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TRAFFIC IMPACT STUDY

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WINDSOR, ONTARIO**

PROJECT NO. 22-070

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1.0 INTRODUCTION

1.1 Background

Baird AE has been retained to prepare a Traffic Impact Assessment in support of a proposed residential development at 0 Richmond Street in the City of Windsor. The proposed development will have Semi-detached houses and townhouses.

The site is bounded by Walker Road and commercial development to the west, Saint Luke Road to the east, Richmond Street to the north, industrial development to the south.

One access will be provided to the site from Richmond Street. The development is anticipated to be completed in 2027.

The traffic flow from development is predicted to produce 542 daily vehicles, 33 morning vehicles and 52 evening peak vehicles.



Exhibit 1 - Location Plan

1.2 Proposed Development

As illustrated in the site plan (Appendix A), the proposed development is approximately 2.12 hectares (ha) in size. The existing commercial building which will be removed. The proposed development will consist of 52 Semi-detached houses, 18 townhomes, and roads.

1.3 Scope

The proposed development is anticipated to be built in 2027. Therefore, future horizon periods (conditions) are established as part of this study are:

- 2027 Future Condition
- 2032 Future Condition – 5-year horizon
- 2037 Future Condition – 10-year horizon

The study has considered the impacts of site generated traffic at the following intersections:

- Saint Luke Road and Richmond Street
- Walker Road and Wyandotte Street
- Richmond Street and Walker Road
- Richmond Street and Drouillard Street

1.4 Analysis Methodology

A transportation analysis was completed to determine the intersection's existing and future operating conditions and individual turning movements. The operational analyses were primarily based on procedures set out in the Highway Capacity Manual (2010) with the assistance of Synchro 10. Several performance measures are used in the analysis of signalized and unsignalized intersections, including the following:

- Level of Service (LOS) – a measure of the average vehicle delay experienced by the motorists attempting to travel through the intersection. LOS is measured from “A” to “F” with peak hour LOS in the “A” to “D” range being considered acceptable by most and a LOS of F representing unacceptable delays;
- Delay – the additional travel time experienced by a driver compared to free-flow conditions; and
- Queue Lengths – the Synchro Software measures both the 50th percentile and 95th percentile maximum queue lengths. The 50th percentile queue (the median) is the

maximum back of queue length during a typical traffic cycle. The 95th percentile queue is the maximum back of queue length during a typical traffic cycle with 95th percentile traffic volumes. The 95th percentile queue measures the queue length that 95 percent of the sample lies below. The 95th percentile critical queue lengths were identified for movements where the queue surpassed the estimated length of the storage bay.

These measures provide an indication of delay and the number of vehicles that can be accommodated through an intersection.

2.0 EXISTING CONDITION

2.1 Road Network Characteristics

The existing road network, lane configuration and existing traffic control for the study area are shown in Exhibit 2 and the details are described below:

Walker Road is a north-south two-lane collector roadway extending from Riverside Drive East to Provincial Road. It has a posted 50 km/h speed limit. It is signal controlled on its approach to the intersection with Wyandotte Street.

Saint Luke Road is the two-lane urban north-south local roadway with a posted speed limit of 50 km/h in close proximity to the development. The road ends 100m north of Wyandotte Street.

Richmond Street is an east-west two-lane local roadway with a posted 50 km/h speed limit. It is stop-controlled on its approach to the intersection with Walker Road.

Wyandotte Street is an east-west four-lane arterial roadway with a posted 50 km/h speed limit. It is signal-controlled on its approach to the intersection with Walker Road.

Drouillard Road is the two-lane urban north-south local roadway with a posted speed limit of 50 km/h in close proximity to the development. The road connects Riverside Dr. from the north to Tecumseh Rd. to the south.

2.2 Key Existing Intersections

Following are the key intersections within the vicinity of development:

Walker Road and Wyandotte Street The Intersection at Walker Road and Wyandotte street is a Signalized cross intersection. Exclusive left-turn lanes are provided on both the roads at the intersection. However, through lane are shared with right turn lane for Wyandotte Street as well as for Walker Road. Wyandotte street is a double lane street in both directions. Walker road is a single lane road for each direction.

Richmond Street and Drouillard Street The intersection of Richmond Street with Drouillard Street is a 4-leg unsignalized intersection. All approaches have one left/through/right shared lane. The intersection is controlled by a STOP sign on Richmond Street.

Walker Road and Richmond Street

The intersection of Walker Road with Richmond Street is a 3-leg unsignalized intersection. An exclusive left-turn lane and through lane are provided for southbound and westbound traffic. The north approach lane consists of one shared through/right-turning lane. The intersection is controlled by a STOP sign on Richmond Street.

Richmond Street and St Luke Road

The intersection of Richmond Street with St. Luke Road is a 4-leg unsignalized intersection. All approaches have one left/through/right shared lane. The intersection is controlled by a STOP sign on St. Luke Road.

2.3 Existing Traffic Volumes

A recent traffic count was obtained from the City of Windsor for the intersection of Walker Road with Wyandotte Street and Richmond Street. Counts were conducted in year 2023 and 2024.

A traffic count was also conducted by sub-consultant Pyramid Traffic Inc. for the intersection of Richmond Street with St Luke Road and Drouillard Street, dated April 16, 2025.

The traffic counts and other relevant data are included in Appendix A.

3.0 FUTURE CONDITION

3.1 Growth Rate

The growth rate information was obtained from the Windsor Area Long Range Transportation Study (WALTS) traffic growth chart. Based on the chart, 20-year traffic growth (2.17 traffic volume 1997 and 2.22 traffic volume 2017) is approximately 1.1%; hence a conservative growth rate of 3% per year was assumed to reflect growth in background traffic volumes. The projected traffic volumes are provided in Appendix B.

3.2 Future Background Development

The development is located in an urban area surrounded by industries, restaurants and local residences. Based on a recent visit, there are no proposed developments in close proximity to the site.

4.0 DEVELOPMENT TRAFFIC

This section will describe the development accesses, trip generation, trip distribution and ultimate peak hour traffic.

4.1 Description of Project

As shown in the site plan (Appendix A), the development is approximately 2.12ha and consist of residential buildings, which will include semi-detached houses and townhouses. The residential portion will include 51 townhouses and 24 semi-detached homes. It is assumed that the development will be constructed by 2027 and generate 542 daily vehicles, 33 morning vehicles and 52 evening peak vehicles.

4.2 Development Access

There will only be one development access provided from Richmond Street.

4.3 Trip Generation

The number of vehicle trips anticipated to be generated by the proposed development was calculated based on trip generation rates published by The Institution of Transportation Engineers (ITE) Trip Generation 10th Edition. For the residential section, ITE Code 210 (Single-Family Detached Housing) is used for Semi-detached houses and ITE Code 230 (Townhomes) for townhouses.

Description of Land use, ITE codes, unit sizes, trip generation rates and trip generations for daily and peak hours are provided in Table 1. Appendix B provides detailed calculations and all relevant charts.

Table 1: Trip Generation

Use	ITE	Units /Area	AADT	Trip Generated			
				AM Hour		PM Hour	
				In	Out	In	Out
Residential							
Semi-detached	210	24 units	228	5	14	15	9
Townhouses	230	51 units	314	4	20	19	9
Total Residential			542	9	24	34	18

The by-pass traffic was taken into consideration in this study. Pass-by trips are made by the traffic already using the adjacent roadway, entering the site as an intermediate stop. For this site, the Residential development is within this limit. It is assumed that total residential calculated trips will be after the reduction of by-pass trips, as shown in Table 1.

4.4 Trip Distribution and Assignment

Given that the site is an urban location (proximity to a mix of residential, industrial, commercial and employment uses). It is assumed that 80 percent of the volume generated will travel to/from Walker Road, and 20 percent from St Luke Road. At the intersection of Walker Road with Access Road, the traffic trip will be distributed 80/20, (80 percent travel west and 20 percent travel east). At the existing intersections, it is assumed that the

development traffic will follow existing traffic pattern. The development traffic distribution is shown in Table 2 and Figures 1.2, 2.2 and 3.2 (see Appendix B).

Table 2: Trip Distribution

Walker Road		St Luke Road	
To/from	Distribution	To/from	Distribution
Total	80%	Total	20%

4.5 Future Condition

Development traffic volumes were added to the forecasted (2027, 2032 and 2037) background traffic volumes to obtain corresponding total traffic volumes at intersections. The projected total future volumes are provided in Figure 1.3, Figure 2.3 and Figure 3.3 (see Appendix B).

5.0 INTERSECTION OPERATIONS

The forecasted 2027, 2032 and 2037 traffic volumes for the study intersections are evaluated using the Synchro/Sim Traffic software version 10, which automates the procedures contained in the Highway Capacity Manual 2010.

The 2027 background condition and future total conditions analysis results are included in Tables 3-6 and corresponding worksheets are included in Appendix C.

Table 3: 2027 Background Conditions – Level of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)
Wyandotte Street E and Walker Road						
EB L	B	0.09	14.5	B	0.09	15.5
EB TR	C	0.46	24.6	D	0.92	40.5
WB L	B	0.52	15.4	F	1.18	141.5
WB TR	C	0.65	22.8	C	0.47	23.9
NB L	C	0.45	24.3	B	0.36	19.3
NB T	C	0.37	32.9	C	0.26	26.5
NB R	A	0.24	1.3	B	0.50	14.9

SB L	C	0.13	23.5	C	0.19	20.5
SB TR	C	0.38	34.4	C	0.25	25.5
Overall LOS	B			D		
Walker Road and Richmond Street E						
EB LR	C	0.38	17.4	D	0.42	25.4
NB L	B	0.08	11.2	C	0.22	16.4
NB T	A	0.31	0.0	B	0.53	0.0
SB RT	A	0.02	8.6	B	0.06	10.9
Overall LOS	A			B		
Walker Road and Richmond Street W						
WB L	A	0.30	7.7	B	0.42	10.8
WB R	C	0.45	24.2	B	0.31	18.5
NB TR	B	0.68	19.7	E	1.05	67.9
SB TL	C	0.89	34.5	F	1.17	112.9
Overall LOS	C			E		
St Luke Road and Richmond Street						
EB LTR	A	0.08	9.7	B	0.18	10.6
WB LTR	A	0.09	9.9	B	0.13	10.3
NB LTR	A	0.01	3.5	A	0.01	1.9
SB LTR	A	0.0	0.0	A	0.01	2.4
Overall LOS	A			A		
Richmond Street and Drouillard Street						
EB LTR	A	0.01	1.3	A	0.01	1.3
WB LTR	A	0.0	2.8	A	0.0	2.9
NB LTR	B	0.26	11.1	B	0.45	14.0
SB LTR	B	0.18	10.4	B	0.30	11.8
Overall LOS	A			B		

Note: NB – Northbound SB – Southbound EB – Eastbound WB – Westbound; LTR – Left/Through/Right turn

Table 4: 2027 Total Conditions – Level of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)
Wyandotte Street E and Walker Road						
EB L	B	0.09	14.5	B	0.09	155
EB TR	C	0.46	24.7	D	0.92	40.5
WB L	B	0.53	15.5	F	1.18	143.3
WB TR	C	0.65	22.8	C	0.47	23.9
NB L	C	0.45	24.4	B	0.36	19.3
NB T	C	0.37	32.9	C	0.26	26.5
NB R	A	0.25	1.7	B	0.51	15.3
SB L	C	0.13	23.5	C	0.19	20.5
SB TR	C	0.38	34.1	C	0.25	25.5

Overall LOS	B			D		
Walker Road and Richmond Street E						
EB LR	C	0.40	18.1	D	0.45	26.6
NB L	B	0.10	11.3	C	0.24	16.9
NB T	A	0.31	0.0	B	0.54	0.0
SB RT	A	0.03	8.6	B	0.06	11.0
Overall LOS	A			B		
Walker Road and Richmond Street W						
WB L	A	0.31	7.8	B	0.43	11.1
WB R	C	0.45	24.2	B	0.31	18.5
NB TR	B	0.68	19.7	E	1.05	67.9
SB TL	C	0.89	34.5	F	1.17	112.9
Overall LOS	C			E		
St Luke Road and Richmond Street						
EB LTR	A	0.08	9.8	B	0.8	10.7
WB LTR	A	0.09	9.9	B	0.14	10.4
NB LTR	A	0.01	3.5	A	0.01	2.3
SB LTR	A	0.0	0.0	A	0.01	2.4
Overall LOS	A			A		
Richmond Street and Drouillard Street						
EB LTR	A	0.01	1.4	A	0.01	1.4
WB LTR	A	0.0	2.8	A	0.0	2.9
NB LTR	B	0.26	11.2	B	0.46	14.3
SB LTR	B	0.18	10.5	B	0.30	11.9
Overall LOS	A			B		

The results of analysis from Table 3 and Table 4 indicate the following:

- At the intersection of Walker Road and Wyandotte Street E
 - During the 2027 background condition, the westbound left turn movement is expected to operate at a LOS F during the pm peak hour with a v/c ratio of 1.23. Intersection improvements are required such as an improved signal timing. Similar conditions are observed under the 2027 total conditions, with only a marginal increase in the v/c ratio. Accordingly, the operational deficiency at the intersection is not attributable by the proposed development.
- At the intersection of Walker Road and Richmond Street
 - Under the background conditions, all turning movements are expected to operate at acceptable levels of service, with the exception of the northbound and southbound movements at the west leg of the intersection. It is noted that

the west leg of the intersection is signalized; therefore, intersection improvements, such as optimized signal timing, are required.

- Similar operating conditions are observed under the 2027 total conditions, with only a marginal increase in the volume-to-capacity (v/c) ratio. Accordingly, the observed operational deficiency at the intersection is not attributable by the proposed development.
- At the intersection of St. Luke Road and Richmond Street
 - During the background condition, the turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.
 - With the development traffic, the turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.
 - At the intersection of Richmond Street and Drouillard Street
 - During the background condition, all turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.
 - With the development traffic, all turning movements are expected to operate at an acceptable level of service.
 - At the intersection of Richmond Street and St Luke
 - During the background condition, all turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.
 - With the development traffic, all turning movements are expected to operate at an acceptable level of service.

Table 5: 2032 Total Conditions – Level of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)
Wyandotte Street E and Walker Road						
EB L	B	0.13	15.8	B	0.11	15.9
EB TR	C	0.53	26.0	E	1.05	68.1
WB L	B	0.64	18.2	F	1.40	230.0
WB TR	C	0.74	25.2	C	0.53	25.0
NB L	C	0.54	26.2	C	0.42	20.4
NB T	C	0.42	33.8	C	0.30	27.0
NB R	A	0.28	2.7	B	0.58	18.2
SB L	C	0.15	224.0	C	0.22	21.2
SB TR	C	0.43	35.7	C	0.28	26.1
Overall LOS	B			E		
Walker Road and Richmond Street E						
EB LR	B	0.50	22.3	E	0.62	41.4
NB L	C	0.12	11.9	C	0.34	21.8
NB T	A	0.35	0.0	B	0.61	0.0
SB RT	A	0.03	8.9	B	0.11	12.4
Overall LOS	A			B		
Walker Road and Richmond Street W						
WB L	A	0.35	8.4	B	0.9	13.2
WB R	C	0.51	28.4	B	0.35	19.6
NB TR	C	0.76	24.0	E	1.18	118.4
SB TL	E	1.01	58.1	F	1.33	17.9
Overall LOS	D			E		
St Luke Road and Richmond Street						
EB LTR	A	0.10	9.9	B	0.21	11.0
WB LTR	A	0.10	10.1	B	0.16	10.7
NB LTR	A	0.01	3.6	A	0.01	2.2
SB LTR	A	0.0	3.6	A	0.01	2.4
Overall LOS	A			A		
Richmond Street and Drouillard Street						
EB LTR	A	0.01	1.3	A	0.01	1.3
WB LTR	A	0.0	3.0	A	0.0	3.1
NB LTR	B	0.31	11.7	C	0.55	16.6
SB LTR	B	0.21	10.7	B	0.35	12.7
Overall LOS	A			A		

Table 6: 2037 Total Conditions – Level of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)
Wyandotte Street E and Walker Road						
EB L	B	0.18	17.2	B	0.15	16.5
EB TR	C	0.59	27.4	F	1.17	115.2
WB L	C	0.76	24.9	F	1.56	296.9
WB TR	C	0.83	28.8	C	0.59	26.2
NB L	C	0.62	28.9	C	0.49	22.0
NB T	C	0.47	34.9	C	0.34	27.6
NB R	A	0.32	3.7	C	0.65	21.3
SB L	C	0.17	24.7	C	0.26	22.0
SB TR	D	0.48	37.4	C	0.32	26.7
Overall LOS	C			F		
Walker Road and Richmond Street E						
EB LR	D	0.62	29.5	F	0.82	72.2
NB L	B	0.14	12.7	C	0.46	30.4
NB T	A	0.36	0.0	B	0.68	0.0
SB RT	A	0.04	9.3	B	0.13	14.0
Overall LOS	C			D		
Walker Road and Richmond Street W						
WB L	A	0.39	9.4	B	0.53	14.8
WB R	C	0.57	32.6	C	0.39	21.4
NB TR	C	0.86	30.9	F	1.32	177.2
SB TL	F	1.13	97.8	F	1.49	246.6
Overall LOS	E			F		
St Luke Road and Richmond Street						
EB LTR	B	0.11	10.1	B	0.24	11.3
WB LTR	B	0.12	10.2	B	0.18	11.0
NB LTR	A	0.01	3.7	A	0.01	2.1
SB LTR	A	0.0	0.0	A	0.01	2.4
Overall LOS	A			A		
Richmond Street and Drouillard Street						
EB LTR	A	0.01	1.3	A	0.02	1.4
WB LTR	A	0.00	2.7	A	0.01	3.3
NB LTR	B	0.35	12.4	B	0.65	20.1
SB LTR	B	0.24	11.1	B	0.41	13.8
Overall LOS	A			B		

The results of analysis from Table 5 and Table 6 indicate the following:

- At the intersection of Walker Road and Wyandotte Street E

- During the PM peak hour, the westbound left-turn movement is projected to operate at LOS F, with a volume-to-capacity (v/c) ratio of approximately 1.40. In addition, the eastbound turning movement is expected to operate at LOS E during the PM peak hour. Intersection improvements, such as optimized signal timing, are therefore recommended.
 - During the PM peak hour, the westbound left-turn movement is projected to operate at LOS F, while the eastbound turning movement is also projected to operate at LOS F. Intersection improvements, including further signal timing optimization, are required under this horizon year.
- At the intersection of Walker Road and Richmond Street
- Under the 2032 horizon year, the AM and PM peak hours, most turning movements are projected to operate at acceptable levels of service. However, at Walker Road and Richmond Street West, the northbound through/right movement and the southbound through/left movement are projected to operate at LOS E and LOS F, respectively, during the peak hours. These deficiencies are indicative of existing and future background traffic growth conditions. No additional intersection improvements are recommended at this time beyond monitoring and standard signal optimization.
 - Under the 2037 horizon year, traffic operations at Walker Road and Richmond Street East remain generally acceptable, with the exception of the eastbound left/right movement, which is projected to operate at LOS F during the PM peak hour. At Walker Road and Richmond Street West, the northbound through/right and southbound through/left movements are projected to operate at LOS F during both peak periods, with elevated delays. These operational deficiencies are associated with background traffic growth and corridor demand rather than the proposed development. Accordingly, no site-specific intersection improvements are warranted as part of this development.
- At the intersection of St. Luke Road and Richmond Street
- During 2032 total condition, all turning movements are projected to operate at acceptable levels of service. No intersection improvements are required.

