Tordar Investments Ltd.

Maritime Ontario Kanata West
TIA Report

April 2021

PARSONS

Maritime Ontario Kanata West

TIA Report

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PARSONS

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TIA REPORT

Parsons has been retained by Tordar Investments Ltd to prepare a TIA in support of a Site Plan application for a proposed package sorting facility development in Ward 4: Kanata North. The following report represents Step 4 of the TIA process. This document follows the TIA process, as outlined in the City Transportation Impact Assessment (TIA) Guidelines (2017).

1. SCREENING FORM

The Screening Form was submitted to the City of Ottawa for review and verification of the need to complete a Transportation Impact Assessment (TIA). The Trip Generation trigger was met due to the size of the development. As such, a TIA Report was deemed required. The Screening Form is provided in Appendix A, along with responses to the City comments received for the Forecasting Report.

2. SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The proposed development is located at 8700 Campeau Drive and is expected to occupy Blocks 37, 38 and 39 of the Kanata West Business Park. The site plan proposes three driveways. The east-most driveway will service the gated warehouse area located at the rear of the building and will have a single outbound lane plus three inbound lanes to provide queuing space for transports waiting to pass through the security checkpoint. The two other driveways are intended to service the employee/visitor parking area located along the southern building frontage.

For the purposes of the TIA, the development will be implemented in two phases:

- Phase 1 will consist of a two-storey office building with a gross floor area of 6,000 ft^2, a 60,000 ft^2 warehouse building, as well as parking for 50 tractors and 138 staff. The assumed horizon year is 2021 with the facility operating at only 25% of the ultimate capacity.
- Phase 2 will consist of the balance of Phase 1 capacity, plus the a 11,800 ft^2 expansion of the warehouse. The assumed horizon year is 2026, although in reality it could take upwards of 20 years for this level of operation to materialize depending on market conditions.

It is understood that it is preferable for transport trucks accessing the warehouse to circulate the site in a counter-clockwise rotation, as shown in Figure 1. This provides the transport truck operators the ability to see obstructions from the driver seat as the vehicle reverses into the loading dock/bay. Figure 2 below displays sightlines at two locations for transport truck operator during the reverse maneuver into the loading dock/bay. The subject site is currently vacant and zoned as IP – Business Park Industrial Zone. The local context of the site is provided as Figure 3 and the proposed Site Plan is provided as Figure 4.

Figure 1: Transport Truck Site Circulation

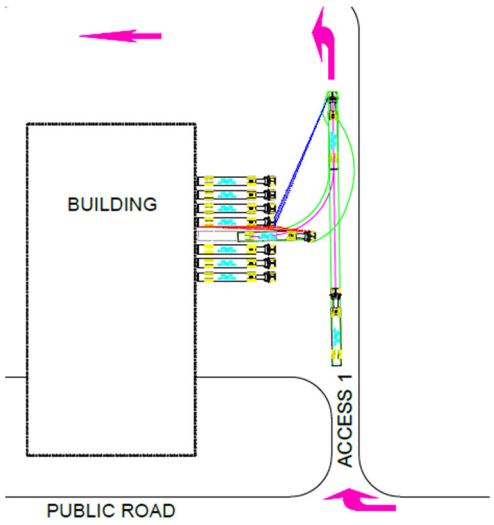


Figure 2: Transport Truck Sight Lines

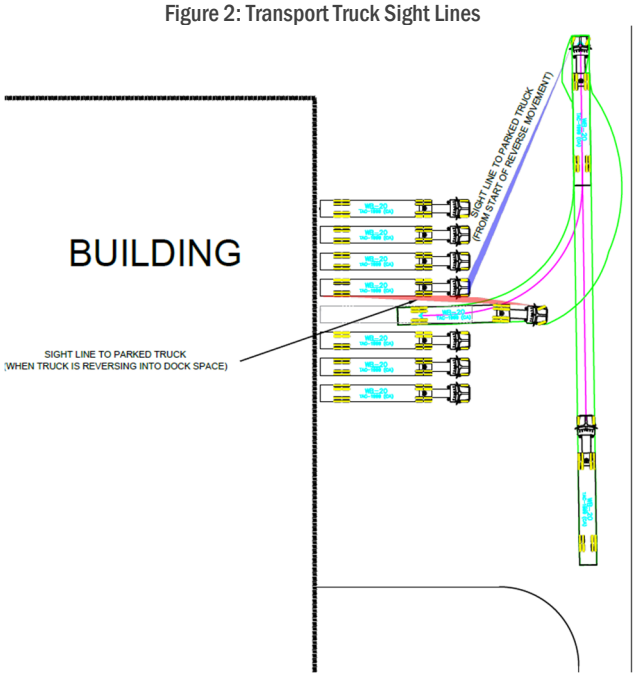
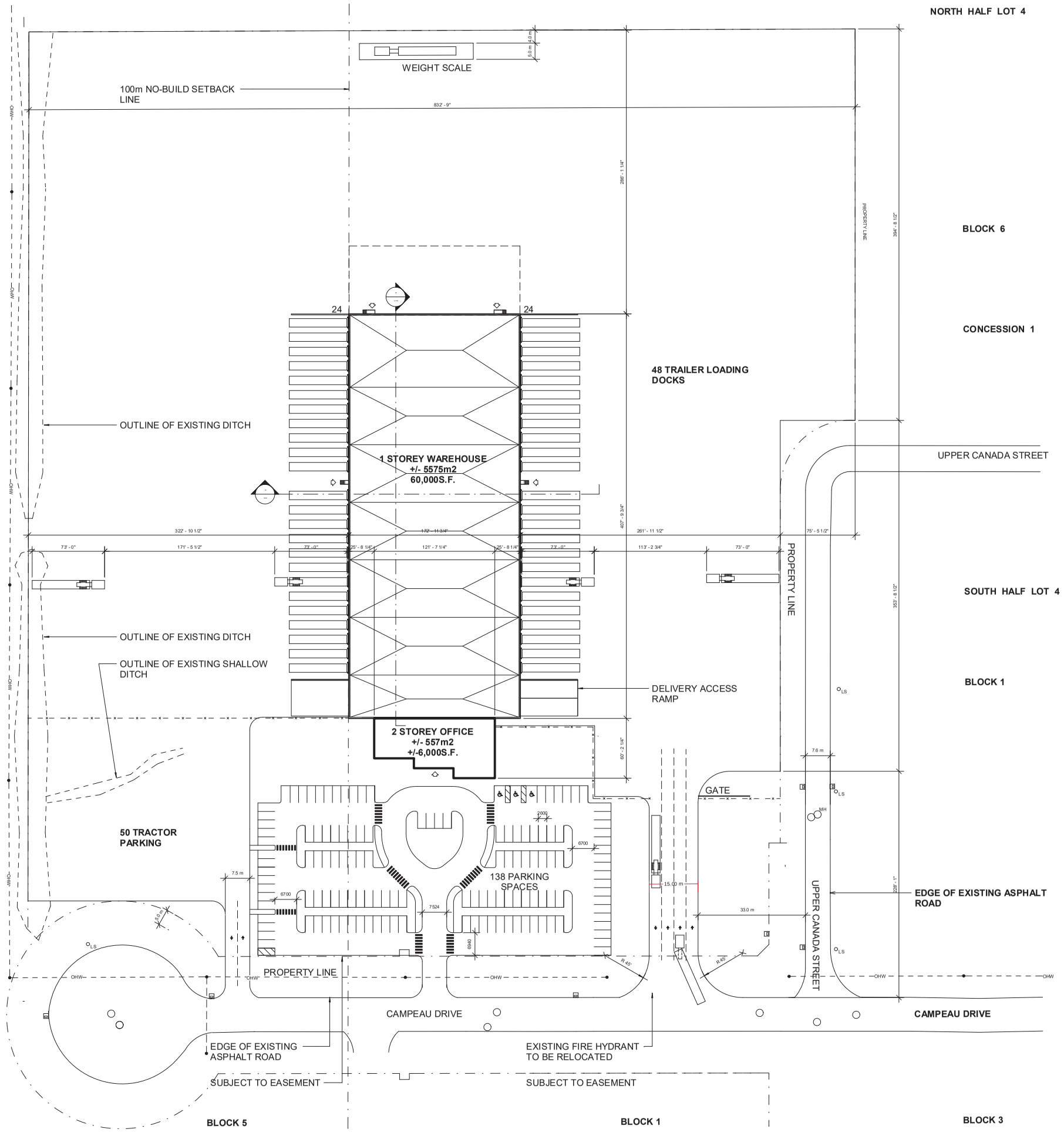


