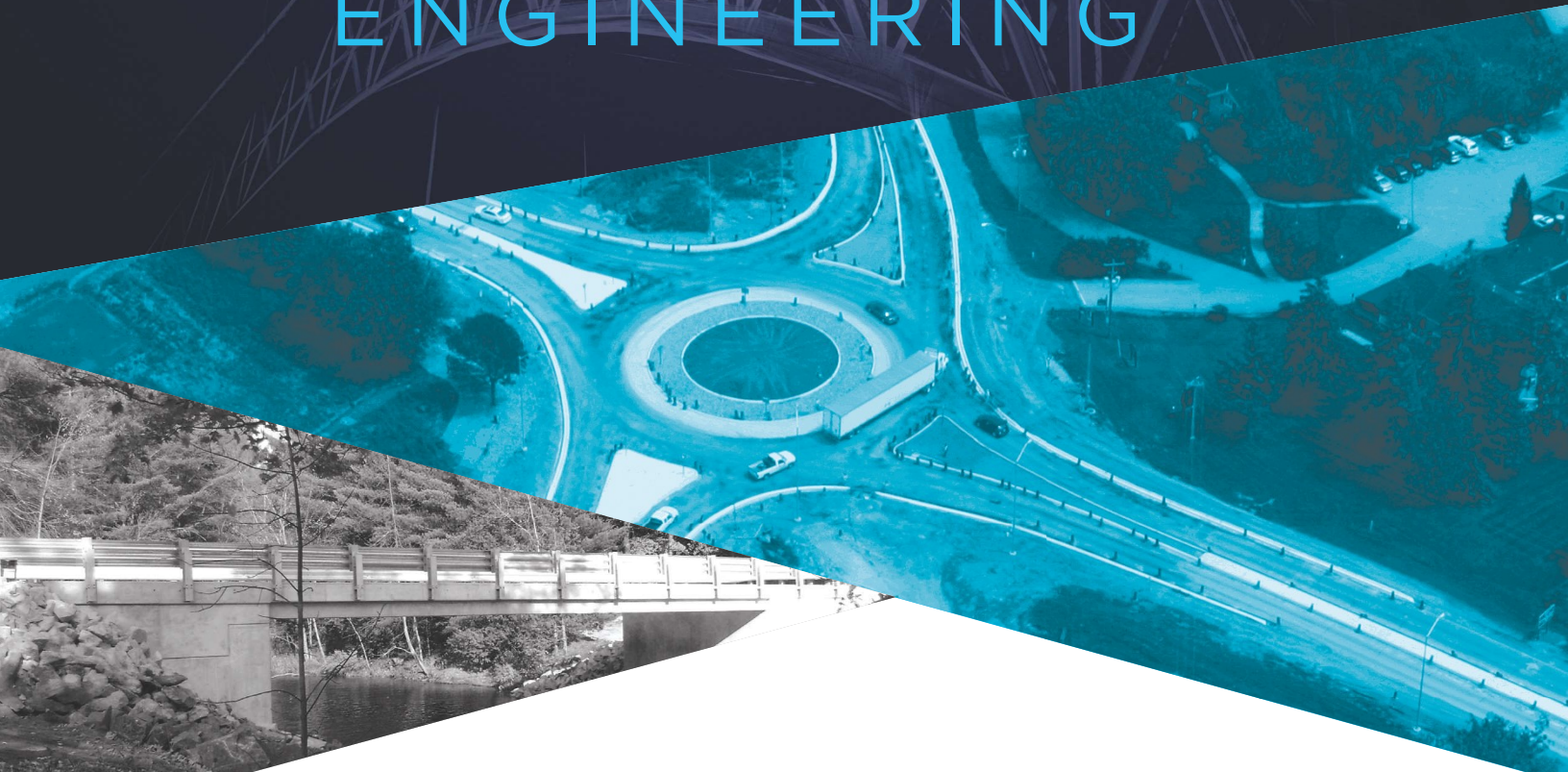




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Traffic Impact Study
40 Wilson Avenue Phase Two, Belleville ON
Romspen Investment Corporation
Jewell File No. 250-5897-03

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Traffic Impact Study
40 Wilson Avenue Development – Phase Two
Belleville, ON

Zoning By-Law Amendment
& Draft Plan Applications
July 10, 2026

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Revision Summary

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Traffic Impact Study issued for Zoning By-Law Amendment & Draft Plan Applications.

Table of Contents

1	INTRODUCTION	1
2	BACKGROUND	2
2.1	PROPOSED DEVELOPMENT	2
2.2	ADJACENT DEVELOPMENTS	3
2.2.1	40 Wilson Ave Phase One	4
2.2.2	Sand Cherry Subdivision	5
2.2.3	Mancuso Subdivision	6
2.2.4	YMCA Centre for Life	6
2.3	EXISTING ROAD NETWORK	6
2.3.1	Moira St W	6
2.3.2	Sidney St	7
2.3.3	Palmer Rd	7
2.3.4	Tripp Ave	8
2.3.5	Elgin St	8
2.3.6	Wilson Ave	8
2.3.7	Bogart Cres	8
2.3.8	Bogart Cres N / Palmer Rd	9
2.3.9	Moira St W / Palmer Rd	10
2.3.10	Moira St W / Tripp Ave	11
2.3.11	Moira St W / Elgin St	12
2.3.12	Wilson Ave / Sidney St	13
3	BACKGROUND TRAFFIC	14
3.1	TRAFFIC COUNTS	14
3.2	MANCUSO SUBDIVISION	16
3.2.1	Trip Generation	16
3.2.2	Trip Distribution & Assignment	16
3.3	YMCA DEVELOPMENT	17
3.3.1	Trip Generation	17
3.3.2	Trip Distribution & Assignment	18
4	PROPOSED DEVELOPMENT TRAFFIC	19
4.1	ITE VEHICULAR TRIP GENERATION	19
4.2	VEHICULAR TRIP DISTRIBUTION AND ASSIGNMENT	20
5	TRANSPORTATION IMPACTS	22
5.1	TRAFFIC ANALYSIS	22
5.1.1	Analysis Horizons	22
5.1.2	Traffic Volumes	22
5.1.3	Level of Service	22
5.2	SENSITIVITY ANALYSIS – MOIRA ST W / PALMER RD	28
5.3	INTERSECTION IMPROVEMENTS	29
5.4	SAFETY IMPACTS	29
5.4.1	Intersection Controls	29
5.4.2	Intersection Spacing	30
6	TRANSPORTATION DEMAND MANAGEMENT	31

6.1	ACTIVE TRANSPORTATION	31
6.2	TRANSIT SERVICE	32
7	CONCLUSIONS & RECOMMENDATIONS	34
8	REFERENCES	36

Table of Tables

TABLE 2-1: TRIP DISTRIBUTION - SAND CHERRY SUBDIVISION	5
TABLE 3-1: PEAK HOUR FACTORS (TSA TRAFFIC COUNTS)	15
TABLE 3-2: TRIP GENERATION – MANCUSO SUBDIVISION	16
TABLE 3-3: TRIP DISTRIBUTION – MANCUSO SUBDIVISION OUTBOUND/INBOUND TRIPS	16
TABLE 3-4: MANCUSO SUBDIVISION - NODAL TRIP DISTRIBUTION	17
TABLE 3-5: TRIP GENERATION – YMCA DEVELOPMENT	18
TABLE 3-6: TRIP DISTRIBUTION – YMCA DEVELOPMENT OUTBOUND/INBOUND TRIPS	18
TABLE 3-7: YMCA DEVELOPMENT – NODAL TRIP DISTRIBUTION	18
TABLE 4-1: TRIP GENERATION – 40 WILSON PHASE 2.....	19
TABLE 4-2: TRIP DISTRIBUTION – 40 WILSON PHASE 2 OUTBOUND/INBOUND TRIPS.....	20
TABLE 4-3: 40 WILSON PHASE 2 - NODAL TRIP DISTRIBUTION PERCENTAGE	21
TABLE 4-4: 40 WILSON PHASE 2 - SITE ACCESS TRIP DISTRIBUTION.....	21
TABLE 5-1: INTERSECTION LEVEL-OF-SERVICE CRITERIA (HCM 2000, EXHIBIT 16-2, 17-2)	23
TABLE 5-2: ANALYSIS HORIZON LOS - BACKGROUND AND BACKGROUND + PROPOSED DEVELOPMENT TRAFFIC CONDITIONS	26
TABLE 5-3: SENSITIVITY ANALYSIS LOS - BACKGROUND AND BACKGROUND + PROPOSED DEVELOPMENT TRAFFIC CONDITIONS	29

Table of Figures

FIGURE 1-1: DEVELOPMENT SITE LOCATION (GOOGLE, MAXAR TECH 2020).....	1
FIGURE 2-1: PROPOSED DEVELOPMENT SITE & SURROUNDING ROAD NETWORK (GOOGLE, MAXAR TECH 2020)	3
FIGURE 2-2: ADJACENT DEVELOPMENT LOCATIONS (GOOGLE, MAXAR TECH 2020)	4
FIGURE 2-3: BOGART CRES N / PALMER RD INTERSECTION (GOOGLE, MAXAR TECH 2015).....	9
FIGURE 2-4: BOGART CRES N / PALMER RD INTERSECTION (TRAFFICWARE - SYNCHRO 11)	9
FIGURE 2-5: MOIRA ST W / PALMER RD INTERSECTION (GOOGLE, MAXAR TECH 2015).....	10
FIGURE 2-6: MOIRA ST W / PALMER RD INTERSECTION (TRAFFICWARE - SYNCHRO 11)	10
FIGURE 2-7: MOIRA ST W / TRIPP AVE INTERSECTION (GOOGLE, MAXAR TECH 2015).....	11
FIGURE 2-8: MOIRA ST W / TRIPP AVE INTERSECTION (TRAFFICWARE - SYNCHRO 11)	11
FIGURE 2-9: MOIRA ST W / ELGIN ST INTERSECTION (GOOGLE, MAXAR TECH 2015).....	12
FIGURE 2-10: MOIRA ST W / ELGIN ST INTERSECTION (TRAFFICWARE - SYNCHRO 11)	12
FIGURE 2-11: WILSON AVE / SIDNEY ST INTERSECTION (GOOGLE, MAXAR TECH 2015).....	13
FIGURE 2-12: WILSON AVE / SIDNEY ST INTERSECTION (TRAFFICWARE - SYNCHRO 11)	13
FIGURE 3-1: TSA COUNT WEEKDAY TRAFFIC VOLUMES, MARCH 2026	14
FIGURE 5-1: WILSON AVE - BOGART CRES N / PALMER RD INTERSECTION (TRAFFICWARE - SYNCHRO 11).....	24
FIGURE 5-2: INTERNAL INTERSECTION CONTROLS – 40 WILSON PHASE 2	30
FIGURE 6-1: BELLEVILLE TRANSIT ROUTES IN THE DEVELOPMENT VICINITY (CITY OF BELLEVILLE, 2025).....	32

List of Appendices

- Appendix A Development Concept Plans – Proposed and Adjacent Developments
- Appendix B Traffic Counts – TSA, West Belleville Secondary Plan
- Appendix C Traffic Volume Figures – Background, Development Traffic
- Appendix D Synchro Reports
- Appendix E Terms of Reference
- Appendix F Wilson Avenue Development Traffic Impact Study

1 Introduction

Traffic impact analysis is a fundamental part of the continuous planning process of land use and the transportation infrastructure. The goal is to provide various interested groups and decision-makers with information regarding the use of developed land and the impacts the development has on the transportation system. From there, mitigation measures can be recommended if necessary. Traditionally, the analysis includes addressing the impacts of a proposed development during the adjacent street peak hours for present and future planning horizons. The impact area is considered "the site access" and the nearby key regional road intersections. Beyond that point, the traffic blends in and is considered as part of the "background traffic".

Jewell Engineering Inc. (Jewell) has prepared this Traffic Impact Study (TIS) to evaluate and summarize the impact of the second phase of a proposed residential development located in Belleville, ON (Figure 1-1).

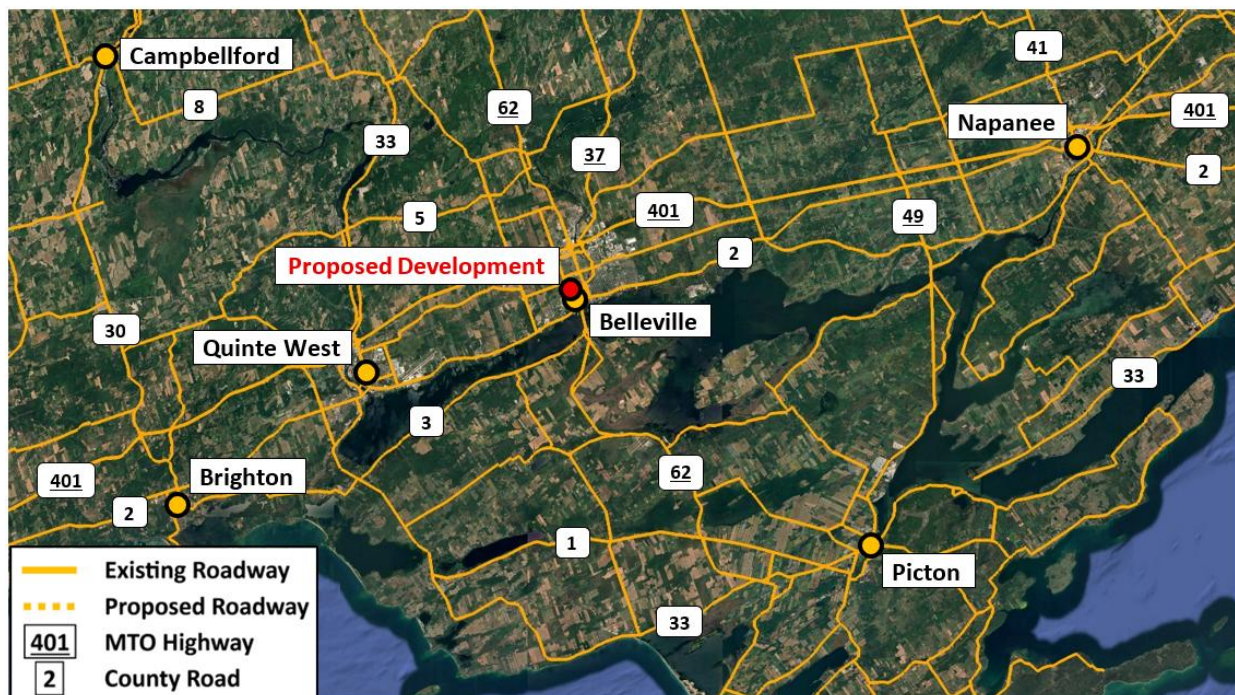


Figure 1-1: Development Site Location (Google, Maxar Tech 2020)

The evaluation of vehicular traffic is based on the performance of the intersections impacted. The performance of an intersection is based on Level of Service (LOS) and safety. Jewell uses the computer software SYNCHRO 11 for the LOS analysis. The Levels of Service are based on "vehicle delay".

This traffic study assumes that the development will be fully constructed in 2028 (see following sections for further details).

2 Background

2.1 Proposed Development

The project site is located at 40 Wilson Ave in Belleville, ON. Phase 2 of the 40 Wilson Ave development has an area of 4.57 ha, and is located on the vacant site of the Pre-Con facility which previously manufactured concrete products. The second phase of the development is bounded by Moira St W, Sidney St, Bridge St W, and Palmer Rd (Figure 2-1). The Phase Two lands (and Phase One lands to the west) are currently zoned as development-controlled, the lands immediately south are zoned as industrial, and the lands immediately north and east are zoned as residential.

The 40 Wilson Ave Phase Two development will be residential. A total of 109 units are proposed, comprising 78 street townhouses, 22 semi-detached, and 9 single-detached units. Tripp Ave and Elgin St will be extended to Wilson Ave, and a new street (and cul-de-sac) is proposed with access via Wilson Ave. Access will be provided to the development via the intersections of Tripp Ave and Elgin St with Moira St W, and Wilson Ave with Palmer Rd and Sidney St. The Concept Plan is included in Appendix A.

Accordingly, this TIS will evaluate the impact of Phase 2 of the 40 Wilson Development on the “key intersections” in the study area:

- Moira St W at Palmer Rd
- Moira St W at Tripp Ave
- Moira St W at Elgin St
- Wilson Ave at Palmer Rd / Bogart Cres (N)
- Wilson Ave at Sidney St

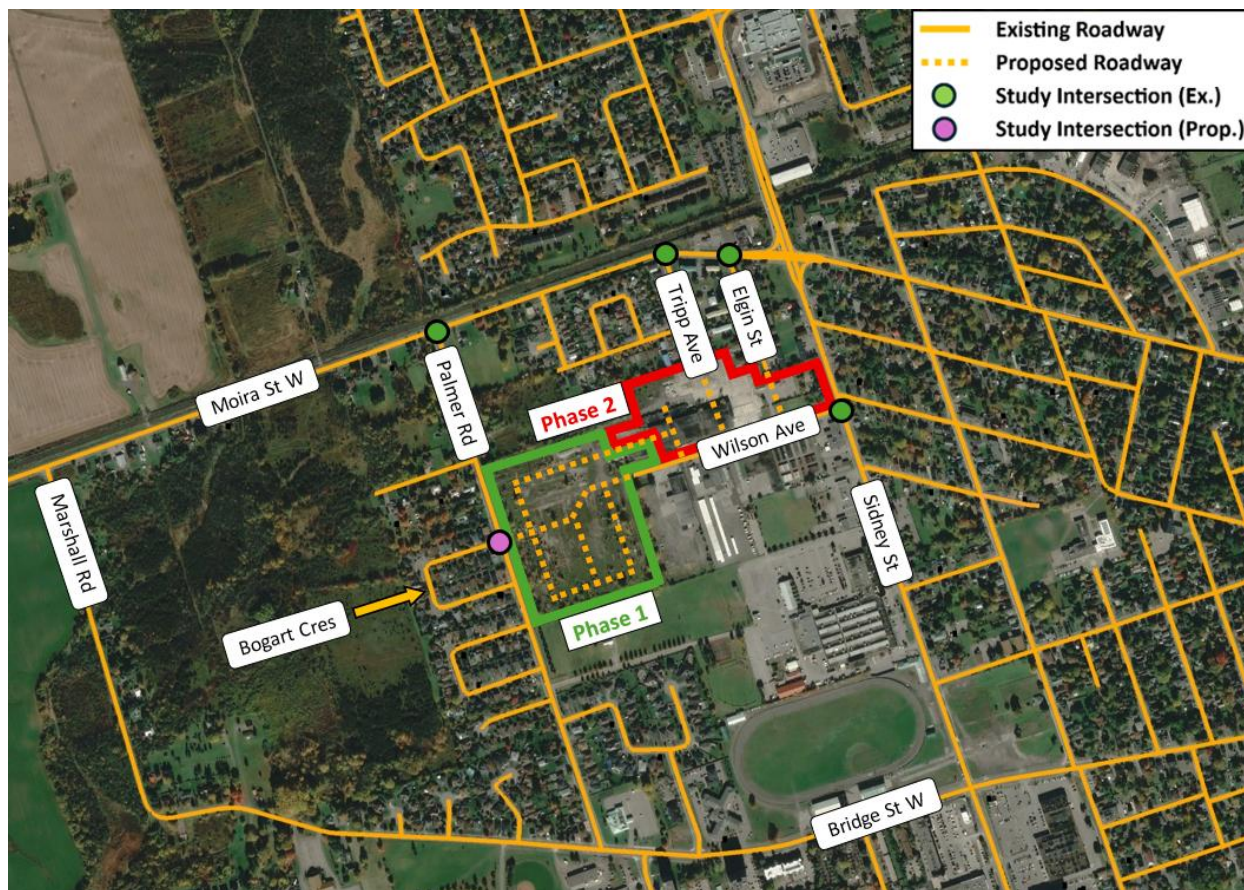


Figure 2-1: Proposed Development Site & Surrounding Road Network (Google, Maxar Tech 2020)

2.2 Adjacent Developments

As per consultation with City of Belleville staff, the following adjacent developments have been included in this analysis (refer to Appendix E):

- 40 Wilson Ave Phase 1
- Sand Cherry Subdivision
- Mancuso Subdivision
- YMCA Centre for Life

The location of the adjacent developments is shown in Figure 2-2.

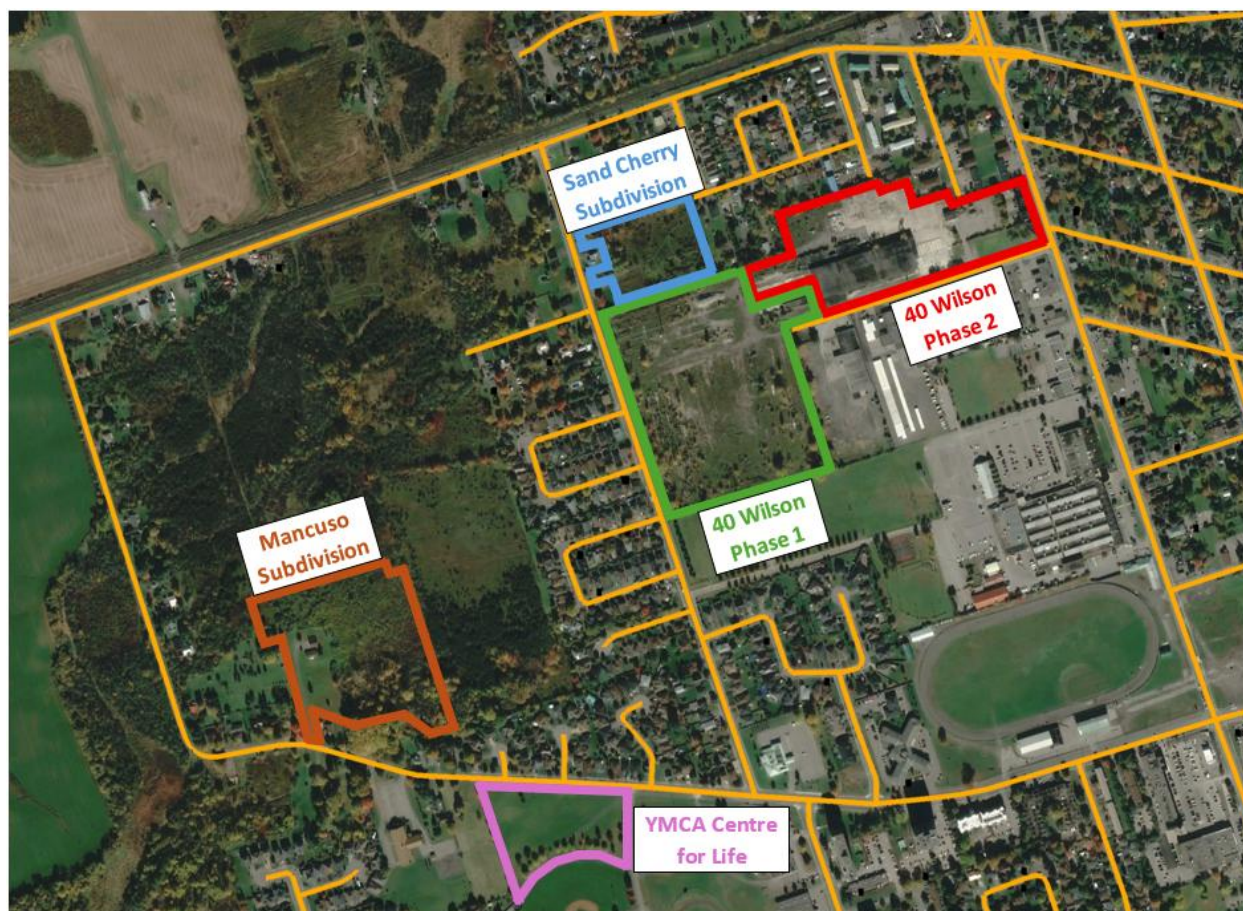


Figure 2-2: Adjacent Development Locations (Google, Maxar Tech 2020)

2.2.1 40 Wilson Ave Phase One

The Phase One lands have an area of 7.78 ha, and are located immediately west of the Phase Two lands. 40 Wilson Phase 1 will introduce 153 new residential units, comprising 82 single-detached and 71 townhouse units. Wilson Ave will be extended through the subdivision and four new streets will be constructed, with a 20 m right-of-way provided. The Concept Plan is included in Appendix A.

A TIS for Phase 1 was previously prepared by JD Northcote Engineering Inc. in 2022. Trip generation was completed using the *I.T.E. Trip Generation Manual (TGM) 10th Ed. Peak Hour of Generator* was used, as the proposed development's (residential) use is the same as the surrounding land use, and the fitted curve equations were applied. Phase 1 was projected to generate 110 trips in the AM peak hour (with 25% inbound and 75% outbound), and 137 trips in the PM peak hour (63% inbound and 27% outbound).

Trips were distributed based on existing background traffic. 50% of trips were assigned to/from the north and the south, with an equal distribution between the Wilson Ave / Sidney St and Wilson Ave / Palmer Rd site accesses.

The study evaluated the Phase Two study intersections, among others, and determined that all study intersections continue to operate well with existing geometry and controls through the 2034 study horizon. Several left-turn storage lanes were found to be warranted, however, due to good intersection operation and the fact that the warrant is only triggered in the PM peak hour, no upgrades were recommended to support 40 Wilson Phase 1.

The City confirmed that no updates are required to the existing TIS. However, Jewell revised the trip distribution to account for the new site accesses which will be constructed in Phase Two. It was assumed that, of the 25% of the trips to the north via Wilson Ave & Sidney St, 80% would redirect via the new site access nearest to their destination (Elgin St) to avoid having to make a left turn onto Sidney St (and associated delays due to the high traffic volumes). Additionally, as Phase One buildout was projected to be in 2024, and there is not yet evidence of construction at the site, the generated trips were included in the Phase Two analysis from 2028 onward.

2.2.2 Sand Cherry Subdivision

The Sand Cherry Subdivision is located east of Palmer Rd, immediately north of 40 Wilson Phase 1. The subdivision will contain 39 single-detached residential units with access onto Palmer Rd via a proposed road.

The Sand Cherry Subdivision was included in the 2022 TIS previously prepared for 40 Wilson Phase 1 by JD Northcote Engineering Inc. Trip generation was completed using the *I.T.E. TGM 10th Ed. Peak Hour of Generator*, as the proposed development's (residential) use is the same as the surrounding land use, and the fitted curve equations were applied. The subdivision was projected to generate 32 trips in the AM peak hour (with 25% inbound and 75% outbound), and 41 trips in the PM peak hour (63% inbound and 37% outbound). Trip distribution was assigned based on existing background traffic, as summarized in Table 2-1.

Table 2-1: Trip Distribution - Sand Cherry Subdivision

Node	AM Peak Hour		PM Peak Hour	
	OB Trips	IB Trips	OB Trips	IB Trips
South (Via Palmer Rd)	7	2	5	8
North & East (Via Palmer Rd & Moira St W)	8	3	5	9
North & West (Via Palmer Rd & Moira St W)	9	3	5	9
Total	24	8	15	26

The previous 2022 TIS projected the proposed subdivision to be fully occupied by 2029. The trips generated by the development were included in the Phase Two analysis from 2028 onward for conservatism.

2.2.3 Mancuso Subdivision

The Mancuso Subdivision is located 1 km southwest of 40 Wilson Phase 2. The subdivision is planned to include 35 single-detached residential units with access via Bridge St W.

The Mancuso Subdivision was included in the 2022 TIS previously prepared for the 40 Wilson Phase 1. However, due to the development location, the study concluded that generated traffic volumes in the study area will be minor and have low impact. Trip generation was assumed to be included within the background traffic growth.

The City required that the Mancuso development be included in this analysis, therefore Jewell completed trip generation calculations for the development. Please refer to Section 3.2 for detailed trip generation and distribution. As no buildout year was specified, and there is not yet evidence of construction at the site, the generated trips were included in the Phase Two analysis from 2028 onward.

2.2.4 YMCA Centre for Life

The YMCA development is located 1 km southwest of 40 Wilson Phase 2, opposite and adjacent to the Mancuso Subdivision. Jewell obtained relevant information from the October 2025 Public Information Centre for the development. The site is 2.33 ha (of which the facility will be 0.425 ha) and two site accesses onto Bridge St W are proposed. Dedicated bicycle parking will be provided. A segment of the Bridge St W multi-use pathway (MUP) currently running through the lot will be relocated. The new MUP will run south along the eastern site boundary to Legion Baseball Field, where it will then follow the field's curved perimeter to the west. No modifications to the road network are proposed.

Jewell completed detailed trip generation for the proposed YMCA development. Please refer to Section 3.3 for detailed trip generation and distribution. The development is currently under construction; the generated trips were included in the first future horizon of the Phase Two analysis (2028) onward.

2.3 Existing Road Network

2.3.1 Moira St W

Moira St W is classified as an *Arterial* road (City of Belleville Official Plan, 2023). Moira St W is a hard-surfaced road which runs in an east-west direction. The road has an urbanized cross

section in the development vicinity and further east, and a rural cross section further west. The road connects to Wallbridge Loyalist Rd to the west and Moira St E to the east. The speed limit on Moira St W transitions ~100 m west of Palmer Rd; the speed limit is posted as 80 km/hr to the west and 50 km/hr to the east.

West of Sidney St the road has a typical width of ~7.8 m, accommodating two marked travel lanes. The road is widened at the intersection with Palmer Rd to accommodate an ~80 m long westbound left-turn storage lane. At the intersection with Sidney St, the road is widened to accommodate ~30 m long left-turn storage lanes for eastbound and westbound traffic and ~65 m long painted/raised medians with a typical width of ~2.2 m.

West of Sidney St, concrete sidewalks ~1.25 m in width are provided along the north side of the road for ~75 m, and along the south side until Palmer Rd. A portion of the southern sidewalk is separated by an ~6 m wide grassed buffer strip. West of Palmer Rd, asphalt boulevard continues along the north and south sides of the road, ~2 m wide and ~250 m long and ~1.25 m wide and ~350 m long respectively.

2.3.2 Sidney St

Sidney St is classified as an *Arterial* road (City of Belleville Official Plan, 2023). Sidney St is a hard-surfaced road with an urbanized cross section. The road runs in a north-south direction and connects to Dundas St W in the south and Bell Blvd and Vermilyea Rd in the north. The speed limit in the development vicinity is posted as 40 km/hr.

Sidney St has a typical width of ~12 m in the development vicinity, accommodating two ~3 m wide marked travel lanes in each direction.

From Moira St W to Bridge St, concrete sidewalk ~1.5 m in width is located along the east side of the road separated by an ~2 m wide grassed buffer strip. Several discontinuous sections of sidewalk are also located along the west side of the road.

2.3.3 Palmer Rd

Palmer Rd is classified as a *Collector* road (City of Belleville Official Plan, 2023). Palmer Rd is a hard-surfaced road with an urbanized cross section which runs in a north-south direction. Palmer Rd connects to Moira St W to the north and Bridge St W to the south. The speed limit is posted as 50 km/hr.

The road has a width of ~10-10.5 m, typically accommodating one lane of travel in each direction. Palmer Rd has separated right and left turning lanes ~30 m long at the south end and ~60 m long at the north end. Lane markings are provided in the northernmost ~400 m and southernmost ~100 m. A ~1.5 m wide concrete sidewalk runs along the west side of the road, and on the east side for the southernmost 300 m. The sidewalk is separated from the road by a grassed buffer strip ~2 m in width.

2.3.4 Tripp Ave

Tripp Ave is classified as a *Local* road (City of Belleville Official Plan, 2023). Tripp Ave is a hard-surfaced road with a semi-urbanized cross section. The road runs in a north-south direction, connecting to Moira St W to the north, and dead-ends ~200 m to the south. The speed limit is unposted, and can thus be assumed as 50 km/hr.

The road has a width of ~6.5-7.5 m, sufficient to accommodate two lanes of travel, with no lane markings. Gravel shoulders run along the east side of the road as well as the northernmost ~100 m of the west side, ~2 m in width. A concrete sidewalk ~1.5 m in width is provided along the northernmost ~125 m of the west side of the road, separated by the gravel shoulder or a grassed buffer strip.

2.3.5 Elgin St

Elgin St is classified as a *Local* road (City of Belleville Official Plan, 2023). Elgin St is a hard-surfaced road with a semi-urbanized cross section. The road runs in a north-south direction, connecting to Moira St W to the north, and dead-ends ~225 m to the south. The speed limit on Elgin St is unposted, and can be assumed as 50 km/hr.

The road is ~6.8-7.2 m in width, sufficient to accommodate two lanes of travel, with no lane markings. Gravel shoulders are located along the road, with a width of ~2.5 m to the west and ~1 m to the east. No pedestrian infrastructure is provided.

2.3.6 Wilson Ave

Wilson Ave is classified as a *Local* road (City of Belleville Official Plan, 2023). Wilson Ave is a hard-surfaced road with a semi-urbanized cross section. The road runs in an east-west direction, connecting to Sidney St to the east, and dead-ends ~375 m to the west. The speed limit is unposted, and can be assumed as 50 km/hr.

The road has a width of ~7.2 m, sufficient to accommodate two lanes of travel, with no lane markings. Curb and gutter are provided along the easternmost ~150 m of the north side of the road. A gravel shoulder ~1 m in width is located along the south side of the road. An asphalt sidewalk is provided along the easternmost ~40 m of the north side of the road.

2.3.7 Bogart Cres

Bogart Cres is classified as a *Local* road (City of Belleville Official Plan, 2023). Bogart Cres is a hard-surfaced road with an urbanized cross section. The road runs in a primarily east-west direction, connecting to Palmer Rd in the east via north and south legs, and has a length of ~365 m. The speed limit is unposted, and can be assumed as 50 km/hr.

The road generally has a width of 8 m (sufficient for two lanes of travel) with no lane markings. Curb and gutter are provided along the length of the road, and a 1.5 m sidewalk runs along the outside of the crescent separated by an ~2 m wide grassed buffer strip.

2.3.8 Bogart Cres N / Palmer Rd

Bogart Cres N / Palmer Rd is a T-intersection with stop control on Bogart Cres N. No auxiliary or turning lanes are provided (Figure 2-3) (Figure 2-4).



Figure 2-3: Bogart Cres N / Palmer Rd Intersection (Google, Maxar Tech 2015)

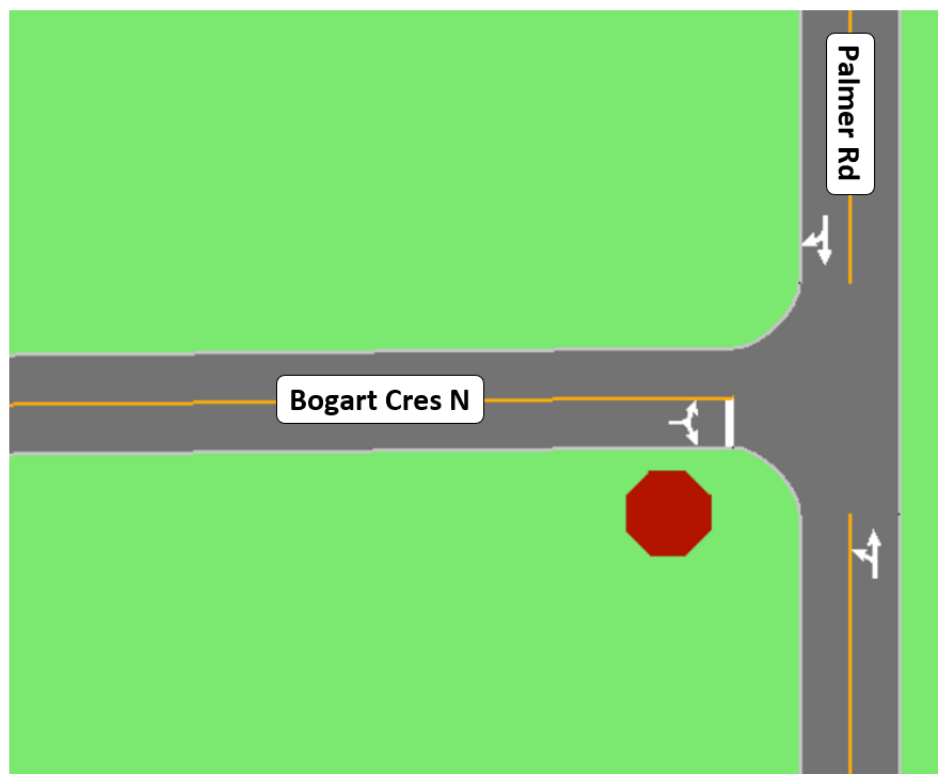


Figure 2-4: Bogart Cres N / Palmer Rd Intersection (Trafficware - Synchro 11)

2.3.9 Moira St W / Palmer Rd

Moira St W / Palmer Rd is a T-intersection with stop control on Palmer Rd. Northbound left- and right-turn storage lanes are provided. A marked pedestrian crosswalk is located on Palmer Rd (Figure 2-5) (Figure 2-6).



Figure 2-5: Moira St W / Palmer Rd Intersection (Google, Maxar Tech 2015)

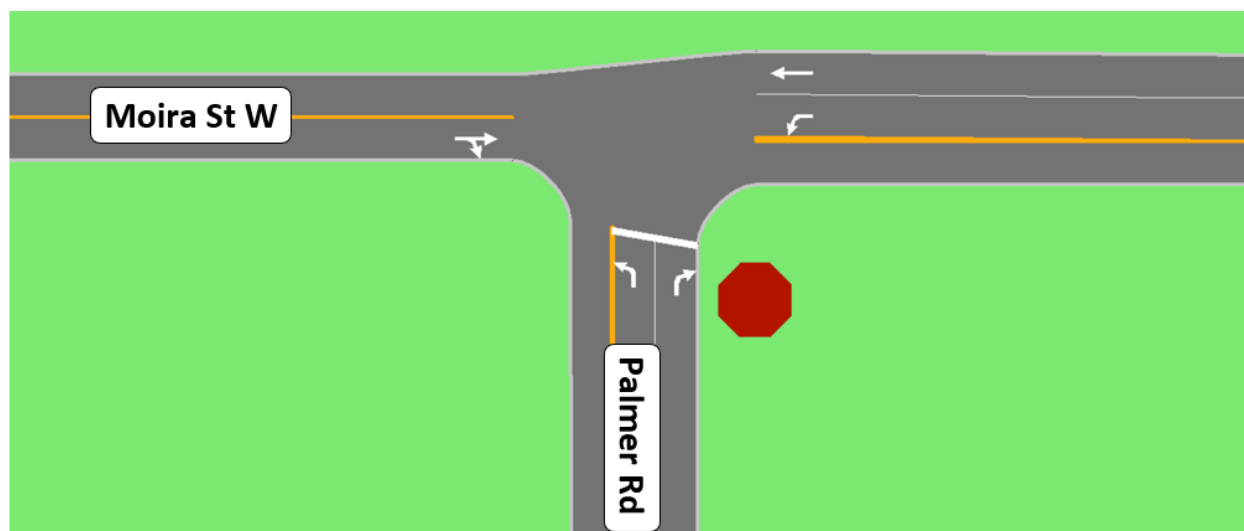


Figure 2-6: Moira St W / Palmer Rd Intersection (Trafficware - Synchro 11)

2.3.10 Moira St W / Tripp Ave

Moira St W / Tripp Ave is a T-intersection with stop control on Tripp Ave. No auxiliary or turning lanes are provided (Figure 2-7) (Figure 2-8).



Figure 2-7: Moira St W / Tripp Ave Intersection (Google, Maxar Tech 2015)

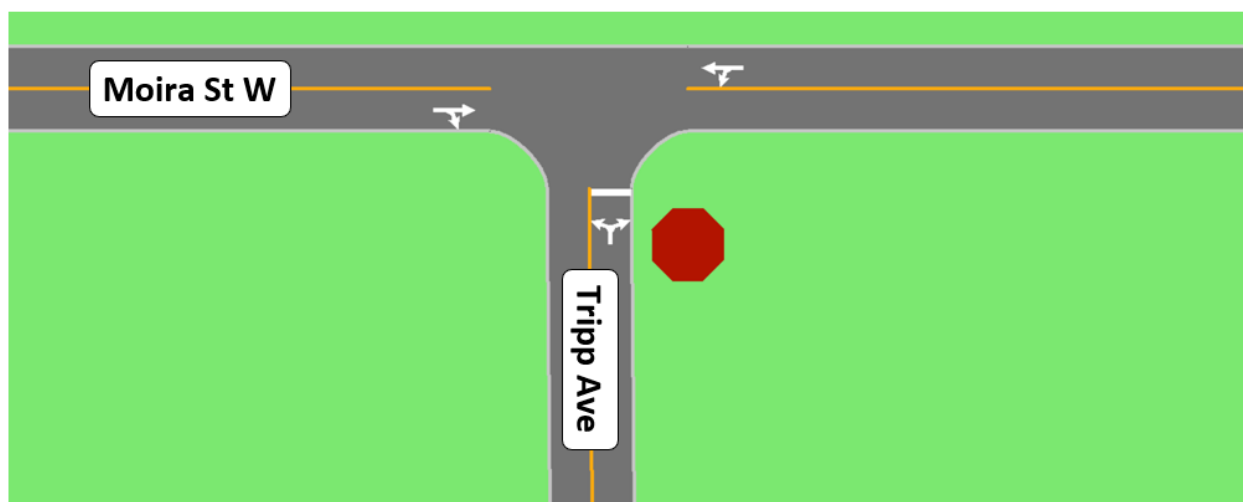


Figure 2-8: Moira St W / Tripp Ave Intersection (Trafficware - Synchro 11)

2.3.11 Moira St W / Elgin St

Moira St W / Elgin St is a T-intersection with stop control on Elgin St and a commercial driveway located to the north. No auxiliary or turning lanes are provided (Figure 2-9) (Figure 2-10).

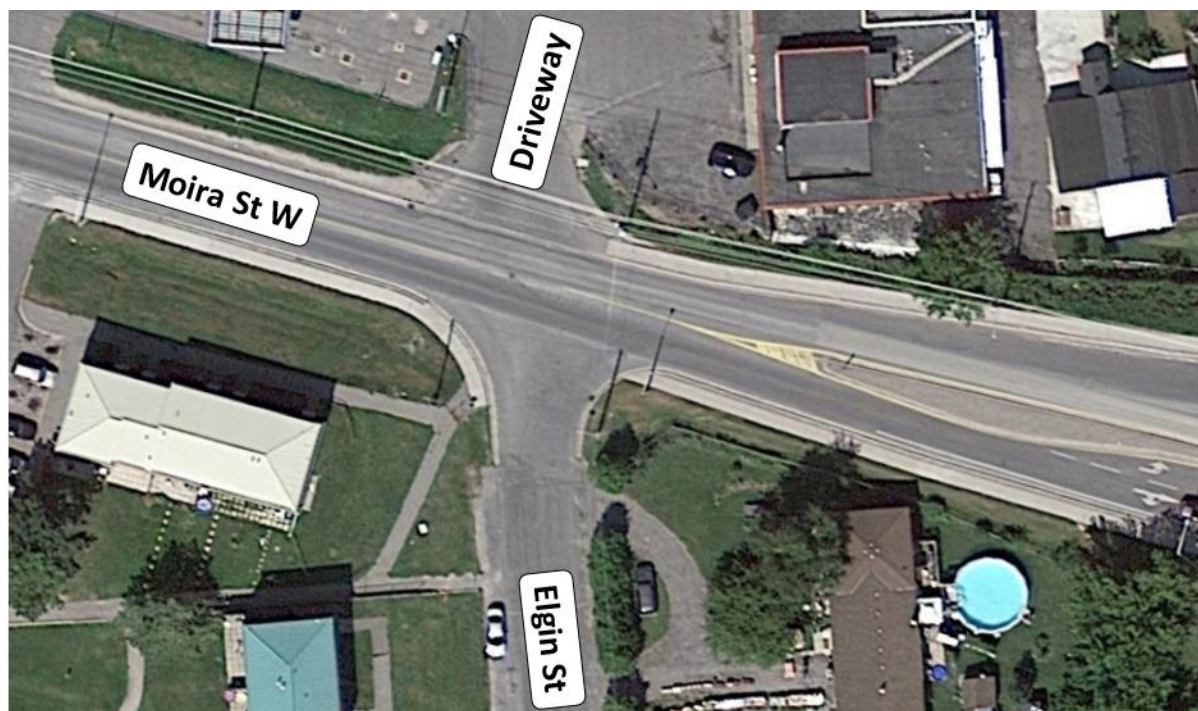


Figure 2-9: Moira St W / Elgin St Intersection (Google, Maxar Tech 2015)

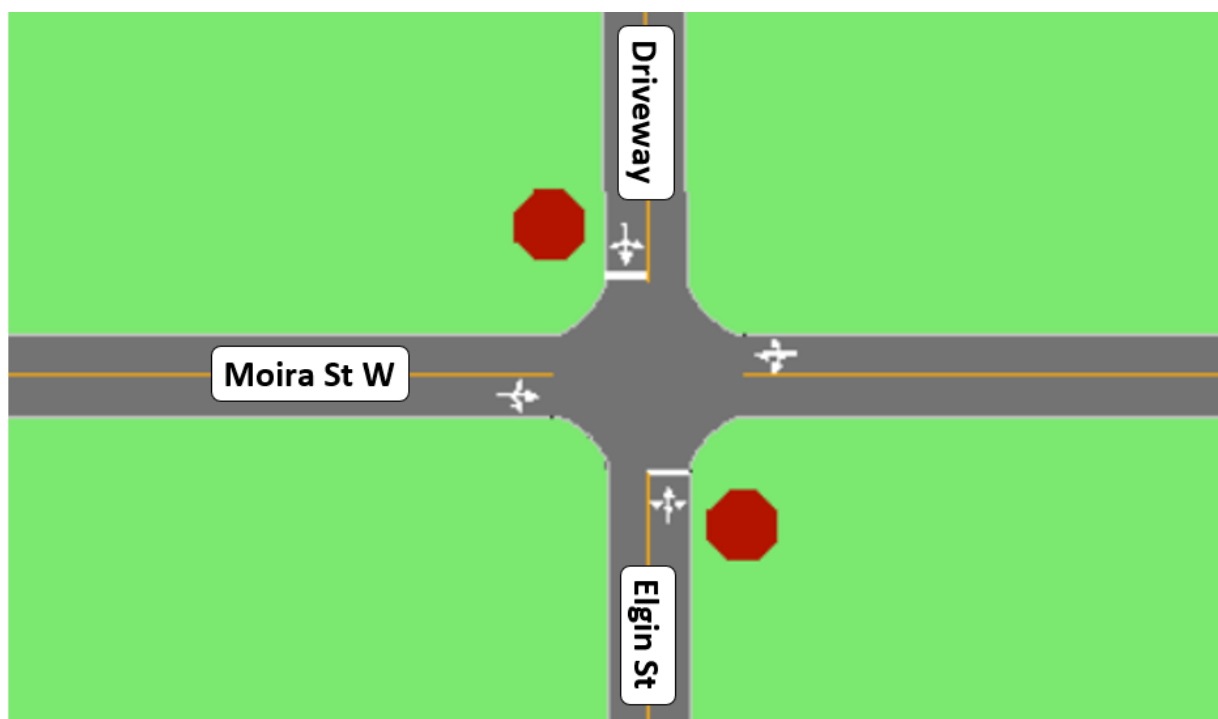


Figure 2-10: Moira St W / Elgin St Intersection (Trafficware - Synchro 11)

2.3.12 Wilson Ave / Sidney St

Wilson Ave / Sidney St is a T-intersection with stop control on Wilson Ave. No auxiliary or turning lanes are provided. A marked pedestrian crossing with a “School Crossing” sign and warning signals is located on Sidney St (Figure 2-11) (Figure 2-12).



Figure 2-11: Wilson Ave / Sidney St Intersection (Google, Maxar Tech 2015)

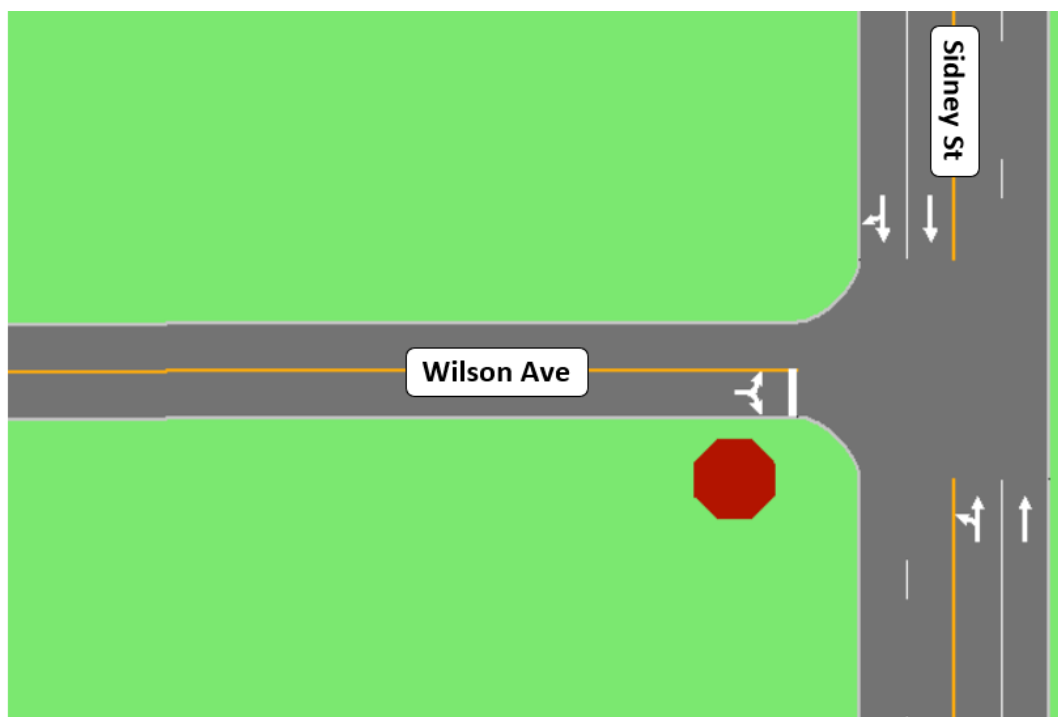


Figure 2-12: Wilson Ave / Sidney St Intersection (Trafficware - Synchro 11)

3 Background Traffic

3.1 Traffic Counts

Jewell retained Traffic Survey Analysis Inc. (TSA) to complete traffic counts at the intersections of Moira St W / Tripp Ave, Moira St W / Elgin St, and Sidney St / Wilson Ave. The counts were completed on Tuesday, Mar 24, 2026, between 7:00 AM and 7:00 PM. The traffic counts are included in Appendix B, and figures displaying the traffic volumes by turning movement are provided in Appendix C.

The hourly traffic volumes at each intersection are shown in Figure 3-1.

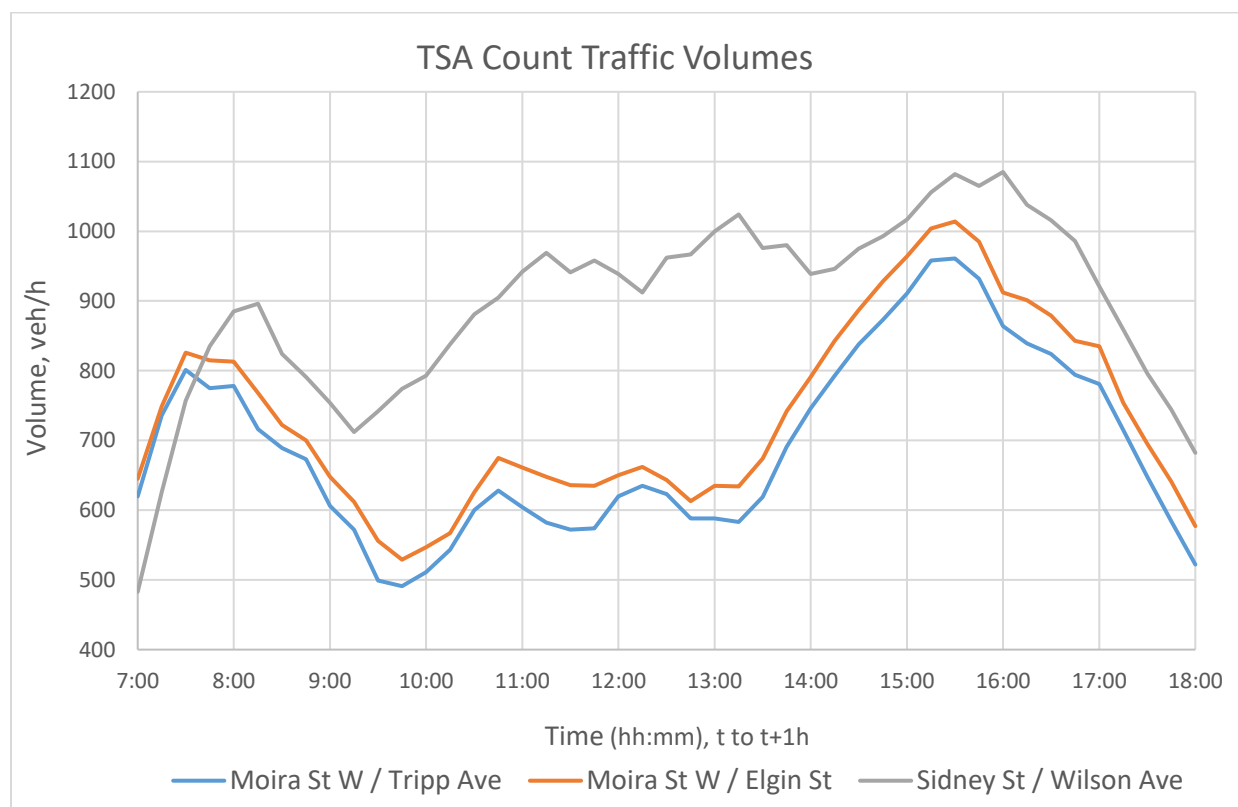


Figure 3-1: TSA Count Weekday Traffic Volumes, March 2026

Traffic volumes at the study intersections peak in the early morning between 7:30-9:30 AM, around the typical morning commute period. The volumes decrease during the mid-morning, before increasing until the afternoon peak occurring between 3:30-4:30 PM, around the typical evening commute period. The Sidney St / Wilson Ave intersection shows the greatest traffic volumes, with significantly higher mid-day traffic compared to the other two count intersections. As the intersections of Moira St W with Tripp Ave and Elgin St are immediately adjacent, similar traffic volumes are observed.

Based on the TSA traffic count data, the peak hours for the study were selected as follows:

- AM 7:30 – 8:30 AM
- PM 3:30 – 4:30 PM

The selected peak hours capture the maximum 15-minute traffic volumes of each intersection within each peak period. The Peak Hour Factors (PHFs) (total peak hour volume divided by four times the maximum 15-minute volume) indicate how concentrated traffic is within the peak hour; a low PHF indicates high concentration. The PHFs at each TSA count location are summarized in Table 3-1.

Table 3-1: Peak Hour Factors (TSA Traffic Counts)

Peak	Moira St W / Tripp Ave	Moira St W / Elgin St	Sidney St / Wilson Ave
AM	0.89	0.95	0.79
PM	0.94	0.94	0.91

As a standard conservative best-practice, the maximum (lowest concentration) PHF used for analysis was 0.92; PHFs greater than 0.92 were set to this value.

As per consultation with City staff, peak hour traffic data at the Moira St W / Palmer Rd intersection was obtained from the 2025 *West Belleville Secondary Plan* produced by Dillon Consulting Limited. The traffic volumes were reported in 2023 conditions, projected from pre-pandemic counts by the City. Jewell projected the counts to 2026 conditions using the approved annual growth factor of 0.5% (refer to Appendix E). The PHF was determined as 0.92 for both the AM and PM peak hour from the *West Belleville Secondary Plan* modelling.

No traffic counts at the Bogart Cres N / Palmer Rd intersection were specified to be required by City staff (refer to Appendix E). Therefore, Jewell applied the northbound and southbound traffic and PHFs from the adjacent Moira St W / Palmer Rd intersection. Jewell completed supplementary manual traffic counts at the Bogart Cres N / Palmer Rd intersection within the peak hours to determine turning movement distributions. The PM counts were completed on Tuesday, June 9, 2026, and the AM counts on Friday, June 12, 2026.

The supplementary traffic counts were also used to determine pedestrian and heavy vehicle volumes at the Bogart Cres N / Palmer Rd intersection. As the *West Belleville Secondary Plan* did not report this information, the pedestrian and heavy vehicle volumes from the counts were also applied to the Moira St W / Palmer Rd intersection.

3.2 Mancuso Subdivision

3.2.1 Trip Generation

Jewell used the *I.T.E. Trip Generation Manual, 12th Ed.* to estimate the AM peak hour and PM peak hour trips generated by the proposed Mancuso Subdivision.

Trip generation was estimated using *Peak Hour of Generator*, which assumes that the peak of site-generated traffic aligns with the peak hours of background traffic. This aligns with traffic patterns for the proposed residential use, providing an accurate estimation of the impact of the proposed development on the existing network.

Trips generated by the fitted curve and average rate equations were evaluated, and the most conservative result was used. To align with the proposed land use, I.T.E Trip Generation Code 210 (Single-Family Detached) was applied.

The resulting trip generation per the *I.T.E. Trip Generation Manual, 12th Ed.* is summarized in Table 3-2 and Table 3-3.

Table 3-2: Trip Generation – Mancuso Subdivision

Land Use Code	Units	I.T.E. Trip Generation	Trips	
			AM Peak	PM Peak
210	35	Avg. Rate	0.75(x)	0.97(x)
		Fitted Curve	0.71(x)+8.84	$e^{(0.90\ln(x)+0.48)}$
		Trips Generated	34	40
Total	-	-	34	40

Table 3-3: Trip Distribution – Mancuso Subdivision Outbound/Inbound Trips

Land Use Code	AM Peak			PM Peak		
	OB/IB%	OB Trips	IB Trips	OB/IB%	OB Trips	IB Trips
210	73/27	25	9	37/63	15	25

3.2.2 Trip Distribution & Assignment

Trips generated by the development were assigned and distributed to the surrounding road network based on the patterns of existing background traffic on Bridge St W and Palmer Rd, which is primarily a residential area. It should be noted that all trips to the northwest, southwest, and southeast will not result in any impact at the study intersections.

The new vehicle trips generated by the Mancuso Subdivision were assigned and distributed to the surrounding road network as summarized in Table 3-4. Figures displaying traffic volumes by turning movement are provided in Appendix C.

Table 3-4: Mancuso Subdivision - Nodal Trip Distribution

Node	AM Peak Hour		PM Peak Hour	
	OB Trips	IB Trips	OB Trips	IB Trips
Northeast (Via Palmer Rd)	2	1	1	2
Northeast (Via Sidney St)	2	1	1	2
Southeast (Via Bridge St W)	9	3	5	9
Northwest & Southwest (Via Marshall Rd)	13	5	8	13
Total	26	10	15	26

3.3 YMCA Development

3.3.1 Trip Generation

Jewell used the *I.T.E. Trip Generation Manual, 12th Ed.* to estimate the AM and PM peak hour trips generated by the proposed *YMCA Centre for Life* development.

Trip generation was estimated using *Peak Hour of Adjacent Street Traffic*, which projects trips generated during the peak hours of background traffic and applies between 7:00 – 9:00 AM and 4:00 – 6:00 PM. The observed AM Peak Hour falls within this range, as does half of the PM Peak Hour. As a recreational facility, the peak hour of site generated traffic will differ from that of the background traffic; *Peak Hour of Adjacent Street Traffic* provides a more accurate estimation of the impact of the proposed development on the existing network.

Trips generated by the average rate equation were used, due to the stronger statistical relationship than that of the fitted curve equation for this scale of development. *I.T.E Trip Generation Code 495* (Recreational Community Centre) was applied.

The resulting trip generation is summarized in Table 3-5 and Table 3-6.

Table 3-5: Trip Generation – YMCA Development

Land Use Code	Units (k sq. ft.)	I.T.E. Trip Generation	Trips	
			AM Peak	PM Peak
495	45.8	Avg. Rate	2.02(x)	2.89(x)
		Trips Generated	93	132
Total	-	-	93	132

Table 3-6: Trip Distribution – YMCA Development Outbound/Inbound Trips

Land Use Code	AM Peak			PM Peak		
	OB/IB%	OB Trips	IB Trips	OB/IB%	OB Trips	IB Trips
495	34/66	31	61	52/48	69	64

3.3.2 Trip Distribution & Assignment

As the patterns of existing background traffic do not align with the proposed land use, the trips generated by the development were assigned and distributed to the surrounding road network based on regions of the City assumed to contribute traffic. It should be noted that trips to the southwest and southeast will not result in any impact at the study intersections.

The new vehicle trips generated by the proposed development were assigned and distributed to the surrounding road network as summarized in Table 3-4. Figures displaying traffic volumes by turning movement are provided in Appendix C.

Table 3-7: YMCA Development – Nodal Trip Distribution

Node	AM Peak Hour		PM Peak Hour	
	OB Trips	IB Trips	OB Trips	IB Trips
Northeast (Via Palmer Rd)	6	11	12	12
Northeast (Via Sidney St)	8	16	19	17
Southeast (Via Bridge St W)	11	21	24	22
Southwest (Via Marshall Rd)	6	12	14	13
Total	31	60	69	64

4 Proposed Development Traffic

4.1 ITE Vehicular Trip Generation

The *I.T.E. Trip Generation Manual, 12th Ed.* was referenced to estimate vehicular trip production for the proposed 40 Wilson Phase 2 development.

Trip generation was estimated using *Peak Hour of Generator*, which assumes that the peak of site-generated traffic aligns with the peak hours of background traffic. This aligns with traffic patterns for the proposed residential use, providing an accurate estimation of the impact of the proposed development on the existing network.

Trips generated by the fitted curve and average rate equations were evaluated, and the most conservative result was used. To align with the proposed land use, the following Trip Generation Codes were used:

- 210 – Single-Family Detached Housing
 - Applied to single-detached units
- 215 – Single-Family Attached Housing
 - Applied to semi-detached and townhouse units

The resulting trip generation per the *I.T.E. Trip Generation Manual, 12th Ed.* is summarized in Table 4-1 and Table 4-2.

Table 4-1: Trip Generation – 40 Wilson Phase 2

Land Use Code	Units	I.T.E. Trip Generation	Trips	
			AM Peak	PM Peak
210	9	Avg. Rate	$0.75(x)$	$0.97(x)$
		Fitted Curve	$0.71(x)+8.84$	$e^{(0.90\ln(x)+0.48)}$
		Trips Generated	15	12
215	100	Avg. Rate	$0.57(x)$	$0.52(x)$
		Fitted Curve	$e^{(0.86\ln(x)+0.01)}$	$e^{(0.66\ln(x)+0.89)}$
		Trips Generated	57	52
Total	-	-	72	64

Table 4-2: Trip Distribution – 40 Wilson Phase 2 Outbound/Inbound Trips

Land Use Code	AM Peak			PM Peak		
	OB/IB%	OB Trips	IB Trips	OB/IB%	OB Trips	IB Trips
210	73/27	11	4	37/63	4	7
215	77/23	44	13	38/62	20	32
Total	-	55	17	-	24	40

4.2 Vehicular Trip Distribution and Assignment

The new vehicle trips generated by the proposed development were assigned and distributed to the surrounding road network according to the existing background traffic travel patterns which reflect various “trip productions and attractions” in the study environs.

The “trip productions and attractions” in the vicinity of the proposed development include:

- Northeast
 - Hwy 401 East
 - Quinte Mall
 - Hwy 7
- Northwest
 - Hwy 401 West
 - Loyalist College
- Southeast
 - Old Hwy 2
 - Downtown Belleville
 - Shannonville
 - Prince Edward County
- Southwest
 - Old Hwy 2
 - Loyalist College
 - Quinte West

It should be noted that trips were distributed to the north and south based on the Palmer Rd traffic volumes reported by the *West Belleville Secondary Plan*. Sidney St is a main arterial roadway and the background traffic pattern is impacted by trips from numerous land uses; background traffic on Palmer Rd is primarily residential and better aligns with the proposed land use of the development. Trips were equally distributed between the east and west to align with the pattern of background traffic observed from the TSA counts at the intersections of

Moira St W with Tripp Ave and Elgin St. Trips were distributed to the site accesses via the most direct route.

The new vehicle trips generated by the proposed development were assigned and distributed to the surrounding road network as summarized in Table 4-3 and Table 4-4. Figures displaying traffic volumes by turning movement are provided in Appendix C.

Table 4-3: 40 Wilson Phase 2 - Nodal Trip Distribution Percentage

Node	Wilson Ave (E)	Wilson Ave (W)	Tripp Ave (N)	Elgin St (N)	Total
Northeast	5	0	5	5	15%
Northwest	0	5	5	5	15%
Southeast	35	0	0	0	35%
Southwest	0	35	0	0	35%
Total	40%	40%	10%	10%	100%

Table 4-4: 40 Wilson Phase 2 - Site Access Trip Distribution

Node	Site Access	AM Peak Hour		PM Peak Hour	
		OB Trips	IB Trips	OB Trips	IB Trips
Northeast	Wilson Ave (E)	3	1	1	2
	Tripp Ave (N)	3	1	1	2
	Elgin St (N)	3	1	1	2
Northwest	Wilson Ave (W)	3	1	1	2
	Tripp Ave (N)	3	1	1	2
	Elgin St (N)	3	1	1	2
Southeast	Wilson Ave (E)	19	6	8	14
Southwest	Wilson Ave (W)	19	6	8	14
Total	-	56	18	22	40

5 Transportation Impacts

5.1 Traffic Analysis

5.1.1 Analysis Horizons

Buildout of the proposed 40 Wilson Phase 2 development is expected to be complete in 2028. 5-yr (2033) and 10-yr (2038) horizons were also modelled to analyze future intersection performance. Jewell projected the background counts to future conditions using the approved annual growth factor of 0.5%, to align with the modelling of the *West Belleville Secondary Plan* (refer to Appendix E).

Accordingly, Jewell considered the following scenarios and planning horizons:

- 2026: Current Conditions
 - Background traffic
- 2028: Development Buildout
 - Projected background traffic (*Sand Cherry, Mancuso, YMCA, 40 Wilson Phase 1*)
 - Projected background traffic + Development-generated traffic
- 2030: 5-yr future projection
 - Projected background traffic (*Sand Cherry, Mancuso, YMCA, 40 Wilson Phase 1*)
 - Projected background traffic + Development-generated traffic
- 2035: 10-yr future projection
 - Projected background traffic (*Sand Cherry, Mancuso, YMCA, 40 Wilson Phase 1*)
 - Projected background traffic + Development-generated traffic

5.1.2 Traffic Volumes

Figures displaying background plus development-generated traffic are provided in Appendix C.

5.1.3 Level of Service

The performance of the study intersections was assessed based on delay calculations per the Highway Capacity Manual (HCM) criteria included as Table 5-1.

