	-	-
Stage 2	522	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	939	-	-	1243	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	-

HCM 2010 TWSC
35: Hyland Croy Road & Gorden RI/RO Site Access

6/15/2017

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	296	0	0	591
Future Vol, veh/h	0	0	296	0	0	591
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	322	0	0	642
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	964	161	0	0	322	0
Stage 1	322	-	-	-	-	-
Stage 2	642	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	268	856	-	-	1235	-
Stage 1	708	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	856	-	-	1235	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	523	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1235	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile O(veh)	-	-	-	0	-	

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	31	0	40	5	576	55	48	340	4
Future Volume (veh/h)	1	0	1	31	0	40	5	576	55	48	340	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	34	0	43	5	626	60	52	370	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	115	20	56	116	4	55	880	1369	131	639	1504	16
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.82	0.82	0.82	0.82	0.82	0.82
Sat Flow, veh/h	547	301	848	614	55	847	1004	1674	160	753	1839	20
Grp Volume(v), veh/h	2	0	0	77	0	0	5	0	686	52	0	374
Grp Sat Flow(s),veh/h/ln	1695	0	0	1516	0	0	1004	0	1834	753	0	1859
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.1	0.0	7.5	1.5	0.0	3.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.4	0.0	0.0	3.2	0.0	7.5	8.9	0.0	3.1
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.09	1.00		0.01
Lane Grp Cap(c), veh/h	190	0	0	175	0	0	880	0	1500	639	0	1520
V/C Ratio(X)	0.01	0.00	0.00	0.44	0.00	0.00	0.01	0.00	0.46	0.08	0.00	0.25
Avail Cap(c_a), veh/h	649	0	0	647	0	0	880	0	1500	639	0	1520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	0.0	31.5	0.0	0.0	1.8	0.0	1.8	3.1	0.0	1.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.0	0.2	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	4.0	0.3	0.0	1.7
LnGrp Delay(d),s/veh	30.0	0.0	0.0	33.2	0.0	0.0	1.8	0.0	2.8	3.4	0.0	1.8
LnGrp LOS	C			C			A		A	A		A
Approach Vol, veh/h	2		77				691				426	
Approach Delay, s/veh	30.0		33.2				2.8				2.0	
Approach LOS	C		C				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4				6				8	
Phs Duration (G+Y+Rc), s	60.0		8.5				60.0				8.5	
Change Period (Y+Rc), s	4.0		4.0				4.0				4.0	
Max Green Setting (Gmax), s	56.0		26.0				56.0				26.0	
Max Q Clear Time (g_c+I1), s	9.5		2.1				10.9				5.4	
Green Ext Time (p_c), s	8.5		0.4				8.5				0.4	
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

No Build 2019 - PM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	50

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	524	513	0	0	606	260	0	0	0	44	0	329
Future Volume (veh/h)	524	513	0	0	606	260	0	0	0	44	0	329
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	570	558	0	0	659	283				48	0	358
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	629	2348	0	0	822	353				406	426	788
Arrive On Green	0.27	0.66	0.00	0.00	0.34	0.34				0.23	0.00	0.23
Sat Flow, veh/h	1774	3632	0	0	2506	1036				1774	1863	1583
Grp Volume(v), veh/h	570	558	0	0	483	459				48	0	358
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1680				1774	1863	1583
Q Serve(g_s), s	16.3	4.7	0.0	0.0	18.4	18.4				1.6	0.0	10.9
Cycle Q Clear(g_c), s	16.3	4.7	0.0	0.0	18.4	18.4				1.6	0.0	10.9
Prop In Lane	1.00		0.00	0.00		0.62				1.00		1.00
Lane Grp Cap(c), veh/h	629	2348	0	0	603	572				406	426	788
V/C Ratio(X)	0.91	0.24	0.00	0.00	0.80	0.80				0.12	0.00	0.45
Avail Cap(c_a), veh/h	940	3098	0	0	667	633				406	426	788
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	5.0	0.0	0.0	22.2	22.2				22.7	0.0	12.1
Incr Delay (d2), s/veh	8.8	0.1	0.0	0.0	6.4	6.7				0.6	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	2.3	0.0	0.0	10.1	9.6				0.8	0.0	0.4
LnGrp Delay(d),s/veh	24.9	5.0	0.0	0.0	28.6	28.9				23.3	0.0	14.0
LnGrp LOS	C	A			C	C				C		B
Approach Vol, veh/h		1128			942						406	
Approach Delay, s/veh		15.1			28.8						15.1	
Approach LOS		B			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				53.2		21.0	24.0	29.3				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				65.0		17.0	33.0	28.0				
Max Q Clear Time (g_c+I1), s				6.7		12.9	18.3	20.4				
Green Ext Time (p_c), s				12.9		0.6	1.6	4.9				
Intersection Summary												
HCM 2010 Ctrl Delay			20.3									
HCM 2010 LOS			C									

No Build 2019 - PM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	4	6	7	8
Movement	EBTL	SBTL	EBL	WBT
Lead/Lag			Lead	Lag
Lead-Lag Optimize			Yes	Yes
Recall Mode	None	Max	None	None
Maximum Split (s)	69	21	37	32
Maximum Split (%)	76.7%	23.3%	41.1%	35.6%
Minimum Split (s)	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5		5
Flash Dont Walk (s)	11	11		11
Dual Entry	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	21	0	21	58
End Time (s)	0	21	58	0
Yield/Force Off (s)	86	17	54	86
Yield/Force Off 170(s)	75	6	54	75
Local Start Time (s)	21	0	21	58
Local Yield (s)	86	17	54	86
Local Yield 170(s)	75	6	54	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	27	0	20	0	703	89	23	340	0
Future Vol, veh/h	0	0	0	27	0	20	0	703	89	23	340	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	29	0	22	0	764	97	25	370	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1195	1184	370	1184	1184	764	370	0	0	764	0	0
Stage 1	420	420	-	764	764	-	-	-	-	-	-	-
Stage 2	775	764	-	420	420	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	163	189	676	166	189	404	1189	-	-	849	-	-
Stage 1	611	589	-	396	413	-	-	-	-	-	-	-
Stage 2	391	413	-	611	589	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	151	183	676	162	183	404	1189	-	-	849	-	-
Mov Cap-2 Maneuver	151	183	-	162	183	-	-	-	-	-	-	-
Stage 1	611	572	-	396	413	-	-	-	-	-	-	-
Stage 2	370	413	-	593	572	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			26.6			0			0.6		
HCM LOS	A			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1189	-	-	-	217	849	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.235	0.029	-	-				
HCM Control Delay (s)	0	-	-	0	26.6	9.4	-	-				
HCM Lane LOS	A	-	-	A	D	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	0.9	0.1	-	-				

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	791	0	0	367	0
Future Vol, veh/h	0	0	0	0	0	0	0	791	0	0	367	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	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	0	0	0	0	0	0	0	860	0	0	399	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1259	1259	399	1259	1259	860	399	0	0	860	0	0
Stage 1	399	399	-	860	860	-	-	-	-	-	-	-
Stage 2	860	860	-	399	399	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	147	171	651	147	171	356	1160	-	-	781	-	-
Stage 1	627	602	-	351	373	-	-	-	-	-	-	-
Stage 2	351	373	-	627	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	147	171	651	147	171	356	1160	-	-	781	-	-
Mov Cap-2 Maneuver	147	171	-	147	171	-	-	-	-	-	-	-
Stage 1	627	602	-	351	373	-	-	-	-	-	-	-
Stage 2	351	373	-	627	602	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1160	-	-	-	-	781	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s)	0	-	-	0	0	0	-	-				
HCM Lane LOS	A	-	-	A	A	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	-	0	-	-				

Intersection												
Int Delay, s/veh		0										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	0	0	0	0	788	0	0	370	0
Future Vol, veh/h	0	0	0	0	0	0	0	788	0	0	370	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	0	0	0	0	857	0	0	402	0
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				1259	1259	857	402	0	0	857	0	0
Stage 1				857	857	-	-	-	-	-	-	-
Stage 2				402	402	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver				188	171	357	1157	-	-	783	-	-
Stage 1				416	374	-	-	-	-	-	-	-
Stage 2				676	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver				188	0	357	1157	-	-	783	-	-
Mov Cap-2 Maneuver				188	0	-	-	-	-	-	-	-
Stage 1				416	0	-	-	-	-	-	-	-
Stage 2				676	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				0			0			0		
HCM LOS				A								
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1157	-	-	-	783	-	-					
HCM Lane V/C Ratio	-	-	-	-	-	-	-					
HCM Control Delay (s)	0	-	-	0	0	-	-					
HCM Lane LOS	A	-	-	A	A	-	-					
HCM 95th %tile O(veh)	0	-	-	-	0	-	-					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	784	0	0	373
Future Vol, veh/h	0	0	784	0	0	373
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	852	0	0	405
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1257	426	0	0	852	0
Stage 1	852	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	176	578	-	-	783	-
Stage 1	379	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	176	578	-	-	783	-
Mov Cap-2 Maneuver	176	-	-	-	-	-
Stage 1	379	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	783	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile O(veh)	-	-	-	0	-	

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	65	0	112	0	557	15	78	740	3
Future Volume (veh/h)	3	2	1	65	0	112	0	557	15	78	740	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	71	0	122	0	605	16	85	804	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	165	102	39	138	16	153	95	1332	35	579	1368	5
Arrive On Green	0.16	0.16	0.16	0.16	0.00	0.16	0.00	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	599	648	249	466	100	974	672	1807	48	800	1855	7
Grp Volume(v), veh/h	6	0	0	193	0	0	0	0	621	85	0	807
Grp Sat Flow(s),veh/h/ln	1496	0	0	1540	0	0	672	0	1854	800	0	1862
Q Serve(g_s), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	10.0	3.6	0.0	15.3
Cycle Q Clear(g_c), s	0.2	0.0	0.0	9.1	0.0	0.0	0.0	0.0	10.0	13.6	0.0	15.3
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.03	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	0	307	0	0	95	0	1368	579	0	1373
V/C Ratio(X)	0.02	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.45	0.15	0.00	0.59
Avail Cap(c_a), veh/h	579	0	0	587	0	0	95	0	1368	579	0	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	30.7	0.0	0.0	0.0	0.0	3.9	6.6	0.0	4.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	1.1	0.5	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	5.4	0.9	0.0	8.3
LnGrp Delay(d),s/veh	27.1	0.0	0.0	32.9	0.0	0.0	0.0	0.0	5.0	7.2	0.0	6.5
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			193			621			892	
Approach Delay, s/veh		27.1			32.9			5.0			6.5	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		15.9		60.0		15.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		12.0		2.2		17.3		11.1				
Green Ext Time (p_c), s		13.6		1.2		13.1		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			9.0									
HCM 2010 LOS			A									

No Build 2029 - AM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	52	0	88	0	475	8	34	819	0
Future Volume (veh/h)	0	0	0	52	0	88	0	475	8	34	819	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	57	0	96	0	516	9	37	890	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	0	237	0	127	14	123	0	1394	24	684	1422	0
Arrive On Green	0.00	0.00	0.00	0.13	0.00	0.13	0.00	0.76	0.76	0.76	0.76	0.00
Sat Flow, veh/h	0	1863	0	466	109	968	0	1825	32	874	1863	0
Grp Volume(v), veh/h	0	0	0	153	0	0	0	0	525	37	890	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1543	0	0	0	0	1857	874	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	6.8	1.1	15.9	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	6.8	7.9	15.9	0.0
Prop In Lane	0.00		0.00	0.37		0.63	0.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	0	237	0	264	0	0	0	0	1418	684	1422	0
V/C Ratio(X)	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.37	0.05	0.63	0.00
Avail Cap(c_a), veh/h	0	660	0	608	0	0	0	0	1418	684	1422	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.9	0.0	0.0	0.0	0.0	2.9	4.2	3.9	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.7	0.2	2.1	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	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	3.6	0.3	8.7	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.9	0.0	0.0	0.0	0.0	3.6	4.3	6.0	0.0
LnGrp LOS				C					A	A	A	
Approach Vol, veh/h		0			153			525			927	
Approach Delay, s/veh		0.0			32.9			3.6			5.9	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		13.3		60.0		13.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		8.8		0.0		17.9		9.0				
Green Ext Time (p_c), s		13.3		0.0		12.6		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				7.8								
HCM 2010 LOS				A								

No Build 2029 - AM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	675	0	0	445	136	0	0	0	258	0	602
Future Volume (veh/h)	338	675	0	0	445	136	0	0	0	258	0	602
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	367	734	0	0	484	148				280	0	654
Adj No. of Lanes	1	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	551	1759	0	0	854	970				659	692	888
Arrive On Green	0.19	0.50	0.00	0.00	0.24	0.24				0.37	0.00	0.37
Sat Flow, veh/h	1774	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	367	734	0	0	484	148				280	0	654
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	8.5	8.0	0.0	0.0	7.3	2.4				7.1	0.0	18.8
Cycle Q Clear(g_c), s	8.5	8.0	0.0	0.0	7.3	2.4				7.1	0.0	18.8
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	551	1759	0	0	854	970				659	692	888
V/C Ratio(X)	0.67	0.42	0.00	0.00	0.57	0.15				0.43	0.00	0.74
Avail Cap(c_a), veh/h	1179	3266	0	0	1108	1084				760	798	978
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	12.3	9.7	0.0	0.0	20.2	5.0				14.2	0.0	10.0
Incr Delay (d2), s/veh	1.4	0.2	0.0	0.0	0.6	0.1				0.4	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	3.9	0.0	0.0	3.6	3.5				3.6	0.0	16.4
LnGrp Delay(d),s/veh	13.7	9.8	0.0	0.0	20.8	5.1				14.7	0.0	12.6
LnGrp LOS	B	A			C	A				B		B
Approach Vol, veh/h		1101			632						934	
Approach Delay, s/veh		11.1			17.1						13.2	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				34.2		26.5	15.5	18.7				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				56.0		26.0	33.0	19.0				
Max Q Clear Time (g_c+I1), s				10.0		20.8	10.5	9.3				
Green Ext Time (p_c), s				10.5		1.8	1.0	5.4				
Intersection Summary												
HCM 2010 Ctrl Delay				13.3								
HCM 2010 LOS				B								
Notes												

No Build 2029 - AM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	30	60	30	37	23
Maximum Split (%)	33.3%	66.7%	33.3%	41.1%	25.6%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	30	67
End Time (s)	30	0	30	67	0
Yield/Force Off (s)	26	86	26	63	86
Yield/Force Off 170(s)	26	75	15	63	75
Local Start Time (s)	0	30	0	30	67
Local Yield (s)	26	86	26	63	86
Local Yield 170(s)	26	75	15	63	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	55

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	23	0	14	0	469	3	2	869	0
Future Vol, veh/h	0	0	0	23	0	14	0	469	3	2	869	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	175	175	-	-
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	0	0	0	25	0	15	0	510	3	2	945	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1466	1459	945	1459	1459	510	945	0	0	510	0	0
Stage 1	949	949	-	510	510	-	-	-	-	-	-	-
Stage 2	517	510	-	949	949	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	106	129	318	107	129	563	726	-	-	1055	-	-
Stage 1	313	339	-	546	538	-	-	-	-	-	-	-
Stage 2	541	538	-	313	339	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	103	129	318	107	129	563	726	-	-	1055	-	-
Mov Cap-2 Maneuver	103	129	-	107	129	-	-	-	-	-	-	-
Stage 1	313	338	-	546	538	-	-	-	-	-	-	-
Stage 2	526	538	-	312	338	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	34.6	0	0
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	726	-	-	-	-	107	563	1055	-	-
HCM Lane V/C Ratio	-	-	-	-	-	0.234	0.027	0.002	-	-
HCM Control Delay (s)	0	-	-	0	0	48.6	11.6	8.4	-	-
HCM Lane LOS	A	-	-	A	A	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0.8	0.1	0	-	-

HCM 2010 TWSC
6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	68	0	4	0	472	10	1	888	0
Future Vol, veh/h	0	0	0	68	0	4	0	472	10	1	888	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	175	175	-	-
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	0	0	0	74	0	4	0	513	11	1	965	0
Major/Minor	Minor1			Major1			Major2					
Conflicting Flow All	1480	1480	513	965	0	0	513	0	0			
Stage 1	513	513	-	-	-	-	-	-	-			
Stage 2	967	967	-	-	-	-	-	-	-			
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-			
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-			
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-			
Pot Cap-1 Maneuver	138	125	561	714	-	-	1052	-	-			
Stage 1	601	536	-	-	-	-	-	-	-			
Stage 2	369	333	-	-	-	-	-	-	-			
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	138	0	561	714	-	-	1052	-	-			
Mov Cap-2 Maneuver	138	0	-	-	-	-	-	-	-			
Stage 1	601	0	-	-	-	-	-	-	-			
Stage 2	369	0	-	-	-	-	-	-	-			
Approach	WB			NB			SB					
HCM Control Delay, s	55.2			0			0					
HCM LOS	F											
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR			
Capacity (veh/h)	714	-	-	138	-	561	1052	-	-			
HCM Lane V/C Ratio	-	-	-	0.536	-	0.008	0.001	-	-			
HCM Control Delay (s)	0	-	-	57.8	0	11.5	8.4	-	-			
HCM Lane LOS	A	-	-	F	A	B	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	2.6	-	0	0	-	-			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	487	0	0	953
Future Vol, veh/h	0	0	487	0	0	953
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	529	0	0	1036
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1565	265	0	0	529	0
Stage 1	529	-	-	-	-	-
Stage 2	1036	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	112	734	-	-	1034	-
Stage 1	556	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	112	734	-	-	1034	-
Mov Cap-2 Maneuver	112	-	-	-	-	-
Stage 1	556	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	1034	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	34	0	44	6	942	60	53	657	4
Future Volume (veh/h)	1	0	1	34	0	44	6	942	60	53	657	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	37	0	48	7	1024	65	58	714	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	119	20	61	118	5	62	611	1407	89	383	1502	8
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	565	282	847	589	74	860	731	1733	110	516	1851	10
Grp Volume(v), veh/h	2	0	0	85	0	0	7	0	1089	58	0	718
Grp Sat Flow(s),veh/h/ln	1694	0	0	1522	0	0	731	0	1843	516	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	3.3	0.0	0.0	0.2	0.0	18.8	4.0	0.0	8.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.8	0.0	0.0	8.4	0.0	18.8	22.8	0.0	8.2
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.06	1.00		0.01
Lane Grp Cap(c), veh/h	201	0	0	185	0	0	611	0	1496	383	0	1510
V/C Ratio(X)	0.01	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.73	0.15	0.00	0.48
Avail Cap(c_a), veh/h	645	0	0	643	0	0	611	0	1496	383	0	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	0.0	31.4	0.0	0.0	3.3	0.0	3.0	8.2	0.0	2.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	3.1	0.8	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	10.4	0.7	0.0	4.4
LnGrp Delay(d),s/veh	29.7	0.0	0.0	33.2	0.0	0.0	3.3	0.0	6.1	9.1	0.0	3.1
LnGrp LOS	C			C			A		A	A		A
Approach Vol, veh/h	2		85				1096				776	
Approach Delay, s/veh	29.7		33.2				6.1				3.5	
Approach LOS	C		C				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4				6				8	
Phs Duration (G+Y+Rc), s	60.0		9.0				60.0				9.0	
Change Period (Y+Rc), s	4.0		4.0				4.0				4.0	
Max Green Setting (Gmax), s	56.0		26.0				56.0				26.0	
Max Q Clear Time (g_c+I1), s	20.8		2.1				24.8				5.8	
Green Ext Time (p_c), s	19.5		0.4				18.2				0.4	
Intersection Summary												
HCM 2010 Ctrl Delay			6.3									
HCM 2010 LOS			A									

No Build 2029 - PM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	29	0	22	0	1089	97	26	655	0
Future Volume (veh/h)	0	0	0	29	0	22	0	1089	97	26	655	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	32	0	24	0	1184	105	28	712	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	0	85	0	123	0	29	0	1408	125	298	1555	0
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.83	0.83	0.83	0.83	0.00
Sat Flow, veh/h	0	1863	0	846	0	635	0	1687	150	427	1863	0
Grp Volume(v), veh/h	0	0	0	56	0	0	0	0	1289	28	712	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1481	0	0	0	0	1836	427	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	26.1	2.6	6.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	26.1	28.7	6.8	0.0
Prop In Lane	0.00		0.00	0.57		0.43	0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	0	85	0	152	0	0	0	0	1533	298	1555	0
V/C Ratio(X)	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.84	0.09	0.46	0.00
Avail Cap(c_a), veh/h	0	722	0	658	0	0	0	0	1533	298	1555	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	3.1	11.0	1.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	5.7	0.6	1.0	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	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	14.6	0.4	3.8	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	33.2	0.0	0.0	0.0	0.0	8.8	11.6	2.5	0.0
LnGrp LOS				C					A	B	A	
Approach Vol, veh/h		0			56			1289			740	
Approach Delay, s/veh		0.0			33.2			8.8			2.8	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		7.1		60.0		7.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		28.1		0.0		30.7		4.5				
Green Ext Time (p_c), s		19.9		0.0		18.5		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay				7.3								
HCM 2010 LOS				A								

No Build 2029 - PM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	849	563	0	0	665	431	0	0	0	160	0	557
Future Volume (veh/h)	849	563	0	0	665	431	0	0	0	160	0	557
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	923	612	0	0	723	468				174	0	605
Adj No. of Lanes	1	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	932	2674	0	0	865	633				276	290	985
Arrive On Green	0.47	0.76	0.00	0.00	0.24	0.24				0.16	0.00	0.16
Sat Flow, veh/h	1774	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	923	612	0	0	723	468				174	0	605
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	41.1	4.6	0.0	0.0	17.5	22.0				8.3	0.0	14.0
Cycle Q Clear(g_c), s	41.1	4.6	0.0	0.0	17.5	22.0				8.3	0.0	14.0
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	932	2674	0	0	865	633				276	290	985
V/C Ratio(X)	0.99	0.23	0.00	0.00	0.84	0.74				0.63	0.00	0.61
Avail Cap(c_a), veh/h	932	2674	0	0	865	633				276	290	985
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.7	3.3	0.0	0.0	32.3	23.0				35.6	0.0	10.4
Incr Delay (d2), s/veh	27.2	0.0	0.0	0.0	7.2	4.6				4.6	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	29.6	2.2	0.0	0.0	9.4	19.4				4.4	0.0	21.0
LnGrp Delay(d),s/veh	45.9	3.3	0.0	0.0	39.4	27.6				40.1	0.0	11.5
LnGrp LOS	D	A			D	C				D		B
Approach Vol, veh/h		1535			1191						779	
Approach Delay, s/veh		28.9			34.8						17.9	
Approach LOS		C			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				72.0		18.0	46.0	26.0				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				68.0		14.0	42.0	22.0				
Max Q Clear Time (g_c+I1), s				6.6		16.0	43.1	24.0				
Green Ext Time (p_c), s				15.1		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			28.5									
HCM 2010 LOS			C									
Notes												