Figure 3: Local Context

Figure 4: Proposed Site Plan



01 SITE PLAN
SP-01 Scale: 1 : 500

MCROBIE
ARCHITECTS + INTERIOR DESIGNERS
OTTAWA, ONTARIO

North

Revisions

Revision Number	Description	Date
1	ISSUED FOR REVEIW	2020/09/09

Project

MARITIME-ONTARIO, KANATA WEST

KANATA WEST BUSINESS PARK

Drawing

SITE PLAN - OPTION C

Scale 1 : 500
Stamp
Drawn RH
Checked DM

Project No. 19-247
Drawing No. SP-01
Date 2020/07/21

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2.1.2. Existing Conditions

AREA ROAD NETWORK

Campeau Drive is an east-west arterial roadway that currently extends from approximately 650m west of Palladium Drive to Eagleson Rd/March Rd in the east. Within the study area, Campeau Drive consists of two travel lanes along the proposed sites' frontage, then widens to a four-lane cross section approximately 150m west of the Campeau/Palladium intersection. The roadway has a posted speed limit of 60 km/h.

Palladium Drive is an arterial roadway that currently extends from approximately 270m north of Campeau Drive to south of the Hwy 417 EB Off Ramp, where it curves east and continues until Terry Fox Drive. East of Terry Fox Drive, Palladium Drive continues as Katimavik Road. The roadway consists of a four-lane cross section and a posted speed limit of 60 km/h north of the Hwy 417 WB On-Off Ramps, and 70 km/h south of the ramps.

Upper Canada Way is a proposed east-west local roadway, which will extend from Huntmar Drive in the east to Campeau Drive in the west. Its cross-section will consist of a single travel lane per direction. At study area intersections, auxiliary turn lanes are not provided, and the unposted speed limit is understood to be 50 km/h.

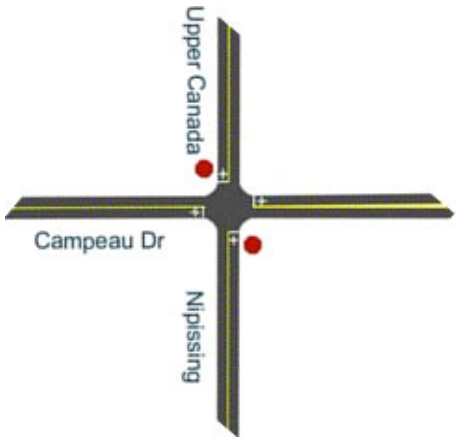
Kanata West Centre Drive is a north-south local roadway that extends south from Campeau Drive that services a shopping center. The road consists of a single travel lane in either direction and is assumed to have an unposted speed of 50km/h.

Cabela's Way is an east-west local roadway which extends from Cabela's Outfitters in the west to Palladium Drive in the east. Its cross-section consists of a single travel lane per direction. At study area intersections, auxiliary turn lanes are not provided, and the unposted speed limit is understood to be 50 km/h.

EXISTING STUDY AREA INTERSECTIONS

Campeau/Nipissing

The Upper Canada/Palladium intersection is anticipated to be a four-legged intersection with STOP Control on the north and south legs of the intersection. All approaches are expected to consist of a singe shared movement lane. There are no anticipated restricted movements at this intersection.



Campeau /Kanata West Centre

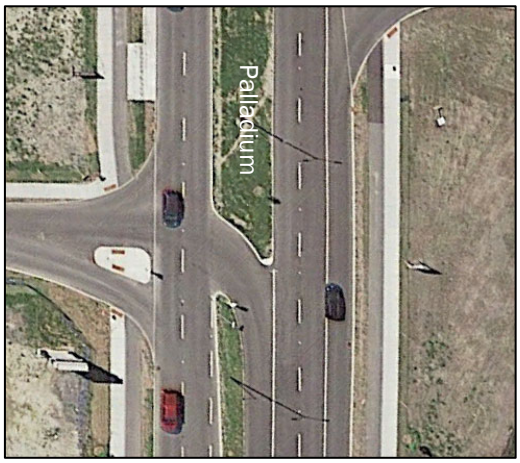
Campeau/Kanata West Centre intersection is a T-intersection with full movement STOP control on the south leg (Kanata West Center drive). The south leg consists of dedicated northbound left-turn and right-turn lanes, and a southbound receiving lane. The west leg of Campeau has a two-lane cross-section with a single shared eastbound through right-turn lane and a single westbound receiving lane. The east leg is comprised of four travel lanes consisting of a through lane plus a dedicated left-turn heading westbound and two receiving lanes heading eastbound.

Campeau/Palladium

The Campeau/Palladium intersection is a four-legged roundabout intersection consisting of two approach lanes on each leg. The west and south legs consist of a single shared movement lane and a right-turn slip lane. The north leg consists of one shared through and right-turn lane and one shared through and left-turn lane. The east leg consists of one shared all movement lane and one left-turn lane. There are no prohibited movements at this intersection.

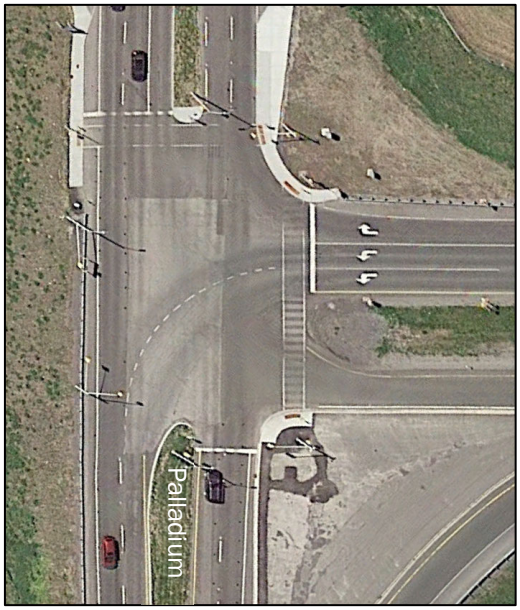
Cabela's/Palladium

The Cabela's/Palladium intersection is a 'T' intersection with STOP Control on the west leg of the intersection. The north leg of the intersection consists of a through lane and a shared through/right-turn lane. The south leg consists of two through lanes and an auxiliary left-turn lane. The west leg consists of a single right-turn lane. There is no left-turn movement coming from the west leg of the intersection.