Table 5-1: Intersection Level-of-Service Criteria (HCM 2000, Exhibit 16-2, 17-2)

Level of Service	Average Control Delay (s/veh)	
	Stop-Controlled Intersection	Signalized Intersection
A	0 – 10	< 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

Jewell conservatively modelled the study intersections' performance based on the highest recorded 15-minute volume in each respective peak hour. Refer to Section 3.1 for the PHFs.

The heavy vehicle percentages (HVP) at the Wilson Ave / Sidney St, Moira St W / Tripp Ave, and Moira St W / Elgin St intersections were generally modelled to be consistent with those observed for each turning movement during the peak hours. However, due to low sample sizes which were skewed by one heavy vehicle trip, the eastbound-right (ER) movement at Moira St W / Elgin St and the eastbound-left (EL) movement at Wilson Ave / Sidney St were respectively adjusted from 100% to 2% and 33% to 20%. The 2% HVP for the ER movement at the Elgin St intersection aligns with that of the adjacent Tripp Ave intersection. The HVP for the EL movement at the Wilson Ave intersection was decreased to account for the residential trips which will be generated by the proposed development, with a 20% HVP selected based on the existing industrial/commercial developments on the road.

The HVPs at the Wilson Ave – Bogart Cres N / Palmer Rd intersection were set based on the observed volumes of heavy vehicles from the supplementary counts and the traffic volumes on Palmer Rd from the *West Belleville Secondary Plan*. The HVPs at the Moira St W / Palmer Rd intersection were set based on the volumes of heavy vehicles at the adjacent intersections (Wilson Ave – Bogart Cres N / Palmer Rd, Moira St W / Tripp Ave) observed from the counts and the traffic volumes on Palmer Rd from the *West Belleville Secondary Plan*.

Minimum HVPs of 2% were imposed for conservatism.

Modelling of all existing legs of the study intersections was completed with existing intersection geometry/controls. The Wilson Ave / Palmer Rd site access was modelled as stop-controlled (Figure 5-1).

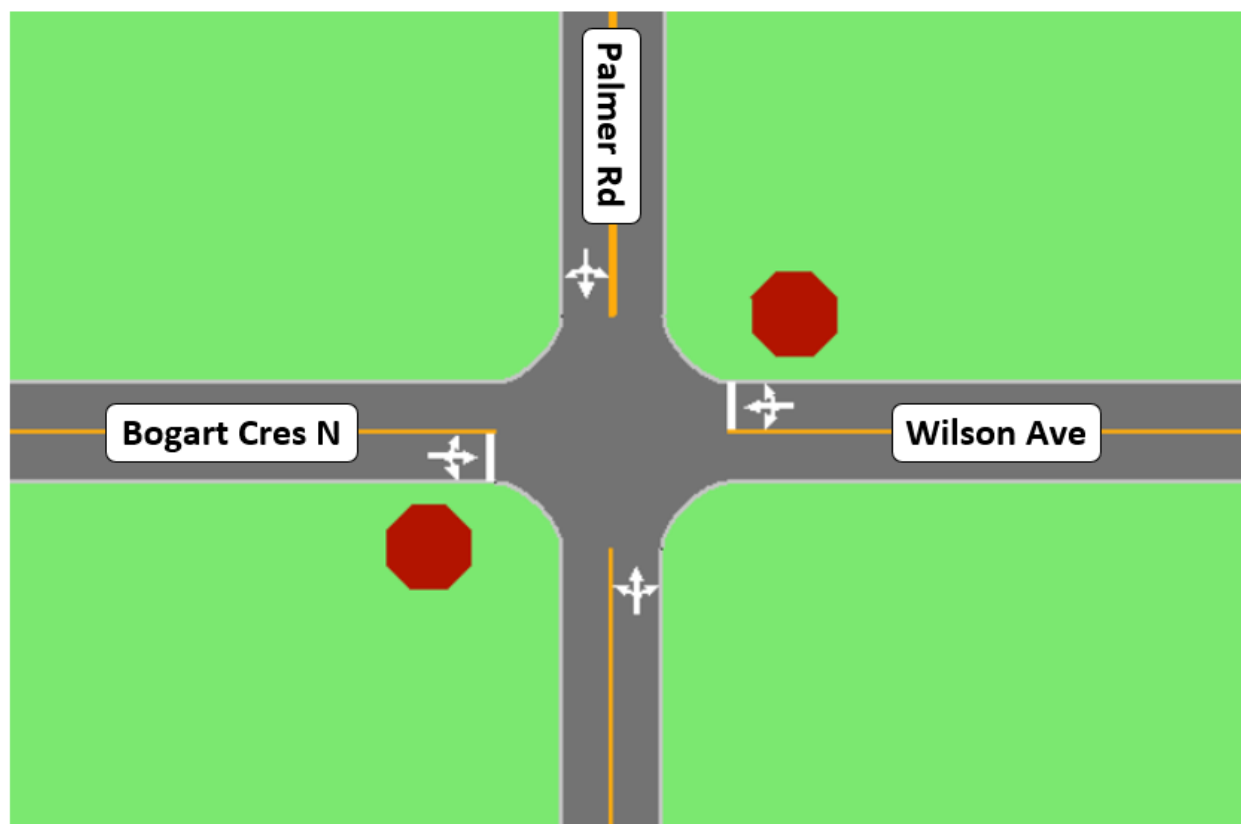


Figure 5-1: Wilson Ave - Bogart Cres N / Palmer Rd Intersection (Trafficware - Synchro 11)

The performance of the intersections under background traffic conditions and with the addition of the proposed development is summarized in Table 5-2. The detailed results of the analysis are provided in Appendix D.

The results of the Level of Service (LOS) analysis are summarized below:

- Background Traffic Conditions
 - Wilson Ave – Bogart Cres N / Palmer Rd: Good LOS (A-B) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, vehicle/capacity (V/C) ratio, and 95th percentile queue length are respectively 11 s, 0.06, and 0.2 vehicles.
 - Moira St W / Palmer Rd: Good LOS (A-C) is achieved through 2038 for all directions of traffic in the AM peak period. LOS A is achieved for eastbound (EB) and westbound (WB) traffic through 2038 in the PM peak period. For northbound (NB) traffic in the PM peak period, LOS decreases from good to acceptable (LOS C → D) between 2026 and 2028, which is then maintained through 2038. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 34 s, 0.39, and 1.7 vehicles.

- Moira St W / Tripp Ave: Good LOS (A-B) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 14 s, 0.08, and 0.3 vehicles.
- Moira St W / Elgin St: Good LOS (A-C) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 24.5 s, 0.15, and 0.5 vehicles.
- Wilson Ave / Sidney St: Good LOS (A-B) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 15 s, 0.08, and 0.2 vehicles.
- With Addition of the Proposed Development Traffic
 - Wilson Ave – Bogart Cres N / Palmer Rd: Good LOS (A-B) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 11 s, 0.09, and 0.3 vehicles.
 - Moira St W / Palmer Rd: Good LOS (A-C) is achieved through 2038 for all directions of traffic in the AM peak period. LOS A is achieved for EB and WB traffic through 2038 in the PM peak period. For NB traffic in the PM peak period, LOS decreases from acceptable to marginal (LOS D → E) between 2033 and 2038. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 35 s, 0.40, and 1.8 vehicles.
 - Moira St W / Tripp Ave: Good LOS (A-C) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 15 s, 0.1, and 0.3 vehicles.
 - Moira St W / Elgin St: Good LOS (A-C) is achieved for all directions of traffic through 2038 in the AM peak period and 2033 in the PM peak period. Good LOS (A-C) is achieved through 2038 for NB, EB, and WB traffic in the PM period, while LOS declines from good to acceptable (LOS C → D) for NB traffic between 2033 and 2038. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 25.3 s, 0.16, and 0.5 vehicles.
 - Wilson Ave / Sidney St: Good LOS (A-B) is achieved through 2038 for all directions of traffic in all peak periods. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 14 s, 0.13, and 0.4 vehicles.

In summary, the study intersections will continue to operate at acceptable levels through the study horizon with existing geometry/controls and the addition of the proposed development traffic.

Table 5-2: Analysis Horizon LOS - Background and Background + Proposed Development Traffic Conditions

			AM Peak Hour				PM Peak Hour			
			NB	EB	SB	WB	NB	EB	SB	WB
Wilson Ave - Bogart Cres N / Palmer Rd	2026 Bkgd	LOS	A	A	A		A	A	A	
		Delay	7.4	9.4	0		7.4	9.7	0	
		v/c	0.001	0.008	0		0.002	0.004	0	
		95thQ (veh)	0.001	0	0		0	0	0	
	2028 Bkgd	LOS	A	A	A	A	A	B	A	A
		Delay	7.5	9.9	7.4	9.7	7.5	10.7	7.5	9.8
		v/c	0.001	0.009	0.005	0.056	0.002	0.005	0.016	0.037
		95thQ (veh)	0	0	0	0.2	0	0	0.1	0.1
	2028 Bkgd+Dev	LOS	A	B	A	B	A	B	A	B
		Delay	7.5	10	7.4	10.1	7.5	10.8	7.5	10.2
		v/c	0.001	0.009	0.007	0.089	0.002	0.005	0.019	0.052
		95thQ (veh)	0	0	0	0.3	0	0	0.1	0.2
	2033 Bkgd	LOS	A	A	A	A	A	B	A	A
		Delay	7.5	9.8	7.4	9.7	7.5	10.7	7.5	9.9
		v/c	0.001	0.01	0.005	0.057	0.002	0.005	0.016	0.037
		95thQ (veh)	0	0	0	0.2	0	0	0.1	0.1
Moir a St W / Palmer Rd	2026 Bkgd	LOS	C	A		A	C	A		A
		Delay	18	0		8.4	23.7	0		8.6
		v/c	0.167	0		0.03	0.224	0		0.047
		95thQ (veh)	0.6	0		0.1	0.8	0		0.1
	2028 Bkgd	LOS	C	A		A	D	A		A
		Delay	21.4	0		8.5	30.1	0		8.8
		v/c	0.287	0		0.045	0.346	0		0.072
		95thQ (veh)	1.2	0		0.1	1.5	0		0.2
	2028 Bkgd+Dev	LOS	C	A		A	D	A		A
		Delay	21.8	0		8.5	31	0		8.8
		v/c	0.3	0		0.045	0.357	0		0.073
		95thQ (veh)	1.2	0		0.1	1.5	0		0.2
	2033 Bkgd	LOS	C	A		A	D	A		A
		Delay	22	0		8.5	31.8	0		8.8
		v/c	0.297	0		0.046	0.364	0		0.074
		95thQ (veh)	1.2	0		0.1	1.6	0		0.2
Moir a St W / Tripp Ave	2026 Bkgd	LOS	B	A		A	B	A		A
		Delay	12.1	0		8.2	13.3	0		8.5
		v/c	0.072	0		0.019	0.07	0		0.028
		95thQ (veh)	0.2	0		0.1	0.2	0		0.1
	2028 Bkgd	LOS	B	A		A	B	A		A
		Delay	12.4	0		8.3	13.8	0		8.5
		v/c	0.075	0		0.019	0.073	0		0.029
		95thQ (veh)	0.2	0		0.1	0.2	0		0.1
	2028 Bkgd+Dev	LOS	B	A		A	B	A		A
		Delay	12.9	0		8.3	14.2	0		8.6
		v/c	0.092	0		0.021	0.082	0		0.034
		95thQ (veh)	0.3	0		0.1	0.3	0		0.1
	2033 Bkgd	LOS	B	A		A	B	A		A
		Delay	12.5	0		8.3	14	0		8.6
		v/c	0.078	0		0.02	0.077	0		0.03
		95thQ (veh)	0.3	0		0.1	0.3	0		0.1
Moir a St W / Tripp Ave	2033 Bkgd+Dev	LOS	B	A		A	B	A		A
		Delay	13.1	0		8.3	14.4	0		8.6
		v/c	0.096	0		0.021	0.086	0		0.035
		95thQ (veh)	0.3	0		0.1	0.3	0		0.1
	2038 Bkgd	LOS	B	A		A	B	A		A
		Delay	12.7	0		8.3	14.2	0		8.6
		v/c	0.081	0		0.02	0.081	0		0.032
		95thQ (veh)	0.3	0		0.1	0.3	0		0.1
	2038 Bkgd+Dev	LOS	B	A		A	C	A		A
		Delay	13.3	0		8.4	15	0		8.7
		v/c	0.1	0		0.023	0.095	0		0.036
		95thQ (veh)	0.3	0		0.1	0.3	0		0.1

			AM Peak Hour				PM Peak Hour			
			NB	EB	SB	WB	NB	EB	SB	WB
Moira St W / Elgin St	2026 Bkgd	LOS	B	A	C	A	B	A	C	A
		Delay	12.3	8.3	16.3	8.2	14.7	8.5	19.7	8.6
		v/c	0.026	0.004	0.036	0.005	0.037	0.011	0.11	0.016
		95thQ (veh)	0.1	0	0.1	0	0.1	0	0.4	0
	2028 Bkgd	LOS	B	A	C	A	B	A	C	A
		Delay	12	8.3	17.8	8.2	14.4	8.6	22.5	8.7
		v/c	0.057	0.004	0.041	0.011	0.061	0.012	0.129	0.035
		95thQ (veh)	0.2	0	0.1	0	0.2	0	0.4	0.1
	2028 Bkgd+Dev	LOS	B	A	C	A	C	A	C	A
		Delay	12.9	8.3	17.9	8.2	15	8.6	23.1	8.7
		v/c	0.075	0.004	0.041	0.012	0.073	0.012	0.133	0.039
		95thQ (veh)	0.2	0	0.1	0	0.2	0	0.5	0.1
	2033 Bkgd	LOS	B	A	C	A	B	A	C	A
		Delay	12.1	8.3	18.2	8.3	14.6	8.6	23.4	8.7
		v/c	0.058	0.004	0.042	0.011	0.065	0.012	0.135	0.036
		95thQ (veh)	0.2	0	0.1	0	0.2	0	0.5	0.1
	2033 Bkgd+Dev	LOS	B	A	C	A	C	A	C	A
		Delay	13	8.3	18.4	8.3	15.4	8.6	24.1	8.8
		v/c	0.078	0.004	0.043	0.012	0.075	0.012	0.139	0.041
		95thQ (veh)	0.3	0	0.1	0	0.2	0	0.5	0.1
	2038 Bkgd	LOS	B	A	C	A	B	A	C	A
		Delay	12.2	8.4	18.6	8.3	14.8	8.7	24.5	8.8
		v/c	0.059	0.004	0.043	0.011	0.067	0.013	0.15	0.036
		95thQ (veh)	0.2	0	0.1	0	0.2	0	0.5	0.1
	2038 Bkgd+Dev	LOS	B	A	C	A	C	A	D	A
		Delay	13.2	8.4	19	8.3	15.7	8.7	25.3	8.8
		v/c	0.08	0.004	0.044	0.013	0.077	0.013	0.155	0.041
		95thQ (veh)	0.3	0	0.1	0	0.2	0	0.5	0.1
Wilson Ave / Sidney St	2026 Bkgd	LOS	A	B	A		A	B	A	
		Delay	8.4	12.8	0		8.3	14.7	0	
		v/c	0.002	0.019	0		0.002	0.034	0	
		95thQ (veh)	0	0.1	0		0	0.1	0	
	2028 Bkgd	LOS	A	B	A		A	B	A	
		Delay	8.6	12.1	0		8.5	14.1	0	
		v/c	0.011	0.074	0		0.025	0.072	0	
		95thQ (veh)	0	0.2	0		0.1	0.2	0	
	2028 Bkgd+Dev	LOS	A	B	A		A	B	A	
		Delay	8.6	12.3	0		8.6	13.8	0	
		v/c	0.015	0.121	0		0.033	0.09	0	
		95thQ (veh)	0	0.4	0		0.1	0.3	0	
	2033 Bkgd	LOS	A	B	A		A	B	A	
		Delay	8.6	12.2	0		8.6	14.3	0	
		v/c	0.011	0.075	0		0.025	0.073	0	
		95thQ (veh)	0	0.2	0		0.1	0.2	0	
	2033 Bkgd+Dev	LOS	A	B	A		A	B	A	
		Delay	8.6	12.4	0		8.6	14	0	
		v/c	0.016	0.123	0		0.033	0.092	0	
		95thQ (veh)	0.1	0.4	0		0.1	0.3	0	
	2038 Bkgd	LOS	A	B	A		A	B	A	
		Delay	8.6	12.4	0		8.6	14.5	0	
		v/c	0.011	0.077	0		0.026	0.075	0	
		95thQ (veh)	0	0.2	0		0.1	0.2	0	
	2038 Bkgd+Dev	LOS	A	B	A		A	B	A	
		Delay	8.7	12.6	0		8.6	14.3	0	
		v/c	0.017	0.126	0		0.034	0.095	0	
		95thQ (veh)	0.1	0.4	0		0.1	0.3	0	

5.2 Sensitivity Analysis – Moira St W / Palmer Rd

Development of the West Belleville Secondary Plan area will impact background traffic in the site vicinity. The *West Belleville Secondary Plan* used projected peak hour traffic from the area to assess the performance of the Moira St W / Palmer Rd study intersection through 2051. Jewell used this traffic data to complete a sensitivity analysis, to evaluate the impact of the 40 Wilson Phase 2 development on the intersection through this horizon compared to the conclusions of the *West Belleville Secondary Plan*.

Accordingly, Jewell considered the following scenarios and planning horizons:

- 2051: Sensitivity analysis
 - Projected background traffic (*Sand Cherry, Mancuso, YMCA, 40 Wilson Phase 1, West Belleville Secondary Plan Area*)
 - Projected background traffic + Development-generated traffic

The performance of the intersection under background traffic conditions and with the addition of the proposed development is summarized in Table 5-3. The detailed results of the analysis are provided in Appendix D.

The results of the Level of Service (LOS) analysis are summarized below:

- Background Traffic Conditions: Good LOS (A) is achieved for EB and WB traffic in all peak periods. NB traffic experiences marginal LOS (LOS E) in the AM peak period and poor (LOS F) in the PM peak period. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 82 s, 0.71, and 4 vehicles.
- With Addition of the Proposed Development Traffic: Good LOS (A) is achieved for EB and WB traffic in all peak periods. NB traffic experiences marginal LOS (LOS E) in the AM peak period and poor (LOS F) in the PM peak period. Maximum delay, V/C ratio, and 95th percentile queue length are respectively 88 s, 0.74, and 4.2 vehicles.

It is noted that the Moira St W / Palmer Rd intersection will not operate at acceptable levels for northbound traffic by 2051 regardless of whether the proposed development is constructed or not. The proposed development causes marginal increases to the already lengthy delays and has minimal impact on queueing.

Table 5-3: Sensitivity Analysis LOS - Background and Background + Proposed Development Traffic Conditions

			AM Peak Hour				PM Peak Hour			
			NB	EB	SB	WB	NB	EB	SB	WB
			E	A		A	F	A		A
Maira St W / Palmer Rd	2051 Bkgd	LOS	E	A		A	F	A		A
		Delay	35.5	0		8.9	82	0		9.4
		v/c	0.465	0		0.054	0.711	0		0.116
		95thQ (veh)	2.3	0		0.2	4	0		0.4
	2051 Bkgd+Dev	LOS	E	A		A	F	A		A
		Delay	37.4	0		8.9	87.6	0		9.4
		v/c	0.489	0		0.054	0.736	0		0.117
		95thQ (veh)	2.4	0		0.2	4.2	0		0.4

5.3 Intersection Improvements

The study intersections will continue to operate at acceptable levels through the study horizon with existing geometry and controls under both background and development-incorporated traffic conditions. As such, no improvements to the study intersections are proposed through the study horizon (2038).

The sensitivity analysis noted that operation of the Moira St W / Palmer Rd intersection will decline to poor levels (LOS F) for NB traffic by 2051. The decline occurs in background traffic conditions, due to traffic generated by the adjacent developments included in this study. However, due to the V/C ratio below 0.8 and 95th percentile queue length below 5 vehicles, improvements are not warranted. The *West Belleville Secondary Plan* also concluded that no improvements were required at this intersection, as the proposed signalization of Moira St W / Marshall Rd is expected to provide a reliable alternate route for traffic to enter Moira St W and create gaps in the flow of traffic along it, benefiting the operation of Palmer Rd.

No improvements to the study intersections are required as a result of the proposed development. However, it is recommended that the City monitor the operation of Moira St W / Palmer Rd as development of the West Belleville Secondary Plan area progresses.

5.4 Safety Impacts

5.4.1 Intersection Controls

Minor-road stop control will be required for the proposed Wilson Ave / Palmer Rd intersection, as well as all internal intersections (Figure 5-2).

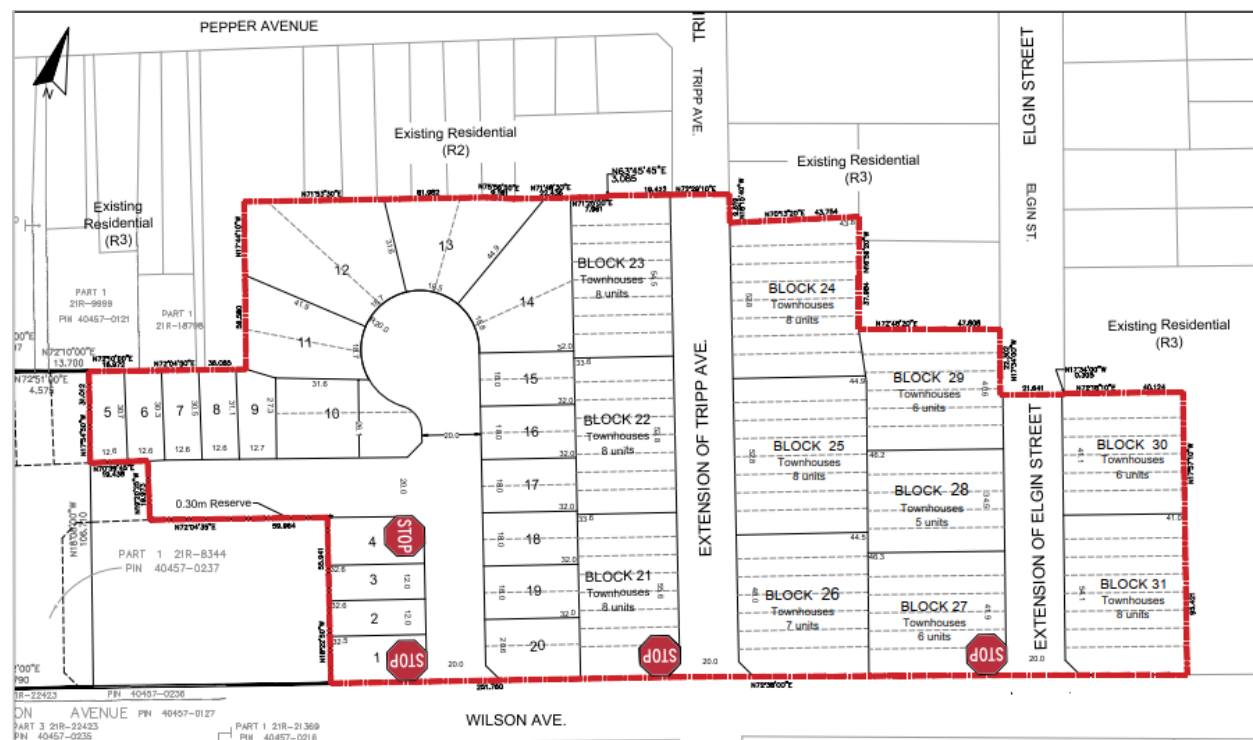


Figure 5-2: Internal Intersection Controls – 40 Wilson Phase 2

5.4.2 Intersection Spacing

The Transportation Association of Canada (TAC) Manual (2017) indicates that the recommended minimum intersection spacing, to allow for queuing and reduce potential turning conflicts, is as follows:

- Local Roads
 - Adjacent 4-legged intersection 60 m
 - Adjacent 3-legged intersection 40 m
- Collector Roads 60 m

As the changes to the existing Bogart Cres N – Palmer Rd intersection are proposed, intersection spacing was reviewed. The adjacent intersections are located ~150 m to the north and ~80 m to the south; recommended minimum spacing is satisfied and safe access to the development will be provided. Internal intersection spacing also exceeds the recommended minimum spacing and provides for safe movement through the development.

6 Transportation Demand Management

Transportation demand management is the application of strategies and policies to reduce travel demand, or to redistribute this demand in space or time. Managing demand can be a cost-effective alternative to increasing capacity.

6.1 Active Transportation

There is an active transportation network in place in the vicinity of the development. This generally comprises sidewalk located along the nearby arterial and collector roads (Palmer Rd, Moira St W, Bridge St W, and Sidney St), as well as the nearby local roads.

There is a marked school crossing with warning signals located at the intersection of Sidney St / Wilson Ave, and a marked crosswalk is located at Moira St W / Palmer Rd. Marked pedestrian crosswalks equipped with visual and audible pedestrian countdown signals are also located at the nearby Moira St W / Sidney St intersection.

The *West Belleville Secondary Plan* proposed the incorporation of sidewalks along one side of the road for local streets in residential areas without through-traffic, and along both sides for all other roads. The same strategy is recommended to be applied for the proposed development due to its proximity the West Belleville Secondary Plan area.

The existing sidewalk along the north side of Wilson Ave should be extended to Palmer Rd. Sidewalk should be installed along the western side of the Tripp Ave extension and along one side of the Elgin St extension. Sidewalk should also be installed along one side of all additional internal roads (see concept plans in Appendix A for proposed road additions).

The proposed road extensions will create discontinuities between the existing sidewalk network on Tripp Avenue and Elgin Street and the proposed sidewalks within the development. Opportunities to complete these missing pedestrian links should be considered by the City as part of future transportation infrastructure planning to improve network continuity and pedestrian connectivity.

In addition, the City should consider provision of sidewalks along the west side of Sidney Street and the east side of Palmer Road between Moira Street West and Bridge Street West as part of capital improvements, where sidewalk infrastructure is currently absent. The implementation of sidewalks on both sides of these arterial and collector roadways would be consistent with the active transportation objectives and complete street policies identified in the West Belleville Secondary Plan.

Should the existing sidewalk on the east side of Palmer Road not be extended to the proposed Wilson Avenue/Palmer Road site access, a pedestrian crossing warrant assessment should be undertaken to evaluate the need for a formal pedestrian crossing at this location.

6.2 Transit Service

Belleville Transit operates the Mobility Bus, an on-demand, door-to-door transit service for registered eligible users. Individuals with mobility concerns can arrange transit to and from the proposed development through this service if desired.

The proposed development is also adjacent to several Belleville Transit bus routes. Route 2 runs between the Downtown Terminal and Quinte Mall, with nearby stops on Sidney St. Route 3 runs between the Downtown Terminal and Loyalist College, with nearby stops on Moira St W. Route 8 runs between the Downtown Terminal and Avondale Rd, with nearby stops on Bridge St W. The routes operate at a 30- to 40-minute frequency throughout the week. Other routes which service the remainder of Belleville can be accessed from the Downtown Terminal (Figure 6-1).

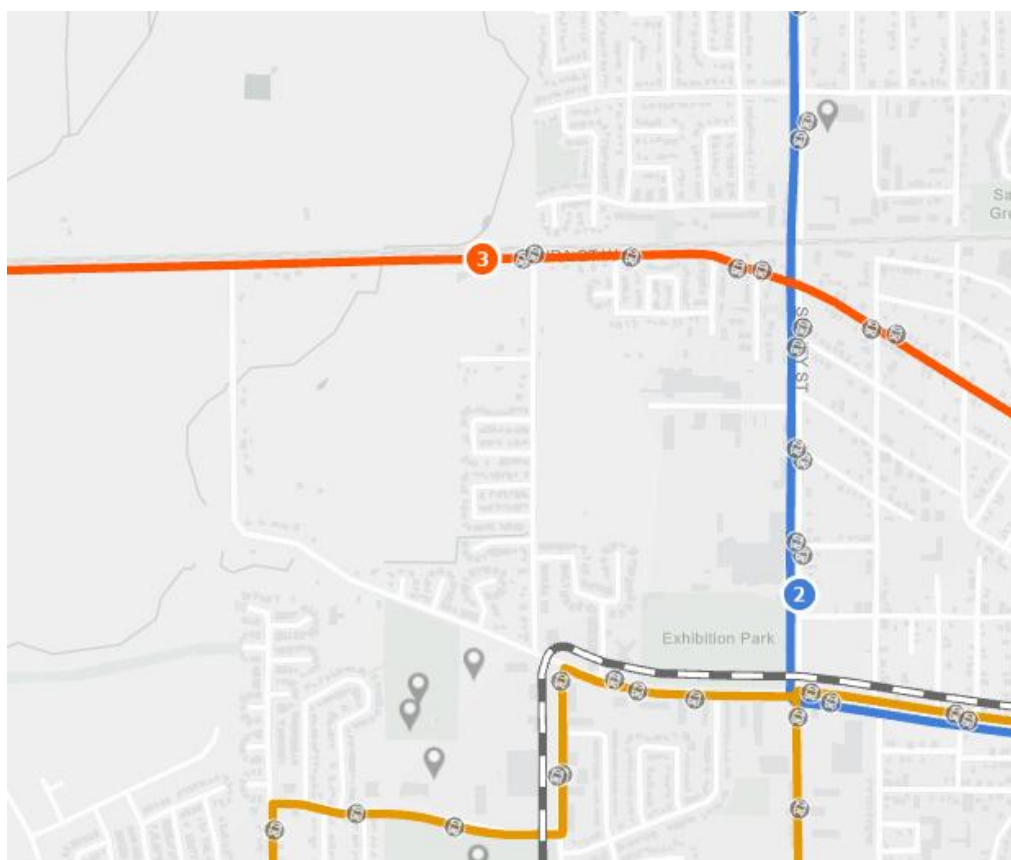


Figure 6-1: Belleville Transit Routes in the Development Vicinity (City of Belleville, 2025)

Inter-city bus transit is available. Quinte Transit operates a Belleville - Trenton route from 6:30 AM - 10:15 PM, and a Belleville - Picton route from 6:15 AM - 7:04 PM, Monday - Friday. The Picton route has a stop at the Downtown Terminal, and the Trenton route has a stop at Loyalist College.

Inter-city rail transit is also available. VIA Rail services Belleville as part of the Toronto - Ottawa & Toronto - Montreal routes, stopping at the Belleville Train Station located at 250 Station St. The station can be accessed from the Downtown Bus Terminal using Belleville Transit Route 6.

7 Conclusions & Recommendations

Jewell has prepared this TIS to discuss the impact of the second phase of the proposed 40 Wilson Ave residential development located in Belleville, ON.

The proposed development is 4.57 ha, and will consist of 78 street townhouse, 22 semi-detached, and 9 single-detached units. Traffic will access the development via the existing Wilson Ave / Sidney St, Moira St W / Tripp Ave, and Moira St W / Elgin St intersections, and the proposed Wilson Ave / Palmer Rd intersection. The site accesses and internal intersections will be minor-road stop-controlled. The development is expected to be completed by 2028.

Background and development-generated traffic was projected through 2038 to analyze the performance of the study intersections. All study intersections will continue to operate with acceptable levels of service through the study horizon with existing geometry and controls. As such, no upgrades to the existing road network are required to support the proposed development.

A sensitivity analysis with a 2051 horizon was also completed for Moira St W / Palmer Rd to align with the *West Belleville Secondary Plan* and consider the impact of the proposed development on the Secondary Plan's conclusions. The LOS for the northbound-left movement will decline to poor (LOS F) between 2038 and 2051 in background traffic conditions. The proposed development causes marginal increases to the already lengthy delays. The *West Belleville Secondary Plan* concluded that no improvements were required at this intersection, as the proposed signalization of Moira St W / Marshall Rd is expected to benefit the operation of Palmer Rd. It is recommended that the City monitor the operation of the Moira St W / Palmer Rd intersection as development of the West Belleville Secondary Plan area progresses.

Existing active transportation infrastructure and transit services in the development vicinity provide opportunity to complete trips using alternate transportation modes. Sidewalk is proposed to be installed along one side of all internal roads, including Wilson Ave and the extensions of Tripp Ave and Elgin St. There will be discontinuities between the existing sidewalk network and the proposed sidewalks within the development along Tripp Ave, Elgin St, Sidney St, and Palmer Rd. Opportunities to complete these missing pedestrian links should be considered by the City as part of future transportation infrastructure planning to improve network continuity and pedestrian connectivity.

Intersection spacing is sufficient to provide safe access and maintain acceptable network operation.

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Reviewed by:



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Jewell Engineering Inc.



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Jewell Engineering Inc.

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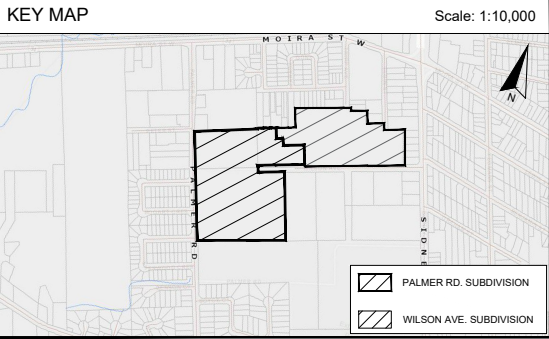
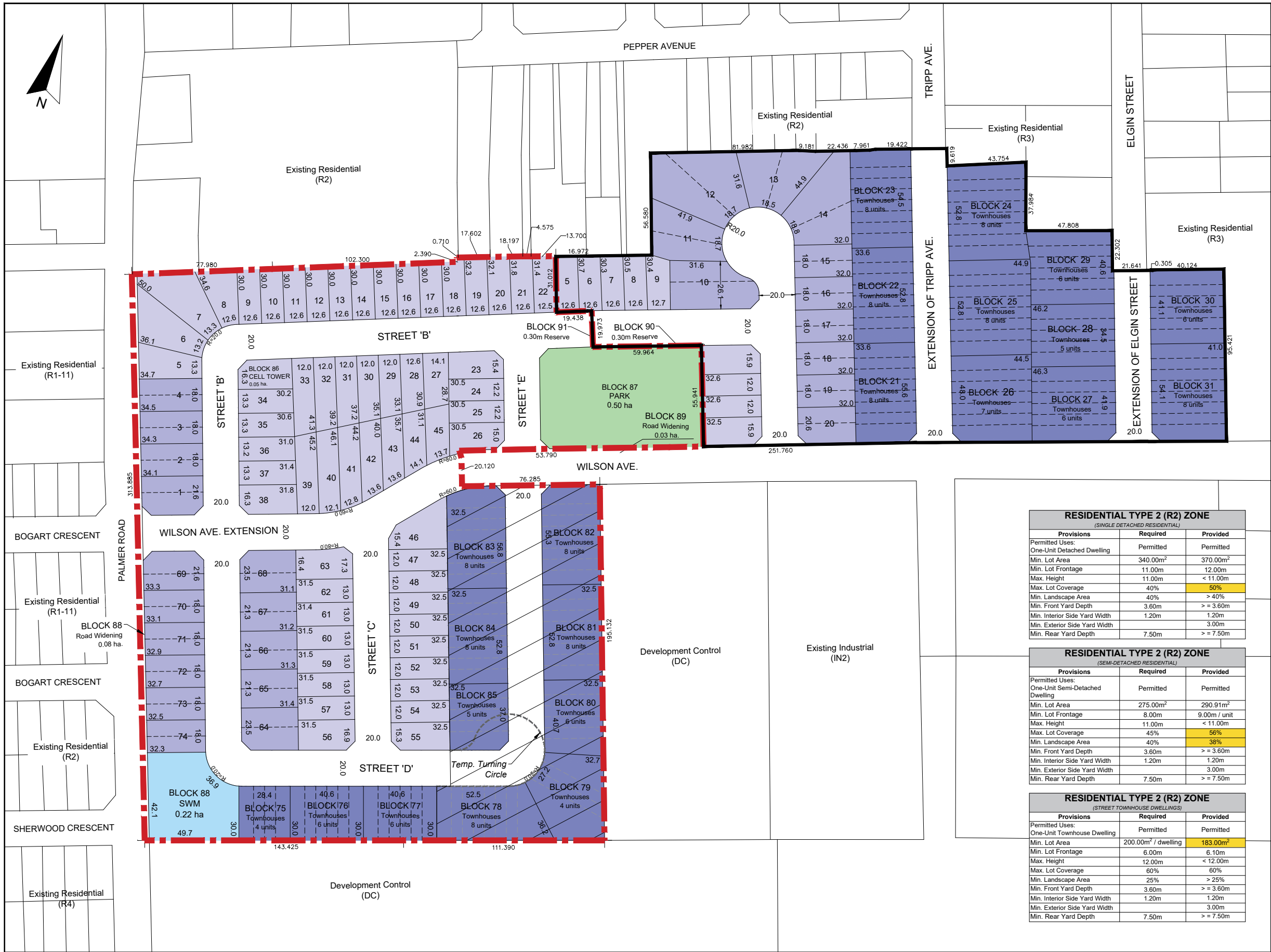
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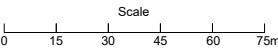
APPENDIX A

Development Concept Plans – Proposed and Adjacent Developments



CONCEPTUAL PLAN OF SUBDIVISION

Part of Lots 15, 16, 17, 26 & 27, Plan 135,
Part of Lots 6 & 7, Plan 1819
In the City of Belleville,
County of Hastings



LEGEND

- Single Detached Residential
- Semi-Detached Residential
- Street Townhouse Dwellings
- Park
- S.W.M. Pond

Phase 1: Palmer Road Subdivision

- Area: 82,738.31m² / 8.27 ha.
- Phase 1 ((65,830.05m² / 6.58 ha.)
- Phase 1b (16,908.26m² / 1.69 ha.)

Phase 2: Wilson Ave. Subdivision

- Area: 45,668.43m² / 4.57 ha

PHASE 1: LAND USE STATISTICS - PALMER RD. SUBDIVISION

LAND USE	LOT / BLK. NO.	UNITS	AREA (ha)
Single Detached Lots (R4 - 12m / 370.9m ²)	5 - 63	59	2.61
Semi - Detached Lots (R4 - 18m / 582.8m ²)	1 - 4, 64 - 74	30	0.97
Street Townhouse Units (R5 - 6.1m)	75 - 85	71	1.63
Cell Tower	86		0.05
Park	87		0.50
SWM Facilities	88		0.22
Road Widening	89 - 90		0.11
0.3m Reserves	91		0.00
20.0m ROW			2.1900
TOTAL	91	160	8.27

PHASE 2: LAND USE STATISTICS - WILSON AVE. SUBDIVISION

LAND USE	LOT / BLK. NO.	UNITS	AREA (ha)
Single Detached Lots	1 - 9	9	0.37
Semi Detached Units	10 - 20	22	1.01
Street Townhouse Units	21 - 31	78	2.16
20.0m ROW			
TOTAL			

RESIDENTIAL TYPE 2 (R2) ZONE (SINGLE DETACHED RESIDENTIAL)		
Provisions	Required	Provided
Permitted Uses:		
One-Unit Detached Dwelling	Permitted	Permitted
Min. Lot Area	340.00m ²	370.00m ²
Min. Lot Frontage	11.00m	12.00m
Max. Height	11.00m	< 11.00m
Max. Lot Coverage	40%	50%
Min. Landscape Area	40%	> 40%
Min. Front Yard Depth	3.60m	> = 3.60m
Min. Interior Side Yard Width	1.20m	1.20m
Min. Exterior Side Yard Width		3.00m
Min. Rear Yard Depth	7.50m	> = 7.50m

RESIDENTIAL TYPE 2 (R2) ZONE (SEMI-DETACHED RESIDENTIAL)		
Provisions	Required	Provided
Permitted Uses:		
One-Unit Semi-Detached Dwelling	Permitted	Permitted
Min. Lot Area	275.00m ²	290.91m ²
Min. Lot Frontage	8.00m	9.00m / unit
Max. Height	11.00m	< 11.00m
Max. Lot Coverage	45%	56%
Min. Landscape Area	40%	38%
Min. Front Yard Depth	3.60m	> = 3.60m
Min. Interior Side Yard Width	1.20m	1.20m
Min. Exterior Side Yard Width		3.00m
Min. Rear Yard Depth	7.50m	> = 7.50m

RESIDENTIAL TYPE 2 (R2) ZONE (STREET TOWNHOUSE DWELLINGS)		
Provisions	Required	Provided
Permitted Uses:		
One-Unit Townhouse Dwelling	Permitted	Permitted
Min. Lot Area	200.00m ² / dwelling	183.00m ²
Min. Lot Frontage	6.00m	6.10m
Max. Height	12.00m	< 12.00m
Max. Lot Coverage	60%	60%
Min. Landscape Area	25%	> 25%
Min. Front Yard Depth	3.60m	> = 3.60m
Min. Interior Side Yard Width	1.20m	1.20m
Min. Exterior Side Yard Width		3.00m
Min. Rear Yard Depth	7.50m	> = 7.50m

SCHEDULE OF REVISIONS

No.	Date	Description	By
1	June 8, 2026	Adjust Boundary; Revise lotting;	A.S.

METRIC NOTE:
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO
FEET BY DIVIDING BY 0.3048

IPS
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647 WELHAM ROAD, UNIT 9, BARRIE, ON, L4N 0B7
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info@ipsconsultinginc.com
www.ipsconsultinginc.com

Tel: 705-912-3281
Tel: 905-291-7525
Tel: 905-595-9008

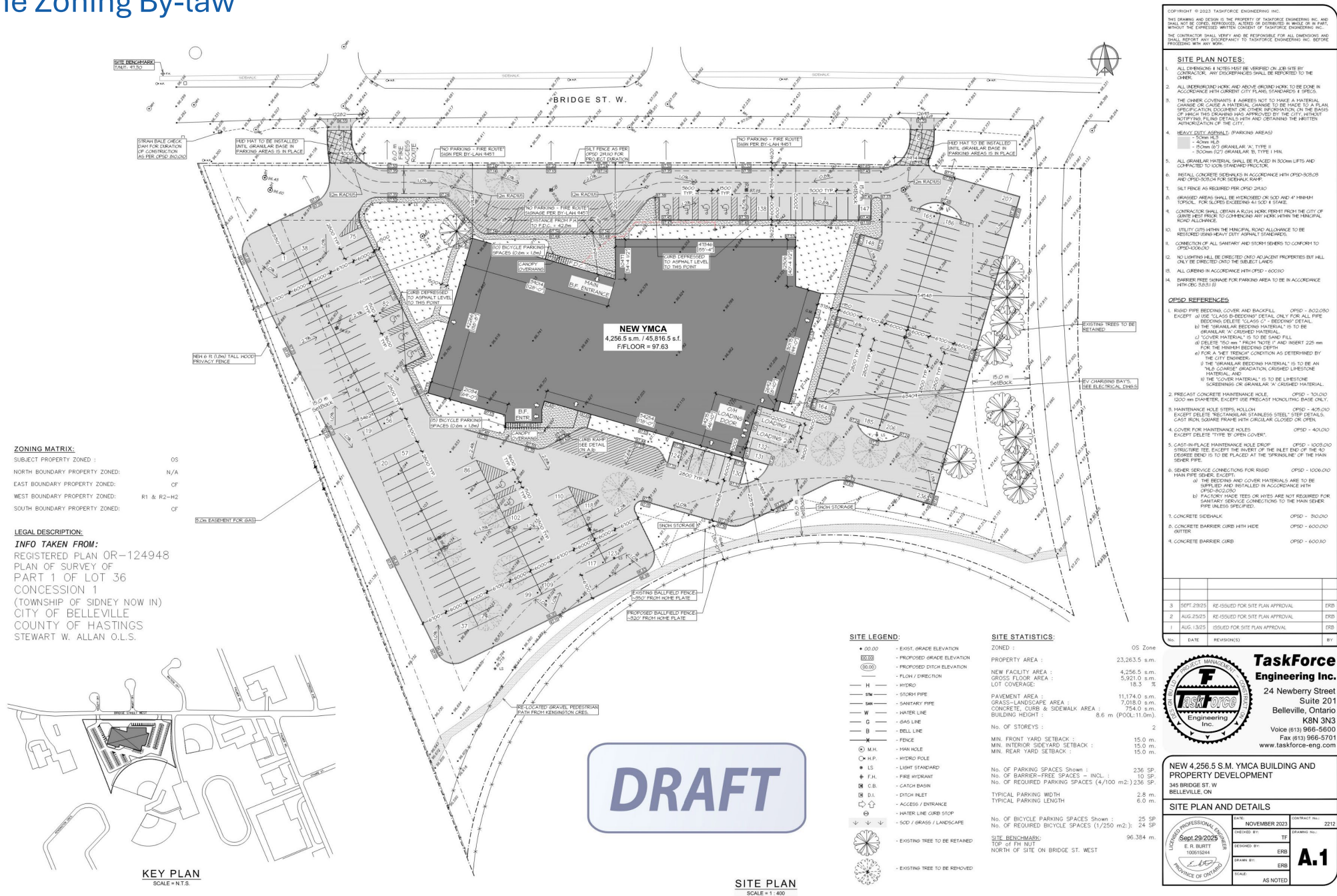
Date: December 14, 2020
File: 20-908

Drawn By: BH
Checked: KT

YMCA Centre for Life

Site Plan for YMCA

- The Plan illustrates a new 4,250 square metre YMCA on the site that meets the requirements of Belleville Zoning By-law 2024-100
- The Planning Act does not provide a public process for approval of Site Plans, the City is required to approve a site plan where it meets the requirements of the Zoning By-law



APPENDIX B

Traffic Counts – TSA, West Belleville Secondary Plan

Moira St W & Tripp Ave

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Belleville

Site #: 0000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 790

East Entering: 409

East Peds: 1

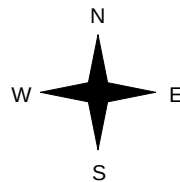
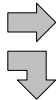
Peds Cross: 8

Heavys	Trucks	Cars	Totals
18	4	374	396



Moira Street West

Heavys	Trucks	Cars	Totals
8	3	341	352
0	0	5	5
8	3	346	



Tripp Avenue



Cars	23
Trucks	1
Heavys	0
Totals	24

Cars	6	28	34
Trucks	0	0	0
Heavys	0	1	1
Totals	6	29	

Cars	Trucks	Heavys	Totals
368	4	18	390
18	1	0	19
386	5	18	



Moira Street West



Cars	Trucks	Heavys	Totals
369	3	9	381

Peds Cross: 8
West Peds: 0
West Entering: 357
West Leg Total: 753

Peds Cross: 8
South Peds: 2
South Entering: 35
South Leg Total: 59

Comments

Moira St W & Tripp Ave

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From: 14:00:00

To: 15:00:00

Municipality: Belleville

Site #: 0000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 738

East Entering: 365

East Peds: 0

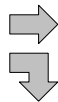
Peds Cross: X

Heavys	Trucks	Cars	Totals
25	4	315	344



Moira Street West

Heavys	Trucks	Cars	Totals
13	3	330	346
0	0	2	2
13	3	332	



Cars	Trucks	Heavys	Totals
309	4	25	338
25	1	1	27
334	5	26	



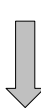
Moira Street West

Cars	Trucks	Heavys	Totals
355	4	14	373

Peds Cross: X
South Peds: 1
South Entering: 33
South Leg Total: 62

Peds Cross: X
West Peds: 0
West Entering: 348
West Leg Total: 692

Cars 27
Trucks 1
Heavys 1
Totals 29



Tripp Avenue

Cars 6
Trucks 0
Heavys 0
Totals 6

Comments

Moira St W & Tripp Ave

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 15:30:00

To: 16:30:00

Municipality: Belleville

Site #: 0000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 949

East Entering: 475

East Peds: 1

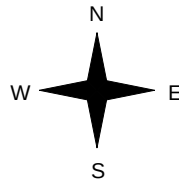
Peds Cross: 8

Heavys	Trucks	Cars	Totals
4	3	445	452



Moira Street West

Heavys	Trucks	Cars	Totals
6	5	438	449
0	0	7	7
6	5	445	



Tripp Avenue



Cars	35
Trucks	0
Heavys	0
Totals	35

Cars	5	23	28
Trucks	0	1	1
Heavys	0	1	1
Totals	5	25	

Cars	Trucks	Heavys	Totals
440	3	4	447
28	0	0	28
468	3	4	



Moira Street West



Cars	Trucks	Heavys	Totals
461	6	7	474

Peds Cross: 8
West Peds: 0
West Entering: 456
West Leg Total: 908

Peds Cross: 8
South Peds: 0
South Entering: 30
South Leg Total: 65

Comments

Moira St W & Tripp Ave

Total Count Diagram

Municipality: Belleville
Site #: 0000002301
Intersection: Moira Street West & Tripp Avenue
TFR File #: 1
Count date: 24-Mar-2026

Weather conditions:
Clear
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

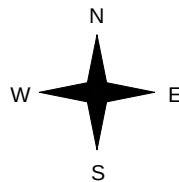
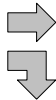
East Leg Total: 8059
East Entering: 4125
East Peds: 6
Peds Cross: 8

Heavys	Trucks	Cars	Totals
90	43	3784	3917



Moira Street West

Heavys	Trucks	Cars	Totals
75	41	3551	3667
1	3	38	42
76	44	3589	



Tripp Avenue



Cars	284
Trucks	12
Heavys	4
Totals	300

Cars	47	254	301
Trucks	3	9	12
Heavys	0	4	4
Totals	50	267	

Cars	Trucks	Heavys	Totals
3737	40	90	3867
246	9	3	258
3983	49	93	



Moira Street West



Cars	Trucks	Heavys	Totals
3805	50	79	3934

Peds Cross: 8
West Peds: 4
West Entering: 3709
West Leg Total: 7626

Peds Cross: 8
South Peds: 19
South Entering: 317
South Leg Total: 617

Comments

Moira St W & Tripp Ave

Traffic Count Summary

Intersection: Moira Street West & Tripp Avenue						Count Date: 24-Mar-2026		Municipality: Belleville					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	0	0	0	0	0	20	8:00:00	2	0	18	20	4	
9:00:00	0	0	0	0	0	34	9:00:00	5	0	29	34	0	
10:00:00	0	0	0	0	0	20	10:00:00	2	0	18	20	3	
11:00:00	0	0	0	0	0	26	11:00:00	9	0	17	26	0	
12:00:00	0	0	0	0	0	23	12:00:00	5	0	18	23	3	
13:00:00	0	0	0	0	0	21	13:00:00	2	0	19	21	2	
14:00:00	0	0	0	0	0	24	14:00:00	3	0	21	24	0	
15:00:00	0	0	0	0	0	33	15:00:00	6	0	27	33	1	
16:00:00	0	0	0	0	0	22	16:00:00	2	0	20	22	0	
17:00:00	0	0	0	0	0	37	17:00:00	7	0	30	37	0	
18:00:00	0	0	0	0	0	31	18:00:00	6	0	25	31	2	
19:00:00	0	0	0	0	0	26	19:00:00	1	0	25	26	4	
Totals:						317	50 0 267 317 19						
East Approach Totals						East/West Total Approaches	West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	11	336	0	347	1	600	8:00:00	0	249	4	253	1	
9:00:00	22	348	0	370	0	744	9:00:00	0	368	6	374	0	
10:00:00	19	256	0	275	0	586	10:00:00	0	309	2	311	0	
11:00:00	13	227	0	240	1	485	11:00:00	0	238	7	245	0	
12:00:00	18	282	0	300	0	581	12:00:00	0	279	2	281	0	
13:00:00	13	311	0	324	1	599	13:00:00	0	273	2	275	0	
14:00:00	26	296	0	322	0	564	14:00:00	0	240	2	242	0	
15:00:00	27	338	0	365	0	713	15:00:00	0	346	2	348	0	
16:00:00	33	444	0	477	0	889	16:00:00	0	408	4	412	0	
17:00:00	22	382	0	404	1	827	17:00:00	0	417	6	423	0	
18:00:00	28	392	0	420	0	750	18:00:00	0	325	5	330	0	
19:00:00	26	255	0	281	2	496	19:00:00	0	215	0	215	3	
Totals:						7834	0 3667 42 3709 4						
Calculated Values for Traffic Crossing Major Street													
Hours Ending:		8:00	9:00	10:00	13:00			15:00	16:00	17:00	18:00		
Crossing Values:		4	5	2	3			6	2	8	6		

Moira St W & Tripp Ave

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Belleville

Site #: 5000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 2

East Entering: 0

East Peds: 0

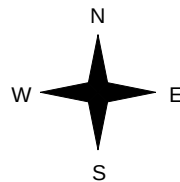
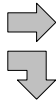
Peds Cross: X

Cyclists	Trucks	Cars	Totals
0	0	0	0



Moira Street West

Cyclists	Trucks	Cars	Totals
2	0	0	2
0	0	0	0
2	0	0	



Tripp Avenue



Cars	0
Trucks	0
Cyclists	0
Totals	0

Cars	0	0	0
Trucks	0	0	0
Cyclists	0	0	0
Totals	0	0	0

Cars	Trucks	Cyclists	Totals
0	0	0	0
0	0	0	0
0	0	0	



Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	2	2

Peds Cross: X

West Peds: 0

West Entering: 2

West Leg Total: 2

Peds Cross: X

South Peds: 0

South Entering: 0

South Leg Total: 0

Comments

Moira St W & Tripp Ave

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From: 12:30:00

To: 13:30:00

Municipality: Belleville

Site #: 5000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 3

East Entering: 2

East Peds: 0

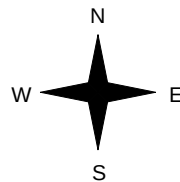
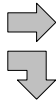
Peds Cross: X

Cyclists	Trucks	Cars	Totals
2	0	0	2



Moira Street West

Cyclists	Trucks	Cars	Totals
1	0	0	1
0	0	0	0
1	0	0	



Tripp Avenue



Cars	0
Trucks	0
Cyclists	0
Totals	0

Cars	0	0	0
Trucks	0	0	0
Cyclists	0	0	0
Totals	0	0	0

Cars	Trucks	Cyclists	Totals
0	0	2	2
0	0	0	0
0	0	2	



Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	1	1

Peds Cross: X
West Peds: 0
West Entering: 1
West Leg Total: 3

Peds Cross: X
South Peds: 0
South Entering: 0
South Leg Total: 0

Comments

Moira St W & Tripp Ave

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Belleville

Site #: 5000002301

Intersection: Moira Street West & Tripp Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

East Leg Total: 1

East Entering: 1

East Peds: 0

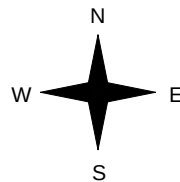
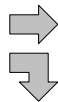
Peds Cross: X

Cyclists	Trucks	Cars	Totals
1	0	0	1



Moira Street West

Cyclists	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0



Tripp Avenue



Cars	0
Trucks	0
Cyclists	0
Totals	0

Cars	0	0	0
Trucks	0	0	0
Cyclists	0	0	0
Totals	0	0	0



Cars	Trucks	Cyclists	Totals
0	0	1	1
0	0	0	0
0	0	1	1

0	0	1	1
0	0	0	0
0	0	1	1

Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	0	0

Peds Cross: X
West Peds: 0
West Entering: 0
West Leg Total: 1

Peds Cross: X
South Peds: 0
South Entering: 0
South Leg Total: 0

Comments

Moira St W & Tripp Ave

Total Count Diagram

Municipality: Belleville
Site #: 5000002301
Intersection: Moira Street West & Tripp Avenue
TFR File #: 1
Count date: 24-Mar-2026

Weather conditions:
Clear
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

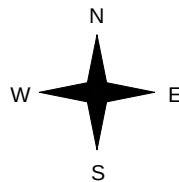
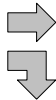
East Leg Total: 9
East Entering: 4
East Peds: 0
Peds Cross: 8

Cyclists	Trucks	Cars	Totals
4	0	0	4



Moira Street West

Cyclists	Trucks	Cars	Totals
5	0	0	5
0	0	0	0
5	0	0	



Tripp Avenue



Cars	0
Trucks	0
Cyclists	0
Totals	0

Cars	0	0	0
Trucks	0	0	0
Cyclists	0	0	0
Totals	0	0	0

Cars	Trucks	Cyclists	Totals
0	0	4	4
0	0	0	0
0	0	4	



Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	5	5

Peds Cross: 8
West Peds: 0
West Entering: 5
West Leg Total: 9

Peds Cross: 0
South Peds: 0
South Entering: 0
South Leg Total: 0

Comments

Moira St W & Tripp Ave Traffic Count Summary

Intersection: Moira Street West & Tripp Avenue						Count Date: 24-Mar-2026		Municipality: Belleville					
North Approach Totals						North/South Total Approaches	South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	0	0	0	0	0	0	8:00:00	0	0	0	0	0	
9:00:00	0	0	0	0	0	0	9:00:00	0	0	0	0	0	
10:00:00	0	0	0	0	0	0	10:00:00	0	0	0	0	0	
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0	
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0	
13:00:00	0	0	0	0	0	0	13:00:00	0	0	0	0	0	
14:00:00	0	0	0	0	0	0	14:00:00	0	0	0	0	0	
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0	
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0	
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0	
18:00:00	0	0	0	0	0	0	18:00:00	0	0	0	0	0	
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0	
Totals:	0	0	0	0	0	0		0	0	0	0	0	
East Approach Totals						East/West Total Approaches	West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds	
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total		
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0	
8:00:00	0	0	0	0	0	1	8:00:00	0	1	0	1	0	
9:00:00	0	0	0	0	0	1	9:00:00	0	1	0	1	0	
10:00:00	0	0	0	0	0	0	10:00:00	0	0	0	0	0	
11:00:00	0	1	0	1	0	2	11:00:00	0	1	0	1	0	
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0	
13:00:00	0	1	0	1	0	2	13:00:00	0	1	0	1	0	
14:00:00	0	1	0	1	0	1	14:00:00	0	0	0	0	0	
15:00:00	0	0	0	0	0	1	15:00:00	0	1	0	1	0	
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0	
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0	
18:00:00	0	1	0	1	0	1	18:00:00	0	0	0	0	0	
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0	
Totals:	0	4	0	4	0	9		0	5	0	5	0	
Calculated Values for Traffic Crossing Major Street													
Hours Ending:	8:00	9:00	10:00	11:00			13:00	14:00	15:00	18:00			
Crossing Values:	0	0	0	0			0	0	0	0			

Moira St W & Elgin St

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Bellville

Site #: 0000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 32

North Entering: 11

North Peds: 5

Peds Cross: $\bowtie$

	Heavys	Trucks	Cars	Totals
North	0	0	0	0
East	0	0	0	0
South	4	0	7	11
West	4	0	7	11



	Heavys	Trucks	Cars	Totals
North	0	0	21	21
East	0	0	21	21
South	0	0	21	21
West	0	0	21	21

East Leg Total: 815

East Entering: 419

East Peds: 1

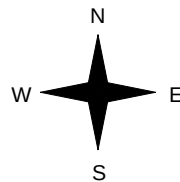
Peds Cross: $\bowtie$

Heavys	Trucks	Cars	Totals
18	5	380	403



Moira Street West

Heavys	Trucks	Cars	Totals
0	0	4	4
8	4	367	379
1	0	0	1
9	4	371	379



Tran Sidney Inn Access



Cars	Trucks	Heavys	Totals
17	0	0	17
374	5	18	397
5	0	0	5
396	5	18	419

Moira Street West



Cars	Trucks	Heavys	Totals
383	4	9	396

Peds Cross: $\bowtie$

West Peds: 1

West Entering: 384

West Leg Total: 787

Cars	Trucks	Heavys	Totals
5	0	1	6



Cars	Trucks	Heavys	Totals
2	0	0	2
0	0	0	0
0	0	1	1
2	0	1	3

Elgin Street



Peds Cross: $\bowtie$

South Peds: 7

South Entering: 12

South Leg Total: 18

Comments

Moira St W & Elgin St

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From: 14:00:00

To: 15:00:00

Municipality: Bellville

Site #: 0000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 40

North Entering: 14

North Peds: 1

Peds Cross: $\nlessgtr$

Heavys	1	0	0	1
Trucks	0	0	1	1
Cars	4	0	8	12
Totals	5	0	9	



Heavys	1
Trucks	0
Cars	25
Totals	26

East Leg Total: 772

East Entering: 383

East Peds: 1

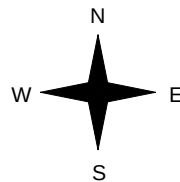
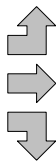
Peds Cross: $\nlessgtr$

Heavys	Trucks	Cars	Totals
26	5	326	357



Moira Street West

Heavys	Trucks	Cars	Totals
0	0	8	8
13	4	351	368
1	0	1	2
14	4	360	



Tran Sidney Inn Access



Cars	Trucks	Heavys	Totals
15	0	1	16
320	5	25	350
17	0	0	17
352	5	26	

Moira Street West



Cars	Trucks	Heavys	Totals
371	5	13	389

Peds Cross: $\nlessgtr$

West Peds: 3

West Entering: 378

West Leg Total: 735

Cars	18
Trucks	0
Heavys	1
Totals	19



Cars	2	2	12	16
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	2	2	12	

Peds Cross: $\nlessgtr$

South Peds: 6

South Entering: 16

South Leg Total: 35

Comments

Moira St W & Elgin St

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 15:30:00

To: 16:30:00

Municipality: Bellville

Site #: 0000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Moira Street West runs W/E

North Leg Total: 76

North Entering: 28

North Peds: 5

Peds Cross: $\bowtie$

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	13	2	13	28
Totals	13	2	13	



Heavys	0
Trucks	1
Cars	47
Totals	48

East Leg Total: 982

East Entering: 495

East Peds: 6

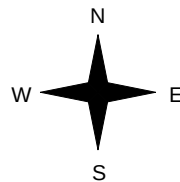
Peds Cross: $\bowtie$

Heavys	Trucks	Cars	Totals
4	2	453	459



Moira Street West

Heavys	Trucks	Cars	Totals
0	0	11	11
7	5	452	464
0	0	3	3
7	5	466	



Tran Sidney Inn Access



Cars	Trucks	Heavys	Totals
35	1	0	36
438	2	4	444
14	0	1	15
487	3	5	

Moira Street West



Cars	Trucks	Heavys	Totals
474	5	8	487

Peds Cross: $\bowtie$

West Peds: 7

West Entering: 478

West Leg Total: 937

Cars	19
Trucks	0
Heavys	1
Totals	20



Cars	2	1	9	12
Trucks	0	0	0	0
Heavys	0	0	1	1
Totals	2	1	10	

Peds Cross: $\bowtie$

South Peds: 2

South Entering: 13

South Leg Total: 33

Elgin Street



Comments

Moira St W & Elgin St

Total Count Diagram

Municipality: Bellville
Site #: 0000002302
Intersection: Moira Street West & Elgin Street
TFR File #: 1
Count date: 24-Mar-2026

Weather conditions:
Clear
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 491
North Entering: 180
North Peds: 34
Peds Cross: $\bowtie$

Heavys	2	0	1	3
Trucks	1	0	5	6
Cars	58	7	106	171
Totals	61	7	112	



Heavys	3
Trucks	6
Cars	302
Totals	311

East Leg Total: 8472
East Entering: 4335
East Peds: 52
Peds Cross: $\bowtie$

Heavys	Trucks	Cars	Totals
93	49	3920	4062



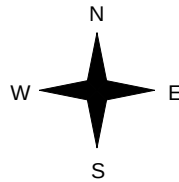
Tran Sidney Inn Access



Cars	Trucks	Heavys	Totals
229	5	1	235
3835	47	91	3973
125	1	1	127
4189	53	93	



Moira Street West



Heavys	Trucks	Cars	Totals
1	1	64	66
75	47	3774	3896
3	2	29	34
79	50	3867	



Moira Street West



Elgin Street



Peds Cross: $\bowtie$
West Peds: 58
West Entering: 3996
West Leg Total: 8058

Cars	161
Trucks	3
Heavys	4
Totals	168



Cars	27	9	124	160
Trucks	1	0	2	3
Heavys	0	1	3	4
Totals	28	10	129	

Peds Cross: $\bowtie$
South Peds: 35
South Entering: 167
South Leg Total: 335

Comments

Moira St W & Elgin St Traffic Count Summary

Intersection: Moira Street West & Elgin Street

Count Date: 24-Mar-2026

Municipality: Bellville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	7	0	3	10	5	20	8:00:00	2	1	7	10	7
9:00:00	13	0	5	18	5	33	9:00:00	4	0	11	15	0
10:00:00	9	1	1	11	0	27	10:00:00	0	1	15	16	4
11:00:00	7	1	1	9	0	26	11:00:00	2	1	14	17	0
12:00:00	6	0	3	9	1	25	12:00:00	3	0	13	16	5
13:00:00	10	0	5	15	5	26	13:00:00	1	0	10	11	1
14:00:00	8	0	6	14	1	23	14:00:00	2	1	6	9	4
15:00:00	9	0	5	14	1	30	15:00:00	2	2	12	16	6
16:00:00	15	0	7	22	7	37	16:00:00	1	2	12	15	1
17:00:00	7	3	11	21	1	34	17:00:00	3	1	9	13	1
18:00:00	15	0	10	25	6	42	18:00:00	7	0	10	17	5
19:00:00	6	2	4	12	2	24	19:00:00	1	1	10	12	1
Totals:	112	7	61	180	34	347		28	10	129	167	35

East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	9	333	16	358	2	625	8:00:00	2	263	2	267	2
9:00:00	6	356	17	379	1	780	9:00:00	6	393	2	401	1
10:00:00	11	270	13	294	7	621	10:00:00	3	322	2	327	6
11:00:00	11	230	18	259	2	521	11:00:00	1	256	5	262	0
12:00:00	12	301	14	327	1	636	12:00:00	4	301	4	309	2
13:00:00	9	310	14	333	2	624	13:00:00	8	283	0	291	6
14:00:00	10	315	18	343	4	612	14:00:00	3	265	1	269	1
15:00:00	17	350	16	383	1	761	15:00:00	8	368	2	378	3
16:00:00	13	454	28	495	8	927	16:00:00	9	420	3	432	6
17:00:00	13	386	27	426	5	878	17:00:00	11	438	3	452	8
18:00:00	9	398	31	438	13	793	18:00:00	7	341	7	355	17
19:00:00	7	270	23	300	6	553	19:00:00	4	246	3	253	6
Totals:	127	3973	235	4335	52	8331		66	3896	34	3996	58

Calculated Values for Traffic Crossing Major Street

Hours Ending:	9:00	10:00	12:00	13:00		15:00	16:00	17:00	18:00
Crossing Values:	19	23	12	19		17	32	26	52

Moira St W & Elgin St

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 9:30:00

To: 10:30:00

Municipality: Bellville

Site #: 5000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 4

North Entering: 2

North Peds: 0

Peds Cross: $\nlessgtr$

Cyclists	1	1	0	2
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	1	1	0	

Cyclists 2

Trucks 0

Cars 0

Totals 2

East Leg Total: 2

East Entering: 1

East Peds: 0

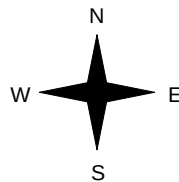
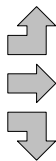
Peds Cross: $\nlessgtr$