- During 2037 total condition, all turning movements are projected to operate at acceptable levels of service. No intersection improvements are required.
- At the intersection of Richmond Street and Drouillard Street
 - During the projected 2032 condition, all turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.
 - During the projected 2037 condition, all turning movements are expected to operate at an acceptable level of service. Hence, no further intersection improvements are required.

5.1 Modified Intersection Analysis

With improved signal timings of 115 second in morning and 115 seconds in evening, Walker Road with Wyandotte Street East results is provided in Appendix C and Table 7 using the Synchro Analysis.

Table 7: 2037 Improved Intersection - Level of Service

Intersection	A.M. Peak Hour			P.M. Peak Hour		
	LOS	v/c	Delay (sec)	LOS	v/c	Delay (sec)
Walker Road and Wyandotte Street E						
EB L	C	0.19	20.2	B	0.11	15.1
EB TR	C	0.62	34.6	F	1.13	102.9
WB L	C	0.73	26.3	F	1.01	87.6
WB TR	C	0.81	32.1	C	0.48	22.3
NB L	C	0.60	31.6	D	0.60	34.3
NB T	D	0.41	36.8	D	0.38	36.9
NB R	A	0.30	6.0	C	.070	27.1
SB L	C	0.16	28.3	C	0.32	31.8
SB TR	D	0.44	41.4	D	0.36	35.9
Overall LOS	C			E		

Under future conditions, the intersection is projected to operate at an overall acceptable LOS during peak hours. However, the eastbound and westbound left turning lane operates at a LOS F during pm peak hours. A higher delay at the westbound leg causes a nuisance to drivers during peak hours without compromising safety; hence, we believe it is acceptable to the intersection;

6.0 CONCLUSION AND RECOMMENDATION

The operating conditions were evaluated for 2027, 2032 and 2037 traffic conditions using the morning and evening traffic data. The findings from these evaluations are summarized below.

- The development site is approximately 2.12ha consisting of Semi-detached houses and townhouses. The development will generate 542 daily vehicles, 33 morning vehicles and 52 evening peak vehicles.
- It is assumed that the development will be completed by 2027.
- The background growth rate of 3 percent is considered in the analysis and represents the worst-case scenario.
- Access to the development will be from Richmond Street and will be “T” intersection with a “Stop” control on access road.
- Based on the traffic operations analysis conducted for the 2032 and 2037 total conditions, the study area intersections are generally expected to operate at acceptable levels of service during both the AM and PM peak hours.
- At the intersection of Walker Road and Wyandotte Street East, capacity-related deficiencies are observed for certain turning movements during the PM peak hour in both analysis years, particularly for the westbound left-turn movement and the eastbound turning movement. These deficiencies are reflective of background traffic growth along the corridor, and intersection improvements such as signal timing optimization may be required independent of the proposed development.
- At the intersections of Walker Road and Richmond Street East and West, traffic operations remain generally acceptable overall. While some individual turning movements are projected to operate at LOS E or LOS F in the horizon years, the associated delays are characteristic of urban signalized intersections and are attributable to background traffic demand rather than the proposed development.

- All other study area intersections, including St. Luke Road and Richmond Street and Richmond Street and Drouillard Street, are projected to operate at acceptable levels of service under both the 2032 and 2037 total conditions, with no operational deficiencies identified.
- Overall, the analysis indicates that the proposed development can be accommodated within the existing and planned roadway network without the need for site-specific intersection improvements, and that any identified capacity constraints are driven by future background conditions rather than development-related traffic.
- With the implementation of signal timing improvements at the intersection of Walker Road with Wyandotte Street, the intersection operates at an acceptable level of service. The westbound left-turning lanes operates at an worst level of service for both intersections during peak hours. There is a higher delay for turning vehicles which may cause a nuisance to the driver without compromising safety; hence, we believe it is acceptable to the intersection;
- An adequate sight line distance is provided for a safe departure from the development.

Based on the evaluation and findings of this report, the proposed development is expected to have minimal impact on the conditions at the intersections, improvements are required at the intersection of Walker Road with Wyandotte Street E in pre-development condition.

7.0 CLOSURE

The information in this report is prepared for the “Avani Development” regarding potential traffic impact on Richmond Street, St. Like Street, Drouillard Street and Walker Road.

We trust that the above meets your purpose. Should you have any questions, please do not hesitate to contact the undersigned.

All of which is respectfully submitted.

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Senior Project Manager
Baird AE

Appendix A

BACKGROUND TRAFFIC DATA AND OTHER RELATED INFORMATION

Richmond St @ Drouillard Rd

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: Windsor

Site #: 0000000002

Intersection: Drouillard Rd & Richmond St

TFR File #: 2

Count date: 16-Apr-2025

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Drouillard Rd runs N/S

North Leg Total: 265

North Entering: 123

North Peds: 5

Peds Cross: $\times$

Heavys	0	5	0	5
Trucks	0	1	0	1
Cars	7	109	1	117
Totals	7	115	1	

Heavys	2
Trucks	2
Cars	138
Totals	142

East Leg Total: 16

East Entering: 8

East Peds: 8

Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
3	0	52	55



Richmond St

Heavys	Trucks	Cars	Totals
0	0	10	10
0	0	2	2
4	1	42	47
4	1	54	

Peds Cross: $\times$

West Peds: 6

West Entering: 59

West Leg Total: 114

Cars	154
Trucks	2
Heavys	9
Totals	165

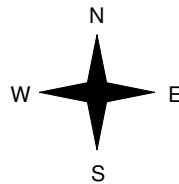
Cars	43	125	5	173
Trucks	0	2	0	2
Heavys	3	2	0	5
Totals	46	129	5	

Peds Cross: $\times$

South Peds: 9

South Entering: 180

South Leg Total: 345



Drouillard Rd

Comments

Richmond St @ Drouillard Rd

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 15:00:00

To: 16:00:00

Municipality: Windsor

Site #: 0000000002

Intersection: Drouillard Rd & Richmond St

TFR File #: 2

Count date: 16-Apr-2025

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Drouillard Rd runs N/S

North Leg Total: 429

North Entering: 192

North Peds: 10

Peds Cross: $\times$

Heavys	0	4	0	4
Trucks	0	3	0	3
Cars	17	161	7	185
Totals	17	168	7	



Heavys 6

Trucks 3

Cars 228

Totals 237

East Leg Total: 32

East Entering: 13

East Peds: 13

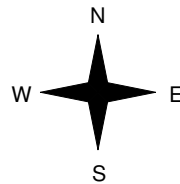
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
3	0	79	82



Richmond St

Heavys	Trucks	Cars	Totals
0	0	16	16
0	0	7	7
3	0	69	72
3	0	92	



Drouillard Rd



Cars	Trucks	Heavys	Totals
4	0	0	4
4	0	0	4
5	0	0	5
13	0	0	

Richmond St



Cars	Trucks	Heavys	Totals
19	0	0	19

Peds Cross: $\times$

West Peds: 7

West Entering: 95

West Leg Total: 177

Cars	235	Cars	58	208	5	271
Trucks	3	Trucks	0	3	0	3
Heavys	7	Heavys	3	6	0	9
Totals	245	Totals	61	217	5	



Peds Cross: $\times$

South Peds: 16

South Entering: 283

South Leg Total: 528

Comments

Richmond St @ St Luke Rd

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: Windsor

Site #: 0000000001

Intersection: Richmond St & St Luke Rd

TFR File #: 1

Count date: 16-Apr-2025

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

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

Major Road: Richmond St runs W/E

North Leg Total: 40

North Entering: 24

North Peds: 8

Peds Cross: $\times$

	Heavys	Trucks	Cars	Totals
North	0	0	0	0
East	0	0	0	0
South	10	14	0	24
West	10	14	0	24



Heavys 0

Trucks 0

Cars 16

Totals 16

East Leg Total: 111

East Entering: 62

East Peds: 3

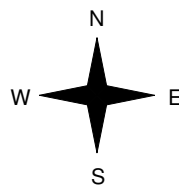
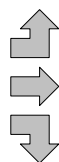
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
2	0	77	79



Richmond St

Heavys	Trucks	Cars	Totals
0	0	3	3
3	0	42	45
0	0	8	8
3	0	53	56



St Luke Rd

Cars	Trucks	Heavys	Totals
1	0	0	1
53	0	2	55
6	0	0	6
60	0	2	62



Richmond St



Cars	Trucks	Heavys	Totals
45	0	4	49

Peds Cross: $\times$

West Peds: 0

West Entering: 56

West Leg Total: 135

	Cars	Trucks	Heavys	Totals
West	28	0	0	28
East	14	0	0	14
South	12	0	0	12
North	3	0	1	4



Peds Cross: $\times$

South Peds: 9

South Entering: 30

South Leg Total: 58

Comments

Richmond St @ St Luke Rd

Afternoon Peak Diagram

Specified Period

From: 15:00:00

To: 18:00:00

One Hour Peak

From: 15:00:00

To: 16:00:00

Municipality: Windsor

Site #: 0000000001

Intersection: Richmond St & St Luke Rd

TFR File #: 1

Count date: 16-Apr-2025

Weather conditions:

Clear/Dry

Person(s) who counted:

Pyramid Traffic Inc

** Non-Signalized Intersection **

Major Road: Richmond St runs W/E

North Leg Total: 69

North Entering: 37

North Peds: 10

Peds Cross: $\times$

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	9	16	12	37
Totals	9	16	12	



Heavys 0

Trucks 0

Cars 32

Totals 32

East Leg Total: 203

East Entering: 89

East Peds: 4

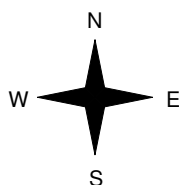
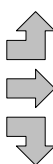
Peds Cross: $\times$

Heavys	Trucks	Cars	Totals
3	0	91	94



Richmond St

Heavys	Trucks	Cars	Totals
0	0	9	9
3	1	93	97
0	0	12	12
3	1	114	



St Luke Rd

St Luke Rd

Cars	Trucks	Heavys	Totals
4	0	0	4
74	0	3	77
8	0	0	8
86	0	3	



Richmond St



Cars	Trucks	Heavys	Totals
110	1	3	114

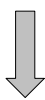
Peds Cross: $\times$

West Peds: 1

West Entering: 118

West Leg Total: 212

Cars	36
Trucks	0
Heavys	0
Totals	36



Cars	8	19	5	32
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	8	19	5	

Peds Cross: $\times$

South Peds: 19

South Entering: 32

South Leg Total: 68

Comments

Peak Hour Diagram

Specified Period

From: 07:00:00

To: 10:00:00

One Hour Peak

From: 08:00:00

To: 09:00:00

Intersection: WYANDOTTE ST E & WALKER RD

Site Code: 2411900083

Count Date: Oct 01, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: WYANDOTTE ST E runs E/W

North Approach

	Out	In	Total
	124	227	351
LT	15	18	33
MT	2	5	7
HT	2	4	6
	0	0	0
Totals	143	254	397

WALKER RD

	0	0	0	0
HT	1	1	0	0
MT	0	2	0	0
LT	2	7	6	0
	20	80	24	0
Totals	23	90	30	0

East Approach

	Out	In	Total
	977	387	1364
LT	107	68	175
MT	5	6	11
HT	11	13	24
	0	0	0
Totals	1100	474	1574

WYANDOTTE ST E

	HT	MT	LT		Totals
	0	0	0	0	0
	0	0	1	11	13
	0	10	3	46	322
	0	5	3	7	101
Totals	0	13	322	116	

Peds: 3

Peds: 4



Peds: 2

Peds: 0

WYANDOTTE ST E

Totals		LT	MT	HT	
0	0	0	0	0	0
98	88	9	1	0	0
764	683	72	2	7	0
238	206	26	2	4	0

West Approach

	Out	In	Total
	375	856	1231
LT	54	97	151
MT	7	5	12
HT	15	17	32
	0	0	0
Totals	451	975	1426

				
Totals	188	143	122	0
	153	128	100	0
LT	23	8	16	0
MT	3	3	3	0
HT	9	4	3	0
	0	0	0	0

WALKER RD

South Approach

	Out	In	Total
	381	387	768
LT	47	40	87
MT	9	7	16
HT	16	10	26
	0	0	0
Totals	453	444	897

- Cars

LT - Light Trucks

MT - Medium Trucks HT - Heavy Trucks

- Bicycles

Comments

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 16:15:00
To: 17:15:00

Intersection: WYANDOTTE ST E & WALKER RD
Site Code: 2411900083
Count Date: Oct 01, 2024

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: WYANDOTTE ST E runs E/W

North Approach

	Out	In	Total
	170	165	335
LT	12	21	33
MT	3	2	5
HT	1	0	1
	0	0	0
Totals	186	188	374

WALKER RD

	0	0	0	0
HT	0	1	0	0
MT	0	3	0	0
LT	0	11	1	0
	7	97	66	0
Totals	7	112	67	0

East Approach

	Out	In	Total
	616	1092	1708
LT	82	87	169
MT	1	4	5
HT	7	8	15
	2	0	2
Totals	708	1191	1899

WYANDOTTE ST E

	HT	MT	LT		Totals
	0	0	0	1	1
	0	0	1	16	19
	0	7	4	761	837
	0	2	3	151	173

Peds: 3



WYANDOTTE ST E

Totals		LT	MT	HT	
0	0	0	0	0	0
41	36	5	0	0	0
474	415	50	0	7	2
193	165	27	1	0	0

West Approach

	Out	In	Total
	929	573	1502
LT	84	64	148
MT	8	1	9
HT	9	10	19
	0	2	2
Totals	1030	650	1680

Totals				
168	128	287	0	0
	150	113	265	0
LT	14	14	21	0
MT	1	1	0	0
HT	3	0	1	0
	0	0	0	0

WALKER RD

South Approach

	Out	In	Total
	528	413	941
LT	49	55	104
MT	2	7	9
HT	4	3	7
	0	0	0
Totals	583	478	1061

- Cars

LT - Light Trucks

MT - Medium Trucks HT - Heavy Trucks

- Bicycles

Comments

Peak Hour Diagram

Specified Period

From: 07:00:00
To: 10:00:00

One Hour Peak

From: 08:15:00
To: 09:15:00

Intersection: RICHMOND ST & WALKER RD
Site Code: 2304800067
Count Date: Mar 23, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: WALKER RD runs N/S

North Approach

	Out	In	Total
	493	427	920
MT	7	17	24
HT	16	21	37
	0	0	0
Totals	516	465	981

WALKER RD

	0	0	0	0
HT	1	13	2	0
MT	0	7	0	0
	73	403	17	0
Totals	74	423	19	0

East Approach

	Out	In	Total
	172	100	272
MT	4	3	7
HT	8	9	17
	0	0	0
Totals	184	112	296

RICHMOND ST

	HT	MT		Totals
	0	0	0	0
	0	2	45	47
	0	6	35	41
	0	4	75	82

Peds: 14



Peds: 0

Peds: 3

Peds: 0

RICHMOND ST

Totals		MT	HT	
0	0	0	0	0
43	41	1	1	0
56	51	0	5	0
85	80	3	2	0

West Approach

	Out	In	Total
	155	179	334
MT	3	0	3
HT	12	6	18
	0	0	0
Totals	170	185	355

Totals	55	375	52	0
	55	341	48	0
MT	0	16	3	0
HT	0	18	1	0
	0	0	0	0

WALKER RD

South Approach

	Out	In	Total
	444	558	1002
MT	19	13	32
HT	19	19	38
	0	0	0
Totals	482	590	1072

 - Cars

MT - Medium Trucks

HT - Heavy Trucks

 - Bicycles

Comments

Peak Hour Diagram

Specified Period

From: 15:00:00
To: 18:00:00

One Hour Peak

From: 15:00:00
To: 16:00:00

Intersection: RICHMOND ST & WALKER RD
Site Code: 2304800067
Count Date: Mar 23, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: WALKER RD runs N/S