No Build 2029 - PM Peak
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	18	72	18	46	26
Maximum Split (%)	20.0%	80.0%	20.0%	51.1%	28.9%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	18	0	18	64
End Time (s)	18	0	18	64	0
Yield/Force Off (s)	14	86	14	60	86
Yield/Force Off 170(s)	14	75	3	60	75
Local Start Time (s)	0	18	0	18	64
Local Yield (s)	14	86	14	60	86
Local Yield 170(s)	14	75	3	60	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	12	0	7	0	1180	28	17	667	0
Future Vol, veh/h	0	0	0	12	0	7	0	1180	28	17	667	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	175	175	-	-
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	0	0	0	13	0	8	0	1283	30	18	725	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2048	2045	725	2045	2045	1283	725	0	0	1283	0	0
Stage 1	762	762	-	1283	1283	-	-	-	-	-	-	-
Stage 2	1286	1283	-	762	762	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	41	56	425	41	56	202	878	-	-	541	-	-
Stage 1	397	414	-	203	236	-	-	-	-	-	-	-
Stage 2	202	236	-	397	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	38	54	425	40	54	202	878	-	-	541	-	-
Mov Cap-2 Maneuver	38	54	-	40	54	-	-	-	-	-	-	-
Stage 1	397	400	-	203	236	-	-	-	-	-	-	-
Stage 2	194	236	-	384	400	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			93			0			0.3		
HCM LOS	A			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	878	-	-	-	-	40	202	541	-	-		
HCM Lane V/C Ratio	-	-	-	-	-	0.326	0.038	0.034	-	-		
HCM Control Delay (s)	0	-	-	0	0	133.6	23.5	11.9	-	-		
HCM Lane LOS	A	-	-	A	A	F	C	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	-	-	1.1	0.1	0.1	-	-		

Intersection

Int Delay, s/veh 2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	36	0	3	0	1201	83	5	677	0
Future Vol, veh/h	0	0	0	36	0	3	0	1201	83	5	677	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	0	-	-	175	175	-	-
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	0	0	0	39	0	3	0	1305	90	5	736	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2052	2052	1305	736	0	0	1305	0	0
Stage 1	1305	1305	-	-	-	-	-	-	-
Stage 2	747	747	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	61	56	196	870	-	-	530	-	-
Stage 1	254	230	-	-	-	-	-	-	-
Stage 2	468	420	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	60	0	196	870	-	-	530	-	-
Mov Cap-2 Maneuver	60	0	-	-	-	-	-	-	-
Stage 1	254	0	-	-	-	-	-	-	-
Stage 2	464	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	131.8	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	870	-	-	60	-	196	530	-	-
HCM Lane V/C Ratio	-	-	-	0.652	-	0.017	0.01	-	-
HCM Control Delay (s)	0	-	-	140.8	0	23.7	11.9	-	-
HCM Lane LOS	A	-	-	F	A	C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	2.7	-	0.1	0	-	-

HCM 2010 TWSC
35: Hyland Croy Road & Gorden RI/RO Site Access

6/15/2017

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	0	1280	0	0	717
Future Vol, veh/h	0	0	1280	0	0	717
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	1391	0	0	779
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2170	696	0	0	1391	0
Stage 1	1391	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	45	385	-	-	488	-
Stage 1	197	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	45	385	-	-	488	-
Mov Cap-2 Maneuver	45	-	-	-	-	-
Stage 1	197	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	-	488	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	-	-	0	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	-	0	-	

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	59	0	102	0	381	13	71	501	3
Future Volume (veh/h)	3	2	1	59	0	102	0	381	13	71	501	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	64	0	111	0	414	14	77	545	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	161	98	37	132	15	141	96	1341	45	740	1386	8
Arrive On Green	0.14	0.14	0.14	0.14	0.00	0.14	0.00	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	612	681	258	458	106	978	856	1791	61	956	1851	10
Grp Volume(v), veh/h	6	0	0	175	0	0	0	0	428	77	0	548
Grp Sat Flow(s),veh/h/ln	1551	0	0	1542	0	0	856	0	1852	956	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	5.7	2.1	0.0	7.8
Cycle Q Clear(g_c), s	0.2	0.0	0.0	8.1	0.0	0.0	0.0	0.0	5.7	7.8	0.0	7.8
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	296	0	0	288	0	0	96	0	1387	740	0	1393
V/C Ratio(X)	0.02	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.31	0.10	0.00	0.39
Avail Cap(c_a), veh/h	597	0	0	596	0	0	96	0	1387	740	0	1393
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	0.0	30.8	0.0	0.0	0.0	0.0	3.1	4.3	0.0	3.3
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.6	0.3	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	3.1	0.6	0.0	4.3
LnGrp Delay(d),s/veh	27.5	0.0	0.0	32.8	0.0	0.0	0.0	0.0	3.7	4.6	0.0	4.2
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			175			428			625	
Approach Delay, s/veh		27.5			32.8			3.7			4.2	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		14.8		60.0		14.8				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		7.7		2.2		9.8		10.1				
Green Ext Time (p_c), s		7.3		1.1		7.3		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			8.2									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	40

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	233	615	0	0	405	84	0	0	0	195	0	435
Future Volume (veh/h)	233	615	0	0	405	84	0	0	0	195	0	435
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	253	668	0	0	440	91				212	0	473
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	557	1886	0	0	918	189				533	560	691
Arrive On Green	0.14	0.53	0.00	0.00	0.31	0.31				0.30	0.00	0.30
Sat Flow, veh/h	1774	3632	0	0	3019	601				1774	1863	1583
Grp Volume(v), veh/h	253	668	0	0	265	266				212	0	473
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1757				1774	1863	1583
Q Serve(g_s), s	4.1	5.2	0.0	0.0	5.8	5.9				4.6	0.0	11.5
Cycle Q Clear(g_c), s	4.1	5.2	0.0	0.0	5.8	5.9				4.6	0.0	11.5
Prop In Lane	1.00		0.00	0.00		0.34				1.00		1.00
Lane Grp Cap(c), veh/h	557	1886	0	0	555	551				533	560	691
V/C Ratio(X)	0.45	0.35	0.00	0.00	0.48	0.48				0.40	0.00	0.68
Avail Cap(c_a), veh/h	1535	4788	0	0	1031	1024				628	659	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	6.5	0.0	0.0	13.3	13.3				13.3	0.0	10.9
Incr Delay (d2), s/veh	0.6	0.1	0.0	0.0	0.6	0.7				0.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	2.5	0.0	0.0	2.9	2.9				2.3	0.0	10.3
LnGrp Delay(d),s/veh	8.7	6.6	0.0	0.0	13.9	14.0				13.8	0.0	13.0
LnGrp LOS	A	A			B	B				B		B
Approach Vol, veh/h		921			531						685	
Approach Delay, s/veh		7.2			14.0						13.3	
Approach LOS		A			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				29.6		18.4	10.5	19.1				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				65.0		17.0	33.0	28.0				
Max Q Clear Time (g_c+I1), s				7.2		13.5	6.1	7.9				
Green Ext Time (p_c), s				9.0		0.9	0.7	7.2				
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	21	69	21	37	32
Maximum Split (%)	23.3%	76.7%	23.3%	41.1%	35.6%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	0	21	58
End Time (s)	21	0	21	58	0
Yield/Force Off (s)	17	86	17	54	86
Yield/Force Off 170(s)	17	75	6	54	75
Local Start Time (s)	0	21	0	21	58
Local Yield (s)	17	86	17	54	86
Local Yield 170(s)	17	75	6	54	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	50

Splits and Phases: 5: Post Rd & Hyland Croy Road

21 s	69 s
21 s	37 s
	32 s

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	47	0	81	0	310	7	31	566	0
Future Vol, veh/h	0	0	0	47	0	81	0	310	7	31	566	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	51	0	88	0	337	8	34	615	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1064	1020	615	1020	1020	337	615	0	0	337	0	0
Stage 1	683	683	-	337	337	-	-	-	-	-	-	-
Stage 2	381	337	-	683	683	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	201	237	491	215	237	705	965	-	-	1222	-	-
Stage 1	439	449	-	677	641	-	-	-	-	-	-	-
Stage 2	641	641	-	439	449	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	230	491	210	230	705	965	-	-	1222	-	-
Mov Cap-2 Maneuver	172	230	-	210	230	-	-	-	-	-	-	-
Stage 1	439	437	-	677	641	-	-	-	-	-	-	-
Stage 2	561	641	-	427	437	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			20			0			0.4		
HCM LOS	A			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	965	-	-	-	378	1222	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.368	0.028	-	-				
HCM Control Delay (s)	0	-	-	0	20	8	-	-				
HCM Lane LOS	A	-	-	A	C	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	1.7	0.1	-	-				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	17	0	13	0	304	9	9	603	0
Future Vol, veh/h	0	0	0	17	0	13	0	304	9	9	603	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	18	0	14	0	330	10	10	655	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1013	1005	655	1005	1005	330	655	0	0	330	0	0
Stage 1	675	675	-	330	330	-	-	-	-	-	-	-
Stage 2	338	330	-	675	675	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	217	241	466	220	241	712	932	-	-	1229	-	-
Stage 1	444	453	-	683	646	-	-	-	-	-	-	-
Stage 2	676	646	-	444	453	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	211	239	466	219	239	712	932	-	-	1229	-	-
Mov Cap-2 Maneuver	211	239	-	219	239	-	-	-	-	-	-	-
Stage 1	444	449	-	683	646	-	-	-	-	-	-	-
Stage 2	663	646	-	440	449	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			17.8			0			0.1		
HCM LOS	A			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	932	-	-	-	313	1229	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.104	0.008	-	-				
HCM Control Delay (s)	0	-	-	0	17.8	8	-	-				
HCM Lane LOS	A	-	-	A	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	-	0.3	0	-	-				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	21	0	9	0	308	7	7	611	0
Future Vol, veh/h	0	0	0	21	0	9	0	308	7	7	611	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
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	0	0	0	23	0	10	0	335	8	8	664	0
Major/Minor	Minor1			Major1			Major2					
Conflicting Flow All	1018	1018	339	664	0	0	342	0	0			
Stage 1	339	339	-	-	-	-	-	-	-			
Stage 2	679	679	-	-	-	-	-	-	-			
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-			
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-			
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-			
Pot Cap-1 Maneuver	263	237	703	925	-	-	1217	-	-			
Stage 1	722	640	-	-	-	-	-	-	-			
Stage 2	504	451	-	-	-	-	-	-	-			
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	261	0	703	925	-	-	1217	-	-			
Mov Cap-2 Maneuver	261	0	-	-	-	-	-	-	-			
Stage 1	722	0	-	-	-	-	-	-	-			
Stage 2	501	0	-	-	-	-	-	-	-			
Approach	WB			NB			SB					
HCM Control Delay, s	17.4			0			0.1					
HCM LOS	C											
Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR						
Capacity (veh/h)	925	-	-	322	1217	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	0.101	0.006	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	17.4	8	-	-	-	-	-	-	-
HCM Lane LOS	A	-	-	C	A	-	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	-	-	-	-	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	7	312	5	0	629
Future Vol, veh/h	0	7	312	5	0	629
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	339	5	0	684
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1026	172	0	0	345	0
Stage 1	342	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	245	842	-	-	1211	-
Stage 1	692	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	245	842	-	-	1211	-
Mov Cap-2 Maneuver	245	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.3	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 842	1211	-		
HCM Lane V/C Ratio	-	- 0.009	-	-		
HCM Control Delay (s)	-	- 9.3	0	-		
HCM Lane LOS	-	- A	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	31	0	40	5	602	55	48	374	4
Future Volume (veh/h)	1	0	1	31	0	40	5	602	55	48	374	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	34	0	43	5	654	60	52	407	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	115	20	56	116	4	55	849	1375	126	620	1506	15
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.82	0.82	0.82	0.82	0.82	0.82
Sat Flow, veh/h	547	301	848	614	55	847	971	1681	154	733	1841	18
Grp Volume(v), veh/h	2	0	0	77	0	0	5	0	714	52	0	411
Grp Sat Flow(s),veh/h/ln	1695	0	0	1516	0	0	971	0	1836	733	0	1860
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.1	0.0	7.9	1.6	0.0	3.5
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.4	0.0	0.0	3.6	0.0	7.9	9.5	0.0	3.5
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.08	1.00		0.01
Lane Grp Cap(c), veh/h	190	0	0	175	0	0	849	0	1501	620	0	1521
V/C Ratio(X)	0.01	0.00	0.00	0.44	0.00	0.00	0.01	0.00	0.48	0.08	0.00	0.27
Avail Cap(c_a), veh/h	649	0	0	647	0	0	849	0	1501	620	0	1521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	0.0	31.5	0.0	0.0	1.9	0.0	1.9	3.3	0.0	1.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.1	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	4.2	0.3	0.0	1.9
LnGrp Delay(d),s/veh	30.0	0.0	0.0	33.2	0.0	0.0	1.9	0.0	2.9	3.5	0.0	1.9
LnGrp LOS	C			C			A		A	A		A
Approach Vol, veh/h	2				77		719				463	
Approach Delay, s/veh	30.0				33.2		2.9				2.1	
Approach LOS	C				C		A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	60.0		8.5		60.0		8.5					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	56.0		26.0		56.0		26.0					
Max Q Clear Time (g_c+I1), s	9.9		2.1		11.5		5.4					
Green Ext Time (p_c), s	9.3		0.4		9.2		0.4					
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	50

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	552	513	0	0	606	276	0	0	0	56	0	351
Future Volume (veh/h)	552	513	0	0	606	276	0	0	0	56	0	351
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	600	558	0	0	659	300				61	0	382
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	661	2440	0	0	828	377				354	371	765
Arrive On Green	0.28	0.69	0.00	0.00	0.35	0.35				0.20	0.00	0.20
Sat Flow, veh/h	1774	3632	0	0	2459	1077				1774	1863	1583
Grp Volume(v), veh/h	600	558	0	0	493	466				61	0	382
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1673				1774	1863	1583
Q Serve(g_s), s	16.6	4.2	0.0	0.0	18.0	18.0				2.0	0.0	11.8
Cycle Q Clear(g_c), s	16.6	4.2	0.0	0.0	18.0	18.0				2.0	0.0	11.8
Prop In Lane	1.00		0.00	0.00		0.64				1.00		1.00
Lane Grp Cap(c), veh/h	661	2440	0	0	620	586				354	371	765
V/C Ratio(X)	0.91	0.23	0.00	0.00	0.80	0.80				0.17	0.00	0.50
Avail Cap(c_a), veh/h	973	3201	0	0	689	652				420	441	824
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	15.5	4.1	0.0	0.0	21.0	21.0				23.9	0.0	12.7
Incr Delay (d2), s/veh	8.8	0.0	0.0	0.0	5.9	6.2				0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.8	2.0	0.0	0.0	9.8	9.3				1.0	0.0	11.6
LnGrp Delay(d),s/veh	24.3	4.2	0.0	0.0	26.9	27.2				24.1	0.0	13.2
LnGrp LOS	C	A			C	C				C		B
Approach Vol, veh/h		1158			959						443	
Approach Delay, s/veh		14.6			27.1						14.7	
Approach LOS		B			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				53.5		18.3	24.4	29.2				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				65.0		17.0	33.0	28.0				
Max Q Clear Time (g_c+I1), s				6.2		13.8	18.6	20.0				
Green Ext Time (p_c), s				13.2		0.5	1.7	5.1				
Intersection Summary												
HCM 2010 Ctrl Delay			19.3									
HCM 2010 LOS			B									

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	21	69	21	37	32
Maximum Split (%)	23.3%	76.7%	23.3%	41.1%	35.6%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	21	0	21	58
End Time (s)	21	0	21	58	0
Yield/Force Off (s)	17	86	17	54	86
Yield/Force Off 170(s)	17	75	6	54	75
Local Start Time (s)	0	21	0	21	58
Local Yield (s)	17	86	17	54	86
Local Yield 170(s)	17	75	6	54	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	70

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	27	0	20	0	729	89	23	374	40
Future Vol, veh/h	0	0	0	27	0	20	0	729	89	23	374	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	29	0	22	0	792	97	25	407	43
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1281	1270	428	1270	1292	792	450	0	0	792	0	0
Stage 1	478	478	-	792	792	-	-	-	-	-	-	-
Stage 2	803	792	-	478	500	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	142	168	627	145	163	389	1110	-	-	829	-	-
Stage 1	568	556	-	382	401	-	-	-	-	-	-	-
Stage 2	377	401	-	568	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	131	163	627	142	158	389	1110	-	-	829	-	-
Mov Cap-2 Maneuver	131	163	-	142	158	-	-	-	-	-	-	-
Stage 1	568	539	-	382	401	-	-	-	-	-	-	-
Stage 2	356	401	-	551	527	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			29.9			0			0.5		
HCM LOS	A			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1110	-	-	-	195	829	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.262	0.03	-	-				
HCM Control Delay (s)	0	-	-	0	29.9	9.5	-	-				
HCM Lane LOS	A	-	-	A	D	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	1	0.1	-	-				

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	15	0	12	0	805	20	19	382	0
Future Vol, veh/h	0	0	0	15	0	12	0	805	20	19	382	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	175	175	-	-
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	0	0	0	16	0	13	0	875	22	21	415	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1339	1332	415	1332	1332	875	415	0	0	875	0	0
Stage 1	457	457	-	875	875	-	-	-	-	-	-	-
Stage 2	882	875	-	457	457	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	130	154	637	131	154	349	1144	-	-	771	-	-
Stage 1	583	568	-	344	367	-	-	-	-	-	-	-
Stage 2	341	367	-	583	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	123	150	637	128	150	349	1144	-	-	771	-	-
Mov Cap-2 Maneuver	123	150	-	128	150	-	-	-	-	-	-	-
Stage 1	583	553	-	344	367	-	-	-	-	-	-	-
Stage 2	328	367	-	567	553	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			29.2			0			0.5		
HCM LOS	A			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1144	-	-	-	178	771	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.165	0.027	-	-				
HCM Control Delay (s)	0	-	-	0	29.2	9.8	-	-				
HCM Lane LOS	A	-	-	A	D	A	-	-				
HCM 95th %tile O(veh)	0	-	-	-	0.6	0.1	-	-				

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	19	0	8	0	814	14	15	385	0
Future Vol, veh/h	0	0	0	19	0	8	0	814	14	15	385	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
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	0	0	0	21	0	9	0	885	15	16	418	0
Major/Minor				Minor1			Major1			Major2		
Conflicting Flow All				1343	1343	892	418	0	0	900	0	0
Stage 1				892	892	-	-	-	-	-	-	-
Stage 2				451	451	-	-	-	-	-	-	-
Critical Hdwy				6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1				5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2				5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy				3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver				168	152	341	1141	-	-	755	-	-
Stage 1				400	360	-	-	-	-	-	-	-
Stage 2				642	571	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver				164	0	341	1141	-	-	755	-	-
Mov Cap-2 Maneuver				164	0	-	-	-	-	-	-	-
Stage 1				400	0	-	-	-	-	-	-	-
Stage 2				628	0	-	-	-	-	-	-	-
Approach				WB			NB			SB		
HCM Control Delay, s				26.8			0			0.4		
HCM LOS				D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1141	-	-	194	755	-	-					
HCM Lane V/C Ratio	-	-	-	0.151	0.022	-	-					
HCM Control Delay (s)	0	-	-	26.8	9.9	-	-					
HCM Lane LOS	A	-	-	D	A	-	-					
HCM 95th %tile O(veh)	0	-	-	0.5	0.1	-	-					

HCM 2010 TWSC
35: Hyland Croy Road & Gorden RI/RO Site Access

6/15/2017

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	6	818	10	0	407
Future Vol, veh/h	0	6	818	10	0	407
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	889	11	0	442
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1337	450	0	0	900	0
Stage 1	895	-	-	-	-	-
Stage 2	442	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	156	557	-	-	751	-
Stage 1	360	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	156	557	-	-	751	-
Mov Cap-2 Maneuver	156	-	-	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.5	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 557	751	-		
HCM Lane V/C Ratio	-	- 0.012	-	-		
HCM Control Delay (s)	-	- 11.5	0	-		
HCM Lane LOS	-	- B	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	65	0	112	0	586	15	78	756	3
Future Volume (veh/h)	3	2	1	65	0	112	0	586	15	78	756	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	71	0	122	0	637	16	85	822	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	165	102	39	138	16	153	95	1334	34	557	1368	5
Arrive On Green	0.16	0.16	0.16	0.16	0.00	0.16	0.00	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	599	648	249	466	100	974	661	1809	45	776	1855	7
Grp Volume(v), veh/h	6	0	0	193	0	0	0	0	653	85	0	825
Grp Sat Flow(s),veh/h/ln	1496	0	0	1540	0	0	661	0	1855	776	0	1862
Q Serve(g_s), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	10.8	3.8	0.0	15.9
Cycle Q Clear(g_c), s	0.2	0.0	0.0	9.1	0.0	0.0	0.0	0.0	10.8	14.6	0.0	15.9
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	0	307	0	0	95	0	1368	557	0	1373
V/C Ratio(X)	0.02	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.48	0.15	0.00	0.60
Avail Cap(c_a), veh/h	579	0	0	587	0	0	95	0	1368	557	0	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	30.7	0.0	0.0	0.0	0.0	4.0	7.0	0.0	4.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	1.2	0.6	0.0	2.0
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	0.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	5.9	0.9	0.0	8.8
LnGrp Delay(d),s/veh	27.1	0.0	0.0	32.9	0.0	0.0	0.0	0.0	5.2	7.6	0.0	6.7
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			193			653			910	
Approach Delay, s/veh		27.1			32.9			5.2			6.7	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		15.9		60.0		15.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		12.8		2.2		17.9		11.1				
Green Ext Time (p_c), s		14.4		1.2		13.8		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			9.1									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↔	↔	
Traffic Volume (veh/h)	0	0	0	52	0	88	0	504	8	34	835	0
Future Volume (veh/h)	0	0	0	52	0	88	0	504	8	34	835	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	57	0	96	0	548	9	37	908	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	0	237	0	127	14	123	0	1395	23	660	1422	0
Arrive On Green	0.00	0.00	0.00	0.13	0.00	0.13	0.00	0.76	0.76	0.76	0.76	0.00
Sat Flow, veh/h	0	1863	0	466	109	968	0	1827	30	849	1863	0
Grp Volume(v), veh/h	0	0	0	153	0	0	0	0	557	37	908	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1543	0	0	0	0	1857	849	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	7.4	1.1	16.5	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	7.0	0.0	0.0	0.0	0.0	7.4	8.6	16.5	0.0
Prop In Lane	0.00		0.00	0.37		0.63	0.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	0	237	0	264	0	0	0	0	1418	660	1422	0
V/C Ratio(X)	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.39	0.06	0.64	0.00
Avail Cap(c_a), veh/h	0	660	0	608	0	0	0	0	1418	660	1422	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	30.9	0.0	0.0	0.0	0.0	2.9	4.4	4.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.8	0.2	2.2	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	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	4.0	0.3	8.9	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	32.9	0.0	0.0	0.0	0.0	3.7	4.5	6.2	0.0
LnGrp LOS				C					A	A	A	
Approach Vol, veh/h		0			153			557			945	
Approach Delay, s/veh		0.0			32.9			3.7			6.1	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		13.3		60.0		13.3				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		9.4		0.0		18.5		9.0				
Green Ext Time (p_c), s		14.1		0.0		13.3		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay				7.8								
HCM 2010 LOS				A								