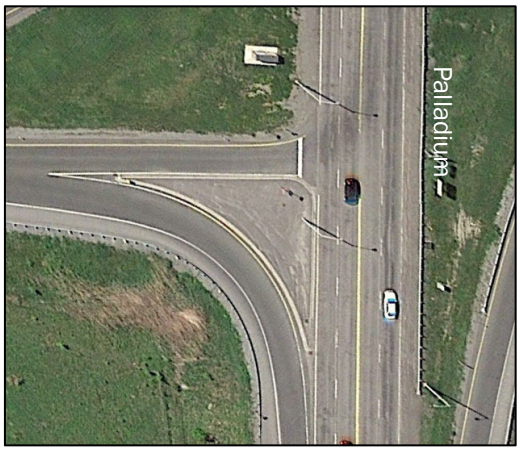
Hwy 417 WB On-Off Ramps/Palladium

The Hwy 417 WB On-Off Ramps/Palladium intersection is a signalized 'T' intersection composed of north, south and east legs. The north leg of the intersection consists of two through lanes and an auxiliary left-turn lane. The south leg of the intersection consists of two through lanes and the east leg of the intersection consists of two left-turn lanes and an auxiliary right-turn lane. There are no restricted movements at this intersection.



Hwy 417 EB Off Ramp/Palladium

The Hwy 417 EB Off ramp/Palladium intersection is a 'T' intersection with STOP Control on the west leg of the intersection. The north and south legs of the intersection consist of two through lanes, while the west leg consists of a single left-turn lane and an auxiliary right-turn lane.



EXISTING DRIVEWAYS TO ADJACENT DEVELOPMENTS

There are 3 driveways on the opposite side of the site on Campeau Drive which is occupied by a package delivery company. There are currently no other existing driveways near the development but it is anticipated that new driveways will be built as the area gets developed.

EXISTING AREA TRAFFIC MANAGEMENT MEASURES

Below are the existing area traffic management measures along both Palladium Drive and Campeau Drive:

- Roundabouts;
- Medians;
- Sidewalks;
- Streetscaping;
- Separated bike lanes; and,
- Zebra crosswalks at most major intersections.

PEDESTRIAN/CYCLING NETWORK

Within the study area, sidewalks are provided along the north and south sides of Campeau Drive, on the east and west sides of Palladium Drive up to the Hwy 417 WB On-Off Ramps, and on both sides south of Campeau Drive.

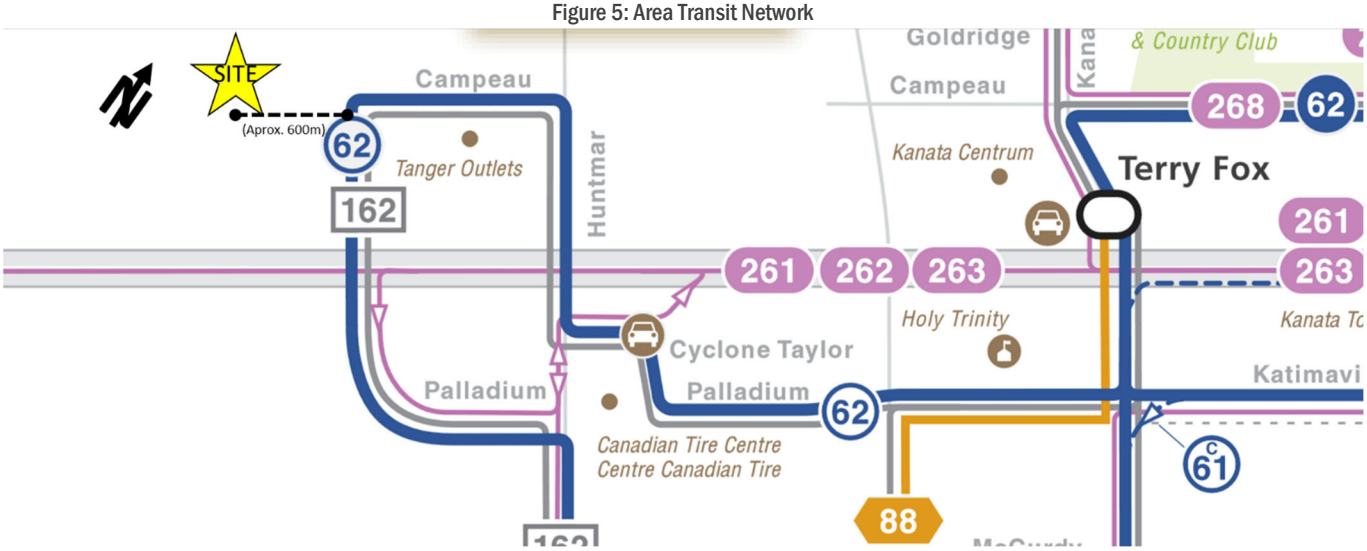
With regards to the cycling network along the sites' frontage, bicycle facilities are limited to mixed on-street conditions until the introduction of bike lanes that have been constructed approximately 325m east of the proposed site.

TRANSIT NETWORK

The current transit area network is provided as Figure 5 with nearby routes including:

- **Route #62 (St-Laurent, Hurdman <-> Terry Fox, Stittsville)**: identified by OC Transpo as a "Rapid Route", Route #62 operates 7 days a week, at an average rate of every 30 minutes during weekday peak hour periods. The nearest bus stops to the site are available at the intersection of Journeyman/Campeau.
- **Route #162 (Terry Fox <-> Stittsville)**: identified by OC Transpo as a "Local Route", this route provides customized routing and scheduling to serve local destinations. Route #162 operates at an hourly rate between 1 and 3 pm and between 7:30 and 10:30 pm on weekdays. The nearest bus stops to the site are available at the intersection of Journeyman/Campeau.