North Approach

	Out	In	Total
	654	722	1376
MT	13	5	18
HT	14	10	24
	0	0	0
Totals	681	737	1418

WALKER RD

	0	0	0	0
HT	1	12	1	0
MT	1	12	0	0
	76	548	30	0
Totals	78	572	31	0






East Approach

	Out	In	Total
	162	231	393
MT	1	5	6
HT	13	11	24
	0	0	0
Totals	176	247	423

RICHMOND ST

	HT	MT		Totals
	0	0	0	0
	0	2	81	83
	0	8	46	54
	0	3	94	97






Peds: 14



Peds: 2

Peds: 15

Peds: 12

RICHMOND ST

Totals		MT	HT	
0	0	0	0	0
73	72	1	0	0
38	32	0	6	0
65	58	0	7	0






West Approach

	Out	In	Total
	221	146	367
MT	0	1	1
HT	13	7	20
	0	0	0
Totals	234	154	388

Totals	38	581	162	0
	38	569	155	0
MT	0	4	5	0
HT	0	8	2	0
	0	0	0	0

WALKER RD

South Approach

	Out	In	Total
	762	700	1462
MT	9	12	21
HT	10	22	32
	0	0	0
Totals	781	734	1515

 - Cars

MT - Medium Trucks

HT - Heavy Trucks

 - Bicycles

Comments



ZONING PROVISION				
	LAND USE			
	SEMI-DETACHED UNIT (RD 2.5)	SEMI-DETACHED UNIT (PROVIDED)	TOWNHOUSE UNIT (RD 2.5)	TOWNHOUSE UNIT (PROVIDED)
LOT AREA MIN.	450-630 m²	534.27 m²	190 m²	192 m²
LOT WIDTH	15.0 m (MIN) /18.0 m (MAX)	15.8 m	20.0 m (MIN)	26.40 m
FRONT YARD DEPTH MIN.	6.0 m/7.0 m	6.0 m	6.0 m/7.0 m	7.0 m
INTERIOR SIDE YARD WIDTH MIN.	1.2 m	1.2 m	1.2 m	1.2 m
REAR YARD DEPTH MIN.	7.5 m	7.5 m	7.5 m	7.5 m
LOT COVERAGE MAX.	50%	50%	50%	50%
LANDSCAPED OPEN SPACE MIN.	N/A	N/A	N/A	N/A

[illegible]

DATE:	AUG 01, 2025	
SCALE:	1:500	
DRAWN BY: J.H.	☒	PRELIMINARY
CHECKED BY: B.P.	☐	CONSTRUCTION
APPROVED BY: B.P.	☐	RECORD

RICHMOND & ST. LUKE SUBDIVISION

0 RICHMOND STREET, CITY OF WINDSOR, ON

SHEET TITLE

CONCEPT PLAN OF SUBDIVISION

DB NUMBER 22-070

02

DISCLAIMER

1. THIS DRAWING IS NOT TO BE SCALED.

2. THIS DRAWING, AS AN INSTRUMENT OF SERVICE, IS PROVIDED BY AND IS THE PROPERTY OF BAIRD & ENGINEERS PLANNERS ARCHITECTS.

3. THE CONTRACTOR MUST VERIFY AND ACCEPT RESPONSIBILITY FOR ALL DIMENSIONS AND CONDITIONS ON SITE AND MUST NOTIFY BAIRD AE OF ANY VARIATION FROM THE SUPPLIED INFORMATION.

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[illegible]

PHASING LEGEND		SEM-DETACHED DWELLING	TOWNHOUSE DWELLINGS	UNITS
PHASE-1		12	0	24
PHASE-2		0	13	51
TOTAL		12	13	75

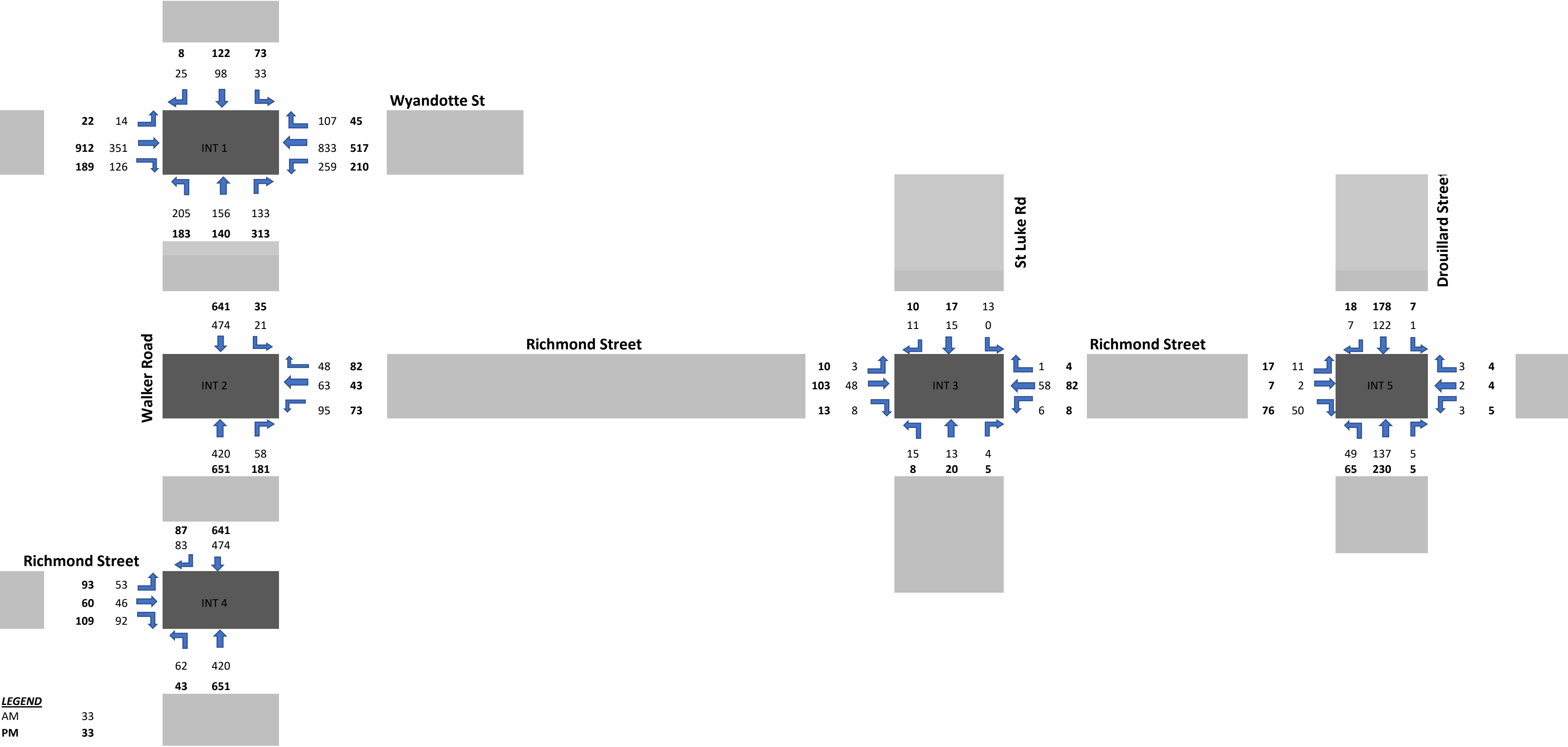
The site plan illustrates the layout of the 1000 Block of Richmond Street, featuring 28 numbered blocks and a central stormwater management area. The plan is bounded by Richmond Street to the north, St. Luke Road to the east, and Ontario Street to the south. A central vertical corridor, labeled 'STREET A', runs through the middle of the site. The blocks are arranged in two main columns flanking this central corridor. The left column contains blocks 21 through 27, while the right column contains blocks 1 through 13. Block 28 is located at the bottom center, adjacent to the stormwater management area. The stormwater management area is situated in the upper left corner, adjacent to Richmond Street. The plan also shows existing industrial buildings to the west and an existing residential area to the east. Dimensions for each block and the central corridor are provided, along with the area of each block in square meters.

Block Number	Area (m²)
Block 1	10.52
Block 2	528.11
Block 3	450.00
Block 4	450.01
Block 5	450.02
Block 6	450.03
Block 7	450.04
Block 8	450.05
Block 9	450.06
Block 10	450.07
Block 11	450.08
Block 12	450.09
Block 13	450.10
Block 14	844.67
Block 15	844.43
Block 16	844.18
Block 17	843.93
Block 18	843.68
Block 19	843.43
Block 20	869.14
Block 21	1,637.26
Block 22	672.00
Block 23	844.80
Block 24	844.80
Block 25	844.80
Block 26	844.80
Block 27	1,072.05
Block 28	6.00

Appendix B

FUTURE TRAFFIC, DEVELOPMENT TRAFFIC AND TOTAL TRAFFIC VOLUMES

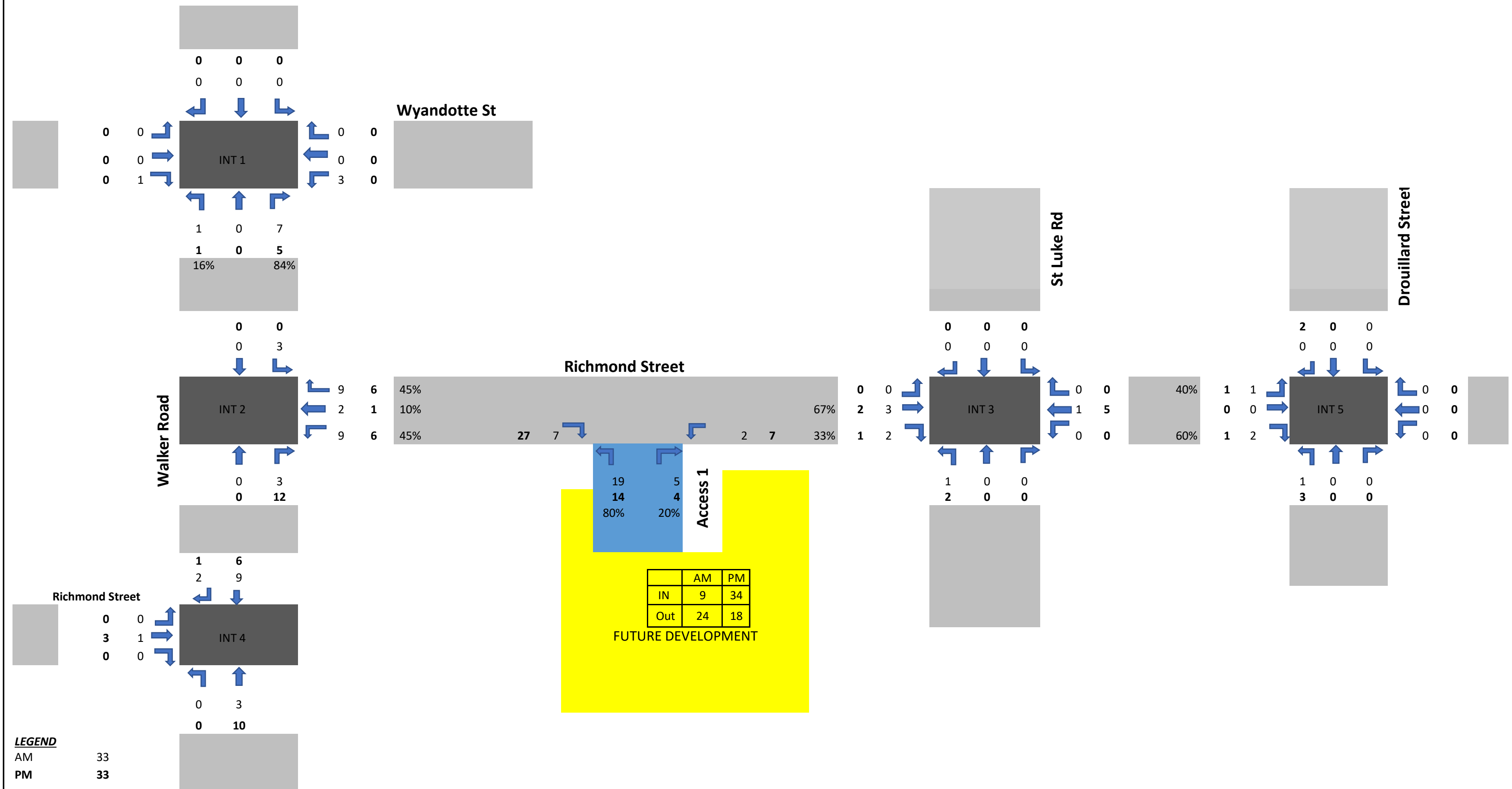
RESIDENTIAL DEVELOPMENT



PROJECT NAME	AVANI HOMES DEVELOPMENT	DATE:	07-May-26
SHEET TITLE	2027 BACKGROUND MODIFIEDTRAFFIC	PROJECT NO:	22-070
		FIGURE NO:	Figure 1.1



RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2027 DEVELOPMENT TRAFFIC

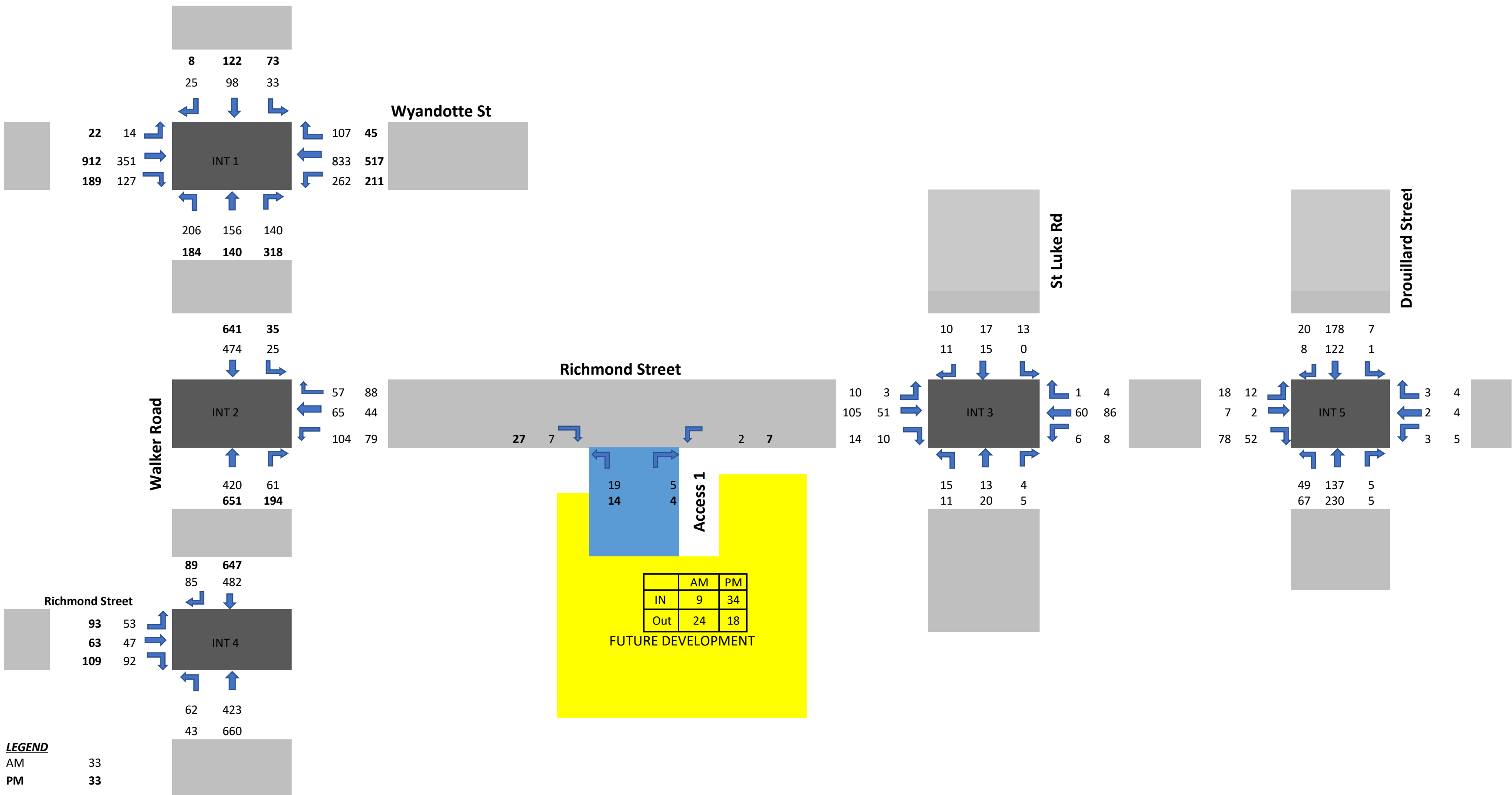


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 1.2

RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2027 TOTAL TRAFFIC

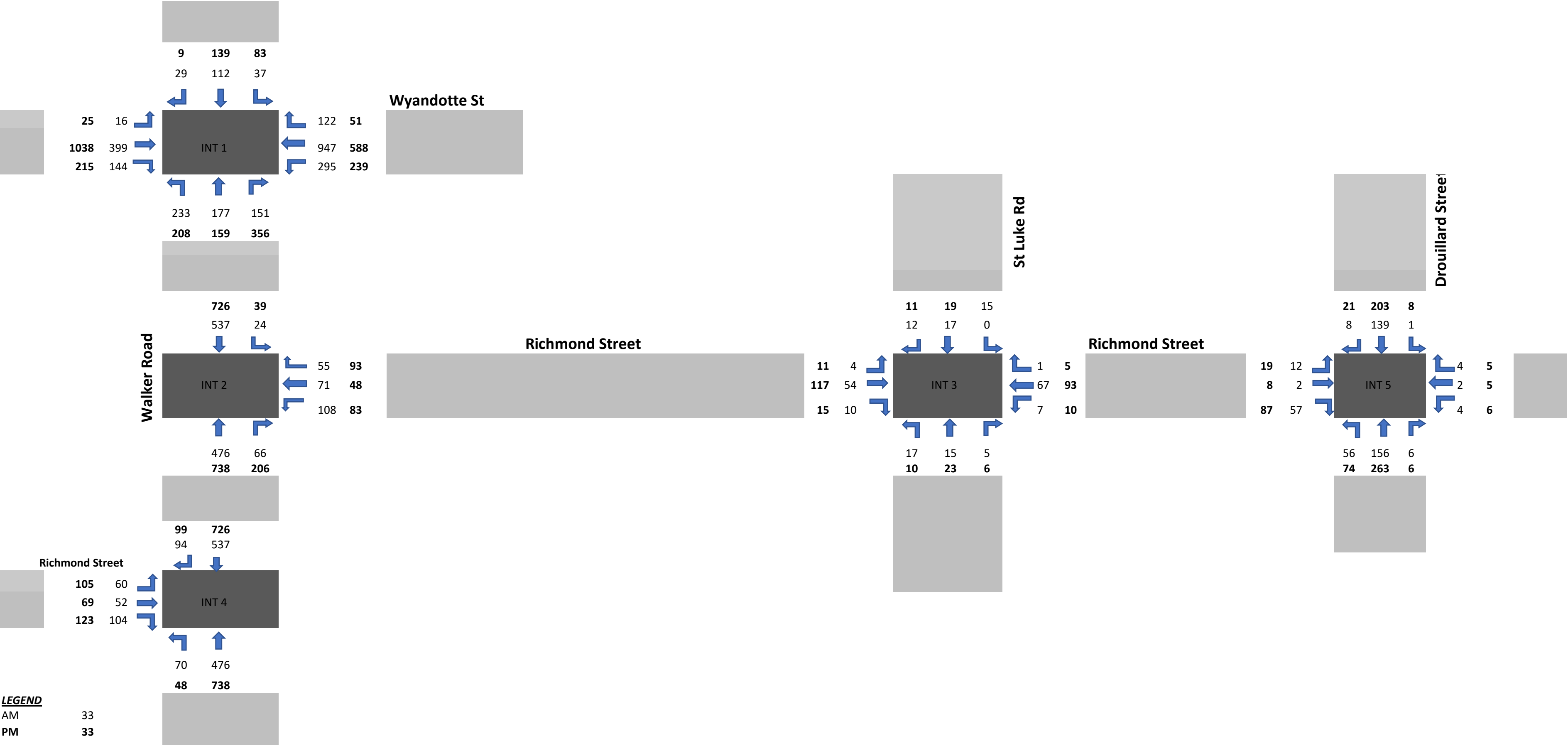


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 1.3

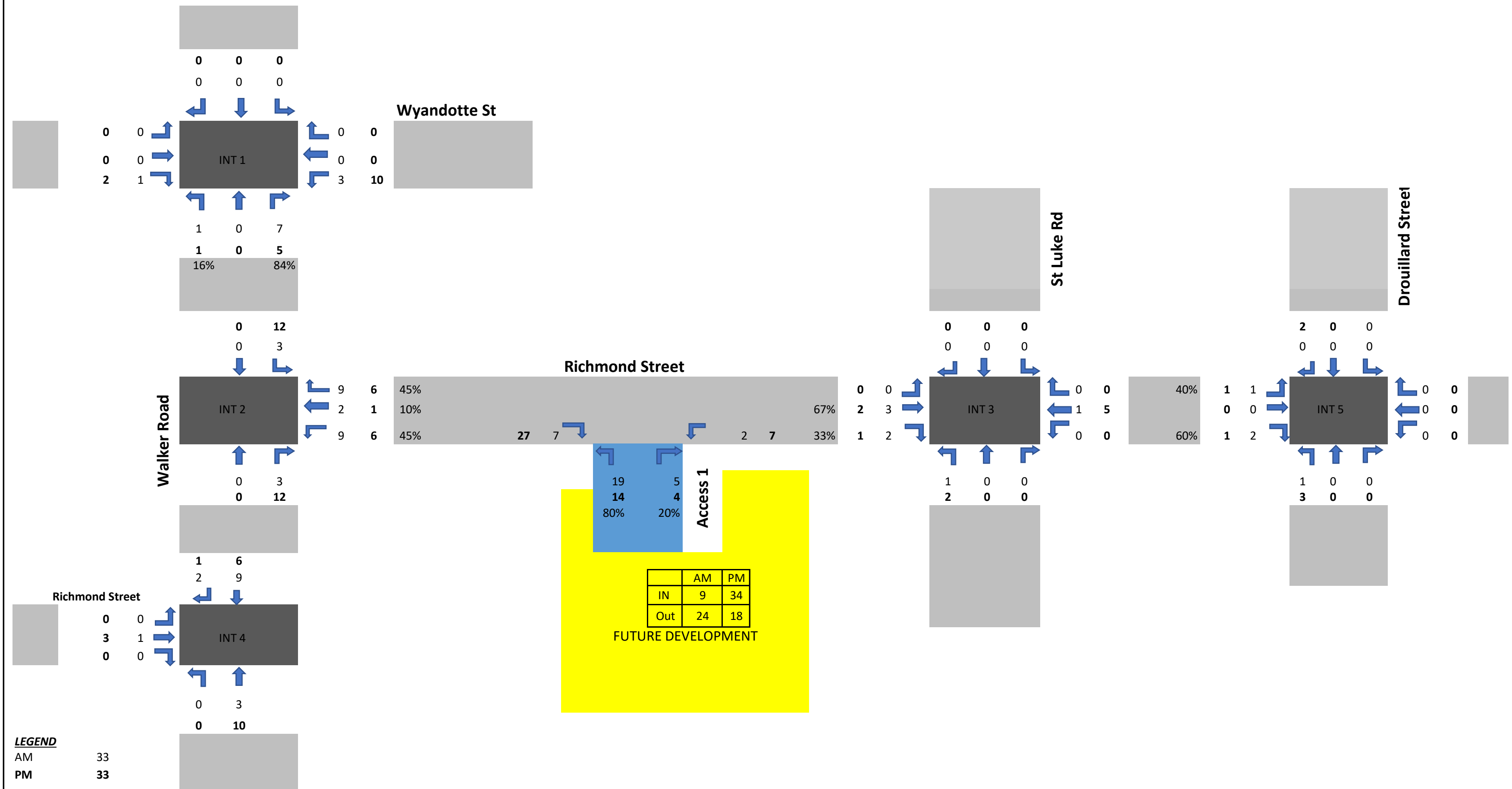
RESIDENTIAL DEVELOPMENT



PROJECT NAME	AVANI HOMES DEVELOPMENT	DATE:	07-May-26
SHEET TITLE	2032 BACKGROUND MODIFIEDTRAFFIC	PROJECT NO:	22-070
		FIGURE NO:	Figure 2.1



RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2032 DEVELOPMENT TRAFFIC

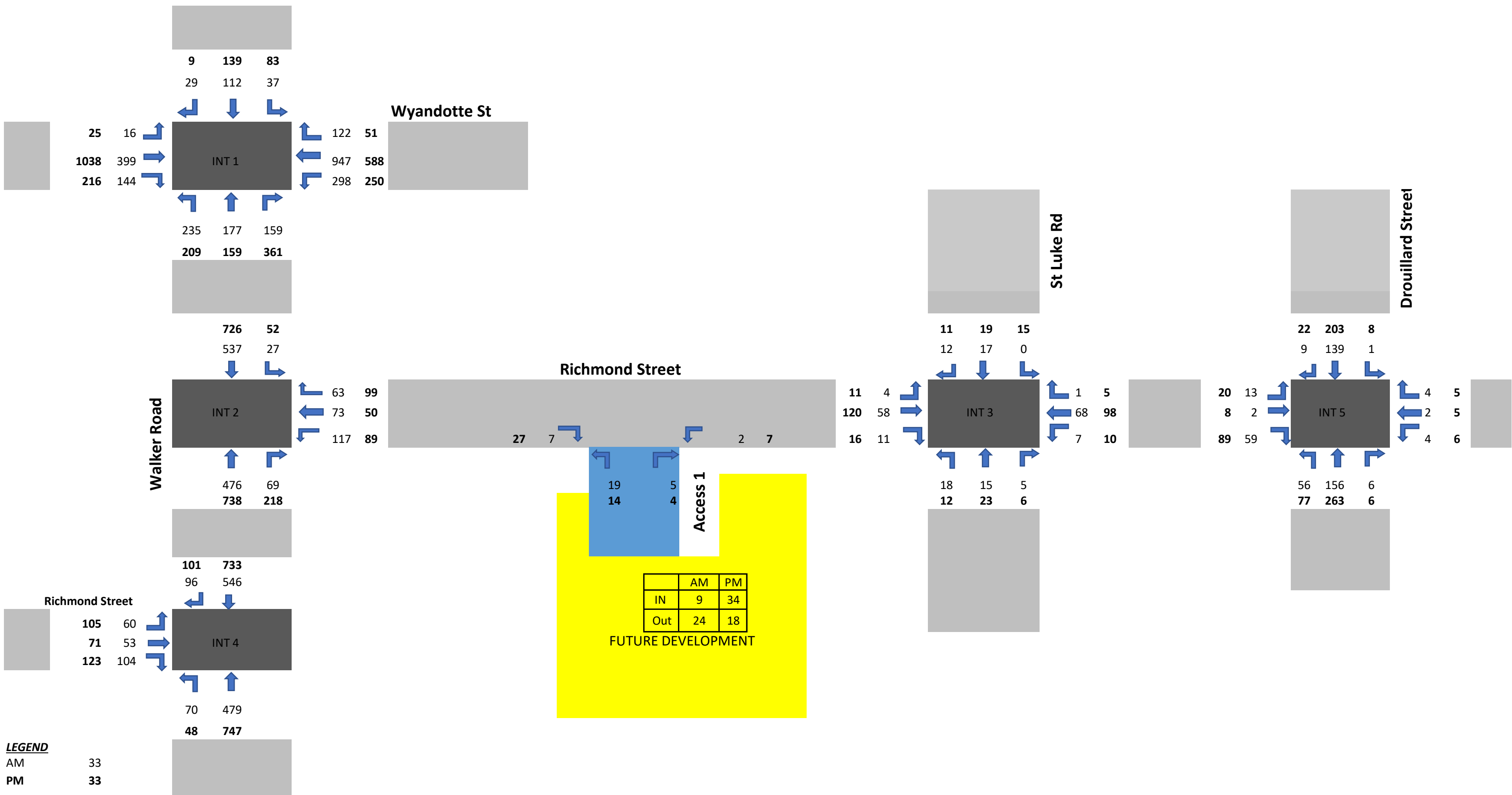


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 2.2

RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2032 TOTAL TRAFFIC

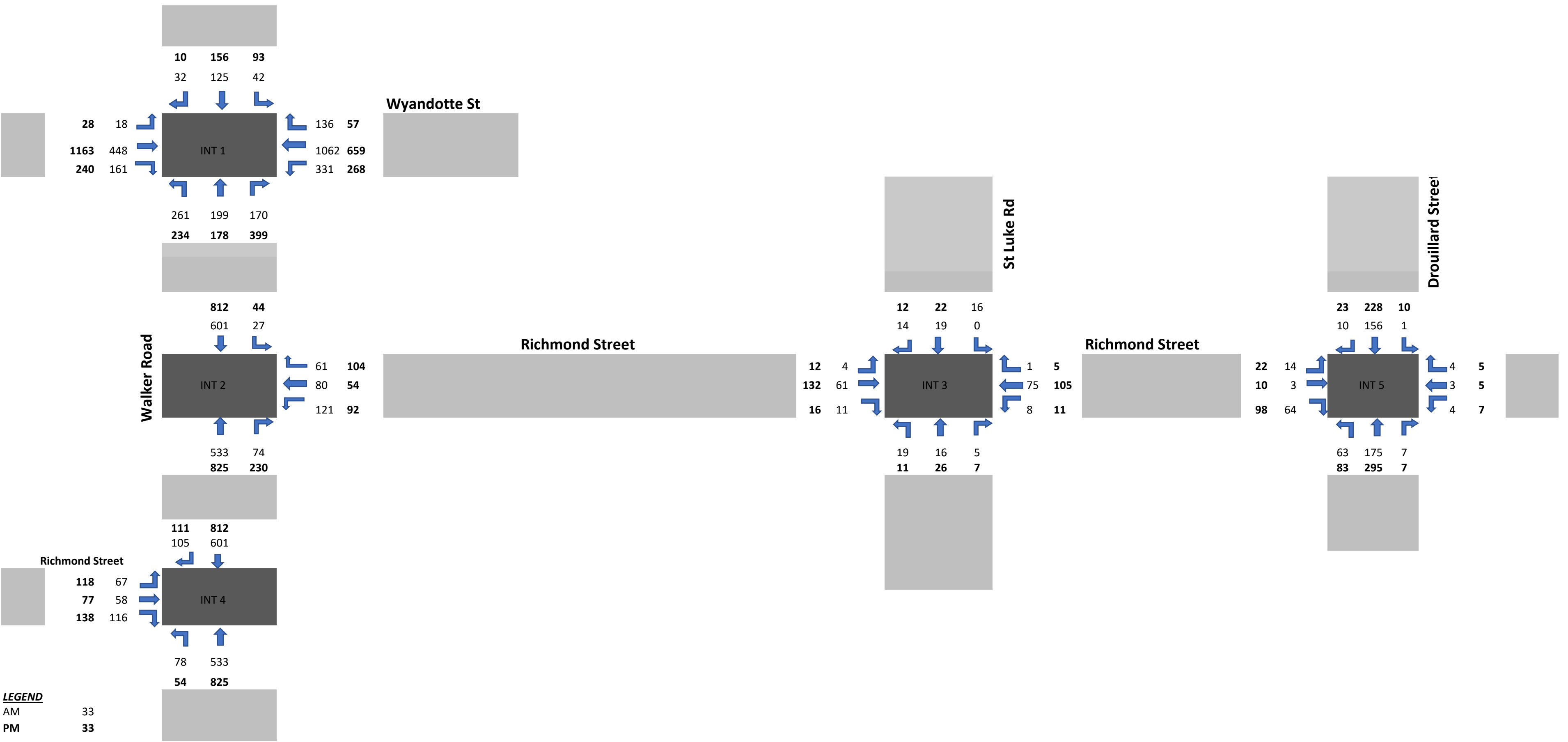


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 2.3

RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2037 BACKGROUND MODIFIEDTRAFFIC

