Final Report

Transportation Impact Study - Northwest Corner of Highway 124 and Second Line Ospringe, Erin, Wellington County

Prepared for Spirit of Pentecost
by IBI Group
October 19, 2017

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CIRCULATION LIST:	
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1 Introduction

IBI Group was retained by Spirit of Pentecost to complete a transportation impact study (TIS) for a proposed development consisting of 13 single family detached units. The proposed development is to be located at the northwest corner of the County Road 124 & Second Line / County Road 125 intersection (hereinafter referred to as the “subject site”), in Ospringe, Town of Erin, Wellington County, Ontario. The purpose of this report is to analyze potential traffic impacts to the study area caused by trips generated by the subject site.

1.1 Proposed Development

The subject site currently contains a vacant lot. It is proposed that 13 single family detached houses be constructed on the lot.

Access to the site is proposed via a single driveway, intersecting with Second Line or County Road 124. The analysis in this report refers to the Second Line driveway as Scenario 1, and the County Road 124 driveway as Scenario 2. Upon consultation with the County of Wellington, it is understood that an intersection with County Road 124 is not permitted, as documented in **Appendix A**. However, the analysis of a County Road 124 connection is included within this report for completeness, and is identified as Scenario 2.

The driveway will be configured to permit full movement operations. The proposed site plan with the Scenario 1 and Scenario 2 configurations are presented in **Exhibit 1-1** and **Exhibit 1-2,** respectively. The subject site is anticipated to be completed and fully occupied under one phase, by the year 2023.

Exhibit 1-1: Site Plan – Scenario 1 Configuration

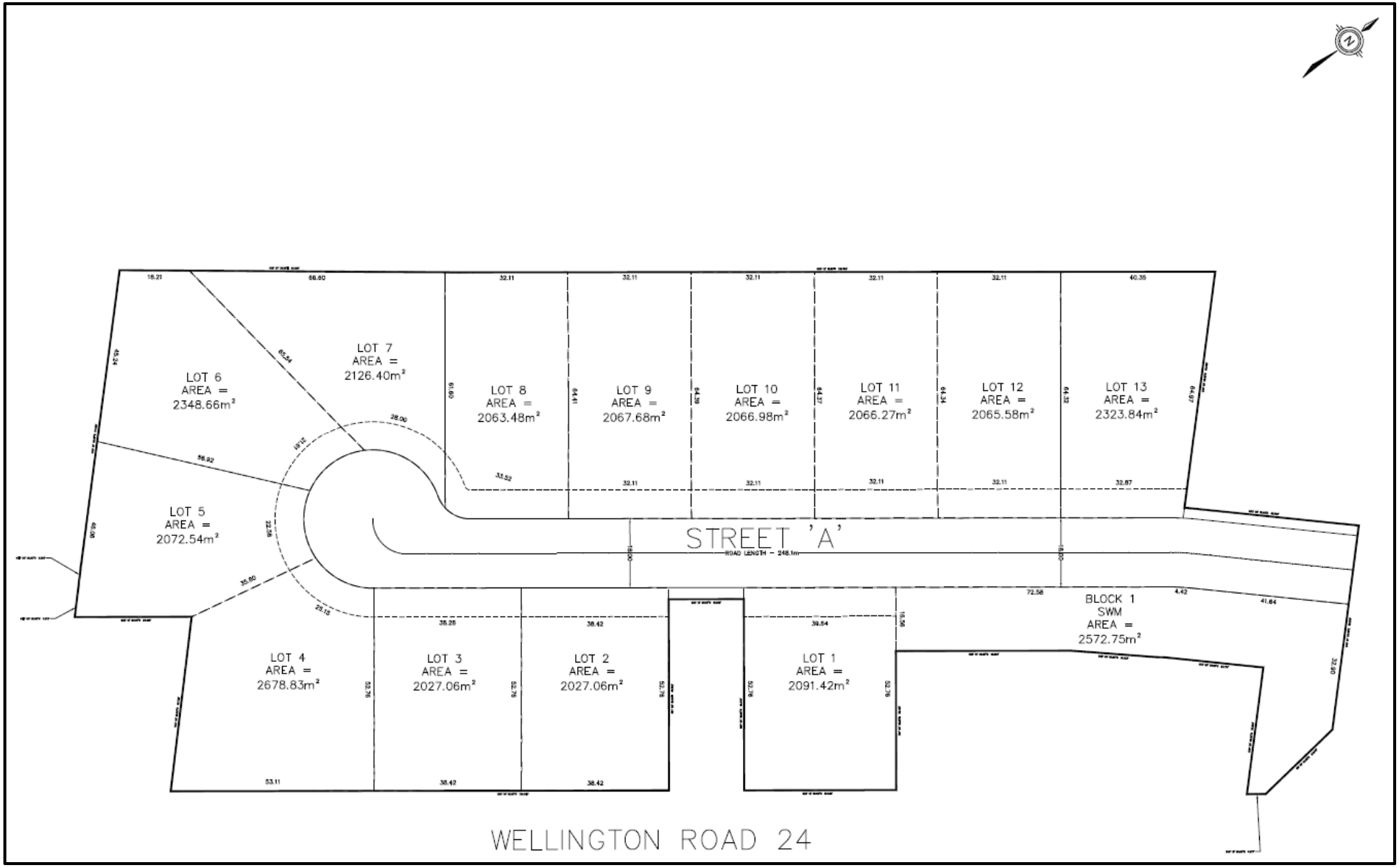
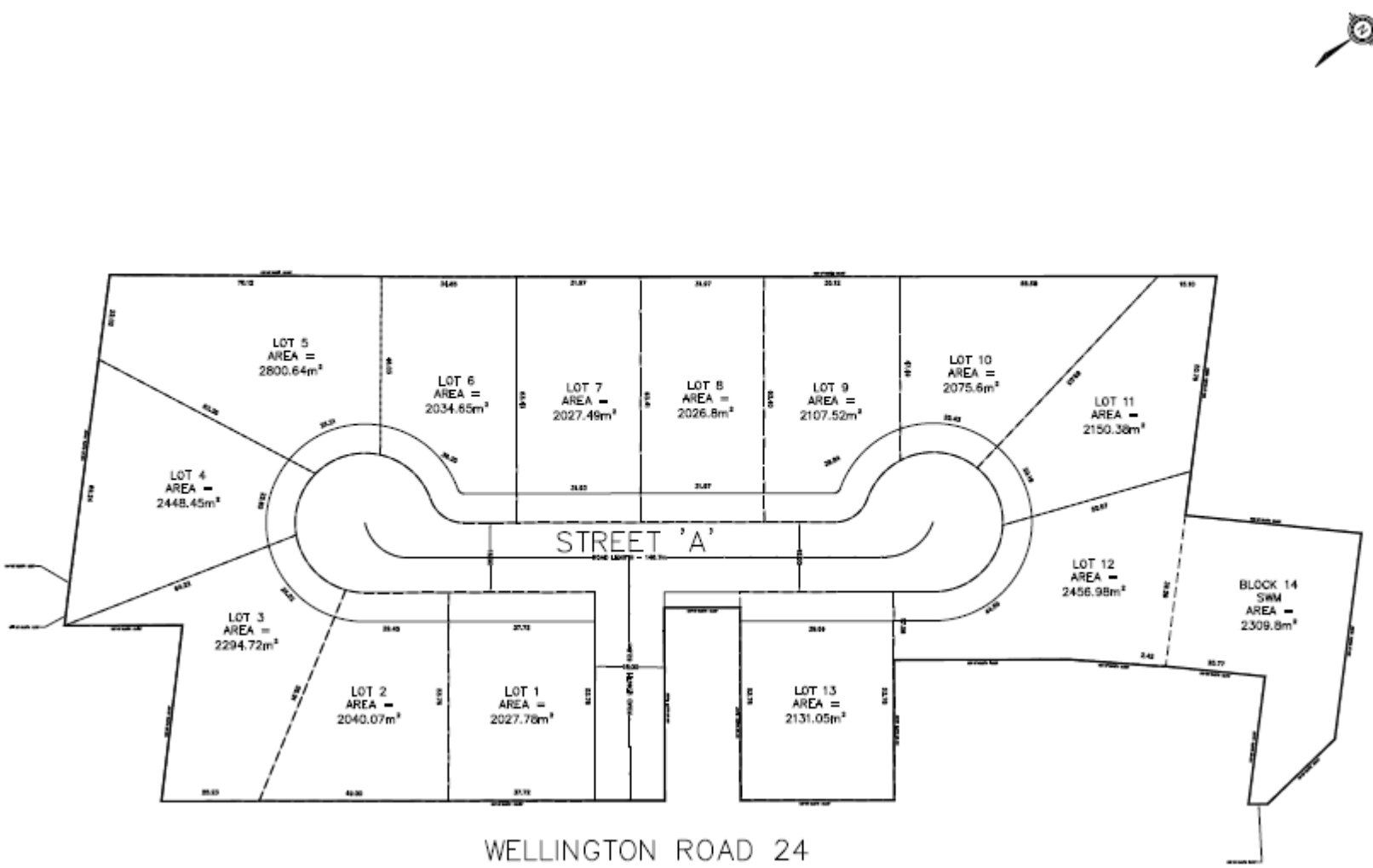


Exhibit 1-2 – Site Plan - Scenario 2 Configuration



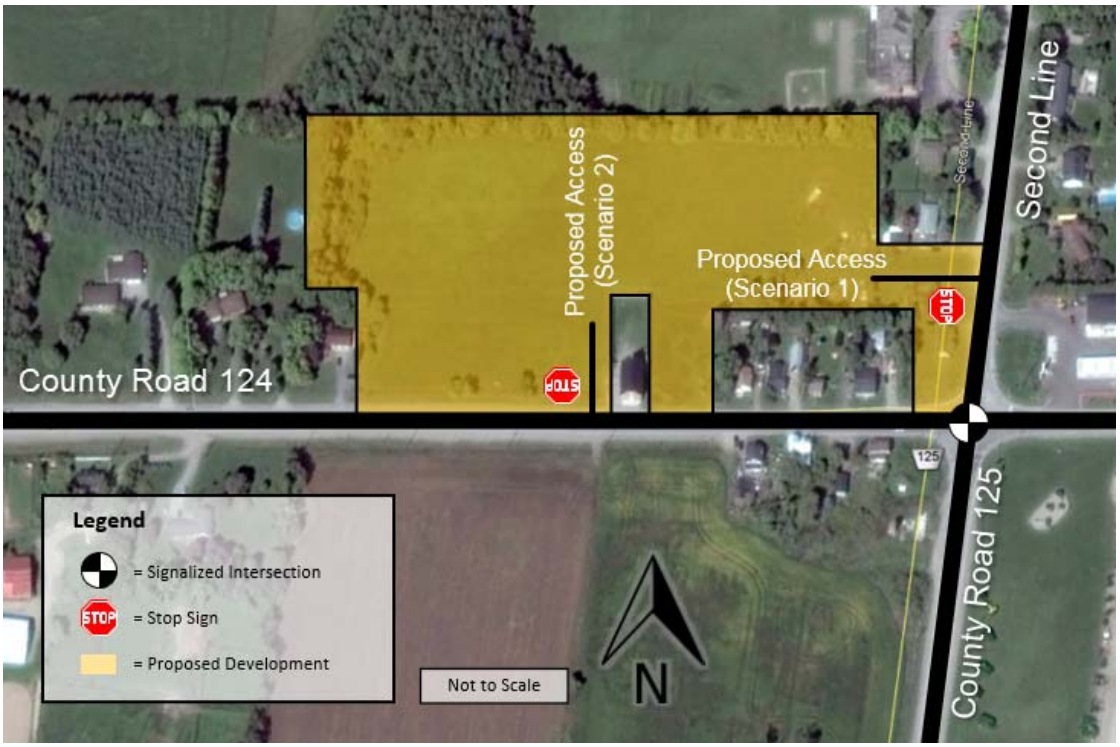
1.2 Study Area

Upon consultation with the County of Wellington and the Town of Erin, the following intersections were selected for analysis in this TIS:

- County Road 124 & County 125 / Second line (signalized, 4-legged intersection);
- County Road 125 / Second Line & Proposed Site Access (unsignalized, 3-legged intersection) – Scenario 1; and
- County Road 124 & Proposed Site Access (unsignalized, 3-legged intersection) – Scenario 2.

The proposed development location and the study area intersections are illustrated in **Exhibit 1-3**.

Exhibit 1-3: Study Area



1.3 Analysis Periods

Based on the proposed development's residential land use, the following periods were used in the analysis for this study:

- AM Peak Period - 7:00 AM – 9:00 AM on a typical weekday; and
- PM Peak Period - 4:00 PM – 6:00 PM on a typical weekday.

2 Existing Conditions

This section documents the transportation network in the study area in 2017, including existing roadways, traffic control measures, intersection performance, walking and cycling facilities, and transit operations.

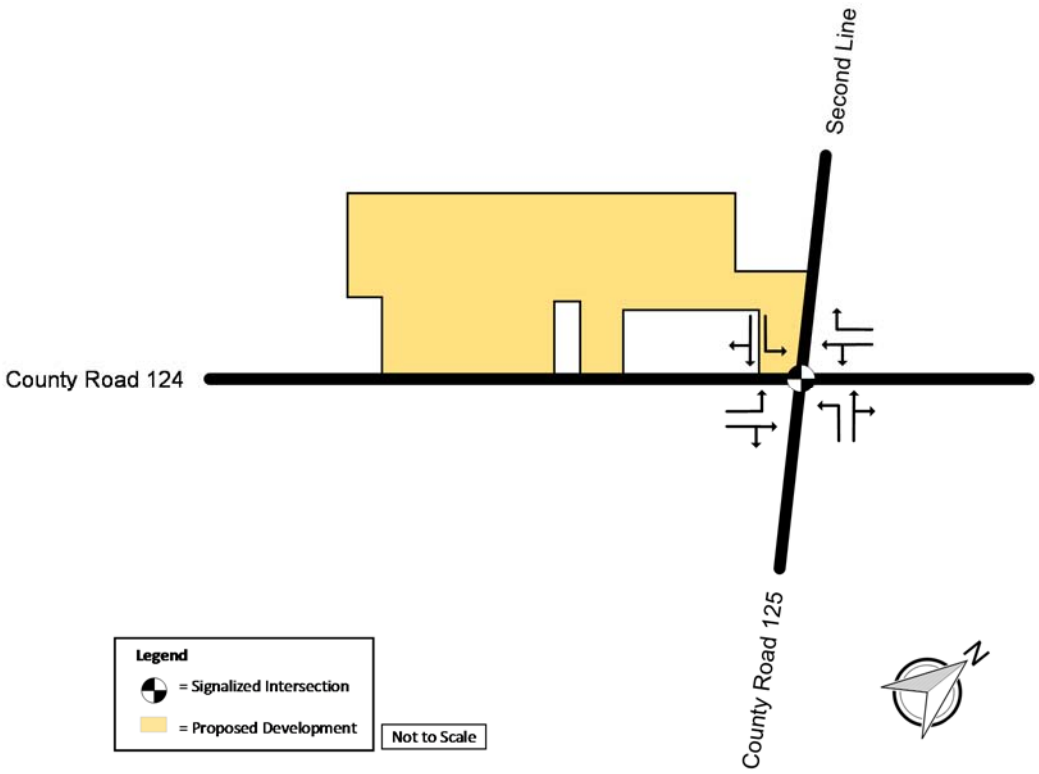
2.1 Existing Road Network

The roadways adjacent to the study area are County Road 124 and County Road 125 / Second Line. They are described in further detail, as follows:

- **County Road 124** is an east-west county road with one lane in each direction with a posted 60 km/hr speed limit. There is one signalized intersection within the study area, where County Road 124 and County Road 125 / Second Line intersects. There are no sidewalks and cycling facilities on this road. East-west transit service is not provided within walking distance of the subject site.
- **County Road 125 / Second Line** is a north-south county road with one lane in each direction. The road becomes Second Line north of the intersection of County Road 124 and County Road 125. On Second Line, the posted speed limit is 40 km/hr whereas on County Road 125, there is a posted speed limit of 80 km/hr. There are no sidewalk and cycling facilities on this road. North-south transit service is not provided within walking distance of the subject site.

The existing lane configuration is shown in **Exhibit 2-1**.