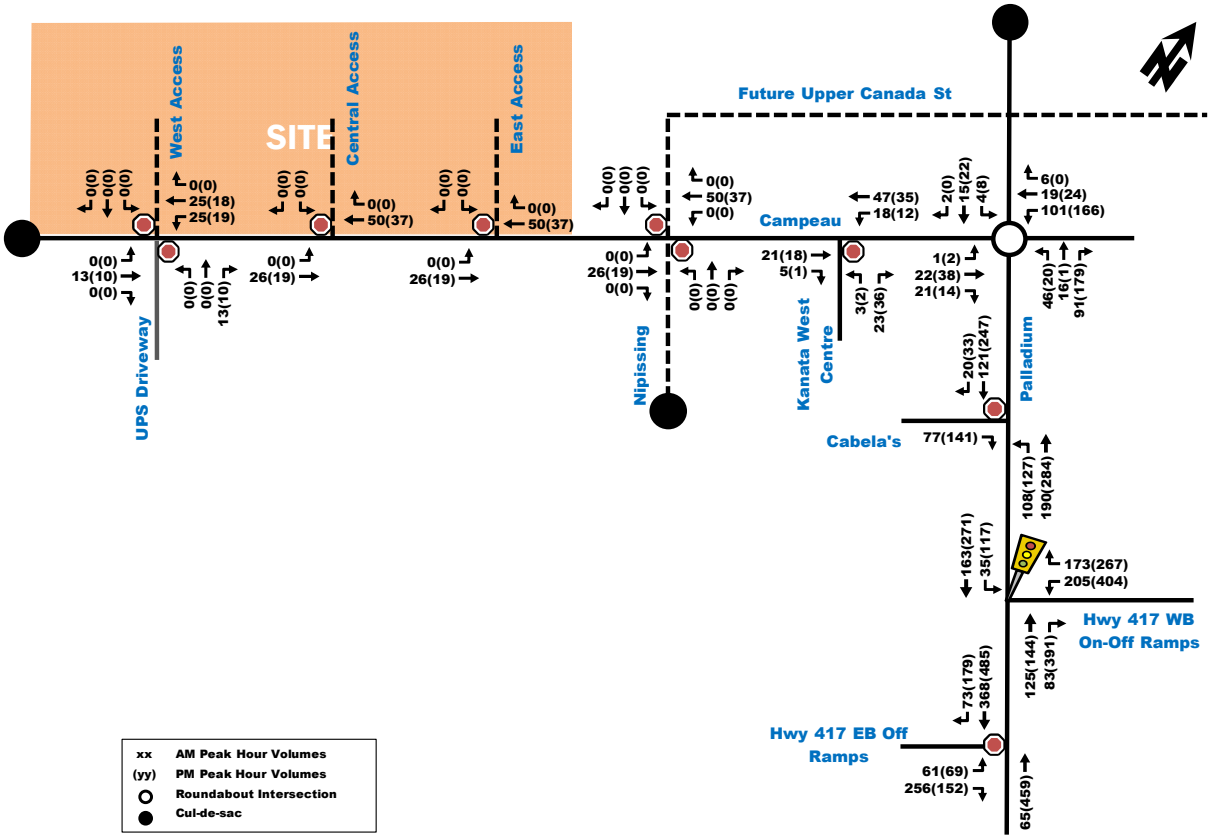
Figure 5: Area Transit Network



VEHICLE PEAK HOUR TRAVEL DEMANDS

Traffic counts at the Hwy 417 Ramps were obtained from MTO (dated April 2018), while counts at other study area intersections were conducted recently by Parsons. The existing peak hour traffic volumes are illustrated in Figure 6. Note that the traffic volumes at the Hwy 417 Ramps were balanced using the volumes at the Cabela's/Palladium intersection. The raw peak hour traffic volume count data has been provided in Appendix B.

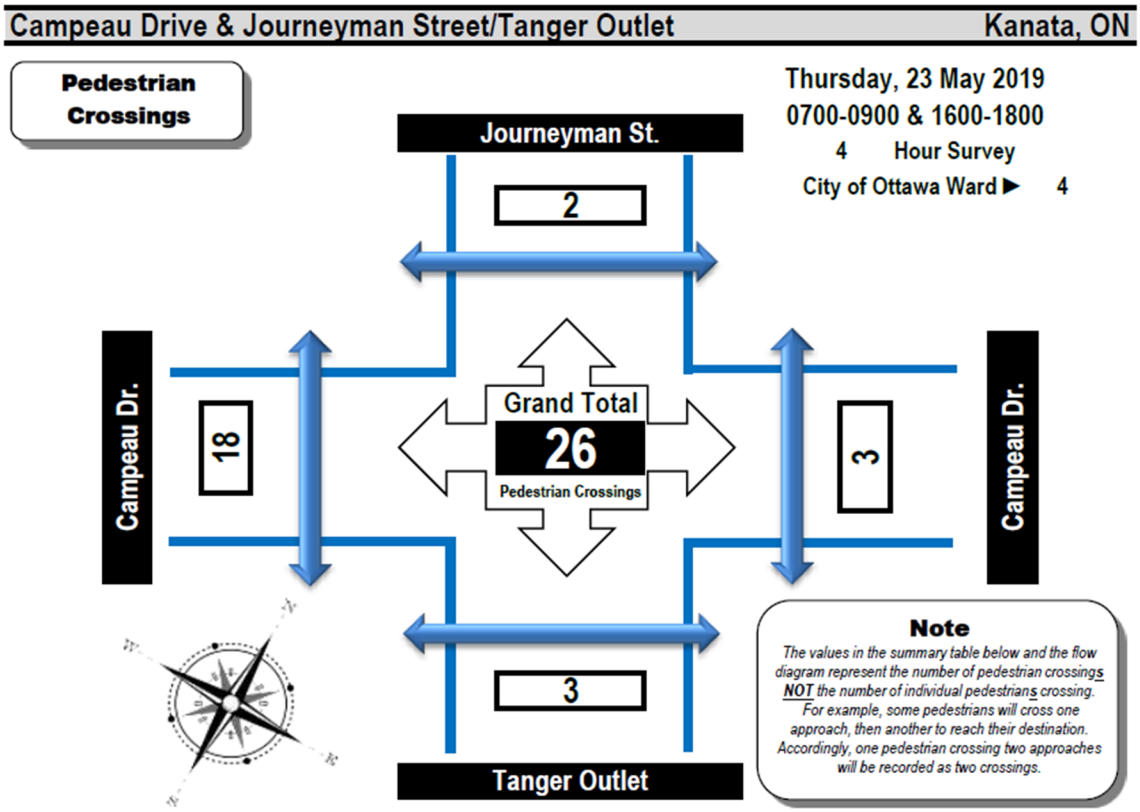
Figure 6: Existing Peak Hour Traffic Volumes



PEDESTRIAN AND CYCLING PEAK HOUR DEMANDS

Within the study area, pedestrians were recorded at Campeau/Journeyman intersection during the peak hour. As shown in Figure 7 below, a total 26 trips during a four-hour period between the hours of 7:00AM to 9:00AM and 4:00PM to 6:00PM, this is very few pedestrians, as the trips recorded represent the number of recorded crossings not the number of pedestrians. It is anticipated that pedestrian traffic throughout the study area will be low due to the location and the context of the business park.

Figure 7: Recorded Pedestrian Volumes at Campeau/Journeyman intersection



With regard to bicycle traffic, no cyclists were recorded using Campeau/Journeyman intersection during the study hours and are anticipated to have low volumes using roadways within the study area.

EXISTING ROAD SAFETY CONDITIONS

Although many features of the surrounding road network are relatively new as some intersections have been recently constructed, a five-year collision history data was requested and obtained from the City of Ottawa, which shows a total of 14 collisions occurring in the past five years at all intersections and road segments within the study area. Note that 13 of the collisions recorded resulted in property damage only and 1 resulted in a non-fatal injury. The reported incidents are composed of 5 (36%) Rear ends, 4 (29%) Turning Movements, 3 (21%) Sideswipe, 1 (7%) Angle, and 1 (7%) Other.