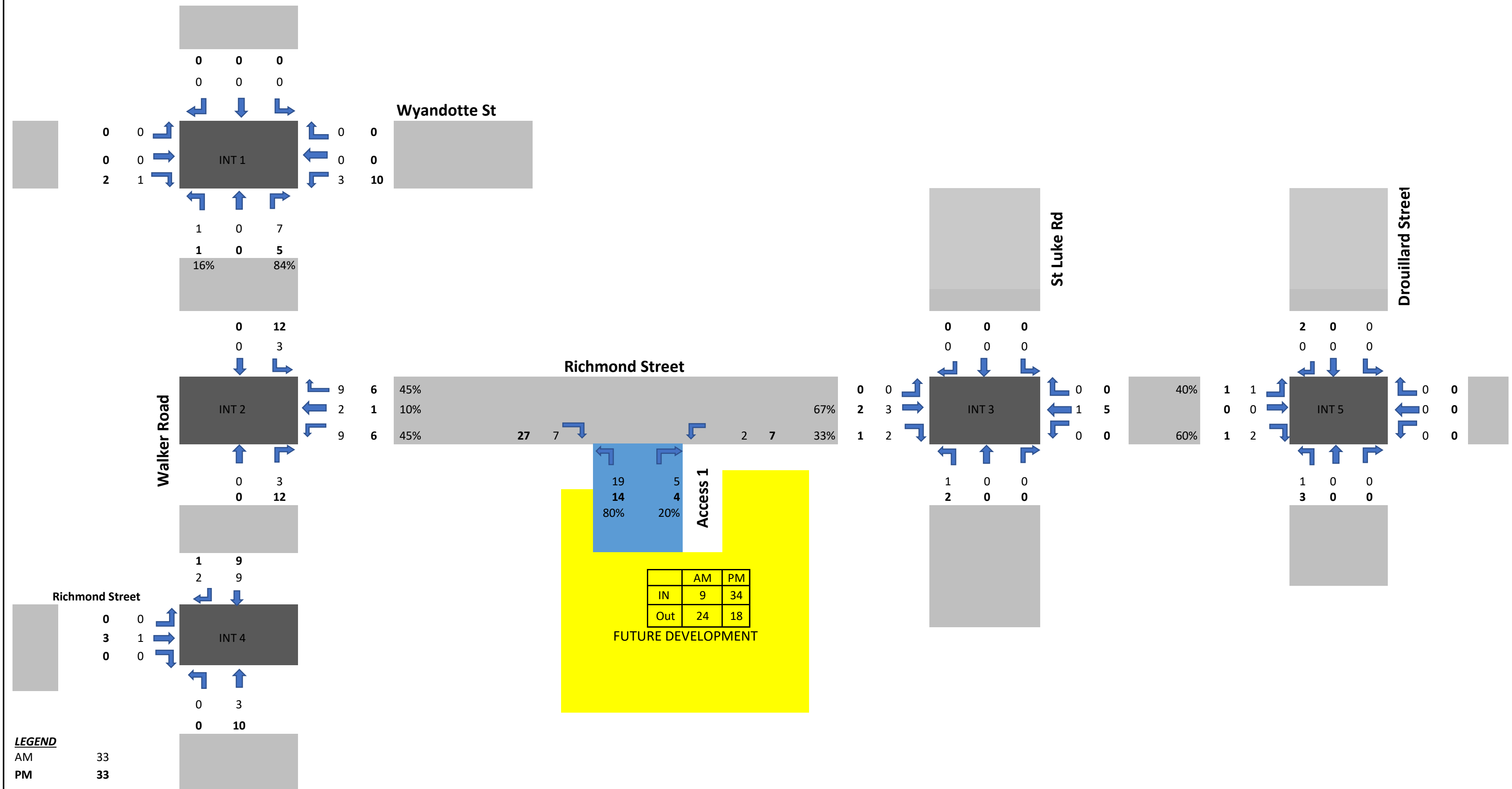


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 3.1

RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2037 DEVELOPMENT TRAFFIC

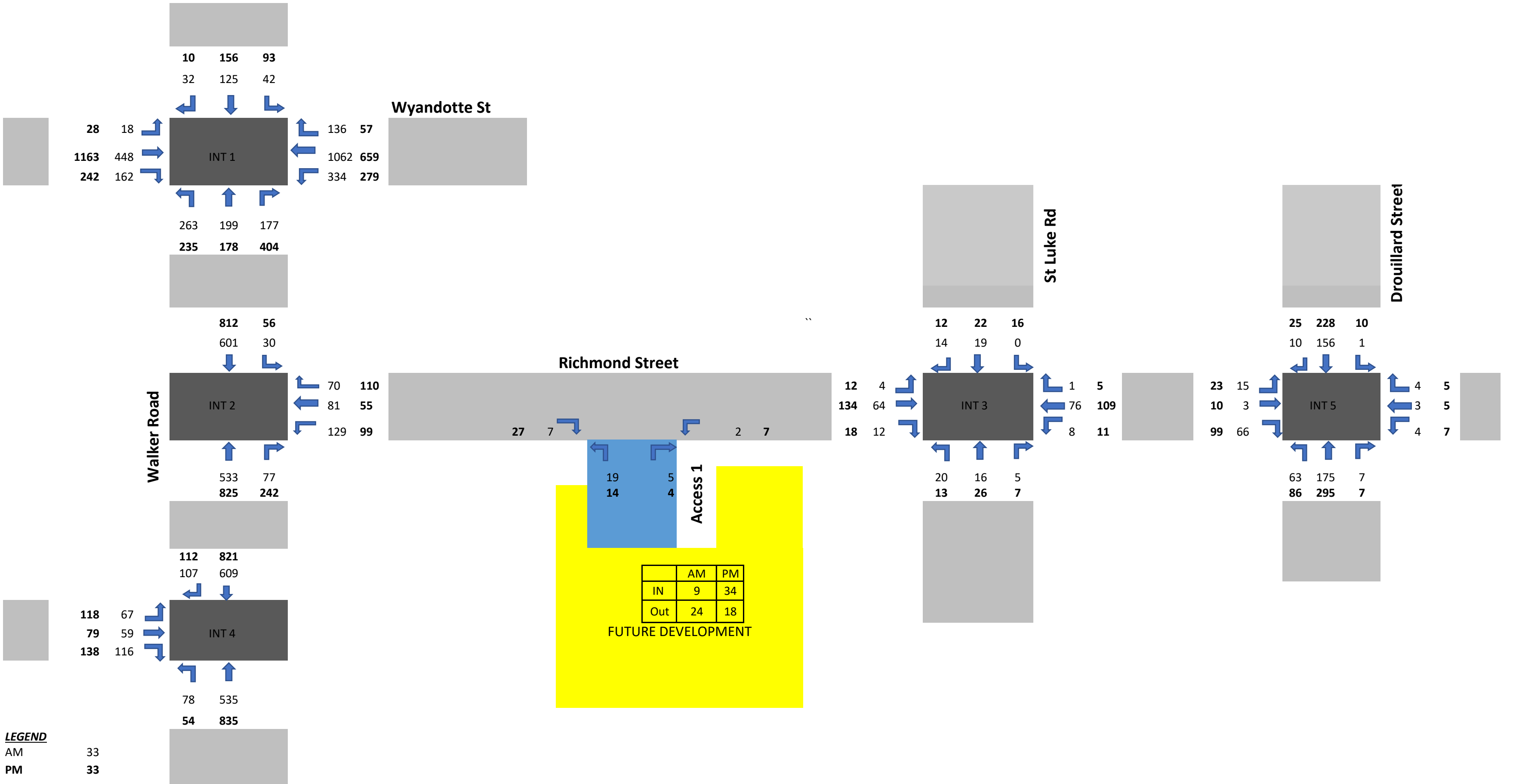


DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 3.2

RESIDENTIAL DEVELOPMENT



PROJECT NAME AVANI HOMES DEVELOPMENT

SHEET TITLE 2032 TOTAL TRAFFIC



DATE: 07-May-26

PROJECT NO: 22-070

FIGURE NO: Figure 3.3

Appendix C

CAPACITY ANALYSIS

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 TOTAL AM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	351	126	259	833	107	205	156	133	33	98	25
Future Volume (vph)	14	351	126	259	833	107	205	156	133	33	98	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.983				0.850		0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3435	0	1789	3518	0	1789	1883	1794	1789	1827	0
Flt Permitted	0.229			0.316			0.569			0.650		
Satd. Flow (perm)	431	3435	0	595	3518	0	1072	1883	1794	1224	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			19				230		12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	15	382	137	282	905	116	223	170	145	36	107	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	519	0	282	1021	0	223	170	145	36	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	9.0	35.0		9.0	35.0		8.0	23.0	23.0	8.0	23.0	
Total Split (s)	9.0	35.0		21.0	47.0		15.0	29.0	29.0	10.0	24.0	
Total Split (%)	9.5%	36.8%		22.1%	49.5%		15.8%	30.5%	30.5%	10.5%	25.3%	
Maximum Green (s)	2.0	30.0		17.0	42.0		12.0	23.0	23.0	3.0	18.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	30.0	30.0		52.0	42.0		36.0	23.0	23.0	20.0	18.0	
Actuated g/C Ratio	0.32	0.32		0.55	0.44		0.38	0.24	0.24	0.21	0.19	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 TOTAL AM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.09	0.46		0.52	0.65		0.45	0.37	0.24	0.13	0.38	
Control Delay	14.5	24.6		15.4	22.8		24.3	32.9	1.3	23.5	34.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.5	24.6		15.4	22.8		24.3	32.9	1.3	23.5	34.1	
LOS	B	C		B	C		C	C	A	C	C	
Approach Delay		24.4			21.2			20.8			31.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 22.5

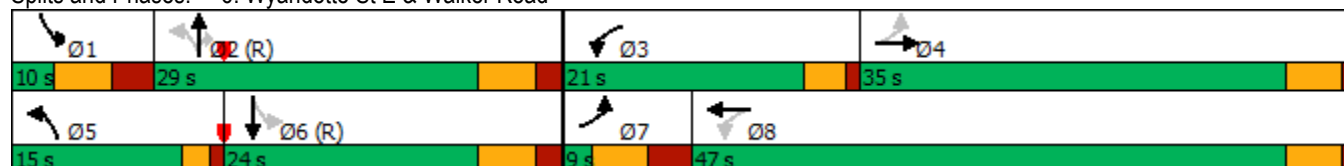
Intersection LOS: C

Intersection Capacity Utilization 66.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
7: Richmond Street

2027 TOTAL AM Traffic Volume

05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	99	92	62	420	474	83
Future Volume (vph)	99	92	62	420	474	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.980	
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1717	0	1789	1883	1846	0
Flt Permitted	0.975		0.222			
Satd. Flow (perm)	1717	0	418	1883	1846	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	100				20	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	108	100	67	457	515	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	208	0	67	457	605	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.30		0.45	0.68	0.89	

Lanes, Volumes, Timings
7: Richmond Street

2027 TOTAL AM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	7.7		24.2	19.7	34.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	7.7		24.2	19.7	34.5	
LOS	A		C	B	C	
Approach Delay	7.7			20.3	34.5	
Approach LOS	A			C	C	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 24.8

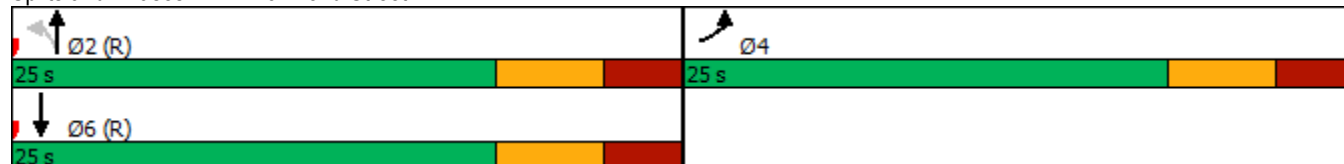
Intersection LOS: C

Intersection Capacity Utilization 62.0%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2027 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	2	50	3	2	3	49	137	5	1	122	7
Future Volume (Veh/h)	11	2	50	3	2	3	49	137	5	1	122	7
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)	12	2	54	3	2	3	53	149	5	1	133	8
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	5			56			137	64	29	142	90	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	5			56			137	64	29	142	90	4
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			100			93	82	100	100	83	99
cM capacity (veh/h)	1616			1549			716	819	1046	704	793	1080
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	68	8	207	142								
Volume Left	12	3	53	1								
Volume Right	54	3	5	8								
cSH	1616	1549	794	804								
Volume to Capacity	0.01	0.00	0.26	0.18								
Queue Length 95th (m)	0.2	0.0	8.3	5.1								
Control Delay (s)	1.3	2.8	11.1	10.4								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.3	2.8	11.1	10.4								
Approach LOS			B	B								
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			31.3%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2027 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	48	8	6	58	1	15	13	4	0	15	11
Future Volume (Veh/h)	3	48	8	6	58	1	15	13	4	0	15	11
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)	3	52	9	7	63	1	16	14	4	0	16	12
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	102	72	22	105	76	16	28			18		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	102	72	22	105	76	16	28			18		
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	93	99	99	92	100	99			100		
cM capacity (veh/h)	755	795	1061	818	806	1063	1585			1599		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	64	71	34	28								
Volume Left	3	7	16	0								
Volume Right	9	1	4	12								
cSH	822	810	1585	1599								
Volume to Capacity	0.08	0.09	0.01	0.00								
Queue Length 95th (m)	2.0	2.3	0.2	0.0								
Control Delay (s)	9.7	9.9	3.5	0.0								
Lane LOS	A	A	A									
Approach Delay (s)	9.7	9.9	3.5	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay			7.3									
Intersection Capacity Utilization			20.3%	ICU Level of Service						A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2027 TOTAL AM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	159	48	420	58	21	474
Future Volume (Veh/h)	159	48	420	58	21	474
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)	173	52	457	63	23	515
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	1050	488			520	
vC1, stage 1 conf vol	488					
vC2, stage 2 conf vol	561					
vCu, unblocked vol	952	270			308	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	62	92			98	
cM capacity (veh/h)	461	632			1030	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	173	52	520	23	515	
Volume Left	173	0	0	23	0	
Volume Right	0	52	63	0	0	
cSH	461	632	1700	1030	1700	
Volume to Capacity	0.38	0.08	0.31	0.02	0.30	
Queue Length 95th (m)	13.8	2.1	0.0	0.5	0.0	
Control Delay (s)	17.4	11.2	0.0	8.6	0.0	
Lane LOS	C	B		A		
Approach Delay (s)	16.0		0.0	0.4		
Approach LOS	C					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			41.1%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 BKGD PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	912	189	210	517	45	183	140	313	73	122	8
Future Volume (vph)	22	912	189	210	517	45	183	140	313	73	122	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3485	0	1789	3536	0	1789	1883	1794	1789	1865	0
Flt Permitted	0.324			0.114			0.666			0.658		
Satd. Flow (perm)	610	3485	0	215	3536	0	1254	1883	1794	1239	1865	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			11				184		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	24	991	205	228	562	49	199	152	340	79	133	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1196	0	228	611	0	199	152	340	79	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (%)	10.5%	42.1%		10.5%	42.1%		10.5%	36.8%	36.8%	10.5%	36.8%	
Maximum Green (s)	3.0	35.0		6.0	35.0		7.0	29.0	29.0	3.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	36.0	35.0		42.0	35.0		39.0	29.0	29.0	31.0	29.0	
Actuated g/C Ratio	0.38	0.37		0.44	0.37		0.41	0.31	0.31	0.33	0.31	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 BKGD PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.09	0.92		1.18	0.47		0.36	0.26	0.50	0.19	0.25	
Control Delay	15.5	40.5		141.5	23.9		19.3	26.5	14.9	20.5	25.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.5	40.5		141.5	23.9		19.3	26.5	14.9	20.5	25.5	
LOS	B	D		F	C		B	C	B	C	C	
Approach Delay		40.0			55.8			18.7			23.7	
Approach LOS		D			E			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Pretimed

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 38.3

Intersection LOS: D

Intersection Capacity Utilization 77.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
10 s	35 s	10 s	40 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10 s	35 s	10 s	40 s

Lanes, Volumes, Timings
7: Richmond Street

2027 BKGD PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	153	109	43	651	641	87
Future Volume (vph)	153	109	43	651	641	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944				0.984	
Flt Protected	0.972		0.950			
Satd. Flow (prot)	1728	0	1789	1883	1853	0
Flt Permitted	0.972		0.222			
Satd. Flow (perm)	1728	0	418	1883	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	80				15	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	118	47	708	697	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	0	47	708	792	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	25.0		25.0	25.0	25.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.42		0.31	1.05	1.17	

Lanes, Volumes, Timings
7: Richmond Street

2027 BKGD PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	10.8		18.5	67.9	112.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	10.8		18.5	67.9	112.9	
LOS	B		B	E	F	
Approach Delay	10.8			64.8	112.9	
Approach LOS	B			E	F	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 77.3