Exhibit 2-1: Existing Lane Configuration



2.2 Turning Movement Counts

A turning movement count survey for the adjacent County Road 124 / County Road 125 & Second Line major intersection was conducted by Ontario Traffic Inc. and the data is provided in **Appendix B**. The survey's study hours were chosen to coincide with weekday AM and PM peak period traffic activity on the adjacent road, and were confirmed with the County of Wellington and the Town of Erin.

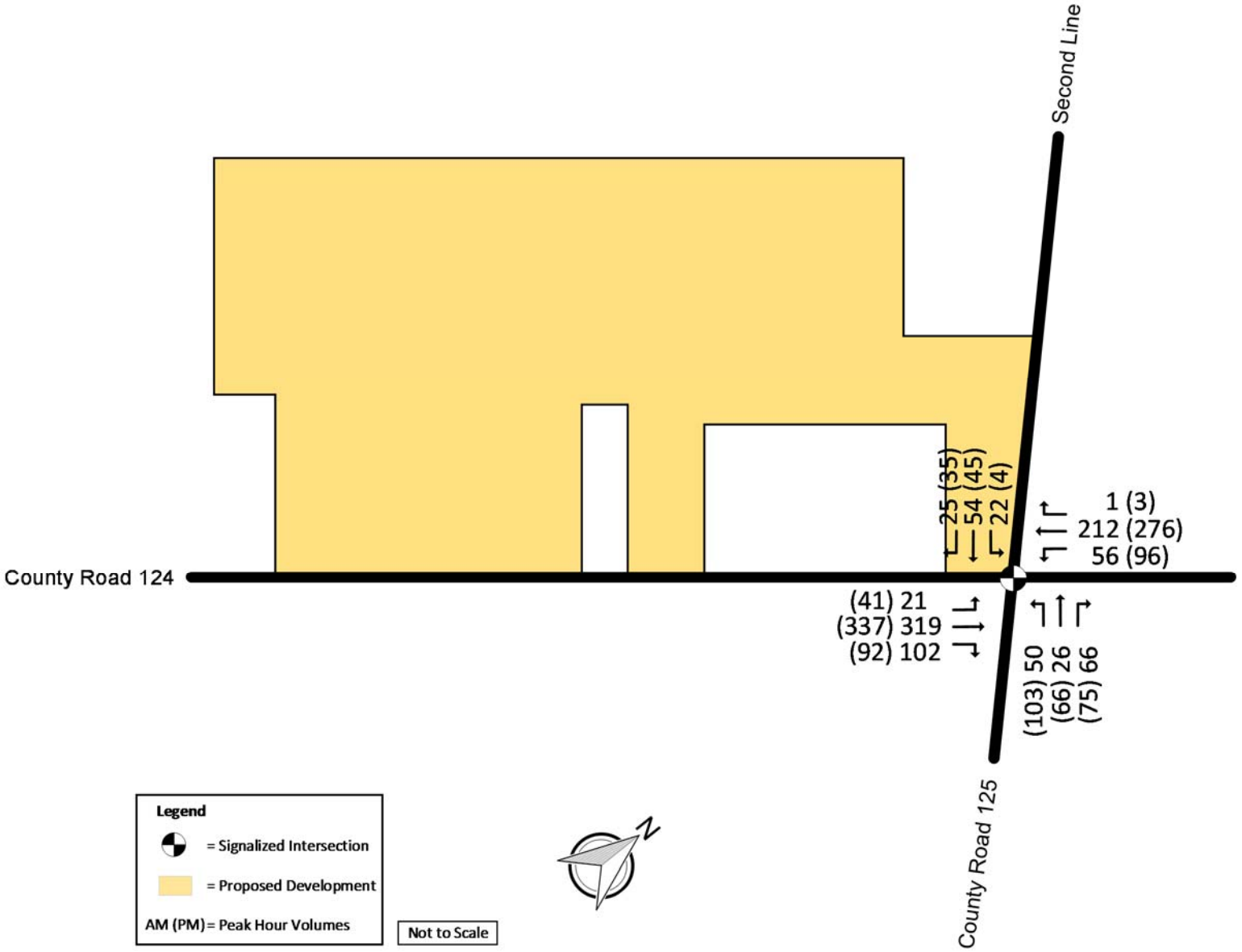
Exhibit 2-2 summarizes the dates of the turning movement counts collected for analysis. The signal timing plan for the intersection is provided in **Appendix C**.

Exhibit 2-2: Turning Movement Count Data

Intersection	Date
County Road 124 & County Road 125 / Second Line	Wednesday, September 13, 2017 7:00 AM - 9:00 AM 4:00 PM - 6:00 PM

IBI Group used the turning movement counts to establish a 2017 existing traffic conditions Synchro model. **Exhibit 2-3** illustrates the weekday AM and PM peak hour traffic volumes for the study area intersection.

Exhibit 2-3: Existing Traffic Volumes



2.3 Existing Traffic Operations

The intersections were analyzed using the Synchro 9.1 analysis package for signalized and unsignalized intersections. Levels of service (LOS) were calculated using the HCM methodology contained in Synchro for the studied intersections. LOS evaluation uses a six-letter grade scale (A to F) to rank vehicle delay at intersections. LOS 'A' indicates excellent traffic operations with minimal delays, while LOS 'F' represents conditions with long delays.

Criteria for identifying critical intersections and movements are based on the City of Guelph Transportation Impact Study Guidelines (April 2016), as there were no applicable guidelines for the County or Town that were available. The criteria outlined below is common in many municipalities.

For signalized intersections, the criteria are as follows:

- Overall intersection operations, through movements, or shared/turning movements with overall volume-to-capacity ratio (v/c) of 0.85 or above;
- v/c ratios for exclusive turning movements increased to 0.90 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

Identification of unsignalized intersection critical operation criteria are:

- Level of service (LOS) based on average delay per vehicle, on individual movements exceeds LOS 'E'; or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

Exhibit 2-4 details existing traffic operations at the signalized County Road 124 / County Road 125 intersection for the AM and PM peak hours. Synchro outputs are found in **Appendix D**. Note that for the analysis of the existing conditions, the peak hour factors (PHF) were calculated for each approach and carried forward to the future background and future total analysis.

Exhibit 2-4: Existing Traffic Operations – Signalized Intersections

Intersection	Intersection			Movement					
	LOS	Delay	V/C Ratio	Movement	LOS	Delay (s)	V/C Ratio	95th Percentile Queue (m)	Storage Capacity (m)
AM Peak Hour									
County Road 125/Second Line & County Road 124	B	11.5	0.51	EBL	A	6.4	0.05	4	180
				EBT	B	10.8	0.62	50	-
				WBL	A	7.4	0.21	9	140
				WBT	A	7.5	0.29	24	-
				NBL	B	19.0	0.26	14	120
				NBT	B	18.2	0.16	13	-
				SBL	B	18.0	0.10	7	140
				SBT	B	18.4	0.19	16	-
PM Peak Hour									
County Road 125/Second Line & County Road 124	B	13.7	0.55	EBL	A	9.1	0.10	8	180
				EBT	B	14.8	0.66	64	-
				WBL	B	11.9	0.39	17	140
				WBT	B	11.3	0.44	37	-
				NBL	B	15.9	0.38	23	120
				NBT	B	15.4	0.31	20	-
				SBL	B	13.7	0.02	3	140
				SBT	B	14.2	0.13	13	-

Based on the analysis of the AM and PM peak hours, the intersection was observed to have overall acceptable operations during both peak periods.The queues did not exceed the storage length and all movements in the study area operate at an acceptable LOS with no critical movements.

3 2023 Future Background Conditions

After pre-consultation with the Town of Erin and the County of Wellington, a horizon year of five years from the estimated site occupancy was used (i.e. 2023).

3.1 Other Developments within Study Area

The Town of Erin 2015-2018 Economic Development Action Plan[1] states the projected population up to the horizon year of 2031. **Exhibit 3-1** shows the projected population for the County for the years 2011 and 2031, which was used to determine an annual population growth rate of 1.3%. It is assumed that this serves as an accurate representation of annual background traffic growth in the study area. This growth rate was applied to all movements at the intersection of County Road 124 at County Road 125. The Town and County were provided these assumptions.

[1] "Town of Erin 2015-2018 Economic Development Action Plan," Town of Erin, http://www.erin.ca/uploads/userfiles/files/final%20approved_momentum%20town%20of%20erin%20action%20plan_november%203_2015_.pdf (September 28, 2017)

Exhibit 3-1: County of Wellington Traffic Growth Rate

Year	Population Projection	Annual Growth Rate Calculated
2011	94660	1.3%
2031	122000	

The Town of Erin and the County of Wellington were consulted to identify any background developments between 2017 and 2023. Discussions with County of Wellington staff identified a development in the southwest corner of County Road 124 at County Road 125 for 60 single detached homes. The document “Ospringe Residential Subdivision – Southwest Corner of CR 124/CR 125 – Transportation Impact Assessment” produced by Salvini Consulting in September 2016 was provided by the County of Wellington and was used as a reference for the development of background traffic.

The Salvini TIS report was reviewed and the associated projected site traffic volumes passing through the study area were included in the future background traffic operations analysis. Trip generation, trip distribution, and trip assignment assumptions outlined in the respective TIS report was maintained.

3.2 2023 Future Background Traffic Operations

To provide a basis for comparison with existing conditions, the 2023 future background traffic operation analysis will consist of corridor traffic growth discussed in Section 4.1, and the background development noted. **Exhibit 3-2** illustrates 2023 future background traffic volumes into the study area during the weekday AM and PM peak hours.

Exhibit 3-2: 2023 Future Background Traffic Volumes

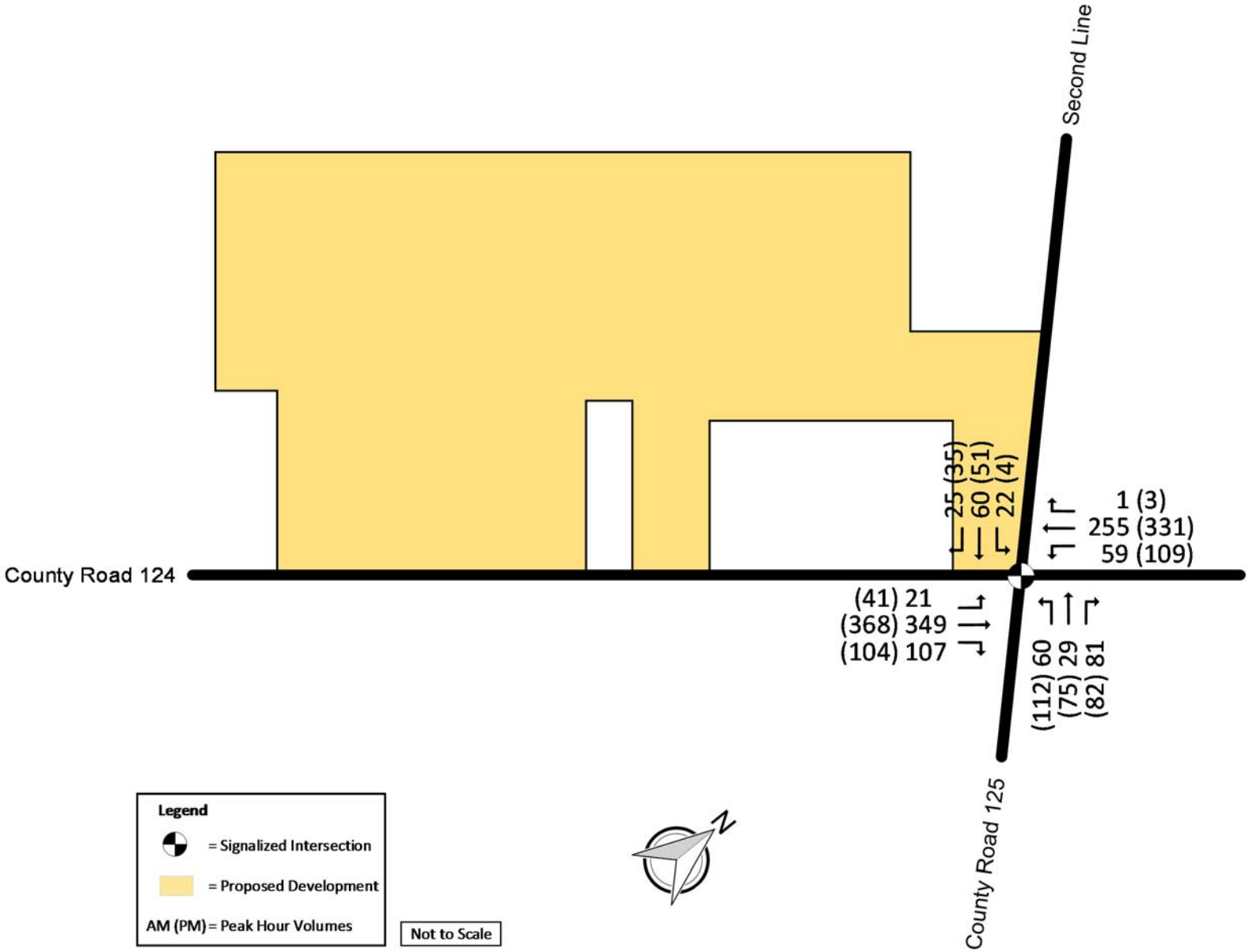


Exhibit 3-3 below summarizes 2023 future background signalized intersection operations in the study area during the AM and PM peak hours. Synchro outputs are provided in **Appendix E**.

Exhibit 3-3: 2023 Future Background Traffic Operations – Signalized Intersections

Intersection	Intersection			Movement					
	LOS	Delay	V/C Ratio	Movement	LOS	Delay (s)	V/C Ratio	95th Percentile Queue (m)	Storage Capacity (m)
AM Peak Hour									
County Road 125/Second Line & County Road 124	B	13.5	0.51	EBL	A	8.4	0.05	4	180
				EBT	B	14.9	0.68	61	-
				WBL	A	9.9	0.25	10	140
				WBT	B	10.4	0.39	29	-
				NBL	B	15.5	0.24	14	120
				NBT	B	15.1	0.17	11	-
				SBL	B	14.7	0.10	7	140
				SBT	B	15.1	0.17	16	-
PM Peak Hour									
County Road 125/Second Line & County Road 124	B	14.7	0.59	EBL	A	9.1	0.11	8	180
				EBT	B	15.6	0.69	75	-
				WBL	B	13.1	0.48	21	140
				WBT	B	11.9	0.50	47	-
				NBL	B	17.7	0.42	29	120
				NBT	B	17.1	0.37	28	-
				SBL	B	14.9	0.02	3	140
				SBT	B	15.6	0.15	17	-

Similar to the existing conditions, the signalized intersection in the study area will operate well with LOS B or better during both peak hours under 2023 background traffic conditions. There are no critical movements anticipated and queues are expected to be within storage capacity.

4 Proposed Development

The proposed residential development will consist of 13 single-family detached housing units. One full movement site access is proposed on the east side of the lot, as preferred by the County of Wellington, with additional sensitivity analysis conducted for a scenario where the site access is on the south side of the lot. These are discussed in this section as Scenario 1 and Scenario 2, respectively.

4.1 Site Access

As mentioned, the two scenarios will be examined for access to the site are:

1. A proposed full movement, one-way stop controlled access onto Second Line; and
2. A proposed full movement, one-way stop controlled access onto County Road 124.

4.2 Trip Generation

The ITE Trip Generation Manual (9th edition) was used to estimate vehicle trips generated during the weekday AM and PM peak hours of the adjacent street, summarized below in **Exhibit 4-1.** Trip generation consisted of the proposed single-family detached housing (ITE land use code 210) units.

Exhibit 4-1: Trip Generation Summary

Land Use	Unit	Weekday AM Peak Hour			Weekday PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached Housing, 13 Units (ITE Code 210)	Trips/Unit	0.4	1.1	**1.5**	0.8	0.5	**1.3**
	%	25%	75%	**100%**	63%	37%	**100%**
	Trips	5	14	**19**	11	6	**17**

During the AM peak hour and PM peak hour, a total of 19 and 17 site trips are estimated, respectively.

4.3 Trip Distribution

To distribute the trips forecasted to be generated by the subject site, the existing traffic patterns during the weekday AM and PM peak hours were analyzed using the adjacent road network (i.e. County Road 124 & Second Line / County Road 125 four legged signalized intersection). Using this method, **Exhibit 4-2** summarizes the trip distribution to apply to the new subject site trips.