Since the roundabout was opened to traffic in late 2014, collisions of this nature are expected to be encountered in the first few years due to the unfamiliarity of drivers with the intersection configuration. As such, the number of collisions is not necessarily indicative of future trends at this intersection.

There were 7 collisions at the intersection of Palladium/Hwy 417 WB On-Off Ramps, however, there are no particular collision trends taking place. The remaining 7 collisions that occurred at various intersections and road segments within the study area show no particular trends in collision patterns either. It is worth noting that no collisions were recorded at the roundabout intersection of Campeau/Palladium. This is likely due to the recent opening of the intersection to traffic in 2017, as well as the relatively low current traffic volumes.

The collision data as provided by the City of Ottawa is attached as Appendix C.

2.1.3. Planned Conditions

PLANNED STUDY AREA TRANSPORTATION NETWORK CHANGES

Shown in Figure 8 below is the future plan of the Kanata West Business Park. A substantial portion of the road network has been constructed over the past few years. Future additions and improvements to the road network include the

construction of a new roadway named Upper Canada Street directly east of the proposed development site. Upper Canada Street will extend from Huntmar Drive in the east to connect to Campeau Drive in the west, where it continues as Nipissing Way south of Campeau Drive and terminates in a cul-de-sac.

Figure 8: Kanata West Business Park

Slightly further south, the intersection of Hwy 417 EB off Ramp/Palladium is planned to be realigned along with the future realignment of Palladium Drive. The purpose of the realignment is to accommodate a future adjacent area development at 195 Huntmar Drive, by providing it with better connectivity through an east-west collector roadway. A detailed discussion regarding the realignment can be found in a letter submitted by Parsons to the City in May 2018, as an addendum to a Community Transportation Study (CTS) that was prepared for the future development at 195 Huntmar Drive.

The City of Ottawa has also advised that east of the Kanata West Business Park, Campeau Drive connection between Huntmar Drive and Terry Fox Drive is anticipated to be completed in 2021. This will provide a continuous connection from Moodie Drive through to the cul-de-sac located west of Palladium Drive.

With regards to transit, the City of Ottawa Transportation Master Plan (TMP) does not identify any future changes to the existing transit network.

OTHER AREA DEVELOPMENT

Figure 9 below illustrates the other area developments described in this section, relative to the location of the proposed Maritime Ontario development site. The 1-km limit cited in the City of Ottawa TIA Guidelines to consider adjacent developments is also shown. A summary has been provided for these developments based on the latest available information from the City regarding adjacent site development applications.

Figure 9: Other Area Development

Kanata West Business Park

The Kanata West Business Park (shown in Figure 8) is a major development node in Ottawa's west end. It contains a mix of retail, office and lodging developments, some of which have already been constructed in recent years. A Community Transportation Study (CTS) was prepared in December 2011 by Parsons (previously Delcan) depicting the transportation requirements of the road network based on trip generation of the various future developments. To keep up with development changes being made to the area and provide proper recommendations from a transportation perspective, 12 Addendums were submitted by Parsons to the City after the initial CTS, with the latest Addendum submitted in May 2017.

i *- 8700 Campeau Drive (Kinaxis Offices)*

A Transportation Impact Assessment (TIA) was submitted by Parsons in August 2019 in support of a proposed office development to be located at 8600 Campeau Drive (northwest corner of the Campeau/Palladium intersection shown in Figure 9). The proposed office building will consist of a five-storey building with a gross floor area of 150,000 ft^2 and is anticipated to generate up to 130 vehicles/hour during the respective peak hour period. This development was included in the future analysis.

ii *- 8600 Campeau Drive (Wingate Hotel)*

A Transportation Impact Assessment (TIA) was submitted by the IBI Group in May 2018 in support of a proposed hotel development to be located at 8600 Campeau Drive (northeast corner of the Campeau/Palladium intersection shown in Figure 9). The proposed hotel will consist of 120 hotel rooms within a four-storey building and is anticipated to generate up to 56 vehicles/hour during the respective peak hour period. This development was included in the future analysis.

iii *- 3280 Palladium Drive (Medical Office Building)*

Located in the northeast corner of Palladium Drive and the future Upper Canada Street (see Figure 9), the medical office building was constructed in 2018 and traffic from this site would be accounted for in the existing traffic counts.

iv *– 450 Huntmar Dr*

A Transportation Brief was prepared by Parsons in January 2017, addressing the transportation implications and requirements of Stages 3 and 4 of the Arcadia Subdivision. The residential development will be located on the north side of Campeau Dr, approximately 450 m east of the Huntmar/Campeau intersection and will consist of a total of 146 Single Family Units and 255 Townhome Units. Due to the significance of this development with regards to the traffic volumes it generates within the study area, it was included in the future analysis despite being located outside the 1 km radius.

2.2. Study Area and Time Periods

As the proposed site is an industrial use development, the time periods assessed will be the weekday morning and afternoon peak hours and the anticipated buildout years are 2021 for Phase 1, and 2026 for Phase 2. The proposed study area is outlined below and highlighted in Figure 10.

- Campeau/Palladium intersection;
- Upper Canada/Nipissing/Campeau intersection;
- Cabela's/Palladium intersection;
- Hwy 417 EB/Palladium intersection;
- Hwy 417 WB/Palladium intersection;
- Cabela's/Campeau Dr intersection; and
- Upper Canada Way adjacent to the site
- Campeau Drive adjacent to the site;

Figure 10: Study Area

2.3. Exemption Review

The following modules/elements of the TIA process recommended to be exempt in the subsequent steps of the TIA process, based on the City's TIA guidelines and the subject site:

Table 1: Exemptions Review Summary

Module	Element	Exemption Consideration
4.1 Development Design	4.1.3 New Streets Network	Not required for applications involving site plans.
4.2 Parking	4.2.2 Spillover Parking	The parking is expected to meet By-Law requirements. Spillover demand can be accommodated within site-provided parking and on-street parking on adjacent roads

4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	Traffic along Upper Canada Street is not impacted significantly as a result of this development. This is confirmed by the site-generated traffic volumes in the Forecasting section of the report.
4.8 Network Concept	All elements	Site plan not anticipated to generate more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning.

3. FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and Mode Shares

The proposed development will consist of 557m^2 (6,000ft^2) of office and a 5,575m^2 (60,000ft^2) sort/warehouse area bringing the total Gross Floor Area (GFA) to 6,132m^2 (66,000 ft^2) in the Phase 1 buildout. Phase 2 buildout will be comprised of an expansion of the sort/warehouse, bringing the total GFA to 7,232m^2 (77,800 ft^2). Due to the unique nature and the limited amount of studies related to the delivery/sorting warehouse facilities, the sites total trip generation will be assessed by combining the following:

- ITE 130 - trip generation for Industrial Park to assess the warehouse and office space;
- Proxy trips for the transport truck arrivals and departures based off Bantree Street facility.