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	356	675	0	0	445	152	0	0	0	320	0	669
Future Volume (veh/h)	356	675	0	0	445	152	0	0	0	320	0	669
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	387	734	0	0	484	165				348	0	727
Adj No. of Lanes	1	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	543	1716	0	0	795	978				697	732	938
Arrive On Green	0.20	0.48	0.00	0.00	0.22	0.22				0.39	0.00	0.39
Sat Flow, veh/h	1774	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	387	734	0	0	484	165				348	0	727
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	10.0	8.8	0.0	0.0	8.1	2.9				9.7	0.0	22.7
Cycle Q Clear(g_c), s	10.0	8.8	0.0	0.0	8.1	2.9				9.7	0.0	22.7
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	543	1716	0	0	795	978				697	732	938
V/C Ratio(X)	0.71	0.43	0.00	0.00	0.61	0.17				0.50	0.00	0.78
Avail Cap(c_a), veh/h	1082	2970	0	0	972	1057				731	767	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	11.0	0.0	0.0	22.8	5.3				15.0	0.0	10.1
Incr Delay (d2), s/veh	1.8	0.2	0.0	0.0	0.8	0.1				0.6	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.1	4.3	0.0	0.0	4.0	4.1				4.8	0.0	1.0
LnGrp Delay(d),s/veh	15.7	11.1	0.0	0.0	23.6	5.4				15.6	0.0	14.0
LnGrp LOS	B	B			C	A				B		B
Approach Vol, veh/h		1121			649						1075	
Approach Delay, s/veh		12.7			19.0						14.5	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				35.8		29.8	17.1	18.7				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				55.0		27.0	33.0	18.0				
Max Q Clear Time (g_c+I1), s				10.8		24.7	12.0	10.1				
Green Ext Time (p_c), s				10.5		1.1	1.1	4.7				
Intersection Summary												
HCM 2010 Ctrl Delay				14.8								
HCM 2010 LOS				B								

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	31	59	31	37	22
Maximum Split (%)	34.4%	65.6%	34.4%	41.1%	24.4%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	31	0	31	68
End Time (s)	31	0	31	68	0
Yield/Force Off (s)	27	86	27	64	86
Yield/Force Off 170(s)	27	75	16	64	75
Local Start Time (s)	0	31	0	31	68
Local Yield (s)	27	86	27	64	86
Local Yield 170(s)	27	75	16	64	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 5: Post Rd & Hyland Croy Road



HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	13	0	488	17	8	905	0
Future Volume (veh/h)	0	0	0	89	0	13	0	488	17	8	905	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				97	0	14	0	530	18	9	984	0
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				133	0	19	0	1431	49	56	1480	0
Arrive On Green				0.09	0.00	0.09	0.00	0.80	0.80	0.80	0.80	0.00
Sat Flow, veh/h				1527	0	220	0	1791	61	5	1852	0
Grp Volume(v), veh/h				111	0	0	0	0	548	993	0	0
Grp Sat Flow(s),veh/h/ln				1747	0	0	0	0	1852	1857	0	0
Q Serve(g_s), s				4.3	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0
Cycle Q Clear(g_c), s				4.3	0.0	0.0	0.0	0.0	5.9	16.1	0.0	0.0
Prop In Lane				0.87		0.13	0.00		0.03	0.01		0.00
Lane Grp Cap(c), veh/h				152	0	0	0	0	1480	1536	0	0
V/C Ratio(X)				0.73	0.00	0.00	0.00	0.00	0.37	0.65	0.00	0.00
Avail Cap(c_a), veh/h				648	0	0	0	0	1480	1536	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.2	0.0	0.0	0.0	0.0	2.0	3.0	0.0	0.0
Incr Delay (d2), s/veh				6.6	0.0	0.0	0.0	0.0	0.7	2.1	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
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	0.0	0.0	3.2	8.9	0.0	0.0
LnGrp Delay(d),s/veh				37.8	0.0	0.0	0.0	0.0	2.7	5.1	0.0	0.0
LnGrp LOS				D					A	A		
Approach Vol, veh/h					111			548			993	
Approach Delay, s/veh					37.8			2.7			5.1	
Approach LOS					D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		10.1				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		7.9				18.1		6.3				
Green Ext Time (p_c), s		15.6				14.5		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				6.5								
HCM 2010 LOS				A								

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

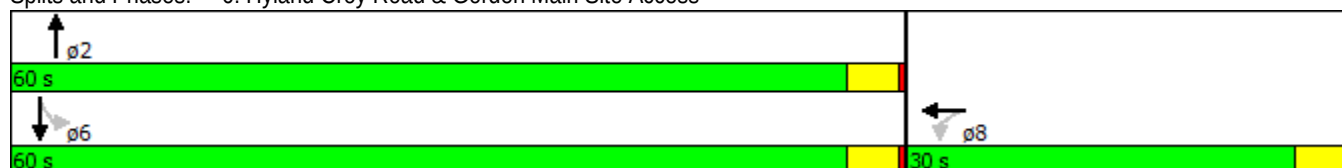


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 6: Hyland Croy Road & Gorden Main Site Access



Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	40	0	27	0	485	12	11	876	0
Future Vol, veh/h	0	0	0	40	0	27	0	485	12	11	876	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	175	175	-	-
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	0	0	0	43	0	29	0	527	13	12	952	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1518	1503	952	1503	1503	527	952	0	0	527	0	0
Stage 1	976	976	-	527	527	-	-	-	-	-	-	-
Stage 2	542	527	-	976	976	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	98	122	315	100	122	551	722	-	-	1040	-	-
Stage 1	302	329	-	535	528	-	-	-	-	-	-	-
Stage 2	525	528	-	302	329	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	92	121	315	99	121	551	722	-	-	1040	-	-
Mov Cap-2 Maneuver	92	121	-	99	121	-	-	-	-	-	-	-
Stage 1	302	325	-	535	528	-	-	-	-	-	-	-
Stage 2	497	528	-	299	325	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			44.9			0			0.1		
HCM LOS	A			E								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	722	-	-	-	-	99	551	1040	-	-		
HCM Lane V/C Ratio	-	-	-	-	-	0.439	0.053	0.011	-	-		
HCM Control Delay (s)	0	-	-	0	0	67.2	11.9	8.5	-	-		
HCM Lane LOS	A	-	-	A	A	F	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	-	-	1.9	0.2	0	-	-		

HCM 2010 TWSC
35: Hyland Croy Road & Gorden RI/RO Site Access

6/15/2017

Intersection

Int Delay, s/veh 0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	7	503	5	0	991
Future Vol, veh/h	0	7	503	5	0	991
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	547	5	0	1077

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1626	276	0
Stage 1	549	-	-
Stage 2	1077	-	-
Critical Hdwy	6.63	6.93	4.14
Critical Hdwy Stg 1	5.83	-	-
Critical Hdwy Stg 2	5.43	-	-
Follow-up Hdwy	3.519	3.319	2.22
Pot Cap-1 Maneuver	102	722	1014
Stage 1	543	-	-
Stage 2	326	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	102	722	1014
Mov Cap-2 Maneuver	102	-	-
Stage 1	543	-	-
Stage 2	326	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 722	1014	-
HCM Lane V/C Ratio	-	- 0.011	-	-
HCM Control Delay (s)	-	- 10	0	-
HCM Lane LOS	-	- B	A	-
HCM 95th %tile Q(veh)	-	- 0	0	-

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	34	0	44	6	968	60	53	691	4
Future Volume (veh/h)	1	0	1	34	0	44	6	968	60	53	691	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	37	0	48	7	1052	65	58	751	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	119	20	61	118	5	62	586	1409	87	367	1502	8
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	565	282	847	589	74	860	706	1737	107	502	1851	10
Grp Volume(v), veh/h	2	0	0	85	0	0	7	0	1117	58	0	755
Grp Sat Flow(s),veh/h/ln	1694	0	0	1522	0	0	706	0	1844	502	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	3.3	0.0	0.0	0.2	0.0	20.0	4.3	0.0	8.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.8	0.0	0.0	9.1	0.0	20.0	24.3	0.0	8.9
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.06	1.00		0.01
Lane Grp Cap(c), veh/h	201	0	0	185	0	0	586	0	1496	367	0	1510
V/C Ratio(X)	0.01	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.75	0.16	0.00	0.50
Avail Cap(c_a), veh/h	645	0	0	643	0	0	586	0	1496	367	0	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	0.0	31.4	0.0	0.0	3.5	0.0	3.1	8.9	0.0	2.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	3.4	0.9	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	11.0	0.7	0.0	4.9
LnGrp Delay(d),s/veh	29.7	0.0	0.0	33.2	0.0	0.0	3.5	0.0	6.5	9.8	0.0	3.2
LnGrp LOS	C			C			A		A	A		A
Approach Vol, veh/h		2			85			1124			813	
Approach Delay, s/veh		29.7			33.2			6.5			3.7	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		9.0		60.0		9.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		22.0		2.1		26.3		5.8				
Green Ext Time (p_c), s		20.2		0.4		18.5		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay			6.5									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	70

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	29	0	22	0	1115	97	26	689	0
Future Volume (veh/h)	0	0	0	29	0	22	0	1115	97	26	689	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	0	0	0	32	0	24	0	1212	105	28	749	0
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	0	85	0	123	0	29	0	1411	122	280	1555	0
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.83	0.83	0.83	0.83	0.00
Sat Flow, veh/h	0	1863	0	846	0	635	0	1690	146	415	1863	0
Grp Volume(v), veh/h	0	0	0	56	0	0	0	0	1317	28	749	0
Grp Sat Flow(s),veh/h/ln	0	1863	0	1481	0	0	0	0	1837	415	1863	0
Q Serve(g_s), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	28.0	2.8	7.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	28.0	30.9	7.4	0.0
Prop In Lane	0.00		0.00	0.57		0.43	0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	0	85	0	152	0	0	0	0	1534	280	1555	0
V/C Ratio(X)	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.00	0.86	0.10	0.48	0.00
Avail Cap(c_a), veh/h	0	722	0	658	0	0	0	0	1534	280	1555	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	31.7	0.0	0.0	0.0	0.0	3.2	12.2	1.5	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	6.5	0.7	1.1	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	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	15.9	0.4	4.0	0.0
LnGrp Delay(d),s/veh	0.0	0.0	0.0	33.2	0.0	0.0	0.0	0.0	9.7	12.9	2.6	0.0
LnGrp LOS				C					A	B	A	
Approach Vol, veh/h		0			56			1317			777	
Approach Delay, s/veh		0.0			33.2			9.7			3.0	
Approach LOS					C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		7.1		60.0		7.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		30.0		0.0		32.9		4.5				
Green Ext Time (p_c), s		19.5		0.0		17.8		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			7.9									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	877	563	0	0	665	447	0	0	0	172	0	579
Future Volume (veh/h)	877	563	0	0	665	447	0	0	0	172	0	579
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	953	612	0	0	723	486				187	0	629
Adj No. of Lanes	1	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	957	2753	0	0	904	616				237	248	968
Arrive On Green	0.48	0.78	0.00	0.00	0.26	0.26				0.13	0.00	0.13
Sat Flow, veh/h	1774	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	953	612	0	0	723	486				187	0	629
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	42.5	4.2	0.0	0.0	17.2	23.0				9.2	0.0	12.0
Cycle Q Clear(g_c), s	42.5	4.2	0.0	0.0	17.2	23.0				9.2	0.0	12.0
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	957	2753	0	0	904	616				237	248	968
V/C Ratio(X)	1.00	0.22	0.00	0.00	0.80	0.79				0.79	0.00	0.65
Avail Cap(c_a), veh/h	957	2753	0	0	904	616				237	248	968
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.3	2.7	0.0	0.0	31.3	24.2				37.8	0.0	11.3
Incr Delay (d2), s/veh	27.9	0.0	0.0	0.0	5.1	6.8				16.4	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	30.7	2.0	0.0	0.0	9.0	20.6				5.6	0.0	22.1
LnGrp Delay(d),s/veh	46.2	2.7	0.0	0.0	36.5	31.1				54.2	0.0	12.8
LnGrp LOS	D	A			D	C				D		B
Approach Vol, veh/h		1565			1209						816	
Approach Delay, s/veh		29.2			34.3						22.3	
Approach LOS		C			C						C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				74.0		16.0	47.0	27.0				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				70.0		12.0	43.0	23.0				
Max Q Clear Time (g_c+I1), s				6.2		14.0	44.5	25.0				
Green Ext Time (p_c), s				15.4		0.0	0.0	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				29.4								
HCM 2010 LOS				C								

Gorden Only 2029 - PM Peak - Build
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	16	74	16	47	27
Maximum Split (%)	17.8%	82.2%	17.8%	52.2%	30.0%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	16	0	16	63
End Time (s)	16	0	16	63	0
Yield/Force Off (s)	12	86	12	59	86
Yield/Force Off 170(s)	12	75	1	59	75
Local Start Time (s)	0	16	0	16	63
Local Yield (s)	12	86	12	59	86
Local Yield 170(s)	12	75	1	59	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 5: Post Rd & Hyland Croy Road

16 s	74 s
16 s	47 s
	27 s

HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	55	0	11	0	1227	97	20	692	0
Future Volume (veh/h)	0	0	0	55	0	11	0	1227	97	20	692	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				60	0	12	0	1334	105	22	752	0
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				81	0	16	0	1409	111	64	1212	0
Arrive On Green				0.06	0.00	0.06	0.00	0.83	0.83	0.83	0.83	0.00
Sat Flow, veh/h				1449	0	290	0	1705	134	12	1467	0
Grp Volume(v), veh/h				72	0	0	0	0	1439	774	0	0
Grp Sat Flow(s),veh/h/ln				1739	0	0	0	0	1839	1478	0	0
Q Serve(g_s), s				2.8	0.0	0.0	0.0	0.0	42.3	8.8	0.0	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.0	0.0	0.0	42.3	51.1	0.0	0.0
Prop In Lane				0.83		0.17	0.00		0.07	0.03		0.00
Lane Grp Cap(c), veh/h				97	0	0	0	0	1520	1276	0	0
V/C Ratio(X)				0.74	0.00	0.00	0.00	0.00	0.95	0.61	0.00	0.00
Avail Cap(c_a), veh/h				667	0	0	0	0	1520	1276	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.5	0.0	0.0	0.0	0.0	4.7	3.2	0.0	0.0
Incr Delay (d2), s/veh				10.7	0.0	0.0	0.0	0.0	13.5	2.1	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
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.0	0.0	0.0	25.7	4.8	0.0	0.0
LnGrp Delay(d),s/veh				42.3	0.0	0.0	0.0	0.0	18.2	5.3	0.0	0.0
LnGrp LOS				D					B	A		
Approach Vol, veh/h					72			1439			774	
Approach Delay, s/veh					42.3			18.2			5.3	
Approach LOS					D			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		7.8				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		44.3				53.1		4.8				
Green Ext Time (p_c), s		10.5				2.8		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				14.6								
HCM 2010 LOS				B								

Gorden Only 2029 - PM Peak - Build
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

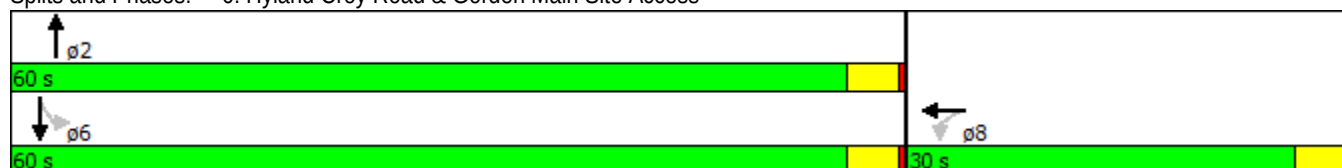


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	120

Splits and Phases: 6: Hyland Croy Road & Gorden Main Site Access



Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	27	0	19	0	1194	48	36	682	0
Future Vol, veh/h	0	0	0	27	0	19	0	1194	48	36	682	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	175	175	-	-
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	0	0	0	29	0	21	0	1298	52	39	741	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2128	2118	741	2118	2118	1298	741	0	0	1298	0	0
Stage 1	820	820	-	1298	1298	-	-	-	-	-	-	-
Stage 2	1308	1298	-	820	820	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	36	50	416	37	50	198	866	-	-	534	-	-
Stage 1	369	389	-	199	232	-	-	-	-	-	-	-
Stage 2	196	232	-	369	389	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	30	46	416	35	46	198	866	-	-	534	-	-
Mov Cap-2 Maneuver	30	46	-	35	46	-	-	-	-	-	-	-
Stage 1	369	361	-	199	232	-	-	-	-	-	-	-
Stage 2	176	232	-	342	361	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			170			0			0.6		
HCM LOS	A			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	866	-	-	-	-	35	198	534	-	-		
HCM Lane V/C Ratio	-	-	-	-	-	0.839	0.104	0.073	-	-		
HCM Control Delay (s)	0	-	-	0	0	271.9	25.3	12.3	-	-		
HCM Lane LOS	A	-	-	A	A	F	D	B	-	-		
HCM 95th %tile Q(veh)	0	-	-	-	-	3	0.3	0.2	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	6	1314	10	0	751
Future Vol, veh/h	0	6	1314	10	0	751
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1428	11	0	816
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2250	720	0	0	1439	0
Stage 1	1434	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	40	371	-	-	468	-
Stage 1	187	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	40	371	-	-	468	-
Mov Cap-2 Maneuver	40	-	-	-	-	-
Stage 1	187	-	-	-	-	-
Stage 2	434	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	14.9		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 371	468	-		
HCM Lane V/C Ratio	-	- 0.018	-	-		
HCM Control Delay (s)	-	- 14.9	0	-		
HCM Lane LOS	-	- B	A	-		
HCM 95th %tile Q(veh)	-	- 0.1	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	59	0	102	0	434	13	71	518	3
Future Volume (veh/h)	3	2	1	59	0	102	0	434	13	71	518	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	64	0	111	0	472	14	77	563	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	159	97	37	131	15	141	95	1352	40	695	1390	7
Arrive On Green	0.14	0.14	0.14	0.14	0.00	0.14	0.00	0.75	0.75	0.75	0.75	0.75
Sat Flow, veh/h	610	677	257	459	105	978	842	1800	53	906	1851	10
Grp Volume(v), veh/h	6	0	0	175	0	0	0	0	486	77	0	566
Grp Sat Flow(s),veh/h/ln	1544	0	0	1542	0	0	842	0	1853	906	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	6.4	0.0	0.0	0.0	0.0	6.7	2.4	0.0	8.3
Cycle Q Clear(g_c), s	0.2	0.0	0.0	8.3	0.0	0.0	0.0	0.0	6.7	9.1	0.0	8.3
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.03	1.00		0.01
Lane Grp Cap(c), veh/h	293	0	0	286	0	0	95	0	1392	695	0	1397
V/C Ratio(X)	0.02	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.35	0.11	0.00	0.41
Avail Cap(c_a), veh/h	568	0	0	567	0	0	95	0	1392	695	0	1397
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.9	0.0	0.0	31.3	0.0	0.0	0.0	0.0	3.2	4.7	0.0	3.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.7	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	3.7	0.0	0.0	0.0	0.0	3.6	0.6	0.0	4.4
LnGrp Delay(d),s/veh	28.0	0.0	0.0	33.4	0.0	0.0	0.0	0.0	3.9	5.1	0.0	4.3
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			175			486			643	
Approach Delay, s/veh		28.0			33.4			3.9			4.4	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		61.0		14.9		61.0		14.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		57.0		25.0		57.0		25.0				
Max Q Clear Time (g_c+I1), s		8.7		2.2		11.1		10.3				
Green Ext Time (p_c), s		8.2		1.1		8.1		0.9				
Intersection Summary												
HCM 2010 Ctrl Delay			8.2									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	61	29	61	29
Maximum Split (%)	67.8%	32.2%	67.8%	32.2%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	61	0	61
End Time (s)	61	0	61	0
Yield/Force Off (s)	57	86	57	86
Yield/Force Off 170(s)	46	75	46	75
Local Start Time (s)	0	61	0	61
Local Yield (s)	57	86	57	86
Local Yield 170(s)	46	75	46	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	40

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
61 s	29 s
 p6	 p8
61 s	29 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (veh/h)	248	615	0	0	405	92	0	0	0	220	0	481
Future Volume (veh/h)	248	615	0	0	405	92	0	0	0	220	0	481
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	270	668	0	0	440	100				239	0	523
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	532	1804	0	0	826	186				595	625	760
Arrive On Green	0.14	0.51	0.00	0.00	0.29	0.29				0.34	0.00	0.34
Sat Flow, veh/h	1774	3632	0	0	2964	648				1774	1863	1583
Grp Volume(v), veh/h	270	668	0	0	270	270				239	0	523
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1748				1774	1863	1583
Q Serve(g_s), s	4.9	5.9	0.0	0.0	6.6	6.7				5.3	0.0	13.3
Cycle Q Clear(g_c), s	4.9	5.9	0.0	0.0	6.6	6.7				5.3	0.0	13.3
Prop In Lane	1.00		0.00	0.00		0.37				1.00		1.00
Lane Grp Cap(c), veh/h	532	1804	0	0	509	503				595	625	760
V/C Ratio(X)	0.51	0.37	0.00	0.00	0.53	0.54				0.40	0.00	0.69
Avail Cap(c_a), veh/h	1271	3835	0	0	787	778				892	937	1025
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	9.6	7.7	0.0	0.0	15.5	15.5				13.2	0.0	10.4
Incr Delay (d2), s/veh	0.8	0.1	0.0	0.0	0.9	0.9				0.4	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	2.9	0.0	0.0	3.3	3.3				2.7	0.0	11.6
LnGrp Delay(d),s/veh	10.4	7.8	0.0	0.0	16.3	16.4				13.6	0.0	11.6
LnGrp LOS	B	A			B	B				B		B
Approach Vol, veh/h		938			540						762	
Approach Delay, s/veh		8.5			16.4						12.3	
Approach LOS		A			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				30.3		21.3	11.5	18.9				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				56.0		26.0	29.0	23.0				
Max Q Clear Time (g_c+I1), s				7.9		15.3	6.9	8.7				
Green Ext Time (p_c), s				9.0		2.1	0.7	6.1				
Intersection Summary												
HCM 2010 Ctrl Delay				11.7								
HCM 2010 LOS				B								

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	30	60	30	33	27
Maximum Split (%)	33.3%	66.7%	33.3%	36.7%	30.0%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	30	0	30	63
End Time (s)	30	0	30	63	0
Yield/Force Off (s)	26	86	26	59	86
Yield/Force Off 170(s)	26	75	15	59	75
Local Start Time (s)	0	30	0	30	63
Local Yield (s)	26	86	26	59	86
Local Yield 170(s)	26	75	15	59	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	55

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection

Int Delay, s/veh 4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	39	0	42	47	0	81	14	324	7	31	570	13
Future Vol, veh/h	39	0	42	47	0	81	14	324	7	31	570	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	175	-	225	175	-	175
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	42	0	46	51	0	88	15	352	8	34	620	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1114	1070	620	1093	1070	352	620	0	0	352	0	0
Stage 1	687	687	-	383	383	-	-	-	-	-	-	-
Stage 2	427	383	-	710	687	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	185	221	488	192	221	692	960	-	-	1207	-	-
Stage 1	437	447	-	640	612	-	-	-	-	-	-	-
Stage 2	606	612	-	424	447	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	156	211	488	168	211	692	960	-	-	1207	-	-
Mov Cap-2 Maneuver	156	211	-	168	211	-	-	-	-	-	-	-
Stage 1	430	434	-	630	602	-	-	-	-	-	-	-
Stage 2	521	602	-	374	434	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.4	20	0.4	0.4
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	960	-	-	156	488	168	692	1207	-	-
HCM Lane V/C Ratio	0.016	-	-	0.272	0.094	0.304	0.127	0.028	-	-
HCM Control Delay (s)	8.8	-	-	36.5	13.1	35.5	11	8.1	-	-
HCM Lane LOS	A	-	-	E	B	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1	0.3	1.2	0.4	0.1	-	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	14	0	28	17	0	13	9	318	9	9	645	4
Future Vol, veh/h	14	0	28	17	0	13	9	318	9	9	645	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	175	175	-	-
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	15	0	30	18	0	14	10	346	10	10	701	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1095	1088	703	1103	1090	346	705	0	0	346	0	0
Stage 1	723	723	-	365	365	-	-	-	-	-	-	-
Stage 2	372	365	-	738	725	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	191	216	438	189	215	697	893	-	-	1213	-	-
Stage 1	417	431	-	654	623	-	-	-	-	-	-	-
Stage 2	648	623	-	410	430	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	184	212	438	173	211	697	893	-	-	1213	-	-
Mov Cap-2 Maneuver	184	212	-	173	211	-	-	-	-	-	-	-
Stage 1	412	427	-	647	616	-	-	-	-	-	-	-
Stage 2	628	616	-	378	426	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	18			20.5			0.2			0.1		
HCM LOS	C			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	893	-	-	184	438	173	697	1213	-	-		
HCM Lane V/C Ratio	0.011	-	-	0.083	0.069	0.107	0.02	0.008	-	-		
HCM Control Delay (s)	9.1	-	-	26.3	13.8	28.3	10.3	8	-	-		
HCM Lane LOS	A	-	-	D	B	D	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.4	0.1	0	-	-		