Exhibit 4-2: Trip Distribution

Origin / Destination	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
To / From North: via Second Line	11%	5%	7%	10%
To / From South: via County Road 125	15%	22%	21%	20%
To / From East: via County Road 124	28%	43%	32%	35%
To / From West: via County Road 124	46%	30%	40%	35%
Total	100%	100%	100%	100%

4.4 Site Trip Assignment

Based on the proposed site connectivity, the assignment of site traffic for both scenarios are provided below in **Exhibit 4-3** and **Exhibit 4-4**.

Exhibit 4-3: Site Traffic Volume Assignment – Access via Second Line (Scenario 1)

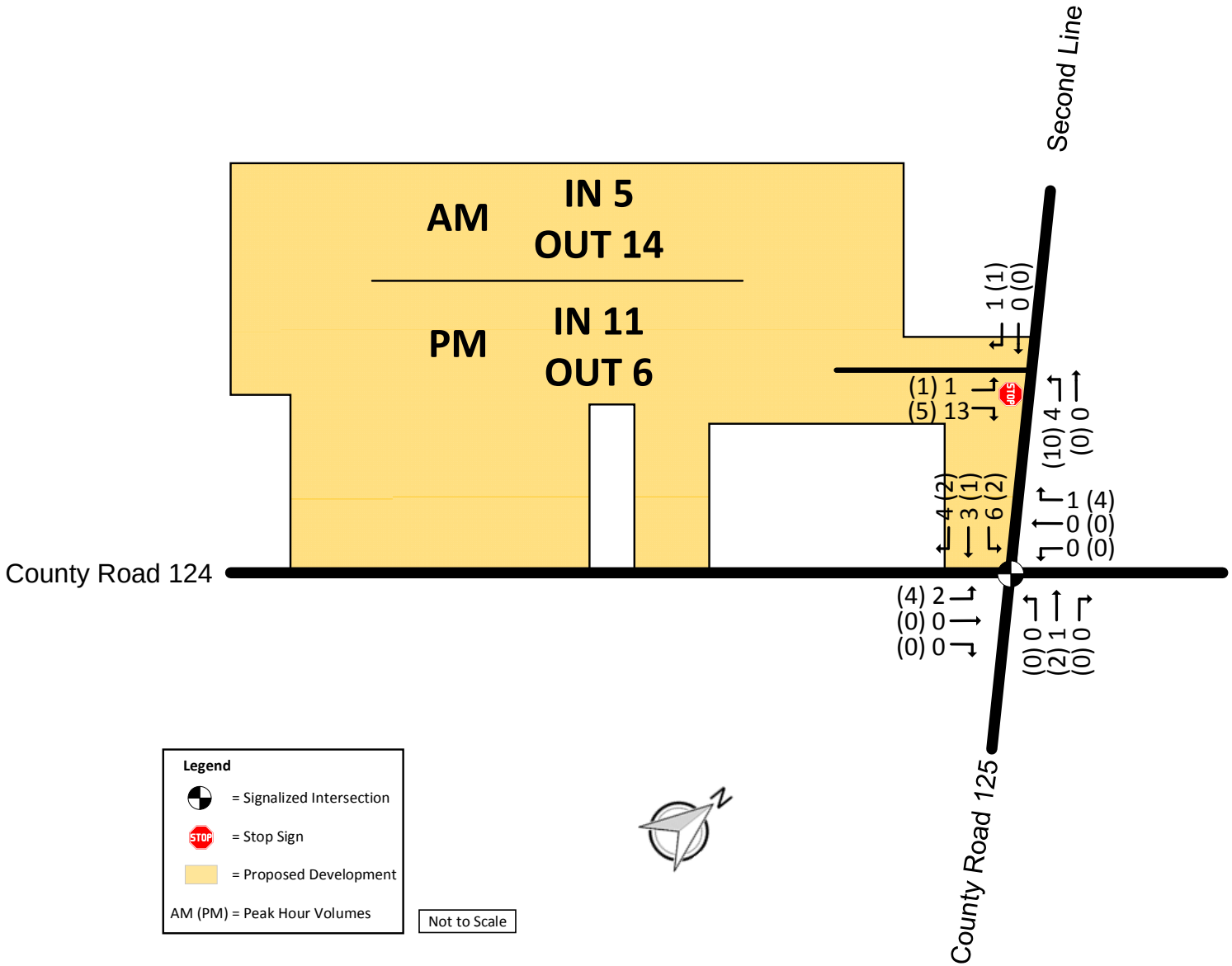
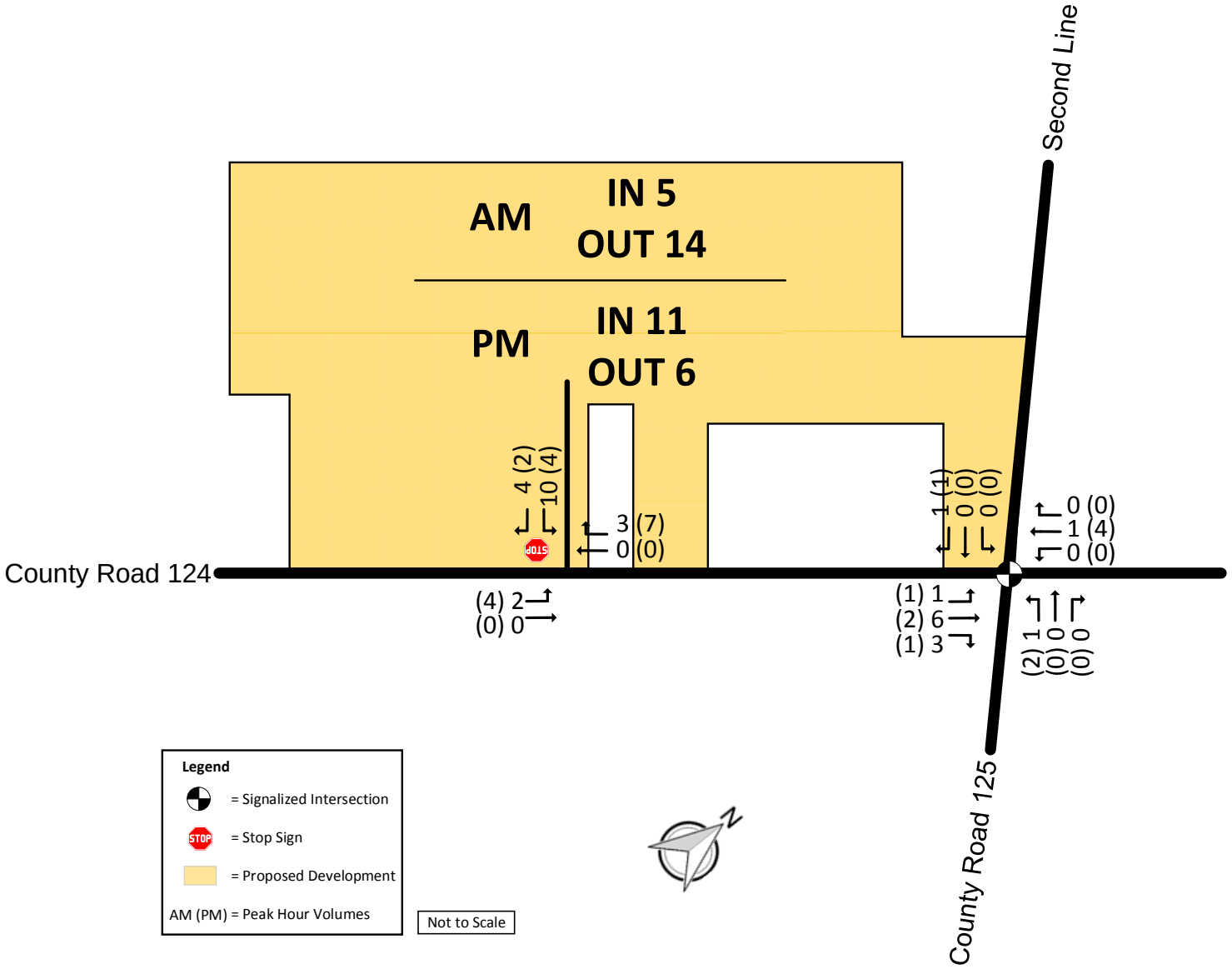


Exhibit 4-4: Site Traffic Volume Assignment via County Road 124 (Scenario 2)



5 2023 Future Total Traffic Conditions

The 2023 future background traffic volumes were added to the forecasted trips generated by the subject site to establish 2023 future total traffic volumes. The 2023 future total volumes for Scenario 1 and Scenario 2 are shown in **Exhibit 5-1** and **Exhibit 5-2**, respectively.

Exhibit 5-1: 2023 Future Total Traffic Volumes – Scenario 1 Configuration

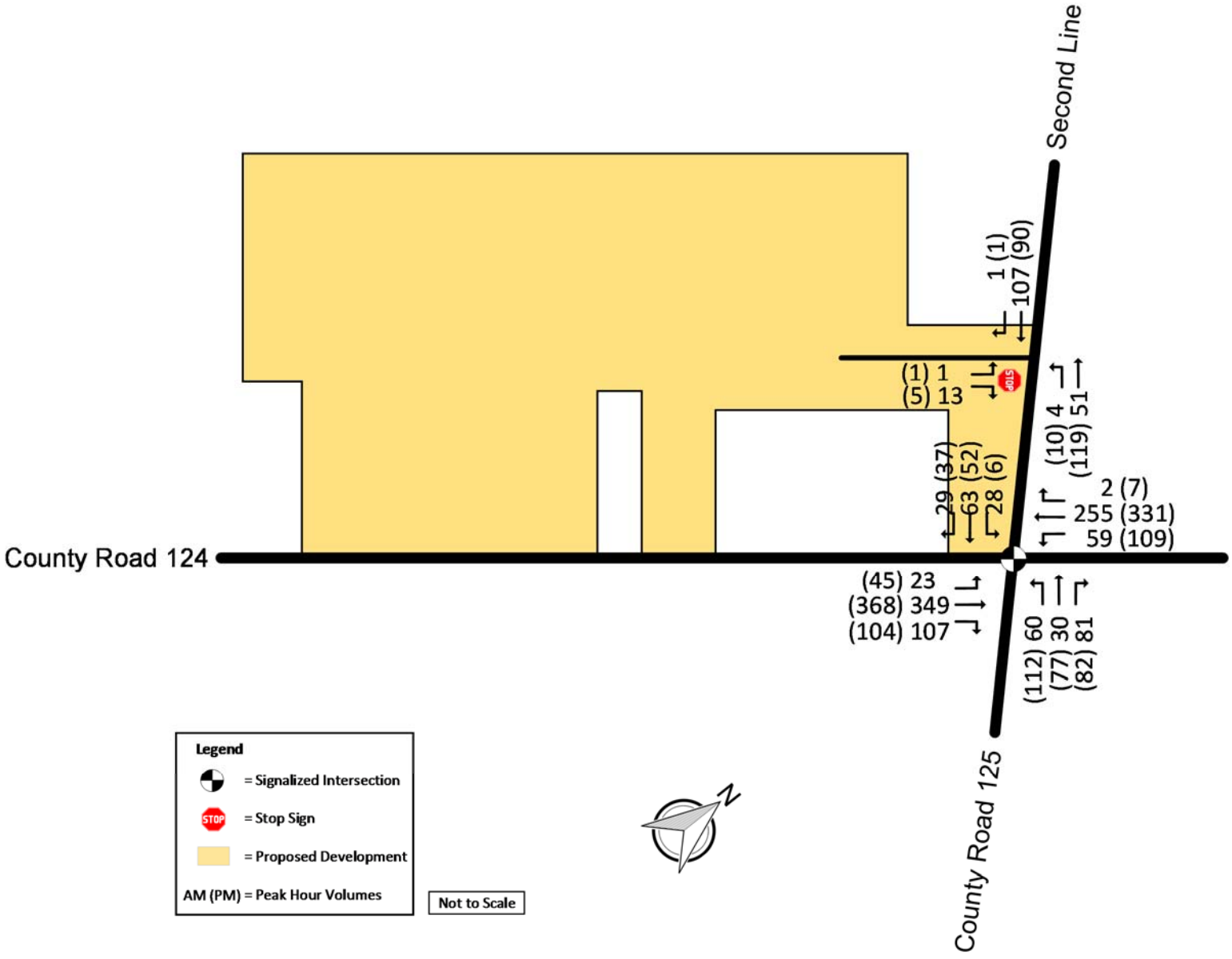
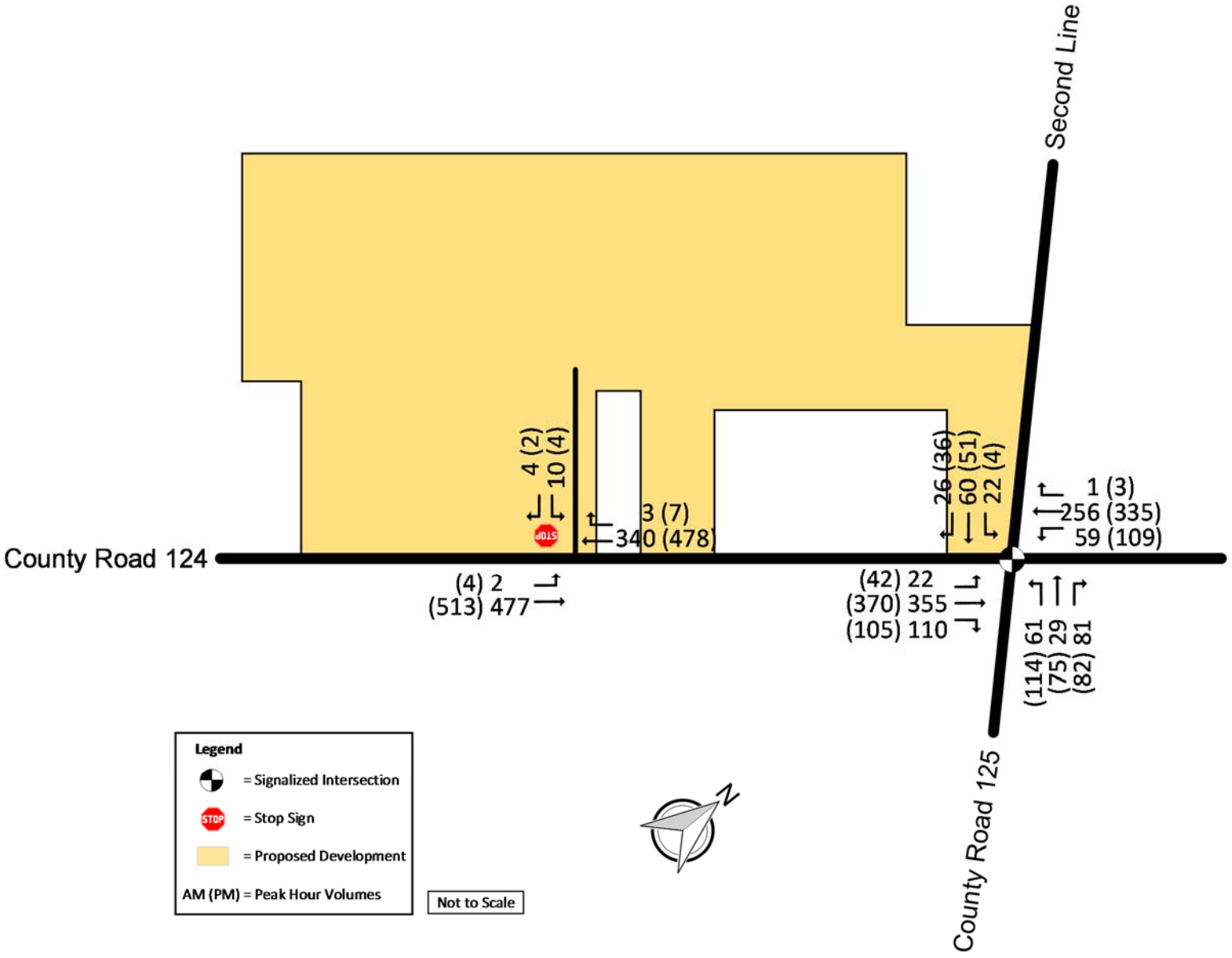


Exhibit 5-2: 2023 Future Total Traffic Volumes – Scenario 2 Configuration



The exhibits below summarize 2023 future total traffic operations at the studied intersections for Scenario 1 and Scenario 2. Synchro outputs for Scenario 1 and Scenario 2 are provided in **Appendix F** and **Appendix G**, respectively.