As shown in Figure 11, the existing Maritime Ontario Bantree facility is comprised of approximately 344m^2 (3,700 ft^2) 2 storey office space/ancillary use space, 625m^2 (6,700 ft^2) warehouse/sorting area, has 20 transport truck loading docks. The average trips generated by this facility, are as follows:

- Transport Delivery Trucks:
  - Depart facility between 6:00AM - 8:00AM (approximately 2 delivery veh/h)
  - Return to facility between 4:00PM - 6:00PM (approximately 2 delivery veh/h)

Figure 11: Maritime Ontario Bantree Street Facility

Industrial Park (Office/Ancillary Space and Sort Area) *Trips Using ITE Trip Generation*

This portion of the site generated trips include only the trips related to the operations of only the warehouse and office/ancillary space and does not include the delivery truck operations; these site generated trips will follow in the next few sections of the report. The office/ancillary space and the sort/warehouse area trip generation rates for Industrial Park land use were obtained from the ITE Trip Generation Manual (10th Edition) and are summarized in Table 2.

Table 2: ITE Trip Generation Trip Rates

Land Use	Data Source	Trip Rates (Fitted Curve Equations)	
		AM Peak	PM Peak
Industrial Park (Office/Ancillary Space and Sort Area)	ITE 130	T = 0.40(X);	T = 0.40(X);
Notes: *T = Average Vehicle Trip Ends* *X = 1000 Sq. ft GFA*			

The ITE vehicle trip rates shown in Table 2 were then multiplied by a factor of 1.28, which was calculated by assuming a default 10% non-auto mode share and an average vehicle occupancy of 1.15, in order to convert the vehicle trips provided by the ITE manual to person trips. The resulting person trips/h for Phases 1 and 2 are provided in Table 3 and Table 4 below. Note that the percentages of in and out traffic were also obtained from the ITE Trip Generation Manual.

Table 3: Estimated ITE 130 Person Trips (Phase 1)

Land Use	Area (ft²)	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In (81%)	Out (19%)	Total	In (21%)	Out (79%)	Total
Industrial Park (Office/Ancillary Space and Sort/Warehouse Area)	66,000	27	7	34	7	27	34
Total Person Trips		**27**	**7**	**34**	**7**	**27**	**34**

Table 4: Estimated ITE 130 Person Trips (Phase 2)

Land Use	Area (ft²)	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In (81%)	Out (19%)	Total	In (21%)	Out (79%)	Total
Industrial Park (Office/Ancillary Space and Sort/Warehouse Area)	77,800	32	8	40	8	32	40
Total Person Trips		**32**	**8**	**40**	**8**	**32**	**40**

As shown in Table 3, the total person trips generated by Phase 1 buildout are 34 person trips/hour during both the morning and afternoon weekday peak hour periods. As shown in Table 4, at Phase 2 buildout, the development will be generating approximately 40 person trips/hour during both the morning and afternoon weekday peak hour periods.

Vehicle trips may be determined using mode share percentages found in the 2011 NCR Household Origin-Destination Survey for the Kanata/Stittsville district (see Table 5). However, due to the location of the development at the edge of the urban boundaries of the City of Ottawa, as well as the delivery truck operations of the proposed Maritime Ontario facility, it is anticipated that there may be lower non-motorized trips and higher transit and auto driver trips. Additionally, as the number of bus stops are increased within the Kanata West Business Park and with the anticipated connection of Campeau Drive between Terry Fox Drive and Huntmar Drive being completed, transit availability is likely to increase. As such, the mode shares were slightly modified as shown in Table 6.

Table 5: O-D Survey Mode Share Percentages for Kanata/Stittsville

Travel Mode	Mode Share
Auto Driver	60%
Auto Passenger	15%
Transit	10%
Non-motorized	15%
Total Person Trips	100%

Table 6: Modified O-D Survey Mode Share Percentages

Travel Mode	Mode Share
Auto Driver	65%
Auto Passenger	15%
Transit	15%
Non-motorized	5%
Total Person Trips	100%

Based on the 65% mode share in Table 6 and the estimated employee person trips in Table 3 and Table 4, the employee vehicle trips anticipated to be generated by Phases 1 and 2 of the proposed facility are summarized in Table 7 and Table 8 below.

Table 7: Estimated ITE 130 Vehicle Trips (Phase 1)

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In (81%)	Out (19%)	Total	In (21%)	Out (79%)	Total
Auto Driver	65%	18	5	23	5	18	23
Auto Passenger	15%	4	1	5	1	4	5
Transit	15%	4	1	5	1	4	5
Non-motorized	5%	1	0	1	0	1	1
Total Person Trips	100%	27	7	34	7	27	34
Total 'New' Auto Trips		**18**	**5**	**23**	**5**	**18**	**23**

Table 8: Estimated ITE 130 Vehicle Trips (Phase 2)

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In (81%)	Out (19%)	Total	In (21%)	Out (79%)	Total
Auto Driver	65%	21	5	26	6	21	27
Auto Passenger	15%	6	1	6	1	5	6
Transit	15%	4	2	6	1	5	6
Non-motorized	5%	2	0	2	0	1	1
Total Person Trips	100%	32	8	40	8	32	40
Total 'New' Auto Trips		**21**	**5**	**26**	**6**	**21**	**27**

As shown in Table 7, the total number of vehicle trips anticipated to be generated by the employees of the proposed Maritime Ontario facility at Phase 1 buildout are approximately 23 vehicles/hour during the morning and afternoon peak hour periods. Phase 2 buildout, the number of vehicle trips increases to 26 and 27 vehicles/hour during the morning and afternoon peak hour periods, respectively.

Transport Truck Trips

Traffic volumes generated by transport delivery trucks are estimated using the existing Bantree Street Maritime Ontario Facility. Converting the information provided for the Bantree facility indicates that it performs as follows:

- Local delivery trips: 15 trucks operate between 6:00 AM and 9:00 PM. On average each truck makes 3 trips per day and the estimated trips generated are as follows:

  AM outbound delivery vehicle trips = 15 veh / (15h) = 1 veh/h
  PM inbound delivery vehicle trips = 15 veh / (15h) = 1 veh/h

- Out of town transport trips: Operate during off-peak (overnight) with approximately 1 truck per hour departing and arriving between the hours 6:00PM through to 7:00AM. Due to the transport trucks operating during off peak periods with a small amount of overlap in both the AM and PM peak hours, the conservative transport peak hour trips are as follows:

  AM inbound transport vehicle trips = 1 veh/h
  AM outbound vehicle trips = 1 veh/h

PM inbound vehicle trips = 1 veh/h
PM outbound transport vehicle trips = 1 veh/h

Table 9 below provides a summary of the estimated delivery and transport vehicle trips for the Bantree facility.

Table 9: Bantree Facility Estimated Delivery and Transport Vehicle Trips

Trip Type	AM Peak (Vehicle Trips/h)			PM Peak (Vehicle Trips/h)		
	In	Out	Total	In	Out	Total
Local Delivery Trucks/Driver Personal Vehicle	1	1	2	1	1	2
Out of Town Trucks/Driver Personal Vehicle	1	1	2	1	1	2
Total	**2**	**2**	**4**	**2**	**2**	**4**

The proposed site truck trips will be estimated using the existing Bantree facility trips for the sort/warehouse area of approximately 6,700ft^2 and applying a ratio of the proposed facility sort/warehouse area divided by the existing sort/warehouse area to the traffic volumes in Table 9. An example for each phase of how the calculations were performed can be seen below.