Cyclists	Trucks	Cars	Totals
1	0	0	1



Moira Street West

Cyclists	Trucks	Cars	Totals
0	0	0	0
1	0	0	1
0	0	0	0
1	0	0	



Tran Sidney Inn Access



Cars	Trucks	Cyclists	Totals
0	0	1	1
0	0	0	0
0	0	0	0
0	0	1	

Moira Street West



Elgin Street



Peds Cross: $\nlessgtr$

West Peds: 0

West Entering: 1

West Leg Total: 2

Cars	0
Trucks	0
Cyclists	1
Totals	1



Cars	0	0	0	0
Trucks	0	0	0	0
Cyclists	0	1	0	1
Totals	0	1	0	

Peds Cross: $\nlessgtr$

South Peds: 0

South Entering: 1

South Leg Total: 2

Comments

Moira St W & Elgin St

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From: 14:00:00

To: 15:00:00

Municipality: Bellville

Site #: 5000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 6

North Entering: 3

North Peds: 0

Peds Cross: $\nlessgtr$

Cyclists	0	2	1	3
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	0	2	1	

Cyclists 3

Trucks 0

Cars 0

Totals 3

East Leg Total: 5

East Entering: 3

East Peds: 0

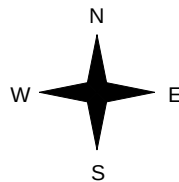
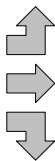
Peds Cross: $\nlessgtr$

Cyclists	Trucks	Cars	Totals
0	0	0	0



Moira Street West

Cyclists	Trucks	Cars	Totals
0	0	0	0
1	0	0	1
0	0	0	0
1	0	0	



Tran Sidney Inn Access

Cars	Trucks	Cyclists	Totals
0	0	3	3
0	0	0	0
0	0	0	0
0	0	3	

Moira Street West



Elgin Street



Peds Cross: $\nlessgtr$

West Peds: 0

West Entering: 1

West Leg Total: 1

Cars	0
Trucks	0
Cyclists	2
Totals	2



Cars	0	0	0	0
Trucks	0	0	0	0
Cyclists	0	0	0	0
Totals	0	0	0	

Peds Cross: $\nlessgtr$

South Peds: 0

South Entering: 0

South Leg Total: 2

Comments

Moira St W & Elgin St

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 15:00:00

To: 16:00:00

Municipality: Bellville

Site #: 5000002302

Intersection: Moira Street West & Elgin Street

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 0

North Entering: 0

North Peds: 0

Peds Cross: 0

Cyclists 0 0 0 0

Trucks 0 0 0 0

Cars 0 0 0 0

Totals 0 0 0 0

Cyclists 0

Trucks 0

Cars 0

Totals 0

East Leg Total: 2

East Entering: 2

East Peds: 0

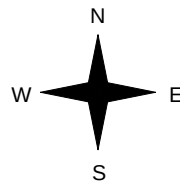
Peds Cross: 0

Cyclists	Trucks	Cars	Totals
0	0	0	0



Moira Street West

Cyclists	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0



Tran Sidney Inn Access

Cars	Trucks	Cyclists	Totals
0	0	0	0
0	0	0	0
0	0	2	2
0	0	2	

Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	0	0

Peds Cross: 0

West Peds: 0

West Entering: 0

West Leg Total: 0

Cars	0
Trucks	0
Cyclists	2
Totals	2



Cars	0	0	0	0
Trucks	0	0	0	0
Cyclists	0	0	0	0
Totals	0	0	0	0

Peds Cross: 0

South Peds: 0

South Entering: 0

South Leg Total: 2

Comments

Moira St W & Elgin St

Total Count Diagram

Municipality: Bellville
Site #: 5000002302
Intersection: Moira Street West & Elgin Street
TFR File #: 1
Count date: 24-Mar-2026

Weather conditions:
Clear
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Moira Street West runs W/E

North Leg Total: 10
North Entering: 5
North Peds: 0
Peds Cross: $\nlessgtr$

Cyclists	1	3	1	5
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	1	3	1	

Cyclists	5
Trucks	0
Cars	0
Totals	5

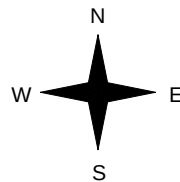
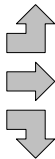
East Leg Total: 15
East Entering: 9
East Peds: 0
Peds Cross: $\nlessgtr$

Cyclists	Trucks	Cars	Totals
4	0	0	4



Moira Street West

Cyclists	Trucks	Cars	Totals
0	0	0	0
5	0	0	5
0	0	0	0
5	0	0	



Tran Sidney Inn Access

Cars	Trucks	Cyclists	Totals
0	0	4	4
0	0	3	3
0	0	2	2
0	0	9	

Moira Street West



Cars	Trucks	Cyclists	Totals
0	0	6	6

Peds Cross: $\nlessgtr$
West Peds: 0
West Entering: 5
West Leg Total: 9

Cars	0
Trucks	0
Cyclists	5
Totals	5



Cars	0	0	0	0
Trucks	0	0	0	0
Cyclists	0	1	0	1
Totals	0	1	0	

Peds Cross: $\nlessgtr$
South Peds: 0
South Entering: 1
South Leg Total: 6

Comments

Moira St W & Elgin St Traffic Count Summary

Intersection: Moira Street West & Elgin Street

Count Date: 24-Mar-2026

Municipality: Bellville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	0	8:00:00	0	0	0	0	0
9:00:00	0	0	0	0	0	0	9:00:00	0	0	0	0	0
10:00:00	0	0	0	0	0	1	10:00:00	0	1	0	1	0
11:00:00	0	1	1	2	0	2	11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0	0	13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0	0	14:00:00	0	0	0	0	0
15:00:00	1	2	0	3	0	3	15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0	0	18:00:00	0	0	0	0	0
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0
Totals:	1	3	1	5	0	6		0	1	0	1	0

East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	1	8:00:00	0	1	0	1	0
9:00:00	0	0	0	0	0	1	9:00:00	0	1	0	1	0
10:00:00	0	0	0	0	0	0	10:00:00	0	0	0	0	0
11:00:00	0	0	1	1	0	2	11:00:00	0	1	0	1	0
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0
13:00:00	0	1	0	1	0	2	13:00:00	0	1	0	1	0
14:00:00	0	1	0	1	0	1	14:00:00	0	0	0	0	0
15:00:00	0	0	3	3	0	4	15:00:00	0	1	0	1	0
16:00:00	2	0	0	2	0	2	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0
18:00:00	0	1	0	1	0	1	18:00:00	0	0	0	0	0
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0
Totals:	2	3	4	9	0	14		0	5	0	5	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	10:00	11:00		13:00	14:00	15:00	16:00
Crossing Values:	0	0	1	1		0	0	3	0

Sidney St & Wilson Ave

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 8:15:00

To: 9:15:00

Municipality: Belleville

Site #: 0000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Sidney Street runs N/S

North Leg Total: 883

North Entering: 447

North Peds: 10

Peds Cross: 

Heavys	0	12	12
Trucks	0	10	10
Cars	16	409	425
Totals	16	431	



Heavys	16
Trucks	4
Cars	416
Totals	436

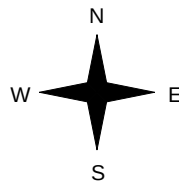
Heavys	Trucks	Cars	Totals
0	0	22	22



Sidney Street



Wilson Avenue



Heavys	Trucks	Cars	Totals
0	1	8	9
0	0	7	7
0	1	15	



Sidney Street



Peds Cross: 

West Peds: 14

West Entering: 16

West Leg Total: 38

Cars	416
Trucks	10
Heavys	12
Totals	438



Cars	6	408	414
Trucks	0	3	3
Heavys	0	16	16
Totals	6	427	

Peds Cross: 

South Peds: 0

South Entering: 433

South Leg Total: 871

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From: 13:15:00

To: 14:15:00

Municipality: Belleville

Site #: 0000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Sidney Street runs N/S

North Leg Total: 1012

North Entering: 484

North Peds: 3

Peds Cross: 

Heavys	0	9	9
Trucks	0	2	2
Cars	8	465	473
Totals	8	476	



Heavys	6
Trucks	6
Cars	516
Totals	528

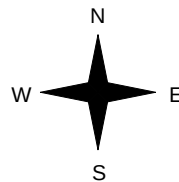
Heavys	Trucks	Cars	Totals
0	0	15	15



Sidney Street



Wilson Avenue



Heavys	Trucks	Cars	Totals
0	0	6	6
0	0	5	5
0	0	11	



Sidney Street



Peds Cross: 

West Peds: 0

West Entering: 11

West Leg Total: 26

Cars	470
Trucks	2
Heavys	9
Totals	481



Cars	7	510	517
Trucks	0	6	6
Heavys	0	6	6
Totals	7	522	

Peds Cross: 

South Peds: 0

South Entering: 529

South Leg Total: 1010

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 16:00:00

To: 17:00:00

Municipality: Belleville

Site #: 0000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Sidney Street runs N/S

North Leg Total: 1074

North Entering: 416

North Peds: 1

Peds Cross: 

Heavys	0	5	5
Trucks	0	4	4
Cars	3	404	407
Totals	3	413	



Heavys 10

Trucks 5

Cars 643

Totals 658

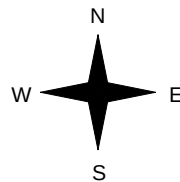
Heavys	Trucks	Cars	Totals
0	0	6	6



Sidney Street



Wilson Avenue



Heavys	Trucks	Cars	Totals
0	0	10	10
0	0	8	8
0	0	18	



Sidney Street



Peds Cross: 

West Peds: 3

West Entering: 18

West Leg Total: 24

Cars	412	Cars	3	633	636
Trucks	4	Trucks	0	5	5
Heavys	5	Heavys	0	10	10
Totals	421	Totals	3	648	



Peds Cross: 

South Peds: 0

South Entering: 651

South Leg Total: 1072

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Total Count Diagram

Municipality: Belleville

Site #: 0000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Sidney Street runs N/S

North Leg Total: 10321

North Entering: 4628

North Peds: 51

Peds Cross: 

Heavys	2	86	
Trucks	5	76	
Cars	86	4373	
Totals	93	4535	

88
81
4459



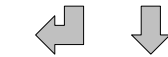
Heavys	107
Trucks	78
Cars	5508
Totals	5693

Heavys	Trucks	Cars	Totals
2	6	144	152

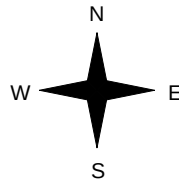


Wilson Avenue

Heavys	Trucks	Cars	Totals
2	5	82	89
0	1	59	60
2	6	141	



Sidney Street



Sidney Street



Peds Cross: 
West Peds: 49
West Entering: 149
West Leg Total: 301

Cars	4432
Trucks	77
Heavys	86
Totals	4595



Cars	58	5426	5484
Trucks	1	73	74
Heavys	0	105	105
Totals	59	5604	

Peds Cross: 
South Peds: 2
South Entering: 5663
South Leg Total: 10258

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave Traffic Count Summary

Intersection: Sidney Street & Wilson Avenue

Count Date: 24-Mar-2026

Municipality: Belleville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	258	7	265	0	480	8:00:00	1	214	0	215	0
9:00:00	0	449	15	464	10	873	9:00:00	4	405	0	409	0
10:00:00	0	334	10	344	0	737	10:00:00	8	385	0	393	2
11:00:00	0	318	8	326	2	776	11:00:00	5	445	0	450	0
12:00:00	0	381	11	392	3	929	12:00:00	8	529	0	537	0
13:00:00	0	387	10	397	5	925	13:00:00	8	520	0	528	0
14:00:00	0	465	7	472	6	984	14:00:00	5	507	0	512	0
15:00:00	0	411	6	417	3	925	15:00:00	7	501	0	508	0
16:00:00	0	420	8	428	21	1005	16:00:00	6	571	0	577	0
17:00:00	0	413	3	416	1	1067	17:00:00	3	648	0	651	0
18:00:00	0	387	1	388	0	914	18:00:00	3	523	0	526	0
19:00:00	0	312	7	319	0	676	19:00:00	1	356	0	357	0
Totals:	0	4535	93	4628	51	10291		59	5604	0	5663	2

East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	3	8:00:00	2	0	1	3	0
9:00:00	0	0	0	0	0	12	9:00:00	8	0	4	12	11
10:00:00	0	0	0	0	0	17	10:00:00	9	0	8	17	7
11:00:00	0	0	0	0	0	17	11:00:00	10	0	7	17	3
12:00:00	0	0	0	0	0	13	12:00:00	5	0	8	13	0
13:00:00	0	0	0	0	0	14	13:00:00	7	0	7	14	0
14:00:00	0	0	0	0	0	16	14:00:00	9	0	7	16	0
15:00:00	0	0	0	0	0	14	15:00:00	10	0	4	14	1
16:00:00	0	0	0	0	0	12	16:00:00	12	0	0	12	21
17:00:00	0	0	0	0	0	18	17:00:00	10	0	8	18	3
18:00:00	0	0	0	0	0	7	18:00:00	6	0	1	7	1
19:00:00	0	0	0	0	0	6	19:00:00	1	0	5	6	2
Totals:	0	0	0	0	0	149		89	0	60	149	49

Calculated Values for Traffic Crossing Major Street

Hours Ending:	9:00	12:00	13:00	14:00		15:00	16:00	17:00	18:00
Crossing Values:	18	8	12	15		13	33	11	6

Sidney St & Wilson Ave

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 11:00:00

One Hour Peak

From: 7:45:00

To: 8:45:00

Municipality: Belleville

Site #: 5000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Sidney Street runs N/S

North Leg Total: 1

North Entering: 1

North Peds: 0

Peds Cross: 

Cyclists	0	1	1
Trucks	0	0	0
Cars	0	0	0
Totals	0	1	



Cyclists 0

Trucks 0

Cars 0

Totals 0

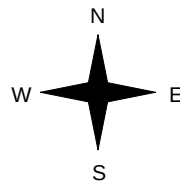
Cyclists	Trucks	Cars	Totals
0	0	0	0



Sidney Street



Wilson Avenue



Cyclists	Trucks	Cars	Totals
0	0	0	0
1	0	0	1
1	0	0	



Sidney Street



Peds Cross: 

West Peds: 0

West Entering: 1

West Leg Total: 1

Cars	0
Trucks	0
Cyclists	2
Totals	2



Cars	0	0	0
Trucks	0	0	0
Cyclists	0	0	0
Totals	0	0	

Peds Cross: 

South Peds: 0

South Entering: 0

South Leg Total: 2

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Mid-day Peak Diagram

Specified Period

From: 11:00:00

To: 15:00:00

One Hour Peak

From:

To:

Municipality: Belleville

Site #: 5000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Sidney Street runs N/S

North Leg Total: 0

North Entering: 0

North Peds: 0

Peds Cross: 

Cyclists	0	0	0
Trucks	0	0	0
Cars	0	0	0
Totals	0	0	0



Cyclists 0

Trucks 0

Cars 0

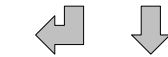
Totals 0

Cyclists	Trucks	Cars	Totals
0	0	0	0

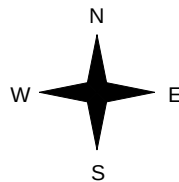


Wilson Avenue

Cyclists	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0



Sidney Street



Sidney Street



Peds Cross: 

West Peds: 0

West Entering: 0

West Leg Total: 0

Cars	0	Cars	0	0	0
Trucks	0	Trucks	0	0	0
Cyclists	0	Cyclists	0	0	0
Totals	0	Totals	0	0	0



Peds Cross: 

South Peds: 0

South Entering: 0

South Leg Total: 0

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 19:00:00

One Hour Peak

From: 15:00:00

To: 16:00:00

Municipality: Belleville

Site #: 5000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

** Non-Signalized Intersection **

Major Road: Sidney Street runs N/S

North Leg Total: 1

North Entering: 0

North Peds: 0

Peds Cross: 

Cyclists	0	0	0
Trucks	0	0	0
Cars	0	0	0
Totals	0	0	0



Cyclists 1

Trucks 0

Cars 0

Totals 1

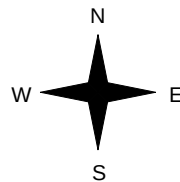
Cyclists	Trucks	Cars	Totals
0	0	0	0



Sidney Street



Wilson Avenue



Cyclists	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0



Sidney Street



Peds Cross: 

West Peds: 0

West Entering: 0

West Leg Total: 0

Cars	0
Trucks	0
Cyclists	0
Totals	0



Cars	0	0	0
Trucks	0	0	0
Cyclists	0	1	1
Totals	0	1	1

Peds Cross: 

South Peds: 0

South Entering: 1

South Leg Total: 1

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave

Total Count Diagram

Municipality: Belleville

Site #: 5000002303

Intersection: Sidney Street & Wilson Avenue

TFR File #: 1

Count date: 24-Mar-2026

Weather conditions:

Clear

Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: Sidney Street runs N/S

North Leg Total: 2

North Entering: 1

North Peds: 0

Peds Cross: 

Cyclists	0	1	1
Trucks	0	0	0
Cars	0	0	0
Totals	0	1	



Cyclists 1

Trucks 0

Cars 0

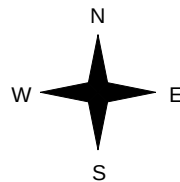
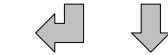
Totals 1

Cyclists	Trucks	Cars	Totals
0	0	0	0



Wilson Avenue

Cyclists	0	0	0	0
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	0	0	0	0
Cyclists	1	0	0	1
Trucks	0	0	0	0
Cars	0	0	0	0
Totals	1	0	0	1



Sidney Street

Peds Cross: 

West Peds: 0

West Entering: 1

West Leg Total: 1

Cars	0
Trucks	0
Cyclists	2
Totals	2



Cars	0	0	0
Trucks	0	0	0
Cyclists	0	1	1
Totals	0	1	

Peds Cross: 

South Peds: 0

South Entering: 1

South Leg Total: 3

Comments

School crossing guard time 8:30-9:00, 12:30-13:00, 15:00-15:40.

Sidney St & Wilson Ave Traffic Count Summary

Intersection: Sidney Street & Wilson Avenue

Count Date: 24-Mar-2026

Municipality: Belleville

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	1	0	1	0	1	8:00:00	0	0	0	0	0
9:00:00	0	0	0	0	0	0	9:00:00	0	0	0	0	0
10:00:00	0	0	0	0	0	0	10:00:00	0	0	0	0	0
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0	0	13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0	0	14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	1	16:00:00	0	1	0	1	0
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0	0	18:00:00	0	0	0	0	0
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0
Totals:	0	1	0	1	0	2		0	1	0	1	0

East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds		Hour Ending	Includes Cars, Trucks, & Cyclists				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	0	8:00:00	0	0	0	0	0
9:00:00	0	0	0	0	0	1	9:00:00	0	0	1	1	0
10:00:00	0	0	0	0	0	0	10:00:00	0	0	0	0	0
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0	0	12:00:00	0	0	0	0	0
13:00:00	0	0	0	0	0	0	13:00:00	0	0	0	0	0
14:00:00	0	0	0	0	0	0	14:00:00	0	0	0	0	0
15:00:00	0	0	0	0	0	0	15:00:00	0	0	0	0	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	0	17:00:00	0	0	0	0	0
18:00:00	0	0	0	0	0	0	18:00:00	0	0	0	0	0
19:00:00	0	0	0	0	0	0	19:00:00	0	0	0	0	0
Totals:	0	0	0	0	0	1		0	0	1	1	0

Calculated Values for Traffic Crossing Major Street

Hours Ending:	8:00	9:00	10:00	11:00		12:00	13:00	14:00	16:00
Crossing Values:	0	0	0	0		0	0	0	0

Figure 8: Existing Conditions: Traffic Volumes

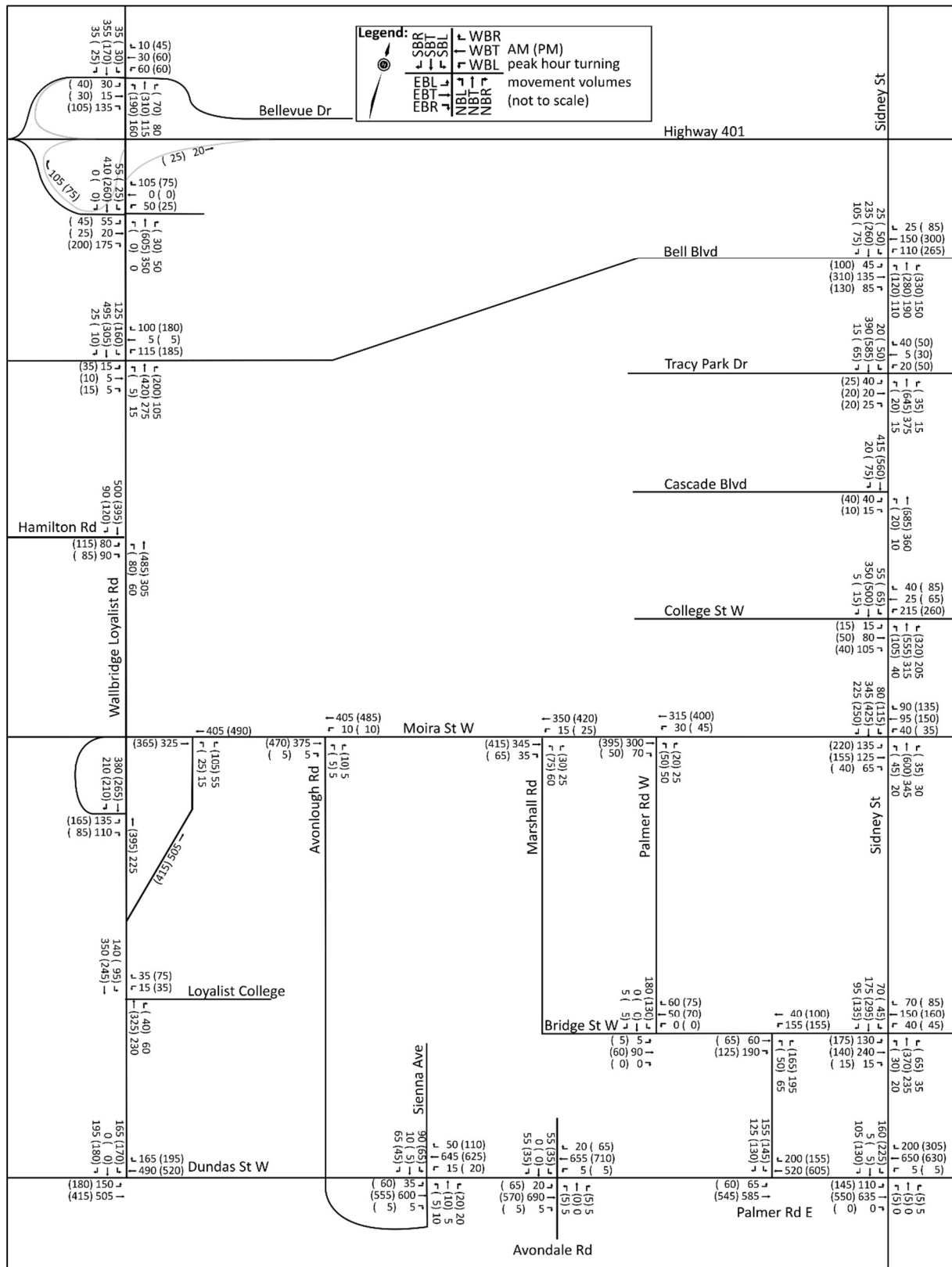
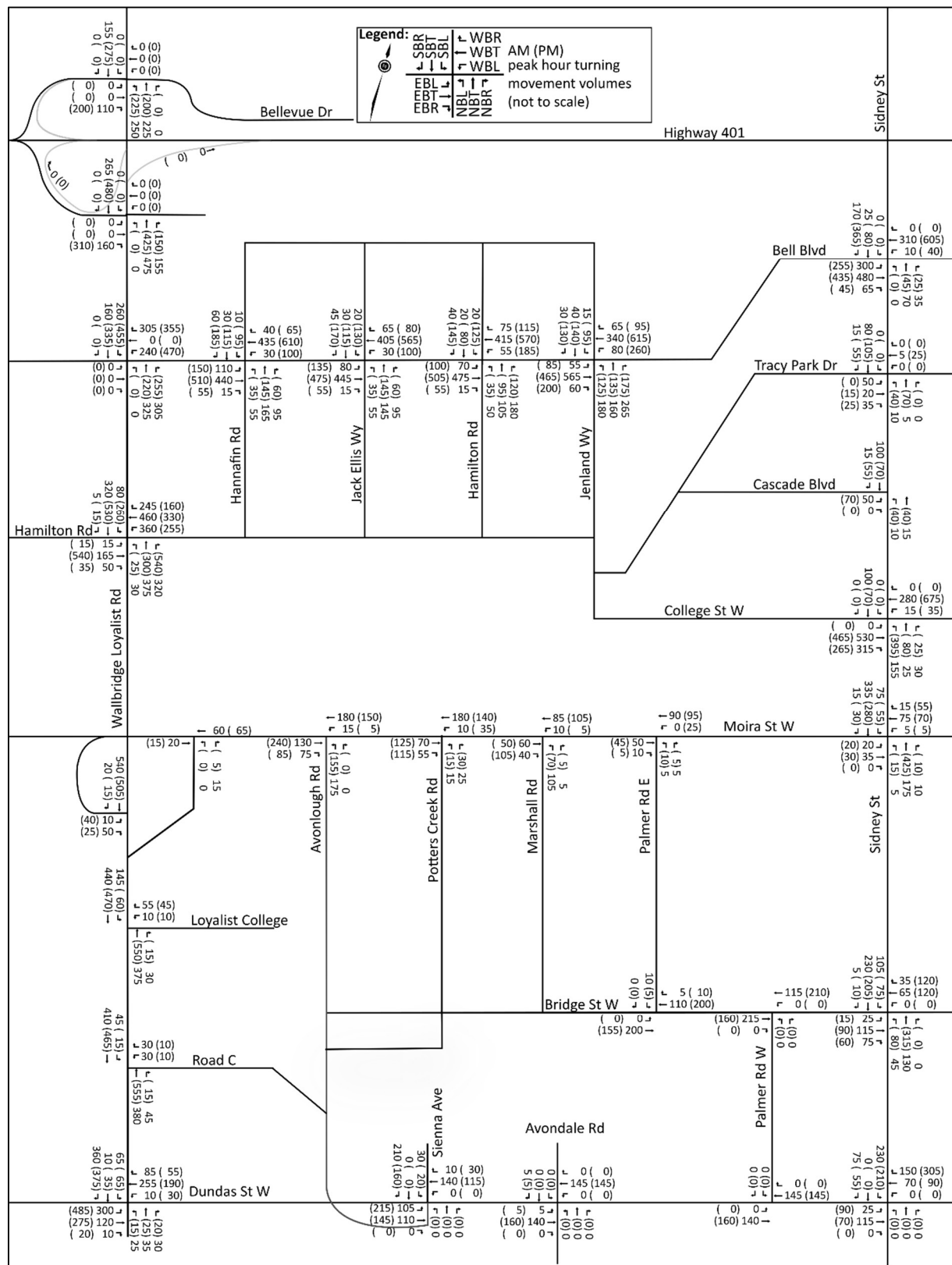


Figure 24: Site Generated Traffic Volumes



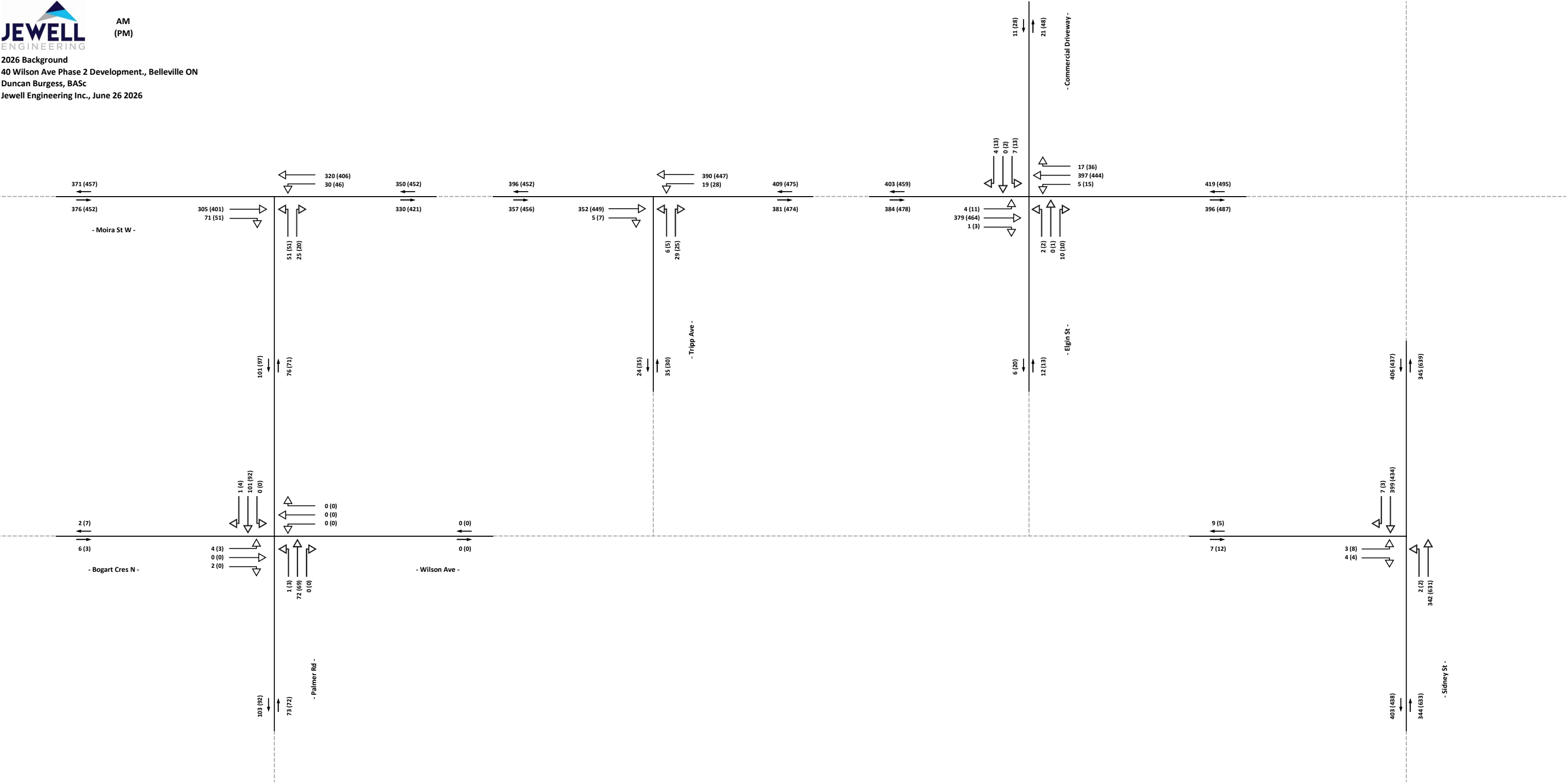
APPENDIX C

Traffic Volume Figures – Background, Development Traffic



2026 Background
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026

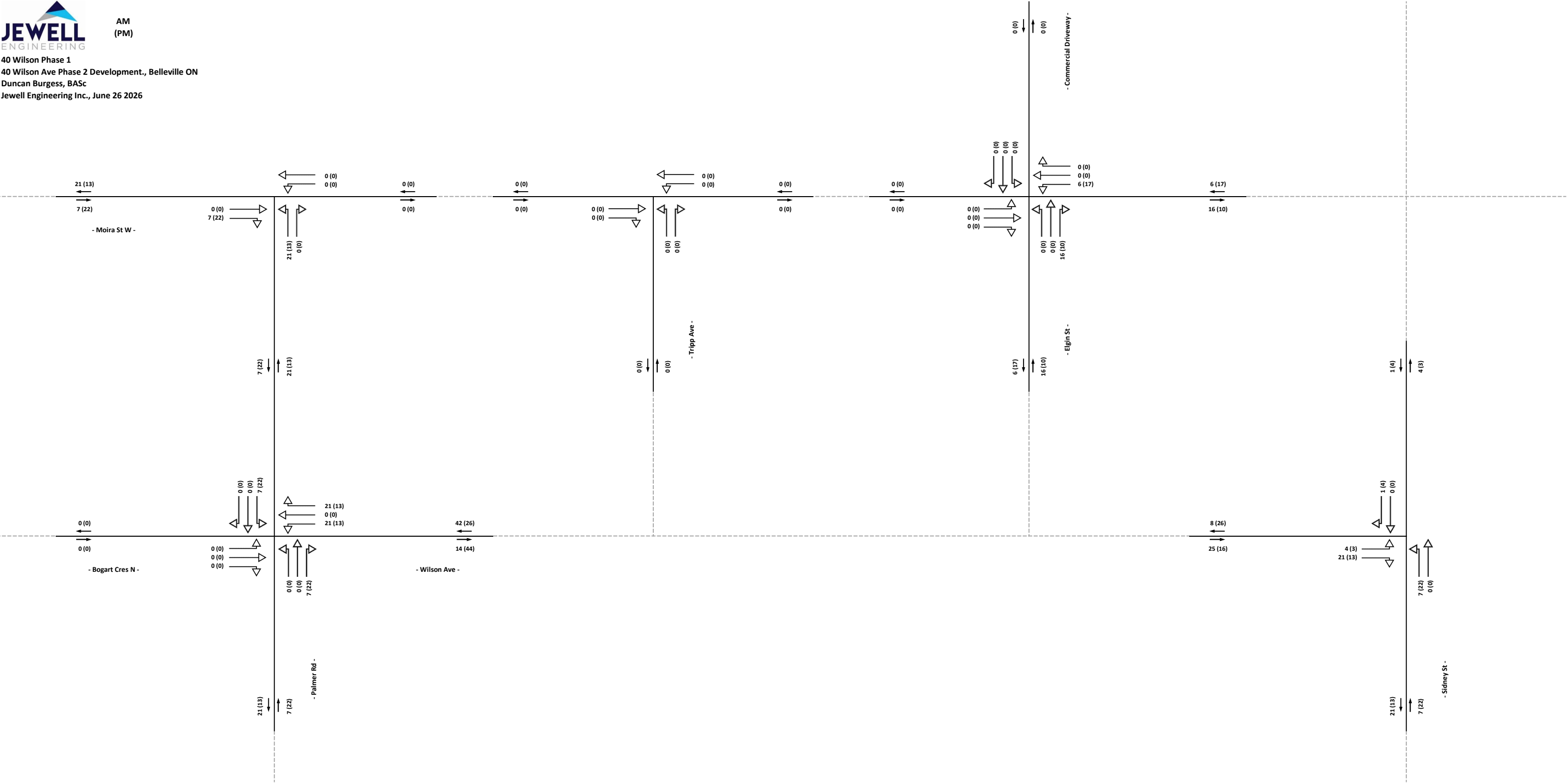
AM
(PM)





AM
(PM)

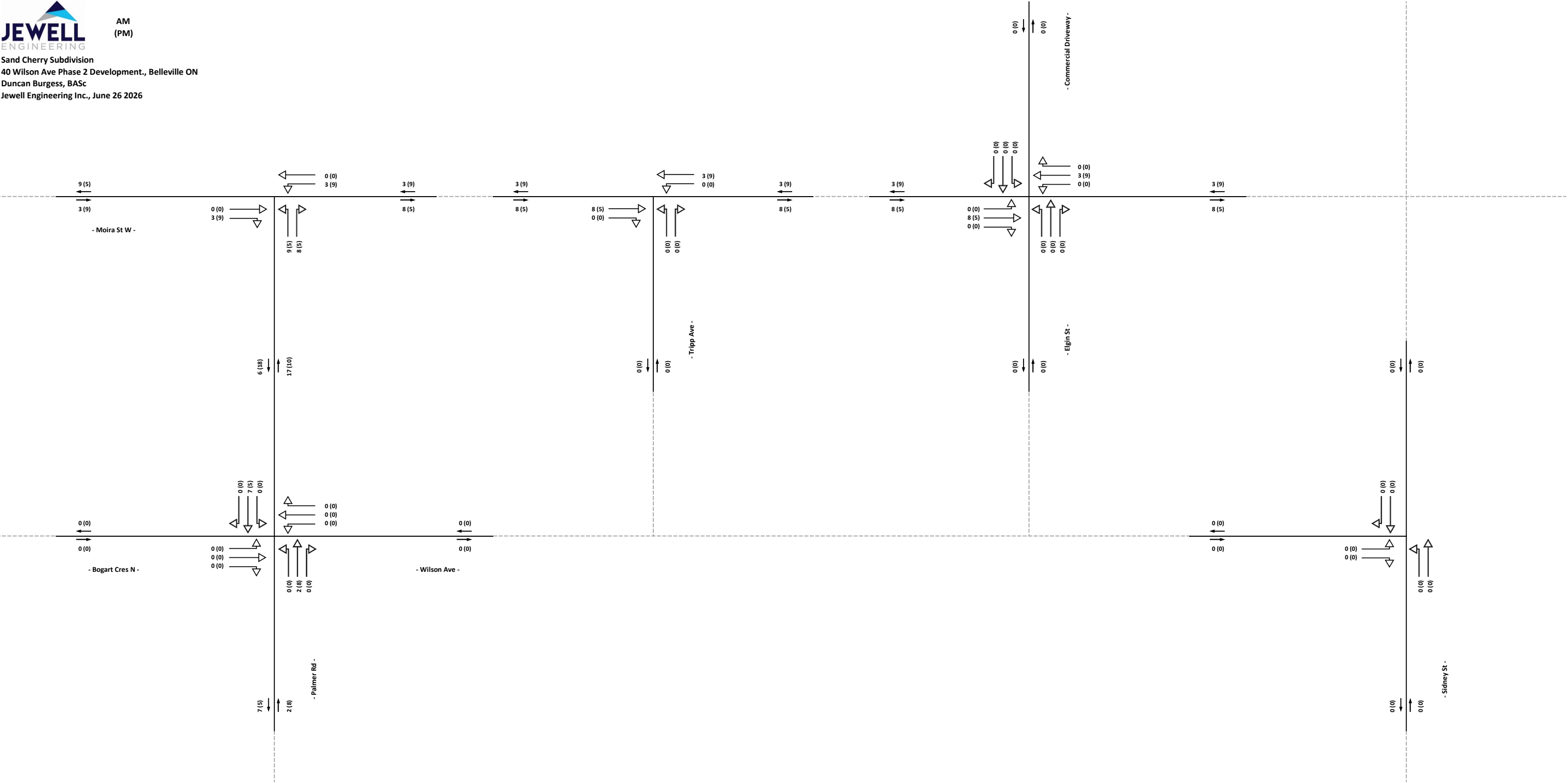
40 Wilson Phase 1
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





AM
(PM)

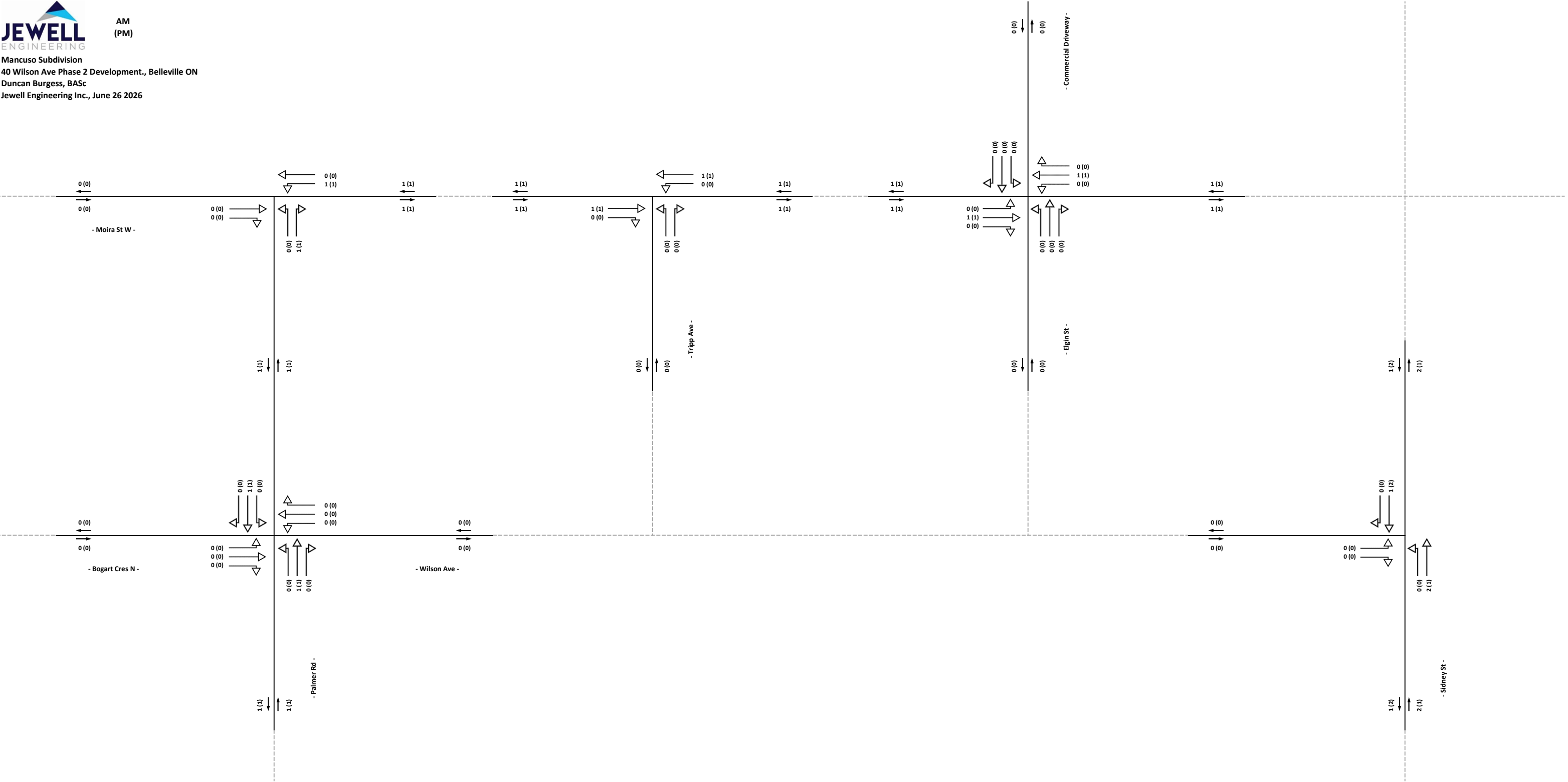
Sand Cherry Subdivision
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





Mancuso Subdivision
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026

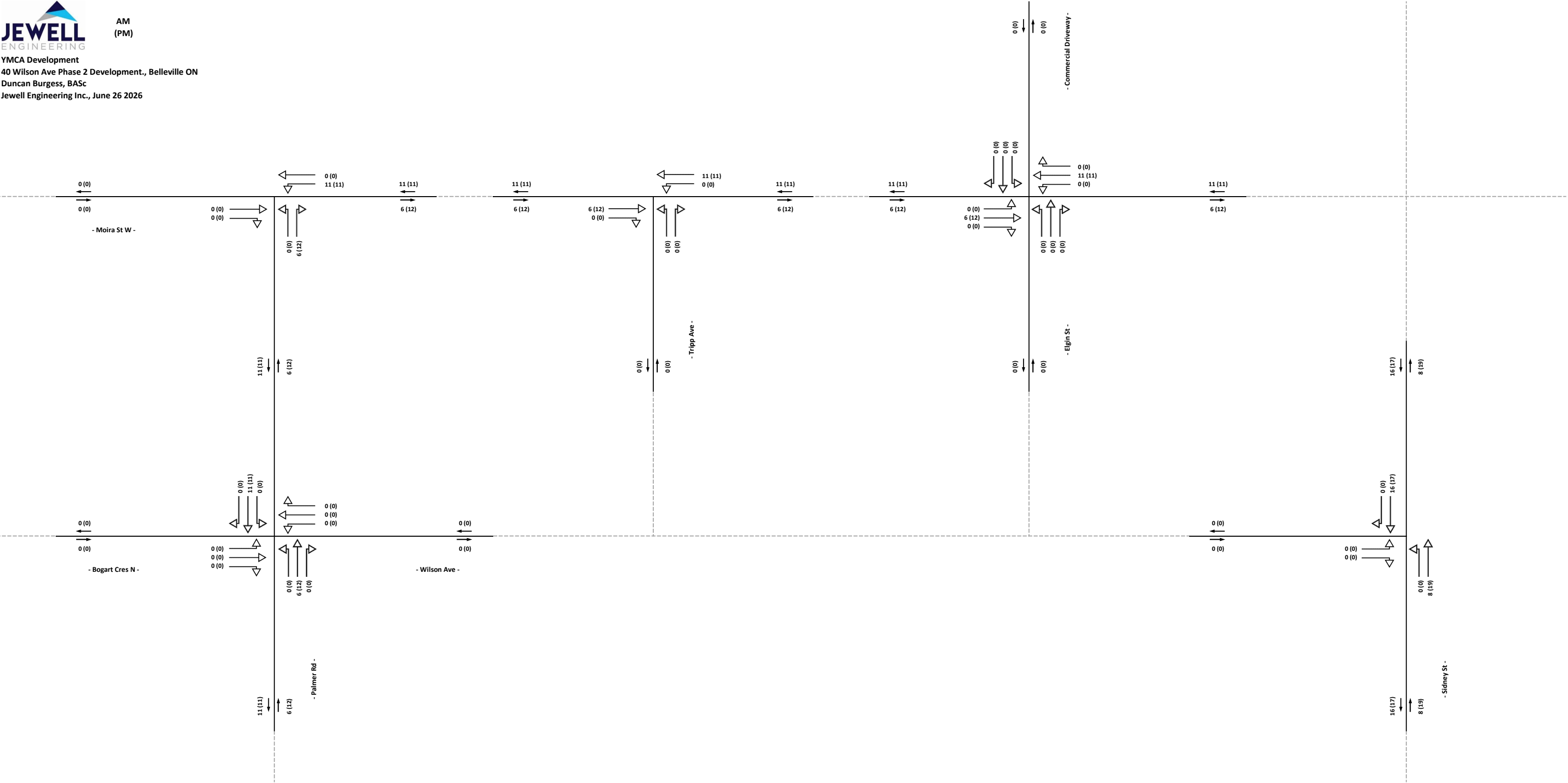
AM
(PM)





AM
(PM)

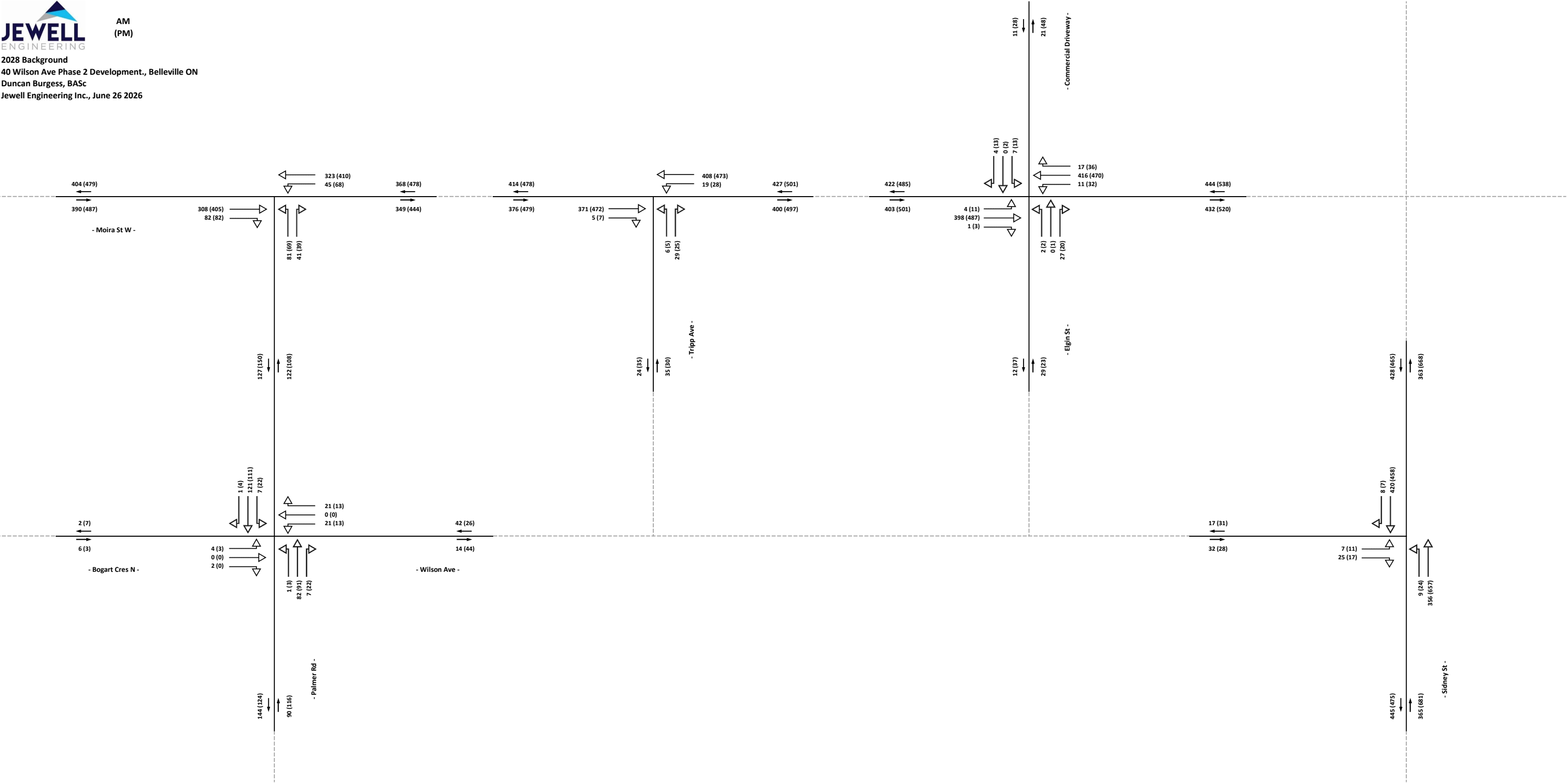
YMCA Development
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





2028 Background
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026

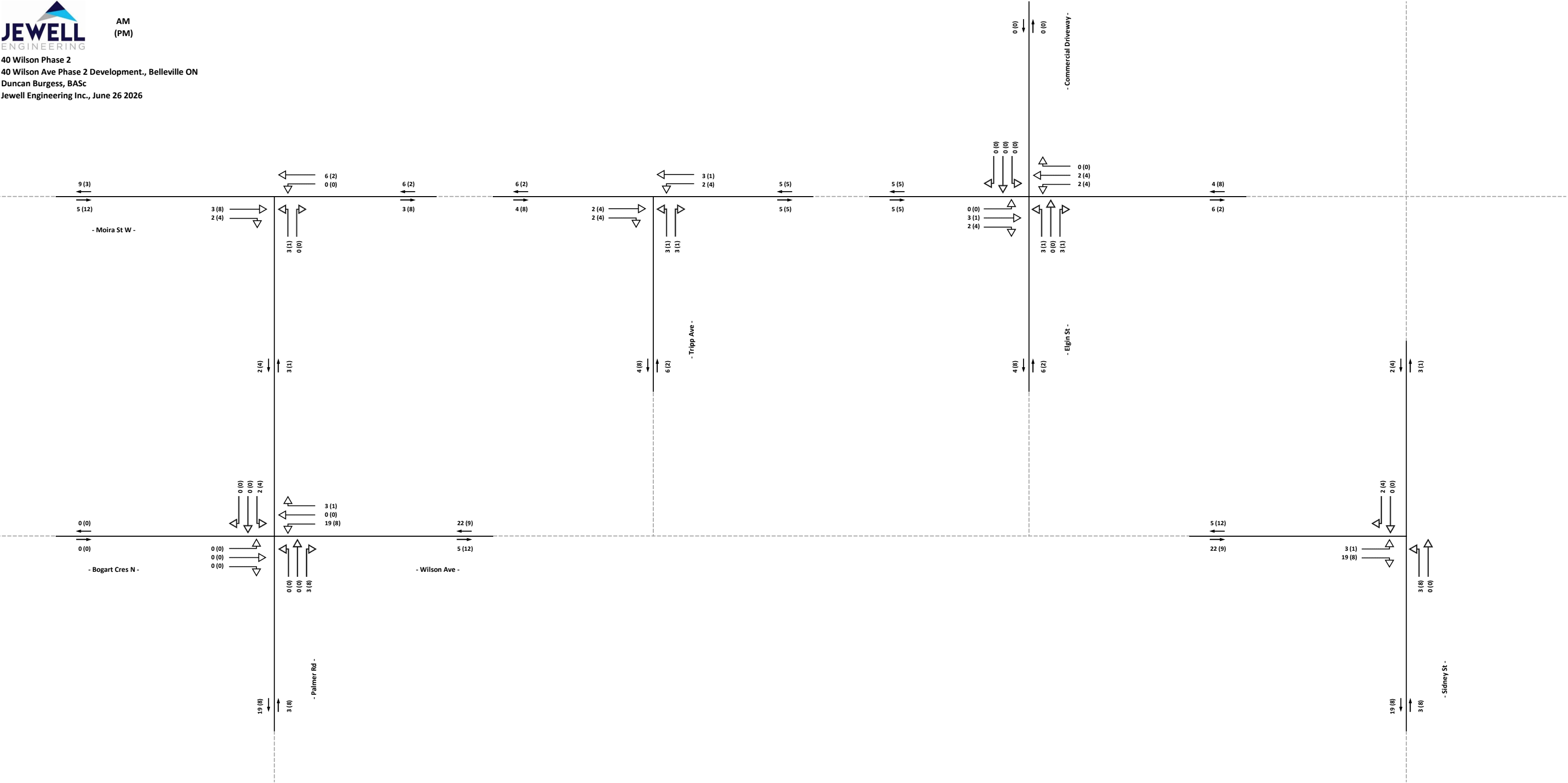
AM
(PM)





40 Wilson Phase 2
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026

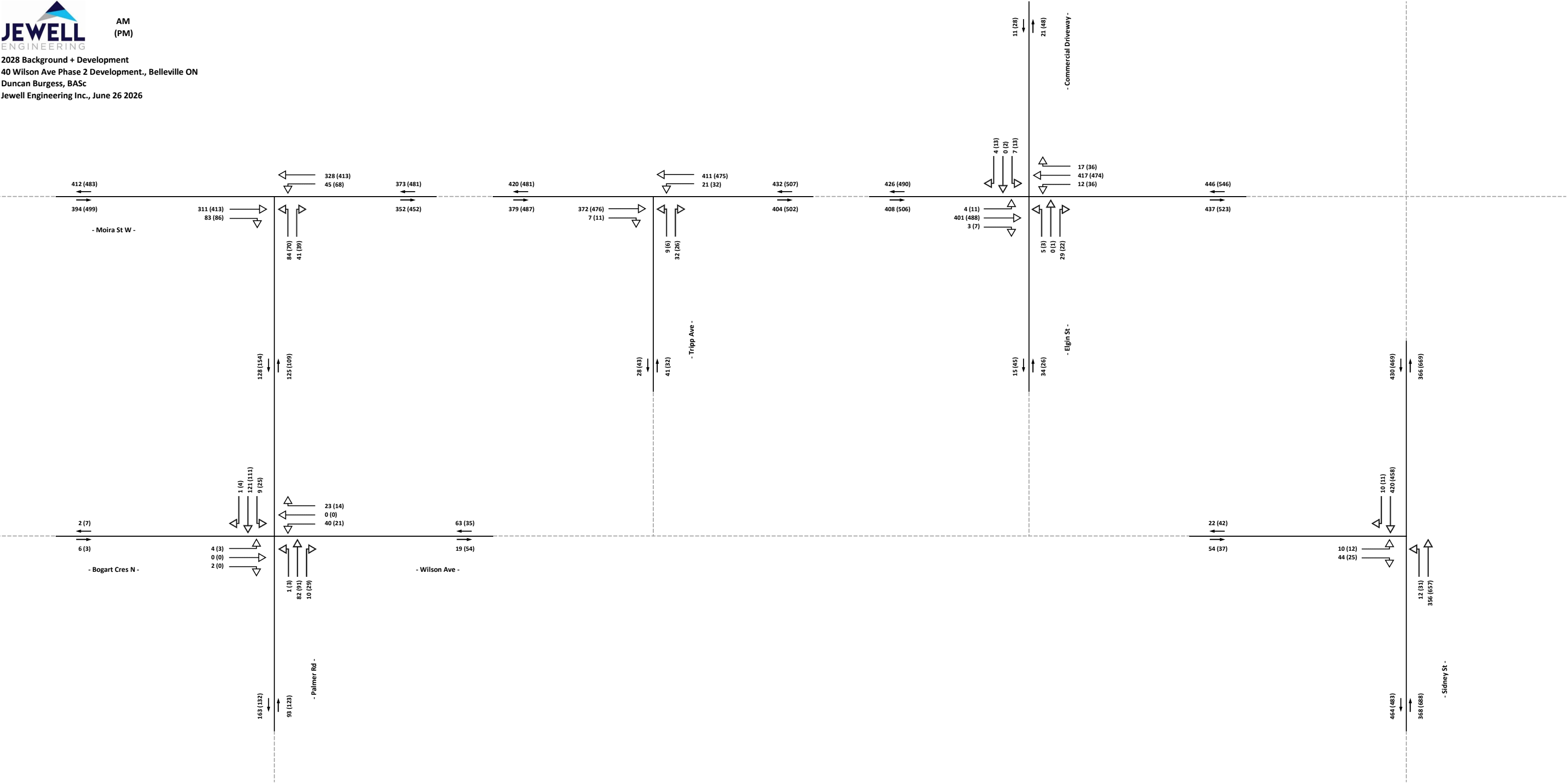
AM
(PM)





AM
(PM)

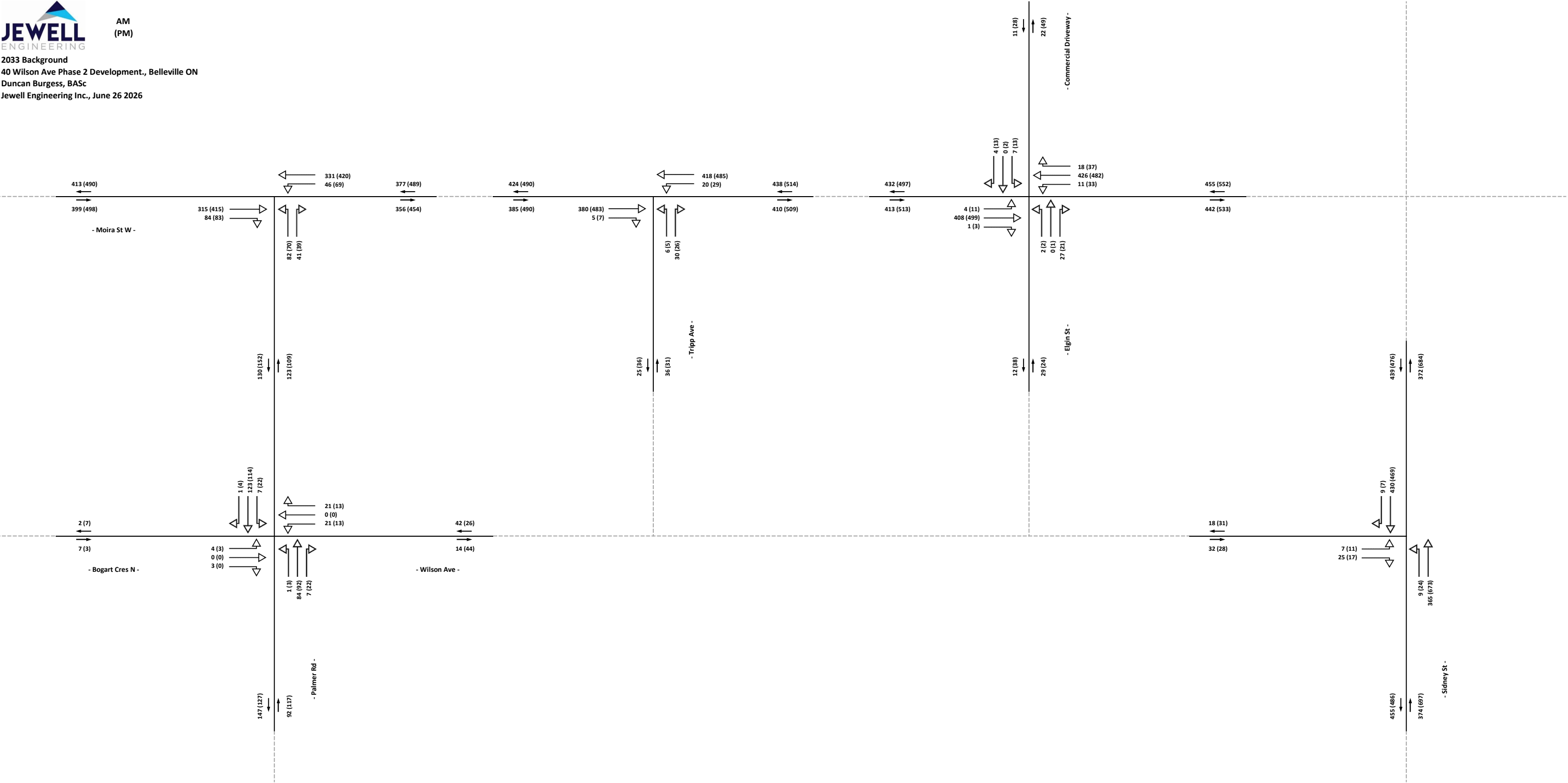
2028 Background + Development
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





AM
(PM)

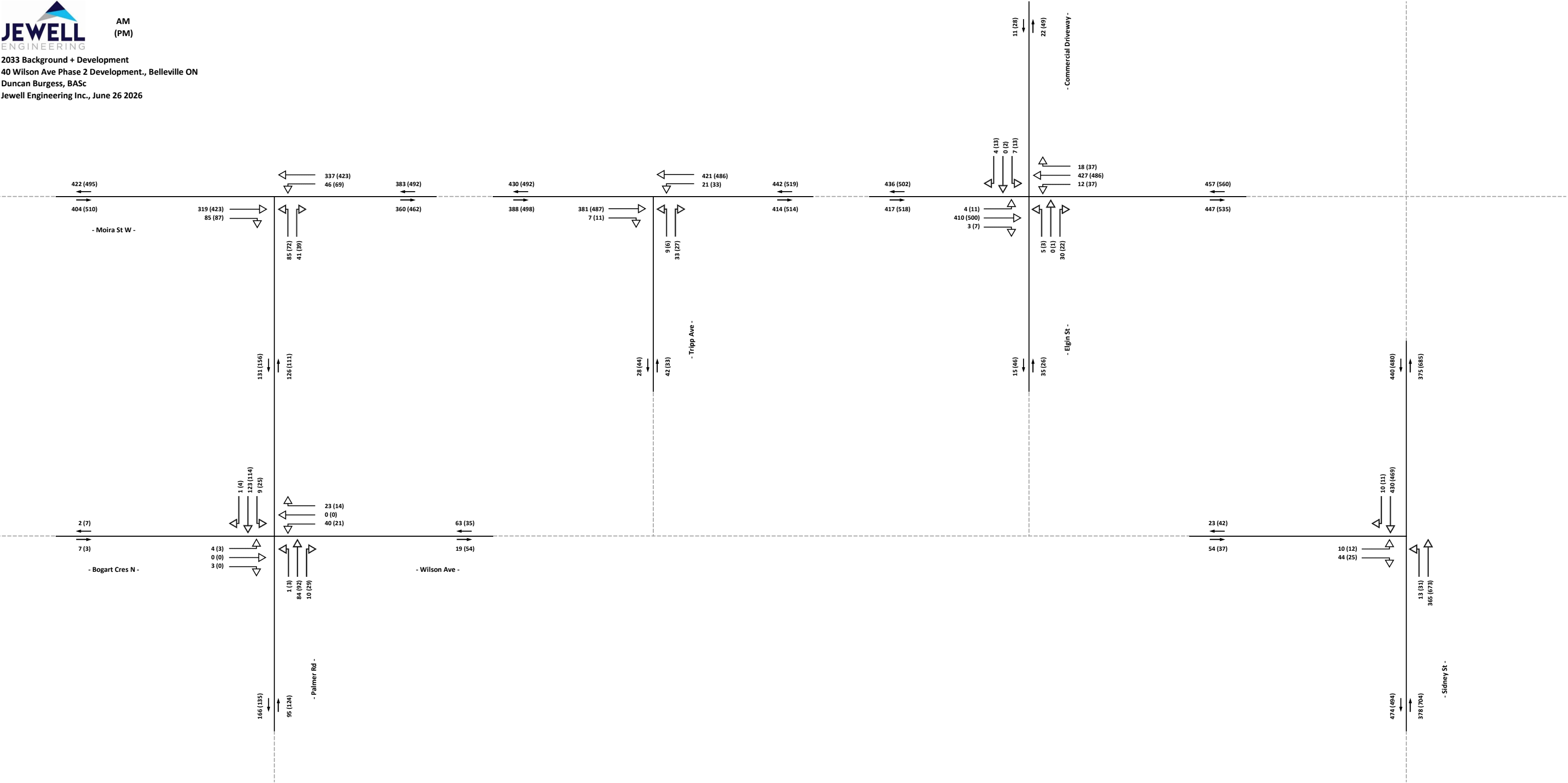
2033 Background
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





AM
(PM)