5.1 Scenario 1 Traffic Operations

Exhibit 5-3 summarizes AM and PM peak operations at the signalized County Road 124 / Second Line / County Road 125 intersection when the site access is connected to Second Line.

Exhibit 5-3: 2023 Future Total Traffic Operations – Signalized Intersection Results – Scenario 1

Intersection	Intersection			Movement					
	LOS	Delay	V/C Ratio	Movement	LOS	Delay (s)	V/C Ratio	95th Percentile Queue (m)	Storage Capacity (m)
AM Peak Hour									
County Road 125/Second Line & County Road 124	B	13.5	0.52	EBL	A	8.4	0.05	4	180
				EBT	B	15.0	0.69	61	-
				WBL	A	10.0	0.25	10	140
				WBT	B	10.5	0.39	29	-
				NBL	B	15.5	0.24	15	120
				NBT	B	15.0	0.17	11	-
				SBL	B	14.8	0.12	9	140
				SBT	B	15.1	0.19	17	-
PM Peak Hour									
County Road 125/Second Line & County Road 124	B	14.7	0.59	EBL	A	9.1	0.12	8	180
				EBT	B	15.6	0.69	76	-
				WBL	B	13.1	0.48	21	140
				WBT	B	11.9	0.51	48	-
				NBL	B	17.7	0.43	29	120
				NBT	B	17.2	0.38	29	-
				SBL	B	15.0	0.03	4	140
				SBT	B	15.7	0.16	17	-

For Scenario 1 during the weekday AM and PM peak hours, it is anticipated that the intersection will operate well for both peak periods with overall LOS B or better, and with no critical operations observed for individual movements. Site related traffic impacts to the intersection operations will be marginal, and all queues are anticipated to be comparable to 2023 future background conditions, with a marginal increase of up to two metres for individual movements. It is noted that the southbound queue of up to 17 metres during the AM peak hour is not expected to block subject site driveway operations, located approximately 60 metres north of the intersection.

Unsignalized operations for the Site Access / Second Line intersection are summarized below in **Exhibit 5-4**.

Exhibit 5-4: 2023 Future Total Traffic Operations – Unsignalized Intersection Results – Scenario 1

Intersection	Delay (s)	Lane	Lane LOS	Control Delay (s)	Approach LOS	V/C Ratio	Queue, 95th (m)	Storage Length (m)
AM Peak Hour								
Second Line & Site Access	0.9	EBL/R	A	9.0	A	0.02	0	-
		NBL	A	0.5	-	0.00	0	-
PM Peak Hour								
Second Line & Site Access	0.6	EBL/R	A	9.0	A	0.01	0	-
		NBL	A	0.6	-	0.01	0	-

During the AM and PM peak hours, acceptable overall intersection and specific movement operations are anticipated at the unsignalized intersections, with no capacity constraints.

5.2 Scenario 2 Traffic Operations

Exhibit 5-5 summarizes AM and PM peak operations at the signalized County Road 124 / Second Line / County Road 125 intersection when the site access is connected to County Road 124.

Exhibit 5-5: 2023 Future Total Traffic Operations – Signalized Intersection Results – Scenario 2

Intersection	Intersection			Movement					
	LOS	Delay	V/C Ratio	Movement	LOS	Delay (s)	V/C Ratio	95th Percentile Queue (m)	Storage Capacity (m)
AM Peak Hour									
County Road 125/Second Line & County Road 124	B	13.6	0.52	EBL	A	8.3	0.05	4	180
				EBT	B	15.1	0.69	62	-
				WBL	A	9.9	0.25	10	140
				WBT	B	10.4	0.39	29	-
				NBL	B	15.8	0.24	15	120
				NBT	B	15.3	0.17	11	-
				SBL	B	14.9	0.10	8	140
				SBT	B	15.3	0.17	16	-
PM Peak Hour									
County Road 125/Second Line & County Road 124	B	14.6	0.6	EBL	A	9.0	0.11	8	180
				EBT	B	15.6	0.70	76	-
				WBL	B	13.1	0.48	22	140
				WBT	B	11.8	0.51	48	-
				NBL	B	17.6	0.44	26	120
				NBT	B	16.8	0.36	23	-
				SBL	B	14.7	0.02	3	140
				SBT	B	15.4	0.15	15	-

The Scenario 2 site driveway configuration (driveway intersecting with County Road 124) is anticipated to operate with no capacity constraints for both peak hours and with overall LOS B or better. There will be no critical operations observed for individual movements.

Site related traffic impacts to the intersection operations will be marginal and all queues are anticipated to be comparable to 2023 future background conditions, with an increase of up to five metres for individual movements, as shown in **Exhibit 5-5**. Eastbound queue lengths of up

to 76 metres during the PM peak hour are not expected to block site access operations, located approximately 150 metres west of the signalized intersection.

Unsignalized operations for the County Road 124 at Site Access are summarized below in **Exhibit 5-6**.

Exhibit 5-6: 2023 Future Total Traffic Operations – Unsignalized Intersection Results – Scenario 2

Intersection	Delay (s)	Lane	Lane LOS	Control Delay (s)	Approach LOS	V/C Ratio	Queue, 95th (m)	Storage Length (m)
AM Peak Hour								
County Road 124 & Site Access	0.3	EBL	A	0.1	-	0.00	0	-
		SBL/R	C	15.4	C	0.04	1	-
PM Peak Hour								
County Road 124 & Site Access	0.2	EBL	A	0.1	-	0.00	0	-
		SBL/R	C	18.0	C	0.02	1	-

During the AM and PM peak hours, acceptable overall intersection and specific movement operations are anticipated, with no capacity constraints.

6 Conclusions

This traffic impact study examined the potential impacts to the study area caused by the proposed development consisting of 13 single-family detached housing units.

Background traffic analysis shows that all study area intersections are anticipated to operate with acceptable LOS with no critical movements. This is seen throughout all future background analysis, as all intersections operate with overall LOS B or better.

Site traffic for the proposed development was calculated based on the ITE Trip Generation manual rates. The development is estimated to generate 19 trips (5 entering, 4 exiting) in the AM peak hour and 17 trips (11 entering, 6 exiting) in the PM peak hour.

Under 2023 total traffic conditions, acceptable traffic operations are expected at the County Road 124 / Second Line / County Road 125 signalized intersection during both weekday AM and PM peak hours with no critical movements.

The proposed site driveway intersecting with Second Line (Scenario 1) is anticipated to operate well with LOS A. The southbound queues for the County Road 124 / Second Line / County Road 125 signalized intersection is expected to not spill upstream and interfere with site driveway operations located approximately 60 metres north on Second Line. Although a site driveway connection with County Road 124 (Scenario 2) is not permitted by the County of Wellington, it is anticipated that traffic operations will be acceptable with regards to LOS and queue lengths.

As both potential site driveways operate well in the future, either location would be suitable and capable to serve the proposed development, from a traffic operations point of view.

Appendix A – County of Wellington Correspondence

Hugo Chan

From: Pasquale Costanzo <pasqualec@wellington.ca>
Sent: Thursday, August 31, 2017 2:18 PM
To: Hugo Chan
Cc: Peter Richards; Odete Gomes
Subject: RE: Scope of Work for Proposed Residential Development - Ospringe (Wellington Rd 125 / Second line)
Attachments: 124 Ospringe.pdf

Hello Hugo,

The responses are below.

Any questions call.

Pasquale Costanzo, C.E.T.
Technical Services Supervisor | Roads Division
County of Wellington | 519.837.2601 Ext. 2250

From: Hugo Chan [mailto:hugo.chan@ibigroup.com]
Sent: Thursday, August 24, 2017 4:37 PM
To: Pasquale Costanzo <pasqualec@wellington.ca>
Cc: Peter Richards <peter.richards@ibigroup.com>; Odete Gomes <Odete.Gomes@IBIGroup.com>
Subject: Scope of Work for Proposed Residential Development - Ospringe (Wellington Rd 125 / Second line)

Hi Pasquale,

Regarding a traffic study scope of work submitted to you in October 12, 2016 by Peter Richards, we are now proceeding with this project. Due to the length of time since the last correspondence, we have updated the scope of work (attached).

Can you please review/provide:

- The attached updated scope of work for your acceptance; an entrance onto Wellington Road 124 will not be permitted.
- Signal timing plan and AM/PM turning movement counts for the Wellington County Road 124 / Second Line (Wellington County Road 125) intersection; Attached.
- Information regarding background developments in the area; and you'll need to contact the Town of Erin about background developments
- Annual traffic growth rates for the above two roads. unknown

If you have any questions, please let me know, thanks.

Hugo Chan

IBI GROUP
200-9133 Leslie Street
Richmond Hill ON L4B 4N1 Canada
tel +1 905 763 2322 fax +1 905 763 9983

From: Peter Richards
Sent: Wednesday, October 12, 2016 2:16 PM
To: pasqualec@wellington.ca
Cc: Odete Gomes <Odete.Gomes@IBIGroup.com>; Andrae Griffith <andrae.griffith@ibigroup.com>; Jason Dahl <jason.dahl@ibigroup.com>
Subject: Scope of Work for Proposed Residential Development

Hello Pasquale;

My colleagues, Andrae Griffith and Jason Dahl, spoke to you the other day about the proposed residential development, near the intersection of Wellington County Rd 124 / Wellington County Rd 125. Attached is the complete traffic study scope of work, for your review and acceptance. Please let me know if you have any questions about the attached.

Pete

Peter Richards P.Eng.

Associate | Manager, Transportation Engineering
email peter.richards@ibigroup.com web www.ibigroup.com

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August 24, 2017

Pasquale Costanzo
Technical Services Supervisor
Engineering Services, Roads Division
74 Woolwich Street
Guelph, ON N1H 3T9

Dear Mr. Costanzo:

SCOPE OF WORK FOR TRAFFIC IMPACT STUDY FOR PROPOSED DEVELOPMENT AT COUNTY ROAD 124 AND SECOND LINE, ERIN

This letter provides our proposed scope of work for the proposed 12-lot residential development at Wellington County Road 124 and Second Line in Erin, Ontario. The development would be located on the north side of Wellington County Road 124, west of Second line in the community of Ospringe.

The County of Wellington requested that an access review be completed, based on the comments provided in October, 2016. Traffic impact provisions of the Wellington County and Town of Erin Official Plans were consulted during the preparation of this scope of work, and recent comments made by the Town and the County have been taken into consideration.

Work Plan – Traffic Impact Study

The tasks that will be completed for the traffic impact study are as follows:

1. **2017 Existing Conditions Analysis**: Based on the proposed development's land uses and size, we plan to analyze the development peak hours, which will occur during the weekday AM peak period (between 7:00 AM – 9:00 AM) and the weekday PM peak period (between 4:00 PM – 6:00 PM).

   Based on the anticipated low number of site-related automobile trips, we propose to analyze the traffic operation of the proposed accesses to the development, as these are the only intersections anticipated to experience any kind of minor impact. Intersections to be analyzed for capacity purposes are:

   - Wellington County Road 124 / Site access (unsignalized, 3-legged intersection)
   - Second Line (Wellington County Road 125) / Site access (unsignalized, 3-legged intersection)

   Traffic counts at the existing Wellington County Road 124 / Wellington County 125 (Second Line) signalized intersection will be obtained through the Town of Erin or County of Wellington, if available, or determined through new turning movement counts.

2. **2023 Background Traffic Conditions**: A study horizon 5 years after the estimated occupancy of the site would be 2023. Therefore, the 2023 background traffic conditions will be determined for the study area intersections. Any future road network or intersection changes proposed by the Town of Erin or County of Wellington, or outlined in their respective Capital Works program, will be taken into consideration.

   We will confirm any background developments to be included, as well as an applicable growth rate for the study area road network. A blanket growth rate might be applied in lieu of background development information.

3. **Site Traffic Generation and Trip Distribution**: The trip generation for the proposed residential development will be based on information from the Institute of Transportation Engineers ("ITE") publication, *Trip Generation, 9th Edition*. A review of the modal split will be undertaken, to account for the trips being made by non-auto modes of travel. The Town and the County's Official Plan, as well as the County's Active Transportation Master Plan, will be used as a tool for this review.

   The trip distribution for the proposed site will be based on a review of the 2011 Transportation Tomorrow Survey (TTS), as well as a review of existing travel patterns, and the available road network.

   The forecast site traffic for the development will be added to the road network based on the trip distribution, and assigned to the network based on logical travel routes and available traffic capacity.

   Transportation Demand Management (TDM) measures will be reviewed and discussed, where applicable.

4. **2023 Total Traffic Conditions**: The estimated site traffic volumes will be combined with the 2023 background traffic volumes to determine the 2023 total traffic volumes for the study area intersections.

   Intersection operations analysis will be undertaken for the Weekday AM and Weekday PM peak hours using the software program Synchro (Version 9) for the proposed accesses. Any necessary road improvements required to accommodate total traffic volumes will be identified, such as additional turning lanes, storage length modifications, or signal timing adjustments.

   Two scenarios will be examined for the total traffic conditions:

   1) A proposed full movement, unsignalized access onto Second Line; and

   2) A proposed full movement, unsignalized access onto Wellington County Road 124.

Please provide me with any questions, comments, or confirmation of the above work plan for the proposed development.

Yours truly,

IBI GROUP

Peter Richards, P.Eng.
Associate
416-596-1930 ext. 61408
peter.richards@ibigroup.com

Appendix B – Turning Movement Counts

Ontario Traffic Inc.

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:15:00
To: 8:15:00

Municipality: Erin
Site #: 1725600001
Intersection: Hwy 124 & Second Line-Hwy 125
TFR File #: 3
Count date: 13-Sep-17

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Hwy 124 runs W/E

North Leg Total:	149
North Entering:	101
North Peds:	0
Peds Cross:	⋈

Heavys	0	0	0	0
Trucks	3	1	3	7
Cars	22	53	19	94
Totals	25	54	22	

Heavys	0
Trucks	4
Cars	44
Totals	48

East Leg Total:	676
East Entering:	269
East Peds:	0
Peds Cross:	⧖

Second Line

Heavys	Trucks	Cars	Totals
0	37	250	287

Cars	Trucks	Heavys	Totals
0	1	0	1
191	21	0	212
46	10	0	56
237	32	0	

Hwy 124

N
W E
S

Heavys	Trucks	Cars	Totals
0	2	19	21
0	31	288	319
0	12	90	102
0	45	397	

Hwy 124

Cars	Trucks	Heavys	Totals
354	53	0	407

Hwy 125

Peds Cross:	⧖
West Peds:	0
West Entering:	442
West Leg Total:	729

Cars	189
Trucks	23
Heavys	0
Totals	212

Cars	37	25	47	109
Trucks	13	1	19	33
Heavys	0	0	0	0
Totals	50	26	66	

Peds Cross:	⋈
South Peds:	0
South Entering:	142
South Leg Total:	354

Comments

Ontario Traffic Inc.