Phase 1 (66,000ft^2 Warehouse)

AM outbound delivery trucks = 66,000ft^2/6,700ft^2 * 1 veh/h = 10 veh/h

To determine the AM inbound and PM outbound vehicle trips to account for the local delivery truck drivers arriving/departing their work shifts during the peak period the number of delivery peak hour vehicle trips from above and multiplying them by the vehicle mode share of 65% presented in Table 6.

AM inbound vehicle trips = 10 veh/h * 0.65 = 7 veh/h
PM outbound vehicle trips = 10 veh/h * 0.65 = 7 veh/h

Phase 2 (77,800ft^2 Warehouse)

AM outbound delivery trucks = 77,800ft^2/6,700ft^2 * 1 veh/h = 12 veh/h

The mode shares are applied again in phase 2, to account for the commuting truck drivers.

AM inbound vehicle trips = 12 veh/h * 0.65 = 8 veh/h
PM outbound vehicle trips = 12 veh/h * 0.65 = 8 veh/h

The results for the projected trips of Phase 1 and Phase 2 are summarized in Table 10 and Table 11.

Table 10: Proposed Facility Estimated Delivery and Transport Vehicle Trips (Phase 1)

Trip Type	AM Peak (Vehicle Trips/h)			PM Peak (Vehicle Trips/h)		
	In	Out	Total	In	Out	Total
Local Delivery Trucks/Driver Personal Vehicle	7	10	17	10	7	17
Out of Town Transport Trucks/Driver Personal Vehicle	10	10	20	10	10	20
Total	**17**	**20**	**37**	**20**	**17**	**37**

Table 11: Proposed Facility Estimated Delivery and Transport Vehicle Trips (Phase 2)

Trip Type	AM Peak (Vehicle Trips/h)			PM Peak (Vehicle Trips/h)		
	In	Out	Total	In	Out	Total
Local Delivery Trucks/Driver Personal Vehicle	8	12	20	12	8	20
Out of Town Transport Trucks/Driver Personal Vehicle	12	12	24	12	12	24
Total	**20**	**24**	**44**	**24**	**20**	**44**

The total number of two-way vehicle trips anticipated to be generated by delivery and transport vehicles of the proposed Maritime Ontario facility during Phase 1 are 37 vehicles/hour during both the AM and PM peak periods. Phase 2 combined transport and delivery two-way vehicle trips are anticipated to be 44 vehicles/hour during the morning and afternoon peak hour periods.

The delivery/transport truck outbound AM and inbound PM peak trips account for 100% of the total trips generated by the delivery truck/transport trucks departing/arriving to and from the facility. Therefore, no modal shares have been applied to these trips. Table 12 and Table 13 below summarize the person trips per mode share for both Phase 1 and Phase 2.

Table 12: Delivery/Transport Person Trips– Phase 1

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In	Out	Total	In	Out	Total
Delivery Service							
Truck/Delivery Driver	100 %	10	20	30	20	10	30
Auto Passenger	0 %	0	0	0	0	0	0
Transit	0 %	0	0	0	0	0	0
Non-motorized	0 %	0	0	0	0	0	0
Person Trips	100%	10	20	30	20	10	30
Employee Commute							
Auto Driver	65%	7	0	7	0	7	7
Auto Passenger	15%	1	0	1	0	1	1
Transit	15%	1	0	1	0	1	1
Non-motorized	5%	1	0	1	0	1	1
Person Trips	100%	10	0	10	0	10	10
Total Person Trips		**20**	**20**	**40**	**20**	**20**	**40**

Table 13: Delivery/Transport Person Trips– Phase 2

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In	Out	Total	In	Out	Total
Delivery Service							
Truck/Delivery Driver	100 %	12	24	36	24	12	36
Auto Passenger	0 %	0	0	0	0	0	0
Transit	0 %	0	0	0	0	0	0
Non-motorized	0 %	0	0	0	0	0	0
Person Trips	100%	12	24	36	24	12	36
Employee Commute							
Auto Driver	65%	8	0	8	0	8	8
Auto Passenger	15%	2	0	2	0	2	2
Transit	15%	1	0	1	0	1	1
Non-motorized	5%	1	0	1	0	1	1
Person Trips	100%	12	0	12	0	12	12
Total Person Trips		**24**	**24**	**48**	**24**	**24**	**48**

Anticipated Total Trips of the Proposed Maritime Ontario Facility

The total site trips generated by the facility, employees, customers and delivery and transport vehicles, for Phases 1 and 2 are provided in Table 14 and Table 15. Table 14 provides a summed total of Phase 1 values from Table 7, and Table 12. Table 15 provides a summed total of Phase 2 values provided in Table 8, and Table 13.

Table 14: Total Site Generated Trips of the Proposed Maritime Ontario Facility (Phase 1)

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In	Out	Total	In	Out	Total
Auto Driver	65%	35	25	60	25	35	60
Auto Passenger	15%	5	1	6	1	5	6
Transit	15%	5	1	6	1	5	6
Non-motorized	5%	2	0	2	0	2	2
Total Person Trips	100%	47	27	74	27	47	74
Total 'New' Auto Trips		**35**	**25**	**60**	**25**	**35**	**60**

Table 15: Mode Share Total Person Trips of the Proposed Maritime Ontario Facility (Phase 2)

Travel Mode	Mode Share	AM Peak (Person Trips/h)			PM Peak (Person Trips/h)		
		In	Out	Total	In	Out	Total
Auto Driver	65%	41	29	70	30	41	71
Auto Passenger	15%	8	1	9	1	7	8
Transit	15%	5	2	7	1	6	7
Non-motorized	5%	3	0	3	0	2	2
Total Person Trips	100%	57	32	89	32	56	88
Total 'New' Auto Trips		**41**	**29**	**70**	**30**	**41**	**71**

The Phase 1 total number of site generated vehicle trips for the proposed Maritime Ontario facility are 60 vehicles/hour during both the morning and afternoon peak hour periods. Phase 2 total site generated vehicle trips are 70 and 72 vehicles/hour, during the morning and afternoon peak hour periods, respectively.

3.1.2. Trip Distribution and Assignment

Based on the 2011 NCR Household Origin-Destination Survey (Kanata – Stittsville district) and the location of adjacent arterial roadways and neighbourhoods, the distribution of site-generated traffic volumes was estimated as follows:

- 25% to/from the north;
- 10% to/from the south;
- 60% to/from the east; and,
- 5% to/from the west.

The expected site-generated auto trips in Table 14 and Table 15 were then assigned to the road networks as shown in Figure 12 and Figure 13, by assessing the flow of existing traffic volumes and the estimated travel times.