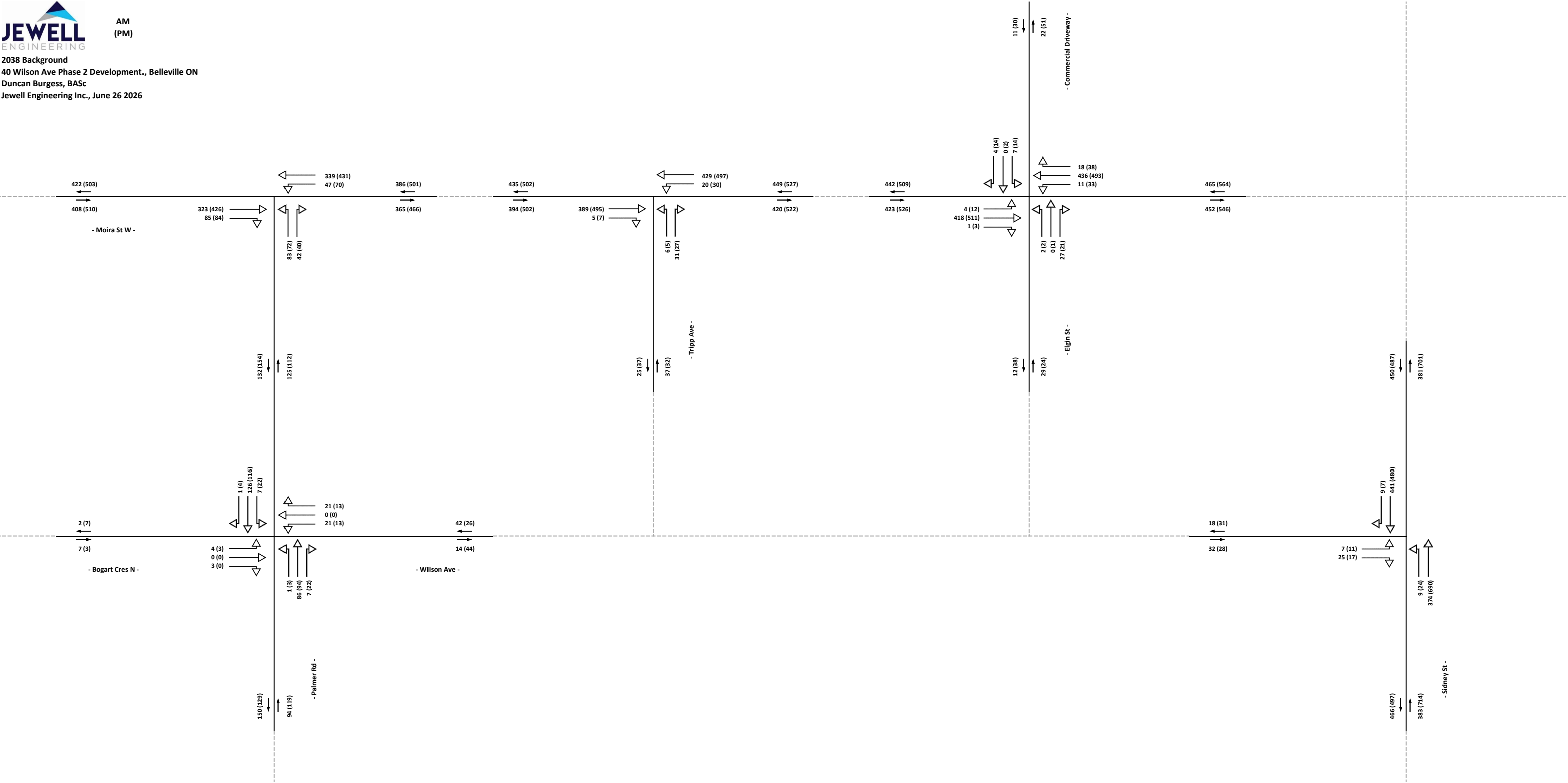
2033 Background + Development
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





2038 Background
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026

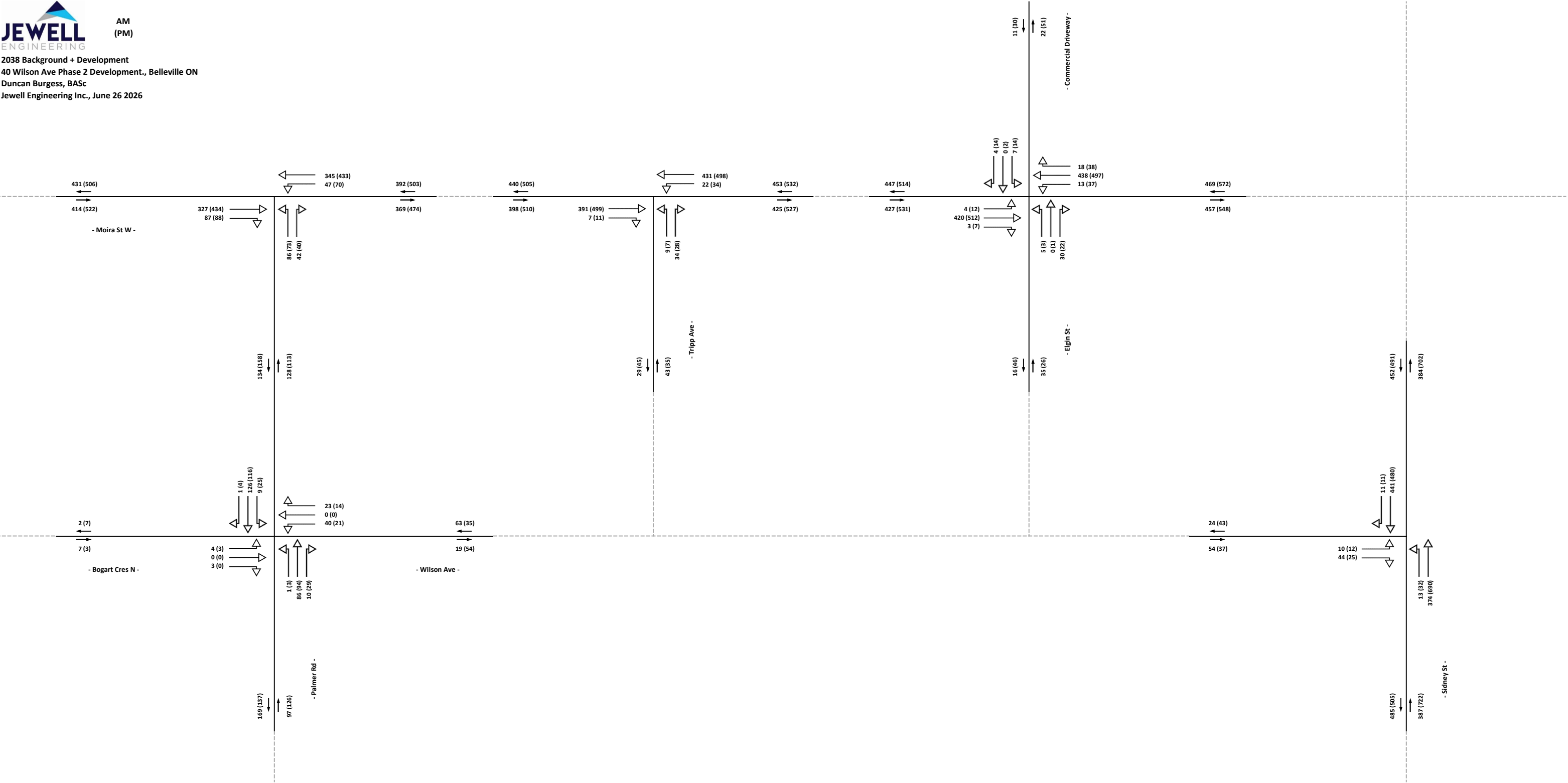
AM
(PM)





AM
(PM)

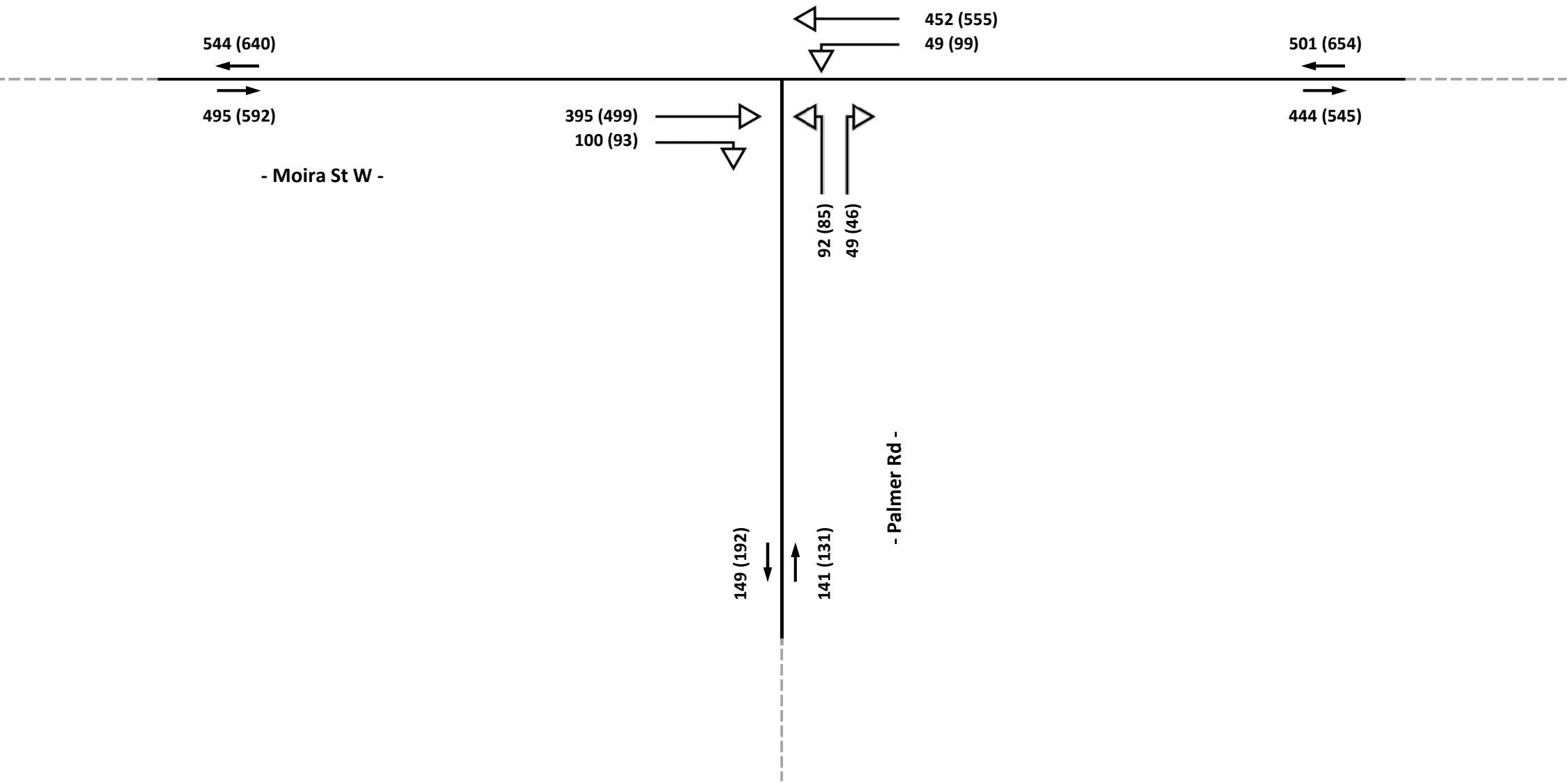
2038 Background + Development
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





AM
(PM)

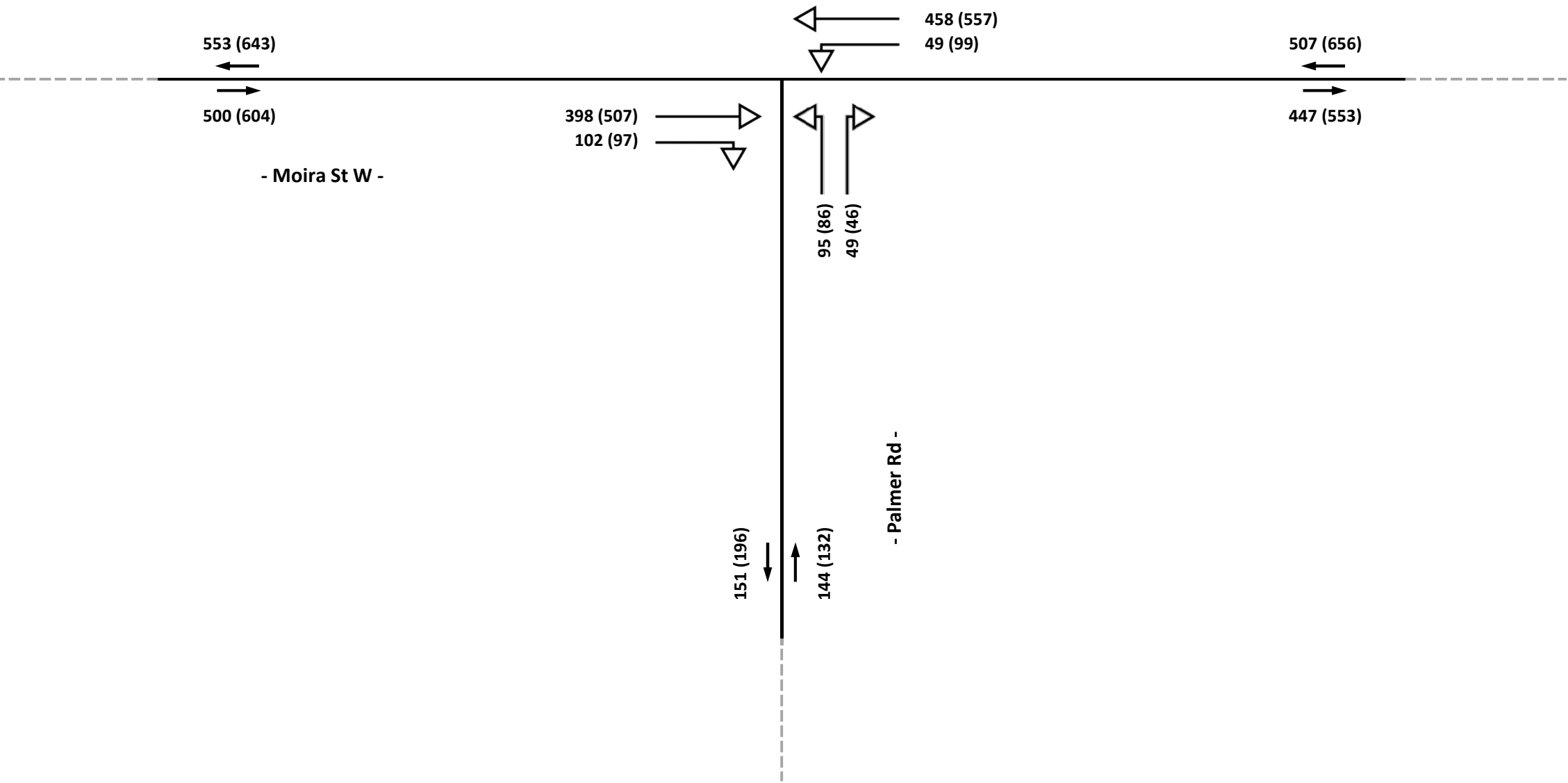
2051 Background
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026





AM
(PM)

2051 Background + Development
40 Wilson Ave Phase 2 Development., Belleville ON
Duncan Burgess, BASc
Jewell Engineering Inc., June 26 2026



APPENDIX D

Synchro Reports

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2026_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	0	0	0	1	72	0	0	101	1
Future Vol, veh/h	4	0	2	0	0	0	1	72	0	0	101	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	2	0	0	0	1	78	0	0	110	1
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	192	192	113	193	192	78	112	0	0	78	0	0
Stage 1	112	112	-	80	80	-	-	-	-	-	-	-
Stage 2	80	80	-	113	112	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	768	703	940	767	703	983	1478	-	-	1520	-	-
Stage 1	893	803	-	929	828	-	-	-	-	-	-	-
Stage 2	929	828	-	892	803	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	766	702	938	764	702	983	1477	-	-	1520	-	-
Mov Cap-2 Maneuver	766	702	-	764	702	-	-	-	-	-	-	-
Stage 1	891	802	-	928	827	-	-	-	-	-	-	-
Stage 2	928	827	-	889	802	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.4			0			0.1			0		
HCM LOS	A			A								
Minor Lane/Major Mvmt	NBL		NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR			
Capacity (veh/h)	1477		-	-	816	-	1520	-	-			
HCM Lane V/C Ratio	0.001		-	-	0.008	-	-	-	-			
HCM Control Delay (s)	7.4		0	-	9.4	0	0	-	-			
HCM Lane LOS	A		A	-	A	A	A	-	-			
HCM 95th %tile Q(veh)	0		-	-	0	-	0	-	-			

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2026_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	305	71	30	320	51	25
Future Vol, veh/h	305	71	30	320	51	25
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	332	77	33	348	55	27
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	420	0	796	384
Stage 1	-	-	-	-	382	-
Stage 2	-	-	-	-	414	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1113	-	345	651
Stage 1	-	-	-	-	673	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1103	-	332	644
Mov Cap-2 Maneuver	-	-	-	-	332	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	631	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		15.6	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	332	644	-	-	1103	-
HCM Lane V/C Ratio	0.167	0.042	-	-	0.03	-
HCM Control Delay (s)	18	10.8	-	-	8.4	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

2026_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	352	5	19	390	6	29
Future Vol, veh/h	352	5	19	390	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	396	6	21	438	7	33
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	402	0	879	399
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	480	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1141	-	318	649
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1141	-	310	649
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	678	-
Stage 2	-	-	-	-	607	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		12.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	547	-	-	1141	-	
HCM Lane V/C Ratio	0.072	-	-	0.019	-	
HCM Control Delay (s)	12.1	-	-	8.2	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2026_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	379	1	5	397	17	2	0	10	7	0	4
Future Vol, veh/h	4	379	1	5	397	17	2	0	10	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	412	1	5	432	18	2	0	11	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	413	0	0	874	881	413	877	872	441
Stage 1	-	-	-	-	-	-	421	421	-	451	451	-
Stage 2	-	-	-	-	-	-	453	460	-	426	421	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1110	-	-	1146	-	-	270	285	622	269	289	616
Stage 1	-	-	-	-	-	-	610	589	-	588	571	-
Stage 2	-	-	-	-	-	-	586	566	-	606	589	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1110	-	-	1146	-	-	266	282	622	262	286	616
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	282	-	262	286	-
Stage 1	-	-	-	-	-	-	607	586	-	585	568	-
Stage 2	-	-	-	-	-	-	578	563	-	592	586	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.1			12.3			16.3		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	509	1110	-	-	1146	-	-	331
HCM Lane V/C Ratio	0.026	0.004	-	-	0.005	-	-	0.036
HCM Control Delay (s)	12.3	8.3	0	-	8.2	0	-	16.3
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2026_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	4	2	342	399	7
Future Vol, veh/h	3	4	2	342	399	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	4	5	3	433	505	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	733	257	514	0	-	0
Stage 1	510	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	320	742	1048	-	-	-
Stage 1	519	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	319	742	1048	-	-	-
Mov Cap-2 Maneuver	319	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.8	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1048	-	473	-	-	
HCM Lane V/C Ratio	0.002	-	0.019	-	-	
HCM Control Delay (s)	8.4	0	12.8	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2026_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	0	0	0	3	69	0	0	92	4
Future Vol, veh/h	3	0	0	0	0	0	3	69	0	0	92	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	0	0	0	3	75	0	0	100	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	184	184	103	183	186	75	105	0	0	75	0	0
Stage 1	103	103	-	81	81	-	-	-	-	-	-	-
Stage 2	81	81	-	102	105	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	777	710	952	778	708	986	1486	-	-	1524	-	-
Stage 1	903	810	-	927	828	-	-	-	-	-	-	-
Stage 2	927	828	-	904	808	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	775	708	951	776	706	986	1485	-	-	1524	-	-
Mov Cap-2 Maneuver	775	708	-	776	706	-	-	-	-	-	-	-
Stage 1	900	809	-	925	826	-	-	-	-	-	-	-
Stage 2	925	826	-	904	807	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.7			0			0.3			0		
HCM LOS	A			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1485	-	-	775	-	1524	-	-
HCM Lane V/C Ratio	0.002	-	-	0.004	-	-	-	-
HCM Control Delay (s)	7.4	0	-	9.7	0	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-	-

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2026_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	51	46	406	51	20
Future Vol, veh/h	401	51	46	406	51	20
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	436	55	50	441	55	22
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	498	0	1012	474
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	541	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1066	-	261	574
Stage 1	-	-	-	-	620	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1060	-	247	569
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	616	-
Stage 2	-	-	-	-	549	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.9		20.3		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	569	-	-	1060	-
HCM Lane V/C Ratio	0.224	0.038	-	-	0.047	-
HCM Control Delay (s)	23.7	11.6	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0.1	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

2026_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	449	7	28	447	5	25
Future Vol, veh/h	449	7	28	447	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	488	8	30	486	5	27
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	496	0	1038	492
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	546	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1068	-	256	565
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	580	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1068	-	246	565
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	558	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		13.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	465	-	-	1068	-	
HCM Lane V/C Ratio	0.07	-	-	0.028	-	
HCM Control Delay (s)	13.3	-	-	8.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2026_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	464	3	15	444	36	2	1	10	13	2	13
Future Vol, veh/h	11	464	3	15	444	36	2	1	10	13	2	13
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	12	504	3	16	483	39	2	1	11	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	522	0	0	509	0	0	1075	1086	508	1071	1068	503
Stage 1	-	-	-	-	-	-	532	532	-	535	535	-
Stage 2	-	-	-	-	-	-	543	554	-	536	533	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1044	-	-	1031	-	-	197	216	549	198	222	569
Stage 1	-	-	-	-	-	-	531	526	-	529	524	-
Stage 2	-	-	-	-	-	-	524	514	-	529	525	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1044	-	-	1029	-	-	185	207	548	188	213	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	207	-	188	213	-
Stage 1	-	-	-	-	-	-	521	517	-	521	512	-
Stage 2	-	-	-	-	-	-	498	503	-	509	516	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			14.7			19.7		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	384	1044	-	-	1029	-	-	276
HCM Lane V/C Ratio	0.037	0.011	-	-	0.016	-	-	0.11
HCM Control Delay (s)	14.7	8.5	0	-	8.6	0	-	19.7
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2026_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	4	2	631	434	3
Future Vol, veh/h	8	4	2	631	434	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	9	4	2	693	477	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	830	240	480	0	-	0
Stage 1	479	-	-	-	-	-
Stage 2	351	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	308	761	1079	-	-	-
Stage 1	589	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	307	761	1079	-	-	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.7	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1079	-	383	-	-	
HCM Lane V/C Ratio	0.002	-	0.034	-	-	
HCM Control Delay (s)	8.3	0	14.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2028_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	21	0	21	1	82	7	7	121	1
Future Vol, veh/h	4	0	2	21	0	21	1	82	7	7	121	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	2	23	0	23	1	89	8	8	132	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	257	249	135	246	245	93	134	0	0	97	0	0
Stage 1	150	150	-	95	95	-	-	-	-	-	-	-
Stage 2	107	99	-	151	150	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	696	654	914	708	657	964	1451	-	-	1496	-	-
Stage 1	853	773	-	912	816	-	-	-	-	-	-	-
Stage 2	898	813	-	851	773	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	675	649	912	702	652	964	1450	-	-	1496	-	-
Mov Cap-2 Maneuver	675	649	-	702	652	-	-	-	-	-	-	-
Stage 1	851	768	-	911	815	-	-	-	-	-	-	-
Stage 2	876	812	-	843	768	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.9		9.7		0.1		0.4					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1450	-	-	739	812	1496	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.009	0.056	0.005	-	-				
HCM Control Delay (s)	7.5	0	-	9.9	9.7	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-				

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2028_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	308	82	45	323	81	41
Future Vol, veh/h	308	82	45	323	81	41
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	335	89	49	351	88	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	435	0	840	393
Stage 1	-	-	-	-	391	-
Stage 2	-	-	-	-	449	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1099	-	325	643
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	626	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1089	-	307	636
Mov Cap-2 Maneuver	-	-	-	-	307	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	598	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1		17.9		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	307	636	-	-	1089	-
HCM Lane V/C Ratio	0.287	0.07	-	-	0.045	-
HCM Control Delay (s)	21.4	11.1	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

2028_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	371	5	19	408	6	29
Future Vol, veh/h	371	5	19	408	6	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	417	6	21	458	7	33
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	423	0	920	420
Stage 1	-	-	-	-	420	-
Stage 2	-	-	-	-	500	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1120	-	301	631
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1120	-	293	631
Mov Cap-2 Maneuver	-	-	-	-	293	-
Stage 1	-	-	-	-	663	-
Stage 2	-	-	-	-	594	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	527	-	-	1120	-	
HCM Lane V/C Ratio	0.075	-	-	0.019	-	
HCM Control Delay (s)	12.4	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2028_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	398	1	11	416	17	2	0	27	7	0	4
Future Vol, veh/h	4	398	1	11	416	17	2	0	27	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	433	1	12	452	18	2	0	29	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	470	0	0	434	0	0	929	936	434	941	927	461
Stage 1	-	-	-	-	-	-	442	442	-	485	485	-
Stage 2	-	-	-	-	-	-	487	494	-	456	442	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1092	-	-	1126	-	-	248	265	605	243	268	600
Stage 1	-	-	-	-	-	-	594	576	-	563	552	-
Stage 2	-	-	-	-	-	-	562	546	-	584	576	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1092	-	-	1126	-	-	243	260	605	228	263	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	243	260	-	228	263	-
Stage 1	-	-	-	-	-	-	591	573	-	560	544	-
Stage 2	-	-	-	-	-	-	550	538	-	553	573	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			12			17.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	549	1092	-	-	1126	-	-	294
HCM Lane V/C Ratio	0.057	0.004	-	-	0.011	-	-	0.041
HCM Control Delay (s)	12	8.3	0	-	8.2	0	-	17.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2028_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	25	9	356	420	8
Future Vol, veh/h	7	25	9	356	420	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	9	32	11	451	532	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	785	271	542	0	-	0
Stage 1	537	-	-	-	-	-
Stage 2	248	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	295	727	1023	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	291	727	1023	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	495	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.1		0.3		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1023		-	548	-	-
HCM Lane V/C Ratio	0.011		-	0.074	-	-
HCM Control Delay (s)	8.6		0.1	12.1	-	-
HCM Lane LOS	A		A	B	-	-
HCM 95th %tile Q(veh)	0		-	0.2	-	-

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2028_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	13	0	13	3	91	22	22	111	4
Future Vol, veh/h	3	0	0	13	0	13	3	91	22	22	111	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	14	0	14	3	99	24	24	121	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	296	301	124	288	291	111	126	0	0	123	0	0
Stage 1	172	172	-	117	117	-	-	-	-	-	-	-
Stage 2	124	129	-	171	174	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	656	612	927	664	619	942	1460	-	-	1464	-	-
Stage 1	830	756	-	888	799	-	-	-	-	-	-	-
Stage 2	880	789	-	831	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	636	599	926	654	606	942	1459	-	-	1464	-	-
Mov Cap-2 Maneuver	636	599	-	654	606	-	-	-	-	-	-	-
Stage 1	828	742	-	886	797	-	-	-	-	-	-	-
Stage 2	865	787	-	816	741	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.7			9.8			0.2			1.2		
HCM LOS	B			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1459	-	-	636	772	1464	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.037	0.016	-	-
HCM Control Delay (s)	7.5	0	-	10.7	9.8	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2028_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	82	68	410	69	39
Future Vol, veh/h	405	82	68	410	69	39
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	440	89	74	446	75	42
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	536	0	1086	495
Stage 1	-	-	-	-	492	-
Stage 2	-	-	-	-	594	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1032	-	235	559
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	544	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1026	-	217	554
Mov Cap-2 Maneuver	-	-	-	-	217	-
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	505	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.2		23.6	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	217	554	-	-	1026	-
HCM Lane V/C Ratio	0.346	0.077	-	-	0.072	-
HCM Control Delay (s)	30.1	12	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.5	0.2	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	472	7	28	473	5	25
Future Vol, veh/h	472	7	28	473	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	513	8	30	514	5	27
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	521	0	1091	517
Stage 1	-	-	-	-	517	-
Stage 2	-	-	-	-	574	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1045	-	238	547
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1045	-	228	547
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	540	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		13.8	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	444	-	-	1045	-	
HCM Lane V/C Ratio	0.073	-	-	0.029	-	
HCM Control Delay (s)	13.8	-	-	8.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2028_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	487	3	32	470	36	2	1	20	13	2	13
Future Vol, veh/h	11	487	3	32	470	36	2	1	20	13	2	13
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	12	529	3	35	511	39	2	1	22	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	550	0	0	534	0	0	1166	533	1167	1159	531	
Stage 1	-	-	-	-	-	-	557	557	-	601	601	-
Stage 2	-	-	-	-	-	-	609	620	-	566	558	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1020	-	-	1009	-	-	171	191	531	171	196	548
Stage 1	-	-	-	-	-	-	515	512	-	487	489	-
Stage 2	-	-	-	-	-	-	482	480	-	509	512	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1020	-	-	1007	-	-	156	178	530	155	183	548
Mov Cap-2 Maneuver	-	-	-	-	-	-	156	178	-	155	183	-
Stage 1	-	-	-	-	-	-	505	502	-	479	465	-
Stage 2	-	-	-	-	-	-	444	456	-	479	502	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			14.4			22.5		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	409	1020	-	-	1007	-	-	236
HCM Lane V/C Ratio	0.061	0.012	-	-	0.035	-	-	0.129
HCM Control Delay (s)	14.4	8.6	0	-	8.7	0	-	22.5
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2028_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	17	24	657	458	7
Future Vol, veh/h	11	17	24	657	458	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	12	19	26	722	503	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	920	256	511	0	-	0
Stage 1	507	-	-	-	-	-
Stage 2	413	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	270	743	1050	-	-	-
Stage 1	570	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	259	743	1050	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	547	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1050	-	428	-	-	
HCM Lane V/C Ratio	0.025	-	0.072	-	-	
HCM Control Delay (s)	8.5	0.2	14.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2028_Bkgd+Dev_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	2	40	0	23	1	82	10	9	121	1
Future Vol, veh/h	4	0	2	40	0	23	1	82	10	9	121	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	2	43	0	25	1	89	11	10	132	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	263	256	135	252	251	95	134	0	0	100	0	0
Stage 1	154	154	-	97	97	-	-	-	-	-	-	-
Stage 2	109	102	-	155	154	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	690	648	914	701	652	962	1451	-	-	1493	-	-
Stage 1	848	770	-	910	815	-	-	-	-	-	-	-
Stage 2	896	811	-	847	770	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	667	642	912	695	646	962	1450	-	-	1493	-	-
Mov Cap-2 Maneuver	667	642	-	695	646	-	-	-	-	-	-	-
Stage 1	846	764	-	909	814	-	-	-	-	-	-	-
Stage 2	872	810	-	838	764	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10		10.1			0.1			0.5			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1450	-	-	733	773	1493	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.009	0.089	0.007	-	-				
HCM Control Delay (s)	7.5	0	-	10	10.1	7.4	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-				

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	311	83	45	328	84	41
Future Vol, veh/h	311	83	45	328	84	41
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	338	90	49	357	91	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	439	0	849	396
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	455	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1095	-	321	640
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1085	-	304	633
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	658	-
Stage 2	-	-	-	-	594	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1		18.3		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	633	-	-	1085	-
HCM Lane V/C Ratio	0.3	0.07	-	-	0.045	-
HCM Control Delay (s)	21.8	11.1	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	372	7	21	411	9	32
Future Vol, veh/h	372	7	21	411	9	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	418	8	24	462	10	36
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	426	0	932	422
Stage 1	-	-	-	-	422	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1117	-	296	630
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1117	-	287	630
Mov Cap-2 Maneuver	-	-	-	-	287	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	586	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.9	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	499	-	-	1117	-	
HCM Lane V/C Ratio	0.092	-	-	0.021	-	
HCM Control Delay (s)	12.9	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

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HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	401	3	12	417	17	5	0	29	7	0	4
Future Vol, veh/h	4	401	3	12	417	17	5	0	29	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	436	3	13	453	18	5	0	32	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	471	0	0	439	0	0	936	943	438	950	935	462
Stage 1	-	-	-	-	-	-	446	446	-	488	488	-
Stage 2	-	-	-	-	-	-	490	497	-	462	447	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1091	-	-	1121	-	-	245	263	602	240	265	600
Stage 1	-	-	-	-	-	-	591	574	-	561	550	-
Stage 2	-	-	-	-	-	-	560	545	-	580	573	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1091	-	-	1121	-	-	239	257	602	224	259	600
Mov Cap-2 Maneuver	-	-	-	-	-	-	239	257	-	224	259	-
Stage 1	-	-	-	-	-	-	588	571	-	558	541	-
Stage 2	-	-	-	-	-	-	547	536	-	547	570	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			12.9			17.9		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1091	-	-	1121	-	-	290
HCM Lane V/C Ratio	0.075	0.004	-	-	0.012	-	-	0.041
HCM Control Delay (s)	12.9	8.3	0	-	8.2	0	-	17.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

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HCM 6th TWSC

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	44	12	356	420	10
Future Vol, veh/h	10	44	12	356	420	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	13	56	15	451	532	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	795	273	545	0	-	0
Stage 1	539	-	-	-	-	-
Stage 2	256	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	290	725	1020	-	-	-
Stage 1	501	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	284	725	1020	-	-	-
Mov Cap-2 Maneuver	284	-	-	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.3	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1020	-	563	-	-	
HCM Lane V/C Ratio	0.015	-	0.121	-	-	
HCM Control Delay (s)	8.6	0.1	12.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.4	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

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HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	21	0	14	3	91	29	25	111	4
Future Vol, veh/h	3	0	0	21	0	14	3	91	29	25	111	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	23	0	15	3	99	32	27	121	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	307	315	124	298	301	115	126	0	0	131	0	0
Stage 1	178	178	-	121	121	-	-	-	-	-	-	-
Stage 2	129	137	-	177	180	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	645	601	927	654	612	937	1460	-	-	1454	-	-
Stage 1	824	752	-	883	796	-	-	-	-	-	-	-
Stage 2	875	783	-	825	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	623	587	926	643	598	937	1459	-	-	1454	-	-
Mov Cap-2 Maneuver	623	587	-	643	598	-	-	-	-	-	-	-
Stage 1	822	736	-	881	794	-	-	-	-	-	-	-
Stage 2	859	781	-	809	734	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.8			10.2			0.2			1.3		
HCM LOS	B			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1459	-	-	623	735	1454	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.052	0.019	-	-
HCM Control Delay (s)	7.5	0	-	10.8	10.2	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	413	86	68	413	70	39
Future Vol, veh/h	413	86	68	413	70	39
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	449	93	74	449	76	42
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	549	0	1100	506
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1021	-	231	551
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1015	-	213	546
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	502	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.2		24.2	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	213	546	-	-	1015	-
HCM Lane V/C Ratio	0.357	0.078	-	-	0.073	-
HCM Control Delay (s)	31	12.1	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.5	0.3	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	476	11	32	475	6	26
Future Vol, veh/h	476	11	32	475	6	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	517	12	35	516	7	28
Major/Minor	Major1		Major2	Minor1		
Conflicting Flow All	0	0	529	0	1109	523
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	586	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1038	-	232	542
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	556	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1038	-	221	542
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	530	-
Approach	EB		WB	NB		
HCM Control Delay, s	0		0.5	14.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	426	-	-	1038	-	
HCM Lane V/C Ratio	0.082	-	-	0.034	-	
HCM Control Delay (s)	14.2	-	-	8.6	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

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HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	488	7	36	474	36	3	1	22	13	2	13
Future Vol, veh/h	11	488	7	36	474	36	3	1	22	13	2	13
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	12	530	8	39	515	39	3	1	24	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	554	0	0	540	0	0	1181	536	1184	1177	535	
Stage 1	-	-	-	-	-	-	560	560	-	613	613	-
Stage 2	-	-	-	-	-	-	621	632	-	571	564	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1016	-	-	1004	-	-	167	187	529	166	191	545
Stage 1	-	-	-	-	-	-	513	511	-	480	483	-
Stage 2	-	-	-	-	-	-	475	474	-	506	508	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1016	-	-	1002	-	-	152	173	528	149	177	545
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	173	-	149	177	-
Stage 1	-	-	-	-	-	-	503	501	-	472	455	-
Stage 2	-	-	-	-	-	-	434	447	-	474	498	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			15			23.1		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	387	1016	-	-	1002	-	-	229
HCM Lane V/C Ratio	0.073	0.012	-	-	0.039	-	-	0.133
HCM Control Delay (s)	15	8.6	0	-	8.7	0	-	23.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2028_Bkgd+Dev_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	25	31	657	458	11
Future Vol, veh/h	12	25	31	657	458	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	13	27	34	722	503	12
Major/Minor	Minor2		Major1	Major2		
Conflicting Flow All	938	258	515	0	-	0
Stage 1	509	-	-	-	-	-
Stage 2	429	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	263	741	1047	-	-	-
Stage 1	569	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	249	741	1047	-	-	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	624	-	-	-	-	-
Approach	EB		NB	SB		
HCM Control Delay, s	13.8		0.6	0		
HCM LOS	B					
Minor Lane/Major Mvmt		NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)		1047	-	452	-	-
HCM Lane V/C Ratio		0.033	-	0.09	-	-
HCM Control Delay (s)		8.6	0.2	13.8	-	-
HCM Lane LOS		A	A	B	-	-
HCM 95th %tile Q(veh)		0.1	-	0.3	-	-

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2033_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	21	0	21	1	84	7	7	123	1
Future Vol, veh/h	4	0	3	21	0	21	1	84	7	7	123	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	3	23	0	23	1	91	8	8	134	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	261	253	137	250	249	95	136	0	0	99	0	0
Stage 1	152	152	-	97	97	-	-	-	-	-	-	-
Stage 2	109	101	-	153	152	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	692	650	911	703	654	962	1448	-	-	1494	-	-
Stage 1	850	772	-	910	815	-	-	-	-	-	-	-
Stage 2	896	811	-	849	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	671	645	909	696	649	962	1447	-	-	1494	-	-
Mov Cap-2 Maneuver	671	645	-	696	649	-	-	-	-	-	-	-
Stage 1	848	767	-	909	814	-	-	-	-	-	-	-
Stage 2	874	810	-	840	767	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.8			9.7			0.1			0.4		
HCM LOS	A			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	756	808	1494	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.057	0.005	-	-
HCM Control Delay (s)	7.5	0	-	9.8	9.7	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	315	84	46	331	82	41
Future Vol, veh/h	315	84	46	331	82	41
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	342	91	50	360	89	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	444	0	859	401
Stage 1	-	-	-	-	399	-
Stage 2	-	-	-	-	460	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1090	-	317	636
Stage 1	-	-	-	-	661	-
Stage 2	-	-	-	-	619	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1080	-	300	629
Mov Cap-2 Maneuver	-	-	-	-	300	-
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	591	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		18.4	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	300	629	-	-	1080	-
HCM Lane V/C Ratio	0.297	0.071	-	-	0.046	-
HCM Control Delay (s)	22	11.2	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

2033_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	380	5	20	418	6	30
Future Vol, veh/h	380	5	20	418	6	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	427	6	22	470	7	34
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	433	0	944	430
Stage 1	-	-	-	-	430	-
Stage 2	-	-	-	-	514	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1111	-	291	623
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1111	-	283	623
Mov Cap-2 Maneuver	-	-	-	-	283	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	584	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		12.5	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	519		-	-	1111	-
HCM Lane V/C Ratio	0.078		-	-	0.02	-
HCM Control Delay (s)	12.5		-	-	8.3	0
HCM Lane LOS	B		-	-	A	A
HCM 95th %tile Q(veh)	0.3		-	-	0.1	-

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2033_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	408	1	11	426	18	2	0	27	7	0	4
Future Vol, veh/h	4	408	1	11	426	18	2	0	27	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	443	1	12	463	20	2	0	29	8	0	4
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	483	0	0	444	0	0	951	959	444	963	949	473
Stage 1	-	-	-	-	-	-	452	452	-	497	497	-
Stage 2	-	-	-	-	-	-	499	507	-	466	452	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1080	-	-	1116	-	-	240	257	597	235	260	591
Stage 1	-	-	-	-	-	-	587	570	-	555	545	-
Stage 2	-	-	-	-	-	-	554	539	-	577	570	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1080	-	-	1116	-	-	235	252	597	220	255	591
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	252	-	220	255	-
Stage 1	-	-	-	-	-	-	584	567	-	552	537	-
Stage 2	-	-	-	-	-	-	542	531	-	546	567	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.1		0.2			12.1			18.2			
HCM LOS						B			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	540	1080	-	-	1116	-	-	285				
HCM Lane V/C Ratio	0.058	0.004	-	-	0.011	-	-	0.042				
HCM Control Delay (s)	12.1	8.3	0	-	8.3	0	-	18.2				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2033_Bkgd_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	25	9	365	430	9
Future Vol, veh/h	7	25	9	365	430	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	9	32	11	462	544	11
Major/Minor	Minor2		Major1	Major2		
Conflicting Flow All	803	278	555	0	-	0
Stage 1	550	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	287	719	1011	-	-	-
Stage 1	494	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	719	1011	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	487	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Approach	EB		NB	SB		
HCM Control Delay, s	12.2		0.3	0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1011	-	538	-	-	
HCM Lane V/C Ratio	0.011	-	0.075	-	-	
HCM Control Delay (s)	8.6	0.1	12.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2033_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	13	0	13	3	92	22	22	114	4
Future Vol, veh/h	3	0	0	13	0	13	3	92	22	22	114	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	14	0	14	3	100	24	24	124	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	300	305	127	292	295	112	129	0	0	124	0	0
Stage 1	175	175	-	118	118	-	-	-	-	-	-	-
Stage 2	125	130	-	174	177	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	652	608	923	660	616	941	1457	-	-	1463	-	-
Stage 1	827	754	-	887	798	-	-	-	-	-	-	-
Stage 2	879	789	-	828	753	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	632	595	922	650	603	941	1456	-	-	1463	-	-
Mov Cap-2 Maneuver	632	595	-	650	603	-	-	-	-	-	-	-
Stage 1	825	740	-	885	796	-	-	-	-	-	-	-
Stage 2	864	787	-	813	739	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.7		9.9			0.2			1.2			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1456	-	-	632	769	1463	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.005	0.037	0.016	-	-				
HCM Control Delay (s)	7.5	0	-	10.7	9.9	7.5	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-				

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2033_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	415	83	69	420	70	39
Future Vol, veh/h	415	83	69	420	70	39
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	451	90	75	457	76	42
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	548	0	1110	506
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	607	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1021	-	227	551
Stage 1	-	-	-	-	599	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1015	-	209	546
Mov Cap-2 Maneuver	-	-	-	-	209	-
Stage 1	-	-	-	-	595	-
Stage 2	-	-	-	-	496	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	1.2	24.8			
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	209	546	-	-	1015	-
HCM Lane V/C Ratio	0.364	0.078	-	-	0.074	-
HCM Control Delay (s)	31.8	12.1	-	-	8.8	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.6	0.3	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	483	7	29	485	5	26
Future Vol, veh/h	483	7	29	485	5	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	525	8	32	527	5	28
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	533	0	1120	529
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	591	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1035	-	228	538
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1035	-	218	538
Mov Cap-2 Maneuver	-	-	-	-	218	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	529	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		14	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	435		-	-	1035	-
HCM Lane V/C Ratio	0.077		-	-	0.03	-
HCM Control Delay (s)	14		-	-	8.6	0
HCM Lane LOS	B		-	-	A	A
HCM 95th %tile Q(veh)	0.3		-	-	0.1	-

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2033_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	499	3	33	482	37	2	1	21	13	2	13
Future Vol, veh/h	11	499	3	33	482	37	2	1	21	13	2	13
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	12	542	3	36	524	40	2	1	23	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	564	0	0	547	0	0	1194	1206	546	1196	1187	544
Stage 1	-	-	-	-	-	-	570	570	-	616	616	-
Stage 2	-	-	-	-	-	-	624	636	-	580	571	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1008	-	-	998	-	-	163	184	522	163	188	539
Stage 1	-	-	-	-	-	-	506	505	-	478	482	-
Stage 2	-	-	-	-	-	-	473	472	-	500	505	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1008	-	-	996	-	-	149	171	521	147	175	539
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	171	-	147	175	-
Stage 1	-	-	-	-	-	-	496	495	-	470	456	-
Stage 2	-	-	-	-	-	-	434	447	-	469	495	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			14.6			23.4		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	403	1008	-	-	996	-	-	226
HCM Lane V/C Ratio	0.065	0.012	-	-	0.036	-	-	0.135
HCM Control Delay (s)	14.6	8.6	0	-	8.7	0	-	23.4
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2033_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	17	24	673	469	7
Future Vol, veh/h	11	17	24	673	469	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	12	19	26	740	515	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	941	262	523	0	-	0
Stage 1	519	-	-	-	-	-
Stage 2	422	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	262	737	1040	-	-	-
Stage 1	562	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	251	737	1040	-	-	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.3	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1040	-	419	-	-	
HCM Lane V/C Ratio	0.025	-	0.073	-	-	
HCM Control Delay (s)	8.6	0.2	14.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2033_Bkgd+Dev_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	40	0	23	1	84	10	9	123	1
Future Vol, veh/h	4	0	3	40	0	23	1	84	10	9	123	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	3	43	0	25	1	91	11	10	134	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	267	260	137	256	255	97	136	0	0	102	0	0
Stage 1	156	156	-	99	99	-	-	-	-	-	-	-
Stage 2	111	104	-	157	156	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	686	645	911	697	649	959	1448	-	-	1490	-	-
Stage 1	846	769	-	907	813	-	-	-	-	-	-	-
Stage 2	894	809	-	845	769	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	663	639	909	689	643	959	1447	-	-	1490	-	-
Mov Cap-2 Maneuver	663	639	-	689	643	-	-	-	-	-	-	-
Stage 1	844	763	-	906	812	-	-	-	-	-	-	-
Stage 2	870	808	-	835	763	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.8			10.1			0.1			0.5		
HCM LOS	A			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	750	768	1490	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.089	0.007	-	-
HCM Control Delay (s)	7.5	0	-	9.8	10.1	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	319	85	46	337	85	41
Future Vol, veh/h	319	85	46	337	85	41
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	347	92	50	366	92	45
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	450	0	870	406
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	466	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1084	-	312	632
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1074	-	295	625
Mov Cap-2 Maneuver	-	-	-	-	295	-
Stage 1	-	-	-	-	651	-
Stage 2	-	-	-	-	586	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1		19		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	295	625	-	-	1074	-
HCM Lane V/C Ratio	0.313	0.071	-	-	0.047	-
HCM Control Delay (s)	22.7	11.2	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	381	7	21	421	9	33
Future Vol, veh/h	381	7	21	421	9	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	428	8	24	473	10	37
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	436	0	953	432
Stage 1	-	-	-	-	432	-
Stage 2	-	-	-	-	521	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1108	-	287	621
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1108	-	279	621
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	655	-
Stage 2	-	-	-	-	579	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		13.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	492	-	-	1108	-	
HCM Lane V/C Ratio	0.096	-	-	0.021	-	
HCM Control Delay (s)	13.1	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2033_Bkgd+Dev_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	410	3	12	427	18	5	0	30	7	0	4
Future Vol, veh/h	4	410	3	12	427	18	5	0	30	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	446	3	13	464	20	5	0	33	8	0	4
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	484	0	0	449	0	0	958	966	448	972	957	474
Stage 1	-	-	-	-	-	-	456	456	-	500	500	-
Stage 2	-	-	-	-	-	-	502	510	-	472	457	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1079	-	-	1111	-	-	237	255	594	232	258	590
Stage 1	-	-	-	-	-	-	584	568	-	553	543	-
Stage 2	-	-	-	-	-	-	552	538	-	573	568	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1079	-	-	1111	-	-	232	250	594	216	253	590
Mov Cap-2 Maneuver	-	-	-	-	-	-	232	250	-	216	253	-
Stage 1	-	-	-	-	-	-	581	565	-	550	534	-
Stage 2	-	-	-	-	-	-	539	529	-	539	565	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.1		0.2			13			18.4			
HCM LOS						B			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	486	1079	-	-	1111	-	-	281				
HCM Lane V/C Ratio	0.078	0.004	-	-	0.012	-	-	0.043				
HCM Control Delay (s)	13	8.3	0	-	8.3	0	-	18.4				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1				

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2033_Bkgd+Dev_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	44	13	365	430	10
Future Vol, veh/h	10	44	13	365	430	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	13	56	16	462	544	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	814	279	557	0	-	0
Stage 1	551	-	-	-	-	-
Stage 2	263	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	282	718	1010	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	276	718	1010	-	-	-
Mov Cap-2 Maneuver	276	-	-	-	-	-
Stage 1	483	-	-	-	-	-
Stage 2	706	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.4		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010		-	554	-	-
HCM Lane V/C Ratio	0.016		-	0.123	-	-
HCM Control Delay (s)	8.6		0.1	12.4	-	-
HCM Lane LOS	A		A	B	-	-
HCM 95th %tile Q(veh)	0.1		-	0.4	-	-

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2033_Bkgd+Dev_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	21	0	14	3	92	29	25	114	4
Future Vol, veh/h	3	0	0	21	0	14	3	92	29	25	114	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	23	0	15	3	100	32	27	124	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	311	319	127	302	305	116	129	0	0	132	0	0
Stage 1	181	181	-	122	122	-	-	-	-	-	-	-
Stage 2	130	138	-	180	183	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	642	598	923	650	608	936	1457	-	-	1453	-	-
Stage 1	821	750	-	882	795	-	-	-	-	-	-	-
Stage 2	874	782	-	822	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	620	584	922	639	594	936	1456	-	-	1453	-	-
Mov Cap-2 Maneuver	620	584	-	639	594	-	-	-	-	-	-	-
Stage 1	819	734	-	880	793	-	-	-	-	-	-	-
Stage 2	858	780	-	806	732	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.8			10.2			0.2			1.3		
HCM LOS	B			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1456	-	-	620	732	1453	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.052	0.019	-	-
HCM Control Delay (s)	7.5	0	-	10.8	10.2	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	423	87	69	423	72	39
Future Vol, veh/h	423	87	69	423	72	39
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	460	95	75	460	78	42
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	562	0	1125	518
Stage 1	-	-	-	-	515	-
Stage 2	-	-	-	-	610	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1009	-	223	542
Stage 1	-	-	-	-	592	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1003	-	205	537
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	495	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.2		25.7		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	205	537	-	-	1003	-
HCM Lane V/C Ratio	0.382	0.079	-	-	0.075	-
HCM Control Delay (s)	33	12.3	-	-	8.9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.7	0.3	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	487	11	33	486	6	27
Future Vol, veh/h	487	11	33	486	6	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	529	12	36	528	7	29
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	541	0	1135	535
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	600	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1028	-	224	534
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	548	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1028	-	213	534
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	521	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		14.4	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	419		-	-	1028	-
HCM Lane V/C Ratio	0.086		-	-	0.035	-
HCM Control Delay (s)	14.4		-	-	8.6	0
HCM Lane LOS	B		-	-	A	A
HCM 95th %tile Q(veh)	0.3		-	-	0.1	-

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2033_Bkgd+Dev_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	500	7	37	486	37	3	1	22	13	2	13
Future Vol, veh/h	11	500	7	37	486	37	3	1	22	13	2	13
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	12	543	8	40	528	40	3	1	24	14	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	0	553	0	0	1209	1221	549	1212	1205	548
Stage 1	-	-	-	-	-	-	573	573	-	628	628	-
Stage 2	-	-	-	-	-	-	636	648	-	584	577	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1004	-	-	992	-	-	160	180	520	159	184	536
Stage 1	-	-	-	-	-	-	505	504	-	471	476	-
Stage 2	-	-	-	-	-	-	466	466	-	498	502	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1004	-	-	990	-	-	145	166	519	142	170	536
Mov Cap-2 Maneuver	-	-	-	-	-	-	145	166	-	142	170	-
Stage 1	-	-	-	-	-	-	495	494	-	463	448	-
Stage 2	-	-	-	-	-	-	425	439	-	466	492	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			15.4			24.1		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	1004	-	-	990	-	-	219
HCM Lane V/C Ratio	0.075	0.012	-	-	0.041	-	-	0.139
HCM Control Delay (s)	15.4	8.6	0	-	8.8	0	-	24.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

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HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	25	31	673	469	11
Future Vol, veh/h	12	25	31	673	469	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	13	27	34	740	515	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	959	264	527	0	-	0
Stage 1	521	-	-	-	-	-
Stage 2	438	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	255	734	1036	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	241	734	1036	-	-	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	618	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1036	-	441	-	-	
HCM Lane V/C Ratio	0.033	-	0.092	-	-	
HCM Control Delay (s)	8.6	0.2	14	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

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HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	21	0	21	1	86	7	7	126	1
Future Vol, veh/h	4	0	3	21	0	21	1	86	7	7	126	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	3	23	0	23	1	93	8	8	137	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	266	258	140	255	254	97	139	0	0	101	0	0
Stage 1	155	155	-	99	99	-	-	-	-	-	-	-
Stage 2	111	103	-	156	155	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	687	646	908	698	650	959	1445	-	-	1491	-	-
Stage 1	847	769	-	907	813	-	-	-	-	-	-	-
Stage 2	894	810	-	846	769	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	666	641	906	691	645	959	1444	-	-	1491	-	-
Mov Cap-2 Maneuver	666	641	-	691	645	-	-	-	-	-	-	-
Stage 1	845	764	-	906	812	-	-	-	-	-	-	-
Stage 2	872	809	-	837	764	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.8			9.8			0.1			0.4		
HCM LOS	A			A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	751	803	1491	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.057	0.005	-	-
HCM Control Delay (s)	7.5	0	-	9.8	9.8	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection						
Int Delay, s/veh	3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	323	85	47	339	83	42
Future Vol, veh/h	323	85	47	339	83	42
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	351	92	51	368	90	46
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	454	0	878	410
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1081	-	308	629
Stage 1	-	-	-	-	654	-
Stage 2	-	-	-	-	613	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1071	-	290	622
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	648	-
Stage 2	-	-	-	-	584	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1		19		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	290	622	-	-	1071	-
HCM Lane V/C Ratio	0.311	0.073	-	-	0.048	-
HCM Control Delay (s)	22.9	11.2	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.3	0.2	-	-	0.1	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

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HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	389	5	20	429	6	31
Future Vol, veh/h	389	5	20	429	6	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	437	6	22	482	7	35
Major/Minor	Major1		Major2	Minor1		
Conflicting Flow All	0	0	443	0	966	440
Stage 1	-	-	-	-	440	-
Stage 2	-	-	-	-	526	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1101	-	282	615
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	593	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1101	-	274	615
Mov Cap-2 Maneuver	-	-	-	-	274	-
Stage 1	-	-	-	-	649	-
Stage 2	-	-	-	-	577	-
Approach	EB		WB	NB		
HCM Control Delay, s	0		0.4	12.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	512	-	-	1101	-	
HCM Lane V/C Ratio	0.081	-	-	0.02	-	
HCM Control Delay (s)	12.7	-	-	8.3	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2038_Bkgd_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	418	1	11	436	18	2	0	27	7	0	4
Future Vol, veh/h	4	418	1	11	436	18	2	0	27	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	454	1	12	474	20	2	0	29	8	0	4
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	494	0	0	455	0	0	973	981	455	985	971	484
Stage 1	-	-	-	-	-	-	463	463	-	508	508	-
Stage 2	-	-	-	-	-	-	510	518	-	477	463	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1070	-	-	1106	-	-	231	249	589	227	253	583
Stage 1	-	-	-	-	-	-	579	564	-	547	539	-
Stage 2	-	-	-	-	-	-	546	533	-	569	564	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1070	-	-	1106	-	-	226	244	589	212	248	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	226	244	-	212	248	-
Stage 1	-	-	-	-	-	-	576	561	-	544	531	-
Stage 2	-	-	-	-	-	-	534	525	-	538	561	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			12.2			18.6		
HCM LOS							B			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	530	1070	-	-	1106	-	-	276				
HCM Lane V/C Ratio	0.059	0.004	-	-	0.011	-	-	0.043				
HCM Control Delay (s)	12.2	8.4	0	-	8.3	0	-	18.6				
HCM Lane LOS	B	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	25	9	374	441	9
Future Vol, veh/h	7	25	9	374	441	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	9	32	11	473	558	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	823	285	569	0	-	0
Stage 1	564	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	278	712	999	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	274	712	999	-	-	-
Mov Cap-2 Maneuver	274	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	12.4		0.3		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	999	-	528	-	-	
HCM Lane V/C Ratio	0.011	-	0.077	-	-	
HCM Control Delay (s)	8.6	0.1	12.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2038_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	13	0	13	3	94	22	22	116	4
Future Vol, veh/h	3	0	0	13	0	13	3	94	22	22	116	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	14	0	14	3	102	24	24	126	4
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	304	309	129	296	299	114	131	0	0	126	0	0
Stage 1	177	177	-	120	120	-	-	-	-	-	-	-
Stage 2	127	132	-	176	179	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	648	605	921	656	613	939	1454	-	-	1460	-	-
Stage 1	825	753	-	884	796	-	-	-	-	-	-	-
Stage 2	877	787	-	826	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	628	592	920	646	600	939	1453	-	-	1460	-	-
Mov Cap-2 Maneuver	628	592	-	646	600	-	-	-	-	-	-	-
Stage 1	823	739	-	882	794	-	-	-	-	-	-	-
Stage 2	862	785	-	811	737	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.8		9.9			0.2			1.2			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1453	-	-	628	765	1460	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.005	0.037	0.016	-	-				
HCM Control Delay (s)	7.5	0	-	10.8	9.9	7.5	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-				

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2038_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	426	84	70	431	72	40
Future Vol, veh/h	426	84	70	431	72	40
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	463	91	76	468	78	43
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	561	0	1136	519
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	1010	-	219	541
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	529	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1004	-	201	536
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	489	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.2		26.2		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	201	536	-	-	1004	-
HCM Lane V/C Ratio	0.389	0.081	-	-	0.076	-
HCM Control Delay (s)	33.9	12.3	-	-	8.9	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1.7	0.3	-	-	0.2	-

40 Wilson Avenue Phase Two
3: Tripp Ave & Moira St W

2038_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	495	7	30	497	5	27
Future Vol, veh/h	495	7	30	497	5	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	538	8	33	540	5	29
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	546	0	1148	542
Stage 1	-	-	-	-	542	-
Stage 2	-	-	-	-	606	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1023	-	220	529
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	545	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1023	-	210	529
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	583	-
Stage 2	-	-	-	-	520	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		14.2	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	428		-	-	1023	-
HCM Lane V/C Ratio	0.081		-	-	0.032	-
HCM Control Delay (s)	14.2		-	-	8.6	0
HCM Lane LOS	B		-	-	A	A
HCM 95th %tile Q(veh)	0.3		-	-	0.1	-

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2038_Bkgd_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	511	3	33	493	38	2	1	21	14	2	14
Future Vol, veh/h	12	511	3	33	493	38	2	1	21	14	2	14
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	13	555	3	36	536	41	2	1	23	15	2	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	577	0	0	560	0	0	1222	1234	559	1224	1215	557
Stage 1	-	-	-	-	-	-	585	585	-	629	629	-
Stage 2	-	-	-	-	-	-	637	649	-	595	586	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	996	-	-	987	-	-	156	177	514	156	181	530
Stage 1	-	-	-	-	-	-	497	498	-	470	475	-
Stage 2	-	-	-	-	-	-	465	466	-	491	497	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	996	-	-	985	-	-	141	164	513	140	168	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	164	-	140	168	-
Stage 1	-	-	-	-	-	-	487	488	-	461	449	-
Stage 2	-	-	-	-	-	-	425	441	-	459	487	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			14.8			24.5		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	392	996	-	-	985	-	-	217
HCM Lane V/C Ratio	0.067	0.013	-	-	0.036	-	-	0.15
HCM Control Delay (s)	14.8	8.7	0	-	8.8	0	-	24.5
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2038_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	17	24	690	480	7
Future Vol, veh/h	11	17	24	690	480	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	12	19	26	758	527	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	962	268	535	0	-	0
Stage 1	531	-	-	-	-	-
Stage 2	431	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	254	730	1029	-	-	-
Stage 1	554	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	243	730	1029	-	-	-
Mov Cap-2 Maneuver	243	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.5	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1029	-	408	-	-	
HCM Lane V/C Ratio	0.026	-	0.075	-	-	
HCM Control Delay (s)	8.6	0.2	14.5	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2038_Bkgd+Dev_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	3	40	0	23	1	86	10	9	126	1
Future Vol, veh/h	4	0	3	40	0	23	1	86	10	9	126	1
Conflicting Peds, #/hr	0	0	1	0	0	0	1	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	7	2	2	8	2
Mvmt Flow	4	0	3	43	0	25	1	93	11	10	137	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	272	265	140	261	260	99	139	0	0	104	0	0
Stage 1	159	159	-	101	101	-	-	-	-	-	-	-
Stage 2	113	106	-	160	159	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	680	640	908	692	645	957	1445	-	-	1488	-	-
Stage 1	843	766	-	905	811	-	-	-	-	-	-	-
Stage 2	892	807	-	842	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	658	634	906	684	639	957	1444	-	-	1488	-	-
Mov Cap-2 Maneuver	658	634	-	684	639	-	-	-	-	-	-	-
Stage 1	841	760	-	904	810	-	-	-	-	-	-	-
Stage 2	868	806	-	832	760	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.9			10.2			0.1			0.5		
HCM LOS	A			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	745	764	1488	-	-
HCM Lane V/C Ratio	0.001	-	-	0.01	0.09	0.007	-	-
HCM Control Delay (s)	7.5	0	-	9.9	10.2	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection						
Int Delay, s/veh	3.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	327	87	47	345	86	42
Future Vol, veh/h	327	87	47	345	86	42
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	355	95	51	375	93	46
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	461	0	891	416
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	477	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	1074	-	303	624
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	608	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1064	-	286	617
Mov Cap-2 Maneuver	-	-	-	-	286	-
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	579	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1		19.6		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	286	617	-	-	1064	-
HCM Lane V/C Ratio	0.327	0.074	-	-	0.048	-
HCM Control Delay (s)	23.6	11.3	-	-	8.6	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.4	0.2	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	391	7	22	431	9	34
Future Vol, veh/h	391	7	22	431	9	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	3	2	5	6	2	3
Mvmt Flow	439	8	25	484	10	38
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	447	0	977	443
Stage 1	-	-	-	-	443	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	-	-	4.15	-	6.42	6.23
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.245	-	3.518	3.327
Pot Cap-1 Maneuver	-	-	1098	-	278	613
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1098	-	269	613
Mov Cap-2 Maneuver	-	-	-	-	269	-
Stage 1	-	-	-	-	647	-
Stage 2	-	-	-	-	570	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.4		13.3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	484	-	-	1098	-	
HCM Lane V/C Ratio	0.1	-	-	0.023	-	
HCM Control Delay (s)	13.3	-	-	8.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2038_Bkgd+Dev_AM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	420	3	13	438	18	5	0	30	7	0	4
Future Vol, veh/h	4	420	3	13	438	18	5	0	30	7	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	6	2	2	2	10	2	2	2
Mvmt Flow	4	457	3	14	476	20	5	0	33	8	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	496	0	0	460	0	0	983	991	459	997	982	486
Stage 1	-	-	-	-	-	-	467	467	-	514	514	-
Stage 2	-	-	-	-	-	-	516	524	-	483	468	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	1068	-	-	1101	-	-	228	246	586	223	249	581
Stage 1	-	-	-	-	-	-	576	562	-	543	535	-
Stage 2	-	-	-	-	-	-	542	530	-	565	561	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1068	-	-	1101	-	-	222	240	586	207	243	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	222	240	-	207	243	-
Stage 1	-	-	-	-	-	-	573	559	-	540	525	-
Stage 2	-	-	-	-	-	-	528	520	-	531	558	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.2			13.2			19		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	475	1068	-	-	1101	-	-	270
HCM Lane V/C Ratio	0.08	0.004	-	-	0.013	-	-	0.044
HCM Control Delay (s)	13.2	8.4	0	-	8.3	0	-	19
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2038_Bkgd+Dev_AM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	44	13	374	441	11
Future Vol, veh/h	10	44	13	374	441	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	20	2	2	6	4	2
Mvmt Flow	13	56	16	473	558	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	834	286	572	0	-	0
Stage 1	565	-	-	-	-	-
Stage 2	269	-	-	-	-	-
Critical Hdwy	7.2	6.94	4.14	-	-	-
Critical Hdwy Stg 1	6.2	-	-	-	-	-
Critical Hdwy Stg 2	6.2	-	-	-	-	-
Follow-up Hdwy	3.7	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	273	711	997	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	267	711	997	-	-	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	474	-	-	-	-	-
Stage 2	701	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.6	0.4		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	997	-	544	-	-	
HCM Lane V/C Ratio	0.017	-	0.126	-	-	
HCM Control Delay (s)	8.7	0.1	12.6	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-	

40 Wilson Avenue Phase Two
1: Bogart Cres/Wilson Ave & Palmer Rd

2038_Bkgd+Dev_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	0	21	0	14	3	94	29	25	116	4
Future Vol, veh/h	3	0	0	21	0	14	3	94	29	25	116	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	4	2	2	2	13
Mvmt Flow	3	0	0	23	0	15	3	102	32	27	126	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	315	323	129	306	309	118	131	0	0	134	0	0
Stage 1	183	183	-	124	124	-	-	-	-	-	-	-
Stage 2	132	140	-	182	185	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	638	595	921	646	605	934	1454	-	-	1451	-	-
Stage 1	819	748	-	880	793	-	-	-	-	-	-	-
Stage 2	871	781	-	820	747	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	616	581	920	635	591	934	1453	-	-	1451	-	-
Mov Cap-2 Maneuver	616	581	-	635	591	-	-	-	-	-	-	-
Stage 1	817	732	-	878	791	-	-	-	-	-	-	-
Stage 2	855	779	-	804	731	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.9			10.2			0.2			1.3		
HCM LOS	B			B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1453	-	-	616	728	1451	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	0.052	0.019	-	-
HCM Control Delay (s)	7.5	0	-	10.9	10.2	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	434	88	70	433	73	40
Future Vol, veh/h	434	88	70	433	73	40
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	472	96	76	471	79	43
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	575	0	1150	530
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	623	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	998	-	215	534
Stage 1	-	-	-	-	584	-
Stage 2	-	-	-	-	527	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	992	-	197	529
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	486	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.2		27.1	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	197	529	-	-	992	-
HCM Lane V/C Ratio	0.403	0.082	-	-	0.077	-
HCM Control Delay (s)	35.1	12.4	-	-	8.9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	1.8	0.3	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	499	11	34	498	7	28
Future Vol, veh/h	499	11	34	498	7	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	8
Mvmt Flow	542	12	37	541	8	30
Major/Minor	Major1		Major2	Minor1		
Conflicting Flow All	0	0	554	0	1163	548
Stage 1	-	-	-	-	548	-
Stage 2	-	-	-	-	615	-
Critical Hdwy	-	-	4.12	-	6.42	6.28
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.372
Pot Cap-1 Maneuver	-	-	1016	-	215	525
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	539	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1016	-	204	525
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	511	-
Approach	EB		WB	NB		
HCM Control Delay, s	0		0.6	15		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	399	-	-	1016	-	
HCM Lane V/C Ratio	0.095	-	-	0.036	-	
HCM Control Delay (s)	15	-	-	8.7	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-	

40 Wilson Avenue Phase Two
4: Elgin St & Moira St W

2038_Bkgd+Dev_PM
HCM 6th TWSC

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	512	7	37	497	38	3	1	22	14	2	14
Future Vol, veh/h	12	512	7	37	497	38	3	1	22	14	2	14
Conflicting Peds, #/hr	0	0	0	2	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	7	2	3	2	2	10	2	2	2
Mvmt Flow	13	557	8	40	540	41	3	1	24	15	2	15
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	567	0	0	1238	1250	563	1241	1234	561
Stage 1	-	-	-	-	-	-	589	589	-	641	641	-
Stage 2	-	-	-	-	-	-	649	661	-	600	593	-
Critical Hdwy	4.12	-	-	4.17	-	-	7.12	6.52	6.3	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.263	-	-	3.518	4.018	3.39	3.518	4.018	3.318
Pot Cap-1 Maneuver	993	-	-	981	-	-	152	173	511	152	177	527
Stage 1	-	-	-	-	-	-	494	495	-	463	469	-
Stage 2	-	-	-	-	-	-	458	460	-	488	493	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	979	-	-	137	159	510	135	163	527
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	159	-	135	163	-
Stage 1	-	-	-	-	-	-	484	485	-	454	440	-
Stage 2	-	-	-	-	-	-	416	432	-	455	483	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.6			15.7			25.3		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	365	993	-	-	979	-	-	210				
HCM Lane V/C Ratio	0.077	0.013	-	-	0.041	-	-	0.155				
HCM Control Delay (s)	15.7	8.7	0	-	8.8	0	-	25.3				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.5				

40 Wilson Avenue Phase Two
5: Wilson Ave & Sidney St

2038_Bkgd+Dev_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	25	32	690	480	11
Future Vol, veh/h	12	25	32	690	480	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	4	3	2
Mvmt Flow	13	27	35	758	527	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	982	270	539	0	-	0
Stage 1	533	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	246	728	1025	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	231	728	1025	-	-	-
Mov Cap-2 Maneuver	231	-	-	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.3	0.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1025	-	429	-	-	
HCM Lane V/C Ratio	0.034	-	0.095	-	-	
HCM Control Delay (s)	8.6	0.2	14.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-	

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	395	100	49	452	92	49
Future Vol, veh/h	395	100	49	452	92	49
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	429	109	53	491	100	53
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	549	0	1092	497
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	996	-	229	561
Stage 1	-	-	-	-	596	-
Stage 2	-	-	-	-	535	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	987	-	215	555
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	506	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.9		27.4	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	215	555	-	-	987	-
HCM Lane V/C Ratio	0.465	0.096	-	-	0.054	-
HCM Control Delay (s)	35.5	12.2	-	-	8.9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	0.3	-	-	0.2	-

40 Wilson Avenue Phase Two
2: Palmer Rd & Moira St W

2051_Bkgd_PM
HCM 6th TWSC

Intersection						
Int Delay, s/veh	6.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	499	93	99	555	85	46
Future Vol, veh/h	499	93	99	555	85	46
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	542	101	108	603	92	50
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	650	0	1419	603
Stage 1	-	-	-	-	600	-
Stage 2	-	-	-	-	819	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	936	-	148	485
Stage 1	-	-	-	-	540	-
Stage 2	-	-	-	-	427	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	930	-	130	481
Mov Cap-2 Maneuver	-	-	-	-	130	-
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	377	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.4		57.9	
HCM LOS					F	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	130	481	-	-	930	-
HCM Lane V/C Ratio	0.711	0.104	-	-	0.116	-
HCM Control Delay (s)	82	13.4	-	-	9.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4	0.3	-	-	0.4	-

Intersection						
Int Delay, s/veh	4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	398	102	49	458	95	49
Future Vol, veh/h	398	102	49	458	95	49
Conflicting Peds, #/hr	0	0	11	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	7	6	10	8
Mvmt Flow	433	111	53	498	103	53
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	555	0	1104	502
Stage 1	-	-	-	-	500	-
Stage 2	-	-	-	-	604	-
Critical Hdwy	-	-	4.17	-	6.5	6.28
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.263	-	3.59	3.372
Pot Cap-1 Maneuver	-	-	991	-	225	557
Stage 1	-	-	-	-	593	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	982	-	211	551
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	588	-
Stage 2	-	-	-	-	502	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.9		28.8		
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	211	551	-	-	982	-
HCM Lane V/C Ratio	0.489	0.097	-	-	0.054	-
HCM Control Delay (s)	37.4	12.2	-	-	8.9	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	2.4	0.3	-	-	0.2	-

Intersection						
Int Delay, s/veh	6.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	507	97	99	557	86	46
Future Vol, veh/h	507	97	99	557	86	46
Conflicting Peds, #/hr	0	0	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	60	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	6	10
Mvmt Flow	551	105	108	605	93	50
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	663	0	1432	614
Stage 1	-	-	-	-	611	-
Stage 2	-	-	-	-	821	-
Critical Hdwy	-	-	4.12	-	6.46	6.3
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.218	-	3.554	3.39
Pot Cap-1 Maneuver	-	-	926	-	145	477
Stage 1	-	-	-	-	534	-
Stage 2	-	-	-	-	426	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	921	-	127	473
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	376	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.4		61.8	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	127	473	-	-	921	-
HCM Lane V/C Ratio	0.736	0.106	-	-	0.117	-
HCM Control Delay (s)	87.6	13.5	-	-	9.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.2	0.4	-	-	0.4	-

APPENDIX E

Terms of Reference

From: Gliddon, Jarrod <JGliddon@belleville.ca>
Sent: Friday, March 20, 2026 1:00 PM
To: Andrew Rosenthal
Cc: Amanda Redden
Subject: Re: Terms of Reference - 40 Wilson Phase 2

Hey Andrew,

Thanks for following up on this.