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

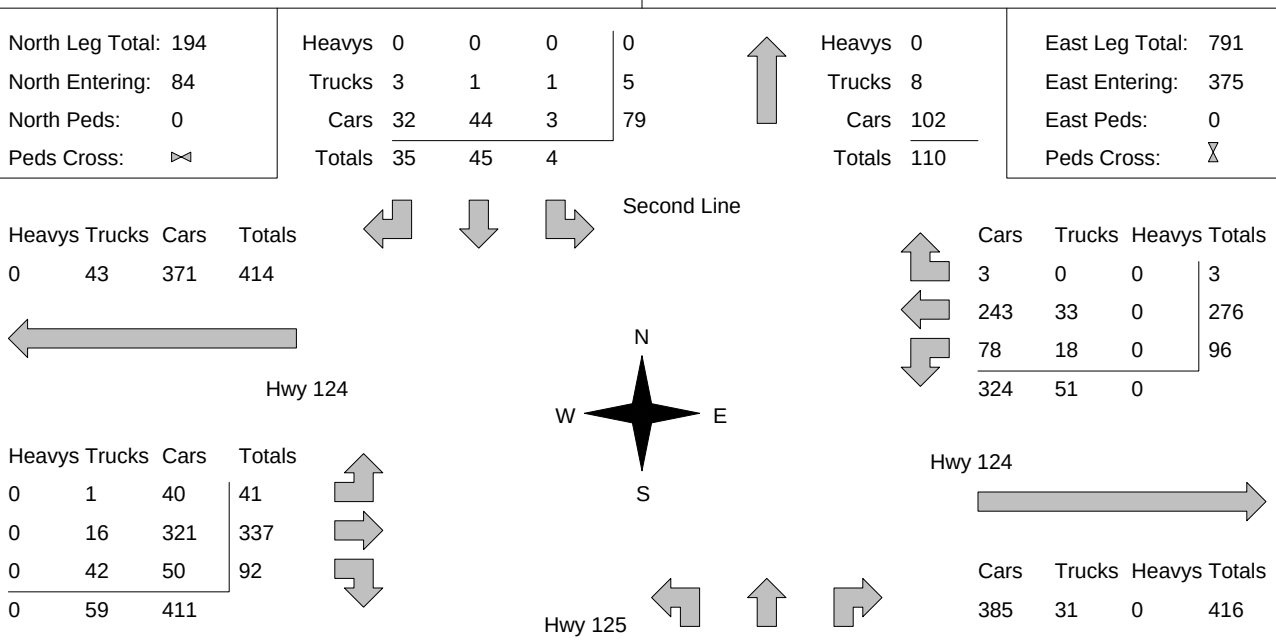
Municipality: Erin
Site #: 1725600001
Intersection: Hwy 124 & Second Line-Hwy 125
TFR File #: 3
Count date: 13-Sep-17

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Hwy 124 runs W/E



Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Erin
Site #: 1725600001
Intersection: Hwy 124 & Second Line-Hwy 125
TFR File #: 3
Count date: 13-Sep-17

Weather conditions:

Person(s) who counted:

**** Signalized Intersection ****

Major Road: Hwy 124 runs W/E

North Leg Total:	631			
North Entering:	323			
North Peds:	0			
Peds Cross:	⋈			
Heavys	0	0	0	0
Trucks	7	3	7	17
Cars	93	175	38	306
Totals	100	178	45	
Heavys	0			
Trucks	21			
Cars	287			
Totals	308			
East Leg Total:	2678			
East Entering:	1231			
East Peds:	0			
Peds Cross:	⧖			

Second Line

Heavys	Trucks	Cars	Totals
0	162	1159	1321

Cars	Trucks	Heavys	Totals
10	3	0	13
823	113	0	936
227	55	0	282
1060	171	0	

Hwy 124

N
W E
S

Heavys	Trucks	Cars	Totals
0	8	122	130
0	91	1076	1167
0	99	254	353
0	198	1452	

Hwy 124

Cars	Trucks	Heavys	Totals
1294	152	1	1447

Hwy 125

Peds Cross:	⧖			
West Peds:	0			
West Entering:	1650			
West Leg Total:	2971			
Cars	656			
Trucks	157			
Heavys	0			
Totals	813			
Cars	243	155	180	578
Trucks	42	10	54	106
Heavys	0	0	1	1
Totals	285	165	235	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	685			
South Leg Total:	1498			

Comments

Ontario Traffic Inc.
Traffic Count Summary

Intersection: Hwy 124 & Second Line-Hwy 125 | **Count Date:** 13-Sep-17 | **Municipality:** Erin

North Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys Left	Thru	Right	Grand Total	Total Peds	North/South Total Approaches
7:00:00	0	1	0	1	0	2
8:00:00	19	57	24	100	0	236
9:00:00	13	44	21	78	0	201
16:00:00	0	0	0	0	0	0
17:00:00	6	35	27	68	0	299
18:00:00	7	41	28	76	0	270
Totals:	45	178	100	323	0	1008

South Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	1	0	1	0
8:00:00	45	27	64	136	0
9:00:00	49	24	50	123	0
16:00:00	0	0	0	0	0
17:00:00	109	59	63	231	0
18:00:00	82	54	58	194	0
	285	165	235	685	0

East Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys Left	Thru	Right	Grand Total	Total Peds	East/West Total Approaches
7:00:00	0	0	0	0	0	0
8:00:00	52	196	0	248	0	661
9:00:00	58	214	7	279	0	668
16:00:00	1	3	0	4	0	6
17:00:00	72	255	1	328	0	764
18:00:00	99	266	5	370	0	777
Totals:	282	934	13	1229	0	2876

West Approach Totals

Hour Ending	Includes Cars, Trucks, & Heavys Left	Thru	Right	Grand Total	Total Peds
7:00:00	0	0	0	0	0
8:00:00	16	303	94	413	0
9:00:00	24	275	90	389	0
16:00:00	0	2	0	2	0
17:00:00	41	299	96	436	0
18:00:00	49	285	73	407	0
	130	1164	353	1647	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	0:00	0:00	7:00	8:00	9:00	16:00	17:00	18:00
Crossing Values:	0	0	1	121	106	0	174	143

Ontario Traffic Inc.

Count Date: 13-Sep-17 Site #: 1725600001

Interval Time	Passenger Cars - North Approach						Trucks - North Approach						Heavys - North Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		North Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	2	2	16	15	4	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0
7:30:00	7	5	35	19	6	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0
7:45:00	11	4	47	12	10	4	1	1	2	1	1	1	0	0	0	0	0	0	0	0
8:00:00	17	6	56	9	22	12	2	1	2	0	2	1	0	0	0	0	0	0	0	0
8:15:00	21	4	69	13	26	4	3	1	2	0	3	1	0	0	0	0	0	0	0	0
8:30:00	23	2	82	13	29	3	4	1	2	0	3	0	0	0	0	0	0	0	0	0
8:45:00	25	2	93	11	35	6	4	0	2	0	4	1	0	0	0	0	0	0	0	0
9:00:00	28	3	100	7	41	6	4	0	2	0	4	0	0	0	0	0	0	0	0	0
9:00:17	28	0	100	0	41	0	4	0	2	0	4	0	0	0	0	0	0	0	0	0
16:00:00	28	0	100	0	41	0	4	0	2	0	4	0	0	0	0	0	0	0	0	0
16:15:00	28	0	108	8	48	7	6	2	2	0	4	0	0	0	0	0	0	0	0	0
16:30:00	30	2	115	7	54	6	6	0	2	0	4	0	0	0	0	0	0	0	0	0
16:45:00	30	0	124	9	62	8	7	1	2	0	5	1	0	0	0	0	0	0	0	0
17:00:00	31	1	135	11	67	5	7	0	2	0	5	0	0	0	0	0	0	0	0	0
17:15:00	31	0	148	13	77	10	7	0	2	0	5	0	0	0	0	0	0	0	0	0
17:30:00	33	2	159	11	86	9	7	0	3	1	7	2	0	0	0	0	0	0	0	0
17:45:00	37	4	168	9	91	5	7	0	3	0	7	0	0	0	0	0	0	0	0	0
18:00:00	38	1	175	7	93	2	7	0	3	0	7	0	0	0	0	0	0	0	0	0
18:00:05	38	0	175	0	93	0	7	0	3	0	7	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 13-Sep-17 Site #: 1725600001

Interval Time	Passenger Cars - East Approach						Trucks - East Approach						Heavys - East Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		East Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	7	7	37	37	0	0	3	3	3	3	0	0	0	0	0	0	0	0	0	0
7:30:00	20	13	82	45	0	0	4	1	6	3	0	0	0	0	0	0	0	0	0	0
7:45:00	29	9	133	51	0	0	7	3	13	7	0	0	0	0	0	0	0	0	0	0
8:00:00	42	13	179	46	0	0	10	3	17	4	0	0	0	0	0	0	0	0	0	0
8:15:00	53	11	228	49	0	0	13	3	24	7	1	1	0	0	0	0	0	0	0	0
8:30:00	65	12	263	35	1	1	16	3	31	7	1	0	0	0	0	0	0	0	0	0
8:45:00	73	8	328	65	2	1	18	2	43	12	1	0	0	0	0	0	0	0	0	0
9:00:00	86	13	359	31	4	2	24	6	51	8	3	2	0	0	0	0	0	0	0	0
9:00:17	86	0	359	0	4	0	24	0	52	1	3	0	0	0	0	0	0	0	0	0
16:00:00	87	1	361	2	4	0	24	0	52	0	3	0	0	0	0	0	0	0	0	0
16:15:00	98	11	403	42	4	0	27	3	60	8	3	0	0	0	0	0	0	0	0	0
16:30:00	112	14	479	76	5	1	30	3	69	9	3	0	0	0	0	0	0	0	0	0
16:45:00	125	13	527	48	5	0	34	4	75	6	3	0	0	0	0	0	0	0	0	0
17:00:00	144	19	583	56	5	0	39	5	85	10	3	0	0	0	0	0	0	0	0	0
17:15:00	169	25	659	76	5	0	45	6	94	9	3	0	0	0	0	0	0	0	0	0
17:30:00	190	21	722	63	8	3	48	3	102	8	3	0	0	0	0	0	0	0	0	0
17:45:00	210	20	779	57	10	2	53	5	107	5	3	0	0	0	0	0	0	0	0	0
18:00:00	227	17	821	42	10	0	55	2	113	6	3	0	0	0	0	0	0	0	0	0
18:00:05	227	0	823	2	10	0	55	0	113	0	3	0	0	0	0	0	0	0	0	0

Ontario Traffic Inc.

Count Date: 13-Sep-17 Site #: 1725600001

Interval Time	Passenger Cars - South Approach						Trucks - South Approach						Heavys - South Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		South Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	9	9	9	8	7	7	0	0	0	0	5	5	0	0	0	0	0	0	0	0
7:30:00	14	5	14	5	18	11	5	5	0	0	11	6	0	0	0	0	0	0	0	0
7:45:00	26	12	22	8	27	9	7	2	0	0	17	6	0	0	0	0	0	0	0	0
8:00:00	34	8	27	5	43	16	11	4	1	1	21	4	0	0	0	0	0	0	0	0
8:15:00	46	12	34	7	54	11	13	2	1	0	24	3	0	0	0	0	0	0	0	0
8:30:00	55	9	38	4	60	6	17	4	2	1	27	3	0	0	0	0	1	1	0	0
8:45:00	62	7	43	5	74	14	19	2	2	0	29	2	0	0	0	0	1	0	0	0
9:00:00	73	11	50	7	80	6	21	2	2	0	33	4	0	0	0	0	1	0	0	0
9:00:17	73	0	50	0	80	0	21	0	2	0	33	0	0	0	0	0	1	0	0	0
16:00:00	73	0	50	0	80	0	21	0	2	0	33	0	0	0	0	0	1	0	0	0
16:15:00	96	23	61	11	87	7	27	6	2	0	36	3	0	0	0	0	1	0	0	0
16:30:00	117	21	75	14	101	14	35	8	3	1	39	3	0	0	0	0	1	0	0	0
16:45:00	139	22	90	15	112	11	37	2	8	5	41	2	0	0	0	0	1	0	0	0
17:00:00	163	24	103	13	131	19	40	3	8	0	45	4	0	0	0	0	1	0	0	0
17:15:00	191	28	119	16	149	18	42	2	8	0	51	6	0	0	0	0	1	0	0	0
17:30:00	213	22	134	15	162	13	42	0	10	2	53	2	0	0	0	0	1	0	0	0
17:45:00	230	17	146	12	172	10	42	0	10	0	54	1	0	0	0	0	1	0	0	0
18:00:00	243	13	155	9	180	8	42	0	10	0	54	0	0	0	0	0	1	0	0	0
18:00:05	243	0	155	0	180	0	42	0	10	0	54	0	0	0	0	0	1	0	0	0

Ontario Traffic Inc.

Count Date: 13-Sep-17 Site #: 1725600001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross	
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	1	1	67	67	24	24	0	0	6	6	0	0	0	0	0	0	0	0	0	0
7:30:00	6	5	140	73	45	21	1	1	14	8	1	1	0	0	0	0	0	0	0	0
7:45:00	10	4	203	63	64	19	1	0	19	5	4	3	0	0	0	0	0	0	0	0
8:00:00	14	4	273	70	84	20	2	1	30	11	10	6	0	0	0	0	0	0	0	0
8:15:00	20	6	355	82	114	30	2	0	37	7	12	2	0	0	0	0	0	0	0	0
8:30:00	26	6	419	64	135	21	2	0	47	10	13	1	0	0	0	0	0	0	0	0
8:45:00	31	5	461	42	148	13	2	0	54	7	19	6	0	0	0	0	0	0	0	0
9:00:00	38	7	512	51	160	12	2	0	66	12	24	5	0	0	0	0	0	0	0	0
9:00:17	38	0	514	2	160	0	2	0	66	0	24	0	0	0	0	0	0	0	0	0
16:00:00	38	0	514	0	160	0	2	0	66	0	24	0	0	0	0	0	0	0	0	0
16:15:00	47	9	574	60	172	12	2	0	71	5	34	10	0	0	0	0	0	0	0	0
16:30:00	54	7	622	48	186	14	7	5	74	3	46	12	0	0	0	0	0	0	0	0
16:45:00	59	5	700	78	201	15	7	0	79	5	57	11	0	0	0	0	0	0	0	0
17:00:00	73	14	794	94	211	10	8	1	85	6	69	12	0	0	0	0	0	0	0	0
17:15:00	82	9	878	84	222	11	8	0	88	3	80	11	0	0	0	0	0	0	0	0
17:30:00	94	12	943	65	236	14	8	0	90	2	88	8	0	0	0	0	0	0	0	0
17:45:00	113	19	1007	64	246	10	8	0	90	0	94	6	0	0	0	0	0	0	0	0
18:00:00	122	9	1073	66	254	8	8	0	91	1	99	5	0	0	0	0	0	0	0	0
18:00:05	122	0	1076	3	254	0	8	0	91	0	99	0	0	0	0	0	0	0	0	0

Appendix C – Signal Timing Plan (County Road 124 / Wellington County Road 125 & Second Line)

Wellington county 12 -24 124 & 125 Ospringe 7/4/2013 6:18

Configuration

Controller Sequence Priority

	1	2	3	4	5	6	7	8	9	10	11	12
Ring 1 Phases . .	1	2	3	4	9	10	0	0	0	0	0	0
Ring 2 Phases . .	5	6	7	8	11	12	0	0	0	0	0	0

Phase

	1	2	3	4	5	6	7	8	9	10	11	12
In Use.		X		X		X		X				
Exclusive Ped . . .												
Direction												

Overlap

	A	B	C	D
Direction . . .				

Load Switch Channel/Driver Group Assign (Info Only):

Load Switch (MMU) Channel	Signal Driver Phase/ Ovlap	Group Ped
1	1	.
2	2	.
3	3	.
4	4	.
5	5	.
6	6	.
7	7	.
8	8	.
9	2	X
10	4	X
11	6	X
12	8	X
13	A	.
14	B	.
15	C	.
16	D	.

Configuration Continued

```
                Enable BIU: 1  2  3  4  5  6  7  8
Terminal/Facilities. . . . . .  .  .  .  .  .  .  .
Detector Rack. . . . . .  .  .  .  .  .  .  .  .

Type 2 Runs as Type 1. . .  .
MMU Disable. . . . . .  X
Diagnostic Enable. . . . .  .
Peer-Peer Comm Enable. . .  .

                              1    2    3    4    5    6    7    8    9   10
Peer To Peer Addresses . . 255  255  255  255  255  255  255  255  255  255


Port 2:

Port 2 Protocol . . . . . Terminal
Port 2 Enable . . . . . YES
AB3418 Address. . . . . 0
AB3418 Group Address. . . . . 0
AB3418 Response Delay . . . . . 0
AB3418 Single Flag Enable . . . NO
AB3418 Drop-Out Time. . . . . 0
AB3418 TOD SF Select. . . . . 0
Data Rate . . . . . 1200 bps
Data, Parity, Stop. . . . . 8, 0, 1


Port 3:

Port 3 Protocol . . . . . Telemetry
Port 3 Enable . . . . . NO
Telemetry Address . . . . . 0
System Detector 9-16 Address. . 0
Telemetry Response Delay. . . . 6000
AB3418 Address. . . . . 0
AB3418 Group Address. . . . . 0
AB3418 Response Delay . . . . . 0
AB3418 Single Flag Enable . . . NO
AB3418 Drop-Out Time. . . . . 0
AB3418 TOD SF Select. . . . . 0
Duplex. . . . . Full
Data Rate . . . . . 1200 bps
Data, Parity, Stop. . . . . 8, 0, 1
```

Configuration Continued

Event Enabling		Alarm Enabling
Critical RFE'S (MMU/TF)		ALARM 1
Non-Critical RFE'S (DET/TEST)		ALARM 2
Detector Errors		ALARM 3
Coordination Errors		ALARM 4
MMU Flash Faults.		ALARM 5
Local Flash Faults.	X	ALARM 6
Preempt		ALARM 7
Power On/Off.	X	ALARM 8
Low Battery	X	ALARM 9
		ALARM 10.
		ALARM 11.
		ALARM 12.
		ALARM 13.
		ALARM 14.
		ALARM 15.
		ALARM 16.