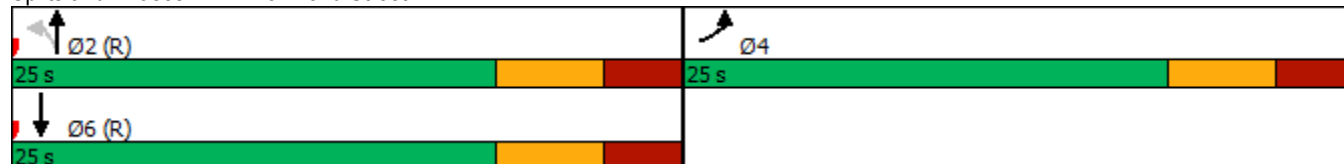
Intersection LOS: E

Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2027 BKGD PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	7	76	5	4	4	65	230	5	7	178	18
Future Volume (Veh/h)	17	7	76	5	4	4	65	230	5	7	178	18
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)	18	8	83	5	4	4	71	250	5	8	193	20
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	8			91			218	104	50	232	143	6
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	8			91			218	104	50	232	143	6
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			100			88	68	100	99	74	98
cM capacity (veh/h)	1612			1504			572	775	1019	534	737	1077
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	109	13	326	221								
Volume Left	18	5	71	8								
Volume Right	83	4	5	20								
cSH	1612	1504	722	748								
Volume to Capacity	0.01	0.00	0.45	0.30								
Queue Length 95th (m)	0.3	0.1	18.9	9.9								
Control Delay (s)	1.3	2.9	14.0	11.8								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.3	2.9	14.0	11.8								
Approach LOS			B	B								
Intersection Summary												
Average Delay				11.0								
Intersection Capacity Utilization				43.3%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2027 BKGD PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	103	13	8	82	4	8	20	5	13	17	10
Future Volume (Veh/h)	10	103	13	8	82	4	8	20	5	13	17	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)	11	112	14	9	89	4	9	22	5	14	18	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	142	96	24	164	100	24	29			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	142	96	24	164	100	24	29			27		
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	85	99	99	89	100	99			99		
cM capacity (veh/h)	684	767	1059	694	779	1052	1584			1587		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	137	102	36	43								
Volume Left	11	9	9	14								
Volume Right	14	4	5	11								
cSH	782	779	1584	1587								
Volume to Capacity	0.18	0.13	0.01	0.01								
Queue Length 95th (m)	5.1	3.6	0.1	0.2								
Control Delay (s)	10.6	10.3	1.9	2.4								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.6	10.3	1.9	2.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.4									
Intersection Capacity Utilization			18.7%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2027 BKGD PM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	116	82	651	181	35	641
Future Volume (Veh/h)	116	82	651	181	35	641
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)	126	89	708	197	38	697
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.66	0.66			0.66	
vC, conflicting volume	1580	806			905	
vC1, stage 1 conf vol	806					
vC2, stage 2 conf vol	773					
vCu, unblocked vol	1621	444			594	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	58	78			94	
cM capacity (veh/h)	300	403			645	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	126	89	905	38	697	
Volume Left	126	0	0	38	0	
Volume Right	0	89	197	0	0	
cSH	300	403	1700	645	1700	
Volume to Capacity	0.42	0.22	0.53	0.06	0.41	
Queue Length 95th (m)	15.9	6.7	0.0	1.5	0.0	
Control Delay (s)	25.4	16.4	0.0	10.9	0.0	
Lane LOS	D	C		B		
Approach Delay (s)	21.7		0.0	0.6		
Approach LOS	C					
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			58.4%	ICU Level of Service		B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2027 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	2	52	3	2	3	49	137	5	1	122	8
Future Volume (Veh/h)	12	2	52	3	2	3	49	137	5	1	122	8
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)	13	2	57	3	2	3	53	149	5	1	133	9
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	5			59			142	68	30	146	94	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	5			59			142	68	30	146	94	4
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			100			93	82	100	100	83	99
cM capacity (veh/h)	1616			1545			710	815	1044	699	788	1080
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	72	8	207	143								
Volume Left	13	3	53	1								
Volume Right	57	3	5	9								
cSH	1616	1545	789	801								
Volume to Capacity	0.01	0.00	0.26	0.18								
Queue Length 95th (m)	0.2	0.0	8.4	5.2								
Control Delay (s)	1.4	2.8	11.2	10.5								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.4	2.8	11.2	10.5								
Approach LOS			B	B								
Intersection Summary												
Average Delay				9.1								
Intersection Capacity Utilization				31.5%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2027 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	51	10	6	60	1	15	13	4	0	15	11
Future Volume (Veh/h)	3	51	10	6	60	1	15	13	4	0	15	11
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)	3	55	11	7	65	1	16	14	4	0	16	12
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	104	72	22	108	76	16	28	18				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	104	72	22	108	76	16	28	18				
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	100	93	99	99	92	100	99	100				
cM capacity (veh/h)	752	795	1061	809	806	1063	1585	1599				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	69	73	34	28								
Volume Left	3	7	16	0								
Volume Right	11	1	4	12								
cSH	826	809	1585	1599								
Volume to Capacity	0.08	0.09	0.01	0.00								
Queue Length 95th (m)	2.2	2.4	0.2	0.0								
Control Delay (s)	9.8	9.9	3.5	0.0								
Lane LOS	A	A	A									
Approach Delay (s)	9.8	9.9	3.5	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay	7.4											
Intersection Capacity Utilization	20.5%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2027 TOTAL AM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	169	57	420	61	25	474
Future Volume (Veh/h)	169	57	420	61	25	474
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)	184	62	457	66	27	515
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.82	0.82			0.82	
vC, conflicting volume	1059	490			523	
vC1, stage 1 conf vol	490					
vC2, stage 2 conf vol	569					
vCu, unblocked vol	963	270			310	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	60	90			97	
cM capacity (veh/h)	456	631			1027	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	184	62	523	27	515	
Volume Left	184	0	0	27	0	
Volume Right	0	62	66	0	0	
cSH	456	631	1700	1027	1700	
Volume to Capacity	0.40	0.10	0.31	0.03	0.30	
Queue Length 95th (m)	15.4	2.6	0.0	0.6	0.0	
Control Delay (s)	18.1	11.3	0.0	8.6	0.0	
Lane LOS	C	B		A		
Approach Delay (s)	16.4		0.0	0.4		
Approach LOS	C					
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			41.8%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 Total PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	912	189	211	517	45	184	140	318	73	122	8
Future Volume (vph)	22	912	189	211	517	45	184	140	318	73	122	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988				0.850		0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3485	0	1789	3536	0	1789	1883	1794	1789	1865	0
Flt Permitted	0.324			0.114			0.666			0.658		
Satd. Flow (perm)	610	3485	0	215	3536	0	1254	1883	1794	1239	1865	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			11				184		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	24	991	205	229	562	49	200	152	346	79	133	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	1196	0	229	611	0	200	152	346	79	142	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (%)	10.5%	42.1%		10.5%	42.1%		10.5%	36.8%	36.8%	10.5%	36.8%	
Maximum Green (s)	3.0	35.0		6.0	35.0		7.0	29.0	29.0	3.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	36.0	35.0		42.0	35.0		39.0	29.0	29.0	31.0	29.0	
Actuated g/C Ratio	0.38	0.37		0.44	0.37		0.41	0.31	0.31	0.33	0.31	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 Total PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.09	0.92		1.18	0.47		0.36	0.26	0.51	0.19	0.25	
Control Delay	15.5	40.5		143.3	23.9		19.3	26.5	15.3	20.5	25.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.5	40.5		143.3	23.9		19.3	26.5	15.3	20.5	25.5	
LOS	B	D		F	C		B	C	B	C	C	
Approach Delay		40.0			56.4			18.9			23.7	
Approach LOS		D			E			B			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 95

Control Type: Pretimed

Maximum v/c Ratio: 1.18

Intersection Signal Delay: 38.5

Intersection LOS: D

Intersection Capacity Utilization 77.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
10 s	35 s	10 s	40 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10 s	35 s	10 s	40 s

Lanes, Volumes, Timings
7: Richmond Street

2027 Total PM Traffic Volume

05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	156	109	43	651	641	87
Future Volume (vph)	156	109	43	651	641	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.945				0.984	
Flt Protected	0.971		0.950			
Satd. Flow (prot)	1728	0	1789	1883	1853	0
Flt Permitted	0.971		0.222			
Satd. Flow (perm)	1728	0	418	1883	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	78				15	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	170	118	47	708	697	95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	288	0	47	708	792	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	25.0		25.0	25.0	25.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.43		0.31	1.05	1.17	

Lanes, Volumes, Timings
7: Richmond Street

2027 Total PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	11.1		18.5	67.9	112.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	11.1		18.5	67.9	112.9	
LOS	B		B	E	F	
Approach Delay	11.1			64.8	112.9	
Approach LOS	B			E	F	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 77.1

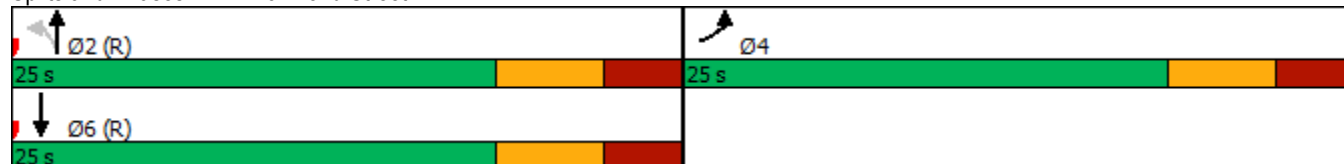
Intersection LOS: E

Intersection Capacity Utilization 66.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2027 Total PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	7	78	5	4	4	67	230	5	7	178	20
Future Volume (Veh/h)	18	7	78	5	4	4	67	230	5	7	178	20
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)	20	8	85	5	4	4	73	250	5	8	193	22
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	8			93			225	108	50	236	149	6
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	8			93			225	108	50	236	149	6
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			100			87	68	100	98	74	98
cM capacity (veh/h)	1612			1501			563	769	1018	528	731	1077
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	113	13	328	223								
Volume Left	20	5	73	8								
Volume Right	85	4	5	22								
cSH	1612	1501	714	744								
Volume to Capacity	0.01	0.00	0.46	0.30								
Queue Length 95th (m)	0.3	0.1	19.4	10.1								
Control Delay (s)	1.4	2.9	14.3	11.9								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.4	2.9	14.3	11.9								
Approach LOS			B	B								
Intersection Summary												
Average Delay												
11.1												
Intersection Capacity Utilization												
43.8%												
ICU Level of Service												
A												
Analysis Period (min)												
15												

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2027 Total PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	105	14	8	86	4	11	20	5	13	17	10
Future Volume (Veh/h)	10	105	14	8	86	4	11	20	5	13	17	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)	11	114	15	9	93	4	12	22	5	14	18	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	150	102	24	172	106	24	29			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	150	102	24	172	106	24	29			27		
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	85	99	99	88	100	99			99		
cM capacity (veh/h)	671	760	1059	682	772	1052	1584			1587		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	140	106	39	43								
Volume Left	11	9	12	14								
Volume Right	15	4	5	11								
cSH	775	771	1584	1587								
Volume to Capacity	0.18	0.14	0.01	0.01								
Queue Length 95th (m)	5.2	3.8	0.2	0.2								
Control Delay (s)	10.7	10.4	2.3	2.4								
Lane LOS	B	B	A	A								
Approach Delay (s)	10.7	10.4	2.3	2.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.5									
Intersection Capacity Utilization			19.0%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2027 Total PM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	123	88	651	194	35	641
Future Volume (Veh/h)	123	88	651	194	35	641
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)	134	96	708	211	38	697
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.66	0.66			0.66	
vC, conflicting volume	1586	814			919	
vC1, stage 1 conf vol	814					
vC2, stage 2 conf vol	773					
vCu, unblocked vol	1632	455			616	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	55	76			94	
cM capacity (veh/h)	298	398			633	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	134	96	919	38	697	
Volume Left	134	0	0	38	0	
Volume Right	0	96	211	0	0	
cSH	298	398	1700	633	1700	
Volume to Capacity	0.45	0.24	0.54	0.06	0.41	
Queue Length 95th (m)	17.7	7.5	0.0	1.5	0.0	
Control Delay (s)	26.6	16.9	0.0	11.0	0.0	
Lane LOS	D	C		B		
Approach Delay (s)	22.5		0.0	0.6		
Approach LOS	C					
Intersection Summary						
Average Delay			3.0			
Intersection Capacity Utilization			59.5%	ICU Level of Service		B
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2032 TOTAL AM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	399	144	298	947	122	235	177	159	37	112	29
Future Volume (vph)	16	399	144	298	947	122	235	177	159	37	112	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.983				0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3435	0	1789	3518	0	1789	1883	1794	1789	1825	0
Flt Permitted	0.160			0.270			0.527			0.637		
Satd. Flow (perm)	301	3435	0	509	3518	0	993	1883	1794	1200	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			19				230		12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	17	434	157	324	1029	133	255	192	173	40	122	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	591	0	324	1162	0	255	192	173	40	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	9.0	35.0		9.0	35.0		8.0	23.0	23.0	8.0	23.0	
Total Split (s)	9.0	35.0		21.0	47.0		15.0	29.0	29.0	10.0	24.0	
Total Split (%)	9.5%	36.8%		22.1%	49.5%		15.8%	30.5%	30.5%	10.5%	25.3%	
Maximum Green (s)	2.0	30.0		17.0	42.0		12.0	23.0	23.0	3.0	18.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	30.0	30.0		52.0	42.0		36.0	23.0	23.0	20.0	18.0	
Actuated g/C Ratio	0.32	0.32		0.55	0.44		0.38	0.24	0.24	0.21	0.19	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2032 TOTAL AM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.13	0.53		0.64	0.74		0.54	0.42	0.28	0.15	0.43	
Control Delay	15.8	26.0		18.2	25.2		26.2	33.8	2.7	24.0	35.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.8	26.0		18.2	25.2		26.2	33.8	2.7	24.0	35.7	
LOS	B	C		B	C		C	C	A	C	D	
Approach Delay		25.7			23.7			22.0			33.3	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 24.4

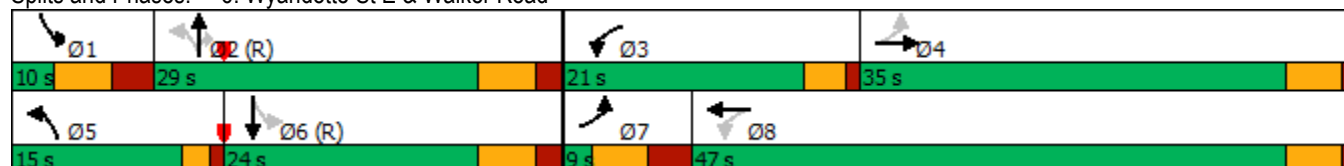
Intersection LOS: C

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
7: Richmond Street

2032 TOTAL AM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	113	104	70	476	537	94
Future Volume (vph)	113	104	70	476	537	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.980	
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1717	0	1789	1883	1846	0
Flt Permitted	0.975		0.222			
Satd. Flow (perm)	1717	0	418	1883	1846	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	103				20	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	123	113	76	517	584	102
Shared Lane Traffic (%)						
Lane Group Flow (vph)	236	0	76	517	686	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.35		0.51	0.76	1.01	

Lanes, Volumes, Timings
7: Richmond Street

2032 TOTAL AM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	8.4		28.4	24.0	58.1	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	8.4		28.4	24.0	58.1	
LOS	A		C	C	E	
Approach Delay	8.4			24.6	58.1	
Approach LOS	A			C	E	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 37.2

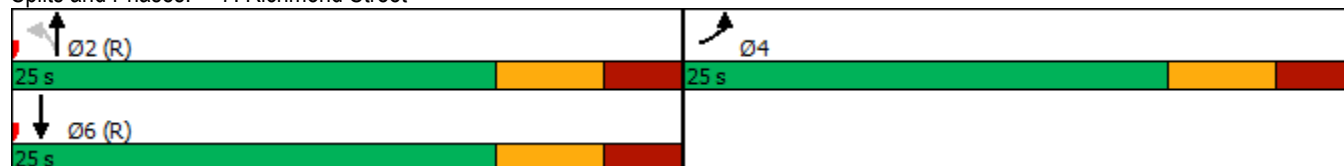
Intersection LOS: D

Intersection Capacity Utilization 68.0%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2032 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	2	59	4	2	4	56	156	6	1	139	9
Future Volume (Veh/h)	13	2	59	4	2	4	56	156	6	1	139	9
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)	14	2	64	4	2	4	61	170	7	1	151	10
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	6			66			160	76	34	166	106	4
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	6			66			160	76	34	166	106	4
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			100			91	79	99	100	81	99
cM capacity (veh/h)	1615			1536			673	805	1039	659	775	1080
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	80	10	238	162								
Volume Left	14	4	61	1								
Volume Right	64	4	7	10								
cSH	1615	1536	772	788								
Volume to Capacity	0.01	0.00	0.31	0.21								
Queue Length 95th (m)	0.2	0.1	10.5	6.1								
Control Delay (s)	1.3	3.0	11.7	10.7								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.3	3.0	11.7	10.7								
Approach LOS			B	B								
Intersection Summary												
Average Delay				9.5								
Intersection Capacity Utilization				34.4%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2032 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	58	11	7	68	1	18	15	5	0	17	12
Future Volume (Veh/h)	4	58	11	7	68	1	18	15	5	0	17	12
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)	4	63	12	8	74	1	20	16	5	0	18	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	121	86	24	126	90	18	31			21		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	121	86	24	126	90	18	31			21		
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	92	99	99	91	100	99			100		
cM capacity (veh/h)	723	780	1058	778	790	1060	1582			1595		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	79	83	41	31								
Volume Left	4	8	20	0								
Volume Right	12	1	5	13								
cSH	809	792	1582	1595								
Volume to Capacity	0.10	0.10	0.01	0.00								
Queue Length 95th (m)	2.6	2.8	0.3	0.0								
Control Delay (s)	9.9	10.1	3.6	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.9	10.1	3.6	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay			7.6									
Intersection Capacity Utilization			21.4%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2032 TOTAL AM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	190	63	476	69	27	537
Future Volume (Veh/h)	190	63	476	69	27	537
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)	207	68	517	75	29	584
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.77	0.77			0.77	
vC, conflicting volume	1196	554			592	
vC1, stage 1 conf vol	554					
vC2, stage 2 conf vol	642					
vCu, unblocked vol	1106	274			322	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	50	88			97	
cM capacity (veh/h)	411	590			954	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	207	68	592	29	584	
Volume Left	207	0	0	29	0	
Volume Right	0	68	75	0	0	
cSH	411	590	1700	954	1700	
Volume to Capacity	0.50	0.12	0.35	0.03	0.34	
Queue Length 95th (m)	21.9	3.1	0.0	0.8	0.0	
Control Delay (s)	22.3	11.9	0.0	8.9	0.0	
Lane LOS	C	B		A		
Approach Delay (s)	19.7		0.0	0.4		
Approach LOS	C					
Intersection Summary						
Average Delay			3.8			
Intersection Capacity Utilization			46.4%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2032 Total PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	8	89	6	5	5	77	263	6	8	203	22
Future Volume (Veh/h)	20	8	89	6	5	5	77	263	6	8	203	22
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)	22	9	97	7	5	5	84	286	7	9	221	24
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	10			106			258	126	58	273	172	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10			106			258	126	58	273	172	8
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			100			83	62	99	98	69	98
cM capacity (veh/h)	1610			1485			509	751	1009	469	708	1075
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	128	17	377	254								
Volume Left	22	7	84	9								
Volume Right	97	5	7	24								
cSH	1610	1485	682	718								
Volume to Capacity	0.01	0.00	0.55	0.35								
Queue Length 95th (m)	0.3	0.1	27.2	12.8								
Control Delay (s)	1.3	3.1	16.6	12.7								
Lane LOS	A	A	C	B								
Approach Delay (s)	1.3	3.1	16.6	12.7								
Approach LOS			C	B								
Intersection Summary												
Average Delay			12.5									
Intersection Capacity Utilization			48.6%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2032 Total PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	120	16	10	98	5	12	23	6	15	19	11
Future Volume (Veh/h)	11	120	16	10	98	5	12	23	6	15	19	11
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	130	17	11	107	5	13	25	7	16	21	12
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	172	117	27	196	120	28	33			32		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	172	117	27	196	120	28	33			32		
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	83	98	98	86	100	99			99		
cM capacity (veh/h)	636	745	1054	642	757	1046	1579			1580		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	159	123	45	49								
Volume Left	12	11	13	16								
Volume Right	17	5	7	12								
cSH	759	753	1579	1580								
Volume to Capacity	0.21	0.16	0.01	0.01								
Queue Length 95th (m)	6.3	4.7	0.2	0.2								
Control Delay (s)	11.0	10.7	2.2	2.4								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.0	10.7	2.2	2.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			8.7									
Intersection Capacity Utilization			20.1%		ICU Level of Service				A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2032 Total PM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	139	99	738	218	52	726
Future Volume (Veh/h)	139	99	738	218	52	726
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)	151	108	802	237	57	789
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.66	0.66			0.66	
vC, conflicting volume	1824	920			1039	
vC1, stage 1 conf vol	920					
vC2, stage 2 conf vol	903					
vCu, unblocked vol	1992	618			798	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	38	66			89	
cM capacity (veh/h)	243	321			541	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	151	108	1039	57	789	
Volume Left	151	0	0	57	0	
Volume Right	0	108	237	0	0	
cSH	243	321	1700	541	1700	
Volume to Capacity	0.62	0.34	0.61	0.11	0.46	
Queue Length 95th (m)	29.8	11.5	0.0	2.8	0.0	
Control Delay (s)	41.4	21.8	0.0	12.4	0.0	
Lane LOS	E	C		B		
Approach Delay (s)	33.2		0.0	0.8		
Approach LOS	D					
Intersection Summary						
Average Delay			4.3			
Intersection Capacity Utilization			66.5%	ICU Level of Service		C
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2032 Total PM Traffic Volume