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	21	0	9	0	331	7	7	681	0
Future Vol, veh/h	0	0	0	21	0	9	0	331	7	7	681	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
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	0	0	0	23	0	10	0	360	8	8	740	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	1119	1119	364	740	0	0	367	0	0
Stage 1	364	364	-	-	-	-	-	-	-
Stage 2	755	755	-	-	-	-	-	-	-
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	229	207	681	867	-	-	1192	-	-
Stage 1	703	624	-	-	-	-	-	-	-
Stage 2	464	417	-	-	-	-	-	-	-
Platoon blocked, %					-	-		-	-
Mov Cap-1 Maneuver	227	0	681	867	-	-	1192	-	-
Mov Cap-2 Maneuver	227	0	-	-	-	-	-	-	-
Stage 1	703	0	-	-	-	-	-	-	-
Stage 2	461	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.3	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR
Capacity (veh/h)	867	-	-	284	1192	-
HCM Lane V/C Ratio	-	-	-	0.115	0.006	-
HCM Control Delay (s)	0	-	-	19.3	8	-
HCM Lane LOS	A	-	-	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	7	335	5	0	699
Future Vol, veh/h	0	7	335	5	0	699
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	364	5	0	760
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1127	185	0	0	370	0
Stage 1	367	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	212	826	-	-	1185	-
Stage 1	672	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	212	826	-	-	1185	-
Mov Cap-2 Maneuver	212	-	-	-	-	-
Stage 1	672	-	-	-	-	-
Stage 2	461	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.4	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 826	1185	-		
HCM Lane V/C Ratio	-	- 0.009	-	-		
HCM Control Delay (s)	-	- 9.4	0	-		
HCM Lane LOS	-	- A	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	31	0	40	5	636	55	48	428	4
Future Volume (veh/h)	1	0	1	31	0	40	5	636	55	48	428	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	34	0	43	5	691	60	52	465	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	115	20	56	116	4	55	801	1382	120	595	1508	13
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.82	0.82	0.82	0.82	0.82	0.82
Sat Flow, veh/h	547	301	848	614	55	847	920	1690	147	709	1844	16
Grp Volume(v), veh/h	2	0	0	77	0	0	5	0	751	52	0	469
Grp Sat Flow(s),veh/h/ln	1695	0	0	1516	0	0	920	0	1837	709	0	1860
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.1	0.0	8.6	1.7	0.0	4.2
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.4	0.0	0.0	4.3	0.0	8.6	10.3	0.0	4.2
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.08	1.00		0.01
Lane Grp Cap(c), veh/h	190	0	0	175	0	0	801	0	1502	595	0	1521
V/C Ratio(X)	0.01	0.00	0.00	0.44	0.00	0.00	0.01	0.00	0.50	0.09	0.00	0.31
Avail Cap(c_a), veh/h	649	0	0	647	0	0	801	0	1502	595	0	1521
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.9	0.0	0.0	31.5	0.0	0.0	2.0	0.0	1.9	3.5	0.0	1.5
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	1.2	0.3	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	4.7	0.4	0.0	2.3
LnGrp Delay(d),s/veh	30.0	0.0	0.0	33.2	0.0	0.0	2.1	0.0	3.1	3.8	0.0	2.0
LnGrp LOS	C			C			A		A	A		A
Approach Vol, veh/h	2		77				756				521	
Approach Delay, s/veh	30.0		33.2				3.1				2.2	
Approach LOS	C		C				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4				6				8	
Phs Duration (G+Y+Rc), s	60.0		8.5				60.0				8.5	
Change Period (Y+Rc), s	4.0		4.0				4.0				4.0	
Max Green Setting (Gmax), s	56.0		26.0				56.0				26.0	
Max Q Clear Time (g_c+I1), s	10.6		2.1				12.3				5.4	
Green Ext Time (p_c), s	10.5		0.4				10.4				0.4	
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	55

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	599	513	0	0	606	301	0	0	0	71	0	380
Future Volume (veh/h)	599	513	0	0	606	301	0	0	0	71	0	380
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1900				1863	1863	1863
Adj Flow Rate, veh/h	651	558	0	0	659	327				77	0	413
Adj No. of Lanes	1	2	0	0	2	0				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	696	2541	0	0	822	408				326	343	783
Arrive On Green	0.31	0.72	0.00	0.00	0.36	0.36				0.18	0.00	0.18
Sat Flow, veh/h	1774	3632	0	0	2387	1138				1774	1863	1583
Grp Volume(v), veh/h	651	558	0	0	508	478				77	0	413
Grp Sat Flow(s),veh/h/ln	1774	1770	0	0	1770	1662				1774	1863	1583
Q Serve(g_s), s	22.1	4.3	0.0	0.0	21.1	21.1				3.0	0.0	14.6
Cycle Q Clear(g_c), s	22.1	4.3	0.0	0.0	21.1	21.1				3.0	0.0	14.6
Prop In Lane	1.00		0.00	0.00		0.68				1.00		1.00
Lane Grp Cap(c), veh/h	696	2541	0	0	634	596				326	343	783
V/C Ratio(X)	0.94	0.22	0.00	0.00	0.80	0.80				0.24	0.00	0.53
Avail Cap(c_a), veh/h	798	2907	0	0	716	672				326	343	783
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	18.6	3.8	0.0	0.0	23.5	23.5				28.4	0.0	14.1
Incr Delay (d2), s/veh	16.9	0.0	0.0	0.0	5.9	6.2				0.4	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.2	2.1	0.0	0.0	11.3	10.7				1.5	0.0	14.2
LnGrp Delay(d),s/veh	35.5	3.9	0.0	0.0	29.4	29.8				28.8	0.0	14.8
LnGrp LOS	D	A			C	C				C		B
Approach Vol, veh/h		1209			986						490	
Approach Delay, s/veh		20.9			29.6						17.0	
Approach LOS		C			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				62.6		19.0	29.3	33.2				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				67.0		15.0	30.0	33.0				
Max Q Clear Time (g_c+I1), s				6.3		16.6	24.1	23.1				
Green Ext Time (p_c), s				13.6		0.0	1.3	6.1				
Intersection Summary												
HCM 2010 Ctrl Delay			23.4									
HCM 2010 LOS			C									

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBTL	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	19	71	19	34	37
Maximum Split (%)	21.1%	78.9%	21.1%	37.8%	41.1%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	19	0	19	53
End Time (s)	19	0	19	53	0
Yield/Force Off (s)	15	86	15	49	86
Yield/Force Off 170(s)	15	75	4	49	75
Local Start Time (s)	0	19	0	19	53
Local Yield (s)	15	86	15	49	86
Local Yield 170(s)	15	75	4	49	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	80

Splits and Phases: 5: Post Rd & Hyland Croy Road



Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	25	0	27	27	0	20	43	738	89	23	388	40
Future Vol, veh/h	25	0	27	27	0	20	43	738	89	23	388	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	175	-	225	175	-	175
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	27	0	29	29	0	22	47	802	97	25	422	43
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1379	1368	422	1382	1368	802	422	0	0	802	0	0
Stage 1	472	472	-	896	896	-	-	-	-	-	-	-
Stage 2	907	896	-	486	472	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	122	147	632	121	147	384	1137	-	-	822	-	-
Stage 1	573	559	-	335	359	-	-	-	-	-	-	-
Stage 2	330	359	-	563	559	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	109	137	632	109	137	384	1137	-	-	822	-	-
Mov Cap-2 Maneuver	109	137	-	109	137	-	-	-	-	-	-	-
Stage 1	549	542	-	321	344	-	-	-	-	-	-	-
Stage 2	298	344	-	521	542	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	29.1			34.9			0.4			0.5		
HCM LOS	D			D								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1137	-	-	109	632	109	384	822	-	-		
HCM Lane V/C Ratio	0.041	-	-	0.249	0.046	0.269	0.057	0.03	-	-		
HCM Control Delay (s)	8.3	-	-	48.7	11	49.8	14.9	9.5	-	-		
HCM Lane LOS	A	-	-	E	B	E	B	A	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.1	1	0.2	0.1	-	-		

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	0	17	15	0	12	29	848	20	19	409	14
Future Vol, veh/h	9	0	17	15	0	12	29	848	20	19	409	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	175	175	-	-
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	10	0	18	16	0	13	32	922	22	21	445	15
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1484	1478	452	1488	1486	922	460	0	0	922	0	0
Stage 1	493	493	-	985	985	-	-	-	-	-	-	-
Stage 2	991	985	-	503	501	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	103	126	608	102	124	327	1101	-	-	741	-	-
Stage 1	558	547	-	299	326	-	-	-	-	-	-	-
Stage 2	296	326	-	551	543	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	95	119	608	95	117	327	1101	-	-	741	-	-
Mov Cap-2 Maneuver	95	119	-	95	117	-	-	-	-	-	-	-
Stage 1	542	531	-	290	317	-	-	-	-	-	-	-
Stage 2	276	317	-	519	528	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	23.6			35.4			0.3			0.4		
HCM LOS	C			E								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	1101	-	-	95	608	95	327	741	-	-		
HCM Lane V/C Ratio	0.029	-	-	0.103	0.03	0.172	0.04	0.028	-	-		
HCM Control Delay (s)	8.4	-	-	47.2	11.1	50.6	16.5	10	-	-		
HCM Lane LOS	A	-	-	E	B	F	C	A	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0.6	0.1	0.1	-	-		

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	19	0	8	0	886	14	15	429	0
Future Vol, veh/h	0	0	0	19	0	8	0	886	14	15	429	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	175	-	-
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	0	0	0	21	0	9	0	963	15	16	466	0
Major/Minor	Minor1			Major1			Major2					
Conflicting Flow All	1470	1470	971	466	0	0	978	0	0			
Stage 1	971	971	-	-	-	-	-	-	-			
Stage 2	499	499	-	-	-	-	-	-	-			
Critical Hdwy	6.42	6.52	6.22	4.12	-	-	4.12	-	-			
Critical Hdwy Stg 1	5.42	5.52	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	5.42	5.52	-	-	-	-	-	-	-			
Follow-up Hdwy	3.518	4.018	3.318	2.218	-	-	2.218	-	-			
Pot Cap-1 Maneuver	140	127	307	1095	-	-	706	-	-			
Stage 1	367	331	-	-	-	-	-	-	-			
Stage 2	610	544	-	-	-	-	-	-	-			
Platoon blocked, %							-	-	-			
Mov Cap-1 Maneuver	137	0	307	1095	-	-	706	-	-			
Mov Cap-2 Maneuver	137	0	-	-	-	-	-	-	-			
Stage 1	367	0	-	-	-	-	-	-	-			
Stage 2	596	0	-	-	-	-	-	-	-			
Approach	WB			NB			SB					
HCM Control Delay, s	31.7			0			0.3					
HCM LOS	D											
Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1	SBL	SBT	SBR						
Capacity (veh/h)	1095	-	- 164	706	-	-						
HCM Lane V/C Ratio	-	-	- 0.179	0.023	-	-						
HCM Control Delay (s)	0	-	- 31.7	10.2	-	-						
HCM Lane LOS	A	-	- D	B	-	-						
HCM 95th %tile Q(veh)	0	-	- 0.6	0.1	-	-						

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	6	890	10	0	451
Future Vol, veh/h	0	6	890	10	0	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	967	11	0	490

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1463	489	0
Stage 1	973	-	-
Stage 2	490	-	-
Critical Hdwy	6.63	6.93	4.14
Critical Hdwy Stg 1	5.83	-	-
Critical Hdwy Stg 2	5.43	-	-
Follow-up Hdwy	3.519	3.319	2.22
Pot Cap-1 Maneuver	130	526	701
Stage 1	328	-	-
Stage 2	615	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	130	526	701
Mov Cap-2 Maneuver	130	-	-
Stage 1	328	-	-
Stage 2	615	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 526	701	-
HCM Lane V/C Ratio	-	- 0.012	-	-
HCM Control Delay (s)	-	- 11.9	0	-
HCM Lane LOS	-	- B	A	-
HCM 95th %tile Q(veh)	-	- 0	0	-

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	65	0	112	0	639	15	78	773	3
Future Volume (veh/h)	3	2	1	65	0	112	0	639	15	78	773	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	71	0	122	0	695	16	85	840	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	165	102	39	138	16	153	95	1337	31	517	1368	5
Arrive On Green	0.16	0.16	0.16	0.16	0.00	0.16	0.00	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	599	648	249	466	100	974	650	1814	42	736	1855	7
Grp Volume(v), veh/h	6	0	0	193	0	0	0	0	711	85	0	843
Grp Sat Flow(s),veh/h/ln	1496	0	0	1540	0	0	650	0	1855	736	0	1862
Q Serve(g_s), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	12.4	4.2	0.0	16.5
Cycle Q Clear(g_c), s	0.2	0.0	0.0	9.1	0.0	0.0	0.0	0.0	12.4	16.6	0.0	16.5
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	0	307	0	0	95	0	1368	517	0	1373
V/C Ratio(X)	0.02	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.52	0.16	0.00	0.61
Avail Cap(c_a), veh/h	579	0	0	587	0	0	95	0	1368	517	0	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	30.7	0.0	0.0	0.0	0.0	4.2	7.8	0.0	4.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	1.4	0.7	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	6.7	0.9	0.0	9.0
LnGrp Delay(d),s/veh	27.1	0.0	0.0	32.9	0.0	0.0	0.0	0.0	5.7	8.5	0.0	6.8
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			193			711			928	
Approach Delay, s/veh		27.1			32.9			5.7			7.0	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		15.9		60.0		15.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		14.4		2.2		18.6		11.1				
Green Ext Time (p_c), s		15.5		1.2		15.0		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay				9.3								
HCM 2010 LOS				A								

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	0	42	52	0	88	14	518	8	34	839	13
Future Volume (veh/h)	39	0	42	52	0	88	14	518	8	34	839	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	42	0	46	57	0	96	15	563	9	37	912	14
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	152	23	113	130	16	133	63	1347	21	730	1386	21
Arrive On Green	0.13	0.00	0.13	0.13	0.00	0.13	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	598	172	844	473	116	991	17	1778	28	837	1830	28
Grp Volume(v), veh/h	88	0	0	153	0	0	587	0	0	37	0	926
Grp Sat Flow(s),veh/h/ln	1614	0	0	1580	0	0	1823	0	0	837	0	1858
Q Serve(g_s), s	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.8
Cycle Q Clear(g_c), s	3.5	0.0	0.0	6.7	0.0	0.0	8.3	0.0	0.0	0.8	0.0	17.8
Prop In Lane	0.48		0.52	0.37		0.63	0.03		0.02	1.00		0.02
Lane Grp Cap(c), veh/h	289	0	0	279	0	0	1430	0	0	730	0	1407
V/C Ratio(X)	0.30	0.00	0.00	0.55	0.00	0.00	0.41	0.00	0.00	0.05	0.00	0.66
Avail Cap(c_a), veh/h	600	0	0	603	0	0	1430	0	0	730	0	1407
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.2	0.0	0.0	30.5	0.0	0.0	3.2	0.0	0.0	2.3	0.0	4.3
Incr Delay (d2), s/veh	0.6	0.0	0.0	1.7	0.0	0.0	0.9	0.0	0.0	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.0	3.1	0.0	0.0	4.4	0.0	0.0	0.2	0.0	9.7
LnGrp Delay(d),s/veh	29.8	0.0	0.0	32.1	0.0	0.0	4.1	0.0	0.0	2.4	0.0	6.8
LnGrp LOS	C			C			A			A		A
Approach Vol, veh/h		88			153			587			963	
Approach Delay, s/veh		29.8			32.1			4.1			6.6	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		13.9		60.0		13.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		10.3		5.5		19.8		8.7				
Green Ext Time (p_c), s		15.1		1.5		14.0		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay			9.1									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	371	675	0	0	445	160	0	0	0	345	0	715
Future Volume (veh/h)	371	675	0	0	445	160	0	0	0	345	0	715
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	403	734	0	0	484	174				375	0	777
Adj No. of Lanes	2	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	561	1578	0	0	782	1030				762	801	939
Arrive On Green	0.16	0.45	0.00	0.00	0.22	0.22				0.43	0.00	0.43
Sat Flow, veh/h	3442	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	403	734	0	0	484	174				375	0	777
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	7.1	9.3	0.0	0.0	7.9	2.8				9.8	0.0	25.3
Cycle Q Clear(g_c), s	7.1	9.3	0.0	0.0	7.9	2.8				9.8	0.0	25.3
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	561	1578	0	0	782	1030				762	801	939
V/C Ratio(X)	0.72	0.47	0.00	0.00	0.62	0.17				0.49	0.00	0.83
Avail Cap(c_a), veh/h	1764	2969	0	0	935	1099				772	810	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	25.5	12.5	0.0	0.0	22.6	4.4				13.3	0.0	10.5
Incr Delay (d2), s/veh	1.7	0.2	0.0	0.0	0.9	0.1				0.5	0.0	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.5	0.0	0.0	3.9	4.2				4.9	0.0	21.1
LnGrp Delay(d),s/veh	27.3	12.7	0.0	0.0	23.5	4.5				13.8	0.0	16.6
LnGrp LOS	C	B			C	A				B		B
Approach Vol, veh/h		1137			658						1152	
Approach Delay, s/veh		17.9			18.5						15.7	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				32.7		31.7	14.5	18.2				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				54.0		28.0	33.0	17.0				
Max Q Clear Time (g_c+I1), s				11.3		27.3	9.1	9.9				
Green Ext Time (p_c), s				10.5		0.4	1.4	4.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBT	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	32	58	32	37	21
Maximum Split (%)	35.6%	64.4%	35.6%	41.1%	23.3%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	32	0	32	69
End Time (s)	32	0	32	69	0
Yield/Force Off (s)	28	86	28	65	86
Yield/Force Off 170(s)	28	75	17	65	75
Local Start Time (s)	0	32	0	32	69
Local Yield (s)	28	86	28	65	86
Local Yield 170(s)	28	75	17	65	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 5: Post Rd & Hyland Croy Road



HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	89	0	13	0	511	17	8	975	0
Future Volume (veh/h)	0	0	0	89	0	13	0	511	17	8	975	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				97	0	14	0	555	18	9	1060	0
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				133	0	19	0	1434	47	55	1481	0
Arrive On Green				0.09	0.00	0.09	0.00	0.80	0.80	0.80	0.80	0.00
Sat Flow, veh/h				1527	0	220	0	1794	58	4	1853	0
Grp Volume(v), veh/h				111	0	0	0	0	573	1069	0	0
Grp Sat Flow(s),veh/h/ln				1747	0	0	0	0	1852	1857	0	0
Q Serve(g_s), s				4.3	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s				4.3	0.0	0.0	0.0	0.0	6.3	19.0	0.0	0.0
Prop In Lane				0.87		0.13	0.00		0.03	0.01		0.00
Lane Grp Cap(c), veh/h				152	0	0	0	0	1480	1536	0	0
V/C Ratio(X)				0.73	0.00	0.00	0.00	0.00	0.39	0.70	0.00	0.00
Avail Cap(c_a), veh/h				648	0	0	0	0	1480	1536	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.2	0.0	0.0	0.0	0.0	2.0	3.3	0.0	0.0
Incr Delay (d2), s/veh				6.6	0.0	0.0	0.0	0.0	0.8	2.6	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	0.0	0.0	3.3	10.3	0.0	0.0
LnGrp Delay(d),s/veh				37.8	0.0	0.0	0.0	0.0	2.8	6.0	0.0	0.0
LnGrp LOS				D					A	A		
Approach Vol, veh/h					111			573			1069	
Approach Delay, s/veh					37.8			2.8			6.0	
Approach LOS					D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		10.1				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		8.3				21.0		6.3				
Green Ext Time (p_c), s		17.9				16.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay					6.9							
HCM 2010 LOS					A							

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

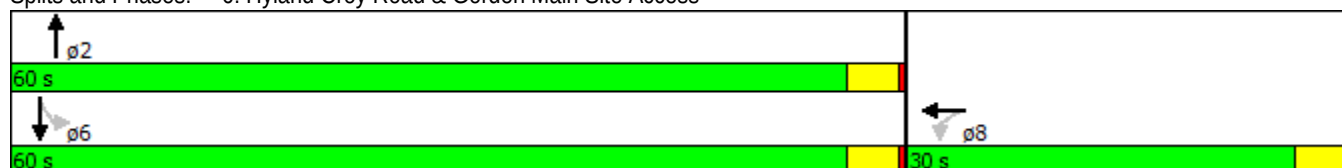


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 6: Hyland Croy Road & Gorden Main Site Access



Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	14	0	28	40	0	27	9	499	12	11	918	4
Future Vol, veh/h	14	0	28	40	0	27	9	499	12	11	918	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	175	175	-	-
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	15	0	30	43	0	29	10	542	13	12	998	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1601	1586	1000	1601	1588	542	1002	0	0	542	0	0
Stage 1	1024	1024	-	562	562	-	-	-	-	-	-	-
Stage 2	577	562	-	1039	1026	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	85	108	295	85	108	540	691	-	-	1027	-	-
Stage 1	284	313	-	512	510	-	-	-	-	-	-	-
Stage 2	502	510	-	279	312	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	79	105	295	75	105	540	691	-	-	1027	-	-
Mov Cap-2 Maneuver	79	105	-	75	105	-	-	-	-	-	-	-
Stage 1	280	309	-	505	503	-	-	-	-	-	-	-
Stage 2	468	503	-	247	308	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	32.8			67.5			0.2			0.1		
HCM LOS	D			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	691	-	-	79	295	75	540	1027	-	-		
HCM Lane V/C Ratio	0.014	-	-	0.193	0.103	0.58	0.054	0.012	-	-		
HCM Control Delay (s)	10.3	-	-	61.1	18.6	104.9	12	8.5	-	-		
HCM Lane LOS	B	-	-	F	C	F	B	A	-	-		
HCM 95th %tile Q(veh)	0	-	-	0.7	0.3	2.5	0.2	0	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	7	526	5	0	1061
Future Vol, veh/h	0	7	526	5	0	1061
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	572	5	0	1153
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1727	289	0	0	577	0
Stage 1	574	-	-	-	-	-
Stage 2	1153	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	88	708	-	-	993	-
Stage 1	528	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	88	708	-	-	993	-
Mov Cap-2 Maneuver	88	-	-	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 708	993	-		
HCM Lane V/C Ratio	-	- 0.011	-	-		
HCM Control Delay (s)	-	- 10.1	0	-		
HCM Lane LOS	-	- B	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	34	0	44	6	1002	60	53	745	4
Future Volume (veh/h)	1	0	1	34	0	44	6	1002	60	53	745	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	37	0	48	7	1089	65	58	810	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	119	20	61	118	5	62	549	1413	84	345	1503	7
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	565	282	847	589	74	860	668	1741	104	485	1852	9
Grp Volume(v), veh/h	2	0	0	85	0	0	7	0	1154	58	0	814
Grp Sat Flow(s),veh/h/ln	1694	0	0	1522	0	0	668	0	1844	485	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	3.3	0.0	0.0	0.2	0.0	21.7	4.7	0.0	10.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.8	0.0	0.0	10.4	0.0	21.7	26.5	0.0	10.1
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	201	0	0	185	0	0	549	0	1497	345	0	1510
V/C Ratio(X)	0.01	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.77	0.17	0.00	0.54
Avail Cap(c_a), veh/h	645	0	0	643	0	0	549	0	1497	345	0	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	0.0	31.4	0.0	0.0	3.9	0.0	3.3	9.9	0.0	2.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	3.9	1.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.7	0.0	0.0	0.1	0.0	12.2	0.7	0.0	5.6
LnGrp Delay(d),s/veh	29.7	0.0	0.0	33.2	0.0	0.0	4.0	0.0	7.2	11.0	0.0	3.6
LnGrp LOS	C			C			A		A	B		A
Approach Vol, veh/h		2			85			1161			872	
Approach Delay, s/veh		29.7			33.2			7.2			4.1	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		9.0		60.0		9.0				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		23.7		2.1		28.5		5.8				
Green Ext Time (p_c), s		20.9		0.4		18.8		0.4				
Intersection Summary												
HCM 2010 Ctrl Delay				6.9								
HCM 2010 LOS				A								