Supervisor Access Code. . . ****
Data Change Access Code . . ****

MMU Compatibility Program (Info Only)

Channel Is Allowed to Time With Channel

Channel	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
3	.	.	.	.	.	.	.	.	.	.	.	.	.		
4	.	.	.	.	.	.	.	.	.	.	.	.			
5	.	.	.	.	.	.	.	.	.	.	.				
6	.	.	.	.	.	.	.	.	.	.					
7	.	.	.	.	.	.	.	.	.						
8	.	.	.	.	.	.	.	.							
9	.	.	.	.	.	.	.								
10	.	.	.	.	.	.									
11	.	.	.	.	.										
12	.	.	.	.											
13	.	.	.												
14	.	.													
15	.														

Version Info:

Software Assy.	Part No.	Version
Boot	27831	2.33
Program	27871	5.1
Application		. 3
Help	27891	4.63
Configuration	27906	C000

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By-Phase Timing Data

	Phase											
Direction	1	2	3	4	5	6	7	8	9	10	11	12
Minimum Green	5	20	5	15	5	20	5	15	5	5	5	5
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	15	0	13	0	15	0	13	0	10	0	10
Ped Clearance	0	5	0	5	0	5	0	5	0	16	0	16
Veh Extension	5.0	4.5	5.0	3.0	5.0	4.5	5.0	3.0	5.0	5.0	5.0	5.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	35	45	35	45	35	45	35	45	35	35	35	35
Max 2	40	40	40	40	40	40	40	40	40	40	40	40
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	5.9	3.0	5.9	3.0	5.9	3.0	5.9	3.0	3.0	3.0	3.0
Red Clearance	1.0	1.4	1.0	1.4	1.0	1.4	1.0	1.4	1.0	1.0	1.0	1.0
Red Revert	2.0	5.0	2.0	2.0	2.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	30	30	30	30	30	30	30	30	30	30	30	30
Time B4 Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

No-Serve Phases

	Phase Cannot Serve With Phase										
Phase	12	11	10	9	8	7	6	5	4	3	2
1	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	
3	.	.	.	.	.	.	.	.	.		
4	.	.	.	.	.	.	.	.			
5	.	.	.	.	.	.	.				
6	.	.	.	.	.	.					
7	.	.	.	.	.						
8	.	.	.	.							
9	.	.	.								
10	.	.									
11	.										

Ped Carryover

Ped Start Phase	Carry Over Phase
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0

Vehicle/Ped Phase as Overlap

Ped Ovlap Phase	Ped Phase As Overlap Consists of Ped Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.

Veh Ovlap Phase	Veh Phase As Overlap Consists of Veh Phases											
	1	2	3	4	5	6	7	8	9	10	11	12
1	X	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.
4	.	.	.	X	.	.	.	.	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.
11	.	.	.	.	.	.	.	.	.	.	X	.
12	.	.	.	.	.	.	.	.	.	.	.	X

Overlap Data

Overlap A	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.												
Protected												
Permitted												
Enable Lag.												
Enable Lead												
Spare												
Advance Green Timer				0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap B	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.												
Protected												
Permitted												
Enable Lag.												
Enable Lead												
Spare												
Advance Green Timer				0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap C	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.												
Protected												
Permitted												
Enable Lag.												
Enable Lead												
Spare												
Advance Green Timer				0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Overlap D	Phase: 1	2	3	4	5	6	7	8	9	10	11	12
Standard.												
Protected												
Permitted												
Enable Lag.												
Enable Lead												
Spare												
Advance Green Timer				0.0								

	Green	Yellow	Red
Lag/Lead Timers	0.0	0.0	0.0

Power Start, Remote Flash

	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12				
Power Start	.	X	.	.	.	X	.	.	.	.	.	.				
External Start	.	X	.	.	.	X	.	.	.	.	.	.				
Into Remote Flash	.	X	.	.	.	X	.	.	.	.	.	.				
Exit Remote Flash	.	X	.	.	.	X	.	.	.	.	.	.	Overlap			
Remote Flash Yellow	.	X	.	.	.	X	.	.	.	.	.	.	A	B	C	D
Flash Together	.	X	.	X	X	.	X	.	.	.	.	.	.	X	.	X

Initialization Interval:

Power Start	Yellow
External Start	Yellow

Power Start All Red Time	0
Power Start Flash Time	0

Remote Flash Options:

Out of Flash Yellow	YES
Out of Flash All Red	NO
Minimum Recall	NO
Alternate Flash	NO
Flash Thru Load Switches	YES
Cycle Through Phases	NO

Option Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Guaranteed Passage												
Call To NonActuated 1		X				X						
Call To NonActuated 2				X				X				
Dual Entry		X		X		X		X				
Conditional Service	X		X		X		X		X		X	
Conditional Reservice												
Actuated Rest in Walk		X				X						
Flashing Walk												

Enable Programmable Options

Dual Entry	ON	Backup Protection Group 1	OFF
Conditional Service	OFF	Backup Protection Group 2	OFF
Ped Clearance Protection	OFF	Backup Protection Group 3	OFF
Special Preempt Overlap Flash	OFF	Simultaneous Gap Group 1	OFF
Cond Service Det Cross Switch	OFF	Simultaneous Gap Group 2	OFF
Lock Detectors in Red Only	OFF	Simultaneous Gap Group 3	OFF

Five Section Left Turn Control

Phases:	5-2	7-4	1-6	3-8	11-10	9-12
Left Turn Head						

Recall Data, Dimming

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Locking Detector. . . .	.	X	.	.	.	X	.	.	.	.	.	.
Vehicle Recall.	.	.	.	.	.	.	.	.	.	.	.	.
Pedestrian Recall . . .	.	X	.	.	.	X	.	.	.	.	.	.
Recall To Max	.	.	.	.	.	.	.	.	.	.	.	.
Soft Recall	.	.	.	.	.	.	.	.	.	.	.	.
Don't Rest Here	.	.	.	.	.	.	.	.	.	.	.	.
Ped Dark if No Call . .	.	.	.	.	.	.	.	.	.	.	.	.

Dimming:

	Load Switch															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green/Walk. . . .	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Yellow/Ped Clear.	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
Red/Don't Walk. .	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

Detector Type/Timers

Det.	Locking Memory	Log Enable	Timers Extend	Timers Delay	Don't Reset Extend	Type
1	NO	NO	0.0	0	.	0 - Normal
2	NO	NO	0.0	0	.	0 - Normal
3	NO	NO	0.0	0	.	0 - Normal
4	NO	NO	0.0	10	.	1 - Extend/Delay
5	NO	NO	0.0	0	.	0 - Normal
6	NO	NO	0.0	0	.	0 - Normal
7	NO	NO	0.0	0	.	0 - Normal
8	NO	NO	0.0	0	.	0 - Normal
9	NO	NO	0.0	0	.	0 - Normal
10	NO	NO	0.0	0	.	0 - Normal
11	NO	NO	0.0	10	.	1 - Extend/Delay
12	NO	NO	0.0	0	.	0 - Normal
13	NO	NO	0.0	0	.	0 - Normal
14	NO	NO	0.0	0	.	0 - Normal
15	NO	NO	0.0	0	.	0 - Normal
16	NO	NO	0.0	0	.	0 - Normal
17	NO	NO	0.0	0	.	0 - Normal
18	NO	NO	0.0	0	.	0 - Normal
19	NO	NO	0.0	0	.	0 - Normal
20	NO	NO	0.0	10	.	1 - Extend/Delay
21	NO	NO	0.0	0	.	0 - Normal
22	NO	NO	0.0	0	.	0 - Normal
23	NO	NO	0.0	0	.	0 - Normal
24	NO	NO	0.0	0	.	0 - Normal
25	NO	NO	0.0	0	.	0 - Normal
26	NO	NO	0.0	10	.	1 - Extend/Delay
27	NO	NO	0.0	0	.	0 - Normal
28	NO	NO	0.0	0	.	0 - Normal
29	NO	NO	0.0	0	.	0 - Normal
30	NO	NO	0.0	0	.	0 - Normal
31	NO	NO	0.0	0	.	0 - Normal
32	NO	NO	0.0	0	.	0 - Normal

Detector Names

Det 1: Detector 1	Det 17: Detector 17
Det 2: Detector 2	Det 18: Detector 18
Det 3: Detector 3	Det 19: Detector 19
Det 4: Detector 4	Det 20: Detector 20
Det 5: Detector 5	Det 21: Detector 21
Det 6: Detector 6	Det 22: Detector 22
Det 7: Detector 7	Det 23: Detector 23
Det 8: Detector 8	Det 24: Detector 24
Det 9: Detector 9	Det 25: Detector 25
Det 10: Detector 10	Det 26: Detector 26
Det 11: Detector 11	Det 27: Detector 27
Det 12: Detector 12	Det 28: Detector 28
Det 13: Detector 13	Det 29: Detector 29
Det 14: Detector 14	Det 30: Detector 30
Det 15: Detector 15	Det 31: Detector 31
Det 16: Detector 16	Det 32: Detector 32

Detector Type/Timers

33	NO	NO	0.0	0	.	0 - Normal
34	NO	NO	0.0	0	.	0 - Normal
35	NO	NO	0.0	0	.	0 - Normal
36	NO	NO	0.0	0	.	0 - Normal
37	NO	NO	0.0	0	.	0 - Normal
38	NO	NO	0.0	0	.	0 - Normal
39	NO	NO	0.0	0	.	0 - Normal
40	NO	NO	0.0	0	.	0 - Normal
41	NO	NO	0.0	0	.	0 - Normal
42	NO	NO	0.0	0	.	0 - Normal
43	NO	NO	0.0	0	.	0 - Normal
44	NO	NO	0.0	0	.	0 - Normal
45	NO	NO	0.0	0	.	0 - Normal
46	NO	NO	0.0	0	.	0 - Normal
47	NO	NO	0.0	0	.	0 - Normal
48	NO	NO	0.0	0	.	0 - Normal
49	NO	NO	0.0	0	.	0 - Normal
50	NO	NO	0.0	0	.	0 - Normal
51	NO	NO	0.0	0	.	0 - Normal
52	NO	NO	0.0	0	.	0 - Normal
53	NO	NO	0.0	0	.	0 - Normal
54	NO	NO	0.0	0	.	0 - Normal
55	NO	NO	0.0	0	.	0 - Normal
56	NO	NO	0.0	0	.	0 - Normal
57	NO	NO	0.0	0	.	0 - Normal
58	NO	NO	0.0	0	.	0 - Normal
59	NO	NO	0.0	0	.	0 - Normal
60	NO	NO	0.0	0	.	0 - Normal
61	NO	NO	0.0	0	.	0 - Normal
62	NO	NO	0.0	0	.	0 - Normal
63	NO	NO	0.0	0	.	0 - Normal
64	NO	NO	0.0	0	.	0 - Normal

Detector Names

Det 33: Detector 33	Det 49: Detector 49
Det 34: Detector 34	Det 50: Detector 50
Det 35: Detector 35	Det 51: Detector 51
Det 36: Detector 36	Det 52: Detector 52
Det 37: Detector 37	Det 53: Detector 53
Det 38: Detector 38	Det 54: Detector 54
Det 39: Detector 39	Det 55: Detector 55
Det 40: Detector 40	Det 56: Detector 56
Det 41: Detector 41	Det 57: Detector 57
Det 42: Detector 42	Det 58: Detector 58
Det 43: Detector 43	Det 59: Detector 59
Det 44: Detector 44	Det 60: Detector 60
Det 45: Detector 45	Det 61: Detector 61
Det 46: Detector 46	Det 62: Detector 62
Det 47: Detector 47	Det 63: Detector 63
Det 48: Detector 48	Det 64: Detector 64

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Detector Phase Assignment

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
1	X	.	.	.	.	.	.	.	.	.	.	.
2	.	X	.	.	.	.	.	.	.	.	.	.
3	.	.	X	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	X	.	.	.	.
5	.	.	.	.	X	.	.	.	.	.	.	.
6	.	.	.	.	.	X	.	.	.	.	.	.
7	.	.	.	.	.	.	X	.	.	.	.	.
8	.	.	.	.	.	.	.	X	.	.	.	.
9	.	.	.	.	.	.	.	.	X	.	.	.
10	.	.	.	.	.	.	.	.	.	X	.	.
11	.	.	.	.	.	.	.	X	.	.	.	.
12	.	.	.	X	.	.	.	X	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.
18	.	X	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	X	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	.	.	.
22	.	.	.	.	.	.	.	.	.	.	.	.
23	.	.	.	.	.	.	.	.	.	.	.	.
24	.	.	.	.	.	.	.	.	.	.	.	.
25	.	.	.	.	.	X	.	.	.	.	.	.
26	.	.	.	X	.	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.	.	.	.	.	.
30	.	.	.	.	.	.	.	.	.	.	.	.
31	.	.	.	.	.	.	.	.	.	.	.	.
32	.	.	.	.	.	.	.	.	.	.	.	.

Detector Cross Switching

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
1	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.
15	.	.	.	.	.	.	.	.	.	.	.	.
16	.	.	.	.	.	.	.	.	.	.	.	.
17	.	.	.	.	.	.	.	.	.	.	.	.
18	.	.	.	.	.	.	.	.	.	.	.	.
19	.	.	.	.	.	.	.	.	.	.	.	.
20	.	.	.	.	.	.	.	.	.	.	.	.
21	.	.	.	.	.	.	.	.	.	.	.	.
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32	.	.	.	.	.	.	.	.	.	.	.	.

Detector Cross Switching

	Phase											
Det.	1	2	3	4	5	6	7	8	9	10	11	12
33	.	.	.	.	.	.	.	.	.	.	.	.
34	.	.	.	.	.	.	.	.	.	.	.	.
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64	.	.	.	.	.	.	.	.	.	.	.	.

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Ped/SD Local Assign,Log Interval

Phase Ped Detector

	1	2	3	4	5	6	7	8	9	10	11	12
Is Ped Detector No. . . .	0	1	0	2	0	3	0	4	0	0	0	0

*Local System Detector No.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Is Local Detector No. . .	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Detector Log Interval . . 0

*NOTE: System master designations cross referenced to local
system detector numbers are:
SDA1 = 1 & 9
SDA2 = 2 & 10
SDB1 = 3 & 11
SDB2 = 4 & 12
SDC1 = 5 & 13
SDC2 = 6 & 14
SDD1 = 7 & 15
SDD2 = 8 & 16

Diagnostic Plans/Fail Action

	Detector															
Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Detector															
Plan	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect
3 = Detector Fail Max Tiime from By-Phase Timing Data

Diagnostic Plans/Fail Action

Plan	Detector 33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Plan	Detector 49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
1 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8 Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Scaling	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
*Fail Action	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*NOTE: 0 = No Action, 1 = Min Recall, 2 = Max Recall in Effect
3 = Detector Fail Max Tiime from By-Phase Timing Data

Ped Diagnostic Plans

Plan		1	2	3	4	5	6	7	8	9	10	11	12
1	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
2	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
3	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
4	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
5	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
6	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
7	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1
8	Diagnostic	0	0	0	0	0	0	0	0	0	0	0	0
	Scaling	1	1	1	1	1	1	1	1	1	1	1	1

Detector Diagnostic Intervals

Diagnostic Number	*No-Activity Diagnostic Interval	*Max Presence Diagnostic Interval	Erratic Counts
1	0	0	0
2	0	0	0
3	0	0	0
4	0	0	0
5	0	0	0
6	0	0	0
7	0	0	0
8	0	0	0
9	0	0	0
10	0	0	0
11	0	0	0
12	0	0	0
13	0	0	0
14	0	0	0
15	0	0	0
16	0	0	0
17	0	0	0
18	0	0	0
19	0	0	0
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0
24	0	0	0
25	0	0	0
26	0	0	0
27	0	0	0
28	0	0	0
29	0	0	0
30	0	0	0
31	0	0	0
32	0	0	0

*NOTE: Scaling is specified in each detector diagnostic plan.