Your proposed scope of work is adequate. Also, no TIS was submitted with the YMCA SPA.

Through the completion of Avonlough SPS project, road improvements will occur in the general greater area of your development but are outside the scope of the intersections that you will analyze. However, if you are interested, you can find out more information here:

<https://getinvolved.belleville.ca/avonlough-sewage-pumping-station-replacement>

If you need anything else, just let me know.

Thanks,
Jarrod

From: Andrew Rosenthal <arosenthal@jewelleng.ca>
Sent: Thursday, March 19, 2026 8:25 AM
To: Gliddon, Jarrod <JGliddon@belleville.ca>
Cc: Amanda Redden <reddena@jewelleng.ca>
Subject: FW: Terms of Reference - 40 Wilson Phase 2

Hi Jarrod, just following up.

Thanks,

Andrew Rosenthal, P.Eng.
Traffic/Stormwater Engineer



Jewell Engineering Inc.
1-71 Millennium Pkwy,
Belleville, ON K8N 4Z5
Phone 613-969-1111 x 246

From: Andrew Rosenthal
Sent: Friday, March 13, 2026 9:04 AM
To: Gliddon, Jarrod <jgliddon@belleville.ca>

Cc: Amanda Redden <reddena@jewelleng.ca>

Subject: Terms of Reference - 40 Wilson Phase 2

Hi Jarrod,

A client of ours is completing a zoning by-law amendment and draft plan application submission to construct Phase 2 of a residential subdivision on Wilson Ave in Belleville. Phase 2 of the proposed development will involve construction of 109 residential units (mix of singles/semis/towns) on a former industrial site on Wilson Ave, located south of Moira St W between Sidney St and Palmer Rd. Based on the number of residential units, we expect the development will generate approx. 62 Weekday AM and 70 Weekday PM peak-hour trips. You and Bryon had a discussion January 9 regarding Phase 1 and confirmed that an update to the 2022 TIS would not be required; the proposed scope below is for Phase 2 of the same development for which a TIS was not completed.

We're looking to confirm that the proposed scope of work below will meet the City's requirements for this development:

- Description of existing road network (geometry, posted speed, etc.)
- Level-of-service analysis at the following intersections (see attached image):
 - Moira St W at Palmer Rd (based on future volumes from West Belleville Secondary Plan)
 - Moira St W at Tripp Ave
 - Moira St W at Elgin St
 - Wilson Ave at Palmer Rd / Bogart Cres (N)
 - Wilson Ave at Sidney St
- Weekday AM and PM peak hour analysis
- One-day, weekday traffic counts to be completed shortly at Moira St W at Tripp Ave and Elgin St, and Sidney St at Wilson Ave
- Development year (2028), and 5, 10-year projection
- Turning lane warrants based on TAC (level-of-service) analysis
- Discussion of existing transit, active transportation
- 0.5% annual background growth rate to be consistent with local traffic modeling, plus
- Inclusion of generated traffic from the following developments:
 - 40 Wilson Phase 1
 - Sand Cherry Subdivision
 - Manusco Subdivision
 - YMCA (please provide the TIS for inclusion in our study)
- Are there any other adjacent developments or intersection/road network improvements we should be aware of?

Thanks,

Andrew Rosenthal, P.Eng.
Traffic/Stormwater Engineer



Jewell Engineering Inc.
1-71 Millennium Pkwy,
Belleville, ON K8N 4Z5

Phone 613-969-1111 x 246

Bryon Keene

From: Bryon Keene
Sent: Friday, January 9, 2026 9:49 AM
To: Amanda Redden; Andrew Rosenthal
Subject: 40 Wilson Ave TIS

I had a conversation with Jarrod Gliddon today regarding the TIS that was completed in 2022 for 40 Wilson Avenue Phase 1. I noted the study was approaching 4 years old, but that the number of homes will be reduced to the sanitary capacity limit.

Jarrold said the report would not need to be updated. This is because they recently completed their own traffic investigation as part of the West Belleville Secondary Plan and found there was no concern with offsite intersections.

He said, whatever conclusions and recommendations that were in the 2022 study will be acceptable to them.

Bryon Keene, P.Eng.
Senior Water Resources Engineer

Jewell Engineering Inc.
1 – 71 Millennium Pkwy.
Belleville, ON, K8N 4Z5
Ph. 613-969-1111
Fax 613-969-8988



APPENDIX F

Wilson Avenue Development Traffic Impact Study

Wilson Avenue Development

City of Belleville

Traffic Impact Study for ROMPSEN

Type of Document:
Final Report

Project Number:
JDE – 21063

Date Submitted:
June 13th, 2022



John Northcote, P.Eng.
Professional License #: 100124071



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86 Cumberland Street
Barrie, ON
705.725.4035
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Legal Notification

This report was prepared by **JD Northcote Engineering Inc.** for the account of **ROMPSEN**.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. **JD Northcote Engineering Inc.** accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this project.

Executive Summary

This report summarizes the traffic impact study prepared for the proposed residential development located between Palmer Road and Sydney Street, south of Moira Street, in the City of Belleville [City]. The report assesses the impact of traffic related to the development on the adjacent roadway and provides recommendations to accommodate this traffic in a safe and efficient manner.

The proposed development consists of 86 single detached units and 71 townhouse units.

Access to the development will be provided via extension of Wilson Avenue between Palmer Road and Sydney Street.

The scope of this analysis includes a review of the following intersections:

- Wilson Avenue Extension / Palmer Road & Bogart Crescent;
- Wilson Avenue / Sydney Street;
- Elgin Street / Moira Street West; and
- Tripp Avenue / Moira Street West.

Conclusions

1. The proposed development is expected to generate a total of 110 AM and 137 PM peak hour trips.
2. Detailed intersection counts were conducted at the study intersections.
3. An intersection operation analysis was completed at the study area intersections, using the existing and background (2029 and 2034) traffic volumes, with consideration for the projected adjacent development traffic growth and without the proposed development traffic. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. No improvements are recommended within the study area.
4. An estimate of the amount of traffic that would be generated by the Subject Site was prepared and assigned to the study area streets and intersections.
5. An intersection operation analysis was completed under total (2029 and 2034) traffic volumes with the proposed development operational at the study area intersections. No improvements recommended within the study area.
6. The proposed Wilson Avenue extension will operate efficiently as a four-legged intersection, with one-way stop control for eastbound and westbound egress movements. A single lane for ingress and egress movements will provide the necessary capacity to convey the traffic volume generated by the proposed development.
7. The location of the Wilson Avenue extension is considered appropriate with respect to minimum corner clearance and spacing requirements as identified in the Transportation Association of Canada Design Guide for Canadian Roads (2017).
8. In summary, the proposed development will not cause any operational issues and will not add significant delay or congestion to the local roadway network.

Table of Contents

1	Introduction.....	6
1.1	Background.....	6
1.2	Study Area	6
1.3	Study Scope and Objectives	7
1.4	Horizon Year and Analysis Periods	8
2	Information Gathering.....	8
2.1	Street and Intersection Characteristics	8
2.2	Local Transportation Infrastructure Improvements.....	9
2.3	Transit Access	9
2.4	Development Growth.....	10
2.4.1	Sandy Cherry Court Subdivision	11
2.4.2	Fairgrounds Property.....	12
2.4.3	Ben Bleecker Lands	12
2.4.4	Mancuso Subdivision.....	13
2.5	Background Traffic Growth.....	13
2.5.1	Population & Employment Growth	13
2.5.2	Other Studies.....	13
2.5.3	Overall Background Growth Rate.....	13
2.6	Traffic Counts	13
2.7	Existing Traffic Volumes	14
2.8	Horizon Year Traffic Volumes.....	14
3	Intersection Operation without Proposed Development.....	15
3.1	Introduction	15
3.2	Existing Intersection Operation.....	16
3.3	Background (2029) Intersection Operation	17
3.4	Background (2034) Intersection Operation	18
4	Proposed Development Traffic Generation and Assignment	19
4.1	Traffic Generation	19
4.2	Traffic Assignment	20
4.3	Total Horizon Year Traffic Volumes with the Proposed Development	21
5	Intersection Operation with Proposed Development	21
5.1	Total (2029) Intersection Operation.....	21

5.2	Total (2034) Intersection Operation	23
5.3	Site Access & Intersection Spacing	24
5.4	Sight Distance Review	25
6	Summary	25

List of Tables

Table 1 – Estimated Traffic Generation – Adjacent Development (Sandy Cherry Court Subdivision)	12
Table 2 – Traffic Count Data	14
Table 3 – Level of Service Criteria for Intersections	16
Table 4 – Existing (2022) LOS	17
Table 5 – Background (2029) LOS	18
Table 6 – Background (2034) LOS	19
Table 7 – Estimated Traffic Generation of Proposed Development	20
Table 8 – Estimated Traffic Generation of Proposed Development	20
Table 9 – Proposed Development Traffic Distribution	21
Table 10 – Total (2029) LOS	22
Table 11 – Total (2029) Left Turn Analysis Summary	22
Table 12 – Total (2034) LOS	23
Table 13 – Total (2034) Left Turn Analysis Summary	24

List of Figures

Figure 1 – Proposed Site Location and Study Area	7
Figure 2 – Existing (2022) Intersection Spacing and Lane Configuration with in Study Area	9
Figure 3 – Adjacent Development Location	11
Figure 4 – Adjacent Development Traffic Volumes – Sandy Cherry Court Subdivision	27
Figure 5 – Adjacent Development Traffic Volumes – Fairgrounds Property	28
Figure 6 – Adjacent Development Traffic Volumes – Ben Bleeker Lands	29
Figure 7 – Existing (2022) Traffic Volumes	30
Figure 8 – Background (2029) Traffic Volumes	31
Figure 9 – Background (2034) Traffic Volumes	32
Figure 10 – Site Traffic Assignment	33
Figure 11 – Total (2029) Traffic Volumes	34
Figure 12 – Total (2034) Traffic Volumes	35

List of Appendices

APPENDIX A – Draft Plan of Subdivision
APPENDIX B – Adjacent Development Excerpts
APPENDIX C – Traffic Count Data
APPENDIX D – Synchro Analysis Output – Existing Traffic Volumes
APPENDIX E – Synchro Analysis Output – Background Traffic Volumes
APPENDIX F – Synchro Analysis Output – Total Traffic Volumes
APPENDIX G – MTO Left Turn Analysis
APPENDIX H – OTM Signal Justification Sheets

1 Introduction

1.1 Background

On behalf of the property owner, **ROMPSEN** [Client] is proposing a residential development on a site located between Palmer Road and Sydney Street, south of Moira Street, in the City of Belleville.

The proposed development consists of 82 single detached units and 71 townhouse units. Access to the development will be provided via extension of Wilson Avenue between Palmer Road and Sydney Street.

It is anticipated that ultimate build-out will occur by 2024.

The Client has retained **JD Northcote Engineering Inc.** [JD Engineering] to prepare this traffic impact study in support of the proposed development.

1.2 Study Area

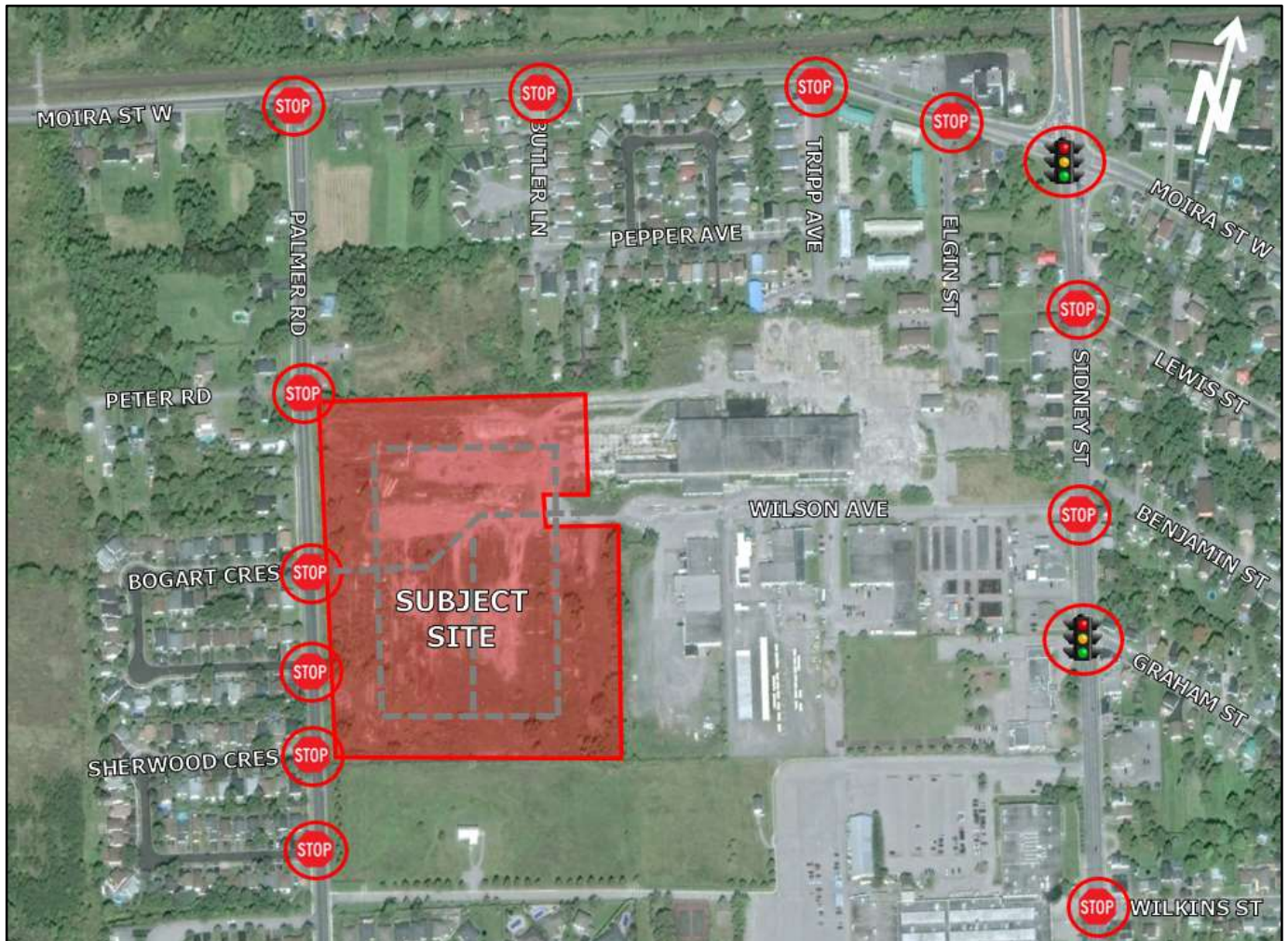
Figure 1 shows the location of the subject site and study area intersections in relation to the surrounding area. The Draft Plan of Subdivision by Innovative Planning Solutions Inc. is provided in **Appendix A**.

The subject site is bound by existing residential lands to the north and east, Dominion Drive to the south and vacant land to the west.

Through consultation with the City, the following intersections are included in the traffic impact study:

- Wilson Avenue Extension / Palmer Road & Bogart Crescent;
- Wilson Avenue / Sydney Street;
- Elgin Street / Moira Street West; and
- Tripp Avenue / Moira Street West.

Figure 1 – Proposed Site Location and Study Area



1.3 Study Scope and Objectives

The purpose of this study is to identify the potential impacts to traffic flow at the site accesses and on the surrounding roadway network. The study analysis includes the following tasks:

- Consult with the City to address any traffic-related issues or concerns they have with the proposed development;
- Determine existing traffic volumes and circulation patterns;
- Estimate future traffic volumes if the proposed development was not constructed, including the impact of additional proposed developments in the area;
- Complete level-of-service [LOS] analysis of horizon year (without the proposed development) traffic conditions and identify operational deficiencies;
- Estimate the amount of traffic that would be generated by the proposed development and assign to the roadway network;
- Complete LOS analysis of horizon year (with the proposed development) traffic conditions and identify additional operational deficiencies;

- Identify improvement options to address operational deficiencies;
- Review the proposed intersection spacing;
- Complete a sight distance review for the proposed Wilson Avenue extension; and
- Document findings and recommendations in a final report.

1.4 Horizon Year and Analysis Periods

Traffic scenarios for the existing year, 5-year post-buildout horizon year (2029) and 10-year post-buildout horizon year (2034) were selected for analysis of traffic operations in the study area. The weekday morning [AM] and weekday afternoon [PM] peak hours have been selected as the analysis periods for this study.

2 Information Gathering

2.1 Street and Intersection Characteristics

Moira Street West is a two-lane arterial road with an urban cross-section through the study area. Between Butler Lane and Sidney Street, sidewalk is available on the south side of the road. East of Sidney, sidewalk is available on both sides of the road. Moira Street West has a posted speed limit of 50 km/h and is under the jurisdiction of City.

Sidney Street is a four-lane arterial road with an urban cross-section through the study area. North of Wilson Avenue, sidewalk is available on the east side of the road. South of Wilson Avenue, sidewalk is available on both sides of the road. Sidney Street has a posted speed limit of 50 km/h and is under the jurisdiction of City.

Palmer Road is a two-lane collector road with an urban cross-section and sidewalk on the west side of the road through the study area. Moira Street West has a posted speed limit of 50 km/h and is under the jurisdiction of City.

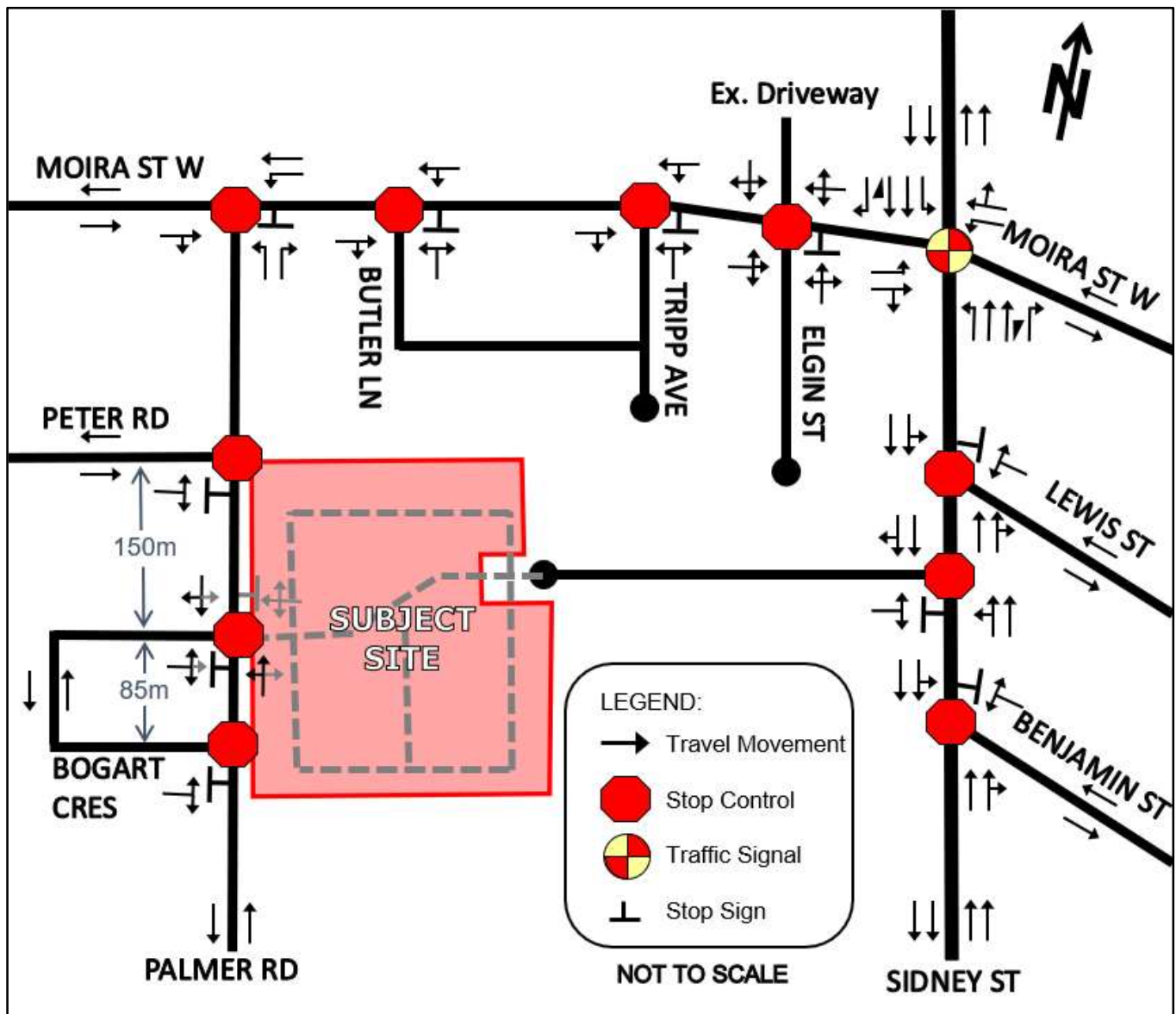
Wilson Avenue is a two-lane local road with a rural cross-section through the study area. Wilson Avenue has an assumed (unposted) speed limit of 50 km/h and is under the jurisdiction of City.

Tripp Avenue is a two-lane local road with a rural cross-section and sidewalk on the west side of the road through the study area. Tripp Avenue has an assumed (unposted) speed limit of 50 km/h and is under the jurisdiction of City.

Elgin Street is a two-lane local road with and a rural cross-section through the study area. Elgin Street has an assumed (unposted) speed limit of 50 km/h and is under the jurisdiction of City.

The existing intersection spacing and lane configuration within the study area is illustrated in **Figure 2**.

Figure 2 – Existing (2022) Intersection Spacing and Lane Configuration with in Study Area



2.2 Local Transportation Infrastructure Improvements

In review of the City's Transportation Master Plan [City TMP] (April 22, 2014) and City's 2022 Capital Budget Summary, there are no planned infrastructure improvements in the study area that would impact the local traffic volumes or traffic distribution.

2.3 Transit Access

Belleville Transit provides bus service within the study area. The following transit routes are accessible for the proposed development:

- **Route 5 (Parkdale-Mall)** - traveling along Sidney Street in the study area with weekday service provided between 05:00 – 21:25 with daytime service every 45 minutes. Saturday service is provided between 05:30 – 18:55 with service every hour. Sunday service is provided between 09:00 – 18:25 with service every hour. The closest bus stop for Route 5 is located at the northeast corner of the Sidney Street / Lewis Street intersection.
- **Route 6 (Avondale)** - traveling along Sidney Street and Moira Street West in the study area with weekday service provided between 06:30 – 18:25 with daytime service every 45 minutes. Saturday service is provided between 08:00 – 18:25 with service every hour. Sunday service is provided between 09:00 – 18:25 with service every hour. The closest bus stop for Route 6 is located on Sidney Street, opposite Lewis Street.
- **Route 7 (Loyalist)** - traveling along Moira Street West in the study area with weekday service provided between 06:30 – 22:25 with daytime service every 30 minutes. Saturday service is provided between 07:00 – 19:25 with service every 30 minutes. Sunday service is provided between 09:30 – 17:55 with service every hour. The closest bus stops for Route 7 are located between Tripp Avenue and Elgin Street on Moira Street West, and on Sidney Street, opposite Lewis Street.
- **Route 10 (Loyalist/Walmart)** - traveling along Moira Street West and Palmer Road in the study area with weekday service provided between 07:30 – 21:25 with daytime service every hour. Saturday service is provided between 08:30 – 18:25 with service every hour. Sunday service is provided between 09:30 – 17:55 with service every hour. The closest bus stop for Route 10 is located on Palmer Road, south of Bogart Crescent (south).

All bus stops are located within a 350-metre radius of the Subject Site.

2.4 Development Growth

Through correspondence with City staff, the following developments have been noted for consideration with respect to impacts on the local traffic volumes / infrastructure capacity:

- Sand Cherry Court Subdivision;
- Mancuso Subdivision,
- Fairgrounds Property; and
- Ben Bleecker Lands.

Figure 3 illustrates the location of the above developments in relation to the subject site.

Figure 3 – Adjacent Development Location



2.4.1 Sandy Cherry Court Subdivision

The Sandy Cherry Court Subdivision is on the east side of Palmer Road, north of the Subject Site. The proposed development has been approved to include 39 residential units with access onto Palmer Road.

Traffic volumes generated by the Sandy Cherry Court Subdivision have been established based on the data provided in the Institute of Transportation Engineers [ITE] Trip Generation Manual (10th Edition) [ITE Trip Generation Manual]. The following ITE land uses have been applied to estimate the traffic from the development:

- ITE land use 210 (Single-Family Detached Housing) – General Urban/Suburban Setting.

Given the strong statistical relationship, the fitted curve equations have been utilized. **Table 1** summarizes the utilized trip generation equations and estimated trip generation for the Sandy Cherry Court Subdivision.

Table 1 – Estimated Traffic Generation – Adjacent Development (Sandy Cherry Court Subdivision)

Land Use	Trip Basis / Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached ITE Land Use: 210	equation (units)	$T = 0.71 X + 4.80$			$\ln(T) = 0.96 \ln(X) + 0.2$		
	distribution	25%	75%	100%	63	37%	100%
Dominion Park Subdivision	39 units	8	24	32	26	15	41

It is anticipated that the subdivision will be fully built and occupied by the 2029 horizon year.

Traffic volumes generated by the Sandy Cherry Court Subdivision have been distributed to the study area road network based on the traffic distribution developed in Section 4.2. The assignment of the Sandy Cherry Court Subdivision volumes through the study area road network is illustrated in **Figure 4**.

2.4.2 Fairgrounds Property

The Fairground Property is located at the northwest corner of the Bridge Street West / Sidney Street intersection. City Staff has indicated that the property has not yet been approved for development. Based on the *Sidney Street Widening & Bridge Street West Intersection Improvements EA* (Ainley & Associates Limited - May 17th, 2021) [Ainley EA], the proposed development is anticipated to include:

- 135 high-density units;
- 75 single detached units;
- 0.92-hectare commercial block;
- 0.86-hectare park land;
- 50,000 ft² recreational community centre;
- Existing Curling Club to remain.

Trip generation and distribution for the development have been established based on the Ainley EA, excerpts of which are provided in **Appendix B**. It is noted that the Ainley EA assumed a build-out year of 2029 for the commercial block and recreational center, and a build-out year of 2039 for the residential and park lands. For the purpose of this study, the entire development has been assumed to be built out by the 2029 horizon year. The AM and PM peak hour traffic volumes are illustrated in **Figure 5**.

2.4.3 Ben Bleecker Lands

The Ben Bleecker Lands are located at the northeast corner of the Bridge Street West / Sidney Street intersection. City Staff has indicated that the property has not yet been approved for development. Based on the Ainley EA, the proposed development is anticipated to include a 100,000 ft² grocery store.

Trip generation and distribution for the development have been established based on the Ainley EA, excerpts of which are provided in **Appendix B**. It is noted that the Ainley EA assumed a build-out year of 2029. For the purpose of this study, the entire development has been assumed to be built out by the 2029 horizon year. The AM and PM peak hour traffic volumes are illustrated in **Figure 6**.

2.4.4 Mancuso Subdivision

The Mancuso Subdivision is on the north side of Bridge Street West, west of the Palmer Road. The proposed development has been approved to include 35 residential units with access onto Bridge Street West.

Given the location of the Mancuso Subdivision, traffic volumes generated by such will be relatively minor through the study area road network. The generated traffic has been assumed to be encompassed within the overall background growth rate noted in Section 2.5.3.

2.5 Background Traffic Growth

2.5.1 Population & Employment Growth

The 2016 census profile for the City of Belleville indicates that the population has increased from 49,454 in 2011 to 50,716 in 2016, translating to an average annual increase of 0.29%. Over the same period, the County of Hastings has experienced a population increase from 134,934 to 136,445 persons translating to an average annual increase of 0.22%.

The City of Belleville Transportation Master Plan [City TMP], projects a population increase of 24% between 2011 to 2031, translating to an annual growth rate of 1.1%. Over the same period, employment is projected to increase from 31,670 to 41,870 jobs, translating to an average annual increase of 1.41%.

2.5.2 Other Studies

The Ainley EA utilized a growth rate of 1.5% per year on Sidney Street.

2.5.3 Overall Background Growth Rate

Considering the above historical population and employment growth, growth rates utilized in similar traffic studies in the local area, and in recognition of the consideration given to the adjacent development growth, a growth rate of 1.5% per annum has been assumed for Sidney Street, Moira Street and Palmer Road within the study area. No growth has been applied to the local roads.

2.6 Traffic Counts

Detailed turning movement traffic and pedestrian counts were commissioned by JD Engineering at the study intersections. **Table 2** summarizes the traffic count data collection information.

Table 2 – Traffic Count Data

Intersection (N-S Street / E-W Street)	Count Date	AM Peak Hour	PM Peak Hour	Source
Palmer Road / Bogart Crescent (north)	Tuesday, June 22, 2021	07:30 – 08:30	16:15 – 17:15	JD Eng. ¹
Tripp Ave / Moira St W	Tuesday, June 22, 2021	07:30 – 08:30	16:30 – 17:30	JD Eng. ¹
Elgin St / Moira St W	Tuesday, June 22, 2021	07:30 – 08:30	16:00 – 17:00	JD Eng. ¹
Sidney St / Wilson Ave	Tuesday, June 22, 2021	08:00 – 09:00	16:00 – 17:00	JD Eng. ¹
Sidney Street / Bridge St W ² (north leg only)	Tuesday, June 22, 2021	07:45 – 08:45	16:30 – 17:30	JD Eng. ¹

¹Counts were completed by Accu-Traffic Inc. on behalf of JD Engineering.

²Although the intersection of Sidney Street / Bridge St W is not explicitly analyzed in this study, traffic counts were conducted at the intersection to evaluate the existing travel patterns in the area.

Detailed traffic count data can be found in **Appendix C**. Heavy vehicle percentages from the traffic count data have also been included in the Synchro analysis.

Recognizing that the timing of the traffic counts coincides with the physical distancing requirements related to the COVID-19 pandemic, the traffic counts conducted at the north leg of the Sidney Street / Bridge Street West intersection were compared to those available within the Ainley EA (conducted in May of 2019, prior to the COVID pandemic) in order to consider any traffic volume adjustments necessary in developing typical roadway conditions. In review of such volumes, it was found that the 2021 northbound and southbound volumes on Sidney Street fall below the 2019 volumes (with consideration for the 1.5% per annum growth rate) by an average of 37%.

Consequently, an increase of 37% has been applied to all counts conducted in June of 2021, for both the AM and PM peak hours.

2.7 Existing Traffic Volumes

The 2022 existing AM and PM peak hour traffic volumes in the study area are illustrated in **Figure 6**, established based on the June 2021 counts, adjusted to reflect the annual background growth rate noted in Section 2.5, the effects of the COVID-19 pandemic as outlined in Section 2.6.

2.8 Horizon Year Traffic Volumes

The background (2029 and 2034) horizon year traffic volumes are illustrated in **Figure 7** through **Figure 9**. The background volumes are based on the June 2021 counts, adjusted to reflect the annual background growth rate noted in Section 2.5, the effects of the COVID-19 pandemic as outlined in Section 2.6 and the traffic volumes generated by the existing adjacent developments as noted in Section 2.4.

3 Intersection Operation without Proposed Development

3.1 Introduction

Existing and background horizon operational conditions were established to determine how the street network within the study area is currently functioning without the proposed development. This provides a base case scenario to compare with future development scenarios. Traffic operations within the study area were evaluated using the existing and future background traffic volumes with the existing road configuration and traffic control. The intersection performance was measured using the traffic analysis software, Synchro 11, a deterministic model that employs Highway Capacity Manual and Intersection Capacity Utilization methodologies for analyzing intersection operations. These procedures are accepted by provincial and municipal agencies throughout North America.

Synchro 11 enables the study area to be graphically defined in terms of streets and intersections, along with their geometric and traffic control characteristics. The user is able to evaluate both signalized and unsignalized intersections in relation to each other, thus not only providing level of service for the individual intersections, but also enabling an assessment of the impact the various intersections in a network have on each other in terms of spacing, traffic congestion, delay, and queuing.

The intersection operations were also evaluated in terms of the LOS. LOS is a common measure of the quality of performance at an intersection and is defined in terms of vehicular delay. This delay includes deceleration delay, queue move-up time, stopped delay, and acceleration delay. LOS is expressed on a scale of A through F, where LOS A represents very little delay (i.e. less than 10 seconds per vehicle) and LOS F represents very high delay (i.e. greater than 50 seconds per vehicle for a stop sign controlled intersection and greater than 80 seconds per vehicle for a signalized intersection).

The LOS criteria for signalized and stop sign-controlled intersections are shown in **Table 3**. A description of traffic performance characteristics is included for each LOS.

Table 3 – Level of Service Criteria for Intersections

LOS	LOS Description	Control Delay (seconds per vehicle)	
		Signalized Intersections	Stop Controlled Intersections
A	Very low delay; most vehicles do not stop (Excellent)	less than 10.0	less than 10.0
B	Higher delay; more vehicles stop (Very Good)	between 10.0 and 20.0	between 10.0 and 15.0
C	Higher level of congestion; number of vehicles stopping is significant, although many still pass through intersection without stopping (Good)	between 20.0 and 35.0	between 15.0 and 25.0
D	Congestion becomes noticeable; vehicles must sometimes wait through more than one red light; many vehicles stop (Satisfactory)	between 35.0 and 55.0	between 25.0 and 35.0
E	Vehicles must often wait through more than one red light; considered by many agencies to be the limit of acceptable delay	between 55.0 and 80.0	between 35.0 and 50.0
F	This level is considered to be unacceptable to most drivers; occurs when arrival flow rates exceed the capacity of the intersection (Unacceptable)	greater than 80.0	greater than 50.0

3.2 Existing Intersection Operation

The results of the LOS analysis under existing (2022) traffic volumes during the AM and PM peak hour can be found below in **Table 4**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix D**.

The results of the LOS analysis indicate that the study intersections are operating within the typical design limits noted in Section 3.1.

An analysis was completed for left turn movements at the unsignalized intersections, based on the criteria outlined in Appendix 9A of the Ontario Ministry of Transportation Design Supplement for TAC Geometric Design Guide for Canadian Roads June 2017 [MTO DS]. A design speed of 60km/h was utilized for the westbound and southbound directions on Moira Street West and Sidney Street, respectively (speed limit + 10 km/h for lower speed roads). Based on MTO DS criteria, exclusive left turn lanes are not warranted at the study intersections (results provided in **Appendix G**). The exception occurs at the Moira Street West / Tripp Avenue intersection during the PM peak hour. However, recognizing that the all movements at the intersection will provide good operations with negligible queuing in the westbound direction (LOS A or greater, 95th percentile queue length < 1.3 metres) and further noting that the warrant is only triggered during the PM peak hour, the implementation of a westbound left turn lane is not recommended.

A review of the need for an additional auxiliary right turn lanes at the unsignalized intersections was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all turning movements; consequently, auxiliary right turn lanes are not recommended.

Further consideration for traffic signal improvements were considered at the unsignalized intersection based on the Ontario Traffic Manual Book 12 *Signal Justification*. The results indicate that traffic signals are not warranted at the intersection (results are provided in **Appendix H**).

Table 4 – Existing (2022) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Palmer Rd / Bogart Cres (unsignalized)	-	0.9	A	-	0.4	A
EB	0.02	9.3	A	0.01	10.2	B
NB	0.00	0.0	-	0.01	0.5	A
SB	0.06	0.0	-	0.14	0.0	-
Sidney St / Wilson Ave (unsignalized)	-	0.3	A	-	0.3	A
EB	0.03	11.5	B	0.06	18.8	C
NBTL	0.01	0.2	A	0.00	0.2	A
NB	0.18	0.0	-	0.34	0.0	-
SB	0.19	0.0	-	0.22	0.0	-
SBTR	0.11	0.0	-	0.12	0.0	-
Tripp Ave / Moira St W (unsignalized)	-	0.8	A	-	1.4	B
EBTR	0.22	0.0	-	0.26	0.0	-
WBTL	0.02	0.6	A	0.05	1.4	A
NB	0.05	10.7	B	0.10	12.0	B
Elgin St & Driveway / Moira St W (unsignalized)	-	0.6	A	-	1.3	A
EB	0.00	0.0	-	0.00	0.1	A
WB	0.01	0.2	A	0.02	0.5	A
NB	0.03	12.0	B	0.06	15.2	C
SB	0.04	15.5	C	0.16	23.6	C

3.3 Background (2029) Intersection Operation

The results of the LOS analysis under background (2029) traffic volumes during the AM and PM peak hour can be found below in **Table 5**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix D**.

The results of the LOS analysis indicate that the study intersections are operating within the typical design limits noted in Section 3.1.

The need for a left turn lanes was again analyzed to consider the background 2029 traffic volumes. Based on the MTO DS criteria exclusive left turn lanes are not warranted at the study intersections (results provided in **Appendix G**). Again, the exception occurs at the Moira Street West / Tripp Avenue intersection during the PM peak hour. However, recognizing that the all movements at the intersection will provide good operations with negligible queuing in the westbound direction (LOS A or greater, 95th percentile queue length < 1.4 metres) and further noting that the warrant is only triggered during the PM peak hour, the implementation of a westbound left turn lane is not considered necessary.

A review of the need for an additional auxiliary right turn lanes at the unsignalized intersections was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all turning movements; consequently, auxiliary right turn lanes are not recommended.

Further consideration for traffic signal improvements were considered at the unsignalized intersection based on the Ontario Traffic Manual Book 12 *Signal Justification*. The results indicate that traffic signals are not warranted at the intersection (results are provided in **Appendix H**).

Table 5 – Background (2029) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Palmer Rd / Bogart Cres (unsignalized)	-	0.8	A	-	0.4	A
EB	0.03	9.5	A	0.02	10.5	B
NB	0.00	0.0	-	0.01	0.4	A
SB	0.07	0.0	-	0.15	0.0	-
Sidney St / Wilson Ave (unsignalized)	-	0.3	A	-	0.3	A
EB	0.04	12.9	B	0.10	27.5	D
NBTL	0.01	0.4	A	0.00	0.2	A
NB	0.23	0.0	-	0.43	0.0	-
SB	0.24	0.0	-	0.30	0.0	-
SBTR	0.13	0.0	-	0.16	0.0	-
Tripp Ave / Moira St W (unsignalized)	-	0.7	A	-	1.4	C
EBTR	0.25	0.0	-	0.30	0.0	-
WBTL	0.02	0.6	A	0.06	1.5	A
NB	0.06	11.2	B	0.11	13.0	B
Elgin St & Driveway / Moira St W (unsignalized)	-	0.6	A	-	1.4	A
EB	0.00	0.0	-	0.01	0.1	A
WB	0.01	0.2	A	0.02	0.5	A
NB	0.03	12.9	B	0.07	17.5	C
SB	0.05	17.6	C	0.21	30.1	D

3.4 Background (2034) Intersection Operation

The results of the LOS analysis under background (2034) traffic volumes during the AM and PM peak hour can be found below in **Table 4**. Existing intersection geometry and traffic control have been utilized for this scenario. Detailed output of the Synchro analysis can be found in **Appendix D**.

The results of the LOS analysis indicate that the study intersections are operating within the typical design limits noted in Section 3.1.

The need for a left turn lanes was again analyzed to consider the background 2034 traffic volumes. Based on the MTO DS criteria exclusive left turn lanes are not warranted at the study intersections (results provided in **Appendix G**). Again, the exception occurs at the Moira Street West / Tripp Avenue intersection during the PM peak hour. However, recognizing that the all movements at the intersection will provide good operations with negligible queuing in the westbound direction (LOS A or greater, 95th percentile queue length < 1.4 metres) and further noting that the warrant is only triggered during the PM peak hour, the implementation of a westbound left turn lane is not considered necessary.

A review of the need for an additional auxiliary right turn lanes at the unsignalized intersections was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all turning movements; consequently, auxiliary right turn lanes are not recommended.

Further consideration for traffic signal improvements were considered at the unsignalized intersection based on the Ontario Traffic Manual Book 12 *Signal Justification*. The results indicate that traffic signals are not warranted at the intersection (results are provided in **Appendix H**).

Table 6 – Background (2034) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Palmer Rd / Bogart Cres (unsignalized)	-	0.7	A	-	0.4	A
EB	0.03	9.6	A	0.02	10.7	B
NB	0.00	0.0	-	0.01	0.4	A
SB	0.07	0.0	-	0.17	0.0	-
Sidney St / Wilson Ave (unsignalized)	-	0.3	A	-	0.3	A
EB	0.04	13.4	B	0.11	30.8	D
NBTL	0.01	0.4	A	0.01	0.2	A
NB	0.25	0.0	-	0.46	0.0	-
SB	0.25	0.0	-	0.32	0.0	-
SBTR	0.14	0.0	-	0.17	0.0	-
Tripp Ave / Moira St W (unsignalized)	-	0.7	A	-	1.4	B
EBTR	0.27	0.0	-	0.32	0.0	-
WBTL	0.02	0.6	A	0.06	1.5	A
NB	0.06	11.5	B	0.12	13.5	B
Elgin St & Driveway / Moira St W (unsignalized)	-	0.6	A	-	1.5	A
EB	0.00	0.0	-	0.01	0.1	A
WB	0.01	0.2	A	0.02	0.5	A
NB	0.03	13.5	B	0.08	19.0	C
SB	0.05	18.9	C	0.23	34.7	D

4 Proposed Development Traffic Generation and Assignment

4.1 Traffic Generation

As previously mentioned, the development will include 82 single detached units and 71 townhouse units

The traffic generation for the subject site has been based on the ITE Trip Generation Manual. The following ITE land use has been applied to estimate the traffic from the proposed development:

- ITE land use 210 (Single Family Detached) – General Urban / Suburban Setting; and
- ITE land use 220 (Multifamily Housing (Low-Rise)) – General Urban / Suburban Setting;

The traffic rates and equations are summarized in **Table 7** and **Table 8**.

Table 7 – Estimated Traffic Generation of Proposed Development

Land Use	Trip Basis / Units	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached ITE Land Use: 210	equation (units)	$\text{Ln}(T) = 0.91 \text{Ln}(X) + 0.12$			$\text{Ln}(T) = 0.94 \text{Ln}(X) + 0.27$		
	distribution	26%	74%	100%	63%	37%	100%
Multifamily Housing (Low-Rise) ITE Land Use: 220	equation (units)	$T = 0.31(X) + 22.85$			$T = 0.43(X) + 20.55$		
	distribution	24%	76%	100%	63%	37%	100%

The estimated trip generation for the proposed development is illustrated below in **Table 8**.

Table 8 – Estimated Traffic Generation of Proposed Development

Land Use	Size	AM Peak Hour			PM Peak Hour		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Single-Family Detached ITE Land Use: 210	86 units ¹	17	48	65	54	32	86
Multifamily Housing (Low-Rise) ITE Land Use: 220	71 units	11	34	45	32	19	51
Total		28	82	110	86	51	137

As shown, the proposed residential development is expected to generate 110 trips and 137 trips during the AM and PM peak hours, respectively. No transportation modal split has been applied to the above-noted traffic generation calculation.

4.2 Traffic Assignment

For the purposes of this study, it has been assumed that all traffic generated by the proposed development will be new traffic and would not be in the study area if the development was not constructed.

Traffic distribution for the trips generated by the proposed development have been developed based on existing traffic flow observed at the study area intersections in conjunction with the site's location within the City of Belleville and proximity to surrounding development, attractions and major travel routes (i.e. Highway 401 to the north).

The distribution of trips is illustrated in **Table 9** using the methodology outlined above.

¹ The development details of the proposed development are based on a previous iteration of the Site Plan, where additional single-detached units were proposed. Consequently, the noted traffic generation provides a conservative estimate.

Table 9 – Proposed Development Traffic Distribution

Access	Travel Direction (to / from)	Percent of Total Traffic Generation
Wilson Avenue	North via Sidney St	25%
	South via Sidney St	25%
Wilson Avenue Extension	North via Palmer Rd	25%
	South via Palmer Rd	25%
TOTAL		100%

The site traffic assignment for buildout of the proposed developments for the AM and PM peak hour is illustrated in **Figure 10**.

4.3 Total Horizon Year Traffic Volumes with the Proposed Development

For the total (2029 and 2034) horizon year traffic volumes, the proposed development traffic was added to the background (2029 and 2034) traffic volumes. The resulting total (2029 and 2034) horizon year traffic volume for the AM and PM peak hour are illustrated in **Figure 11** and **Figure 12**.

5 Intersection Operation with Proposed Development

5.1 Total (2029) Intersection Operation

The results of the LOS analysis under total (2029) traffic volumes during the AM and PM peak hour can be found below in **Table 10**. Existing intersection geometry has been utilized for this scenario, including stop control has been assumed at the Site Access egress movements. Detailed output of the Synchro analysis can be found in **Appendix F**.

Table 10 – Total (2029) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Palmer Rd / Bogart Cres & Wilson Ave ext. (unsignalized)	-	2.3	A	-	1.3	A
EB	0.03	9.9	A	0.02	11.4	B
WB	0.06	9.8	A	0.04	11.1	B
NB	0.00	0.0	-	0.01	0.4	A
SB	0.01	0.5	A	0.02	0.8	A
Sidney St / Wilson Ave (unsignalized)	-	0.9	A	-	0.9	B
EB	0.16	15.8	C	0.24	30.2	D
NBTL	0.02	0.8	A	0.03	1.1	A
NB	0.23	0.0	-	0.43	0.0	-
SB	0.24	0.0	-	0.30	0.0	-
SBTR	0.14	0.0	-	0.17	0.0	-
Tripp Ave / Moira St W (unsignalized)	-	0.7	A	-	1.4	C
EBTR	0.26	0.0	-	0.30	0.0	-
WBTL	0.01	0.4	A	0.06	1.5	A
NB	0.06	11.3	B	0.11	13.0	B
Elgin St & Driveway / Moira St W (unsignalized)	-	0.6	A	-	1.4	A
EB	0.00	0.0	-	0.01	0.1	A
WB	0.01	0.2	A	0.02	0.5	A
NB	0.03	13.0	B	0.07	17.6	C
SB	0.05	17.7	C	0.21	30.5	D

The results of the LOS analysis indicate that the study intersections are operating within the typical design limits noted in Section 3.1.

The need for a left turn lanes was again analyzed to consider the total 2029 traffic volumes. A summary of the left turn lane analysis is provided in **Table 11**.

Table 11 – Total (2029) Left Turn Analysis Summary

Peak Hour	Intersection (N-S Street / E-W Street)	Direction	% Left Turns / Left turn volume	Left Turn Movement				Warrant
				V/C	Delay (s)	LOS	95 th % queue (m)	
AM	Sidney St / Wilson Ave	NB	14 veh	0.02	0.8	A	0.4	X
PM			26 veh	0.03	1.1	A	0.8	✓
AM	Tripp Ave / Moira St W	WB	4.3%	0.02	0.6	A	0.4	X
PM			8.4%	0.06	1.5	A	1.4	✓
AM	Elgin St & Driveway / Moira St W	WB	1.7%	0.01	0.2	A	0.2	X
PM			2.7%	0.02	0.5	A	0.4	✓ ¹

¹The PM peak hour volumes fall below the 5% left turn threshold.

As shown, based on the MTO DS criteria exclusive left turn lanes are warranted during the PM peak hours. However, recognizing that the all movements at the intersection will provide good operations with negligible queuing and further noting that the warrant is only triggered during the PM peak hour, the implementation of an exclusive left turn lane is not recommended. It is further noted that the warrants are sensitive to the conservative background growth rate, adjacent development volumes and COVID-19 adjustment factor assumed in Section 2.4, 2.5.3 and 2.6. Consequently, it is recommended that the need for left turn lanes be evaluated based on continued traffic volume monitoring of City roads, as development occurs.

A review of the need for an additional auxiliary right turn lanes at the unsignalized intersections was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all turning movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the remaining unsignalized intersections (results are provided in **Appendix G**). No additional improvements are recommended within the study area.

5.2 Total (2034) Intersection Operation

The results of the LOS analysis under total (2034) traffic volumes during the AM and PM peak hour can be found below in **Table 12**. Existing intersection geometry has been utilized for this scenario, including stop control has been assumed at the Site Access egress movements. Detailed output of the Synchro analysis can be found in **Appendix F**.

Table 12 – Total (2034) LOS

Location (N-S Street / E-W Street)	Weekday AM Peak Hour			Weekday PM Peak Hour		
	V/C	Delay (s)	LOS	V/C	Delay (s)	LOS
Palmer Rd / Bogart Cres & Wilson Ave ext. (unsignalized)	-	2.2	A	-	1.3	A
EB	0.03	10.0	B	0.02	11.6	B
WB	0.06	9.9	A	0.05	11.4	B
NB	0.00	0.0	-	0.01	0.4	A
SB	0.01	0.5	A	0.02	0.7	A
Sidney St / Wilson Ave (unsignalized)	-	0.9	A	-	1.0	A
EB	0.17	16.8	C	0.27	34.5	B
NBTL	0.02	0.8	A	0.04	0.4	A
NB	0.25	0.0	-	0.46	0.0	-
SB	0.25	0.0	-	0.32	0.0	-
SBTR	0.14	0.0	-	0.18	0.0	-
Tripp Ave / Moira St W (unsignalized)	-	0.7	A	-	1.4	D
EBTR	0.28	0.0	-	0.33	0.0	-
WBTL	0.02	0.7	A	0.06	1.5	A
NB	0.06	11.6	B	0.12	3.6	B
Elgin St & Driveway / Moira St W (unsignalized)	-	0.6	A	-	1.5	B
EB	0.00	0.0	-	0.01	0.1	A
WB	0.01	0.2	A	0.02	0.5	A
NB	0.03	13.5	B	0.08	19.1	C
SB	0.06	19.1	C	0.24	35.3	E

The results of the LOS analysis indicate that the study intersections are operating within the typical design limits noted in Section 3.1.

The need for a left turn lanes was again analyzed to consider the total 2034 traffic volumes. A summary of the left turn lane analysis is provided in **Table 13**.

Table 13 – Total (2034) Left Turn Analysis Summary

Peak Hour	Intersection (N-S Street / E-W Street)	Direction	% Left Turns / Left turn volume	Left Turn Movement				Warrant
				V/C	Delay (s)	LOS	95 th % queue (m)	
AM	Sidney St / Wilson Ave	NB	14 veh	0.02	0.8	A	0.4	X
PM			26 veh	0.04	1.1	A	0.8	✓
AM	Tripp Ave / Moira St W	WB	4.3%	0.02	0.6	A	0.4	X
PM			8.4%	0.06	1.5	A	1.4	✓
AM	Elgin St & Driveway / Moira St W	WB	1.6%	0.01	0.2	A	0.2	X
PM			2.5%	0.02	0.5	A	0.4	✓ ¹

¹The PM peak hour volumes fall below the 5% left turn threshold.

As shown, based on the MTO DS criteria exclusive left turn lanes are warranted during the PM peak hour. However, recognizing that the all movements at the intersection will provide good operations with negligible queuing and further noting that the warrant is only triggered during the PM peak hour, the implementation of a westbound left turn lane is not considered necessary. It is further noted that the warrants are sensitive to the conservative background growth rate, adjacent development volumes and COVID-19 adjustment factor assumed in Section 2.4, 2.5.3 and 2.6. Consequently, it is recommended that the need for left turn lanes be evaluated based on continued traffic volume monitoring of City roads, as development occurs.

A review of the need for an additional auxiliary right turn lanes at the unsignalized intersections was completed as part of our analysis. The results of the Synchro analysis indicate that there is excess capacity for all turning movements; consequently, auxiliary right turn lanes are not recommended.

Based on the Ontario Traffic Manual Book 12 *Signal Justification*, traffic signals are not warranted at the remaining unsignalized intersections (results are provided in **Appendix G**). No additional improvements are recommended within the study area.

5.3 Site Access & Intersection Spacing

The Palmer Road / Bogart Crescent & Wilson Avenue extension intersection will operate efficiently as a four-legged intersection, with one-way stop control for eastbound and westbound egress movements. A single ingress and egress lane will provide the necessary capacity to service the proposed development.

As illustrated in **Figure 3**, the spacing between the proposed Wilson Avenue extension and the closest intersections to the north and south are in excess of the minimum intersection spacing requirements as identified in the Transportation Association of Canada Design Guide for Canadian Roads (2017) [TAC Guidelines] – Section 9.4.2.2 – 60 metres for collector roads.

The majority of the Subject Sites internal intersections are in excess of the minimum intersection spacing requirements as identified in the TAC Guidelines – Section 9.4.2.3 – 40 and 60 metres for three-legged and four-legged intersections on local roads, respectively. The spacing between Palmer

Road and Street B falls slightly below the minimum intersection spacing requirement of 60 metres. However, in context with the relatively minor traffic volumes projected along the Wilson Avenue extension (42 vehicles per lane or less, during both peak hours) and the excellent operations at the Wilson Avenue extension / Palmer Road intersection (LOS B or greater for all horizon years), the proposed spacing is not a considered a concern.

5.4 Sight Distance Review

A review of the available sight distances for the Site Access connections was completed as part of this analysis.

The sight distance north and south on Palmer Road at the Wilson Avenue extension is greater than both the minimum stopping sight distance requirements as per the TAC Guidelines for a design speed of 60 km/h (85 metres).

The majority of the Subject Sites internal intersections are expected to surpass the minimum stopping sight distance requirements as per the TAC Guidelines for a design speed of 60 km/h (85 metres). The sight distance for northbound traffic on Street D, looking west, is limited by the horizontal curve on Wilson Avenue. The sight distance in this direction will need to be reviewed as part of the detailed engineering design. Traffic calming measures on Wilson Avenue and additional daylighting on the north lot in Block 95 may be required.

It is recommended that the sight distances be confirmed once detailed engineering design drawings for the proposed intersections are available.

6 Summary

ROMPSEN retained **JD Engineering** to prepare this traffic impact study in support of the proposed residential development located on located between Palmer Road and Sydney Street, south of Moira Street, in the City of Belleville. The proposed Concept Plan is shown in **Appendix A**. This chapter summarizes the conclusions and recommendations from the study.

1. The proposed development is expected to generate a total of 110 AM and 137 PM peak hour trips.
2. Detailed intersection counts were conducted at the study intersections.
3. An intersection operation analysis was completed at the study area intersections, using the existing and background (2029 and 2034) traffic volumes, with consideration for the projected adjacent development traffic growth and without the proposed development traffic. This enabled a review of existing and future traffic deficiencies that would be present without the influence of the proposed development. No improvements are recommended within the study area.
4. An estimate of the amount of traffic that would be generated by the Subject Site was prepared and assigned to the study area streets and intersections.
5. An intersection operation analysis was completed under total (2029 and 2034) traffic volumes with the proposed development operational at the study area intersections. No improvements recommended within the study area.
6. The proposed Wilson Avenue extension will operate efficiently as a four-legged intersection, with one-way stop control for eastbound and westbound egress movements. A single lane for ingress and egress movements will provide the necessary capacity to convey the traffic volume generated by the proposed development.

7. The location of the Wilson Avenue extension is considered appropriate with respect to minimum corner clearance and spacing requirements as identified in the Transportation Association of Canada Design Guide for Canadian Roads (2017).
8. In summary, the proposed development will not cause any operational issues and will not add significant delay or congestion to the local roadway network.