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	75

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	27	29	0	22	43	1124	97	26	703	40
Future Volume (veh/h)	25	0	27	29	0	22	43	1124	97	26	703	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	27	0	29	32	0	24	47	1222	105	28	764	43
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	122	4	51	136	3	42	83	1322	112	323	1437	81
Arrive On Green	0.06	0.00	0.06	0.06	0.00	0.06	0.82	0.82	0.82	0.82	0.82	0.82
Sat Flow, veh/h	727	64	850	890	43	700	35	1607	136	411	1747	98
Grp Volume(v), veh/h	56	0	0	56	0	0	1374	0	0	28	0	807
Grp Sat Flow(s),veh/h/ln	1641	0	0	1632	0	0	1777	0	0	411	0	1845
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	16.2	0.0	0.0	0.0	0.0	9.4
Cycle Q Clear(g_c), s	2.1	0.0	0.0	2.1	0.0	0.0	39.4	0.0	0.0	1.9	0.0	9.4
Prop In Lane	0.48		0.52	0.57		0.43	0.03		0.08	1.00		0.05
Lane Grp Cap(c), veh/h	177	0	0	181	0	0	1517	0	0	323	0	1518
V/C Ratio(X)	0.32	0.00	0.00	0.31	0.00	0.00	0.91	0.00	0.00	0.09	0.00	0.53
Avail Cap(c_a), veh/h	653	0	0	650	0	0	1517	0	0	323	0	1518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	0.0	0.0	31.1	0.0	0.0	4.4	0.0	0.0	1.2	0.0	1.9
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.0	0.0	0.0	9.4	0.0	0.0	0.5	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	1.1	0.0	0.0	21.9	0.0	0.0	0.1	0.0	5.0
LnGrp Delay(d),s/veh	32.1	0.0	0.0	32.0	0.0	0.0	13.7	0.0	0.0	1.8	0.0	3.2
LnGrp LOS	C			C			B			A		A
Approach Vol, veh/h		56			56			1374			835	
Approach Delay, s/veh		32.1			32.0			13.7			3.2	
Approach LOS		C			C			B			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		8.1		60.0		8.1				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		41.4		4.1		11.4		4.1				
Green Ext Time (p_c), s		12.8		0.6		32.1		0.6				
Intersection Summary												
HCM 2010 Ctrl Delay				10.8								
HCM 2010 LOS				B								

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	100

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	924	563	0	0	665	472	0	0	0	187	0	608
Future Volume (veh/h)	924	563	0	0	665	472	0	0	0	187	0	608
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	1004	612	0	0	723	513				203	0	661
Adj No. of Lanes	2	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	1126	2295	0	0	971	843				457	480	926
Arrive On Green	0.33	0.65	0.00	0.00	0.27	0.27				0.26	0.00	0.26
Sat Flow, veh/h	3442	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	1004	612	0	0	723	513				203	0	661
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	23.6	6.3	0.0	0.0	15.9	19.1				8.2	0.0	22.0
Cycle Q Clear(g_c), s	23.6	6.3	0.0	0.0	15.9	19.1				8.2	0.0	22.0
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	1126	2295	0	0	971	843				457	480	926
V/C Ratio(X)	0.89	0.27	0.00	0.00	0.74	0.61				0.44	0.00	0.71
Avail Cap(c_a), veh/h	1291	2488	0	0	995	853				457	480	926
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	27.3	6.4	0.0	0.0	28.2	13.8				26.5	0.0	12.6
Incr Delay (d2), s/veh	7.4	0.1	0.0	0.0	3.0	1.2				0.7	0.0	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.3	3.1	0.0	0.0	8.1	18.1				4.1	0.0	0.7
LnGrp Delay(d),s/veh	34.7	6.4	0.0	0.0	31.2	15.1				27.2	0.0	15.2
LnGrp LOS	C	A			C	B				C		B
Approach Vol, veh/h		1616			1236						864	
Approach Delay, s/veh		24.0			24.5						18.0	
Approach LOS		C			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				59.3		26.0	31.9	27.4				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				60.0		22.0	32.0	24.0				
Max Q Clear Time (g_c+I1), s				8.3		24.0	25.6	21.1				
Green Ext Time (p_c), s				15.2		0.0	2.3	2.3				
Intersection Summary												
HCM 2010 Ctrl Delay				22.8								
HCM 2010 LOS				C								

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBT	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	26	64	26	36	28
Maximum Split (%)	28.9%	71.1%	28.9%	40.0%	31.1%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	26	0	26	62
End Time (s)	26	0	26	62	0
Yield/Force Off (s)	22	86	22	58	86
Yield/Force Off 170(s)	22	75	11	58	75
Local Start Time (s)	0	26	0	26	62
Local Yield (s)	22	86	22	58	86
Local Yield 170(s)	22	75	11	58	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 5: Post Rd & Hyland Croy Road



HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	55	0	11	0	1299	97	20	736	0
Future Volume (veh/h)	0	0	0	55	0	11	0	1299	97	20	736	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				60	0	12	0	1412	105	22	800	0
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				81	0	16	0	1415	105	55	903	0
Arrive On Green				0.06	0.00	0.06	0.00	0.83	0.83	0.83	0.83	0.00
Sat Flow, veh/h				1449	0	290	0	1713	127	1	1093	0
Grp Volume(v), veh/h				72	0	0	0	0	1517	822	0	0
Grp Sat Flow(s),veh/h/ln				1739	0	0	0	0	1840	1093	0	0
Q Serve(g_s), s				2.8	0.0	0.0	0.0	0.0	55.2	0.8	0.0	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.0	0.0	0.0	55.2	56.0	0.0	0.0
Prop In Lane				0.83		0.17	0.00		0.07	0.03		0.00
Lane Grp Cap(c), veh/h				97	0	0	0	0	1521	958	0	0
V/C Ratio(X)				0.74	0.00	0.00	0.00	0.00	1.00	0.86	0.00	0.00
Avail Cap(c_a), veh/h				667	0	0	0	0	1521	958	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.5	0.0	0.0	0.0	0.0	5.8	13.3	0.0	0.0
Incr Delay (d2), s/veh				10.7	0.0	0.0	0.0	0.0	22.5	9.8	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
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.0	0.0	0.0	35.6	14.4	0.0	0.0
LnGrp Delay(d),s/veh				42.3	0.0	0.0	0.0	0.0	28.3	23.1	0.0	0.0
LnGrp LOS				D					C	C		
Approach Vol, veh/h					72			1517			822	
Approach Delay, s/veh					42.3			28.3			23.1	
Approach LOS					D			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		7.8				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		57.2				58.0		4.8				
Green Ext Time (p_c), s		0.0				0.0		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				27.0								
HCM 2010 LOS				C								

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

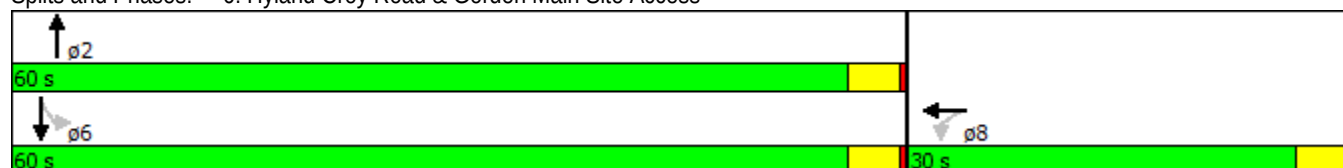


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	150

Splits and Phases: 6: Hyland Croy Road & Gorden Main Site Access



Intersection												
Int Delay, s/veh	8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	9	0	17	27	0	19	29	1237	48	36	709	14
Future Vol, veh/h	9	0	17	27	0	19	29	1237	48	36	709	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	100	175	-	-
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	10	0	18	29	0	21	32	1345	52	39	771	15
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2275	2265	778	2274	2272	1345	786	0	0	1345	0	0
Stage 1	857	857	-	1408	1408	-	-	-	-	-	-	-
Stage 2	1418	1408	-	866	864	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	28	41	396	~ 28	40	185	833	-	-	512	-	-
Stage 1	352	374	-	172	205	-	-	-	-	-	-	-
Stage 2	170	205	-	348	371	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	23	36	396	~ 24	36	185	833	-	-	512	-	-
Mov Cap-2 Maneuver	23	36	-	~ 24	36	-	-	-	-	-	-	-
Stage 1	338	346	-	165	197	-	-	-	-	-	-	-
Stage 2	145	197	-	306	343	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	95.4			\$ 302.7			0.2			0.6		
HCM LOS	F			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	833	-	-	23	396	24	185	512	-	-		
HCM Lane V/C Ratio	0.038	-	-	0.425	0.047	1.223	0.112	0.076	-	-		
HCM Control Delay (s)	9.5	-	-	248.3	14.5	496.8	26.9	12.6	-	-		
HCM Lane LOS	A	-	-	F	B	F	D	B	-	-		
HCM 95th %tile Q(veh)	0.1	-	-	1.3	0.1	3.7	0.4	0.2	-	-		
Notes												
~: Volume exceeds capacity	\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	6	1386	10	0	795
Future Vol, veh/h	0	6	1386	10	0	795
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1507	11	0	864
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2376	759	0	0	1517	0
Stage 1	1512	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	33	350	-	-	436	-
Stage 1	169	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	33	350	-	-	436	-
Mov Cap-2 Maneuver	33	-	-	-	-	-
Stage 1	169	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.5	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 350	436	-		
HCM Lane V/C Ratio	-	- 0.019	-	-		
HCM Control Delay (s)	-	- 15.5	0	-		
HCM Lane LOS	-	- C	A	-		
HCM 95th %tile Q(veh)	-	- 0.1	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	2	1	65	0	112	0	644	15	78	801	3
Future Volume (veh/h)	3	2	1	65	0	112	0	644	15	78	801	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	3	2	1	71	0	122	0	700	16	85	871	3
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	165	102	39	138	16	153	95	1338	31	514	1368	5
Arrive On Green	0.16	0.16	0.16	0.16	0.00	0.16	0.00	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	599	648	249	466	100	974	632	1814	41	732	1855	6
Grp Volume(v), veh/h	6	0	0	193	0	0	0	0	716	85	0	874
Grp Sat Flow(s),veh/h/ln	1496	0	0	1540	0	0	632	0	1855	732	0	1862
Q Serve(g_s), s	0.0	0.0	0.0	7.2	0.0	0.0	0.0	0.0	12.5	4.3	0.0	17.6
Cycle Q Clear(g_c), s	0.2	0.0	0.0	9.1	0.0	0.0	0.0	0.0	12.5	16.8	0.0	17.6
Prop In Lane	0.50		0.17	0.37		0.63	1.00		0.02	1.00		0.00
Lane Grp Cap(c), veh/h	306	0	0	307	0	0	95	0	1368	514	0	1373
V/C Ratio(X)	0.02	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.52	0.17	0.00	0.64
Avail Cap(c_a), veh/h	579	0	0	587	0	0	95	0	1368	514	0	1373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	0.0	0.0	30.7	0.0	0.0	0.0	0.0	4.3	7.9	0.0	4.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	1.4	0.7	0.0	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.0	4.0	0.0	0.0	0.0	0.0	6.7	0.9	0.0	9.6
LnGrp Delay(d),s/veh	27.1	0.0	0.0	32.9	0.0	0.0	0.0	0.0	5.7	8.5	0.0	7.2
LnGrp LOS	C			C					A	A		A
Approach Vol, veh/h		6			193			716			959	
Approach Delay, s/veh		27.1			32.9			5.7			7.3	
Approach LOS		C			C			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		60.0		15.9		60.0		15.9				
Change Period (Y+Rc), s		4.0		4.0		4.0		4.0				
Max Green Setting (Gmax), s		56.0		26.0		56.0		26.0				
Max Q Clear Time (g_c+I1), s		14.5		2.2		19.6		11.1				
Green Ext Time (p_c), s		16.2		1.2		15.4		1.0				
Intersection Summary												
HCM 2010 Ctrl Delay			9.4									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 p2	 p4
60 s	30 s
 p6	 p8
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	0	45	52	0	88	32	518	8	34	844	35
Future Volume (veh/h)	44	0	45	52	0	88	32	518	8	34	844	35
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	48	0	49	57	0	96	35	563	9	37	917	38
Adj No. of Lanes	0	1	0	0	1	0	0	1	0	1	1	0
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	157	23	109	131	16	134	90	1264	20	727	1346	56
Arrive On Green	0.13	0.00	0.13	0.13	0.00	0.13	0.76	0.76	0.76	0.76	0.76	0.76
Sat Flow, veh/h	627	168	811	477	116	999	51	1669	26	837	1776	74
Grp Volume(v), veh/h	97	0	0	153	0	0	607	0	0	37	0	955
Grp Sat Flow(s),veh/h/ln	1606	0	0	1593	0	0	1746	0	0	837	0	1850
Q Serve(g_s), s	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.1
Cycle Q Clear(g_c), s	3.9	0.0	0.0	6.6	0.0	0.0	8.7	0.0	0.0	0.9	0.0	19.1
Prop In Lane	0.49		0.51	0.37		0.63	0.06		0.01	1.00		0.04
Lane Grp Cap(c), veh/h	288	0	0	281	0	0	1374	0	0	727	0	1401
V/C Ratio(X)	0.34	0.00	0.00	0.55	0.00	0.00	0.44	0.00	0.00	0.05	0.00	0.68
Avail Cap(c_a), veh/h	598	0	0	604	0	0	1374	0	0	727	0	1401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.4	0.0	0.0	30.4	0.0	0.0	3.2	0.0	0.0	2.3	0.0	4.5
Incr Delay (d2), s/veh	0.7	0.0	0.0	1.6	0.0	0.0	1.0	0.0	0.0	0.1	0.0	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	3.1	0.0	0.0	4.8	0.0	0.0	0.2	0.0	10.6
LnGrp Delay(d),s/veh	30.1	0.0	0.0	32.1	0.0	0.0	4.3	0.0	0.0	2.4	0.0	7.2
LnGrp LOS	C			C			A			A		A
Approach Vol, veh/h	97				153				607		992	
Approach Delay, s/veh	30.1				32.1				4.3		7.0	
Approach LOS	C				C				A		A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	60.0		13.9		60.0		13.9					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	56.0		26.0		56.0		26.0					
Max Q Clear Time (g_c+I1), s	10.7		5.9		21.1		8.6					
Green Ext Time (p_c), s	16.4		1.5		14.9		1.4					
Intersection Summary												
HCM 2010 Ctrl Delay			9.4									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 							
Traffic Volume (veh/h)	413	675	0	0	445	183	0	0	0	350	0	724
Future Volume (veh/h)	413	675	0	0	445	183	0	0	0	350	0	724
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	449	734	0	0	484	199				380	0	787
Adj No. of Lanes	2	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	606	1600	0	0	765	1020				760	798	957
Arrive On Green	0.18	0.45	0.00	0.00	0.22	0.22				0.43	0.00	0.43
Sat Flow, veh/h	3442	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	449	734	0	0	484	199				380	0	787
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	8.3	9.6	0.0	0.0	8.3	3.4				10.4	0.0	26.1
Cycle Q Clear(g_c), s	8.3	9.6	0.0	0.0	8.3	3.4				10.4	0.0	26.1
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	606	1600	0	0	765	1020				760	798	957
V/C Ratio(X)	0.74	0.46	0.00	0.00	0.63	0.20				0.50	0.00	0.82
Avail Cap(c_a), veh/h	1648	2808	0	0	901	1081				770	809	966
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	26.1	12.7	0.0	0.0	23.8	4.8				13.9	0.0	10.4
Incr Delay (d2), s/veh	1.8	0.2	0.0	0.0	1.1	0.1				0.5	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	4.7	0.0	0.0	4.2	5.0				5.2	0.0	1.5
LnGrp Delay(d),s/veh	27.9	12.9	0.0	0.0	24.9	4.9				14.4	0.0	16.2
LnGrp LOS	C	B			C	A				B		B
Approach Vol, veh/h		1183			683						1167	
Approach Delay, s/veh		18.6			19.1						15.6	
Approach LOS		B			B						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				34.2		32.6	15.8	18.4				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				53.0		29.0	32.0	17.0				
Max Q Clear Time (g_c+I1), s				11.6		28.1	10.3	10.3				
Green Ext Time (p_c), s				10.6		0.5	1.5	4.1				
Intersection Summary												
HCM 2010 Ctrl Delay			17.5									
HCM 2010 LOS			B									

Timing Report, Sorted By Phase

5: Post Rd & Hyland Croy Road

6/15/2017



Phase Number	1	4	6	7	8
Movement	SBL	EBT	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	33	57	33	36	21
Maximum Split (%)	36.7%	63.3%	36.7%	40.0%	23.3%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	33	0	33	69
End Time (s)	33	0	33	69	0
Yield/Force Off (s)	29	86	29	65	86
Yield/Force Off 170(s)	29	75	18	65	75
Local Start Time (s)	0	33	0	33	69
Local Yield (s)	29	86	29	65	86
Local Yield 170(s)	29	75	18	65	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 5: Post Rd & Hyland Croy Road



HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	89	0	13	0	576	17	8	990	0
Future Volume (veh/h)	0	0	0	89	0	13	0	576	17	8	990	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				97	0	14	0	626	18	9	1076	0
Adj No. of Lanes				0	1	0	0	1	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				133	0	19	0	1440	41	55	1480	0
Arrive On Green				0.09	0.00	0.09	0.00	0.80	0.80	0.80	0.80	0.00
Sat Flow, veh/h				1527	0	220	0	1802	52	4	1852	0
Grp Volume(v), veh/h				111	0	0	0	0	644	1085	0	0
Grp Sat Flow(s),veh/h/ln				1747	0	0	0	0	1854	1857	0	0
Q Serve(g_s), s				4.3	0.0	0.0	0.0	0.0	7.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s				4.3	0.0	0.0	0.0	0.0	7.5	19.6	0.0	0.0
Prop In Lane				0.87		0.13	0.00		0.03	0.01		0.00
Lane Grp Cap(c), veh/h				152	0	0	0	0	1481	1535	0	0
V/C Ratio(X)				0.73	0.00	0.00	0.00	0.00	0.43	0.71	0.00	0.00
Avail Cap(c_a), veh/h				648	0	0	0	0	1481	1535	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.2	0.0	0.0	0.0	0.0	2.2	3.4	0.0	0.0
Incr Delay (d2), s/veh				6.6	0.0	0.0	0.0	0.0	0.9	2.8	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
%ile BackOfQ(50%),veh/ln				2.4	0.0	0.0	0.0	0.0	4.1	10.8	0.0	0.0
LnGrp Delay(d),s/veh				37.8	0.0	0.0	0.0	0.0	3.1	6.2	0.0	0.0
LnGrp LOS				D					A	A		
Approach Vol, veh/h					111			644			1085	
Approach Delay, s/veh					37.8			3.1			6.2	
Approach LOS					D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		10.1				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		9.5				21.6		6.3				
Green Ext Time (p_c), s		19.4				17.0		0.5				
Intersection Summary												
HCM 2010 Ctrl Delay				7.0								
HCM 2010 LOS				A								

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gorden Main Site Access

6/15/2017

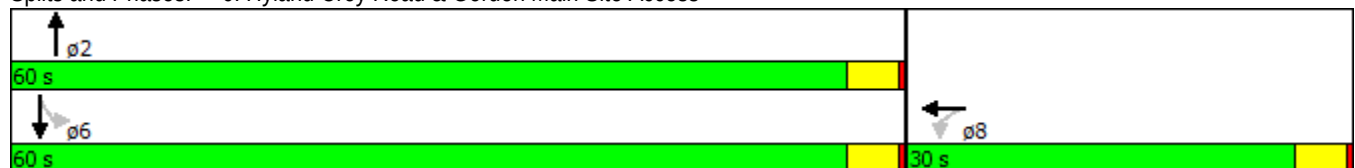


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 6: Hyland Croy Road & Gorden Main Site Access



Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	14	0	40	40	0	27	56	517	12	11	921	9
Future Vol, veh/h	14	0	40	40	0	27	56	517	12	11	921	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	-	175	-	-
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	15	0	43	43	0	29	61	562	13	12	1001	10
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1735	1727	1006	1742	1725	568	1011	0	0	575	0	0
Stage 1	1030	1030	-	690	690	-	-	-	-	-	-	-
Stage 2	705	697	-	1052	1035	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	69	89	293	68	89	522	686	-	-	998	-	-
Stage 1	282	311	-	435	446	-	-	-	-	-	-	-
Stage 2	427	443	-	274	309	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	60	80	293	53	80	522	686	-	-	998	-	-
Mov Cap-2 Maneuver	60	80	-	53	80	-	-	-	-	-	-	-
Stage 1	257	307	-	396	406	-	-	-	-	-	-	-
Stage 2	367	404	-	231	305	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	36.2			121.9			1			0.1		
HCM LOS	E			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	686	-	-	60	293	53	522	998	-	-		
HCM Lane V/C Ratio	0.089	-	-	0.254	0.148	0.82	0.056	0.012	-	-		
HCM Control Delay (s)	10.8	-	-	84.3	19.4	195.9	12.3	8.7	-	-		
HCM Lane LOS	B	-	-	F	C	F	B	A	-	-		
HCM 95th %tile Q(veh)	0.3	-	-	0.9	0.5	3.5	0.2	0	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	7	591	5	0	1076
Future Vol, veh/h	0	7	591	5	0	1076
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	642	5	0	1170
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1815	324	0	0	648	0
Stage 1	645	-	-	-	-	-
Stage 2	1170	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	77	672	-	-	934	-
Stage 1	485	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	77	672	-	-	934	-
Mov Cap-2 Maneuver	77	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	294	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.4	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 672	934	-		
HCM Lane V/C Ratio	-	- 0.011	-	-		
HCM Control Delay (s)	-	- 10.4	0	-		
HCM Lane LOS	-	- B	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 2010 Signalized Intersection Summary