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	1038	216	250	588	51	209	159	361	83	139	9
Future Volume (vph)	25	1038	216	250	588	51	209	159	361	83	139	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988				0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3485	0	1789	3536	0	1789	1883	1794	1789	1866	0
Flt Permitted	0.274			0.114			0.644			0.625		
Satd. Flow (perm)	516	3485	0	215	3536	0	1213	1883	1794	1177	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			11				184		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	27	1128	235	272	639	55	227	173	392	90	151	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	1363	0	272	694	0	227	173	392	90	161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (%)	10.5%	42.1%		10.5%	42.1%		10.5%	36.8%	36.8%	10.5%	36.8%	
Maximum Green (s)	3.0	35.0		6.0	35.0		7.0	29.0	29.0	3.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	36.0	35.0		42.0	35.0		39.0	29.0	29.0	31.0	29.0	
Actuated g/C Ratio	0.38	0.37		0.44	0.37		0.41	0.31	0.31	0.33	0.31	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2032 Total PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	1.05		1.40	0.53		0.42	0.30	0.58	0.22	0.28	
Control Delay	15.9	68.1		230.0	25.0		20.4	27.0	18.2	21.2	26.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.9	68.1		230.0	25.0		20.4	27.0	18.2	21.2	26.1	
LOS	B	E		F	C		C	C	B	C	C	
Approach Delay		67.1			82.7			20.8			24.3	
Approach LOS		E			F			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 105

Control Type: Pretimed

Maximum v/c Ratio: 1.40

Intersection Signal Delay: 57.6

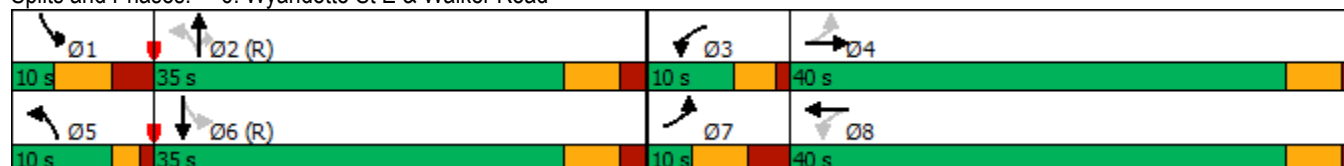
Intersection LOS: E

Intersection Capacity Utilization 85.2%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
7: Richmond Street

2032 Total PM Traffic Volume

05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	176	123	48	738	726	99
Future Volume (vph)	176	123	48	738	726	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.944				0.984	
Flt Protected	0.971		0.950			
Satd. Flow (prot)	1726	0	1789	1883	1853	0
Flt Permitted	0.971		0.222			
Satd. Flow (perm)	1726	0	418	1883	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	58				15	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	134	52	802	789	108
Shared Lane Traffic (%)						
Lane Group Flow (vph)	325	0	52	802	897	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	25.0		25.0	25.0	25.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.49		0.35	1.18	1.33	

Lanes, Volumes, Timings
7: Richmond Street

2032 Total PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	13.2		19.6	118.4	177.9	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	13.2		19.6	118.4	177.9	
LOS	B		B	F	F	
Approach Delay	13.2			112.4	177.9	
Approach LOS	B			F	F	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Maximum v/c Ratio: 1.33

Intersection Signal Delay: 125.2

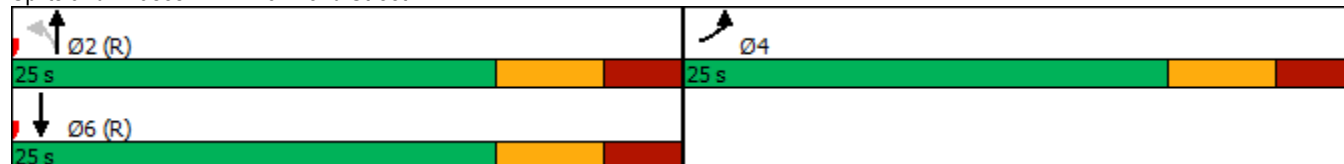
Intersection LOS: F

Intersection Capacity Utilization 73.2%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2037 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	3	66	4	3	4	63	175	7	1	156	10
Future Volume (Veh/h)	15	3	66	4	3	4	63	175	7	1	156	10
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)	16	3	72	4	3	4	68	190	8	1	170	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	7			75			180	86	39	187	120	5
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	7			75			180	86	39	187	120	5
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			100			89	76	99	100	78	99
cM capacity (veh/h)	1614			1524			635	794	1033	620	761	1078
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	91	11	266	182								
Volume Left	16	4	68	1								
Volume Right	72	4	8	11								
cSH	1614	1524	751	773								
Volume to Capacity	0.01	0.00	0.35	0.24								
Queue Length 95th (m)	0.2	0.1	12.8	7.3								
Control Delay (s)	1.3	2.7	12.4	11.1								
Lane LOS	A	A	B	B								
Approach Delay (s)	1.3	2.7	12.4	11.1								
Approach LOS			B	B								
Intersection Summary												
Average Delay				9.9								
Intersection Capacity Utilization				37.6%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2037 TOTAL AM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	64	12	8	76	1	20	16	5	0	19	14
Future Volume (Veh/h)	4	64	12	8	76	1	20	16	5	0	19	14
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)	4	70	13	9	83	1	22	17	5	0	21	15
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	134	94	28	140	100	20	36	22				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	134	94	28	140	100	20	36	22				
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	99	91	99	99	89	100	99	100				
cM capacity (veh/h)	700	770	1052	755	779	1058	1575	1593				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	87	93	44	36								
Volume Left	4	9	22	0								
Volume Right	13	1	5	15								
cSH	798	779	1575	1593								
Volume to Capacity	0.11	0.12	0.01	0.00								
Queue Length 95th (m)	2.9	3.2	0.3	0.0								
Control Delay (s)	10.1	10.2	3.7	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	10.1	10.2	3.7	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay	7.7											
Intersection Capacity Utilization	22.5%			ICU Level of Service					A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2037 TOTAL AM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	210	70	533	77	30	601
Future Volume (Veh/h)	210	70	533	77	30	601
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)	228	76	579	84	33	653
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.72	0.72			0.72	
vC, conflicting volume	1340	621			663	
vC1, stage 1 conf vol	621					
vC2, stage 2 conf vol	719					
vCu, unblocked vol	1279	286			344	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	38	86			96	
cM capacity (veh/h)	368	545			880	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	228	76	663	33	653	
Volume Left	228	0	0	33	0	
Volume Right	0	76	84	0	0	
cSH	368	545	1700	880	1700	
Volume to Capacity	0.62	0.14	0.39	0.04	0.38	
Queue Length 95th (m)	31.8	3.9	0.0	0.9	0.0	
Control Delay (s)	29.5	12.7	0.0	9.3	0.0	
Lane LOS	D	B		A		
Approach Delay (s)	25.3		0.0	0.4		
Approach LOS	D					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			51.0%	ICU Level of Service		A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 TOTAL AM Traffic Volume

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	448	162	334	1062	136	263	199	177	42	125	32
Future Volume (vph)	18	448	162	334	1062	136	263	199	177	42	125	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.983				0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3435	0	1789	3518	0	1789	1883	1794	1789	1825	0
Flt Permitted	0.133			0.228			0.492			0.623		
Satd. Flow (perm)	250	3435	0	429	3518	0	927	1883	1794	1173	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			19				230		12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	20	487	176	363	1154	148	286	216	192	46	136	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	663	0	363	1302	0	286	216	192	46	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	9.0	35.0		9.0	35.0		8.0	23.0	23.0	8.0	23.0	
Total Split (s)	9.0	35.0		21.0	47.0		15.0	29.0	29.0	10.0	24.0	
Total Split (%)	9.5%	36.8%		22.1%	49.5%		15.8%	30.5%	30.5%	10.5%	25.3%	
Maximum Green (s)	2.0	30.0		17.0	42.0		12.0	23.0	23.0	3.0	18.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	30.0	30.0		52.0	42.0		36.0	23.0	23.0	20.0	18.0	
Actuated g/C Ratio	0.32	0.32		0.55	0.44		0.38	0.24	0.24	0.21	0.19	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 TOTAL AM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.18	0.59		0.76	0.83		0.62	0.47	0.32	0.17	0.48	
Control Delay	17.2	27.4		24.9	28.8		28.9	34.9	3.7	24.7	37.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	17.2	27.4		24.9	28.8		28.9	34.9	3.7	24.7	37.1	
LOS	B	C		C	C		C	C	A	C	D	
Approach Delay		27.1			28.0			23.8			34.5	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 27.3

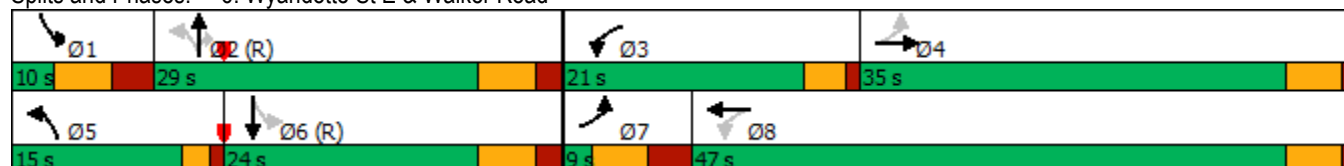
Intersection LOS: C

Intersection Capacity Utilization 78.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
7: Richmond Street

2037 TOTAL AM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	126	116	78	533	601	105
Future Volume (vph)	126	116	78	533	601	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.980	
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1717	0	1789	1883	1846	0
Flt Permitted	0.975		0.222			
Satd. Flow (perm)	1717	0	418	1883	1846	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	98				20	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	126	85	579	653	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	263	0	85	579	767	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.39		0.57	0.86	1.13	

Lanes, Volumes, Timings
7: Richmond Street

2037 TOTAL AM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	9.4		32.6	30.7	97.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	9.4		32.6	30.7	97.8	
LOS	A		C	C	F	
Approach Delay	9.4			30.9	97.8	
Approach LOS	A			C	F	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 57.9

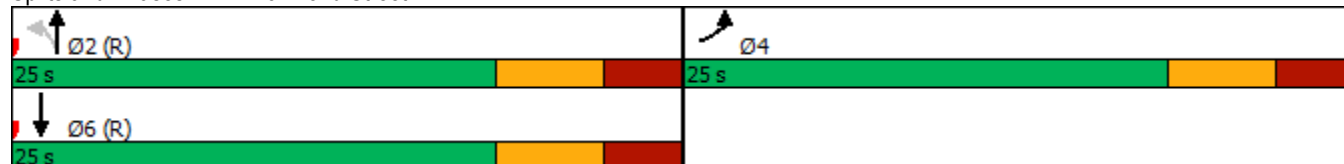
Intersection LOS: E

Intersection Capacity Utilization 73.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



HCM Unsignalized Intersection Capacity Analysis

1: Drouillard Street & Richmond Street

2037 Total PM Traffic Volume
05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	10	99	7	5	5	86	295	7	10	228	25
Future Volume (Veh/h)	23	10	99	7	5	5	86	295	7	10	228	25
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)	25	11	108	8	5	5	93	321	8	11	248	27
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	10			119			290	141	65	307	192	8
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	10			119			290	141	65	307	192	8
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 %	98			99			80	56	99	97	64	97
cM capacity (veh/h)	1610			1469			458	734	999	415	688	1075
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	144	18	422	286								
Volume Left	25	8	93	11								
Volume Right	108	5	8	27								
cSH	1610	1469	651	694								
Volume to Capacity	0.02	0.01	0.65	0.41								
Queue Length 95th (m)	0.4	0.1	37.9	16.2								
Control Delay (s)	1.4	3.3	20.1	13.8								
Lane LOS	A	A	C	B								
Approach Delay (s)	1.4	3.3	20.1	13.8								
Approach LOS			C	B								
Intersection Summary												
Average Delay				14.6								
Intersection Capacity Utilization				53.2%	ICU Level of Service				A			
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis

9: Richmond Street & St Luke Rd

2037 Total PM Traffic Volume

05-07-2026

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	134	18	11	109	5	13	26	7	16	22	12
Future Volume (Veh/h)	12	134	18	11	109	5	13	26	7	16	22	12
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)	13	146	20	12	118	5	14	28	8	17	24	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	188	128	30	218	131	32	37	36				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	188	128	30	218	131	32	37	36				
tC, single (s)	7.4	6.6	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.8	4.1	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	98	80	98	98	84	100	99	99				
cM capacity (veh/h)	610	733	1050	605	745	1042	1574	1575				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	179	135	50	54								
Volume Left	13	12	14	17								
Volume Right	20	5	8	13								
cSH	747	737	1574	1575								
Volume to Capacity	0.24	0.18	0.01	0.01								
Queue Length 95th (m)	7.5	5.3	0.2	0.3								
Control Delay (s)	11.3	11.0	2.1	2.4								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.3	11.0	2.1	2.4								
Approach LOS	B	B										
Intersection Summary												
Average Delay			9.0									
Intersection Capacity Utilization			21.6%	ICU Level of Service					A			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Walker Rd & Richmond Street

2037 Total PM Traffic Volume
05-07-2026

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	154	110	825	242	56	812
Future Volume (Veh/h)	154	110	825	242	56	812
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)	167	120	897	263	61	883
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage (veh)			2			
Upstream signal (m)			236			
pX, platoon unblocked	0.66	0.66			0.66	
vC, conflicting volume	2034	1028			1160	
vC1, stage 1 conf vol	1028					
vC2, stage 2 conf vol	1005					
vCu, unblocked vol	2312	782			983	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	18	54			87	
cM capacity (veh/h)	204	259			462	
Direction, Lane #	WB 1	WB 2	NB 1	SB 1	SB 2	
Volume Total	167	120	1160	61	883	
Volume Left	167	0	0	61	0	
Volume Right	0	120	263	0	0	
cSH	204	259	1700	462	1700	
Volume to Capacity	0.82	0.46	0.68	0.13	0.52	
Queue Length 95th (m)	47.5	18.3	0.0	3.6	0.0	
Control Delay (s)	72.2	30.4	0.0	14.0	0.0	
Lane LOS	F	D		B		
Approach Delay (s)	54.7		0.0	0.9		
Approach LOS	F					
Intersection Summary						
Average Delay			6.9			
Intersection Capacity Utilization			73.3%	ICU Level of Service		D
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 Total PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1163	242	279	659	57	235	178	404	93	156	10
Future Volume (vph)	28	1163	242	279	659	57	235	178	404	93	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988				0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3485	0	1789	3536	0	1789	1883	1794	1789	1866	0
Flt Permitted	0.228			0.114			0.613			0.594		
Satd. Flow (perm)	429	3485	0	215	3536	0	1155	1883	1794	1119	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			11				184		4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	30	1264	263	303	716	62	255	193	439	101	170	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	1527	0	303	778	0	255	193	439	101	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (%)	10.5%	42.1%		10.5%	42.1%		10.5%	36.8%	36.8%	10.5%	36.8%	
Maximum Green (s)	3.0	35.0		6.0	35.0		7.0	29.0	29.0	3.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	36.0	35.0		42.0	35.0		39.0	29.0	29.0	31.0	29.0	
Actuated g/C Ratio	0.38	0.37		0.44	0.37		0.41	0.31	0.31	0.33	0.31	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 Total PM Traffic Volume
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.15	1.17		1.56	0.59		0.49	0.34	0.65	0.26	0.32	
Control Delay	16.5	115.2		296.9	26.2		22.0	27.6	21.3	22.0	26.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	16.5	115.2		296.9	26.2		22.0	27.6	21.3	22.0	26.7	
LOS	B	F		F	C		C	C	C	C	C	
Approach Delay		113.3			102.1			22.9			25.0	
Approach LOS		F			F			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 40 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Pretimed