Figure 4: Adjacent Development Traffic Volumes – Sandy Cherry Court Subdivision

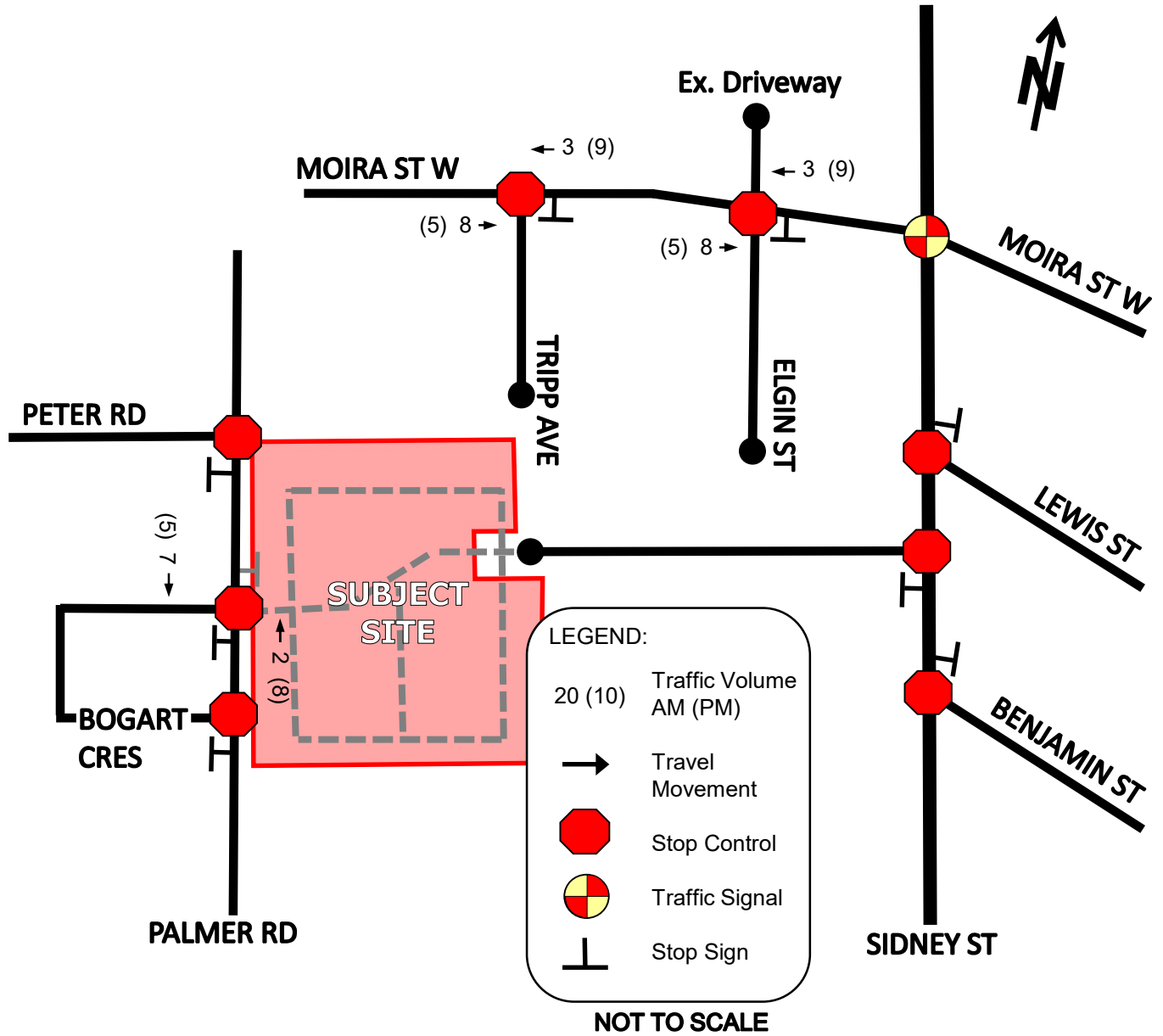


Figure 5: Adjacent Development Traffic Volumes – Fairgrounds Property

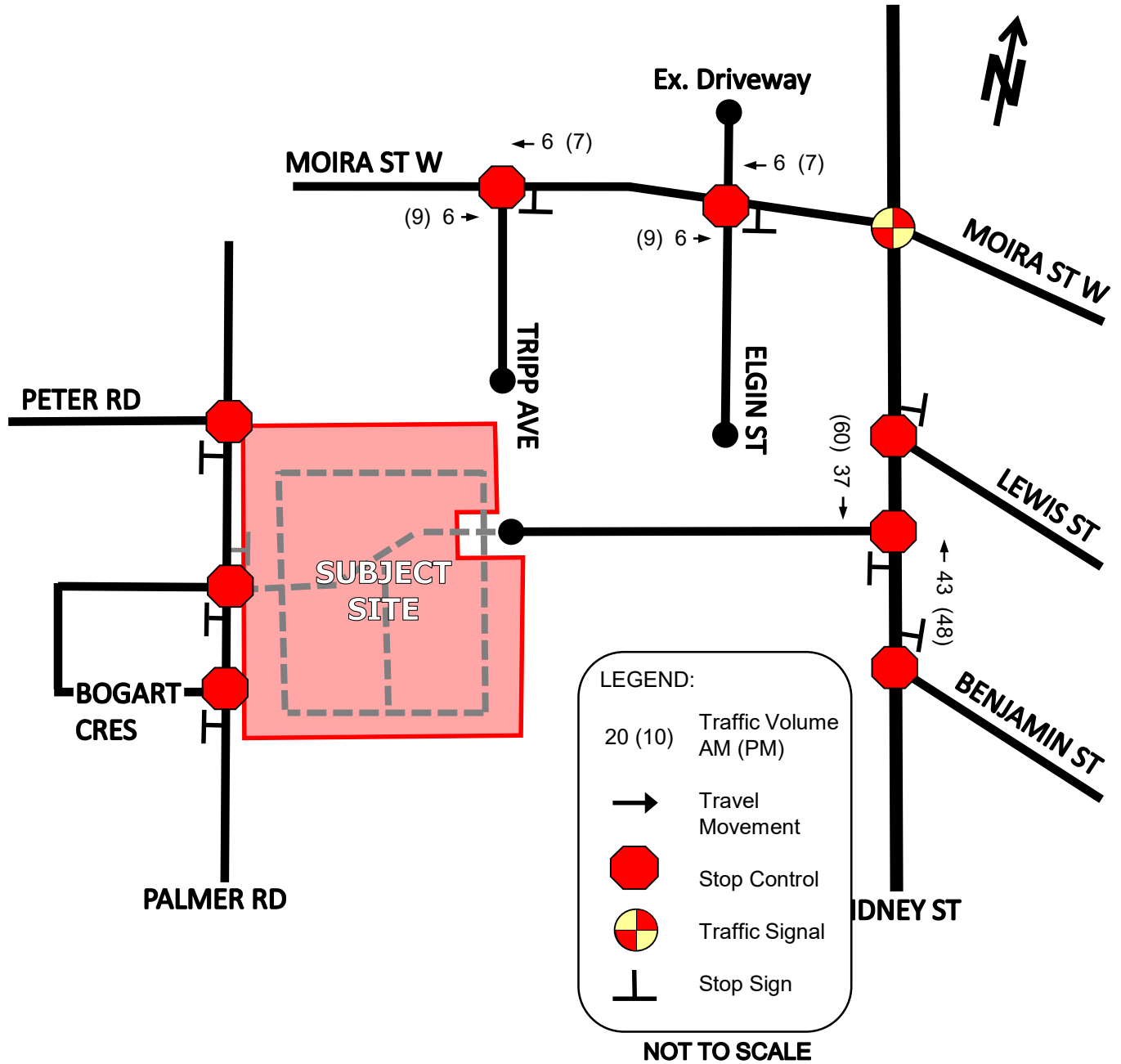


Figure 6: Adjacent Development Traffic Volumes – Ben Bleeker Lands

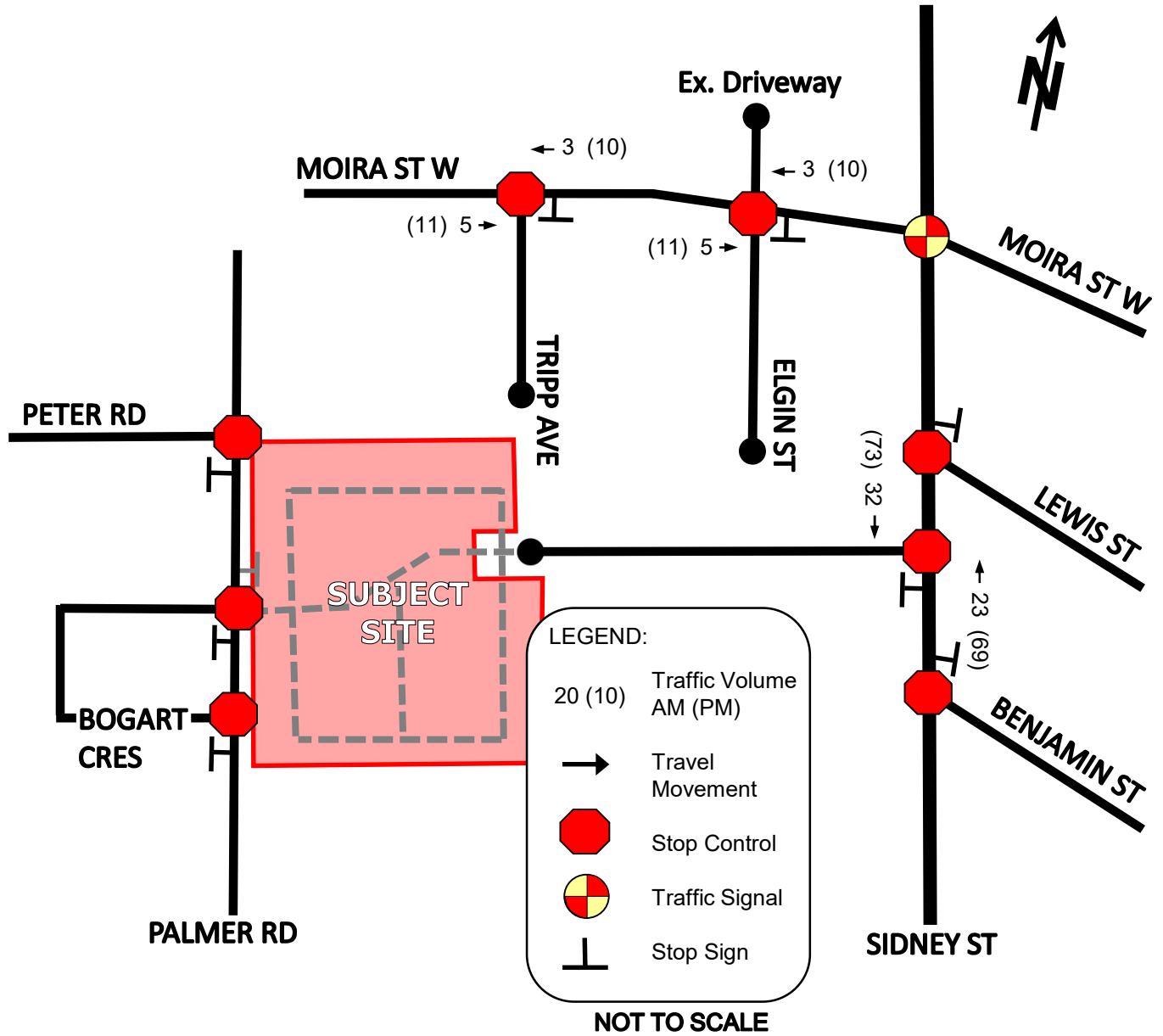


Figure 7: Existing (2022) Traffic Volumes

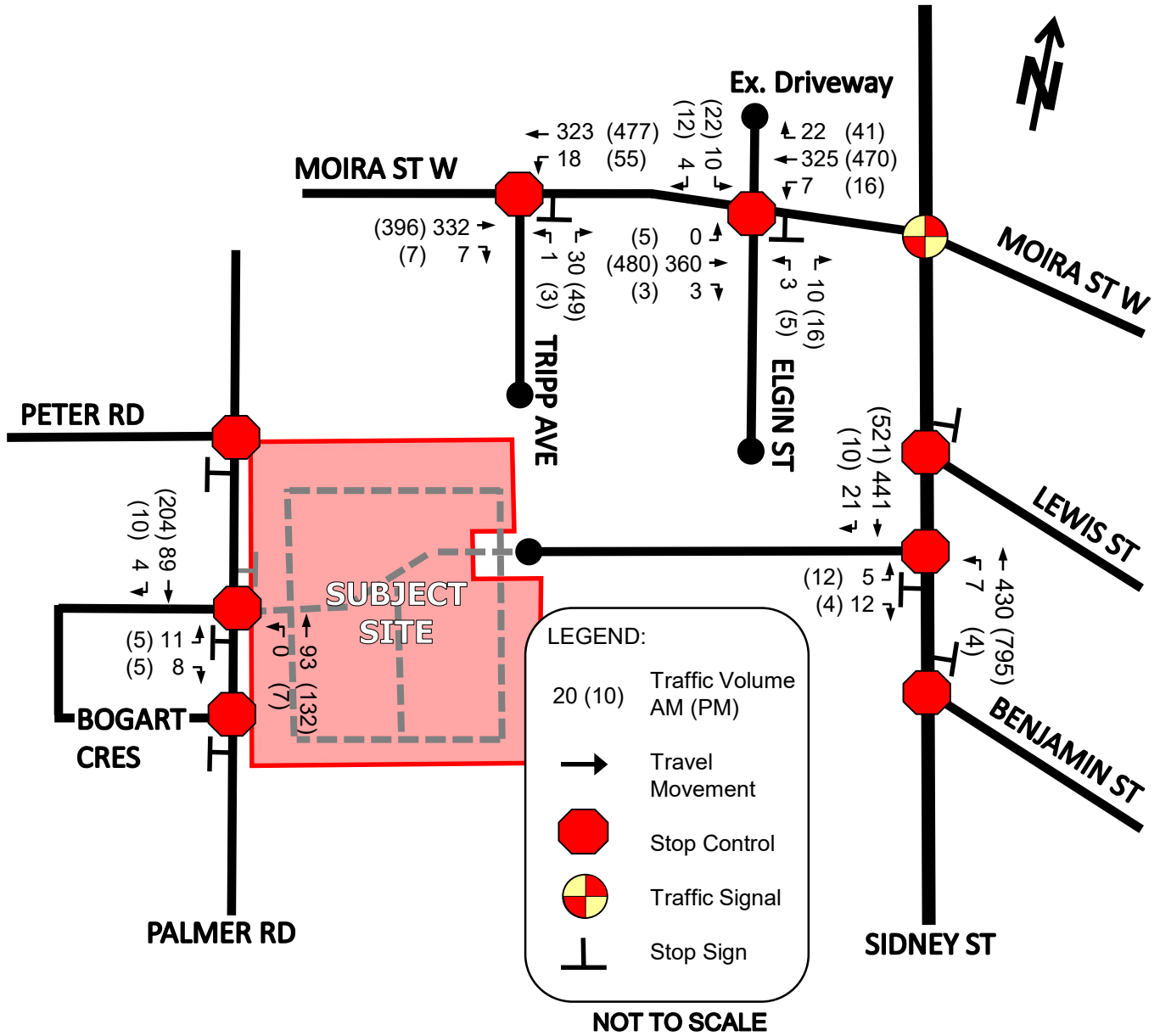


Figure 8: Background (2029) Traffic Volumes

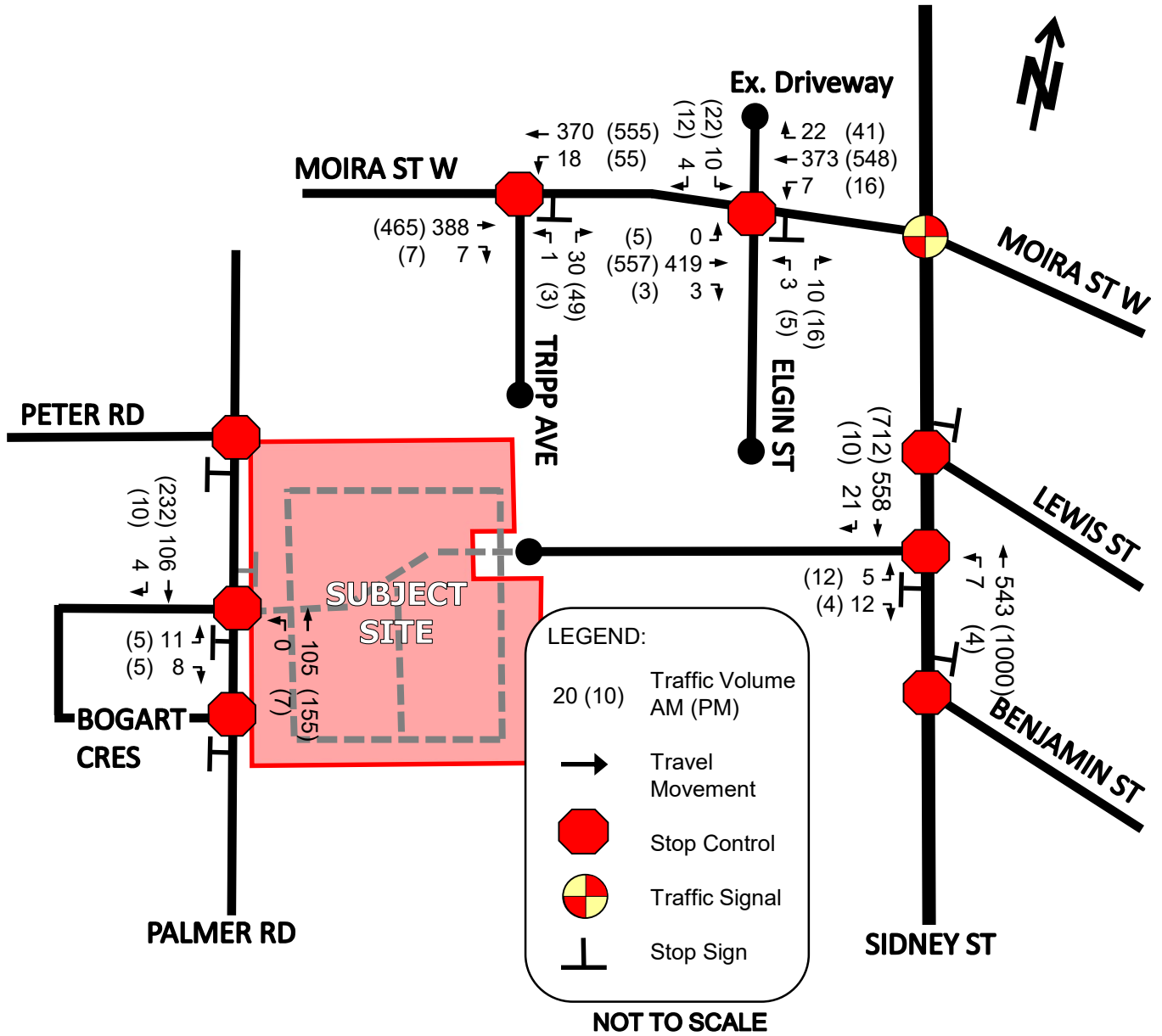


Figure 9: Background (2034) Traffic Volumes

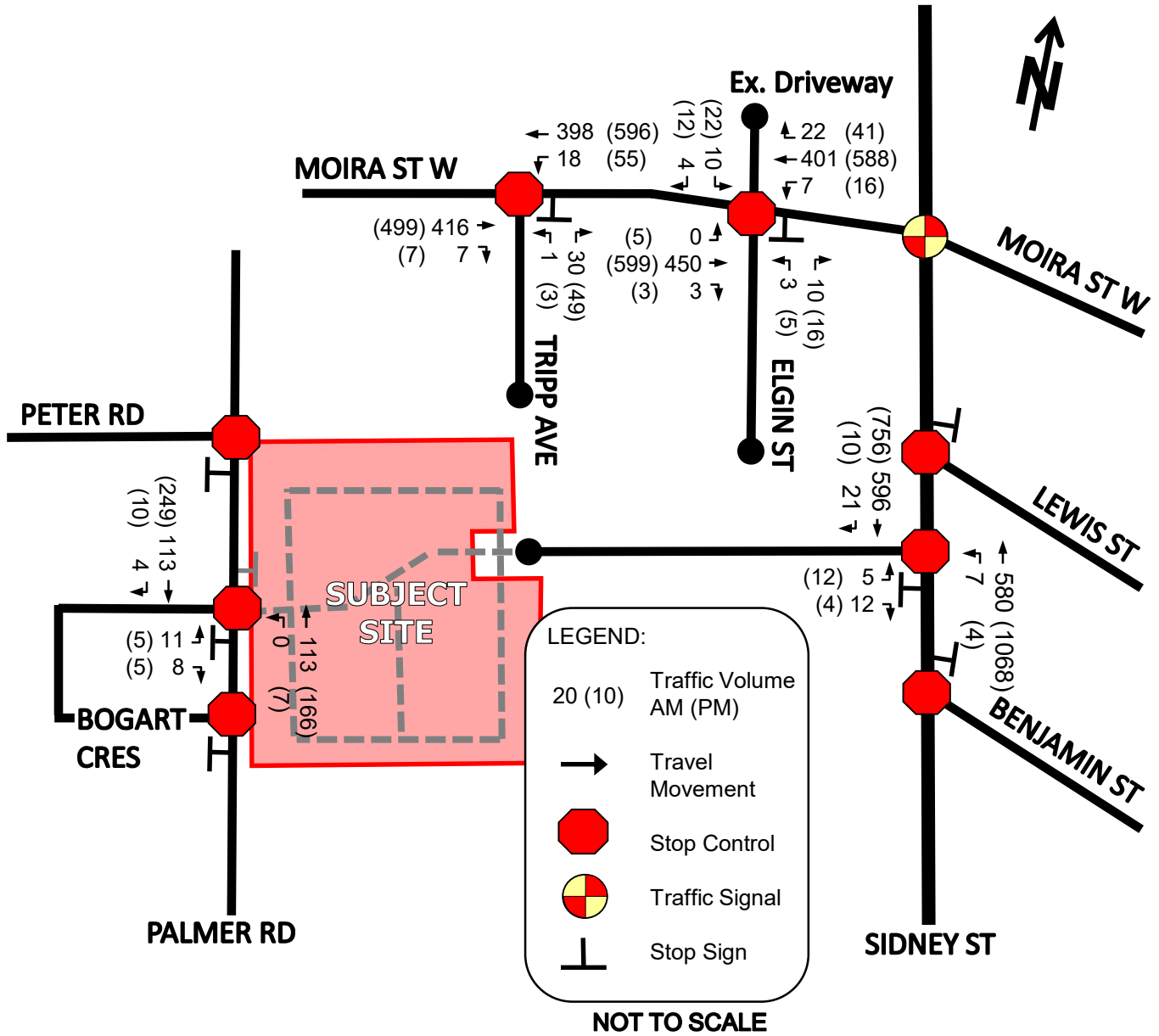


Figure 10: Site Traffic Assignment

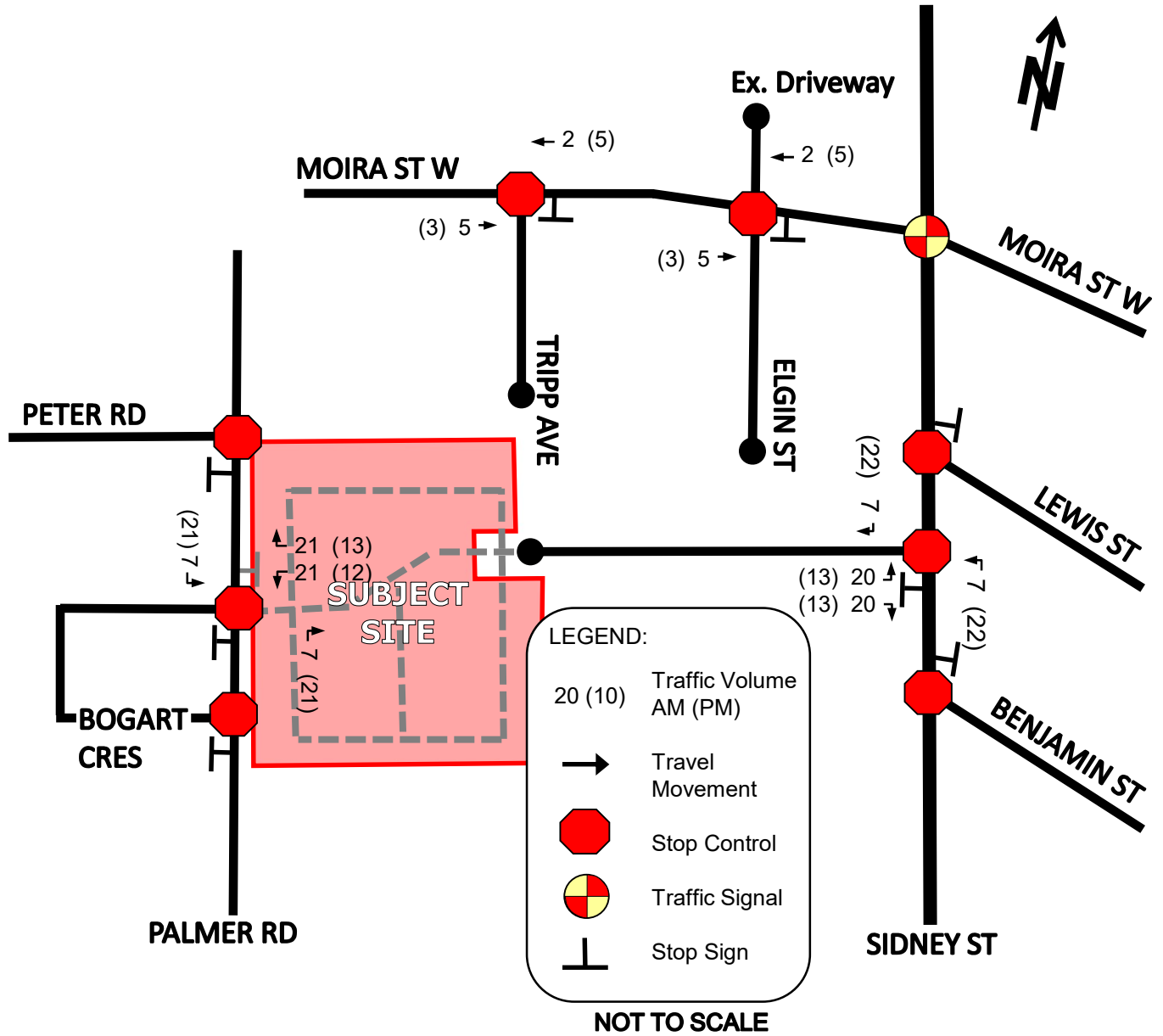


Figure 11: Total (2029) Traffic Volumes

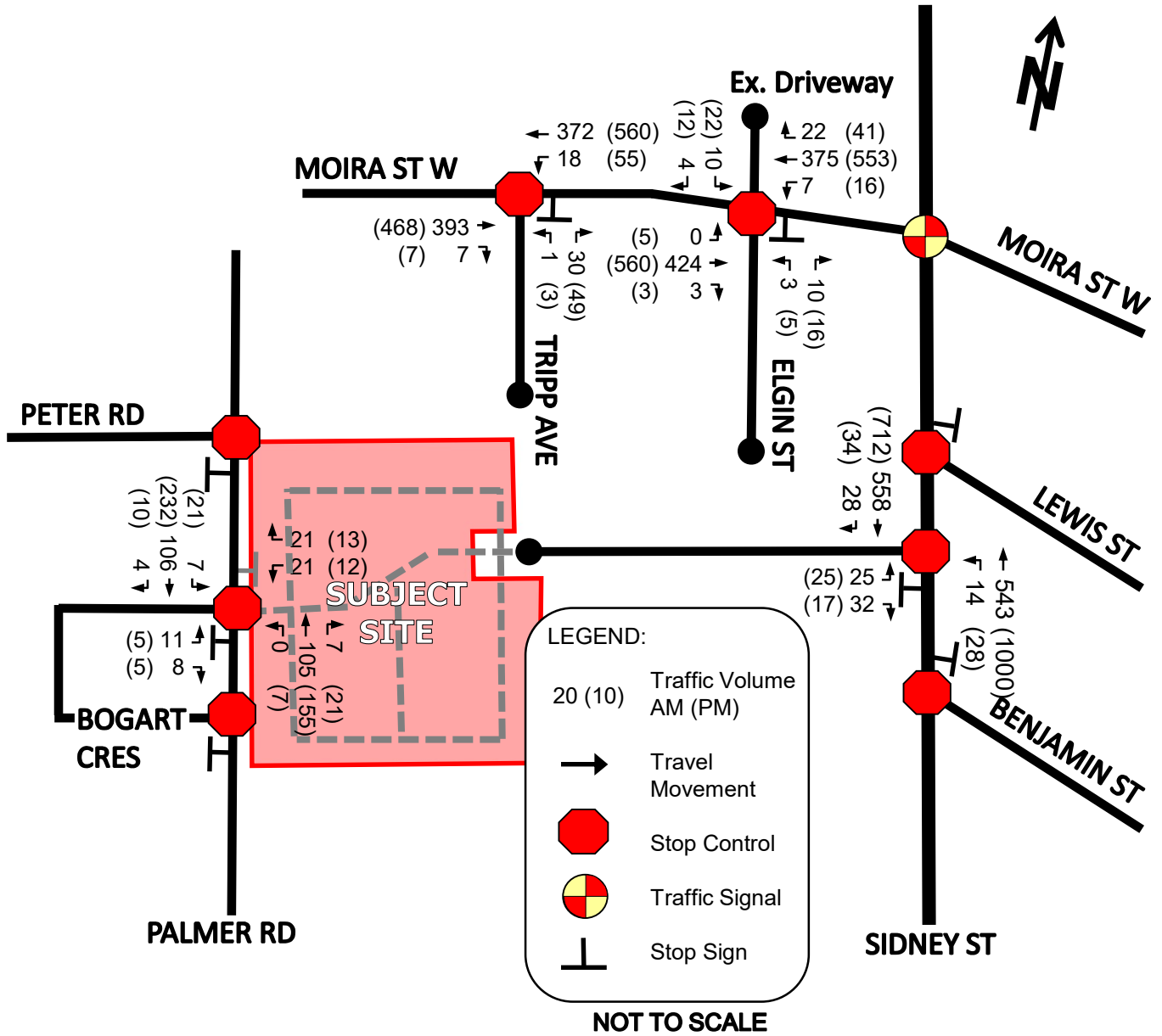
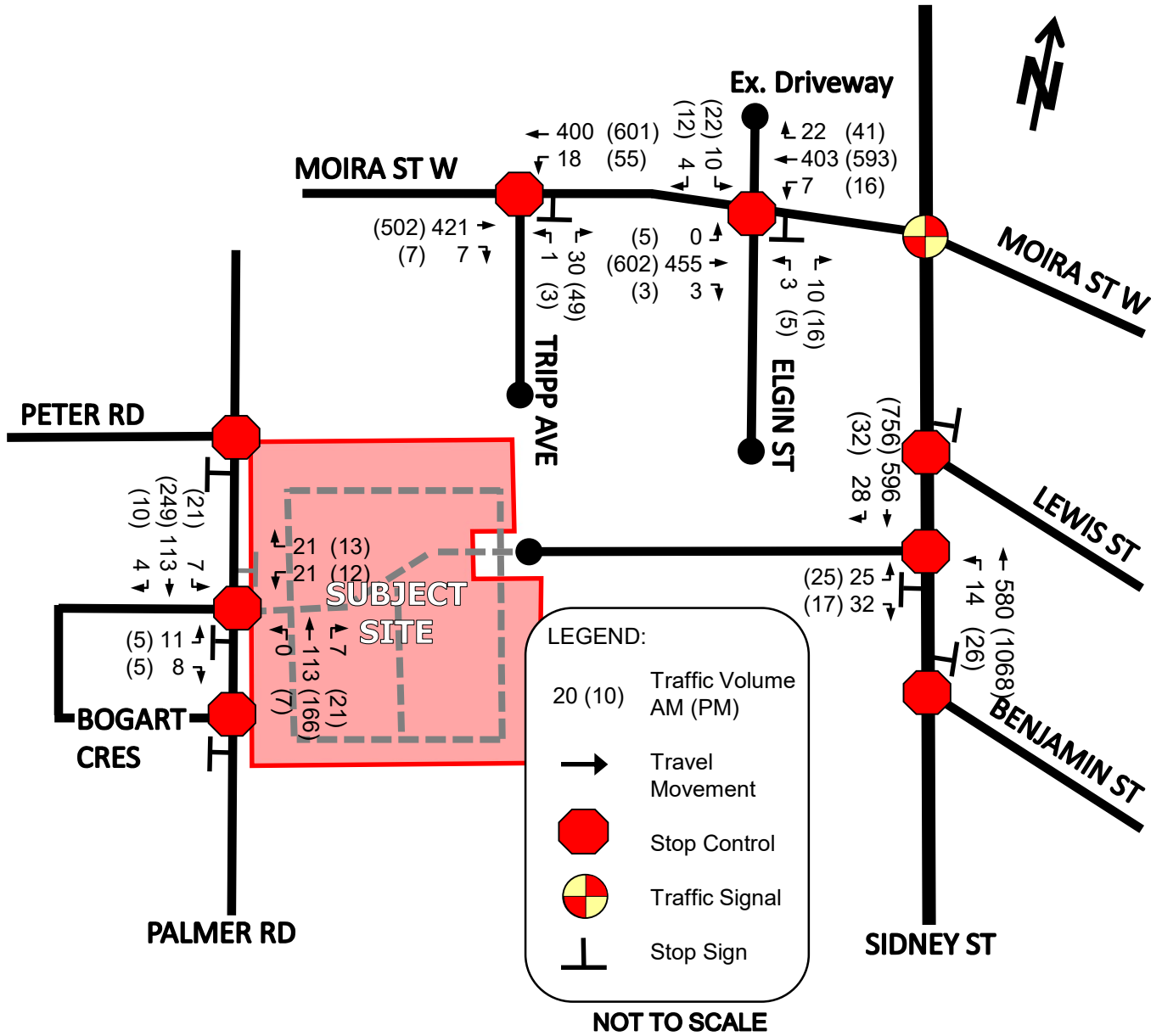
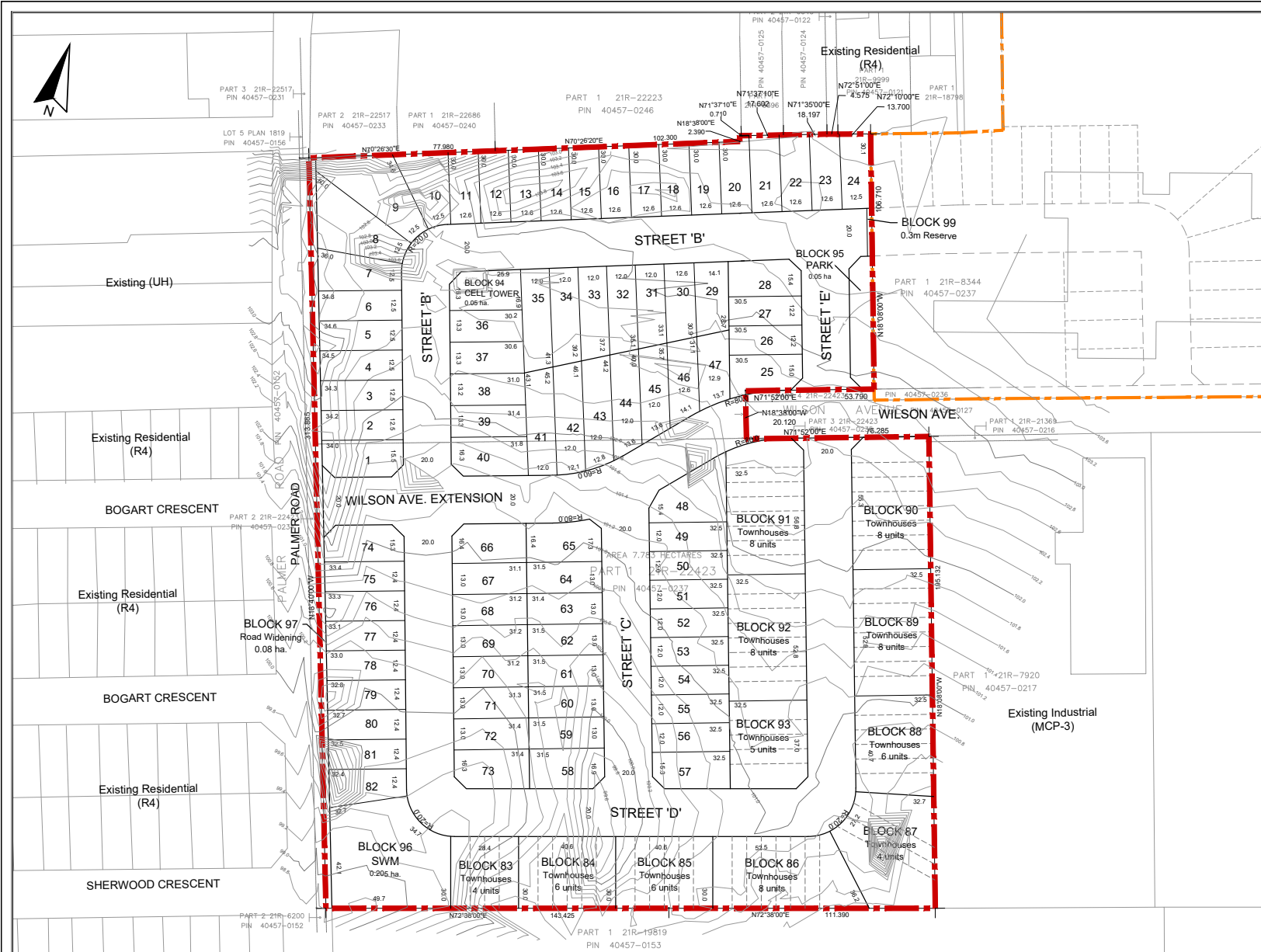


Figure 12: Total (2034) Traffic Volumes



Appendix A – Draft Plan of Subdivision



No.	Date	Description	By
1	June 1, 2022	Updated Legal description and OLS boundary	BH

INNOVATIVE PLANNING SOLUTIONS

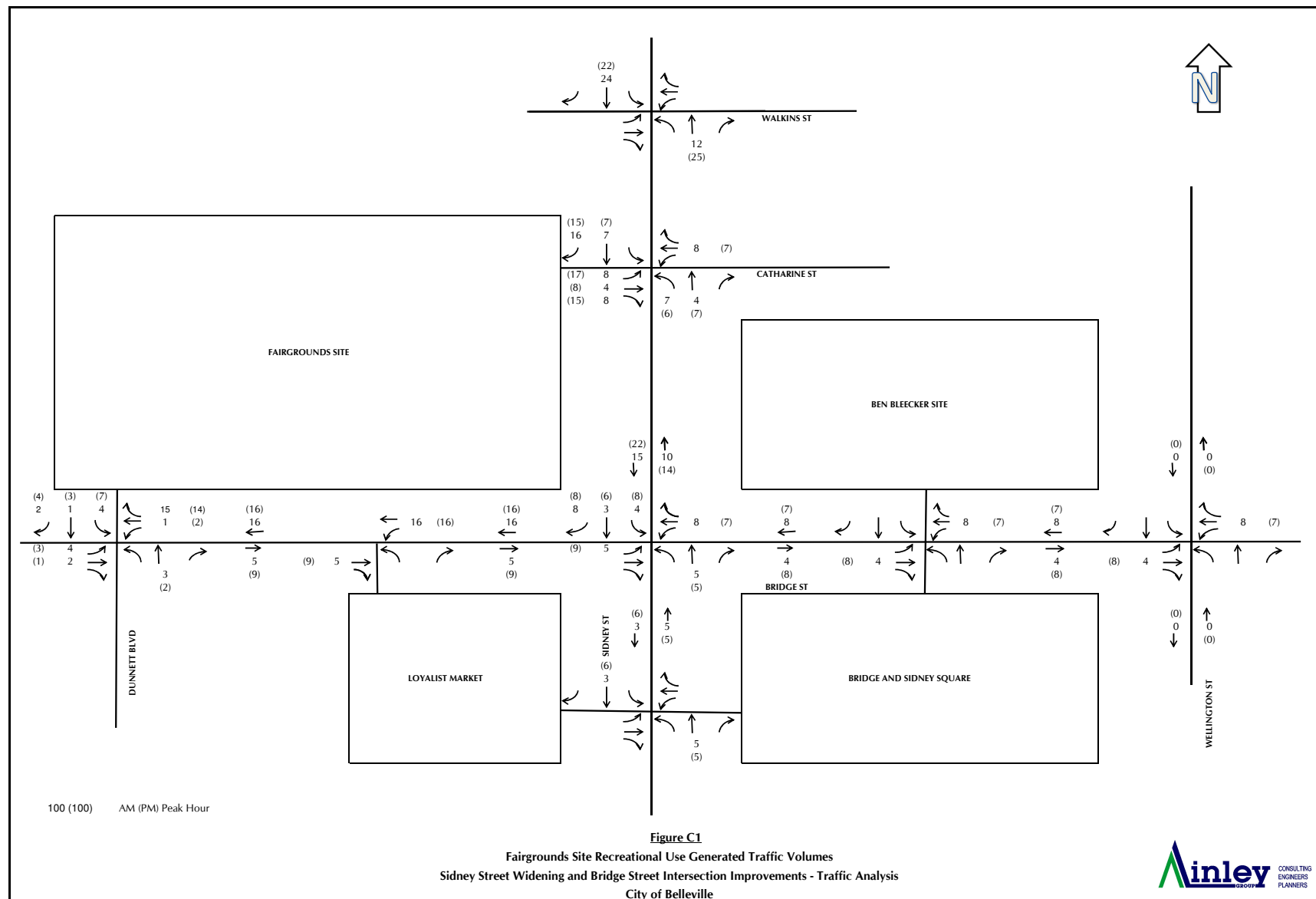
PLANNERS • PROJECT MANAGERS • LAND DEVELOPERS

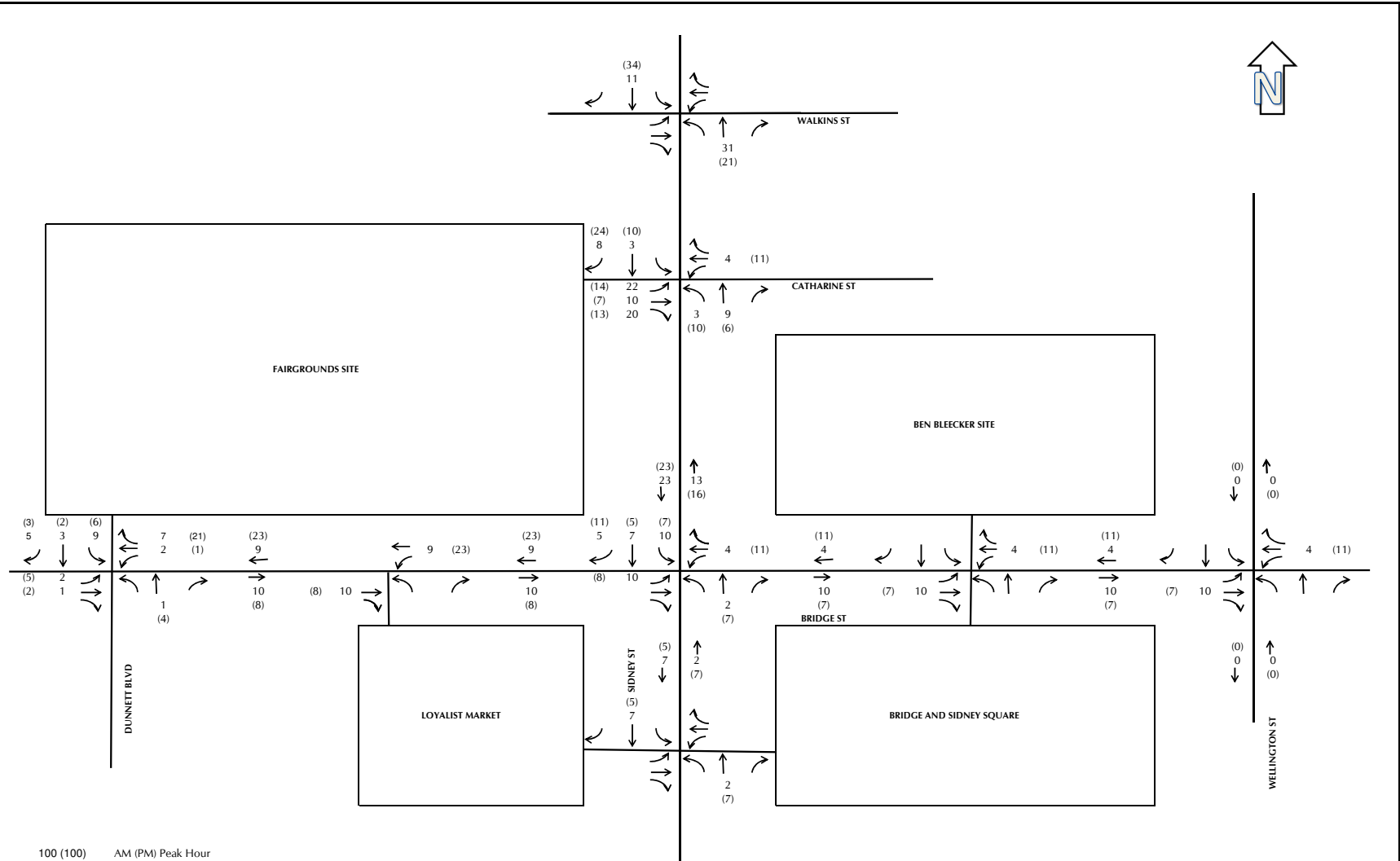
847 WELHAM RD., UNIT 8, BARRIE, ONTARIO, L4N 8B7

Tel: 705 • 812 • 3281 Fax: 705 • 812 • 3438 • info@ipsconsulting.com

Date:	December 14, 2020	Drawn By:	BH
File:	200-908	Checked:	KT

Appendix B – Adjacent Development Excerpts

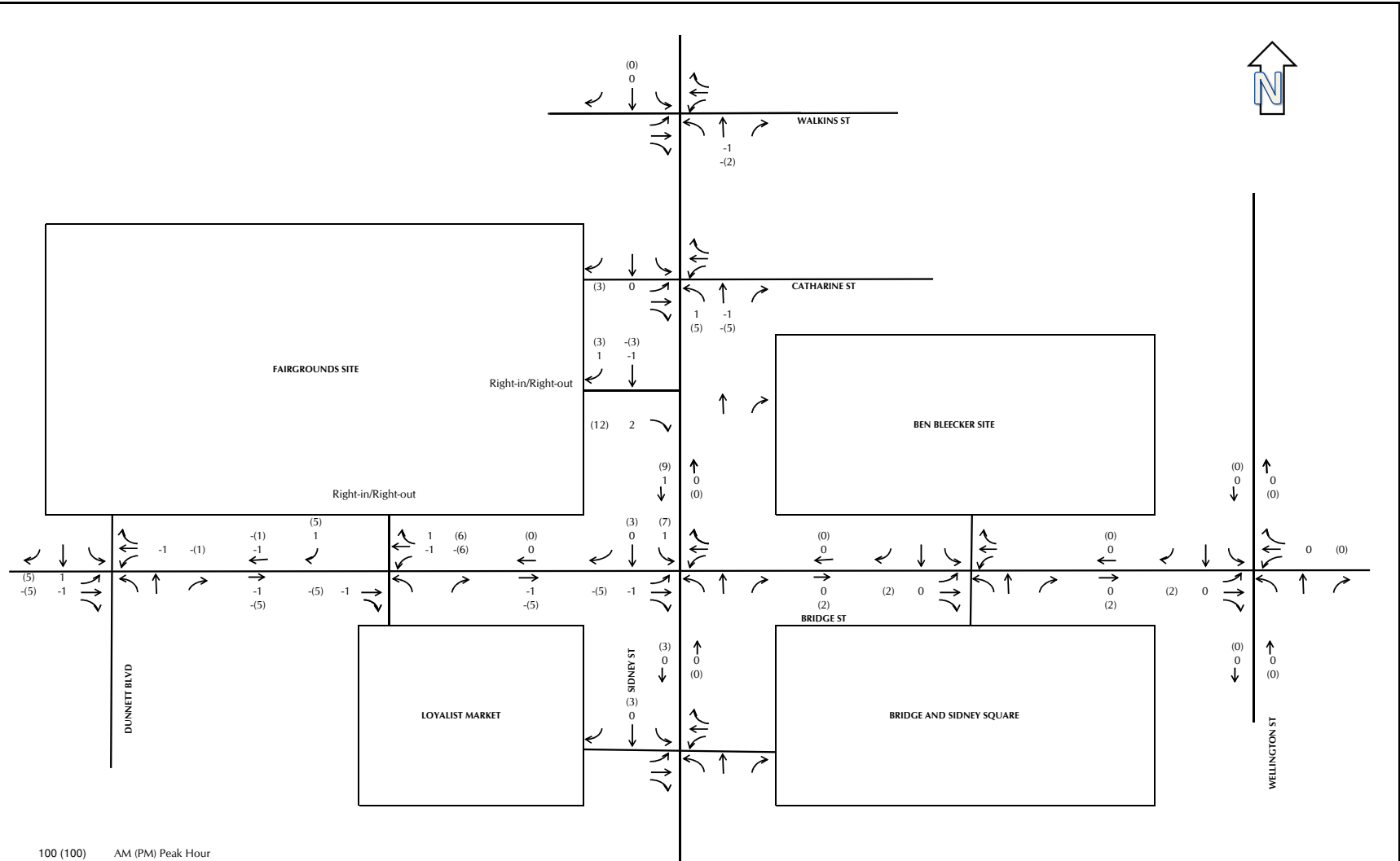




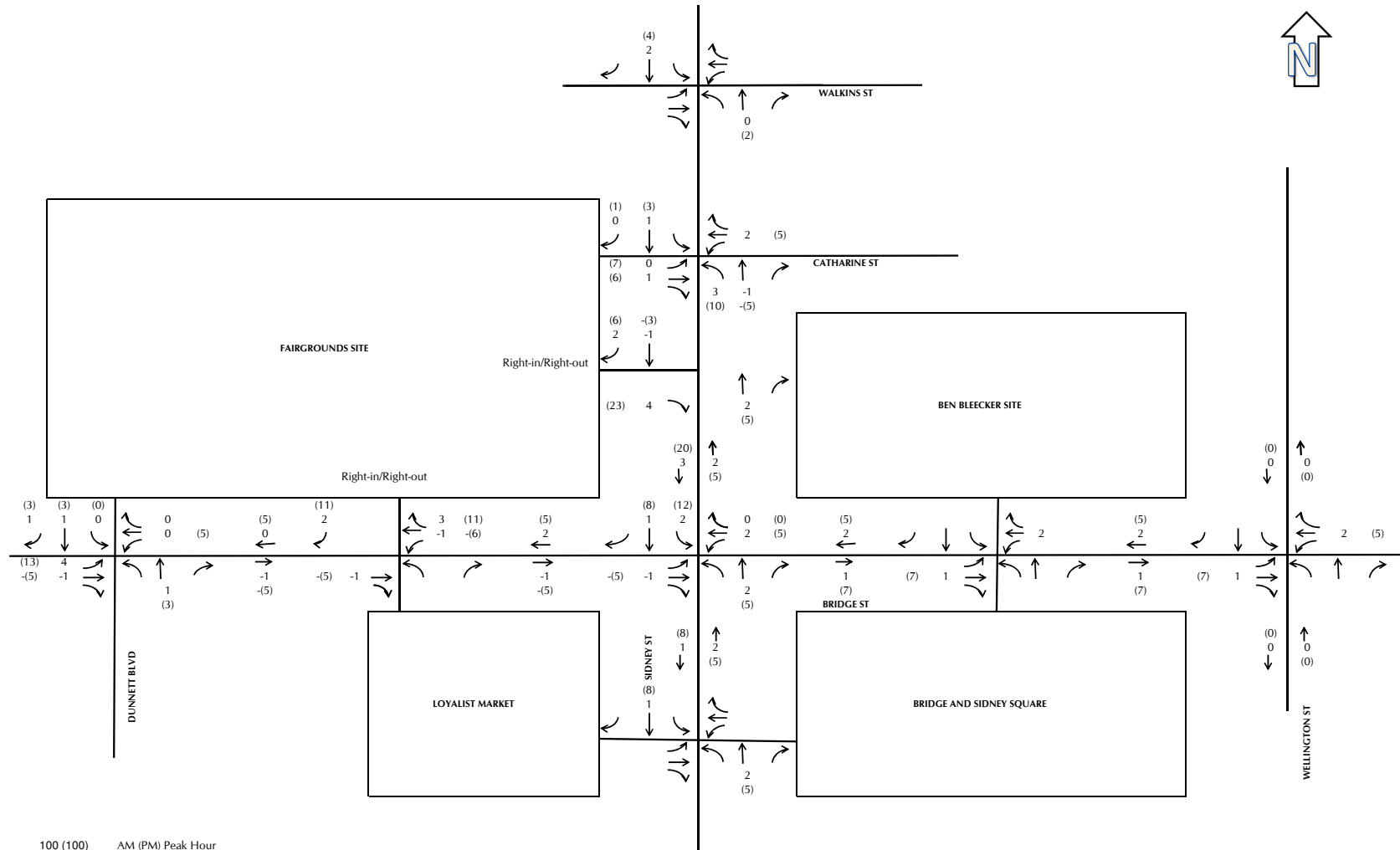
Fairgrounds Site Residential Use Generated Traffic Volumes
Sidney Street Widening and Bridge Street Intersection Improvements - Traffic Analysis
City of Belleville



Figure C3
Fairgrounds Site Commercial Use Generated New Trips
Sidney Street Widening and Bridge Street Intersection Improvements - Traffic Analysis
City of Belleville

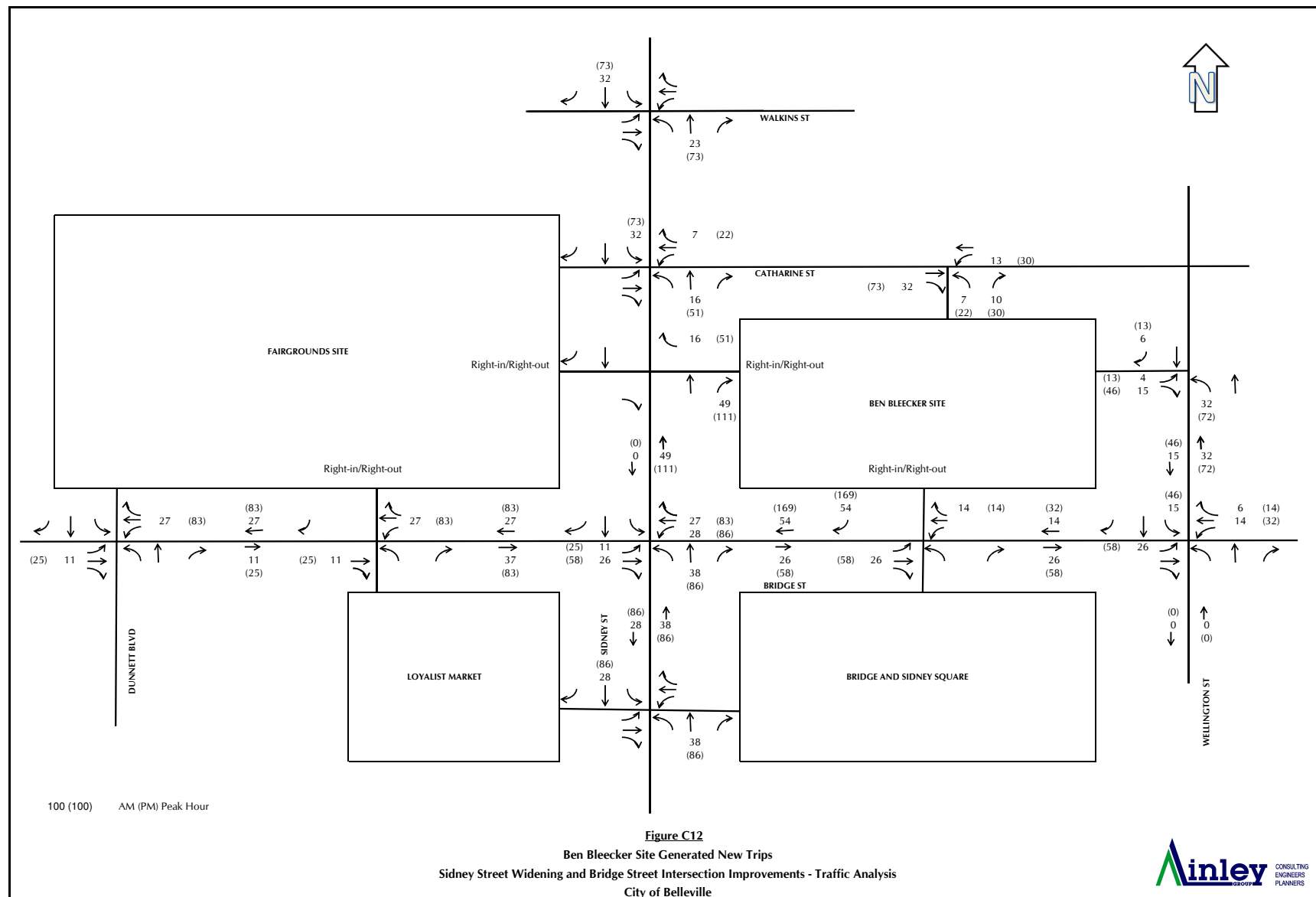


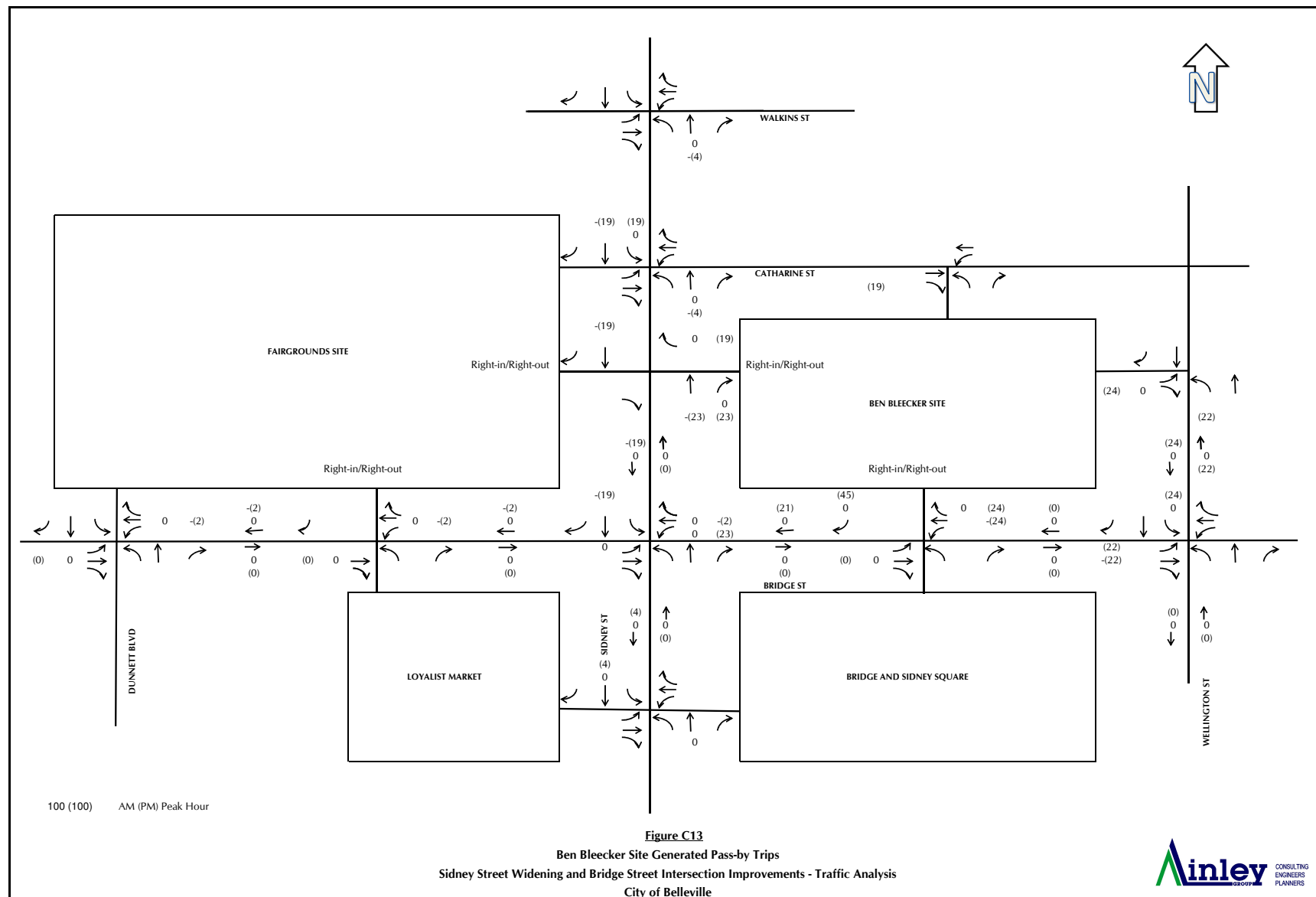
Fairgrounds Site Commercial Use Generated Pass-by Trips
Sidney Street Widening and Bridge Street Intersection Improvements - Traffic Analysis
City of Belleville

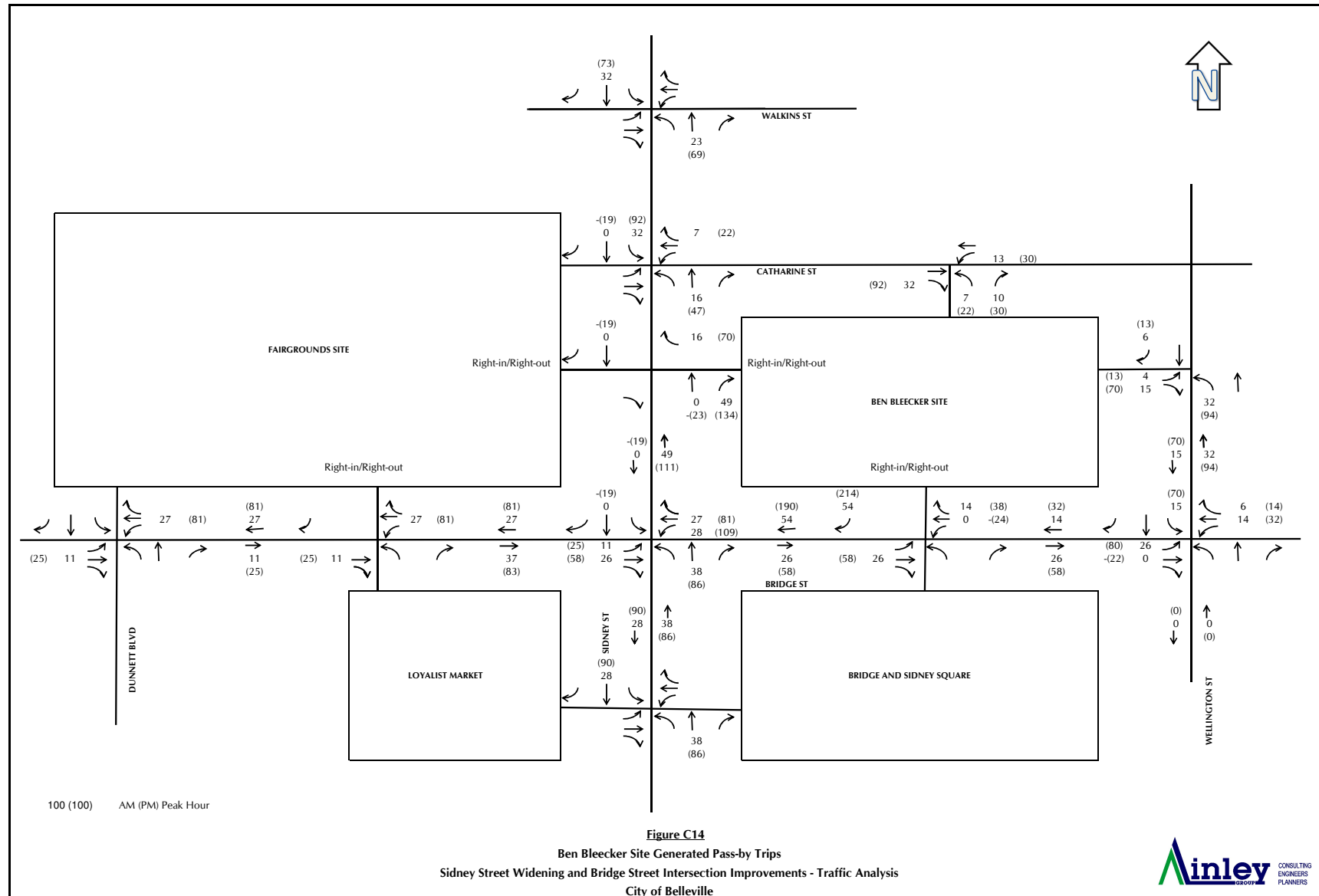


100 (100) AM (PM) Peak Hour

Figure C5
Fairgrounds Site Commercial Use Generated Traffic Volumes
Sidney Street Widening and Bridge Street Intersection Improvements - Traffic Analysis
City of Belleville







Appendix C – Traffic Count Data

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 7:45:00 To: 8:45:00
Municipality: Belleville Site #: 2104900005 Intersection: Sydney St & TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **	Major Road: Sydney St runs N/S	

North Leg Total: 590 North Entering: 259 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 9 0 9 Trucks 0 6 0 6 Cars 0 244 0 244 Totals 0 259 0 </td> <td style="text-align: center; padding: 10px 10px 0 10px;"> </td> <td style="padding: 2px;"> Heavys 15 Trucks 0 Cars 316 Totals 331 </td> </tr> </table>	Heavys 0 9 0 9 Trucks 0 6 0 6 Cars 0 244 0 244 Totals 0 259 0		Heavys 15 Trucks 0 Cars 316 Totals 331	East Leg Total: 0 East Entering: 0 East Peds: 3 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> <td style="padding: 2px;"> Cars 0 Trucks 0 Heavys 0 Totals 0 </td> </tr> </table>	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Cars 0 Trucks 0 Heavys 0 Totals 0
Heavys 0 9 0 9 Trucks 0 6 0 6 Cars 0 244 0 244 Totals 0 259 0		Heavys 15 Trucks 0 Cars 316 Totals 331						
Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Cars 0 Trucks 0 Heavys 0 Totals 0							

Sydney St

<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> <td style="padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> </tr> </table>	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> <td style="padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> </tr> </table>	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> <td style="padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> </tr> </table>	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> <td style="padding: 2px;"> Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0 </td> </tr> </table>	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0
Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0										
Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0										
Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0										
Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0	Heavys 0 0 0 0 Trucks 0 0 0 0 Cars 0 0 0 0 Totals 0 0 0										

Peds Cross: West Peds: 1 West Entering: 0 West Leg Total: 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Cars 244 Trucks 6 Heavys 9 Totals 259 </td> <td style="padding: 2px;"> Cars 0 Trucks 0 Heavys 0 Totals 0 </td> </tr> </table>	Cars 244 Trucks 6 Heavys 9 Totals 259	Cars 0 Trucks 0 Heavys 0 Totals 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;"> Cars 0 316 0 316 Trucks 0 0 0 0 Heavys 0 15 0 15 Totals 0 331 0 </td> <td style="padding: 2px;"> Cars 0 Trucks 0 Heavys 0 Totals 0 </td> </tr> </table>	Cars 0 316 0 316 Trucks 0 0 0 0 Heavys 0 15 0 15 Totals 0 331 0	Cars 0 Trucks 0 Heavys 0 Totals 0	Peds Cross: South Peds: 0 South Entering: 331 South Leg Total: 590
Cars 244 Trucks 6 Heavys 9 Totals 259	Cars 0 Trucks 0 Heavys 0 Totals 0						
Cars 0 316 0 316 Trucks 0 0 0 0 Heavys 0 15 0 15 Totals 0 331 0	Cars 0 Trucks 0 Heavys 0 Totals 0						

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 19:00:00	One Hour Peak From: 16:30:00 To: 17:30:00
Municipality: Belleville Site #: 2104900005 Intersection: Sydney St & TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Sydney St runs N/S

North Leg Total: 936 North Entering: 416 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">6</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">2</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">408</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">408</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> <td style="text-align: right;">416</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;"></td> </tr> </table>	Heavys	0	6	0	6	Trucks	0	2	0	2	Cars	0	408	0	408	Totals	0	416	0		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">5</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">507</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">520</td> </tr> </table>	Heavys	5	Trucks	8	Cars	507	Totals	520	East Leg Total: 0 East Entering: 0 East Peds: 8 Peds Cross:
Heavys	0	6	0	6																											
Trucks	0	2	0	2																											
Cars	0	408	0	408																											
Totals	0	416	0																												
Heavys	5																														
Trucks	8																														
Cars	507																														
Totals	520																														

Heavys	Trucks	Cars	Totals
0	0	0	0

Sydney St

N
S
W
E

Cars	Trucks	Heavys	Totals
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

Heavys	Trucks	Cars	Totals
0	0	0	0
0	0	0	0
0	0	0	0

Sydney St

Cars	Trucks	Heavys	Totals
0	0	0	0

Peds Cross: West Peds: 0 West Entering: 0 West Leg Total: 0	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">408</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">6</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">416</td> </tr> </table>	Cars	408	Trucks	2	Heavys	6	Totals	416	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">0</td> <td style="text-align: right;">507</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">507</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">8</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">5</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">5</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">0</td> <td style="text-align: right;">520</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;"></td> </tr> </table>	Cars	0	507	0	507	Trucks	0	8	0	8	Heavys	0	5	0	5	Totals	0	520	0		Peds Cross: South Peds: 0 South Entering: 520 South Leg Total: 936
Cars	408																														
Trucks	2																														
Heavys	6																														
Totals	416																														
Cars	0	507	0	507																											
Trucks	0	8	0	8																											
Heavys	0	5	0	5																											
Totals	0	520	0																												

Comments

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 9:00:00	One Hour Peak From: 8:00:00 To: 9:00:00
Municipality: Belleville Site #: 2104900001 Intersection: Sydney St & Wilson Ave TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **	Major Road: Sydney St runs N/S	

North Leg Total: 648 North Entering: 332 North Peds: 0 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">1</td> <td style="text-align: right;">10</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">11</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">8</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">14</td> <td style="text-align: right;">297</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black; text-align: right;">313</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">15</td> <td style="text-align: right;">315</td> <td style="text-align: right;">2</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Heavys	1	10	0	11	Trucks	0	8	0	8	Cars	14	297	2	313	Totals	15	315	2		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">16</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">298</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">316</td> </tr> </table>	Heavys	16	Trucks	2	Cars	298	Totals	316	East Leg Total: 10 East Entering: 7 East Peds: 7 Peds Cross:
Heavys	1	10	0	11																											
Trucks	0	8	0	8																											
Cars	14	297	2	313																											
Totals	15	315	2																												
Heavys	16																														
Trucks	2																														
Cars	298																														
Totals	316																														

Heavys	Trucks	Cars	Totals
1	0	20	21

Sydney St
 Wilson Ave

Cars	Trucks	Heavys	Totals
4	0	0	4
1	0	0	1
2	0	0	2
7	0	0	

Heavys	Trucks	Cars	Totals
1	0	3	4
0	0	0	0
0	0	9	9
1	0	12	

Sydney St
 Benjamin St

Cars	Trucks	Heavys	Totals
3	0	0	3

Peds Cross: West Peds: 6 West Entering: 13 West Leg Total: 34	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">308</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">8</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">10</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">326</td> </tr> </table>	Cars	308	Trucks	8	Heavys	10	Totals	326	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Cars</td> <td style="text-align: right;">5</td> <td style="text-align: right;">291</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black; text-align: right;">297</td> </tr> <tr> <td style="text-align: right;">Trucks</td> <td style="text-align: right;">0</td> <td style="text-align: right;">2</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Heavys</td> <td style="text-align: right;">0</td> <td style="text-align: right;">15</td> <td style="text-align: right;">0</td> <td style="border-left: 1px solid black; text-align: right;">15</td> </tr> <tr> <td style="text-align: right;">Totals</td> <td style="text-align: right;">5</td> <td style="text-align: right;">308</td> <td style="text-align: right;">1</td> <td style="border-left: 1px solid black;"></td> </tr> </table>	Cars	5	291	1	297	Trucks	0	2	0	2	Heavys	0	15	0	15	Totals	5	308	1		Peds Cross: South Peds: 0 South Entering: 314 South Leg Total: 640
Cars	308																														
Trucks	8																														
Heavys	10																														
Totals	326																														
Cars	5	291	1	297																											
Trucks	0	2	0	2																											
Heavys	0	15	0	15																											
Totals	5	308	1																												