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	1	34	0	44	6	1030	60	53	766	4
Future Volume (veh/h)	1	0	1	34	0	44	6	1030	60	53	766	4
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1	0	1	37	0	48	7	1120	65	58	833	4
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	119	20	61	118	5	62	534	1415	82	327	1503	7
Arrive On Green	0.07	0.00	0.07	0.07	0.00	0.07	0.81	0.81	0.81	0.81	0.81	0.81
Sat Flow, veh/h	565	282	847	589	74	860	654	1744	101	471	1852	9
Grp Volume(v), veh/h	2	0	0	85	0	0	7	0	1185	58	0	837
Grp Sat Flow(s),veh/h/ln	1694	0	0	1522	0	0	654	0	1845	471	0	1861
Q Serve(g_s), s	0.0	0.0	0.0	3.3	0.0	0.0	0.3	0.0	23.4	5.1	0.0	10.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.8	0.0	0.0	10.9	0.0	23.4	28.5	0.0	10.6
Prop In Lane	0.50		0.50	0.44		0.56	1.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	201	0	0	185	0	0	534	0	1497	327	0	1510
V/C Ratio(X)	0.01	0.00	0.00	0.46	0.00	0.00	0.01	0.00	0.79	0.18	0.00	0.55
Avail Cap(c_a), veh/h	645	0	0	643	0	0	534	0	1497	327	0	1510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	0.0	0.0	31.4	0.0	0.0	4.1	0.0	3.4	10.9	0.0	2.2
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	4.4	1.2	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.7	0.0	0.0	0.1	0.0	13.0	0.8	0.0	5.7
LnGrp Delay(d),s/veh	29.7	0.0	0.0	33.2	0.0	0.0	4.1	0.0	7.8	12.1	0.0	3.7
LnGrp LOS	C			C			A		A	B		A
Approach Vol, veh/h	2		85				1192				895	
Approach Delay, s/veh	29.7		33.2				7.8				4.2	
Approach LOS	C		C				A				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4				6				8	
Phs Duration (G+Y+Rc), s	60.0		9.0				60.0				9.0	
Change Period (Y+Rc), s	4.0		4.0				4.0				4.0	
Max Green Setting (Gmax), s	56.0		26.0				56.0				26.0	
Max Q Clear Time (g_c+I1), s	25.4		2.1				30.5				5.8	
Green Ext Time (p_c), s	21.1		0.4				18.5				0.4	
Intersection Summary												
HCM 2010 Ctrl Delay			7.3									
HCM 2010 LOS			A									

Timing Report, Sorted By Phase

2: Hyland Croy Road & Private Drive/Tullymore Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	80

Splits and Phases: 2: Hyland Croy Road & Private Drive/Tullymore Drive

 $\phi 2$	 $\phi 4$
60 s	30 s
 $\phi 6$	 $\phi 8$
60 s	30 s

HCM 2010 Signalized Intersection Summary

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	65	0	49	29	0	22	64	1112	97	26	698	66
Future Volume (veh/h)	65	0	49	29	0	22	64	1112	97	26	698	66
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	71	0	53	32	0	24	70	1209	105	28	759	72
Adj No. of Lanes	0	1	0	0	1	0	1	1	0	1	1	0
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	168	11	75	166	20	81	488	1312	114	189	1300	123
Arrive On Green	0.11	0.00	0.11	0.11	0.00	0.11	0.78	0.78	0.78	0.78	0.78	0.78
Sat Flow, veh/h	788	96	660	776	176	714	658	1690	147	417	1676	159
Grp Volume(v), veh/h	124	0	0	56	0	0	70	0	1314	28	0	831
Grp Sat Flow(s),veh/h/ln	1544	0	0	1666	0	0	658	0	1837	417	0	1835
Q Serve(g_s), s	3.3	0.0	0.0	0.0	0.0	0.0	3.5	0.0	40.6	4.1	0.0	13.4
Cycle Q Clear(g_c), s	5.4	0.0	0.0	2.1	0.0	0.0	16.9	0.0	40.6	44.7	0.0	13.4
Prop In Lane	0.57		0.43	0.57		0.43	1.00		0.08	1.00		0.09
Lane Grp Cap(c), veh/h	253	0	0	267	0	0	488	0	1425	189	0	1424
V/C Ratio(X)	0.49	0.00	0.00	0.21	0.00	0.00	0.14	0.00	0.92	0.15	0.00	0.58
Avail Cap(c_a), veh/h	614	0	0	622	0	0	488	0	1425	189	0	1424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.7	0.0	0.0	29.3	0.0	0.0	6.8	0.0	6.4	24.0	0.0	3.3
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.0	0.0	0.6	0.0	11.3	1.7	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	0.0	1.1	0.0	0.0	0.7	0.0	24.2	0.6	0.0	7.2
LnGrp Delay(d),s/veh	32.1	0.0	0.0	29.7	0.0	0.0	7.4	0.0	17.6	25.6	0.0	5.1
LnGrp LOS	C			C			A		B	C		A
Approach Vol, veh/h	124				56		1384				859	
Approach Delay, s/veh	32.1				29.7		17.1				5.7	
Approach LOS	C				C		B				A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	60.0		12.2		60.0		12.2					
Change Period (Y+Rc), s	4.0		4.0		4.0		4.0					
Max Green Setting (Gmax), s	56.0		26.0		56.0		26.0					
Max Q Clear Time (g_c+I1), s	42.6		7.4		46.7		4.1					
Green Ext Time (p_c), s	11.6		1.0		8.3		1.0					
Intersection Summary												
HCM 2010 Ctrl Delay	14.1											
HCM 2010 LOS	B											

Timing Report, Sorted By Phase

3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

6/15/2017



Phase Number	2	4	6	8
Movement	NBTL	EBTL	SBTL	WBTL
Lead/Lag				
Lead-Lag Optimize				
Recall Mode	Max	None	Max	None
Maximum Split (s)	60	30	60	30
Maximum Split (%)	66.7%	33.3%	66.7%	33.3%
Minimum Split (s)	20	20	20	20
Yellow Time (s)	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4
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)	5	5	5	5
Flash Dont Walk (s)	11	11	11	11
Dual Entry	Yes	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes	Yes
Start Time (s)	0	60	0	60
End Time (s)	60	0	60	0
Yield/Force Off (s)	56	86	56	86
Yield/Force Off 170(s)	45	75	45	75
Local Start Time (s)	0	60	0	60
Local Yield (s)	56	86	56	86
Local Yield 170(s)	45	75	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	90

Splits and Phases: 3: Hyland Croy Road & Jacquemin Northern Site Access/Park Mill Drive

 ø2	 ø4
60 s	30 s
 ø6	 ø8
60 s	30 s

HCM 2010 Signalized Intersection Summary

5: Post Rd & Hyland Croy Road

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	958	563	0	0	665	492	0	0	0	214	0	656
Future Volume (veh/h)	958	563	0	0	665	492	0	0	0	214	0	656
Number	7	4	14	3	8	18				1	6	16
Initial Q (Qb), veh	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
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	0	0	1863	1863				1863	1863	1863
Adj Flow Rate, veh/h	1041	612	0	0	723	535				233	0	713
Adj No. of Lanes	2	2	0	0	2	1				1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	2	2	0	0	2	2				2	2	2
Cap, veh/h	1162	2305	0	0	946	828				454	476	939
Arrive On Green	0.34	0.65	0.00	0.00	0.27	0.27				0.26	0.00	0.26
Sat Flow, veh/h	3442	3632	0	0	3632	1583				1774	1863	1583
Grp Volume(v), veh/h	1041	612	0	0	723	535				233	0	713
Grp Sat Flow(s),veh/h/ln	1721	1770	0	0	1770	1583				1774	1863	1583
Q Serve(g_s), s	24.7	6.3	0.0	0.0	16.2	21.0				9.7	0.0	22.0
Cycle Q Clear(g_c), s	24.7	6.3	0.0	0.0	16.2	21.0				9.7	0.0	22.0
Prop In Lane	1.00		0.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	1162	2305	0	0	946	828				454	476	939
V/C Ratio(X)	0.90	0.27	0.00	0.00	0.76	0.65				0.51	0.00	0.76
Avail Cap(c_a), veh/h	1320	2468	0	0	946	828				454	476	939
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	27.1	6.3	0.0	0.0	29.0	14.8				27.4	0.0	12.9
Incr Delay (d2), s/veh	7.6	0.1	0.0	0.0	3.8	1.7				1.0	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	3.1	0.0	0.0	8.4	19.3				4.8	0.0	24.9
LnGrp Delay(d),s/veh	34.7	6.4	0.0	0.0	32.8	16.5				28.4	0.0	16.6
LnGrp LOS	C	A			C	B				C		B
Approach Vol, veh/h		1653			1258						946	
Approach Delay, s/veh		24.2			25.9						19.5	
Approach LOS		C			C						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs				4		6	7	8				
Phs Duration (G+Y+Rc), s				60.1		26.0	33.1	27.0				
Change Period (Y+Rc), s				4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s				60.0		22.0	33.0	23.0				
Max Q Clear Time (g_c+I1), s				8.3		24.0	26.7	23.0				
Green Ext Time (p_c), s				15.5		0.0	2.3	0.0				
Intersection Summary												
HCM 2010 Ctrl Delay				23.6								
HCM 2010 LOS				C								

Timing Report, Sorted By Phase
5: Post Rd & Hyland Croy Road

6/15/2017

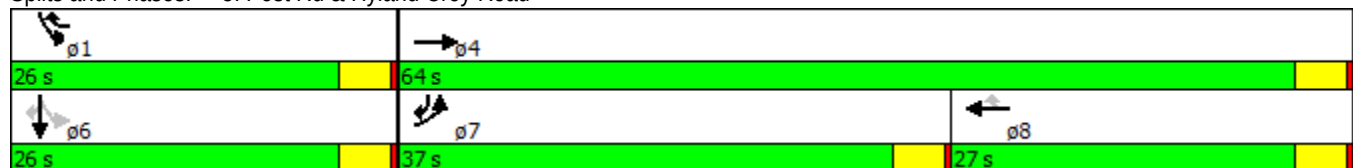


Phase Number	1	4	6	7	8
Movement	SBL	EBT	SBTL	EBL	WBT
Lead/Lag				Lead	Lag
Lead-Lag Optimize				Yes	Yes
Recall Mode	None	None	Max	None	None
Maximum Split (s)	26	64	26	37	27
Maximum Split (%)	28.9%	71.1%	28.9%	41.1%	30.0%
Minimum Split (s)	8	20	20	8	20
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5
Minimum Initial (s)	4	4	4	4	4
Vehicle Extension (s)	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0
Walk Time (s)		5	5		5
Flash Dont Walk (s)		11	11		11
Dual Entry	No	Yes	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes
Start Time (s)	0	26	0	26	63
End Time (s)	26	0	26	63	0
Yield/Force Off (s)	22	86	22	59	86
Yield/Force Off 170(s)	22	75	11	59	75
Local Start Time (s)	0	26	0	26	63
Local Yield (s)	22	86	22	59	86
Local Yield 170(s)	22	75	11	59	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	65

Splits and Phases: 5: Post Rd & Hyland Croy Road



HCM 2010 Signalized Intersection Summary

6: Hyland Croy Road & Gordon Main Site Access

6/15/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	55	0	11	0	1353	97	20	811	0
Future Volume (veh/h)	0	0	0	55	0	11	0	1353	97	20	811	0
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1863	1900	0	1863	1900	1900	1863	0
Adj Flow Rate, veh/h				60	0	12	0	1471	105	22	882	0
Adj No. of Lanes				0	1	0	0	2	0	0	1	0
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				0	2	0	0	2	2	2	2	0
Cap, veh/h				81	0	16	0	2770	197	69	1457	0
Arrive On Green				0.06	0.00	0.06	0.00	0.83	0.83	0.83	0.83	0.00
Sat Flow, veh/h				1449	0	290	0	3445	238	17	1763	0
Grp Volume(v), veh/h				72	0	0	0	773	803	904	0	0
Grp Sat Flow(s),veh/h/ln				1739	0	0	0	1770	1821	1781	0	0
Q Serve(g_s), s				2.8	0.0	0.0	0.0	9.1	9.3	0.0	0.0	0.0
Cycle Q Clear(g_c), s				2.8	0.0	0.0	0.0	9.1	9.3	11.1	0.0	0.0
Prop In Lane				0.83		0.17	0.00		0.13	0.02		0.00
Lane Grp Cap(c), veh/h				97	0	0	0	1462	1505	1526	0	0
V/C Ratio(X)				0.74	0.00	0.00	0.00	0.53	0.53	0.59	0.00	0.00
Avail Cap(c_a), veh/h				667	0	0	0	1462	1505	1526	0	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh				31.5	0.0	0.0	0.0	1.8	1.8	2.0	0.0	0.0
Incr Delay (d2), s/veh				10.7	0.0	0.0	0.0	1.4	1.4	1.7	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				1.6	0.0	0.0	0.0	4.9	5.0	6.0	0.0	0.0
LnGrp Delay(d),s/veh				42.3	0.0	0.0	0.0	3.2	3.2	3.7	0.0	0.0
LnGrp LOS				D				A	A	A		
Approach Vol, veh/h					72			1576			904	
Approach Delay, s/veh					42.3			3.2			3.7	
Approach LOS					D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		7.8				
Change Period (Y+Rc), s		4.0				4.0		4.0				
Max Green Setting (Gmax), s		56.0				56.0		26.0				
Max Q Clear Time (g_c+I1), s		11.3				13.1		4.8				
Green Ext Time (p_c), s		29.0				28.2		0.3				
Intersection Summary												
HCM 2010 Ctrl Delay				4.5								
HCM 2010 LOS				A								

Gorden + Jacquemin Phase 1 + Jacquemin Phase 2 2029 - PM Peak - Build
NRB

Synchro 9 Report

Timing Report, Sorted By Phase

6: Hyland Croy Road & Gordon Main Site Access

6/15/2017

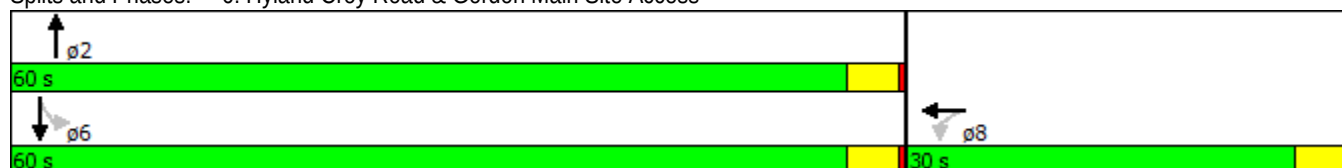


Phase Number	2	6	8
Movement	NBT	SBTL	WBTL
Lead/Lag			
Lead-Lag Optimize			
Recall Mode	Max	Max	None
Maximum Split (s)	60	60	30
Maximum Split (%)	66.7%	66.7%	33.3%
Minimum Split (s)	20	20	20
Yellow Time (s)	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5
Minimum Initial (s)	4	4	4
Vehicle Extension (s)	3	3	3
Minimum Gap (s)	3	3	3
Time Before Reduce (s)	0	0	0
Time To Reduce (s)	0	0	0
Walk Time (s)	5	5	5
Flash Dont Walk (s)	11	11	11
Dual Entry	Yes	Yes	Yes
Inhibit Max	Yes	Yes	Yes
Start Time (s)	0	0	60
End Time (s)	60	60	0
Yield/Force Off (s)	56	56	86
Yield/Force Off 170(s)	45	45	75
Local Start Time (s)	0	0	60
Local Yield (s)	56	56	86
Local Yield 170(s)	45	45	75

Intersection Summary

Cycle Length	90
Control Type	Semi Act-Uncoord
Natural Cycle	60

Splits and Phases: 6: Hyland Croy Road & Gordon Main Site Access



Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	21	0	82	27	0	19	86	1234	48	36	719	21
Future Vol, veh/h	21	0	82	27	0	19	86	1234	48	36	719	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	175	-	175	175	-	175
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	23	0	89	29	0	21	93	1341	52	39	782	23
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2399	2388	782	2432	2388	1341	782	0	0	1341	0	0
Stage 1	860	860	-	1528	1528	-	-	-	-	-	-	-
Stage 2	1539	1528	-	904	860	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
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	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	23	34	394	~ 22	34	186	836	-	-	514	-	-
Stage 1	351	373	-	147	179	-	-	-	-	-	-	-
Stage 2	145	179	-	331	373	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 18	28	394	~ 15	28	186	836	-	-	514	-	-
Mov Cap-2 Maneuver	~ 18	28	-	~ 15	28	-	-	-	-	-	-	-
Stage 1	312	345	-	131	159	-	-	-	-	-	-	-
Stage 2	115	159	-	237	345	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	137.4			\$ 579.1			0.6			0.6		
HCM LOS	F			F								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR		
Capacity (veh/h)	836	-	-	18	394	15	186	514	-	-		
HCM Lane V/C Ratio	0.112	-	-	1.268	0.226	1.957	0.111	0.076	-	-		
HCM Control Delay (s)	9.8	-	-	\$ 608.5	16.8	\$ 967.8	26.8	12.6	-	-		
HCM Lane LOS	A	-	-	F	C	F	D	B	-	-		
HCM 95th %tile Q(veh)	0.4	-	-	3.2	0.9	4.3	0.4	0.2	-	-		
Notes												
~: Volume exceeds capacity	\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon					

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	0	6	1440	10	0	870
Future Vol, veh/h	0	6	1440	10	0	870
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	7	1565	11	0	946
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	2517	788	0	0	1576	0
Stage 1	1571	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Critical Hdwy	6.63	6.93	-	-	4.14	-
Critical Hdwy Stg 1	5.83	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.519	3.319	-	-	2.22	-
Pot Cap-1 Maneuver	27	335	-	-	414	-
Stage 1	157	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	27	335	-	-	414	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	157	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	16	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 335	414	-		
HCM Lane V/C Ratio	-	- 0.019	-	-		
HCM Control Delay (s)	-	- 16	0	-		
HCM Lane LOS	-	- C	A	-		
HCM 95th %tile Q(veh)	-	- 0.1	0	-		

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Tullymoore Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	717	2.0	1227	0.585	100	9.9	LOS A	5.9	148.7	Full	1600	0.0	0.0
Approach	717	2.0		0.585		9.9	LOS A	5.9	148.7				
East: Tullymoore Drive													
Lane 1 ^d	193	2.0	707	0.274	100	8.4	LOS A	1.8	45.6	Full	1600	0.0	0.0
Approach	193	2.0		0.274		8.4	LOS A	1.8	45.6				
North: Hyland-Croy Road													
Lane 1 ^d	959	2.0	1255	0.764	100	15.3	LOS C	11.9	301.8	Full	1600	0.0	0.0
Approach	959	2.0		0.764		15.3	LOS C	11.9	301.8				
West: Private Drive													
Lane 1 ^d	7	2.0	449	0.015	100	8.2	LOS A	0.1	2.5	Full	1600	0.0	0.0
Approach	7	2.0		0.015		8.2	LOS A	0.1	2.5				
Intersection	1876	2.0		0.764		12.5	LOS B	11.9	301.8				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:49:13 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Tullymoore\Gorden + Jacquemin Phases 1 & 2\2029 AM Peak.sip7

LANE LEVEL OF SERVICE

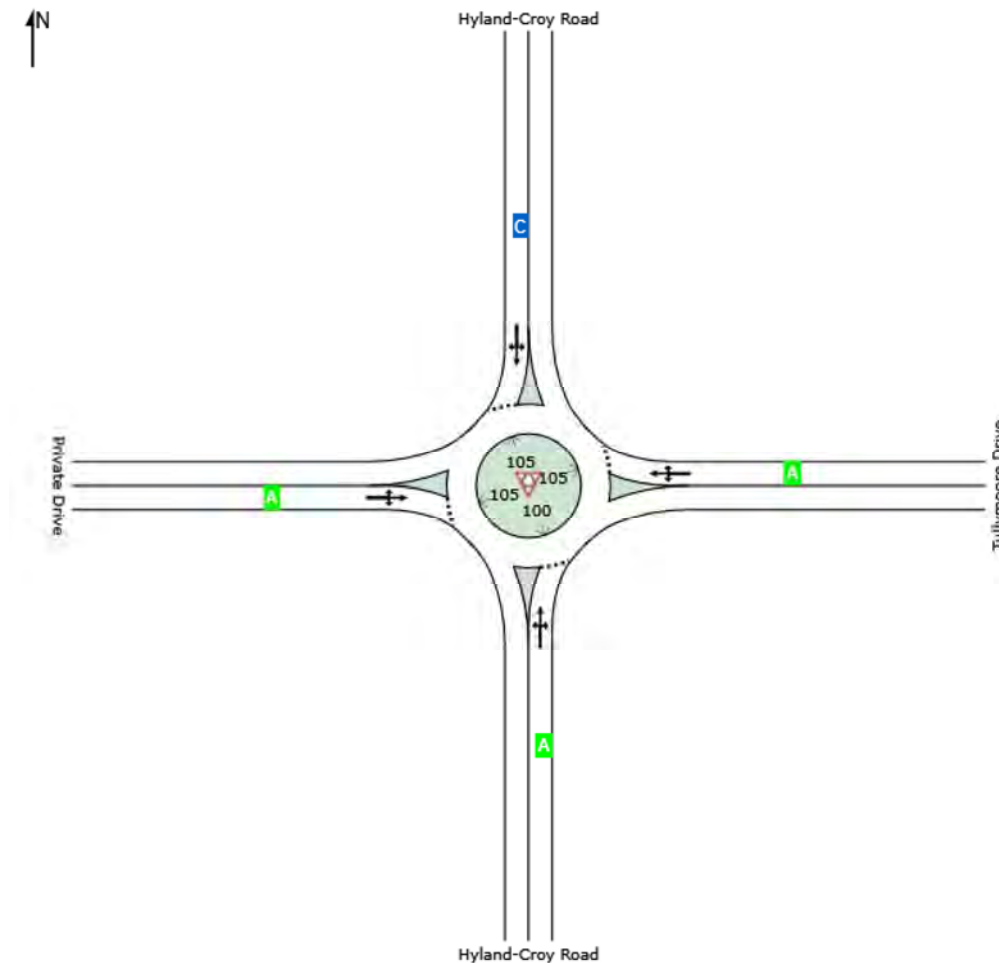
Lane Level of Service

Site: 101 [Hyland-Croy Road & Tullymoore Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	C	A	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:49:13 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Tullymoore\Gorden + Jacquemin Phases 1 & 2\2029 AM

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Tullymoore Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1 ^d	1191	2.0	1271	0.938	100	30.8	LOS D	30.4	772.6	Full	1600	0.0	0.0
Approach	1191	2.0		0.938		30.8	LOS D	30.4	772.6				
East: Tullymoore Drive													
Lane 1 ^d	86	2.0	294	0.292	100	18.7	LOS C	2.3	57.5	Full	1600	0.0	0.0
Approach	86	2.0		0.292		18.7	LOS C	2.3	57.5				
North: Hyland-Croy Road													
Lane 1 ^d	895	2.0	1293	0.692	100	12.2	LOS B	9.8	249.5	Full	1600	0.0	0.0
Approach	895	2.0		0.692		12.2	LOS B	9.8	249.5				
West: Private Drive													
Lane 1 ^d	3	2.0	556	0.006	100	6.5	LOS A	0.0	0.9	Full	1600	0.0	0.0
Approach	3	2.0		0.006		6.5	LOS A	0.0	0.9				
Intersection	2175	2.0		0.938		22.6	LOS C	30.4	772.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 2:51:44 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Tullymoore\Gorden + Jacquemin Phases 1 & 2\2029 PM Peak.sip7