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 82.5

Intersection LOS: F

Intersection Capacity Utilization 93.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road

 Ø1	 Ø2 (R)	 Ø3	 Ø4
10 s	35 s	10 s	40 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
10 s	35 s	10 s	40 s

Lanes, Volumes, Timings
7: Richmond Street

2037 Total PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	179	138	54	825	812	111
Future Volume (vph)	179	138	54	825	812	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.941				0.984	
Flt Protected	0.973		0.950			
Satd. Flow (prot)	1724	0	1789	1883	1853	0
Flt Permitted	0.973		0.222			
Satd. Flow (perm)	1724	0	418	1883	1853	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	40				15	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	150	59	897	883	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	345	0	59	897	1004	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	25.0		25.0	25.0	25.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.53		0.39	1.32	1.49	

Lanes, Volumes, Timings
7: Richmond Street

2037 Total PM Traffic Volume
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	14.8		21.4	177.2	246.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	14.8		21.4	177.2	246.6	
LOS	B		C	F	F	
Approach Delay	14.8			167.6	246.6	
Approach LOS	B			F	F	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 1.49

Intersection Signal Delay: 179.1

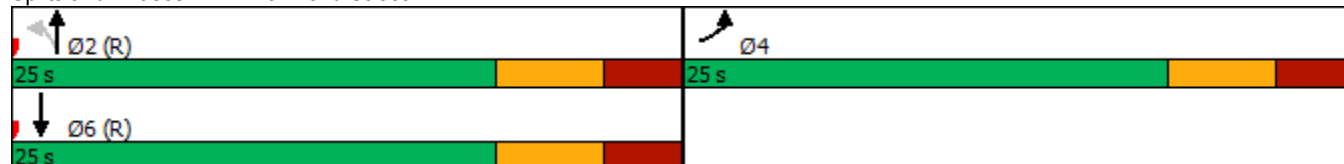
Intersection LOS: F

Intersection Capacity Utilization 79.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 TOTAL AM Traffic Volume - Attenauted

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	351	127	262	833	107	206	156	140	33	98	25
Future Volume (vph)	14	351	127	262	833	107	206	156	140	33	98	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.983				0.850		0.970	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3435	0	1789	3518	0	1789	1883	1794	1789	1827	0
Flt Permitted	0.229			0.316			0.569			0.650		
Satd. Flow (perm)	431	3435	0	595	3518	0	1072	1883	1794	1224	1827	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		56			19				230		12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	15	382	138	285	905	116	224	170	152	36	107	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	520	0	285	1021	0	224	170	152	36	134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	9.0	35.0		9.0	35.0		8.0	23.0	23.0	8.0	23.0	
Total Split (s)	9.0	35.0		21.0	47.0		15.0	29.0	29.0	10.0	24.0	
Total Split (%)	9.5%	36.8%		22.1%	49.5%		15.8%	30.5%	30.5%	10.5%	25.3%	
Maximum Green (s)	2.0	30.0		17.0	42.0		12.0	23.0	23.0	3.0	18.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	30.0	30.0		52.0	42.0		36.0	23.0	23.0	20.0	18.0	
Actuated g/C Ratio	0.32	0.32		0.55	0.44		0.38	0.24	0.24	0.21	0.19	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2027 TOTAL AM Traffic Volume - Attenauted

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.09	0.46		0.53	0.65		0.45	0.37	0.25	0.13	0.38	
Control Delay	14.5	24.7		15.5	22.8		24.4	32.9	1.7	23.5	34.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.5	24.7		15.5	22.8		24.4	32.9	1.7	23.5	34.1	
LOS	B	C		B	C		C	C	A	C	C	
Approach Delay		24.4			21.2			20.7			31.8	
Approach LOS		C			C			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 95

Actuated Cycle Length: 95

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 22.5

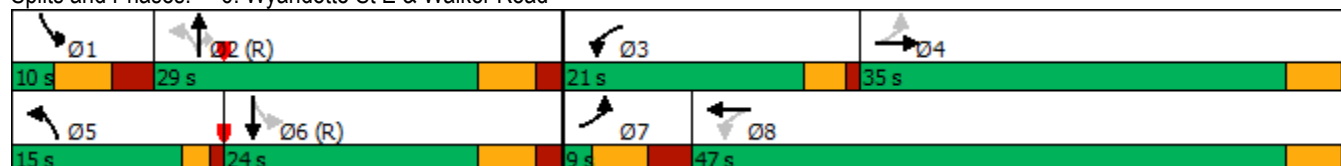
Intersection LOS: C

Intersection Capacity Utilization 66.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
7: Richmond Street

2027 TOTAL AM Traffic Volume - Attenauted
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	100	92	62	420	474	83
Future Volume (vph)	100	92	62	420	474	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	15.0			0.0
Storage Lanes	1	0	1			0
Taper Length (m)	7.5		15.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.935				0.980	
Flt Protected	0.975		0.950			
Satd. Flow (prot)	1717	0	1789	1883	1846	0
Flt Permitted	0.975		0.222			
Satd. Flow (perm)	1717	0	418	1883	1846	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	100				20	
Link Speed (k/h)	50			50	50	
Link Distance (m)	163.7			143.1	235.6	
Travel Time (s)	11.8			10.3	17.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	100	67	457	515	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	209	0	67	457	605	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.7			3.7	3.7	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	3.0			3.0	3.0	
Two way Left Turn Lane					Yes	
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99
Turning Speed (k/h)	25	15	25			15
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Minimum Split (s)	15.0		15.0	15.0	15.0	
Total Split (s)	25.0		25.0	25.0	25.0	
Total Split (%)	50.0%		50.0%	50.0%	50.0%	
Maximum Green (s)	18.0		18.0	18.0	18.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	3.0		3.0	3.0	3.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	7.0		7.0	7.0	7.0	
Lead/Lag						
Lead-Lag Optimize?						
Walk Time (s)	7.0		7.0	7.0	7.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	18.0		18.0	18.0	18.0	
Actuated g/C Ratio	0.36		0.36	0.36	0.36	
v/c Ratio	0.31		0.45	0.68	0.89	

Lanes, Volumes, Timings
7: Richmond Street

2027 TOTAL AM Traffic Volume - Attenauted
05-07-2026

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Control Delay	7.8		24.2	19.7	34.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	7.8		24.2	19.7	34.5	
LOS	A		C	B	C	
Approach Delay	7.8			20.3	34.5	
Approach LOS	A			C	C	

Intersection Summary

Area Type: Other

Cycle Length: 50

Actuated Cycle Length: 50

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green

Natural Cycle: 40

Control Type: Pretimed

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 24.8

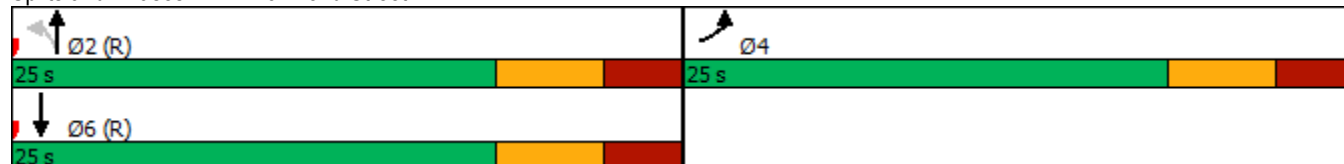
Intersection LOS: C

Intersection Capacity Utilization 62.1%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7: Richmond Street



Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 TOTAL AM Traffic Volume - Attenuated

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	448	162	334	1062	136	263	199	177	42	125	32
Future Volume (vph)	18	448	162	334	1062	136	263	199	177	42	125	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.960			0.983				0.850		0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3435	0	1789	3518	0	1789	1883	1794	1789	1825	0
Flt Permitted	0.114			0.213			0.492			0.623		
Satd. Flow (perm)	215	3435	0	401	3518	0	927	1883	1794	1173	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			16				190		10	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	20	487	176	363	1154	148	286	216	192	46	136	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	20	663	0	363	1302	0	286	216	192	46	171	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	9.0	35.0		9.0	35.0		8.0	23.0	23.0	8.0	23.0	
Total Split (s)	10.0	40.0		27.0	57.0		18.0	38.0	38.0	10.0	30.0	
Total Split (%)	8.7%	34.8%		23.5%	49.6%		15.7%	33.0%	33.0%	8.7%	26.1%	
Maximum Green (s)	3.0	35.0		23.0	52.0		15.0	32.0	32.0	3.0	24.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			10.0	10.0		10.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	36.0	35.0		63.0	52.0		45.0	32.0	32.0	26.0	24.0	
Actuated g/C Ratio	0.31	0.30		0.55	0.45		0.39	0.28	0.28	0.23	0.21	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 TOTAL AM Traffic Volume - Attenuated

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.19	0.62		0.73	0.81		0.60	0.41	0.30	0.16	0.44	
Control Delay	20.2	34.6		26.3	32.1		31.6	36.8	6.0	28.3	41.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	20.2	34.6		26.3	32.1		31.6	36.8	6.0	28.3	41.4	
LOS	C	C		C	C		C	D	A	C	D	
Approach Delay		34.2			30.8			26.1			38.6	
Approach LOS		C			C			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 31.0

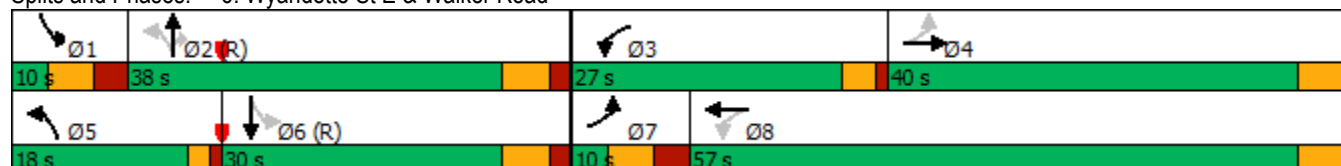
Intersection LOS: C

Intersection Capacity Utilization 78.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 Total PM Traffic Volume - Attenuated

05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	1163	242	279	659	57	235	178	404	93	156	10
Future Volume (vph)	28	1163	242	279	659	57	235	178	404	93	156	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	4.8	3.7	3.7	4.8
Storage Length (m)	60.0		0.0	120.0		0.0	85.0		20.0	40.0		0.0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (m)	15.0			15.0			20.0			10.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974			0.988				0.850		0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3485	0	1789	3536	0	1789	1883	1794	1789	1866	0
Flt Permitted	0.322			0.083			0.573			0.552		
Satd. Flow (perm)	606	3485	0	156	3536	0	1079	1883	1794	1040	1866	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			10				197		3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		1162.2			945.7			612.4			287.6	
Travel Time (s)		83.7			68.1			44.1			20.7	
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
Adj. Flow (vph)	30	1264	263	303	716	62	255	193	439	101	170	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	1527	0	303	778	0	255	193	439	101	181	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.7			3.7			4.8			4.8	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		3.0			3.0			3.0			3.0	
Two way Left Turn Lane												
Headway Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.85	0.99	0.99	0.85
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		
Minimum Split (s)	10.0	40.0		10.0	40.0		10.0	35.0	35.0	10.0	35.0	
Total Split (s)	10.0	49.0		19.0	58.0		10.0	37.0	37.0	10.0	37.0	
Total Split (%)	8.7%	42.6%		16.5%	50.4%		8.7%	32.2%	32.2%	8.7%	32.2%	
Maximum Green (s)	3.0	44.0		15.0	53.0		7.0	31.0	31.0	3.0	31.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		2.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	3.0	1.0		1.0	1.0		1.0	2.0	2.0	3.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	5.0		4.0	5.0		3.0	6.0	6.0	7.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	
Flash Dont Walk (s)		16.0			16.0			20.0	20.0		20.0	
Pedestrian Calls (#/hr)		0			0			0	0		0	
Act Effct Green (s)	45.0	44.0		64.0	53.0		41.0	31.0	31.0	33.0	31.0	
Actuated g/C Ratio	0.39	0.38		0.56	0.46		0.36	0.27	0.27	0.29	0.27	

Lanes, Volumes, Timings
6: Wyandotte St E & Walker Road

2037 Total PM Traffic Volume - Attenuated
05-07-2026

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.11	1.13		1.01	0.48		0.60	0.38	0.70	0.32	0.36	
Control Delay	15.1	102.9		87.6	22.3		34.3	36.9	27.1	31.8	35.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.1	102.9		87.6	22.3		34.3	36.9	27.1	31.8	35.9	
LOS	B	F		F	C		C	D	C	C	D	
Approach Delay		101.2			40.6			31.3			34.4	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 115

Actuated Cycle Length: 115

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 115

Control Type: Pretimed

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 62.8

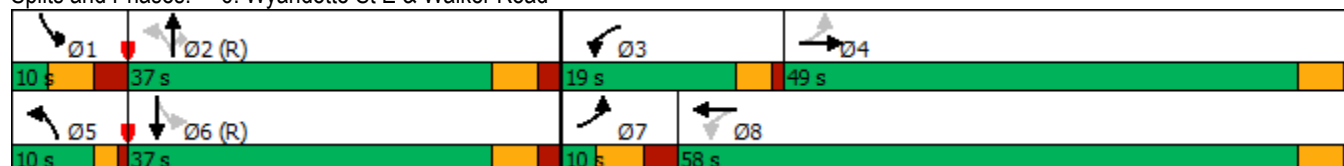
Intersection LOS: E

Intersection Capacity Utilization 93.0%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 6: Wyandotte St E & Walker Road



Appendix D

WARRANT AND PHOTOS

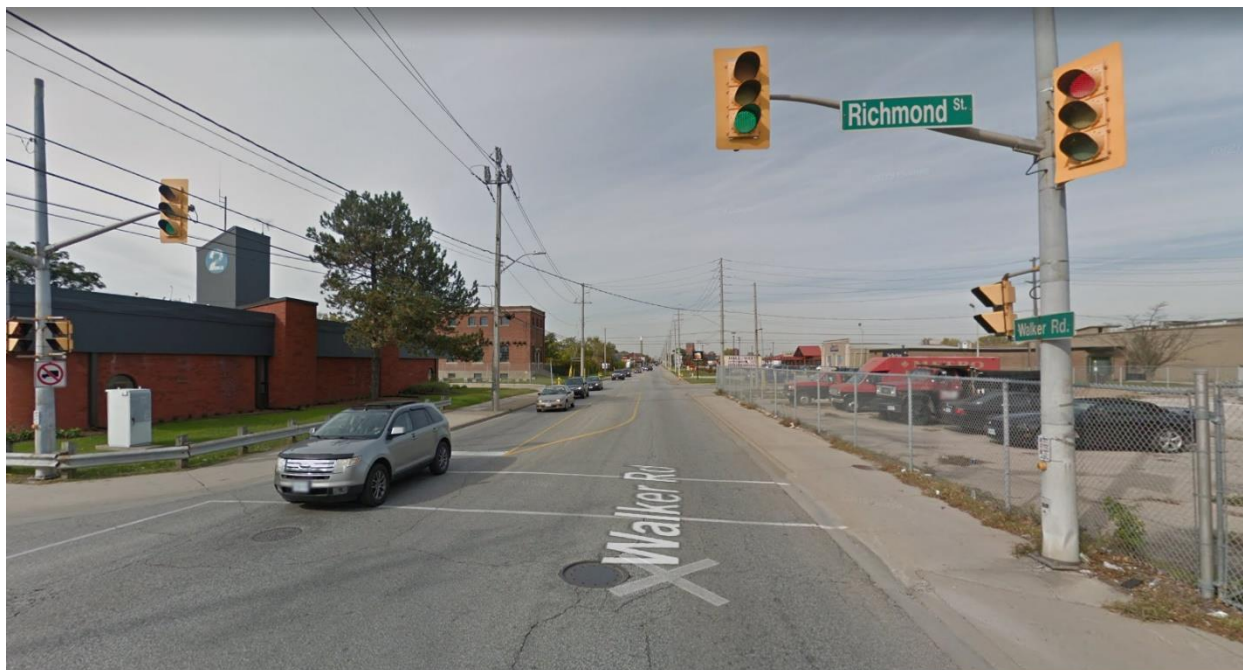


Figure 1: Looking North on Walker Rd toward Richmond Street



Figure 2: Looking North on St Luke Road toward Richmond Street



Figure 3: Looking West on Richmond Street toward St Luke Street



Figure 4: Looking North on Drouillard St toward Richmond Street



Figure 5: Looking West on Richmond Street toward Drouillard Street



Figure 6: Looking West on Richmond Street toward Walker Road



Figure 7: Looking North on Walker Road toward Wyandotte Street



Figure 8: Looking West on Wyandotte Street toward Walker Road