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 19:00:00

One Hour Peak

From: 16:00:00

To: 17:00:00

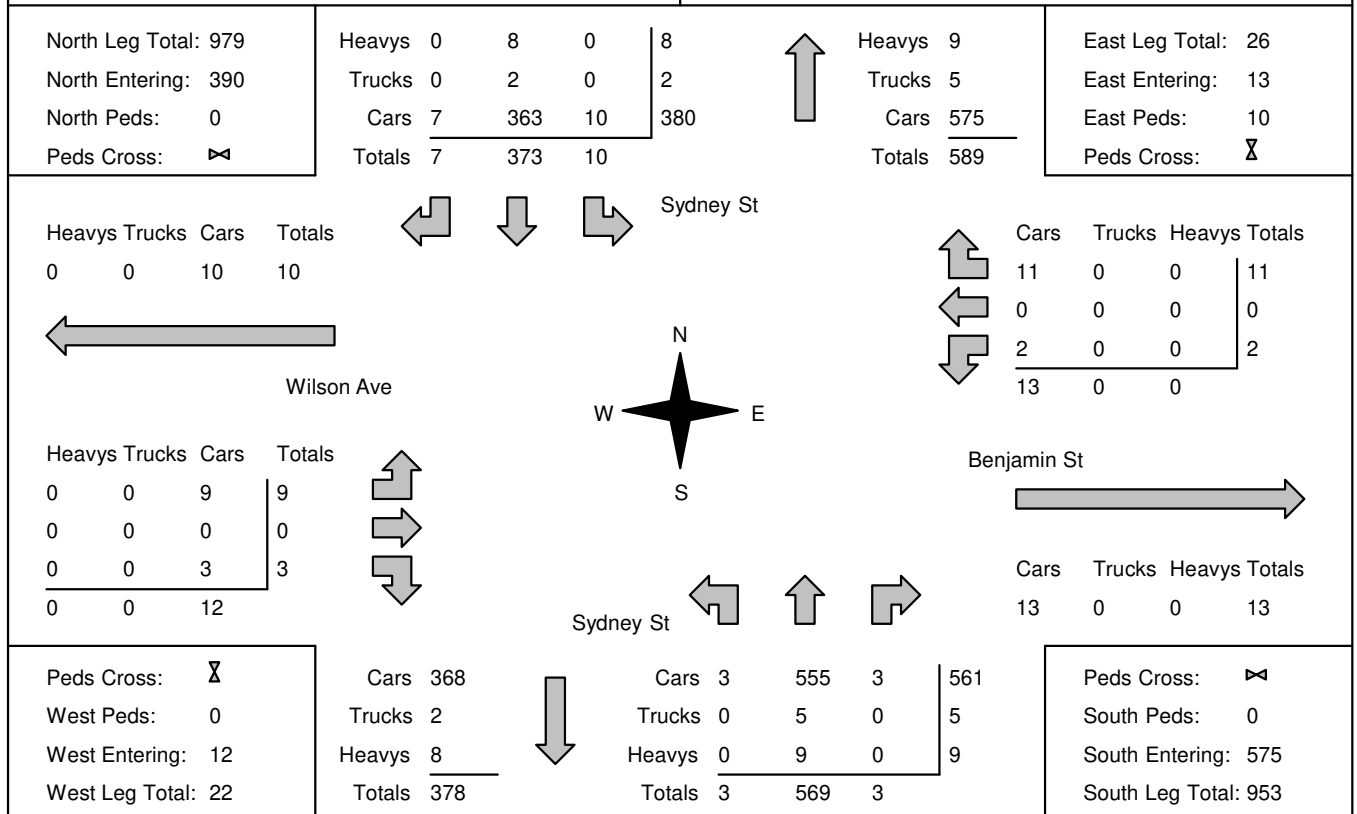
Municipality: Belleville
Site #: 2104900001
Intersection: Sydney St & Wilson Ave
TFR File #: 1
Count date: 22-Jun-21

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Non-Signalized Intersection **

Major Road: Sydney St runs N/S



Comments

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Belleville
Site #: 2104900002
Intersection: Palmer Rd & Bogart Cres
TFR File #: 1
Count date: 22-Jun-21

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Non-Signalized Intersection **

Major Road: Palmer Rd runs N/S

North Leg Total: 142

North Entering: 67

North Peds: 0

Peds Cross: 

Heavys	1	3	4
Trucks	0	2	2
Cars	2	59	61
Totals	3	64	

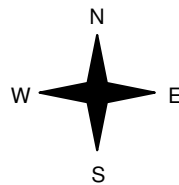
Heavys	4
Trucks	1
Cars	70
Totals	75

Heavys	Trucks	Cars	Totals
1	0	2	3



Bogart Cres

Heavys	Trucks	Cars	Totals
1	0	7	8
0	0	6	6
1	0	13	



Palmer Rd

Peds Cross: 
 West Peds: 0
 West Entering: 14
 West Leg Total: 17

Cars	65
Trucks	2
Heavys	3
Totals	70



Cars	0	63
Trucks	0	1
Heavys	0	3
Totals	0	67

Peds Cross: 
 South Peds: 0
 South Entering: 67
 South Leg Total: 137

Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 19:00:00	One Hour Peak From: 16:15:00 To: 17:15:00
Municipality: Belleville Site #: 2104900002 Intersection: Palmer Rd & Bogart Cres TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Palmer Rd runs N/S

North Leg Total: 253 North Entering: 154 North Peds: 0 Peds Cross:	<table style="width: 100%;"> <tr> <td>Heavys</td><td>0</td><td>1</td><td>1</td></tr> <tr> <td>Trucks</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Cars</td><td>7</td><td>146</td><td>153</td></tr> <tr> <td>Totals</td><td>7</td><td>147</td><td></td></tr> </table>	Heavys	0	1	1	Trucks	0	0	0	Cars	7	146	153	Totals	7	147		<table style="width: 100%;"> <tr> <td>Heavys</td><td>1</td></tr> <tr> <td>Trucks</td><td>0</td></tr> <tr> <td>Cars</td><td>98</td></tr> <tr> <td>Totals</td><td>99</td></tr> </table>	Heavys	1	Trucks	0	Cars	98	Totals	99	
Heavys	0	1	1																								
Trucks	0	0	0																								
Cars	7	146	153																								
Totals	7	147																									
Heavys	1																										
Trucks	0																										
Cars	98																										
Totals	99																										

Heavys	Trucks	Cars	Totals
0	0	12	12

Palmer Rd

Bogart Cres

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	4	4
0	0	4	4
0	0	8	

Palmer Rd

Peds Cross: West Peds: 3 West Entering: 8 West Leg Total: 20	<table style="width: 100%;"> <tr> <td>Cars</td><td>150</td></tr> <tr> <td>Trucks</td><td>0</td></tr> <tr> <td>Heavys</td><td>1</td></tr> <tr> <td>Totals</td><td>151</td></tr> </table>	Cars	150	Trucks	0	Heavys	1	Totals	151	<table style="width: 100%;"> <tr> <td>Cars</td><td>5</td><td>94</td><td>99</td></tr> <tr> <td>Trucks</td><td>0</td><td>0</td><td>0</td></tr> <tr> <td>Heavys</td><td>0</td><td>1</td><td>1</td></tr> <tr> <td>Totals</td><td>5</td><td>95</td><td></td></tr> </table>	Cars	5	94	99	Trucks	0	0	0	Heavys	0	1	1	Totals	5	95		Peds Cross: South Peds: 0 South Entering: 100 South Leg Total: 251
Cars	150																										
Trucks	0																										
Heavys	1																										
Totals	151																										
Cars	5	94	99																								
Trucks	0	0	0																								
Heavys	0	1	1																								
Totals	5	95																									

Comments

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

Municipality: Belleville
Site #: 2104900003
Intersection: Moira St W & Tripp Ave
TFR File #: 1
Count date: 22-Jun-21

Weather conditions:

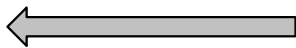
Person counted:
Person prepared:
Person checked:

**** Non-Signalized Intersection ****

Major Road: Moira St W runs W/E

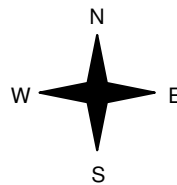
East Leg Total: 506
East Entering: 245
East Peds: 1
Peds Cross: 8

Heavys	Trucks	Cars	Totals
4	9	220	233



Moira St W

Heavys	Trucks	Cars	Totals
5	3	231	239
0	0	5	5
5	3	236	



Tripp Ave

Cars	Trucks	Heavys	Totals
219	9	4	232
13	0	0	13
232	9	4	



Moira St W



Cars	Trucks	Heavys	Totals
253	3	5	261

Peds Cross: 8
West Peds: 0
West Entering: 244
West Leg Total: 477

Cars	18
Trucks	0
Heavys	0
Totals	18



Cars	1	22	23
Trucks	0	0	0
Heavys	0	0	0
Totals	1	22	

Peds Cross: 4
South Peds: 4
South Entering: 23
South Leg Total: 41

Comments

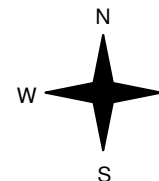
Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 19:00:00	One Hour Peak From: 16:30:00 To: 17:30:00
Municipality: Belleville Site #: 2104900003 Intersection: Moira St W & Tripp Ave TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **	Major Road: Moira St W runs W/E	

	East Leg Total: 704 East Entering: 383 East Peds: 1 Peds Cross: 8
--	--

Heavys	Trucks	Cars	Totals
2	0	343	345

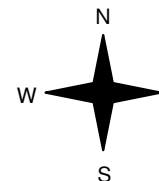
Moira St W



Cars	Trucks	Heavys	Totals
341	0	2	343
40	0	0	40
381	0	2	

Moira St W

Heavys	Trucks	Cars	Totals
3	3	279	285
0	0	5	5
3	3	284	



Cars	Trucks	Heavys	Totals
315	3	3	321

Moira St W

Peds Cross:	8
West Peds:	0
West Entering:	290
West Leg Total:	635

Cars	45	
Trucks	0	
Heavys	0	
Totals	45	

Cars	2	36	38
Trucks	0	0	0
Heavys	0	0	0
Totals	2	36	

Cars	2	36	38
Trucks	0	0	0
Heavys	0	0	0
Totals	2	36	

Peds Cross:	8
South Peds:	3
South Entering:	38
South Leg Total:	83

Cars	2	36	38
Trucks	0	0	0
Heavys	0	0	0
Totals	2	36	

Comments

Accu-Traffic Inc.

Morning Peak Diagram

Specified Period

From: 7:00:00

To: 9:00:00

One Hour Peak

From: 7:30:00

To: 8:30:00

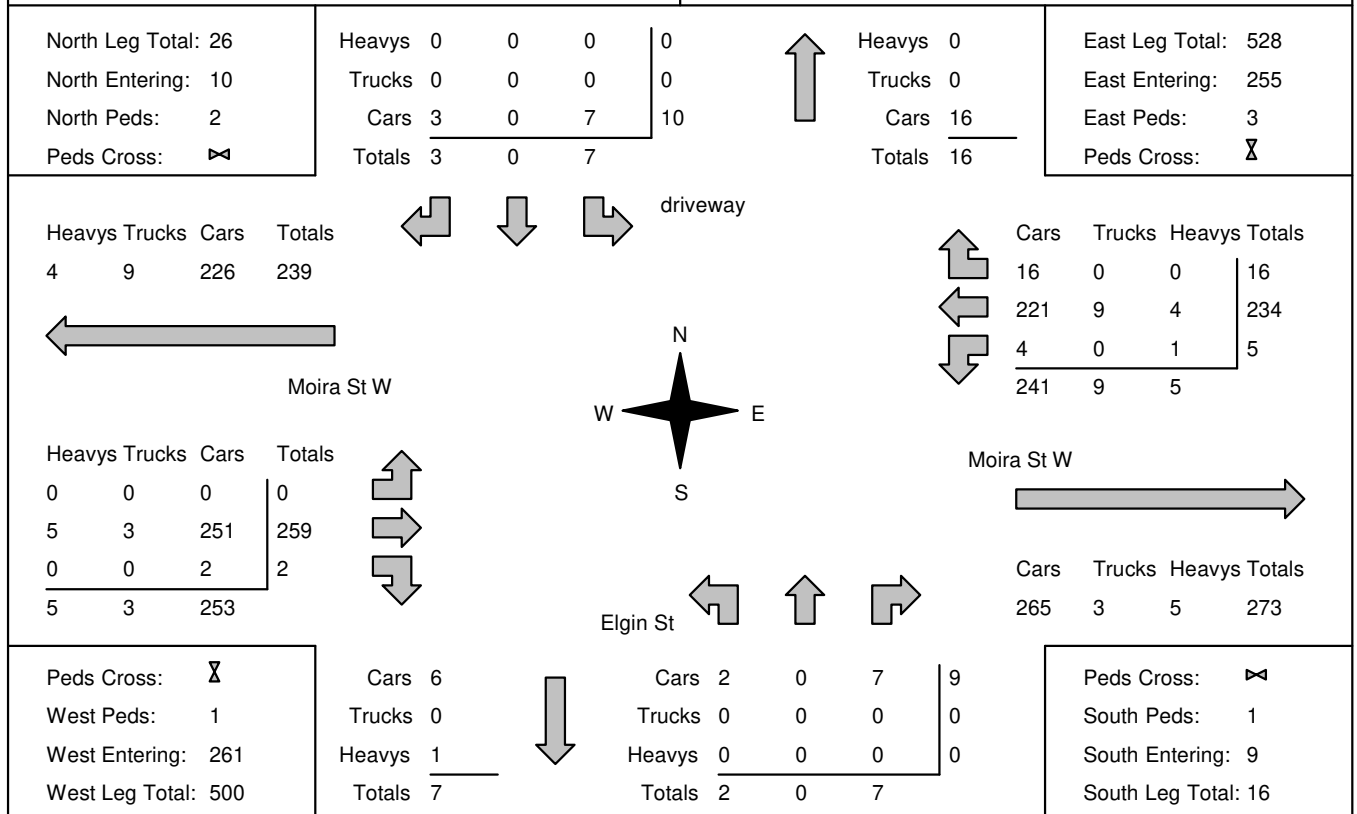
Municipality: Belleville
Site #: 2104900004
Intersection: Moira St W & Elgin St
TFR File #: 1
Count date: 22-Jun-21

Weather conditions:

Person counted:
Person prepared:
Person checked:

** Non-Signalized Intersection **

Major Road: Moira St W runs W/E



Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 16:00:00 To: 19:00:00	One Hour Peak From: 16:00:00 To: 17:00:00
Municipality: Belleville Site #: 2104900004 Intersection: Moira St W & Elgin St TFR File #: 1 Count date: 22-Jun-21	Weather conditions: Person counted: Person prepared: Person checked:	
** Non-Signalized Intersection **		Major Road: Moira St W runs W/E

North Leg Total: 59 North Entering: 25 North Peds: 1 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">16</td> <td style="padding: 2px;">25</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">9</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">16</td> <td style="padding: 2px;"></td> </tr> </table>	Heavys	0	0	0	0	Trucks	0	0	0	0	Cars	9	0	16	25	Totals	9	0	16		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">34</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">34</td> </tr> </table>	Heavys	0	Trucks	0	Cars	34	Totals	34	East Leg Total: 753 East Entering: 380 East Peds: 7 Peds Cross:
Heavys	0	0	0	0																											
Trucks	0	0	0	0																											
Cars	9	0	16	25																											
Totals	9	0	16																												
Heavys	0																														
Trucks	0																														
Cars	34																														
Totals	34																														

Heavys	Trucks	Cars	Totals
1	0	350	351

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
30	0	0	30
337	0	1	338
12	0	0	12
379	0	1	

Moira St W

Heavys	Trucks	Cars	Totals
0	0	4	4
4	3	338	345
0	0	2	2
4	3	344	

N
 W ——— E
 S

Cars	Trucks	Heavys	Totals
366	3	4	373

Elgin St

Peds Cross: West Peds: 3 West Entering: 351 West Leg Total: 702	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">14</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">14</td> </tr> </table>	Cars	14	Trucks	0	Heavys	0	Totals	14	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">12</td> <td style="padding: 2px;">16</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">12</td> <td style="padding: 2px;"></td> </tr> </table>	Cars	4	0	12	16	Trucks	0	0	0	0	Heavys	0	0	0	0	Totals	4	0	12		Peds Cross: South Peds: 1 South Entering: 16 South Leg Total: 30
Cars	14																														
Trucks	0																														
Heavys	0																														
Totals	14																														
Cars	4	0	12	16																											
Trucks	0	0	0	0																											
Heavys	0	0	0	0																											
Totals	4	0	12																												

Comments

Accu-Traffic Inc.

Morning Peak Diagram	Specified Period From: 7:00:00 To: 10:00:00	One Hour Peak From: 7:45:00 To: 8:45:00
Municipality: Belleville Site #: 1906400001 Intersection: Sidney St & Bridge St W TFR File #: 1 Count date: 1-May-19	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **		Major Road: Sidney St runs N/S

North Leg Total: 836 North Entering: 326 North Peds: 4 Peds Cross:	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">12</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">19</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">4</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">53</td> <td style="padding: 2px;">161</td> <td style="padding: 2px;">89</td> <td style="padding: 2px;">303</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">58</td> <td style="padding: 2px;">177</td> <td style="padding: 2px;">91</td> <td style="padding: 2px;"></td> </tr> </table>	Heavys	5	12	2	19	Trucks	0	4	0	4	Cars	53	161	89	303	Totals	58	177	91		<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">15</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">491</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">510</td> </tr> </table>	Heavys	15	Trucks	4	Cars	491	Totals	510	East Leg Total: 713 East Entering: 302 East Peds: 10 Peds Cross:
Heavys	5	12	2	19																											
Trucks	0	4	0	4																											
Cars	53	161	89	303																											
Totals	58	177	91																												
Heavys	15																														
Trucks	4																														
Cars	491																														
Totals	510																														

N

W ——— E

S

Sidney St

Heavys Trucks Cars Totals 10 1 258 269	Bridge St W 	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">79</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">82</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">165</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">5</td> <td style="padding: 2px;">171</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">49</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">49</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">293</td> <td style="padding: 2px;">3</td> <td style="padding: 2px;">6</td> <td style="padding: 2px;"></td> </tr> </table>	Cars	79	2	1	82	Trucks	165	1	5	171	Heavys	49	0	0	49	Totals	293	3	6		Bridge St W
Cars	79	2	1	82																			
Trucks	165	1	5	171																			
Heavys	49	0	0	49																			
Totals	293	3	6																				

Heavys Trucks Cars Totals 8 1 148 157 5 0 251 256 1 0 16 17 14 1 415	Sidney St 	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="border-right: 1px solid black; padding: 2px;">Cars</td> <td style="padding: 2px;">40</td> <td style="padding: 2px;">264</td> <td style="padding: 2px;">61</td> <td style="padding: 2px;">365</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Trucks</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Heavys</td> <td style="padding: 2px;">0</td> <td style="padding: 2px;">6</td> <td style="padding: 2px;">2</td> <td style="padding: 2px;">8</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 2px;">Totals</td> <td style="padding: 2px;">40</td> <td style="padding: 2px;">271</td> <td style="padding: 2px;">64</td> <td style="padding: 2px;"></td> </tr> </table>	Cars	40	264	61	365	Trucks	0	1	1	2	Heavys	0	6	2	8	Totals	40	271	64		Bridge St W
Cars	40	264	61	365																			
Trucks	0	1	1	2																			
Heavys	0	6	2	8																			
Totals	40	271	64																				

Peds Cross: West Peds: 4 West Entering: 430 West Leg Total: 699	Cars 226 Trucks 4 Heavys 13 Totals 243	Peds Cross: South Peds: 18 South Entering: 375 South Leg Total: 618
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Comments

Accu-Traffic Inc.

Afternoon Peak Diagram	Specified Period From: 15:00:00 To: 18:00:00	One Hour Peak From: 16:15:00 To: 17:15:00
Municipality: Belleville Site #: 1906400001 Intersection: Sidney St & Bridge St W TFR File #: 1 Count date: 1-May-19	Weather conditions: Person counted: Person prepared: Person checked:	
** Signalized Intersection **	Major Road: Sidney St runs N/S	

North Leg Total: 1172 North Entering: 510 North Peds: 6 Peds Cross:	<table style="margin: auto;"> <tr> <td>Heavys</td><td>1</td><td>7</td><td>0</td><td>8</td></tr> <tr> <td>Trucks</td><td>0</td><td>1</td><td>1</td><td>2</td></tr> <tr> <td>Cars</td><td>123</td><td>310</td><td>67</td><td>500</td></tr> <tr> <td>Totals</td><td>124</td><td>318</td><td>68</td><td></td></tr> </table>	Heavys	1	7	0	8	Trucks	0	1	1	2	Cars	123	310	67	500	Totals	124	318	68		<table style="margin: auto;"> <tr> <td>Heavys</td><td>14</td></tr> <tr> <td>Trucks</td><td>4</td></tr> <tr> <td>Cars</td><td>644</td></tr> <tr> <td>Totals</td><td>662</td></tr> </table>	Heavys	14	Trucks	4	Cars	644	Totals	662	East Leg Total: 659 East Entering: 365 East Peds: 14 Peds Cross:
Heavys	1	7	0	8																											
Trucks	0	1	1	2																											
Cars	123	310	67	500																											
Totals	124	318	68																												
Heavys	14																														
Trucks	4																														
Cars	644																														
Totals	662																														

Heavys	Trucks	Cars	Totals
1	0	380	381

Sidney St

Cars	Trucks	Heavys	Totals
90	0	2	92
209	0	0	209
62	1	1	64
361	1	3	

Heavys	Trucks	Cars	Totals
3	0	167	170
3	0	172	175
0	0	20	20
6	0	359	

Bridge St W

Cars	Trucks	Heavys	Totals
289	1	4	294

Peds Cross:
 West Peds: 3
 West Entering: 365
 West Leg Total: 746

Sidney St

Peds Cross:
 South Peds: 25
 South Entering: 499
 South Leg Total: 901

Comments

Appendix D – Synchro Analysis Output – Existing Traffic Volumes

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Existing (2022) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	0	93	89	4
Future Volume (Veh/h)	11	8	0	93	89	4
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)	12	9	0	101	97	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)						
pX, platoon unblocked						
vC, conflicting volume	200	99	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	200	99	101			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	789	957	1491			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	21	101	101			
Volume Left	12	0	0			
Volume Right	9	0	4			
cSH	853	1491	1700			
Volume to Capacity	0.02	0.00	0.06			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	9.3	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.3	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization		14.9%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Existing (2022) - AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	12	7	430	441	21
Future Volume (Veh/h)	5	12	7	430	441	21
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)	5	13	8	467	479	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	740	251	502			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	740	251	502			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	99			
cM capacity (veh/h)	350	749	1059			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	18	164	311	319	183	
Volume Left	5	8	0	0	0	
Volume Right	13	0	0	0	23	
cSH	568	1059	1700	1700	1700	
Volume to Capacity	0.03	0.01	0.18	0.19	0.11	
Queue Length 95th (m)	0.7	0.2	0.0	0.0	0.0	
Control Delay (s)	11.5	0.5	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	11.5	0.2		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			26.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Existing (2022) - AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↗	
Traffic Volume (veh/h)	332	7	18	323	1	30
Future Volume (Veh/h)	332	7	18	323	1	30
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)	361	8	20	351	1	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			369		756	365
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			369		756	365
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	95
cM capacity (veh/h)			1190		370	680
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	369	371	34			
Volume Left	0	20	1			
Volume Right	8	0	33			
cSH	1700	1190	664			
Volume to Capacity	0.22	0.02	0.05			
Queue Length 95th (m)	0.0	0.4	1.2			
Control Delay (s)	0.0	0.6	10.7			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.6	10.7			
Approach LOS			B			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			41.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Existing (2022) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	360	3	7	325	22	3	0	10	10	0	4
Future Volume (Veh/h)	0	360	3	7	325	22	3	0	10	10	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	391	3	8	353	24	3	0	11	11	0	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)												
pX, platoon unblocked												
vC, conflicting volume	377			394			778	786	392	784	775	365
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	377			394			778	786	392	784	775	365
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	96	100	99
cM capacity (veh/h)	1181			1165			310	322	656	304	327	680
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	394	385	14	15								
Volume Left	0	8	3	11								
Volume Right	3	24	11	4								
cSH	1181	1165	530	356								
Volume to Capacity	0.00	0.01	0.03	0.04								
Queue Length 95th (m)	0.0	0.2	0.6	1.0								
Control Delay (s)	0.0	0.2	12.0	15.5								
Lane LOS		A	B	C								
Approach Delay (s)	0.0	0.2	12.0	15.5								
Approach LOS			B	C								
Intersection Summary												
Average Delay												
Intersection Capacity Utilization												
Analysis Period (min)												

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Existing (2022) - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	7	132	204	10
Future Volume (Veh/h)	5	5	7	132	204	10
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)	5	5	8	143	222	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	386	228	233			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	386	228	233			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	613	812	1335			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	10	151	233			
Volume Left	5	8	0			
Volume Right	5	0	11			
cSH	699	1335	1700			
Volume to Capacity	0.01	0.01	0.14			
Queue Length 95th (m)	0.3	0.1	0.0			
Control Delay (s)	10.2	0.5	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.2	0.5	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization		22.7%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Existing (2022) - PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Volume (veh/h)	12	4	4	795	521	10
Future Volume (Veh/h)	12	4	4	795	521	10
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)	13	4	4	864	566	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1012	288	577			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1012	288	577			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	94	99	100			
cM capacity (veh/h)	235	708	993			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	17	292	576	377	200	
Volume Left	13	4	0	0	0	
Volume Right	4	0	0	0	11	
cSH	279	993	1700	1700	1700	
Volume to Capacity	0.06	0.00	0.34	0.22	0.12	
Queue Length 95th (m)	1.5	0.1	0.0	0.0	0.0	
Control Delay (s)	18.8	0.2	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	18.8	0.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			34.8%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Existing (2022) - PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	396	7	55	477	3	49
Future Volume (Veh/h)	396	7	55	477	3	49
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)	430	8	60	518	3	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			438		1072	434
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			438		1072	434
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		99	91
cM capacity (veh/h)			1122		231	622
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	438	578	56			
Volume Left	0	60	3			
Volume Right	8	0	53			
cSH	1700	1122	570			
Volume to Capacity	0.26	0.05	0.10			
Queue Length 95th (m)	0.0	1.3	2.5			
Control Delay (s)	0.0	1.4	12.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.4	12.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			62.7%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Existing (2022) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	480	3	16	470	41	5	0	16	22	0	12
Future Volume (Veh/h)	5	480	3	16	470	41	5	0	16	22	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	522	3	17	511	45	5	0	17	24	0	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	556			525			1114	1124	524	1118	1102	534
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	556			525			1114	1124	524	1118	1102	534
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			97	100	97	86	100	98
cM capacity (veh/h)	1015			1042			178	201	554	176	207	546
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	530	573	22	37								
Volume Left	5	17	5	24								
Volume Right	3	45	17	13								
cSH	1015	1042	374	231								
Volume to Capacity	0.00	0.02	0.06	0.16								
Queue Length 95th (m)	0.1	0.4	1.4	4.3								
Control Delay (s)	0.1	0.5	15.2	23.6								
Lane LOS	A	A	C	C								
Approach Delay (s)	0.1	0.5	15.2	23.6								
Approach LOS			C	C								
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			48.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Appendix E – Synchro Analysis Output – Background Traffic Volumes

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
BG (2029) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	0	105	106	4
Future Volume (Veh/h)	11	8	0	105	106	4
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)	12	9	0	114	115	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)						
pX, platoon unblocked						
vC, conflicting volume	231	117	119			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	231	117	119			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	757	935	1469			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	21	114	119			
Volume Left	12	0	0			
Volume Right	9	0	4			
cSH	824	1469	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	9.5	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.5	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization		15.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
BG (2029) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	12	7	543	558	21
Future Volume (Veh/h)	5	12	7	543	558	21
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)	5	13	8	590	607	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	930	315	630			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	930	315	630			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	98	99			
cM capacity (veh/h)	264	681	948			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	18	205	393	405	225	
Volume Left	5	8	0	0	0	
Volume Right	13	0	0	0	23	
cSH	473	948	1700	1700	1700	
Volume to Capacity	0.04	0.01	0.23	0.24	0.13	
Queue Length 95th (m)	0.9	0.2	0.0	0.0	0.0	
Control Delay (s)	12.9	0.4	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	12.9	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			29.9%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
BG (2029) - AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↗	
Traffic Volume (veh/h)	388	7	18	370	1	30
Future Volume (Veh/h)	388	7	18	370	1	30
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)	422	8	20	402	1	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			430		868	426
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			430		868	426
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	95
cM capacity (veh/h)			1129		317	628
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	430	422	34			
Volume Left	0	20	1			
Volume Right	8	0	33			
cSH	1700	1129	611			
Volume to Capacity	0.25	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.3			
Control Delay (s)	0.0	0.6	11.2			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.6	11.2			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			44.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
BG (2029) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	419	3	7	373	22	3	0	10	10	0	4
Future Volume (Veh/h)	0	419	3	7	373	22	3	0	10	10	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	455	3	8	405	24	3	0	11	11	0	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)												
pX, platoon unblocked												
vC, conflicting volume	429			458			894	902	456	900	891	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	429			458			894	902	456	900	891	417
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	96	100	99
cM capacity (veh/h)	1130			1103			259	276	604	253	280	636
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	458	437	14	15								
Volume Left	0	8	3	11								
Volume Right	3	24	11	4								
cSH	1130	1103	470	302								
Volume to Capacity	0.00	0.01	0.03	0.05								
Queue Length 95th (m)	0.0	0.2	0.7	1.2								
Control Delay (s)	0.0	0.2	12.9	17.6								
Lane LOS		A	B	C								
Approach Delay (s)	0.0	0.2	12.9	17.6								
Approach LOS			B	C								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			36.6%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Background (2029) - PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	7	155	232	10
Future Volume (Veh/h)	5	5	7	155	232	10
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)	5	5	8	168	252	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	442	258	263			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442	258	263			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	570	781	1301			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	10	176	263			
Volume Left	5	8	0			
Volume Right	5	0	11			
cSH	659	1301	1700			
Volume to Capacity	0.02	0.01	0.15			
Queue Length 95th (m)	0.4	0.1	0.0			
Control Delay (s)	10.5	0.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.5	0.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			23.8%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Background (2029) - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	4	4	1000	712	10
Future Volume (Veh/h)	12	4	4	1000	712	10
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)	13	4	4	1087	774	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1331	392	785			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1331	392	785			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	91	99	100			
cM capacity (veh/h)	145	606	829			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	17	366	725	516	269	
Volume Left	13	4	0	0	0	
Volume Right	4	0	0	0	11	
cSH	177	829	1700	1700	1700	
Volume to Capacity	0.10	0.00	0.43	0.30	0.16	
Queue Length 95th (m)	2.4	0.1	0.0	0.0	0.0	
Control Delay (s)	27.5	0.2	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	27.5	0.1		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			40.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Background (2029) - PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↗	
Traffic Volume (veh/h)	465	7	55	555	3	49
Future Volume (Veh/h)	465	7	55	555	3	49
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)	505	8	60	603	3	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			513		1232	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			513		1232	509
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		98	91
cM capacity (veh/h)			1052		184	564
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	513	663	56			
Volume Left	0	60	3			
Volume Right	8	0	53			
cSH	1700	1052	508			
Volume to Capacity	0.30	0.06	0.11			
Queue Length 95th (m)	0.0	1.4	2.8			
Control Delay (s)	0.0	1.5	13.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	13.0			
Approach LOS			B			
Intersection Summary						
Average Delay		1.4				
Intersection Capacity Utilization		70.5%		ICU Level of Service		C
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Background (2029) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	557	3	16	548	41	5	0	16	22	0	12
Future Volume (Veh/h)	5	557	3	16	548	41	5	0	16	22	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	605	3	17	596	45	5	0	17	24	0	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	641			608			1282	1292	606	1286	1270	618
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	641			608			1282	1292	606	1286	1270	618
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			96	100	97	82	100	97
cM capacity (veh/h)	943			970			136	159	497	134	164	489
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	613	658	22	37								
Volume Left	5	17	5	24								
Volume Right	3	45	17	13								
cSH	943	970	310	180								
Volume to Capacity	0.01	0.02	0.07	0.21								
Queue Length 95th (m)	0.1	0.4	1.7	5.7								
Control Delay (s)	0.1	0.5	17.5	30.1								
Lane LOS	A	A	C	D								
Approach Delay (s)	0.1	0.5	17.5	30.1								
Approach LOS			C	D								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			52.9%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
BG (2034) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	8	0	113	113	4
Future Volume (Veh/h)	11	8	0	113	113	4
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)	12	9	0	123	123	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)						
pX, platoon unblocked						
vC, conflicting volume	248	125	127			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	248	125	127			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	740	926	1459			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	21	123	127			
Volume Left	12	0	0			
Volume Right	9	0	4			
cSH	810	1459	1700			
Volume to Capacity	0.03	0.00	0.07			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	9.6	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	9.6	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		16.2%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
BG (2034) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	12	7	580	596	21
Future Volume (Veh/h)	5	12	7	580	596	21
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)	5	13	8	630	648	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	990	336	671			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	336	671			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	98	99			
cM capacity (veh/h)	241	660	915			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	18	218	420	432	239	
Volume Left	5	8	0	0	0	
Volume Right	13	0	0	0	23	
cSH	445	915	1700	1700	1700	
Volume to Capacity	0.04	0.01	0.25	0.25	0.14	
Queue Length 95th (m)	1.0	0.2	0.0	0.0	0.0	
Control Delay (s)	13.4	0.4	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	13.4	0.1		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			31.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
BG (2034) - AM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	416	7	18	398	1	30
Future Volume (Veh/h)	416	7	18	398	1	30
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)	452	8	20	433	1	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			460		929	456
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			460		929	456
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		100	95
cM capacity (veh/h)			1101		292	604
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	460	453	34			
Volume Left	0	20	1			
Volume Right	8	0	33			
cSH	1700	1101	586			
Volume to Capacity	0.27	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.4			
Control Delay (s)	0.0	0.6	11.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.6	11.5			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			45.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 4: Elgin St/Driveway & Moira St W

Wilson Avenue
BG (2034) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	450	3	7	401	22	3	0	10	10	0	4
Future Volume (Veh/h)	0	450	3	7	401	22	3	0	10	10	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	489	3	8	436	24	3	0	11	11	0	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)												
pX, platoon unblocked												
vC, conflicting volume	460			492			958	966	490	966	956	448
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	460			492			958	966	490	966	956	448
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	95	100	99
cM capacity (veh/h)	1101			1071			234	252	578	228	256	611
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	492	468	14	15								
Volume Left	0	8	3	11								
Volume Right	3	24	11	4								
cSH	1101	1071	439	274								
Volume to Capacity	0.00	0.01	0.03	0.05								
Queue Length 95th (m)	0.0	0.2	0.7	1.3								
Control Delay (s)	0.0	0.2	13.5	18.9								
Lane LOS		A	B	C								
Approach Delay (s)	0.0	0.2	13.5	18.9								
Approach LOS			B	C								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			38.1%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Background (2034) - PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Volume (veh/h)	5	5	7	166	249	10
Future Volume (Veh/h)	5	5	7	166	249	10
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)	5	5	8	180	271	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	472	276	282			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	472	276	282			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	99	99			
cM capacity (veh/h)	547	762	1280			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	10	188	282			
Volume Left	5	8	0			
Volume Right	5	0	11			
cSH	637	1280	1700			
Volume to Capacity	0.02	0.01	0.17			
Queue Length 95th (m)	0.4	0.1	0.0			
Control Delay (s)	10.7	0.4	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.7	0.4	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			24.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Background (2034) - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	4	4	1068	756	10
Future Volume (Veh/h)	12	4	4	1068	756	10
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)	13	4	4	1161	822	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1416	416	833			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1416	416	833			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	90	99	99			
cM capacity (veh/h)	128	585	796			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	17	391	774	548	285	
Volume Left	13	4	0	0	0	
Volume Right	4	0	0	0	11	
cSH	156	796	1700	1700	1700	
Volume to Capacity	0.11	0.01	0.46	0.32	0.17	
Queue Length 95th (m)	2.7	0.1	0.0	0.0	0.0	
Control Delay (s)	30.8	0.2	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	30.8	0.1		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			42.3%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Background (2034) - PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	499	7	55	586	3	49
Future Volume (Veh/h)	499	7	55	586	3	49
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)	542	8	60	637	3	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			550		1303	546
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			550		1303	546
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		98	90
cM capacity (veh/h)			1020		167	538
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	550	697	56			
Volume Left	0	60	3			
Volume Right	8	0	53			
cSH	1700	1020	480			
Volume to Capacity	0.32	0.06	0.12			
Queue Length 95th (m)	0.0	1.4	3.0			
Control Delay (s)	0.0	1.5	13.5			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	13.5			
Approach LOS			B			
Intersection Summary						
Average Delay		1.4				
Intersection Capacity Utilization		73.9%		ICU Level of Service		D
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Background (2034) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	599	3	16	588	41	5	0	16	22	0	12
Future Volume (Veh/h)	5	599	3	16	588	41	5	0	16	22	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	651	3	17	639	45	5	0	17	24	0	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	684			654			1371	1380	652	1375	1360	662
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	684			654			1371	1380	652	1375	1360	662
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			96	100	96	79	100	97
cM capacity (veh/h)	909			933			118	141	468	116	145	462
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	659	701	22	37								
Volume Left	5	17	5	24								
Volume Right	3	45	17	13								
cSH	909	933	279	157								
Volume to Capacity	0.01	0.02	0.08	0.23								
Queue Length 95th (m)	0.1	0.4	1.9	6.6								
Control Delay (s)	0.1	0.5	19.0	34.7								
Lane LOS	A	A	C	D								
Approach Delay (s)	0.1	0.5	19.0	34.7								
Approach LOS			C	D								
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			55.1%		ICU Level of Service				B			
Analysis Period (min)			15									

Appendix F – Synchro Analysis Output – Total Traffic Volumes

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)/Wilson Ave ext.

Wilson Avenue
Total (2029) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	8	21	0	21	0	105	7	7	106	4
Future Volume (Veh/h)	11	0	8	21	0	21	0	105	7	7	106	4
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	9	23	0	23	0	114	8	8	115	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)												
pX, platoon unblocked												
vC, conflicting volume	274	255	117	260	253	118	119			122		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274	255	117	260	253	118	119			122		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	97	100	98	100			99		
cM capacity (veh/h)	659	645	935	683	647	934	1469			1465		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	46	122	127								
Volume Left	12	23	0	8								
Volume Right	9	23	8	4								
cSH	754	789	1469	1465								
Volume to Capacity	0.03	0.06	0.00	0.01								
Queue Length 95th (m)	0.7	1.4	0.0	0.1								
Control Delay (s)	9.9	9.8	0.0	0.5								
Lane LOS	A	A		A								
Approach Delay (s)	9.9	9.8	0.0	0.5								
Approach LOS	A	A										
Intersection Summary												
Average Delay				2.3								
Intersection Capacity Utilization				21.6%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Total (2029) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	32	14	543	558	28
Future Volume (Veh/h)	25	32	14	543	558	28
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)	27	35	15	590	607	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	947	318	637			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	947	318	637			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	95	98			
cM capacity (veh/h)	255	677	943			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	62	212	393	405	232	
Volume Left	27	15	0	0	0	
Volume Right	35	0	0	0	30	
cSH	394	943	1700	1700	1700	
Volume to Capacity	0.16	0.02	0.23	0.24	0.14	
Queue Length 95th (m)	4.2	0.4	0.0	0.0	0.0	
Control Delay (s)	15.8	0.8	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	15.8	0.3		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			35.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Total (2029) - AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	393	7	18	372	1	30
Future Volume (Veh/h)	393	7	18	372	1	30
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)	427	8	20	404	1	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	435			875	431	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	435			875	431	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	98			100	95	
cM capacity (veh/h)	1125			314	624	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	435	424	34			
Volume Left	0	20	1			
Volume Right	8	0	33			
cSH	1700	1125	607			
Volume to Capacity	0.26	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.4			
Control Delay (s)	0.0	0.6	11.3			
Lane LOS		A	B			
Approach Delay (s)	0.0	0.6	11.3			
Approach LOS			B			
Intersection Summary						
Average Delay	0.7					
Intersection Capacity Utilization	44.2%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Total (2029) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	424	3	7	375	22	3	0	10	10	0	4
Future Volume (Veh/h)	0	424	3	7	375	22	3	0	10	10	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	461	3	8	408	24	3	0	11	11	0	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)												
pX, platoon unblocked												
vC, conflicting volume	432			464			902	910	462	910	900	420
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	432			464			902	910	462	910	900	420
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	96	100	99
cM capacity (veh/h)	1128			1097			255	272	599	250	276	633
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	464	440	14	15								
Volume Left	0	8	3	11								
Volume Right	3	24	11	4								
cSH	1128	1097	465	298								
Volume to Capacity	0.00	0.01	0.03	0.05								
Queue Length 95th (m)	0.0	0.2	0.7	1.2								
Control Delay (s)	0.0	0.2	13.0	17.7								
Lane LOS		A	B	C								
Approach Delay (s)	0.0	0.2	13.0	17.7								
Approach LOS			B	C								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			36.7%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Total (2029) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	12	0	13	7	155	21	21	232	10
Future Volume (Veh/h)	5	0	5	12	0	13	7	155	21	21	232	10
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	13	0	14	8	168	23	23	252	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	513	510	258	504	504	180	263				191	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	513	510	258	504	504	180	263				191	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	99	100	99	97	100	98	99				98	
cM capacity (veh/h)	456	456	781	467	459	863	1301				1383	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	27	199	286								
Volume Left	5	13	8	23								
Volume Right	5	14	23	11								
cSH	576	613	1301	1383								
Volume to Capacity	0.02	0.04	0.01	0.02								
Queue Length 95th (m)	0.4	1.0	0.1	0.4								
Control Delay (s)	11.4	11.1	0.4	0.8								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.4	11.1	0.4	0.8								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization				31.3%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Total (2029) - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	17	26	1000	712	32
Future Volume (Veh/h)	25	17	26	1000	712	32
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)	27	18	28	1087	774	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1391	404	809			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1391	404	809			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	97	97			
cM capacity (veh/h)	129	596	812			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	45	390	725	516	293	
Volume Left	27	28	0	0	0	
Volume Right	18	0	0	0	35	
cSH	187	812	1700	1700	1700	
Volume to Capacity	0.24	0.03	0.43	0.30	0.17	
Queue Length 95th (m)	6.9	0.8	0.0	0.0	0.0	
Control Delay (s)	30.2	1.1	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	30.2	0.4		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			56.3%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Total (2029) - PM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	468	7	55	560	3	49
Future Volume (Veh/h)	468	7	55	560	3	49
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)	509	8	60	609	3	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			517		1242	513
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			517		1242	513
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		98	91
cM capacity (veh/h)			1049		182	561
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	517	669	56			
Volume Left	0	60	3			
Volume Right	8	0	53			
cSH	1700	1049	505			
Volume to Capacity	0.30	0.06	0.11			
Queue Length 95th (m)	0.0	1.4	2.8			
Control Delay (s)	0.0	1.5	13.0			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	13.0			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			70.9%		ICU Level of Service	
Analysis Period (min)			15		C	

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Total (2029) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	560	3	16	553	41	5	0	16	22	0	12
Future Volume (Veh/h)	5	560	3	16	553	41	5	0	16	22	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	609	3	17	601	45	5	0	17	24	0	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	646			612			1291	1300	610	1295	1280	624
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	646			612			1291	1300	610	1295	1280	624
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			96	100	97	82	100	97
cM capacity (veh/h)	939			967			134	157	494	132	162	486
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	617	663	22	37								
Volume Left	5	17	5	24								
Volume Right	3	45	17	13								
cSH	939	967	307	178								
Volume to Capacity	0.01	0.02	0.07	0.21								
Queue Length 95th (m)	0.1	0.4	1.7	5.8								
Control Delay (s)	0.1	0.5	17.6	30.5								
Lane LOS	A	A	C	D								
Approach Delay (s)	0.1	0.5	17.6	30.5								
Approach LOS			C	D								
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			53.1%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)/Wilson Ave ext.

Wilson Avenue
Total (2034) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	0	8	21	0	21	0	113	7	7	113	4
Future Volume (Veh/h)	11	0	8	21	0	21	0	113	7	7	113	4
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	0	9	23	0	23	0	123	8	8	123	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)												
pX, platoon unblocked												
vC, conflicting volume	291	272	125	277	270	127	127			131		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	291	272	125	277	270	127	127			131		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	100	99	97	100	98	100			99		
cM capacity (veh/h)	642	631	926	666	633	923	1459			1454		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	21	46	131	135								
Volume Left	12	23	0	8								
Volume Right	9	23	8	4								
cSH	739	774	1459	1454								
Volume to Capacity	0.03	0.06	0.00	0.01								
Queue Length 95th (m)	0.7	1.4	0.0	0.1								
Control Delay (s)	10.0	9.9	0.0	0.5								
Lane LOS	B	A		A								
Approach Delay (s)	10.0	9.9	0.0	0.5								
Approach LOS	B	A										
Intersection Summary												
Average Delay				2.2								
Intersection Capacity Utilization				21.9%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Total (2034) - AM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	32	14	580	596	28
Future Volume (Veh/h)	25	32	14	580	596	28
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)	27	35	15	630	648	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1008	339	678			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1008	339	678			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	95	98			
cM capacity (veh/h)	233	657	910			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	62	225	420	432	246	
Volume Left	27	15	0	0	0	
Volume Right	35	0	0	0	30	
cSH	367	910	1700	1700	1700	
Volume to Capacity	0.17	0.02	0.25	0.25	0.14	
Queue Length 95th (m)	4.6	0.4	0.0	0.0	0.0	
Control Delay (s)	16.8	0.8	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	16.8	0.3		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			36.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Total (2034) - AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	421	12	18	400	1	30
Future Volume (Veh/h)	421	12	18	400	1	30
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)	458	13	20	435	1	33
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			471			464
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			471			464
tC, single (s)			4.1			6.2
tC, 2 stage (s)						
tF (s)			2.2			3.3
p0 queue free %			98			94
cM capacity (veh/h)			1091			598
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	471	455	34			
Volume Left	0	20	1			
Volume Right	13	0	33			
cSH	1700	1091	579			
Volume to Capacity	0.28	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.4			
Control Delay (s)	0.0	0.6	11.6			
Lane LOS			A		B	
Approach Delay (s)	0.0	0.6	11.6			
Approach LOS			B			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			45.7%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

Wilson Avenue
Total (2034) - AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	455	3	7	403	22	3	0	10	10	0	4
Future Volume (Veh/h)	0	455	3	7	403	22	3	0	10	10	0	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	495	3	8	438	24	3	0	11	11	0	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)												
pX, platoon unblocked												
vC, conflicting volume	462			498			966	974	496	974	964	450
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	462			498			966	974	496	974	964	450
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	98	95	100	99
cM capacity (veh/h)	1099			1066			231	250	573	226	253	609
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	498	470	14	15								
Volume Left	0	8	3	11								
Volume Right	3	24	11	4								
cSH	1099	1066	435	271								
Volume to Capacity	0.00	0.01	0.03	0.06								
Queue Length 95th (m)	0.0	0.2	0.8	1.3								
Control Delay (s)	0.0	0.2	13.5	19.1								
Lane LOS		A	B	C								
Approach Delay (s)	0.0	0.2	13.5	19.1								
Approach LOS			B	C								
Intersection Summary												
Average Delay			0.6									
Intersection Capacity Utilization			38.2%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

1: Palmer Rd & Bogart Cres (N)

Wilson Avenue
Total (2034) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	5	12	0	13	7	166	21	21	249	10
Future Volume (Veh/h)	5	0	5	12	0	13	7	166	21	21	249	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	0	5	13	0	14	8	180	23	23	271	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	544	542	276	535	536	192	282	203				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	544	542	276	535	536	192	282	203				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	99	100	99	97	100	98	99	98				
cM capacity (veh/h)	435	437	762	445	441	850	1280	1369				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	27	211	305								
Volume Left	5	13	8	23								
Volume Right	5	14	23	11								
cSH	554	591	1280	1369								
Volume to Capacity	0.02	0.05	0.01	0.02								
Queue Length 95th (m)	0.4	1.1	0.1	0.4								
Control Delay (s)	11.6	11.4	0.4	0.7								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.6	11.4	0.4	0.7								
Approach LOS	B	B										
Intersection Summary												
Average Delay	1.3											
Intersection Capacity Utilization	32.4%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

2: Sidney St & Wilson Ave

Wilson Avenue
Total (2034) - PM

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	17	26	1068	756	32
Future Volume (Veh/h)	25	17	26	1068	756	32
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)	27	18	28	1161	822	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1476	428	857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1476	428	857			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	97	96			
cM capacity (veh/h)	113	575	779			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	45	415	774	548	309	
Volume Left	27	28	0	0	0	
Volume Right	18	0	0	0	35	
cSH	166	779	1700	1700	1700	
Volume to Capacity	0.27	0.04	0.46	0.32	0.18	
Queue Length 95th (m)	7.9	0.8	0.0	0.0	0.0	
Control Delay (s)	34.5	1.1	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	34.5	0.4		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			58.2%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Tripp Ave & Moira St W

Wilson Avenue
Total (2034) - PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↘↗	
Traffic Volume (veh/h)	502	7	55	601	3	49
Future Volume (Veh/h)	502	7	55	601	3	49
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)	546	8	60	653	3	53
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			554		1323	550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			554		1323	550
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		98	90
cM capacity (veh/h)			1016		162	535
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	554	713	56			
Volume Left	0	60	3			
Volume Right	8	0	53			
cSH	1700	1016	476			
Volume to Capacity	0.33	0.06	0.12			
Queue Length 95th (m)	0.0	1.4	3.0			
Control Delay (s)	0.0	1.5	13.6			
Lane LOS		A	B			
Approach Delay (s)	0.0	1.5	13.6			
Approach LOS			B			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			74.8%	ICU Level of Service	D	
Analysis Period (min)			15			

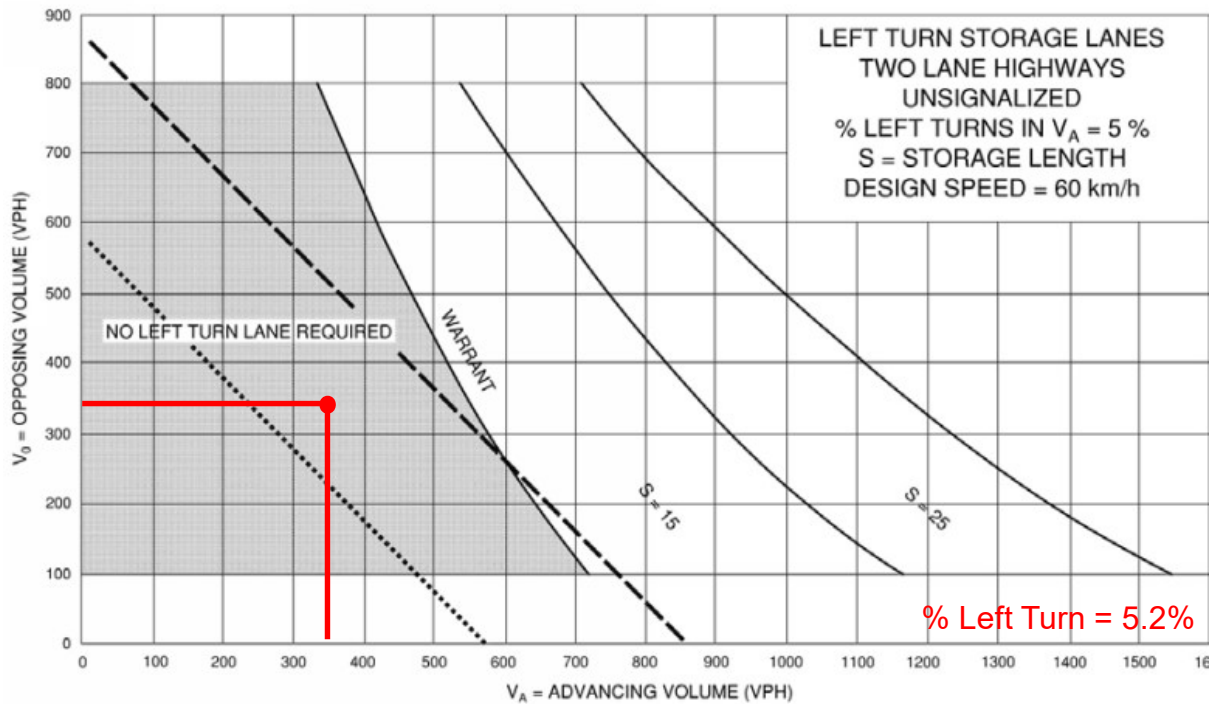
HCM Unsignalized Intersection Capacity Analysis

4: Elgin St/Driveway & Moira St W

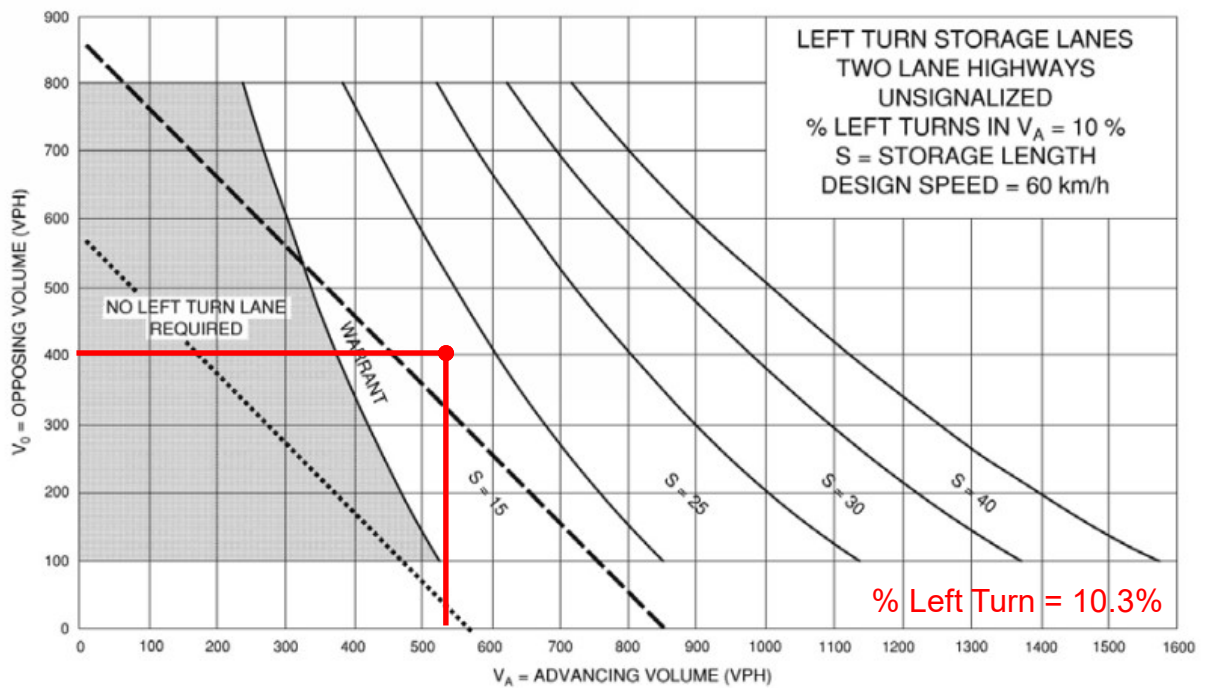
Wilson Avenue
Total (2034) - PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	602	3	16	593	41	5	0	16	22	0	12
Future Volume (Veh/h)	5	602	3	16	593	41	5	0	16	22	0	12
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	654	3	17	645	45	5	0	17	24	0	13
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	690			657			1380	1390	656	1384	1368	668
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	690			657			1380	1390	656	1384	1368	668
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			98			96	100	96	79	100	97
cM capacity (veh/h)	905			931			116	139	466	114	143	458
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	662	707	22	37								
Volume Left	5	17	5	24								
Volume Right	3	45	17	13								
cSH	905	931	276	155								
Volume to Capacity	0.01	0.02	0.08	0.24								
Queue Length 95th (m)	0.1	0.4	2.0	6.7								
Control Delay (s)	0.1	0.5	19.1	35.3								
Lane LOS	A	A	C	E								
Approach Delay (s)	0.1	0.5	19.1	35.3								
Approach LOS			C	E								
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			55.4%		ICU Level of Service				B			
Analysis Period (min)			15									

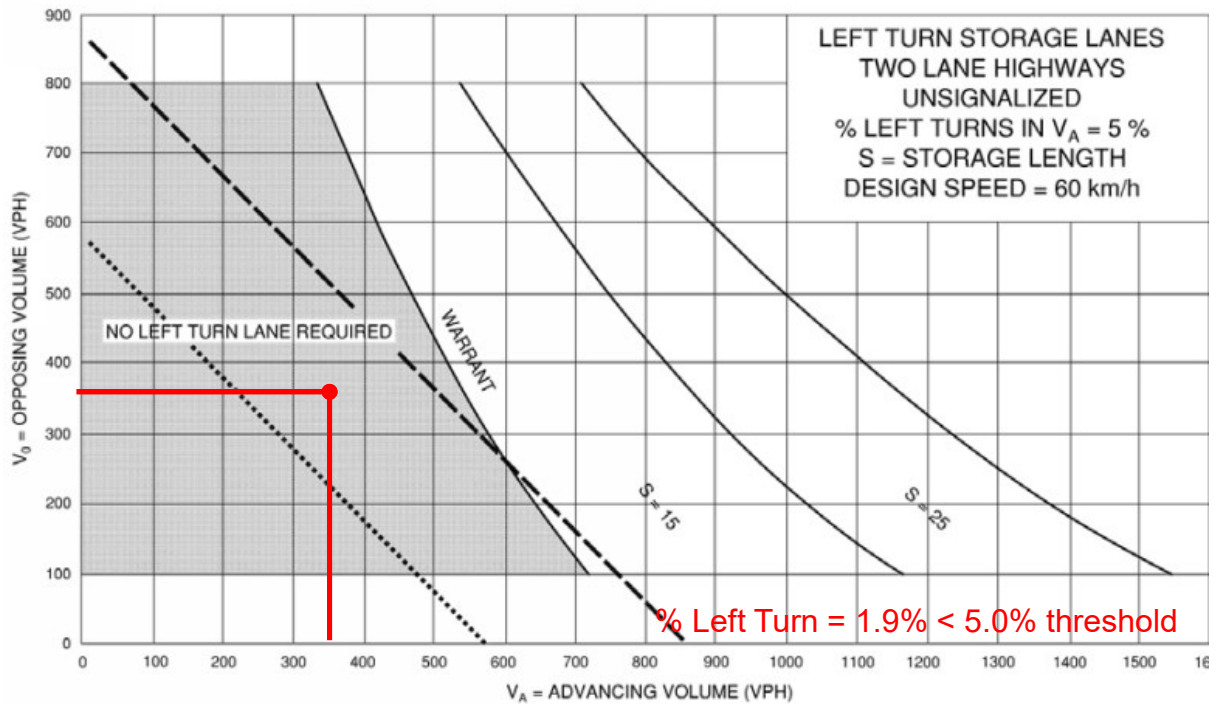
Appendix G – MTO Left Turn Analysis



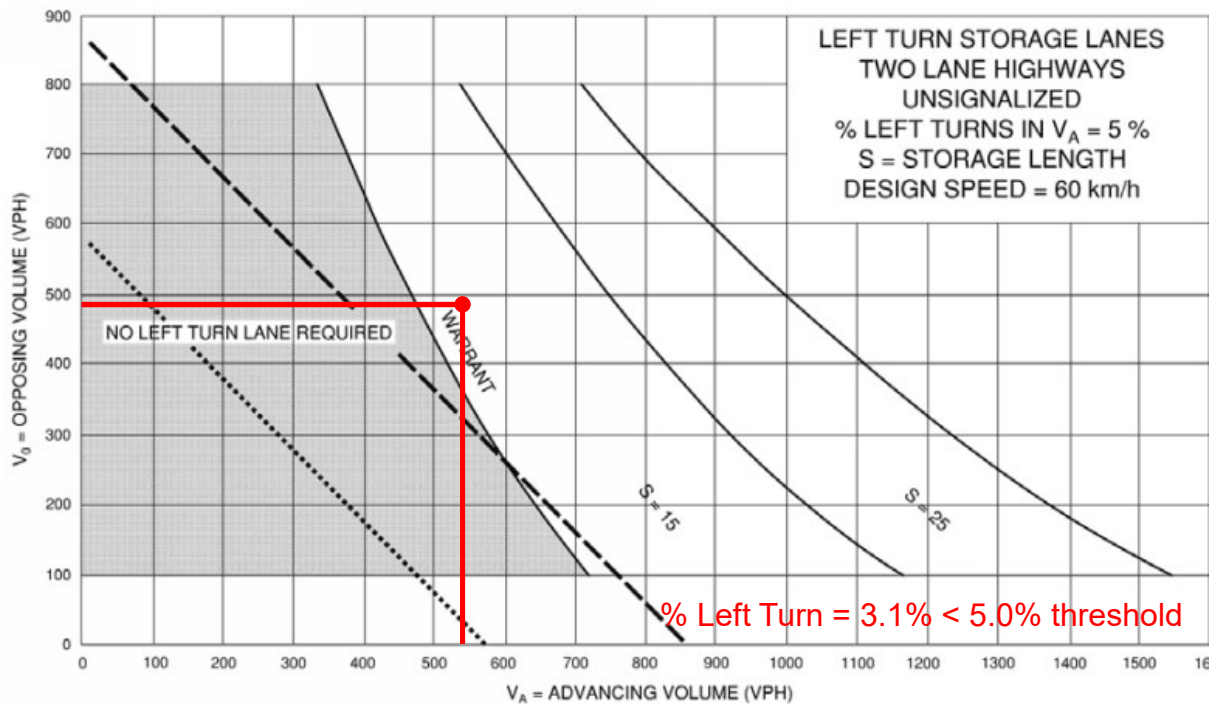
Existing (2022) AM Peak – WB on Moira St W at Tripp Ave



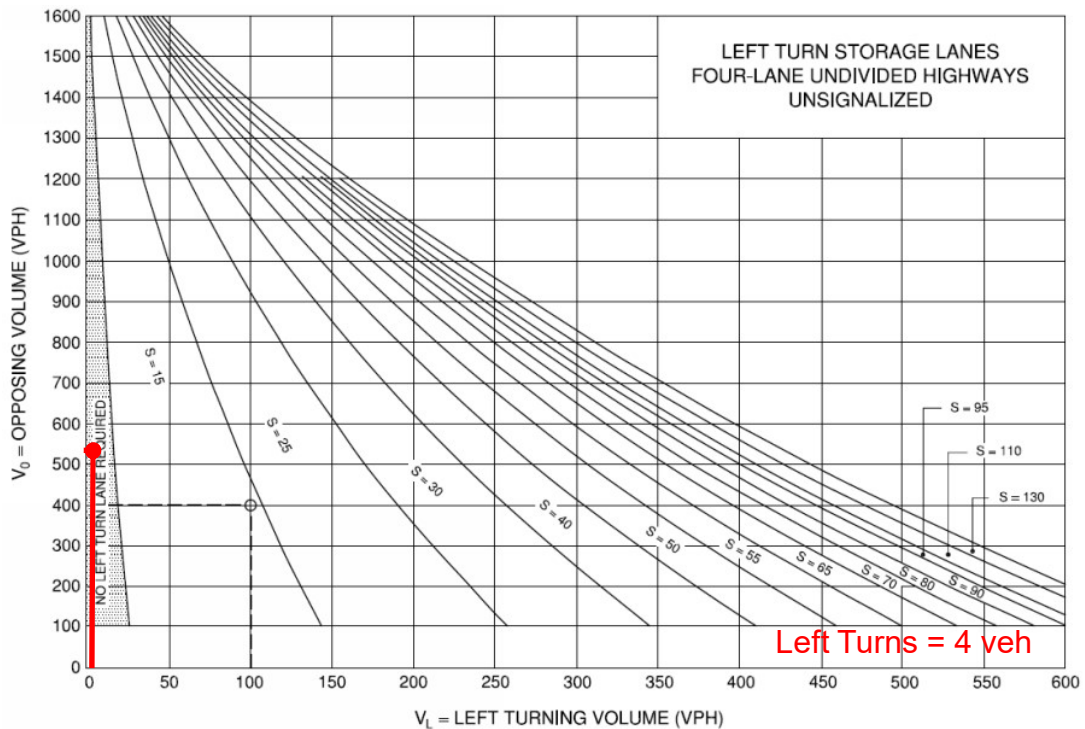
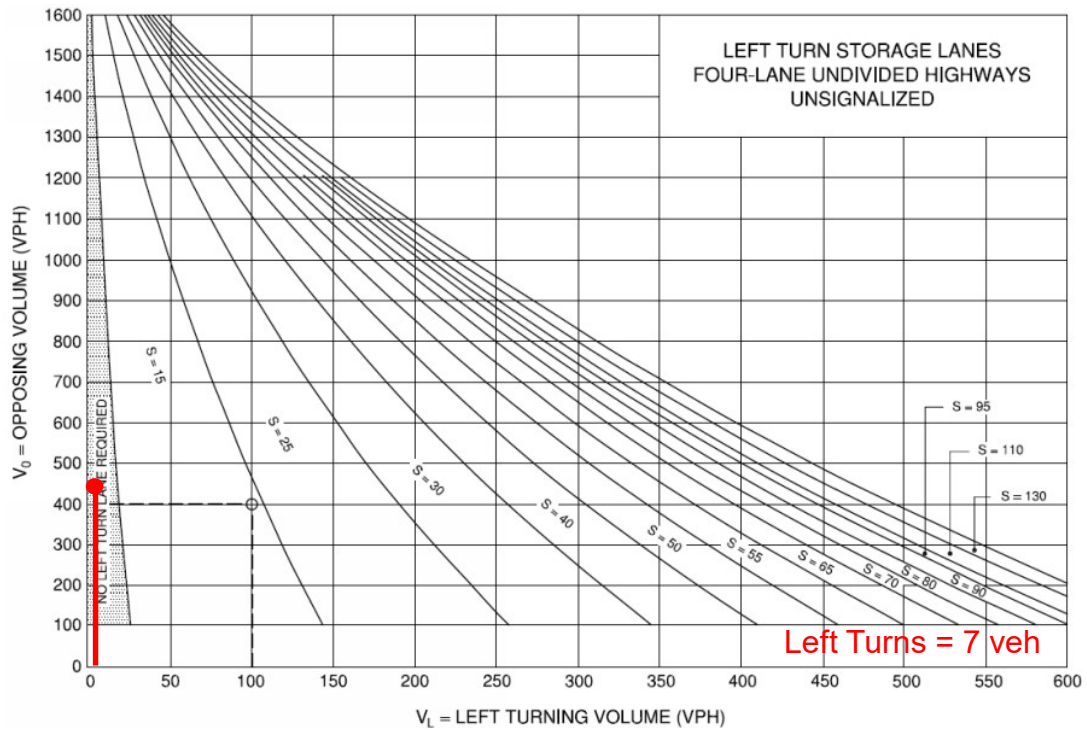
Existing (2022) PM Peak – WB on Moira St W at Tripp Ave