LANE LEVEL OF SERVICE

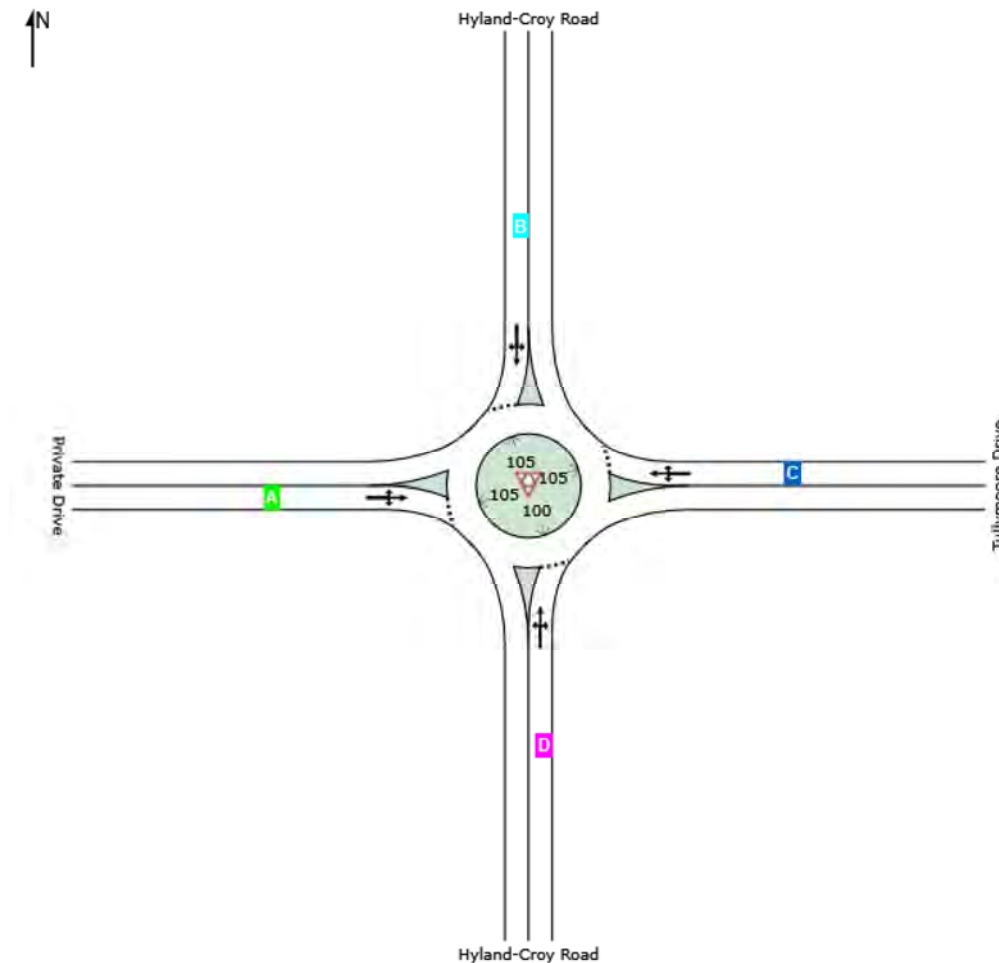
Lane Level of Service

Site: 101 [Hyland-Croy Road & Tullymoore Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	D	C	B	A	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Jacquemin Access/Park Mill Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1	286	2.0	1315	0.217	100	4.6	LOS A	1.4	34.6	Full	1600	0.0	0.0
Lane 2 ^d	321	2.0	1474	0.217	100	4.2	LOS A	1.4	35.3	Full	1600	0.0	0.0
Approach	607	2.0		0.217		4.4	LOS A	1.4	35.3				
East: Park Mill Drive													
Lane 1 ^d	153	2.0	775	0.198	100	6.8	LOS A	0.8	19.9	Full	1600	0.0	0.0
Approach	153	2.0		0.198		6.8	LOS A	0.8	19.9				
North: Hyland-Croy Road													
Lane 1 ^d	992	2.0	1244	0.798	100	17.1	LOS C	11.9	301.6	Full	1600	0.0	0.0
Approach	992	2.0		0.798		17.1	LOS C	11.9	301.6				
West: Jacquemin Access													
Lane 1 ^d	98	2.0	444	0.220	100	11.5	LOS B	1.6	39.9	Full	1600	0.0	0.0
Approach	98	2.0		0.220		11.5	LOS B	1.6	39.9				
Intersection	1850	2.0		0.798		11.8	LOS B	11.9	301.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 3:56:37 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Jacquemin Access_Park Mill Drive\Gorden + Jacquemin Phase 1 & Phase 2\2029 AM Peak with Improvements.sip7

LANE LEVEL OF SERVICE

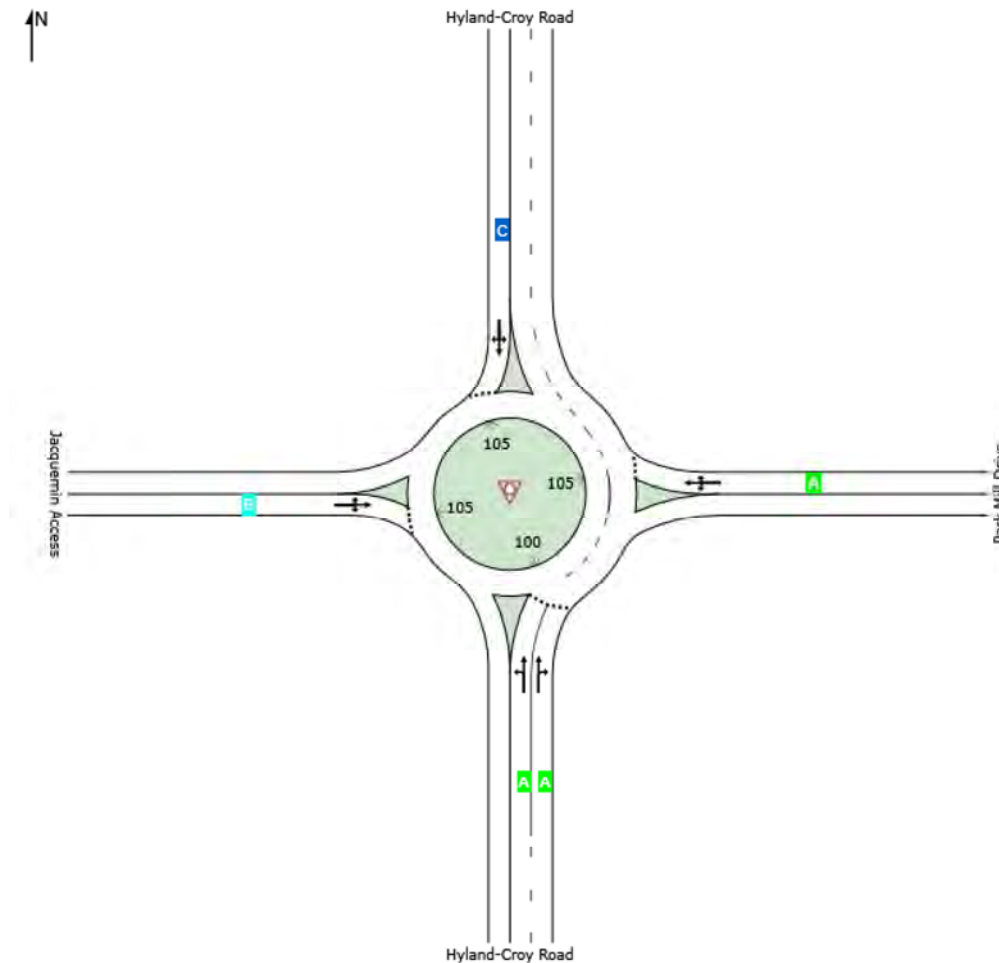
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Jacquemin Access/Park Mill Drive]**

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	C	B	B



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 3:56:37 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Jacquemin Access_Park Mill Drive\Gorden + Jacquemin

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Jacquemin Access/Park Mill Drive]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1	652	2.0	1294	0.504	100	8.1	LOS A	4.4	112.7	Full	1600	0.0	0.0
Lane 2 ^d	732	2.0	1454	0.504	100	7.5	LOS A	4.5	114.7	Full	1600	0.0	0.0
Approach	1384	2.0		0.504		7.8	LOS A	4.5	114.7				
East: Park Mill Drive													
Lane 1 ^d	57	2.0	529	0.107	100	8.1	LOS A	0.4	11.0	Full	1600	0.0	0.0
Approach	57	2.0		0.107		8.1	LOS A	0.4	11.0				
North: Hyland-Croy Road													
Lane 1 ^d	859	2.0	1235	0.696	100	12.8	LOS B	7.9	199.7	Full	1600	0.0	0.0
Approach	859	2.0		0.696		12.8	LOS B	7.9	199.7				
West: Jacquemin Access													
Lane 1 ^d	125	2.0	607	0.206	100	8.5	LOS A	1.4	34.8	Full	1600	0.0	0.0
Approach	125	2.0		0.206		8.5	LOS A	1.4	34.8				
Intersection	2424	2.0		0.696		9.6	LOS A	7.9	199.7				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:01:08 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Jacquemin Access_Park Mill Drive\Gorden + Jacquemin Phase 1 & Phase 2\2029 PM Peak with Improvements.sip7

LANE LEVEL OF SERVICE

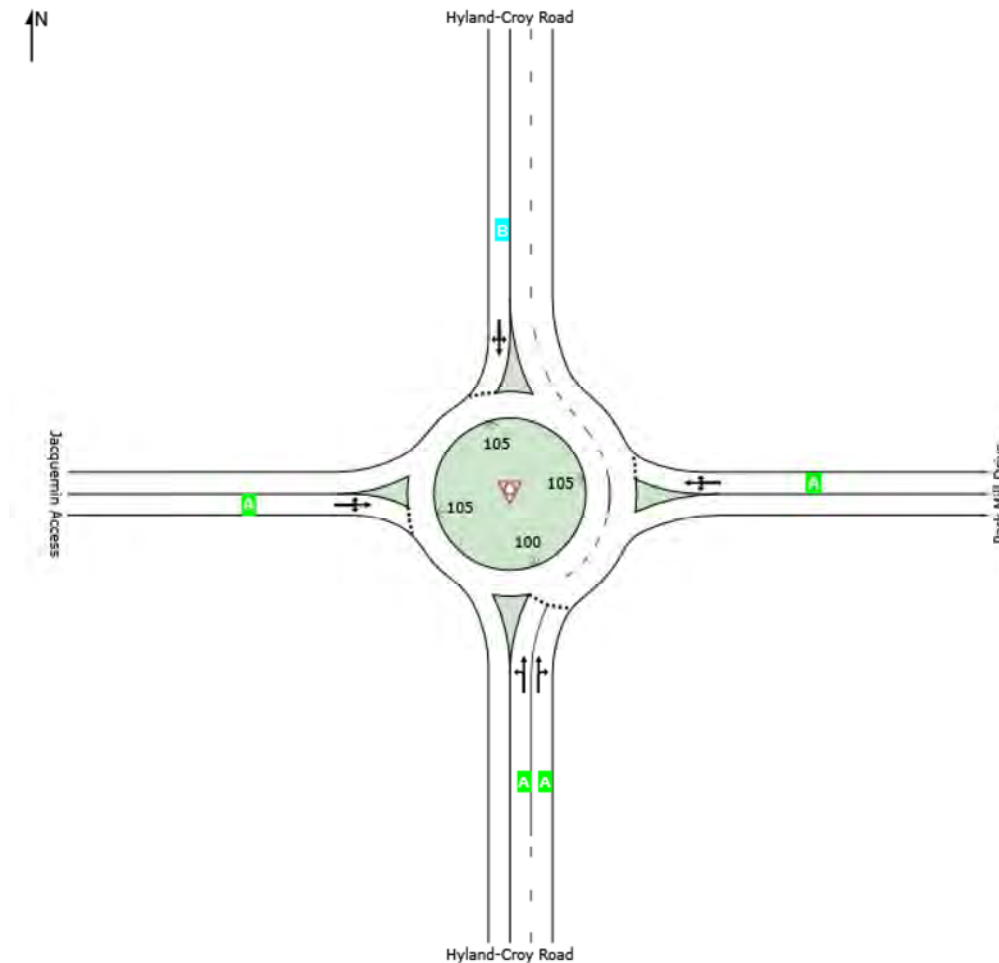
Lane Level of Service

 **Site: 101 [Hyland-Croy Road & Jacquemin Access/Park Mill Drive]**

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	B	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:01:08 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Jacquemin Access_Park Mill Drive\Gorden + Jacquemin

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Main Gorden Access]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1	307	3.0	1416	0.217	100	4.3	LOS A	1.6	41.0	Full	1600	0.0	0.0
Lane 2 ^d	338	3.0	1561	0.217	100	4.0	LOS A	1.6	42.0	Full	1600	0.0	0.0
Approach	645	3.0		0.217		4.2	LOS A	1.6	42.0				
East: Main Gorden Access													
Lane 1 ^d	111	2.9	792	0.140	100	6.0	LOS A	0.5	13.2	Full	1600	0.0	0.0
Approach	111	2.9		0.140		6.0	LOS A	0.5	13.2				
North: Hyland-Croy Road													
Lane 1 ^d	1085	3.0	1219	0.890	100	25.0	LOS D	18.1	464.3	Full	1600	0.0	0.0
Approach	1085	3.0		0.890		25.0	LOS D	18.1	464.3				
Intersection	1840	3.0		0.890		16.6	LOS C	18.1	464.3				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:09:24 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Halls Corner Access_Main Gorden Access\Gorden + Jacquemin Phase 1 & Phase 2\2029 AM Peak.sip7

LANE LEVEL OF SERVICE

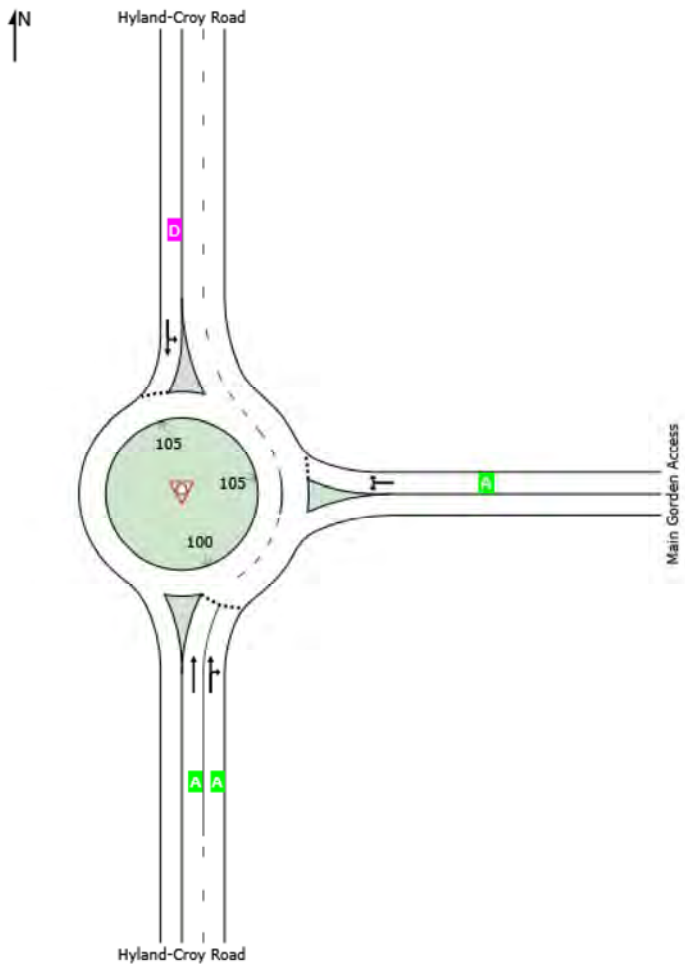
Lane Level of Service

Site: 101 [Hyland-Croy Road & Main Gorden Access]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak
Roundabout

All Movement Classes

	South	East	North	Intersection
LOS	A	A	D	C



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Main Gorden Access]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Hyland-Croy Road													
Lane 1	748	3.0	1396	0.536	100	8.2	LOS A	5.3	136.7	Full	1600	0.0	0.0
Lane 2 ^d	828	3.0	1544	0.536	100	7.7	LOS A	5.4	137.3	Full	1600	0.0	0.0
Approach	1576	3.0		0.536		7.9	LOS A	5.4	137.3				
East: Main Gorden Access													
Lane 1 ^d	72	2.8	547	0.131	100	8.2	LOS A	0.5	12.9	Full	1600	0.0	0.0
Approach	72	2.8		0.131		8.2	LOS A	0.5	12.9				
North: Hyland-Croy Road													
Lane 1 ^d	903	3.0	1262	0.716	100	13.3	LOS B	9.9	254.5	Full	1600	0.0	0.0
Approach	903	3.0		0.716		13.3	LOS B	9.9	254.5				
Intersection	2551	3.0		0.716		9.8	LOS A	9.9	254.5				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:05:28 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Halls Corner Access_Main Gorden Access\Gorden + Jacquemin Phase 1 & Phase 2\2029 PM Peak.sip7

LANE LEVEL OF SERVICE

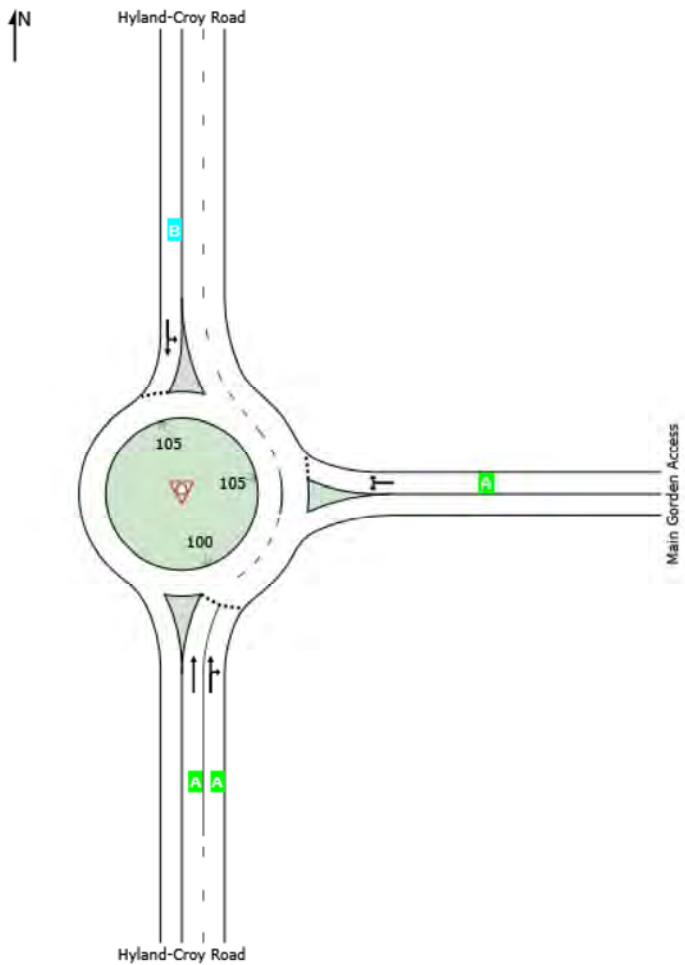
Lane Level of Service

Site: 101 [Hyland-Croy Road & Main Gorden Access]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak
Roundabout

All Movement Classes

	South	East	North	Intersection
LOS	A	A	B	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if $v/c > 1$ irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Post Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: Post Road													
Lane 1	232	2.0	1019	0.228	100	5.7	LOS A	0.9	23.9	Full	1600	0.0	0.0
Lane 2 ^d	251	2.0	1102	0.228	100	5.4	LOS A	1.0	24.4	Full	1600	0.0	0.0
Lane 3	199	2.0	989	0.201	88 ⁵	5.6	LOS A	0.8	20.4	Full	1600	0.0	0.0
Approach	683	2.0		0.228		5.5	LOS A	1.0	24.4				
North: Hyland-Croy Road													
Lane 1	584	2.0	958	0.610	100	12.5	LOS B	3.7	93.6	Full	1600	0.0	0.0
Lane 2 ^d	584	2.0	958	0.610	100	12.5	LOS B	3.7	93.6	Full	1600	0.0	0.0
Approach	1167	2.0		0.610		12.5	LOS B	3.7	93.6				
West: Post Road													
Lane 1	366	2.0	1084	0.338	100	6.7	LOS A	2.1	52.7	Full	1600	0.0	0.0
Lane 2	366	2.0	1084	0.338	100	6.7	LOS A	2.1	52.7	Full	1600	0.0	0.0
Lane 3 ^d	450	2.0	1332	0.338	100	5.8	LOS A	2.2	56.5	Full	1600	0.0	0.0
Approach	1183	2.0		0.338		6.3	LOS A	2.2	56.5				
Intersection	3033	2.0		0.610		8.5	LOS A	3.7	93.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:15:49 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Post\Gorden + Jacquemin Phase 1 & Phase 2\2029 AM Peak.sip7

LANE LEVEL OF SERVICE

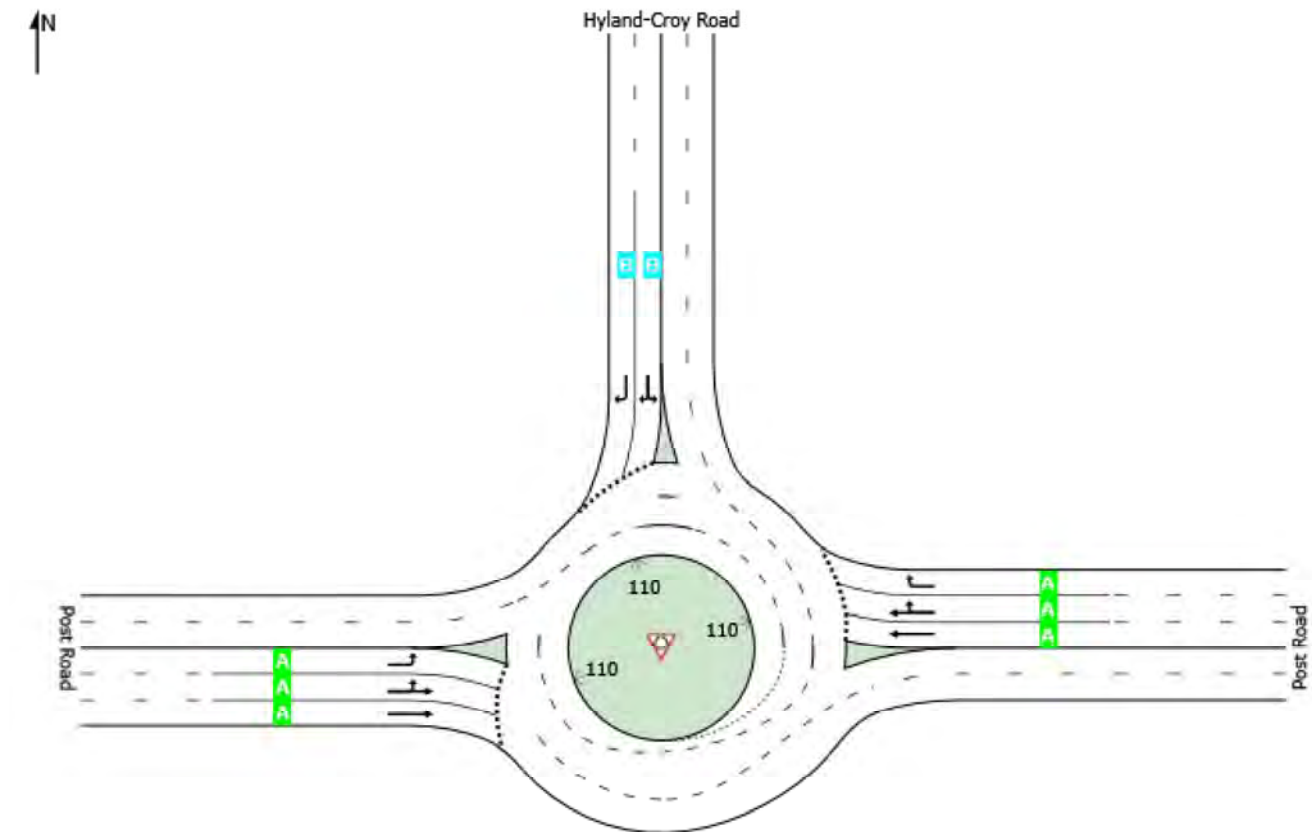
Lane Level of Service

Site: 101 [Hyland-Croy Road & Post Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 AM Peak Build
Roundabout

All Movement Classes

	East	North	West	Intersection
LOS	A	B	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:15:49 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Post\Gorden + Jacquemin Phase 1 & Phase 2\2029 AM Peak.sip7

LANE SUMMARY

Site: 101 [Hyland-Croy Road & Post Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Veh	Queue Dist ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
East: Post Road													
Lane 1	395	2.0	768	0.514	100	12.1	LOS B	2.6	65.4	Full	1600	0.0	0.0
Lane 2	397	1.7	773	0.514	100	12.0	LOS B	2.6	65.4	Full	1600	0.0	0.0
Lane 3 ^d	466	2.3	906	0.514	100	10.7	LOS B	2.7	68.9	Full	1600	0.0	0.0
Approach	1258	2.0		0.514		11.5	LOS B	2.7	68.9				
North: Hyland-Croy Road													
Lane 1	468	2.0	811	0.577	100	13.2	LOS B	3.3	84.1	Full	1600	0.0	0.0
Lane 2 ^d	478	2.0	827	0.577	100	13.0	LOS B	3.3	84.6	Full	1600	0.0	0.0
Approach	946	2.0		0.577		13.1	LOS B	3.3	84.6				
West: Post Road													
Lane 1	521	2.0	1217	0.428	100	7.3	LOS A	2.9	73.5	Full	1600	0.0	0.0
Lane 2	521	2.0	1217	0.428	100	7.3	LOS A	2.9	73.5	Full	1600	0.0	0.0
Lane 3 ^d	612	2.0	1453	0.421	98 ⁵	6.4	LOS A	3.0	75.5	Full	1600	0.0	0.0
Approach	1653	2.0		0.428		7.0	LOS A	3.0	75.5				
Intersection	3857	2.0		0.577		10.0	LOS A	3.3	84.6				

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

Roundabout Capacity Model: SIDRA Standard.