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Speed Detectors

	Local Speed Detector							
One Detector Speed:	1	2	3	4	5	6	7	8
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Vehicle Length	0	0	0	0	0	0	0	0
Loop Length.	0	0	0	0	0	0	0	0
Two Detector Speed:								
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Speed Trap Length.	0	0	0	0	0	0	0	0

	Local Speed Detector							
One Detector Speed:	9	10	11	12	13	14	15	16
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Vehicle Length	0	0	0	0	0	0	0	0
Loop Length.	0	0	0	0	0	0	0	0
Two Detector Speed:								
Local Detector Number. . . .	0	0	0	0	0	0	0	0
Speed Trap Length.	0	0	0	0	0	0	0	0

Units. . . . . Inches

NOTE: Speed Detector 1 = STA, Speed Detector 2 = STB

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Coordinator Manual Command and Options

Manual Enable . . . . . Pattern 0

Split Units . . . . . Percent OffsetUnits . . . . . Percent
Interconnect Format . PLAN Interconnect Source . NIC
Transition. . . . . SMOOTH Dwell Period. 0
Resync Count. 0

Actuated Coord Phase . . . . Actuated Walk Rest . . . .
Inhibit Max Timing . . . . . Max 2 Select . . . . . .
Floating Force Off . . . . . Multisync. . . . . .

Split Demand:	Call	Time	Cyc Count	Phase 1	2	3	4	5	6	7	8	9	10	11	12
Demand 1 . .	0		0	.	.	.	.	.	.	.	.	.	.	.	.
Demand 2 . .	0		0	.	.	.	.	.	.	.	.	.	.	.	.

	Phase 1	2	3	4	5	6	7	8	9	10	11	12
Auto Permissive Min Green .	0	0	0	0	0	0	0	0	0	0	0	0

	A	B	C	D	E	F
Free Alternate Sequence . .	.	.	.	.	.	.

Coordination Patterns

Preemptors

Preemptor 1

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Preemptor 2

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green
Linked Preemptor 0

Preemptors

Preemptor 3

Active	Det Lock.	Ped Dark . . . . .
Priority Preemption.	Yel-Red To Grn. . .	Ped Active . . . . .
Outputs Only During Hold . . .	Flash All Outputs .	Zero Ped Clr Time. .
Terminate Overlap ASAP	Terminate Phases. .	Ped Clr Thru Yel . .
Don't Override Flash	Duration Time. . . 0	
Flash During Hold.	Delay Time 0	
No CVM in Flash.	Inhibit Time . . . 0	
Fast Flash Grn on Hold Phase. .	Min Ped Clear. . . 0	
Enable Max Time.	Max Time 0	
	Exit Max 0	
	Min Hold Time. . . 0	
	Hold Delay Time. . 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold.		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Preemptor 4

Active	Det Lock.	Ped Dark . . . . .
Priority Preemption.	Yel-Red To Grn. . .	Ped Active . . . . .
Outputs Only During Hold . . .	Flash All Outputs .	Zero Ped Clr Time. .
Terminate Overlap ASAP	Terminate Phases. .	Ped Clr Thru Yel . .
Don't Override Flash	Duration Time. . . 0	
Flash During Hold.	Delay Time 0	
No CVM in Flash.	Inhibit Time . . . 0	
Fast Flash Grn on Hold Phase. .	Min Ped Clear. . . 0	
Enable Max Time.	Max Time 0	
	Exit Max 0	
	Min Hold Time. . . 0	
	Hold Delay Time. . 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold.		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green

Linked Preemptor 0

Preemptors

Preemptor 5

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green
Linked Preemptor 0

Preemptor 6

Active	Det Lock	Ped Dark
Priority Preemption	Yel-Red To Grn	Ped Active
Outputs Only During Hold	Flash All Outputs	Zero Ped Clr Time
Terminate Overlap ASAP	Terminate Phases	Ped Clr Thru Yel
Don't Override Flash	Duration Time 0	
Flash During Hold	Delay Time 0	
No CVM in Flash	Inhibit Time 0	
Fast Flash Grn on Hold Phase	Min Ped Clear 0	
Enable Max Time	Max Time 0	
	Exit Max 0	
	Min Hold Time 0	
	Hold Delay Time 0	

	Green	Yellow	Red
Minimum	0	0.0	0.0
Track Clear	0	0.0	0.0
Hold		0.0	0.0

Phase/Overlap	1	2	3	4	5	6	7	8	9	10	11	12/	A	B	C	D
Terminate Overlap																
Track Clearance Phase																
Hold Phases																
Exit Phases																
Exit Calls on Phase																

Out of Flash Color for Exit Phases . . . . Green
Linked Preemptor 0

Bus Preemptors

	Bus Preemptor 1	2	3	4
Preemptor Active	.	.	.	.
Detector Lock	.	.	.	.
Maximum Time	0	0	0	0
Reservice Time	0	0	0	0
Delay Time	0	0	0	0
Inhibit Time	0	0	0	0
Entrance Green	0	0	0	0
Entrance Ped Clearance	0	0	0	0
Entrance Yellow	0.0	0.0	0.0	0.0
Entrance Red	0.0	0.0	0.0	0.0
Minimum Hold Time	0	0	0	0

	Hold Phases 1	2	3	4	5	6	7	8	9	10	11	12
Preemptor 1	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 2	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 3	.	.	.	.	.	.	.	.	.	.	.	.
Preemptor 4	.	.	.	.	.	.	.	.	.	.	.	.

NIC/TOD Clock/Calendar

Manual NIC Program Step 0

Manual TOD Program Step 0

NIC Resync Time 0000

Sync Reference is . . . . . Reference Time

Week 1 Begins on 1st Sunday . . . . . NO If NO, then week containing Jan. 1

Disable Daylight Savings Time . . . . . NO

Daylight Savings
Begins Last Sunday in March . . . . . NO If NO, then Second Sunday as per 2007 DST Law

TOD Weekly/Yearly

Weekly Program Numbers

	1	2	3	4	5	6	7	8	9	10	
Sunday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Monday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Tuesday. . .	1	1	1	1	1	1	1	1	1	1	Program No.
Wednesday. .	1	1	1	1	1	1	1	1	1	1	Program No.
Thursday . .	1	1	1	1	1	1	1	1	1	1	Program No.
Friday . . .	1	1	1	1	1	1	1	1	1	1	Program No.
Saturday . .	1	1	1	1	1	1	1	1	1	1	Program No.

Week of Year

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Prog	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Holiday Programs

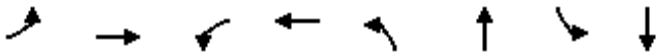
Holiday	Type	Month	Day of Week/ Day of Month	Week of Year/ Year	Program
1	Fixed	0	0	0	0
2	Fixed	0	0	0	0
3	Fixed	0	0	0	0
4	Fixed	0	0	0	0
5	Fixed	0	0	0	0
6	Fixed	0	0	0	0
7	Fixed	0	0	0	0
8	Fixed	0	0	0	0
9	Fixed	0	0	0	0
10	Fixed	0	0	0	0
11	Fixed	0	0	0	0
12	Fixed	0	0	0	0
13	Fixed	0	0	0	0
14	Fixed	0	0	0	0
15	Fixed	0	0	0	0
16	Fixed	0	0	0	0
17	Fixed	0	0	0	0
18	Fixed	0	0	0	0
19	Fixed	0	0	0	0
20	Fixed	0	0	0	0
21	Fixed	0	0	0	0
22	Fixed	0	0	0	0
23	Fixed	0	0	0	0
24	Fixed	0	0	0	0
25	Fixed	0	0	0	0
26	Fixed	0	0	0	0
27	Fixed	0	0	0	0
28	Fixed	0	0	0	0
29	Fixed	0	0	0	0
30	Fixed	0	0	0	0
31	Fixed	0	0	0	0
32	Fixed	0	0	0	0
33	Fixed	0	0	0	0
34	Fixed	0	0	0	0
35	Fixed	0	0	0	0
36	Fixed	0	0	0	0

NIC Program Steps

Step	Program	Step Begins	Pattern	Override

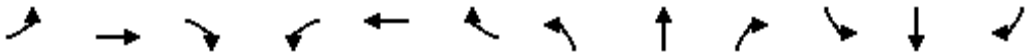
TOD Program Steps

Appendix D – Existing Traffic Conditions: Synchro Outputs



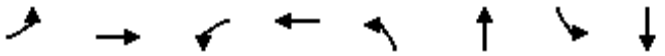
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	554	69	263	57	106	25	91
v/c Ratio	0.05	0.57	0.19	0.26	0.19	0.23	0.08	0.18
Control Delay	7.9	13.0	10.1	9.4	19.8	9.6	18.5	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.9	13.0	10.1	9.4	19.8	9.6	18.5	14.3
Queue Length 50th (m)	1.4	39.5	3.9	15.4	4.2	2.1	1.8	4.6
Queue Length 95th (m)	3.8	49.8	8.9	23.8	13.8	12.8	7.4	15.5
Internal Link Dist (m)		331.5		258.7		306.5		320.6
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	877	1412	534	1462	895	1193	976	1467
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.39	0.13	0.18	0.06	0.09	0.03	0.06

Intersection Summary



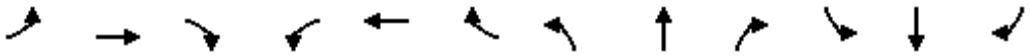
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	319	102	56	212	1	50	26	66	22	54	25
Future Volume (vph)	21	319	102	56	212	1	50	26	66	22	54	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1659	1676		1547	1740		1448	1406		1601	1739	
Flt Permitted	0.60	1.00		0.39	1.00		0.70	1.00		0.69	1.00	
Satd. Flow (perm)	1042	1676		634	1740		1064	1406		1160	1739	
Peak-hour factor, PHF	0.76	0.76	0.76	0.81	0.81	0.81	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	28	420	134	69	262	1	57	30	76	25	62	29
RTOR Reduction (vph)	0	9	0	0	0	0	0	60	0	0	22	0
Lane Group Flow (vph)	28	545	0	69	263	0	57	46	0	25	69	0
Heavy Vehicles (%)	10%	10%	12%	18%	10%	100%	26%	4%	29%	14%	2%	12%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	29.3	29.3		29.3	29.3		11.5	11.5		11.5	11.5	
Effective Green, g (s)	29.3	29.3		29.3	29.3		11.5	11.5		11.5	11.5	
Actuated g/C Ratio	0.53	0.53		0.53	0.53		0.21	0.21		0.21	0.21	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	551	886		335	920		220	291		240	360	
v/s Ratio Prot		c0.33			0.15			0.03			0.04	
v/s Ratio Perm	0.03			0.11			c0.05			0.02		
v/c Ratio	0.05	0.62		0.21	0.29		0.26	0.16		0.10	0.19	
Uniform Delay, d1	6.3	9.1		6.9	7.2		18.4	18.0		17.8	18.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	1.6		0.5	0.3		0.6	0.3		0.2	0.3	
Delay (s)	6.4	10.8		7.4	7.5		19.0	18.2		18.0	18.4	
Level of Service	A	B		A	A		B	B		B	B	
Approach Delay (s)		10.5			7.5			18.5			18.3	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	14.6
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	482	114	333	139	190	5	96
v/c Ratio	0.10	0.67	0.40	0.45	0.38	0.38	0.02	0.18
Control Delay	9.5	17.0	15.2	12.8	20.6	13.7	16.5	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	17.0	15.2	12.8	20.6	13.7	16.5	11.4
Queue Length 50th (m)	2.4	32.6	6.9	20.6	9.8	8.2	0.3	3.5
Queue Length 95th (m)	7.5	63.9	17.3	37.3	22.5	20.1	2.5	13.3
Internal Link Dist (m)		331.5		258.7		306.5		320.6
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	884	1372	553	1436	1046	1297	822	1438
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.35	0.21	0.23	0.13	0.15	0.01	0.07

Intersection Summary

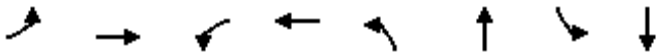


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	337	92	96	276	3	103	66	75	4	45	35
Future Volume (vph)	41	337	92	96	276	3	103	66	75	4	45	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1635		1534	1714		1706	1534		1460	1709	
Flt Permitted	0.56	1.00		0.41	1.00		0.69	1.00		0.64	1.00	
Satd. Flow (perm)	1054	1635		661	1714		1248	1534		980	1709	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	46	379	103	114	329	4	139	89	101	5	54	42
RTOR Reduction (vph)	0	9	0	0	1	0	0	49	0	0	30	0
Lane Group Flow (vph)	46	473	0	114	332	0	139	141	0	5	66	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	23.8	23.8		23.8	23.8		15.9	15.9		15.9	15.9	
Effective Green, g (s)	23.8	23.8		23.8	23.8		15.9	15.9		15.9	15.9	
Actuated g/C Ratio	0.44	0.44		0.44	0.44		0.29	0.29		0.29	0.29	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	461	716		289	751		365	449		286	500	
v/s Ratio Prot		c0.29			0.19			0.09			0.04	
v/s Ratio Perm	0.04			0.17			c0.11			0.01		
v/c Ratio	0.10	0.66		0.39	0.44		0.38	0.31		0.02	0.13	
Uniform Delay, d1	9.0	12.1		10.4	10.6		15.3	15.0		13.6	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.7		1.5	0.7		0.7	0.4		0.0	0.1	
Delay (s)	9.1	14.8		11.9	11.3		15.9	15.4		13.7	14.2	
Level of Service	A	B		B	B		B	B		B	B	
Approach Delay (s)		14.3			11.5			15.6			14.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	14.6
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		

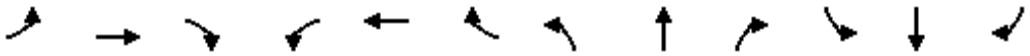
c Critical Lane Group

Appendix E – 2023 Future Background Traffic Conditions: Synchro Outputs



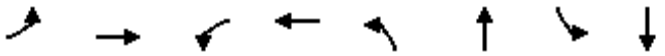
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	512	70	305	81	148	27	102
v/c Ratio	0.05	0.69	0.25	0.39	0.24	0.31	0.10	0.20
Control Delay	8.1	16.8	11.4	11.4	19.1	8.8	17.8	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	16.8	11.4	11.4	19.1	8.8	17.8	14.6
Queue Length 50th (m)	1.2	35.8	3.9	18.4	5.8	2.7	1.9	5.4
Queue Length 95th (m)	4.1	60.8	9.6	29.4	14.2	10.7	7.2	15.8
Internal Link Dist (m)		331.5		258.7		306.5		320.6
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	898	1348	520	1426	1031	1235	847	1471
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.38	0.13	0.21	0.08	0.12	0.03	0.07

Intersection Summary



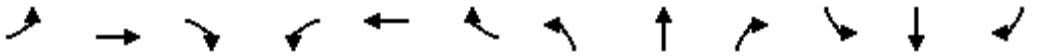
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	349	107	59	255	1	60	29	81	22	60	25
Future Volume (vph)	21	349	107	59	255	1	60	29	81	22	60	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.89		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1617		1534	1715		1706	1462		1460	1765	
Flt Permitted	0.57	1.00		0.39	1.00		0.69	1.00		0.66	1.00	
Satd. Flow (perm)	1082	1617		627	1715		1241	1462		1019	1765	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	24	392	120	70	304	1	81	39	109	27	72	30
RTOR Reduction (vph)	0	10	0	0	0	0	0	79	0	0	18	0
Lane Group Flow (vph)	24	502	0	70	305	0	81	69	0	27	84	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	24.7	24.7		24.7	24.7		15.1	15.1		15.1	15.1	
Effective Green, g (s)	24.7	24.7		24.7	24.7		15.1	15.1		15.1	15.1	
Actuated g/C Ratio	0.45	0.45		0.45	0.45		0.28	0.28		0.28	0.28	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	491	734		284	778		344	405		282	489	
v/s Ratio Prot		c0.31			0.18			0.05			0.05	
v/s Ratio Perm	0.02			0.11			c0.07			0.03		
v/c Ratio	0.05	0.68		0.25	0.39		0.24	0.17		0.10	0.17	
Uniform Delay, d1	8.3	11.8		9.1	9.9		15.2	14.9		14.6	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.1		0.8	0.6		0.4	0.2		0.1	0.2	
Delay (s)	8.4	14.9		9.9	10.4		15.5	15.1		14.7	15.1	
Level of Service	A	B		A	B		B	B		B	B	
Approach Delay (s)		14.6			10.3			15.3			15.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	14.6
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	530	130	398	151	212	5	103
v/c Ratio	0.11	0.70	0.48	0.51	0.43	0.44	0.02	0.20
Control Delay	9.4	17.6	17.6	13.4	24.2	16.9	19.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	17.6	17.6	13.4	24.2	16.9	19.5	13.7
Queue Length 50th (m)	2.4	37.6	8.3	25.8	11.8	11.1	0.4	4.4
Queue Length 95th (m)	7.7	75.3	21.3	47.2	29.0	27.8	2.8	16.7
Internal Link Dist (m)		331.5		258.7		306.5		320.6
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	737	1290	467	1354	978	1226	759	1367
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.41	0.28	0.29	0.15	0.17	0.01	0.08