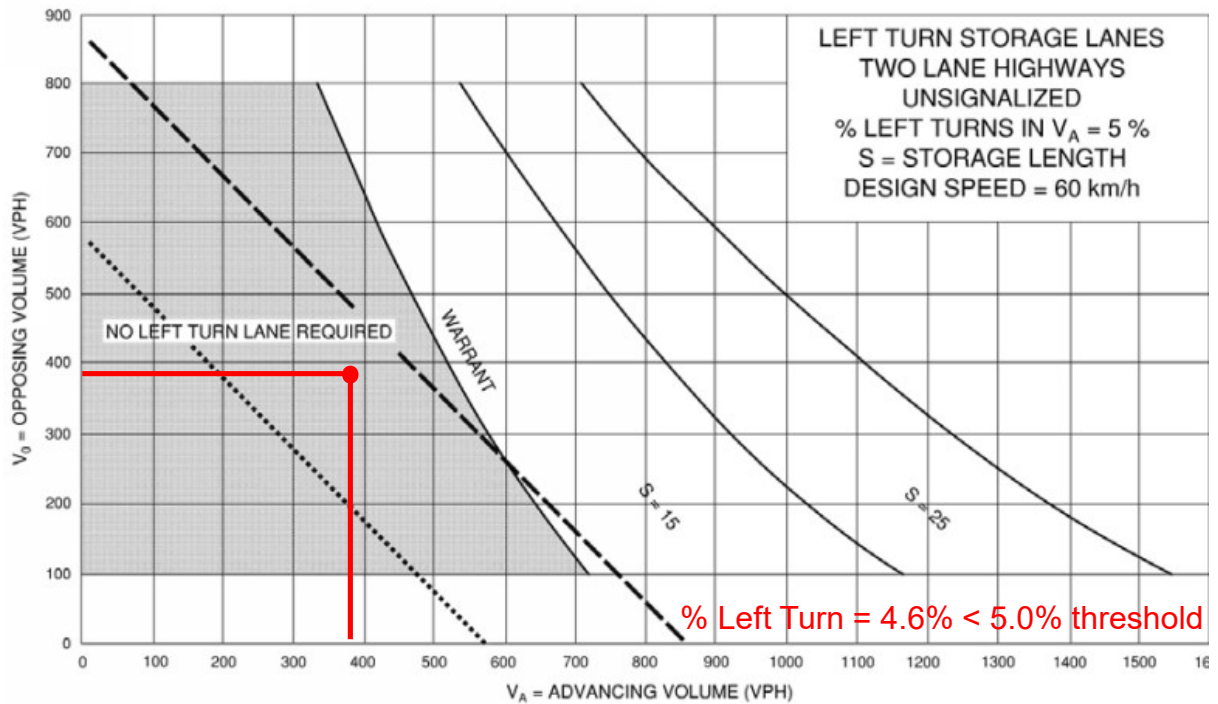


Existing (2022) AM Peak – WB on Moira St W at Elgin Ave

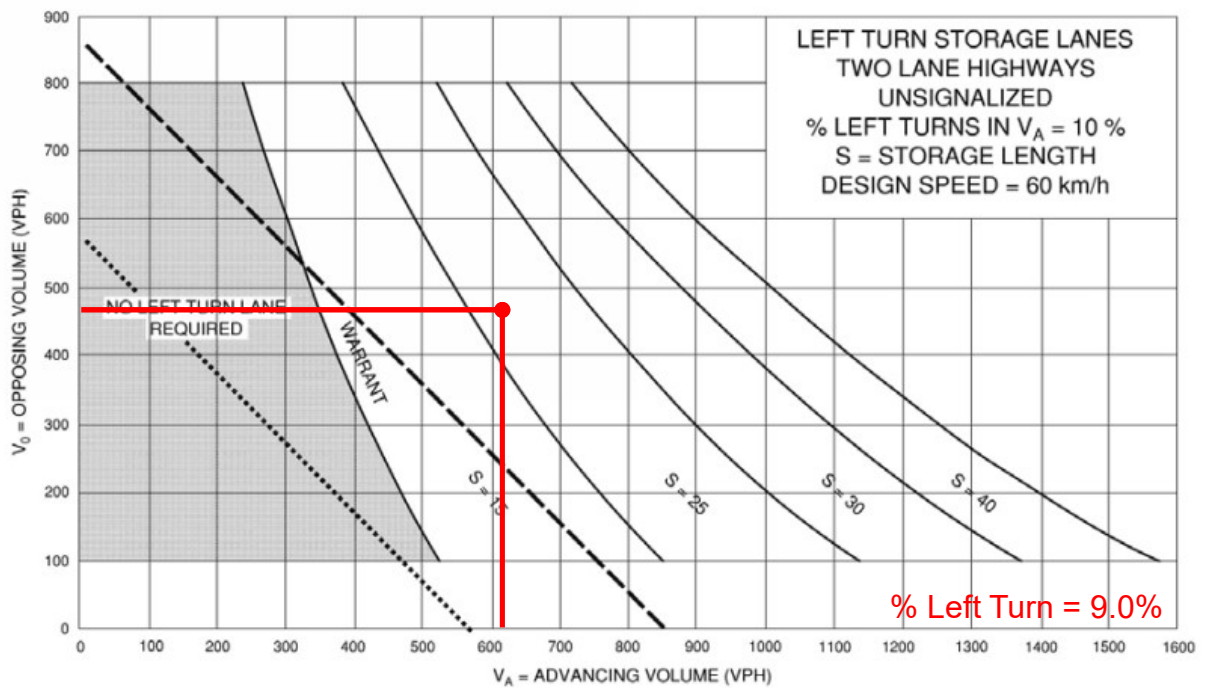


Existing (2022) PM Peak – WB on Moira St W at Elgin Ave

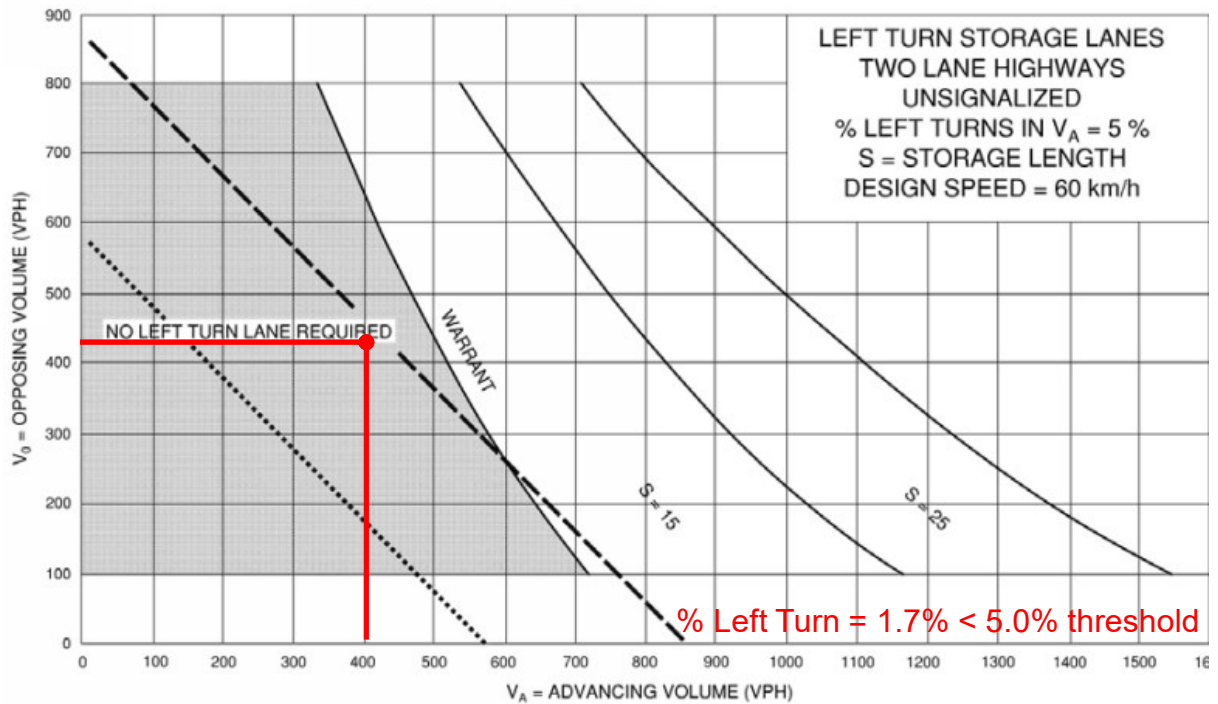




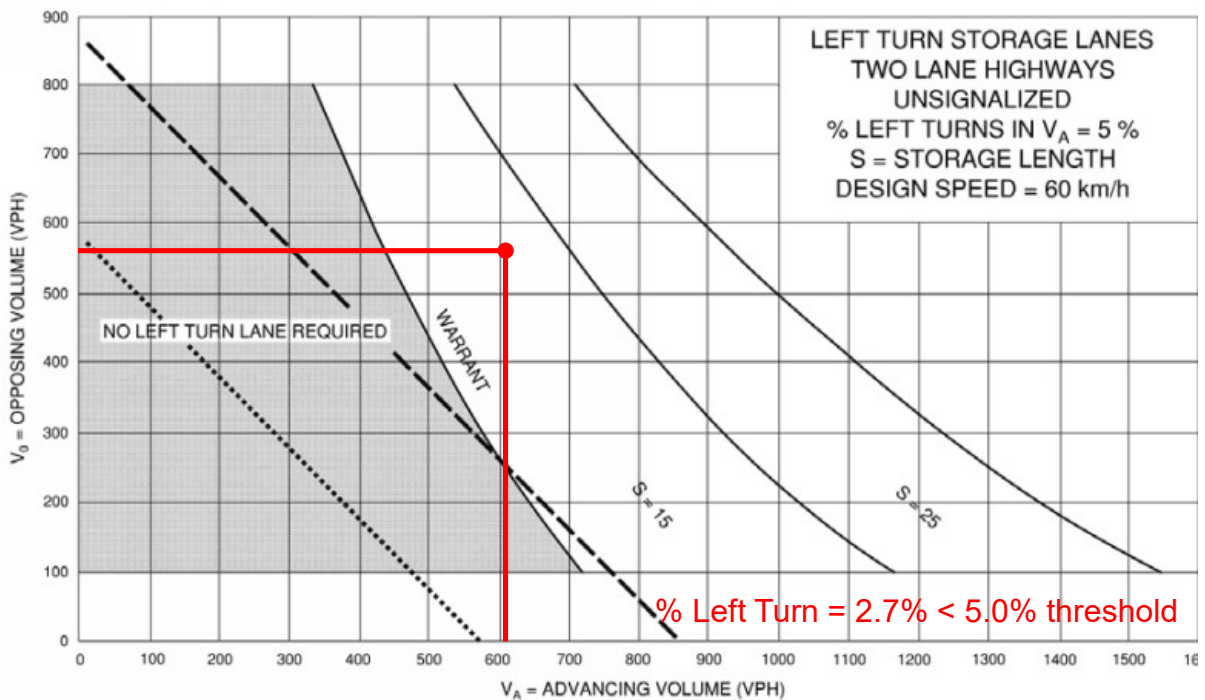
Background (2029) AM Peak – WB on Moira St W at Tripp Ave



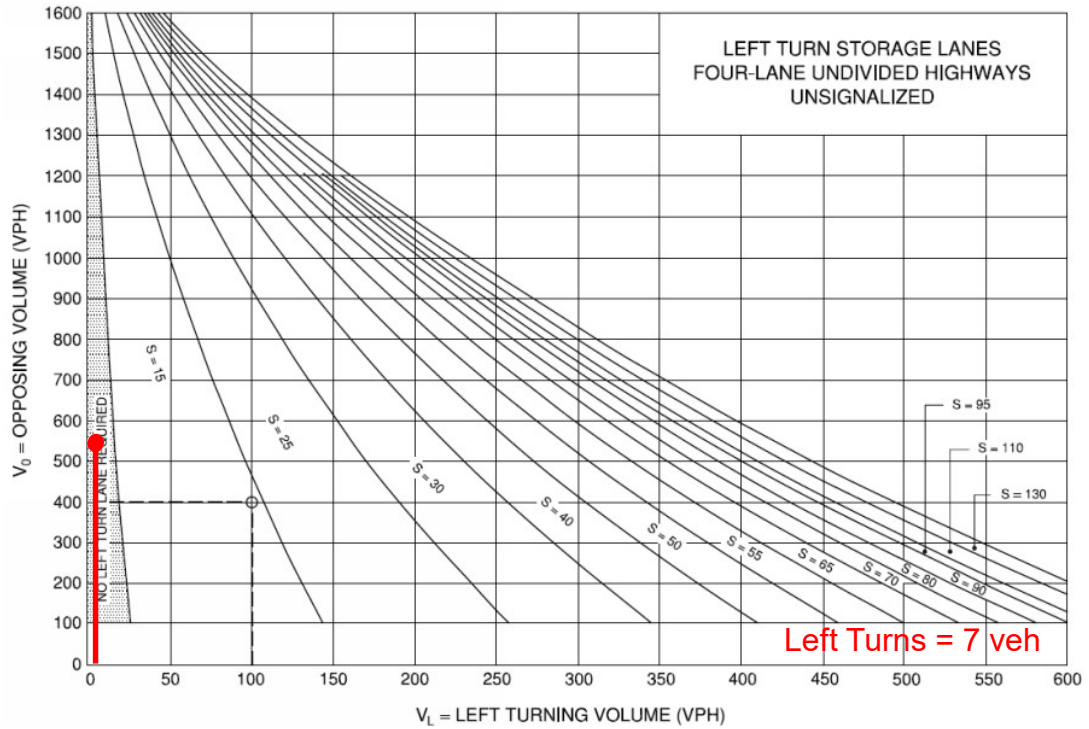
Background (2029) PM Peak – WB on Moira St W at Tripp Ave



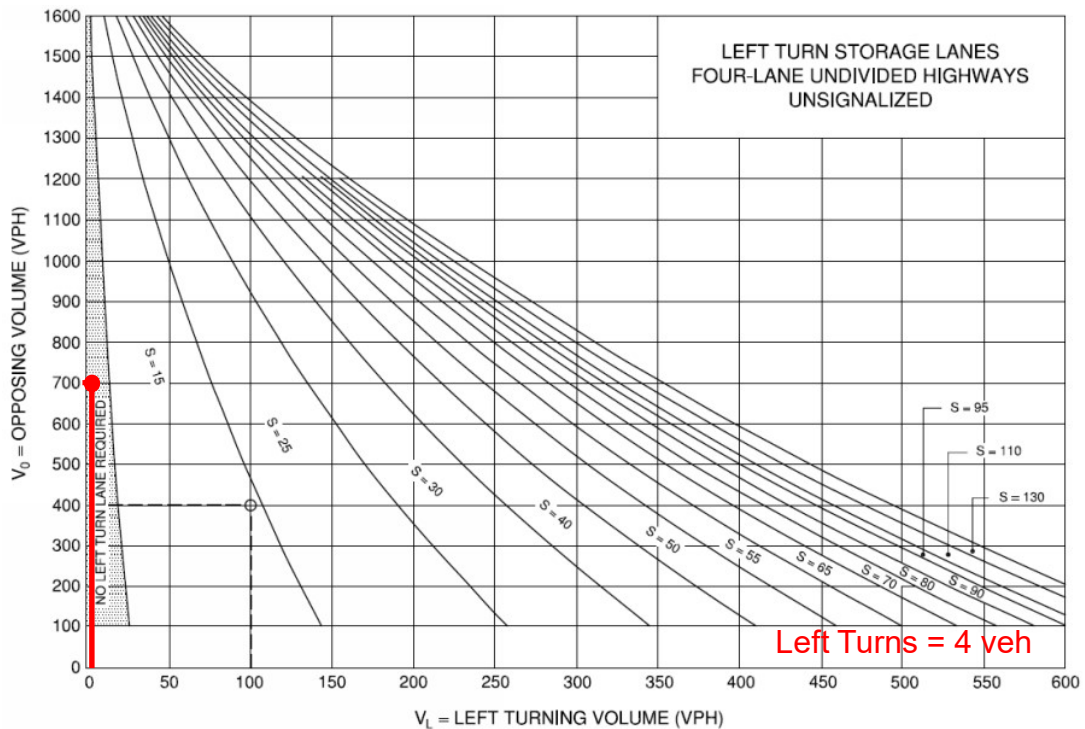
Background (2029) AM Peak – WB on Moira St W at Elgin Ave



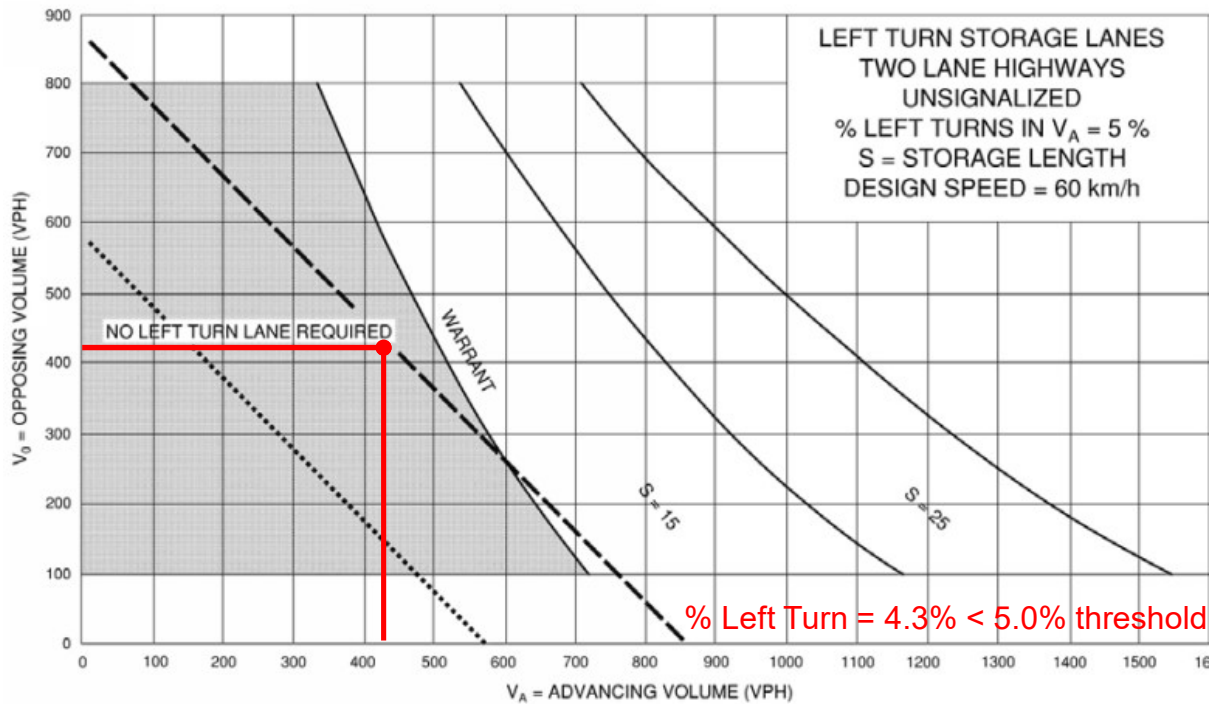
Background (2029) PM Peak – WB on Moira St W at Elgin Ave



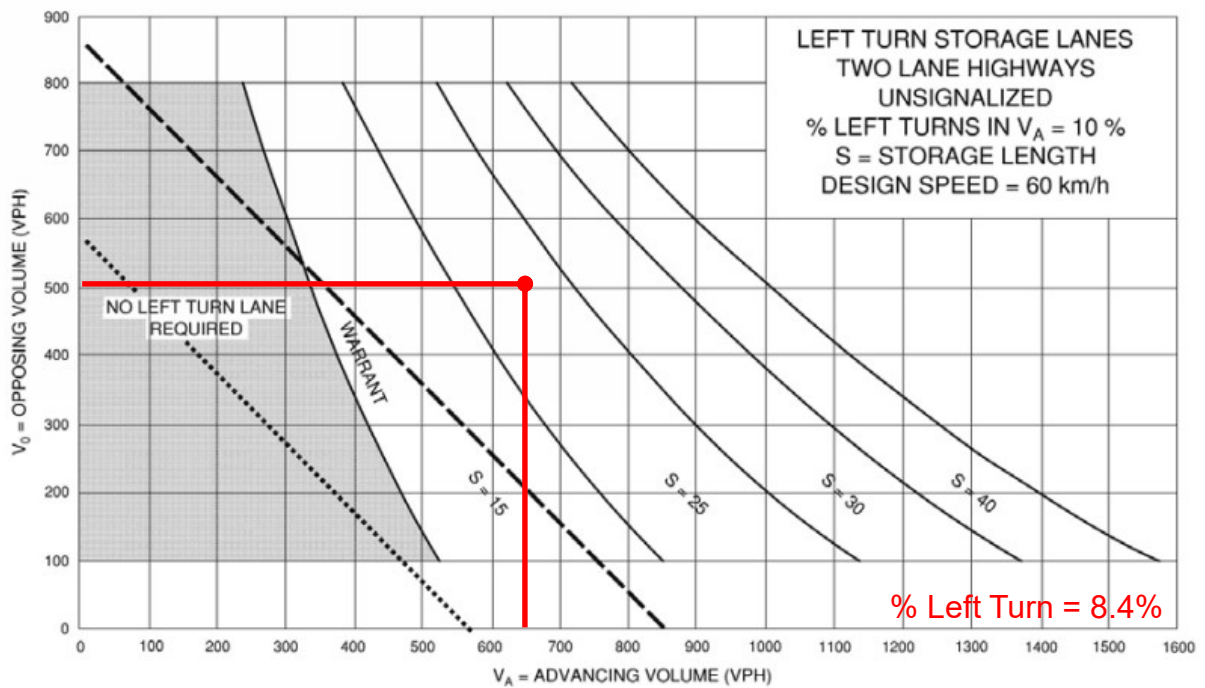
Background (2029) AM Peak – NB on Sidney Street at Wilson Ave



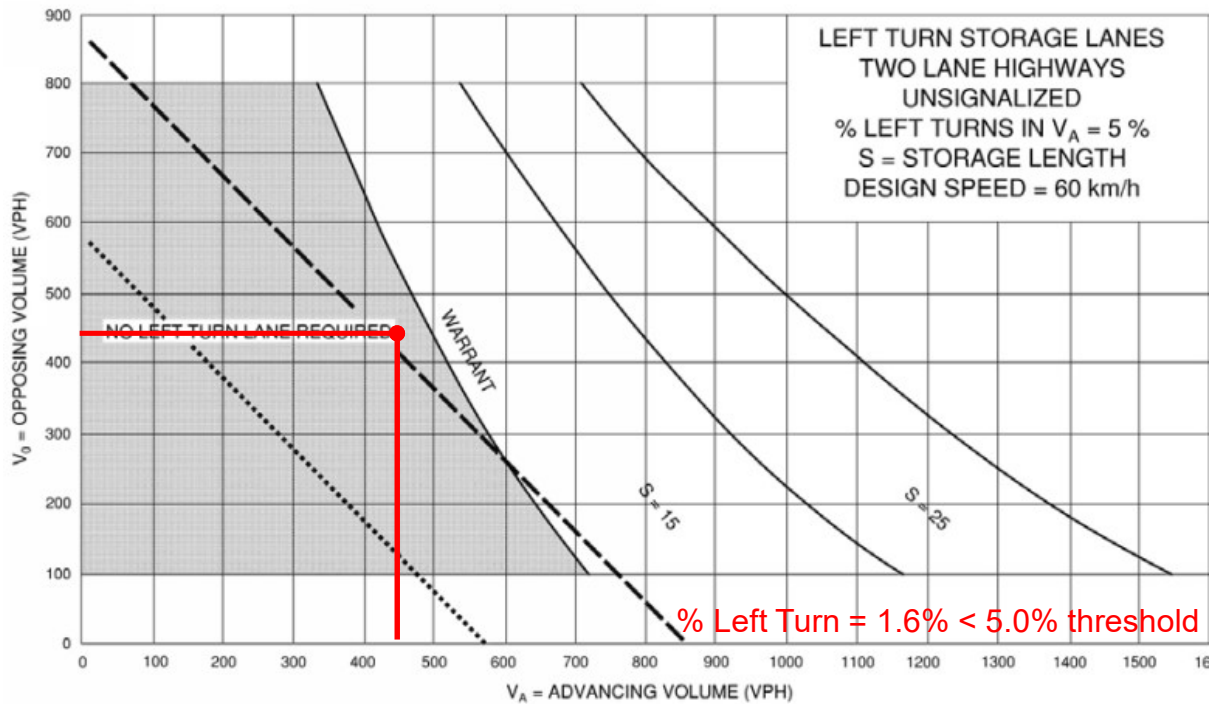
Background (2029) PM Peak – NB on Sidney Street at Wilson Ave



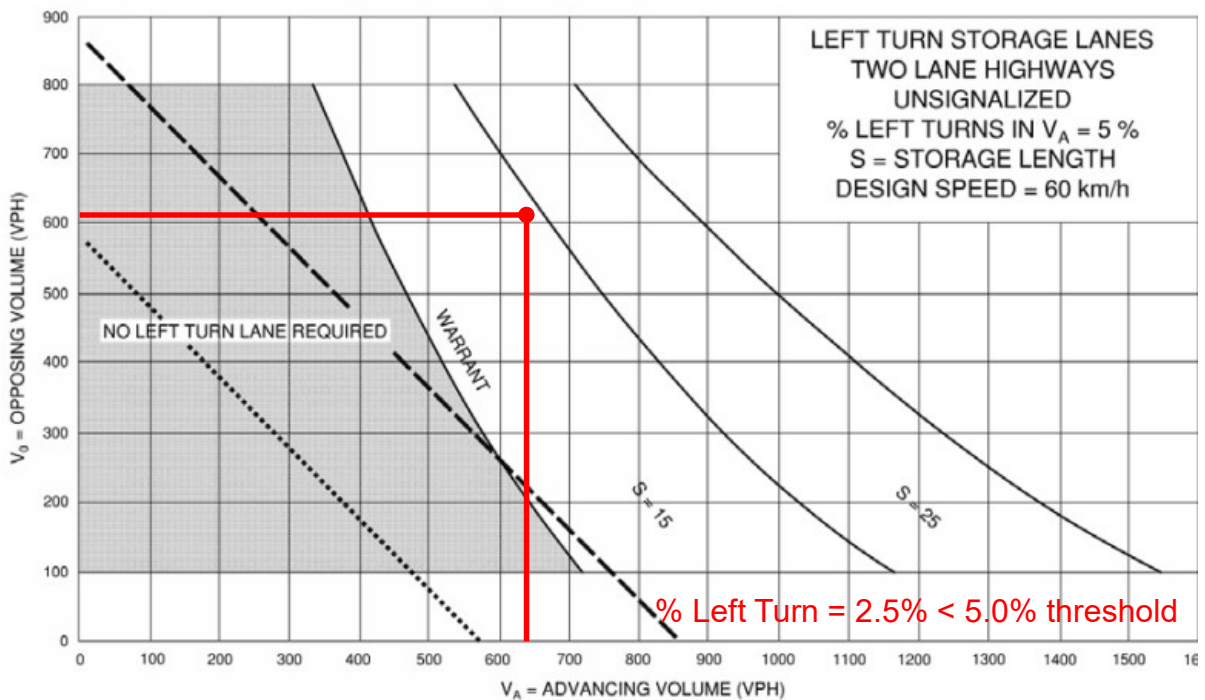
Background (2034) AM Peak – WB on Moira St W at Tripp Ave



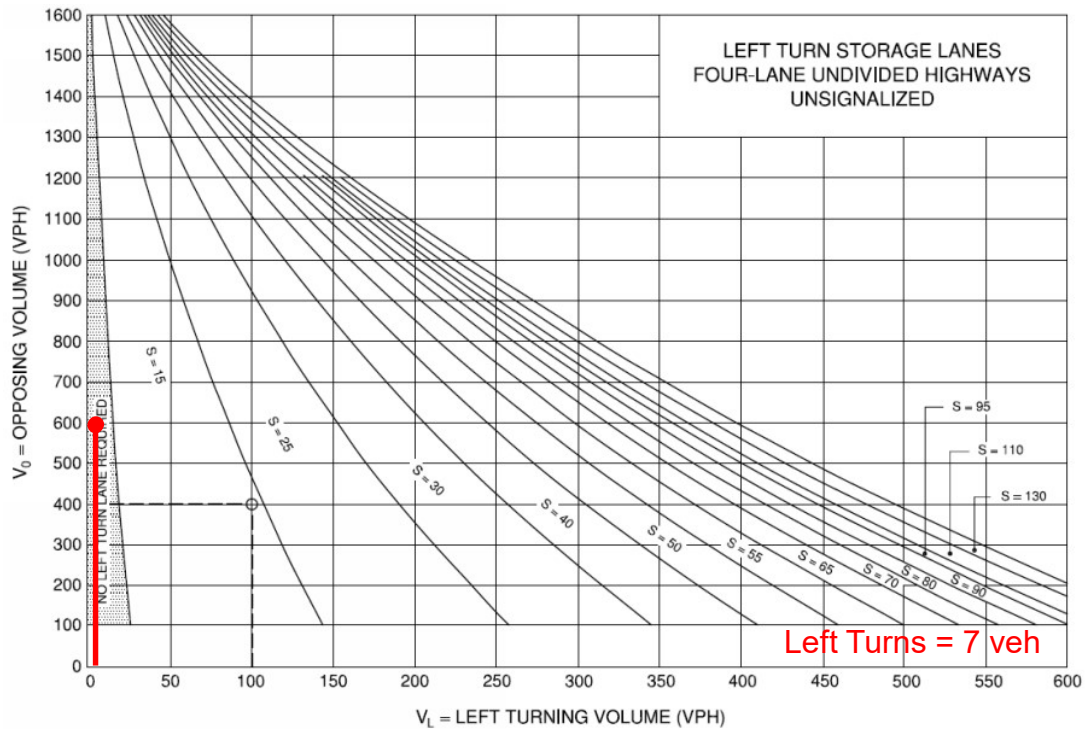
Background (2034) PM Peak – WB on Moira St W at Tripp Ave



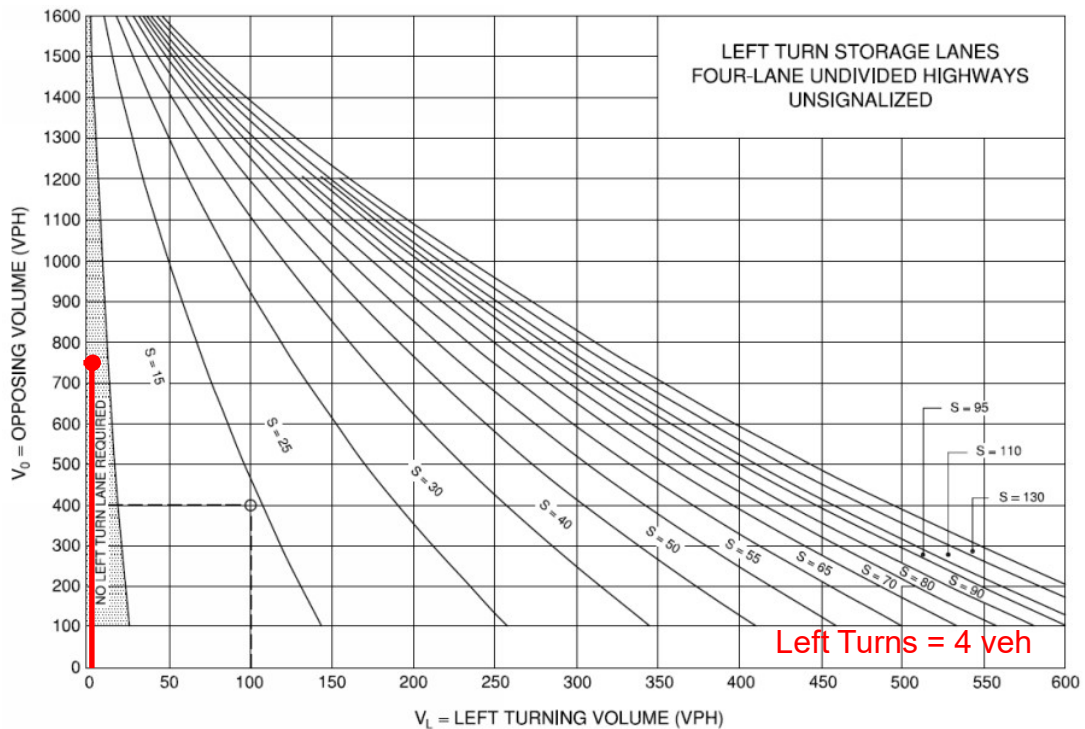
Background (2034) AM Peak – WB on Moira St W at Elgin Ave



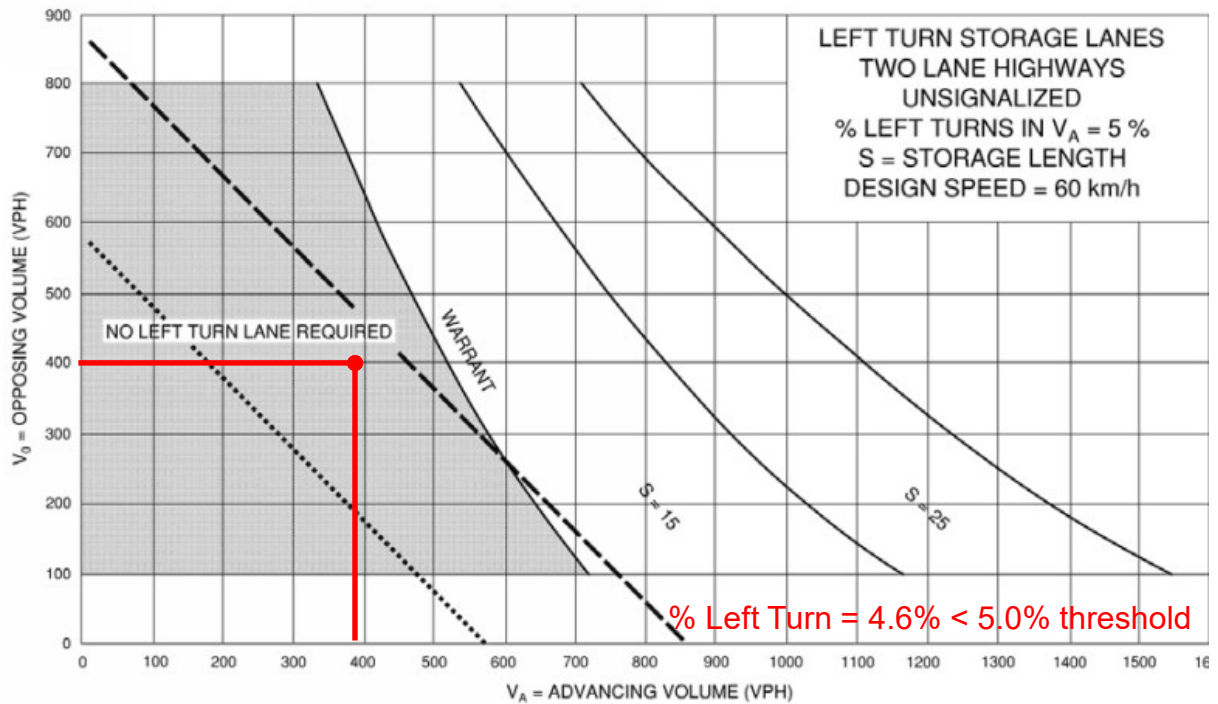
Background (2034) PM Peak – WB on Moira St W at Elgin Ave



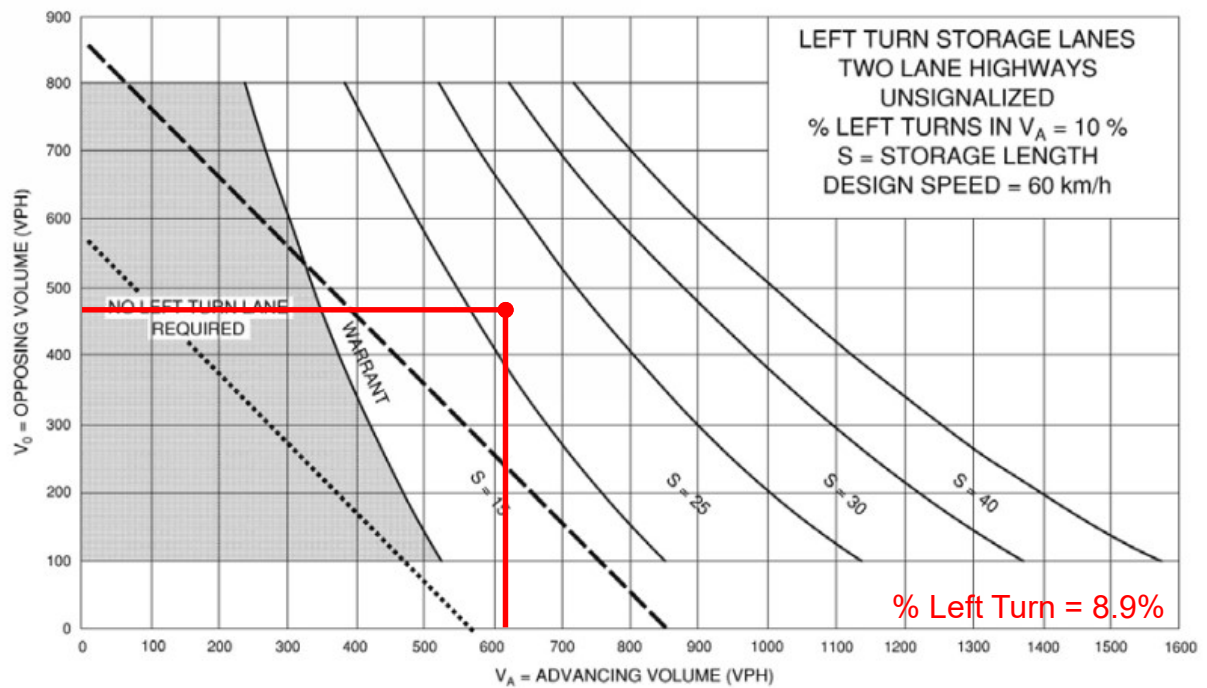
Background (2033) AM Peak – NB on Sidney Street at Wilson Ave



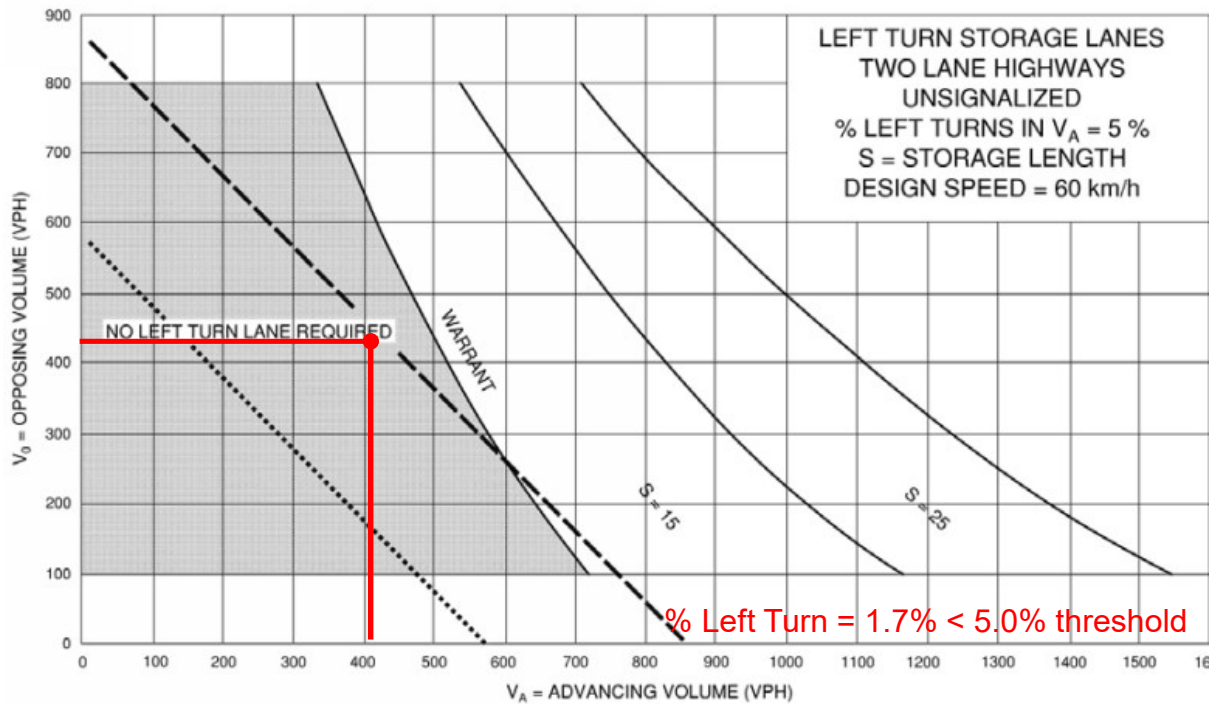
Background (2033) PM Peak – NB on Sidney Street at Wilson Ave



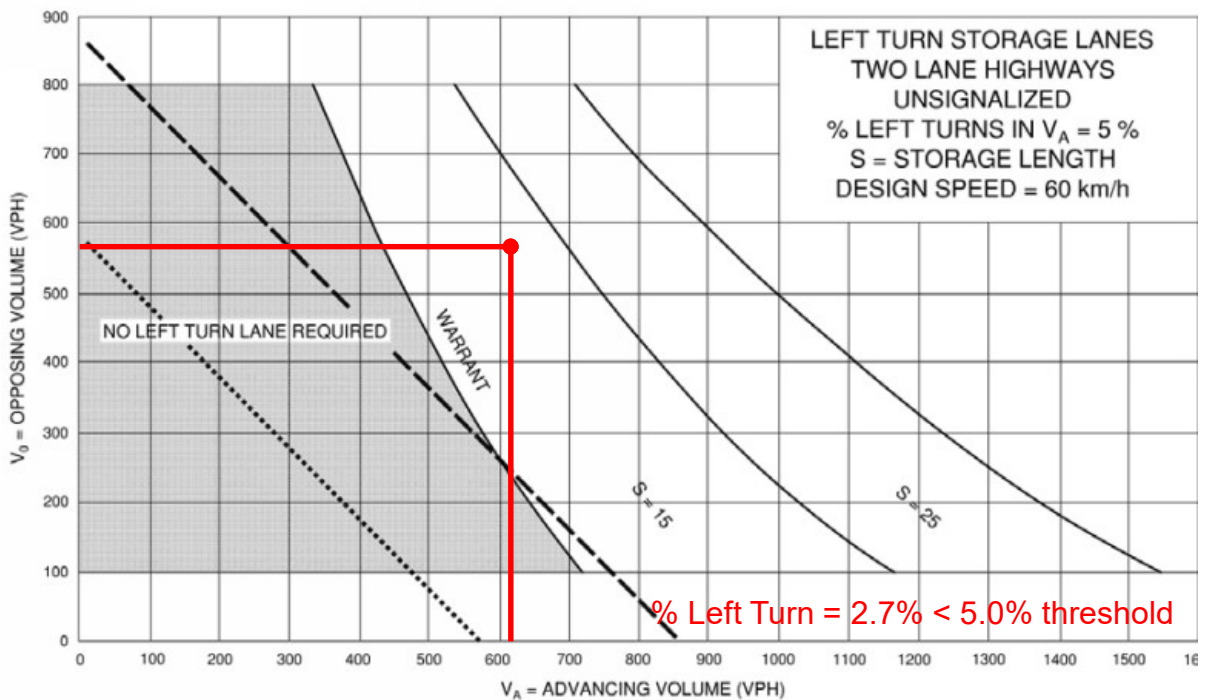
Total (2029) AM Peak – WB on Moira St W at Tripp Ave



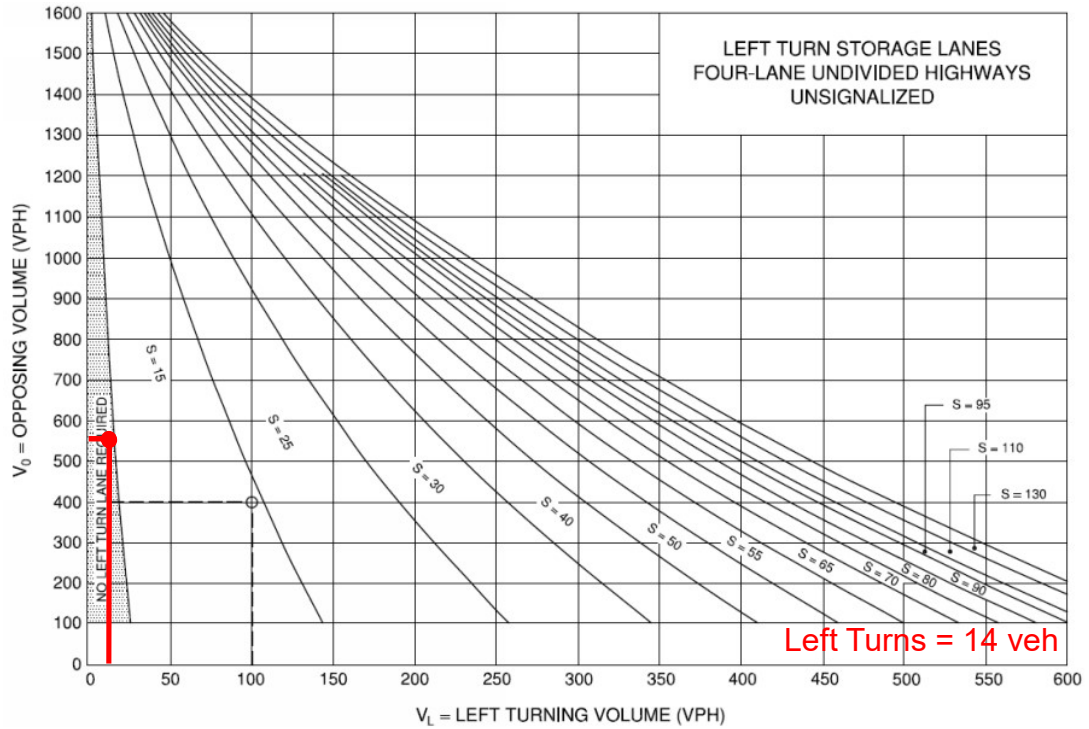
Total (2029) PM Peak – WB on Moira St W at Tripp Ave



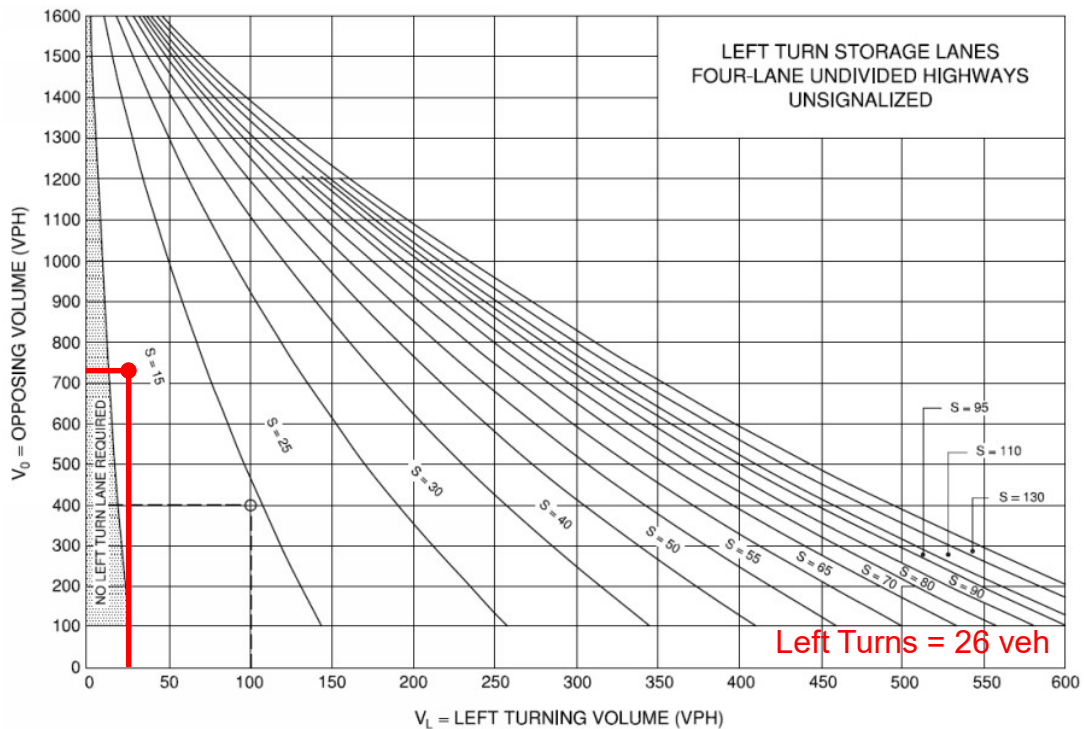
Total (2029) AM Peak – WB on Moira St W at Elgin Ave



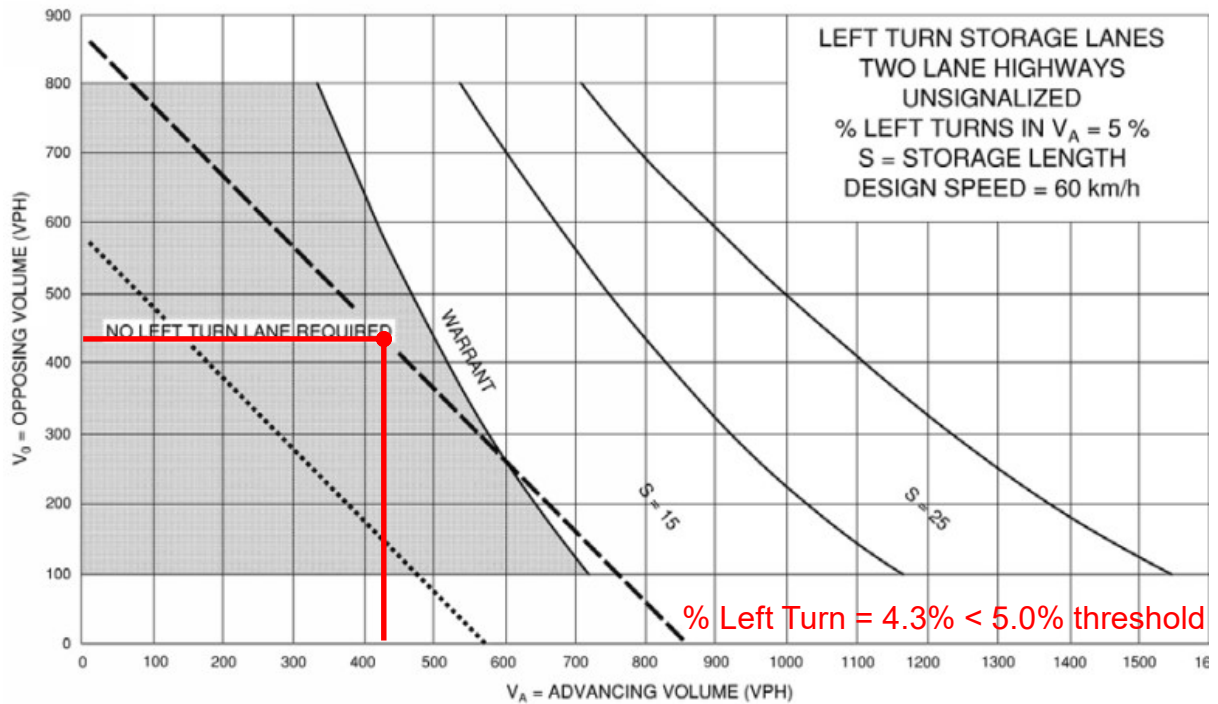
Total (2029) PM Peak – WB on Moira St W at Elgin Ave



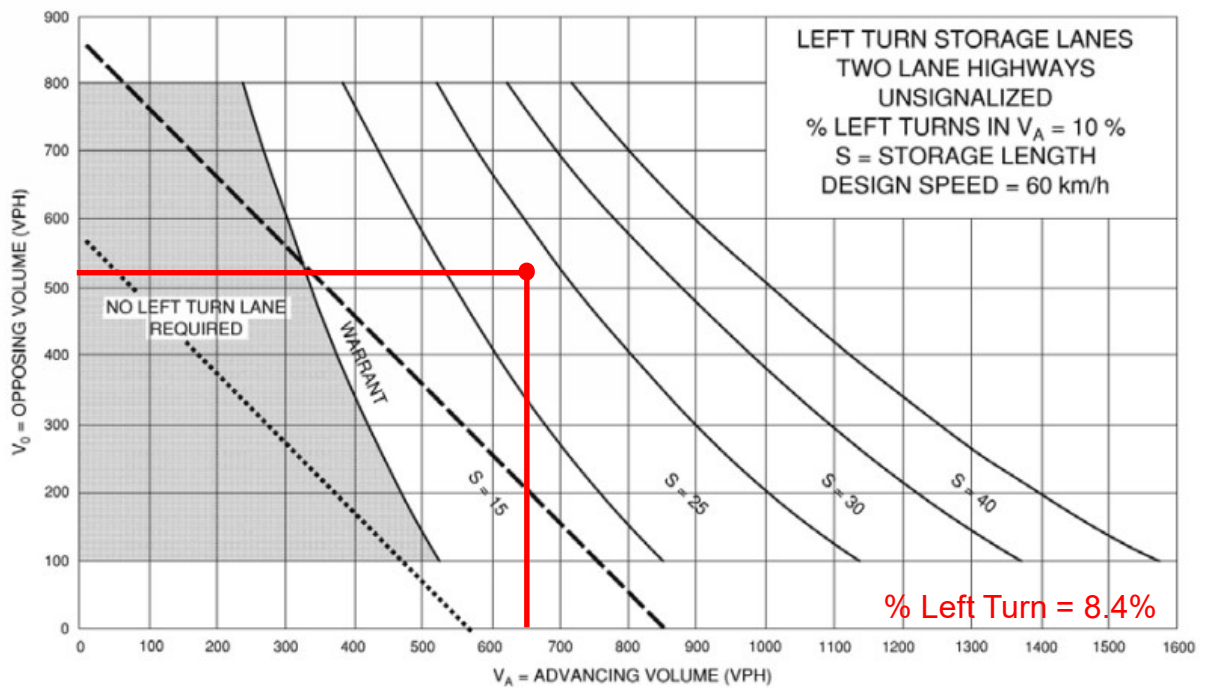
Total (2029) AM Peak – NB on Sidney Street at Wilson Ave



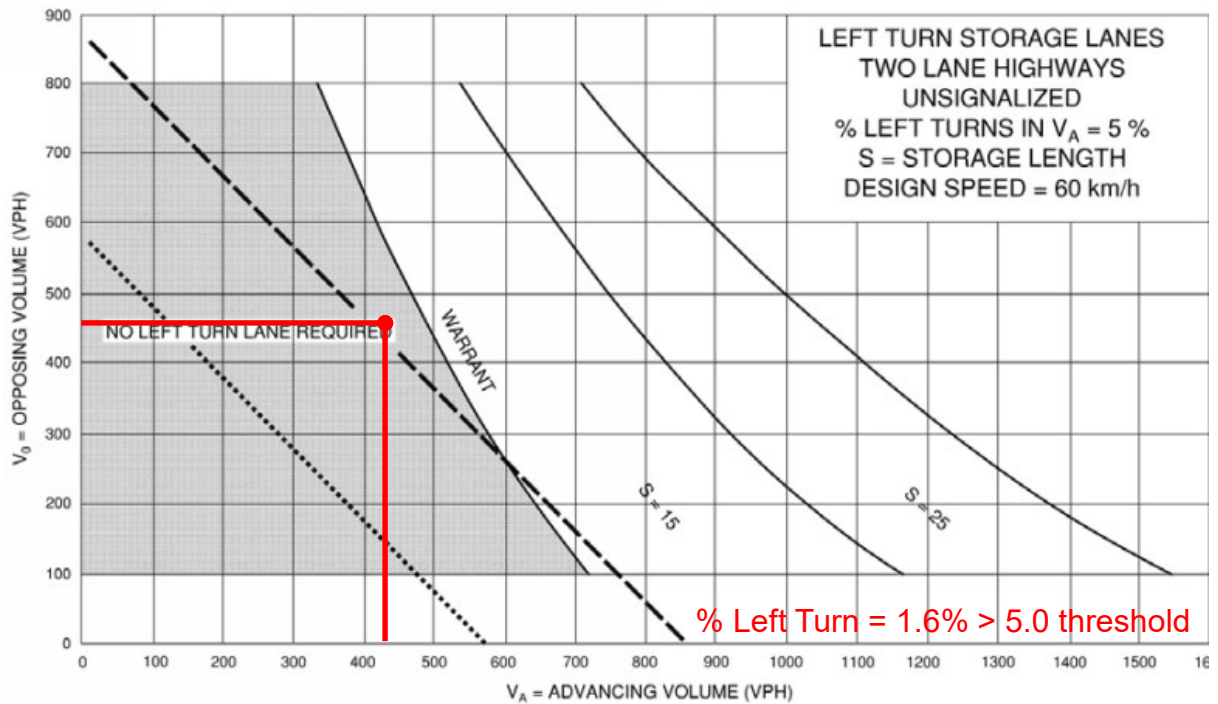
Total (2029) PM Peak – NB on Sidney Street at Wilson Ave



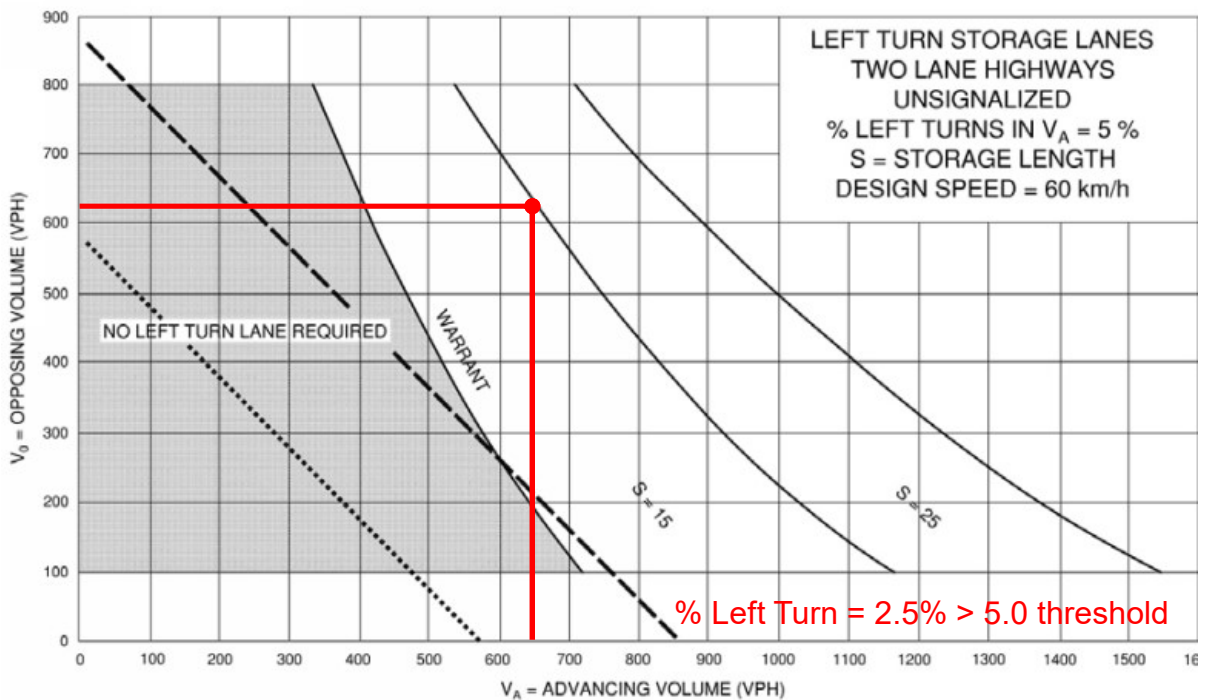
Total (2034) AM Peak – WB on Moira St W at Tripp Ave



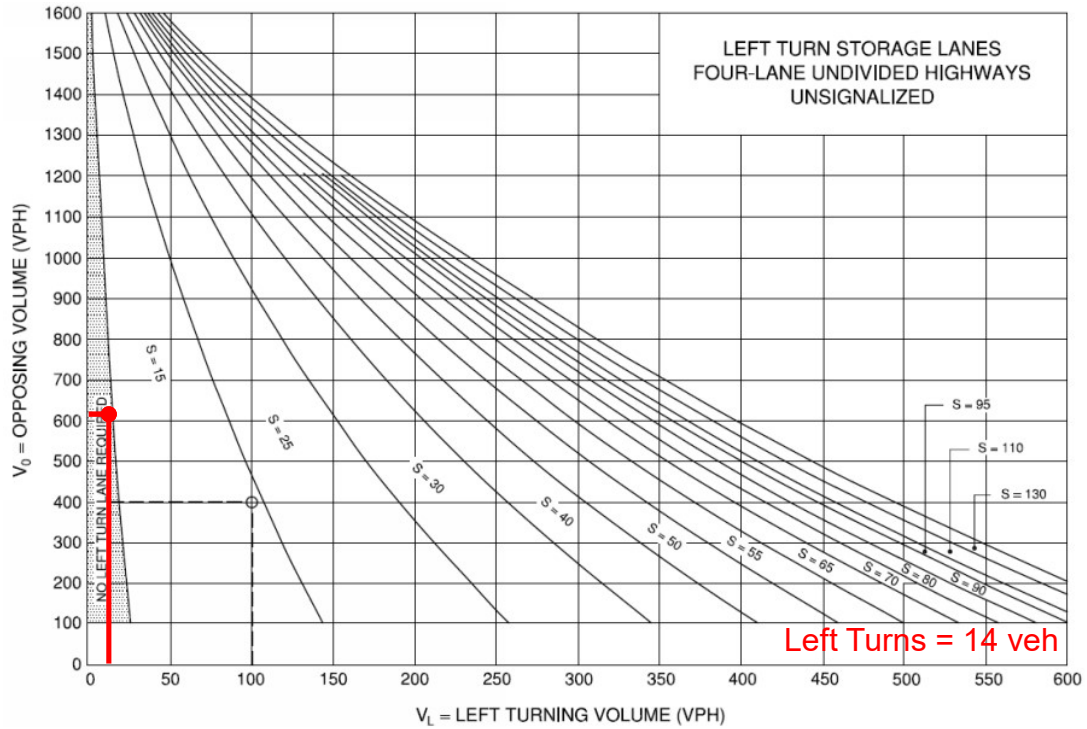
Total (2034) PM Peak – WB on Moira St W at Tripp Ave



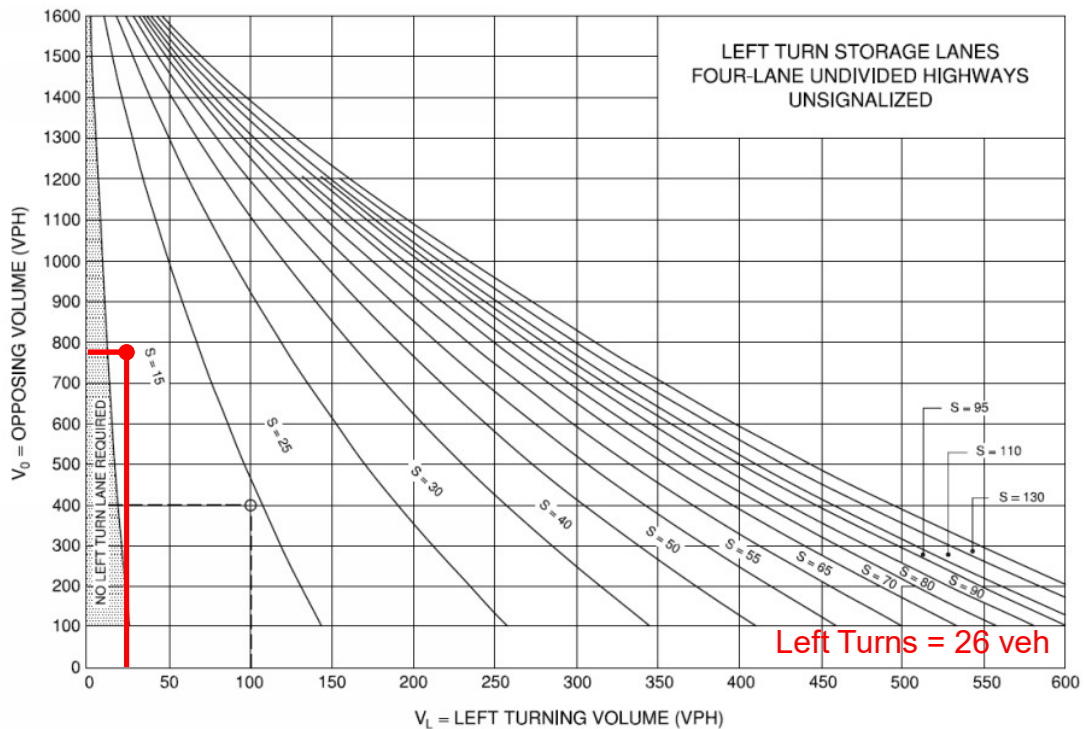
Total (2034) AM Peak – WB on Moira St W at Elgin Ave



Total (2034) PM Peak – WB on Moira St W at Elgin Ave



Total (2033) AM Peak – NB on Sidney Street at Wilson Ave



Total (2033) PM Peak – NB on Sidney Street at Wilson Ave

Appendix H – OTM Signal Justification Sheets

Justification No. 7 - Total (2034) Traffic

Moir St W / Trip Ave

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Rest. Flow	Numerical			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	523	73%	7%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	255	21	8%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	720	499	69%	1%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	75	1	1%		NO	NO

Justification No. 7 - Total (2034) Traffic

Moir St W / Elgin St

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Rest. Flow	Numerical			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	720	558	78%	7%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	255	21	8%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	720	520	72%	11%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	75	10	13%		NO	NO

Justification No. 7 - Total (2034) Traffic

Sidney St / Wilson Ave

Justification	Description		Compliance			Signal Warrant	Underground Provisions Warrant
			Sectional		Entire %		
			Rest. Flow	Numerical			
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	900	800	89%	8%	NO	NO
	B. Vehicle volume, along minor streets (average hour)	255	25	10%		NO	NO
2. Delay to cross traffic	A. Vehicle volume, major street (average hour)	900	760	84%	6%	NO	NO
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	170	13	7%		NO	NO