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

⁵ Lane under-utilisation found by the program

^d Dominant lane on roundabout approach

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:12:02 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Post\Gorden + Jacquemin Phase 1 & Phase 2\2029 PM Peak.sip7

LANE LEVEL OF SERVICE

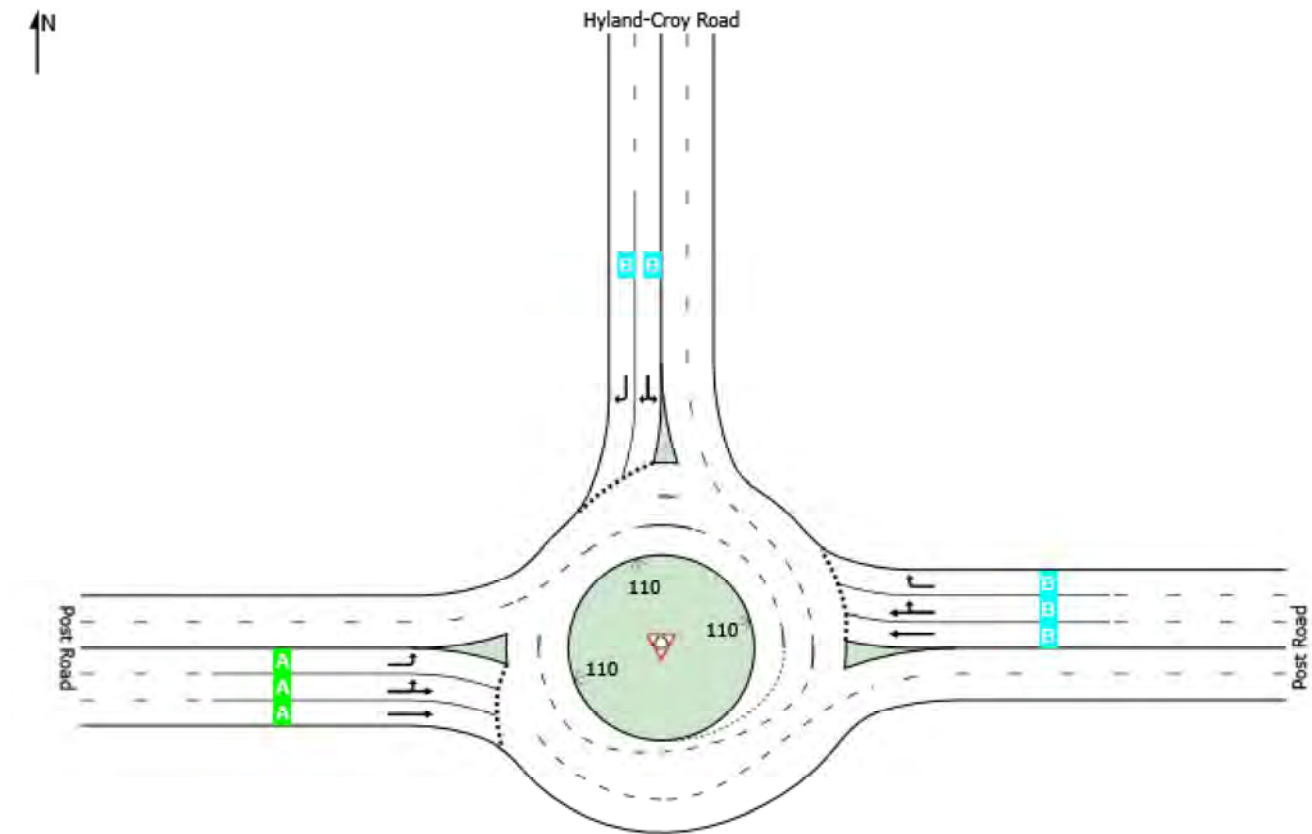
Lane Level of Service

Site: 101 [Hyland-Croy Road & Post Road]

Gorden + Jacquemin Phase 1 & Phase 2
2029 PM Peak Build
Roundabout

All Movement Classes

	East	North	West	Intersection
LOS	B	B	A	A



Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.

Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.

LOS F will result if v/c > 1 irrespective of lane delay value (does not apply for approaches and intersection).

Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).

HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

SIDRA INTERSECTION 7.0 | Copyright © 2000-2017 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: CARPENTER MARTY TRANSPORTATION INC. | Processed: Thursday, June 15, 2017 4:12:02 PM

Project: P:\TRA\Underhill-Hodge\Gorden-Jacquemin 2017\Analysis\Sidra\Hyland-Croy & Post\Gorden + Jacquemin Phase 1 & Phase 2\2029 PM Peak.sip7

Appendix H

Sight Distance Analysis



Figure 1 - Gorden Main Drive - Left Turn - Close



Figure 2 - Gorden Main Drive - Left Turn - Far



Figure 3 - Gorden Main Drive - Right Turn - Close



Figure 4 - Gorden Main Drive - Right Turn - Far



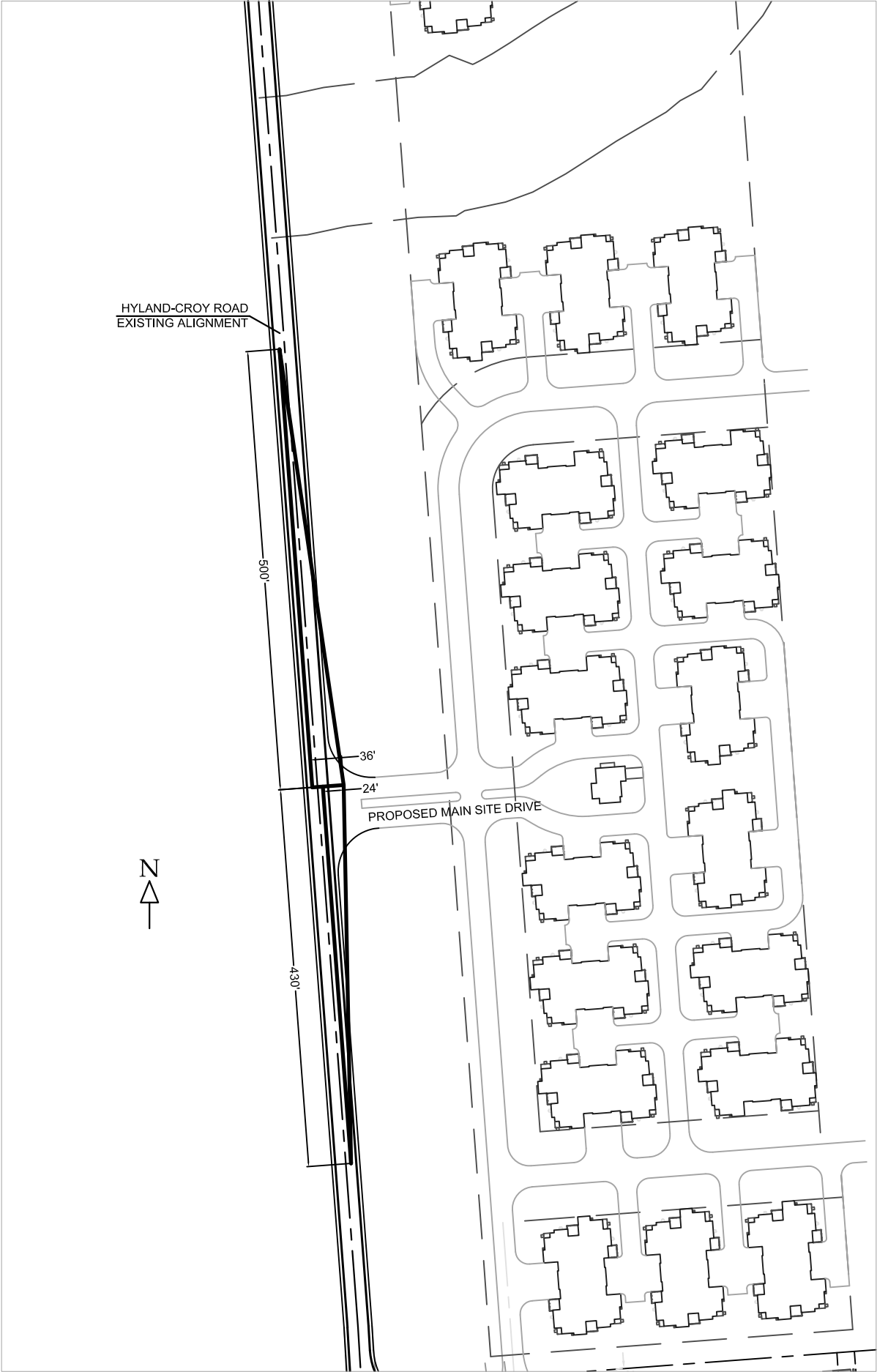


Figure 5 - Gorden Northern Drive - Left Turn - Close



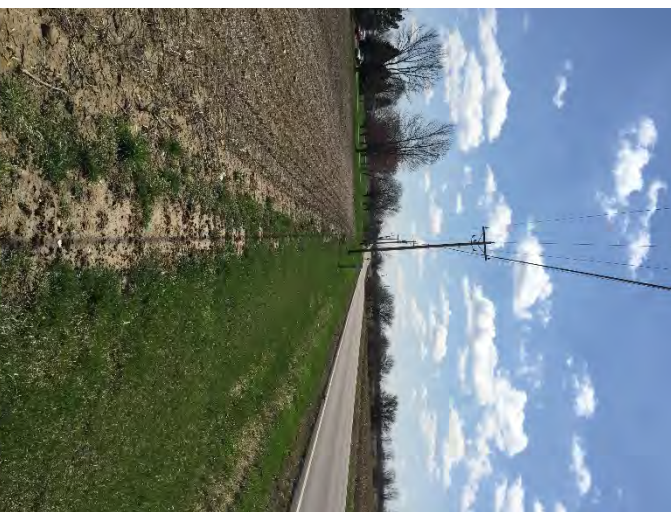
Figure 6 - Gorden Northern Drive - Left Turn - Far



Figure 7 - Gorden Northern Drive - Right Turn - Close



Figure 8 - Gorden Northern Drive - Right Turn - Far



HYLAND-CROY ROAD
EXISTING ALIGNMENT

500'

36'

24'

PROPOSED NORTHERN SITE DRIVE

430'



Figure 9 - Gorden RI/RO Drive - Right Turn - Close



Figure 10 - Gorden RI/RO Drive - Right Turn - Far



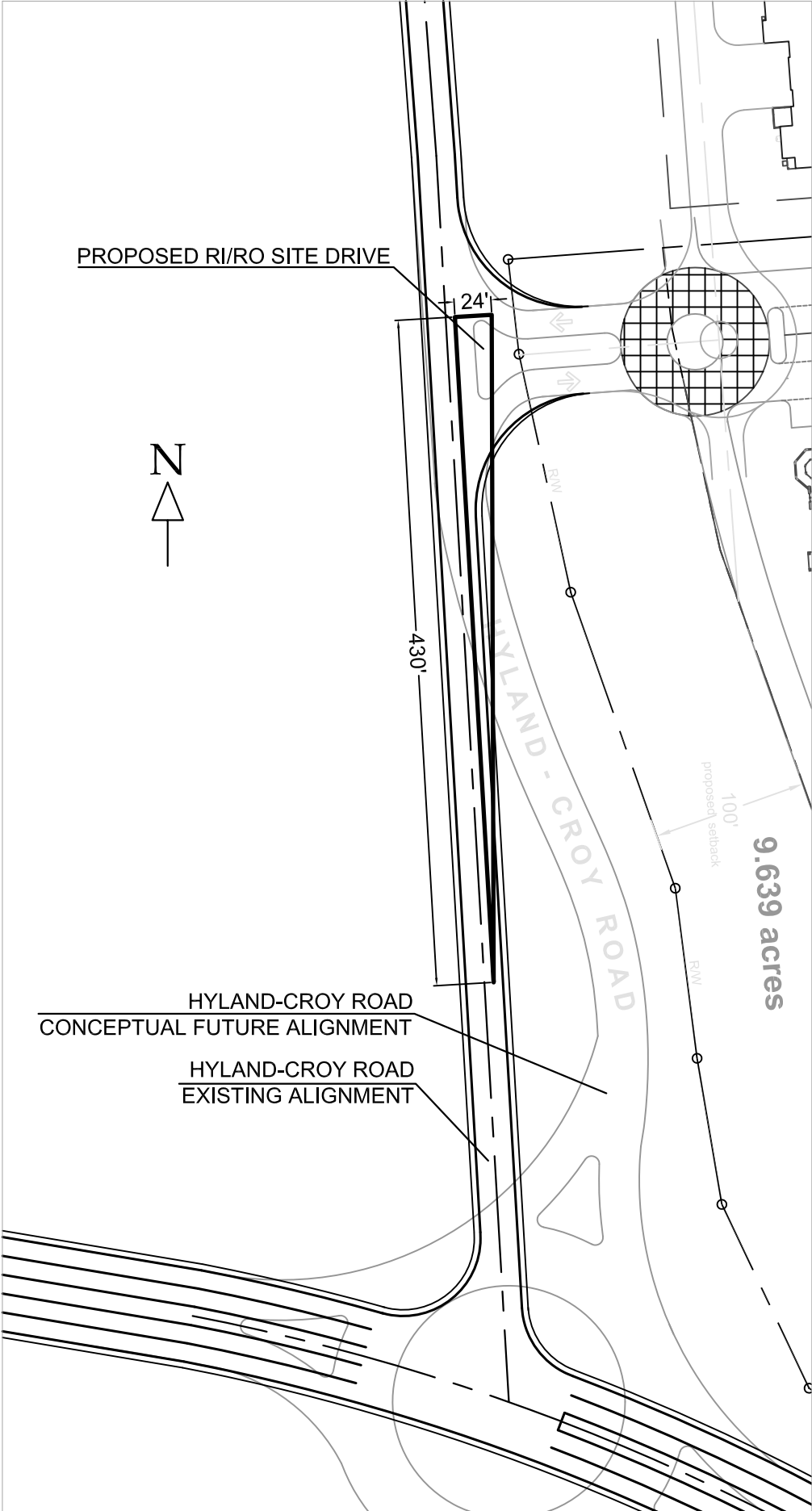


Figure 1 - Jacquemin Northern Drive - Left Turn - Close

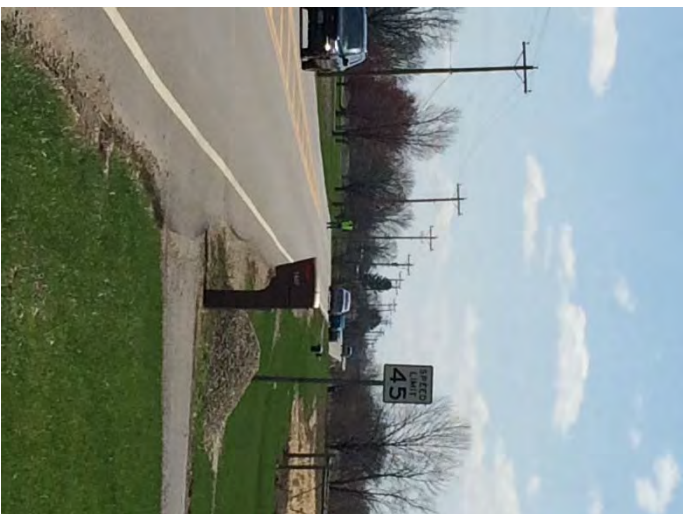


Figure 2 - Jacquemin Northern Drive - Left Turn - Far

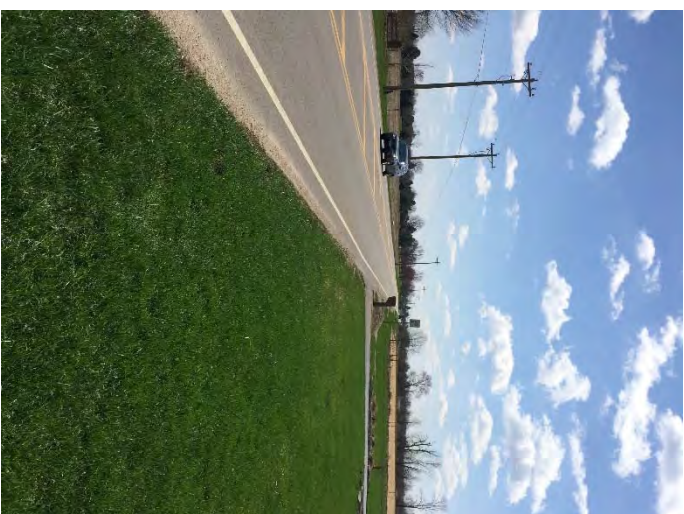


Figure 3 - Jacquemin Northern Drive - Right Turn - Close



Figure 4 - Jacquemin Northern Drive - Right Turn - Far





PROPOSED JACQUEMIN FARMS DEVELOPMENT

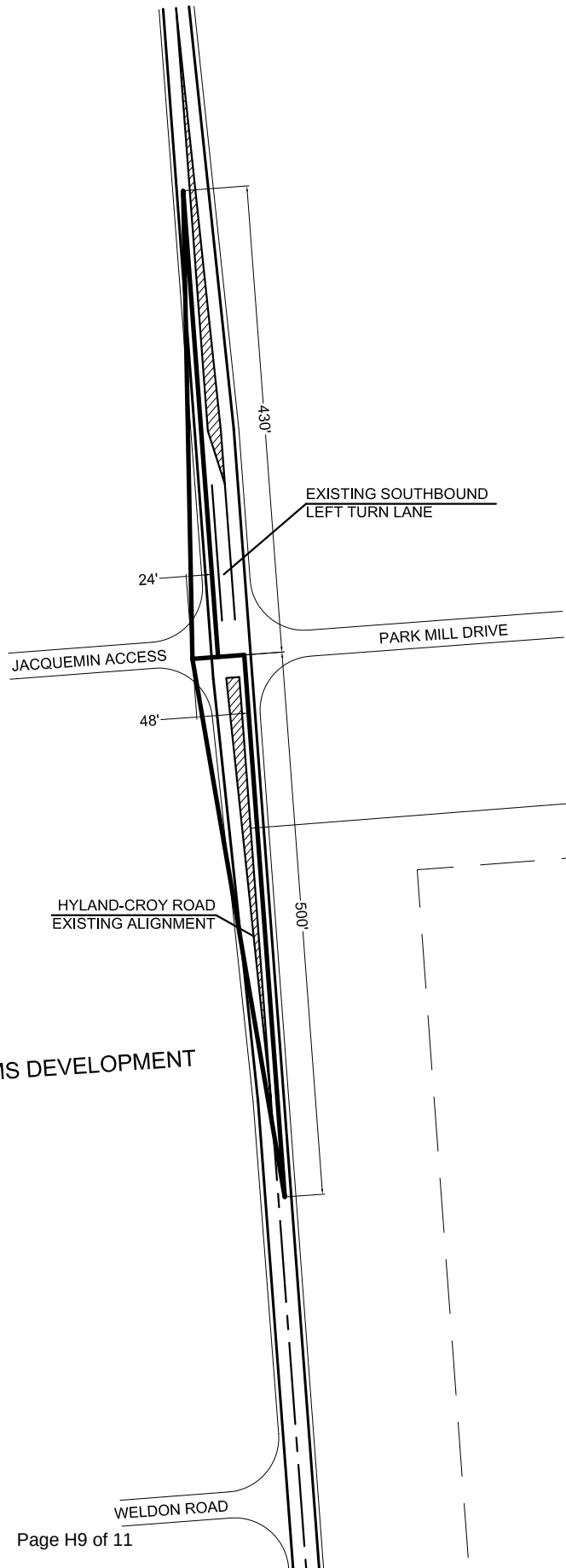


Figure 5 - Jacquemin Southern Drive - Left Turn - Close



Figure 6 - Jacquemin Southern Drive - Left Turn - Far

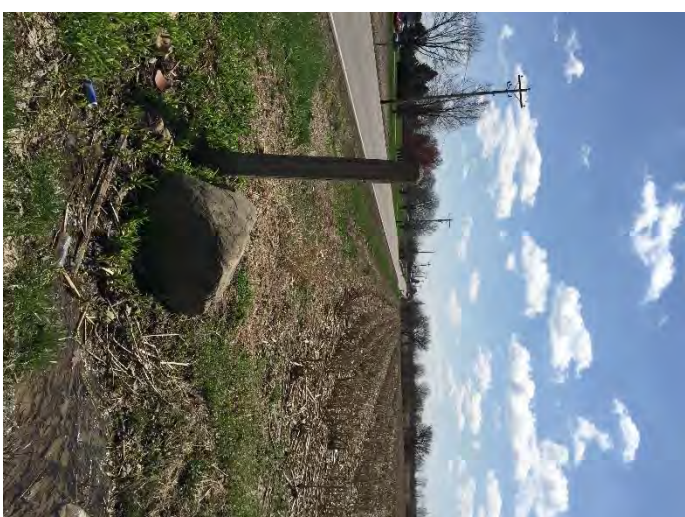


Figure 7 - Jacquemin Southern Drive - Right Turn - Close



Figure 8 - Jacquemin Southern Drive - Right Turn - Far



JACQUEMIN ACCESS

PARK MILL DRIVE

HYLAND-CROY ROAD
EXISTING ALIGNMENT

PROPOSED JACQUEMIN FARMS DEVELOPMENT

WELDON ROAD



24'

36'

430'

500'