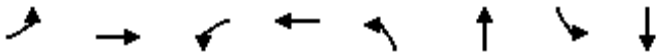
Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	368	104	109	331	3	112	75	82	4	51	35
Future Volume (vph)	41	368	104	109	331	3	112	75	82	4	51	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1629		1534	1715		1706	1537		1460	1720	
Flt Permitted	0.50	1.00		0.37	1.00		0.69	1.00		0.63	1.00	
Satd. Flow (perm)	934	1629		592	1715		1240	1537		961	1720	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	46	413	117	130	394	4	151	101	111	5	61	42
RTOR Reduction (vph)	0	9	0	0	1	0	0	47	0	0	30	0
Lane Group Flow (vph)	46	521	0	130	397	0	151	165	0	5	73	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	27.0	27.0		27.0	27.0		16.8	16.8		16.8	16.8	
Effective Green, g (s)	27.0	27.0		27.0	27.0		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.29	0.29		0.29	0.29	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	431	753		273	792		356	442		276	494	
v/s Ratio Prot		c0.32			0.23			0.11			0.04	
v/s Ratio Perm	0.05			0.22			c0.12			0.01		
v/c Ratio	0.11	0.69		0.48	0.50		0.42	0.37		0.02	0.15	
Uniform Delay, d1	8.9	12.4		10.8	11.0		16.9	16.6		14.9	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.2		2.3	0.9		0.8	0.5		0.0	0.1	
Delay (s)	9.1	15.6		13.1	11.9		17.7	17.1		14.9	15.6	
Level of Service	A	B		B	B		B	B		B	B	
Approach Delay (s)		15.1			12.2			17.4			15.6	
Approach LOS		B			B			B			B	

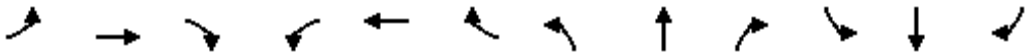
Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	14.6
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Appendix F – 2023 Future Total Traffic Conditions (Scenario 1): Synchro Outputs



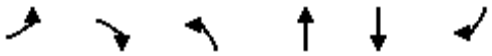
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	512	70	306	81	150	34	111
v/c Ratio	0.05	0.69	0.25	0.40	0.24	0.31	0.12	0.22
Control Delay	8.1	16.9	11.4	11.4	19.3	9.0	18.3	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	16.9	11.4	11.4	19.3	9.0	18.3	14.8
Queue Length 50th (m)	1.3	35.8	3.9	18.6	5.8	2.8	2.4	5.9
Queue Length 95th (m)	4.3	60.5	9.5	29.4	14.5	11.1	8.6	17.2
Internal Link Dist (m)		331.5		258.7		306.5		41.5
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	903	1354	523	1432	1027	1241	849	1472
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.38	0.13	0.21	0.08	0.12	0.04	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	349	107	59	255	2	60	30	81	28	63	29
Future Volume (vph)	23	349	107	59	255	2	60	30	81	28	63	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1617		1534	1715		1706	1465		1460	1756	
Flt Permitted	0.57	1.00		0.39	1.00		0.69	1.00		0.66	1.00	
Satd. Flow (perm)	1081	1617		626	1715		1231	1465		1017	1756	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	26	392	120	70	304	2	81	41	109	34	76	35
RTOR Reduction (vph)	0	10	0	0	0	0	0	79	0	0	20	0
Lane Group Flow (vph)	26	502	0	70	306	0	81	71	0	34	91	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	24.5	24.5		24.5	24.5		15.1	15.1		15.1	15.1	
Effective Green, g (s)	24.5	24.5		24.5	24.5		15.1	15.1		15.1	15.1	
Actuated g/C Ratio	0.45	0.45		0.45	0.45		0.28	0.28		0.28	0.28	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	488	730		282	775		342	408		283	489	
v/s Ratio Prot		c0.31			0.18			0.05			0.05	
v/s Ratio Perm	0.02			0.11			c0.07			0.03		
v/c Ratio	0.05	0.69		0.25	0.39		0.24	0.17		0.12	0.19	
Uniform Delay, d1	8.3	11.8		9.2	9.9		15.1	14.8		14.6	14.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.2		0.8	0.6		0.4	0.2		0.2	0.2	
Delay (s)	8.4	15.0		10.0	10.5		15.5	15.0		14.8	15.1	
Level of Service	A	B		A	B		B	B		B	B	
Approach Delay (s)		14.7			10.4			15.2			15.0	
Approach LOS		B			B			B			B	

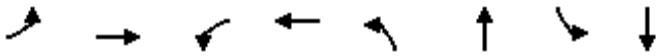
Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	54.2	Sum of lost time (s)	14.6
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	13	4	51	107	1
Future Volume (Veh/h)	1	13	4	51	107	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	14	4	55	116	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				66		
pX, platoon unblocked						
vC, conflicting volume	180	116	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	180	116	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	808	936	1471			

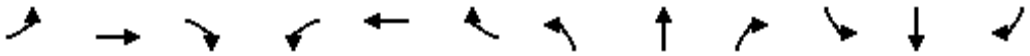
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	59	117
Volume Left	1	4	0
Volume Right	14	0	1
cSH	926	1471	1700
Volume to Capacity	0.02	0.00	0.07
Queue Length 95th (m)	0.4	0.1	0.0
Control Delay (s)	9.0	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		



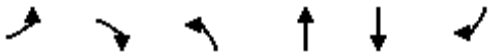
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	530	130	402	151	215	7	108
v/c Ratio	0.12	0.70	0.48	0.51	0.43	0.44	0.03	0.21
Control Delay	9.5	17.7	17.7	13.5	24.2	17.2	19.5	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.5	17.7	17.7	13.5	24.2	17.2	19.5	13.9
Queue Length 50th (m)	2.7	37.6	8.3	26.1	11.8	11.5	0.5	4.6
Queue Length 95th (m)	8.4	75.6	21.4	47.9	29.0	28.6	3.5	17.4
Internal Link Dist (m)		331.5		258.7		306.5		41.5
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	732	1289	467	1353	973	1229	757	1363
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.41	0.28	0.30	0.16	0.17	0.01	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	368	104	109	331	7	112	77	82	6	52	37
Future Volume (vph)	45	368	104	109	331	7	112	77	82	6	52	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1629		1534	1714		1706	1539		1460	1717	
Flt Permitted	0.49	1.00		0.37	1.00		0.69	1.00		0.62	1.00	
Satd. Flow (perm)	926	1629		592	1714		1234	1539		958	1717	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	51	413	117	130	394	8	151	104	111	7	63	45
RTOR Reduction (vph)	0	9	0	0	1	0	0	46	0	0	31	0
Lane Group Flow (vph)	51	521	0	130	401	0	151	169	0	7	77	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	27.0	27.0		27.0	27.0		16.8	16.8		16.8	16.8	
Effective Green, g (s)	27.0	27.0		27.0	27.0		16.8	16.8		16.8	16.8	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.29	0.29		0.29	0.29	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	428	753		273	792		354	442		275	493	
v/s Ratio Prot		c0.32			0.23			0.11			0.05	
v/s Ratio Perm	0.06			0.22			c0.12			0.01		
v/c Ratio	0.12	0.69		0.48	0.51		0.43	0.38		0.03	0.16	
Uniform Delay, d1	8.9	12.4		10.8	11.0		16.9	16.7		14.9	15.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.2		2.3	0.9		0.8	0.6		0.0	0.1	
Delay (s)	9.1	15.6		13.1	11.9		17.7	17.2		15.0	15.7	
Level of Service	A	B		B	B		B	B		B	B	
Approach Delay (s)		15.0			12.2			17.4			15.6	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	58.4	Sum of lost time (s)	14.6
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

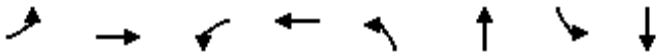


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	5	10	119	90	1
Future Volume (Veh/h)	1	5	10	119	90	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	5	11	129	98	1
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				66		
pX, platoon unblocked						
vC, conflicting volume	250	98	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	250	98	99			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	734	957	1494			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	140	99
Volume Left	1	11	0
Volume Right	5	0	1
cSH	911	1494	1700
Volume to Capacity	0.01	0.01	0.06
Queue Length 95th (m)	0.2	0.2	0.0
Control Delay (s)	9.0	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.6	0.0
Approach LOS	A		

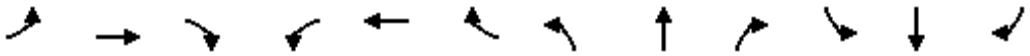
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	23.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G – 2023 Future Total Traffic Conditions (Scenario 2): Synchro Outputs



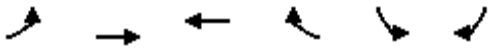
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	523	70	306	82	148	27	103
v/c Ratio	0.05	0.70	0.25	0.39	0.24	0.31	0.10	0.20
Control Delay	8.0	17.0	11.3	11.2	19.7	9.1	18.5	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	17.0	11.3	11.2	19.7	9.1	18.5	14.9
Queue Length 50th (m)	1.3	36.9	3.9	18.6	6.0	2.8	1.9	5.5
Queue Length 95th (m)	4.2	62.1	9.5	29.4	14.9	11.1	7.5	16.4
Internal Link Dist (m)		161.6		258.7		306.5		156.3
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	892	1336	505	1416	1023	1227	841	1459
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.39	0.14	0.22	0.08	0.12	0.03	0.07

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	355	110	59	256	1	61	29	81	22	60	26
Future Volume (vph)	22	355	110	59	256	1	61	29	81	22	60	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.89		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1615		1534	1715		1706	1462		1460	1762	
Flt Permitted	0.57	1.00		0.38	1.00		0.69	1.00		0.66	1.00	
Satd. Flow (perm)	1081	1615		612	1715		1240	1462		1019	1762	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	25	399	124	70	305	1	82	39	109	27	72	31
RTOR Reduction (vph)	0	10	0	0	0	0	0	79	0	0	19	0
Lane Group Flow (vph)	25	513	0	70	306	0	82	69	0	27	84	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	25.1	25.1		25.1	25.1		15.1	15.1		15.1	15.1	
Effective Green, g (s)	25.1	25.1		25.1	25.1		15.1	15.1		15.1	15.1	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.28	0.28		0.28	0.28	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	495	739		280	785		341	402		280	485	
v/s Ratio Prot		c0.32			0.18			0.05			0.05	
v/s Ratio Perm	0.02			0.11			c0.07			0.03		
v/c Ratio	0.05	0.69		0.25	0.39		0.24	0.17		0.10	0.17	
Uniform Delay, d1	8.2	11.8		9.1	9.8		15.4	15.1		14.8	15.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	3.3		0.8	0.6		0.4	0.2		0.2	0.2	
Delay (s)	8.3	15.1		9.9	10.4		15.8	15.3		14.9	15.3	
Level of Service	A	B		A	B		B	B		B	B	
Approach Delay (s)		14.8			10.3			15.5			15.2	
Approach LOS		B			B			B			B	

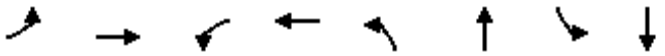
Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	14.6
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	477	340	3	10	4
Future Volume (Veh/h)	2	477	340	3	10	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	518	370	3	11	4
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			186			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	373				894	372
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	316				863	315
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1184				309	691

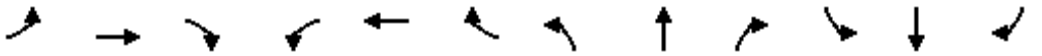
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	520	373	15
Volume Left	2	0	11
Volume Right	0	3	4
cSH	1184	1700	362
Volume to Capacity	0.00	0.22	0.04
Queue Length 95th (m)	0.0	0.0	1.0
Control Delay (s)	0.1	0.0	15.4
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.4
Approach LOS			C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		



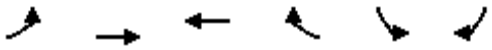
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	47	534	130	403	154	212	5	104
v/c Ratio	0.11	0.70	0.48	0.51	0.44	0.44	0.02	0.20
Control Delay	9.4	17.8	17.8	13.5	24.5	17.0	19.5	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	17.8	17.8	13.5	24.5	17.0	19.5	13.7
Queue Length 50th (m)	2.5	38.0	8.3	26.2	12.2	11.1	0.4	4.4
Queue Length 95th (m)	8.0	76.9	21.7	48.2	29.5	27.8	2.8	16.6
Internal Link Dist (m)		161.6		258.7		306.5		156.3
Turn Bay Length (m)	180.0		140.0		120.0		140.0	
Base Capacity (vph)	727	1284	460	1348	974	1221	755	1359
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.42	0.28	0.30	0.16	0.17	0.01	0.08

Intersection Summary



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	370	105	109	335	3	114	75	82	4	51	36
Future Volume (vph)	42	370	105	109	335	3	114	75	82	4	51	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.92		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1789	1628		1534	1715		1706	1537		1460	1718	
Flt Permitted	0.49	1.00		0.36	1.00		0.69	1.00		0.63	1.00	
Satd. Flow (perm)	924	1628		586	1715		1239	1537		961	1718	
Peak-hour factor, PHF	0.89	0.89	0.89	0.84	0.84	0.84	0.74	0.74	0.74	0.83	0.83	0.83
Adj. Flow (vph)	47	416	118	130	399	4	154	101	111	5	61	43
RTOR Reduction (vph)	0	9	0	0	1	0	0	47	0	0	31	0
Lane Group Flow (vph)	47	525	0	130	402	0	154	165	0	5	73	0
Heavy Vehicles (%)	2%	5%	46%	19%	12%	0%	7%	11%	19%	25%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	27.3	27.3		27.3	27.3		16.9	16.9		16.9	16.9	
Effective Green, g (s)	27.3	27.3		27.3	27.3		16.9	16.9		16.9	16.9	
Actuated g/C Ratio	0.46	0.46		0.46	0.46		0.29	0.29		0.29	0.29	
Clearance Time (s)	7.3	7.3		7.3	7.3		7.3	7.3		7.3	7.3	
Vehicle Extension (s)	4.5	4.5		4.5	4.5		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	429	755		272	796		356	441		276	493	
v/s Ratio Prot		c0.32			0.23			0.11			0.04	
v/s Ratio Perm	0.05			0.22			c0.12			0.01		
v/c Ratio	0.11	0.70		0.48	0.51		0.43	0.37		0.02	0.15	
Uniform Delay, d1	8.9	12.5		10.8	11.0		17.0	16.7		15.0	15.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.2		2.3	0.9		0.8	0.5		0.0	0.1	
Delay (s)	9.1	15.7		13.1	11.9		17.9	17.3		15.0	15.7	
Level of Service	A	B		B	B		B	B		B	B	
Approach Delay (s)		15.2			12.2			17.5			15.7	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	58.8	Sum of lost time (s)	14.6
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	513	478	7	4	2
Future Volume (Veh/h)	4	513	478	7	4	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	558	520	8	4	2
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			186			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	528				1090	524
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404				1038	399
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1024				226	577

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	562	528	6
Volume Left	4	0	4
Volume Right	0	8	2
cSH	1024	1700	284
Volume to Capacity	0.00	0.31	0.02
Queue Length 95th (m)	0.1	0.0	0.5
Control Delay (s)	0.1	0.0	18.0
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	18.0
Approach LOS			C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		