Figure 12: Maritime Ontario Facility Site-Generated Traffic (Phase 1)

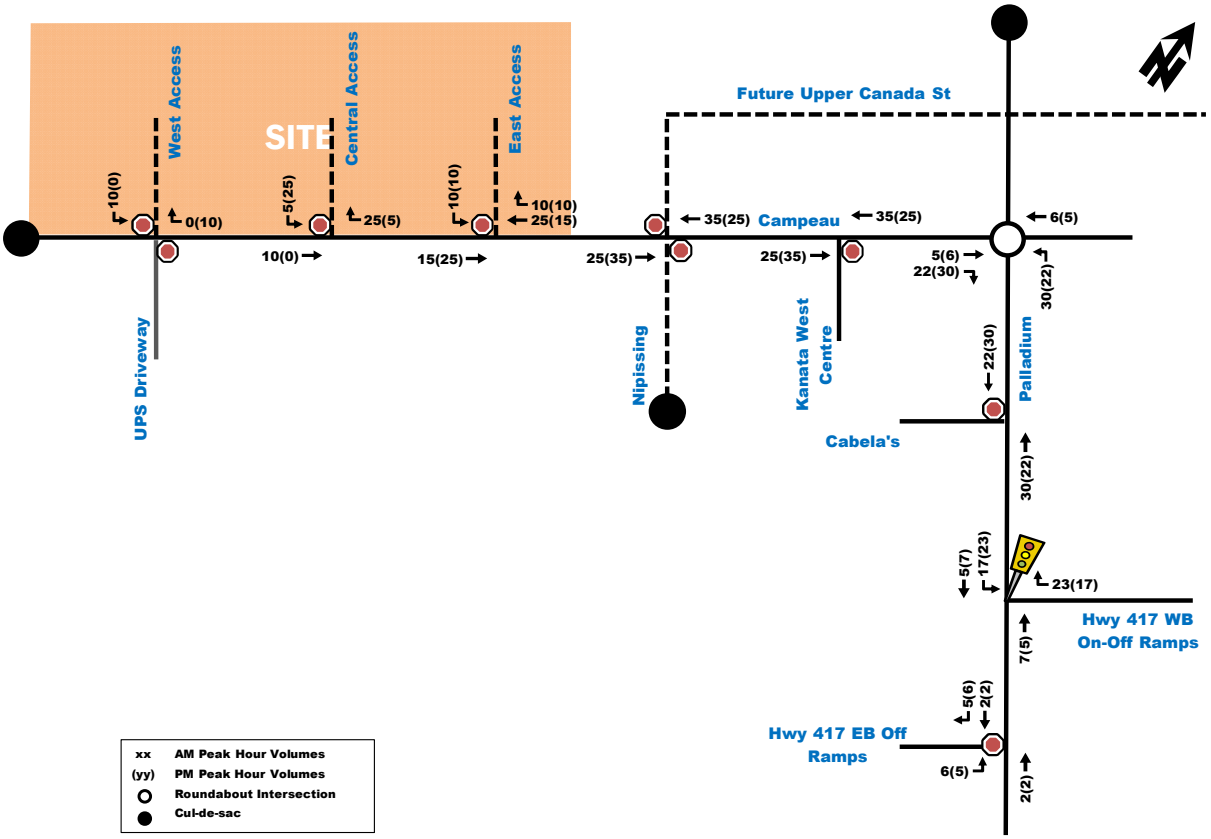
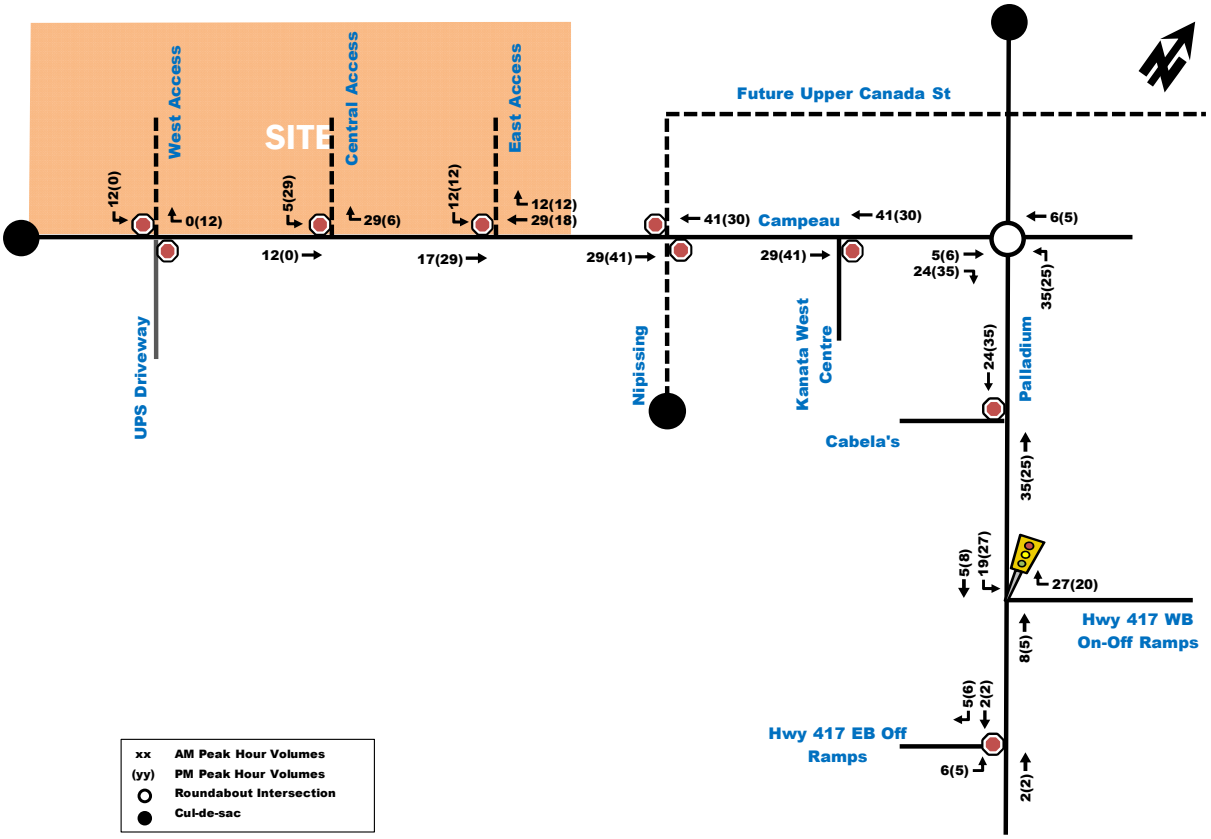


Figure 13: Maritime Ontario Facility Site-Generated Traffic (Phase 2)



It was assumed that 15% of site traffic would travel to/from Huntmar Rd in the east, while 85% would use Hwy 417. The majority of employees and customers (75%) were anticipated to use the sites' central access off Campeau, to enter and exit the development site. The remainder would use the west access. All transports are anticipated to us the east access, as it is the only driveway that provides access to the secure gated area at the rear of the proposed building/property.

3.2. Background Network Traffic

3.2.1. Transportation Network Plans

Refer to Section 2.1.3.

3.2.2. Background Growth

A large portion of the Kanata West Business Park and the ultimate road network to support it (see Figure 8) has already been constructed. Therefore, the existing traffic counts recently conducted by Parsons at study area intersections account for the current buildout. As previously noted, planned adjacent developments will be accounted for separately in this analysis. However, a 1% background growth rate was still applied to the existing traffic volumes to represent more conservative future buildout conditions.

The resulting future background traffic volumes for horizon years 2021, 2026 and 2031 are illustrated in Figure 14, Figure 15 and Figure 16.

Figure 14: Future Background 2021

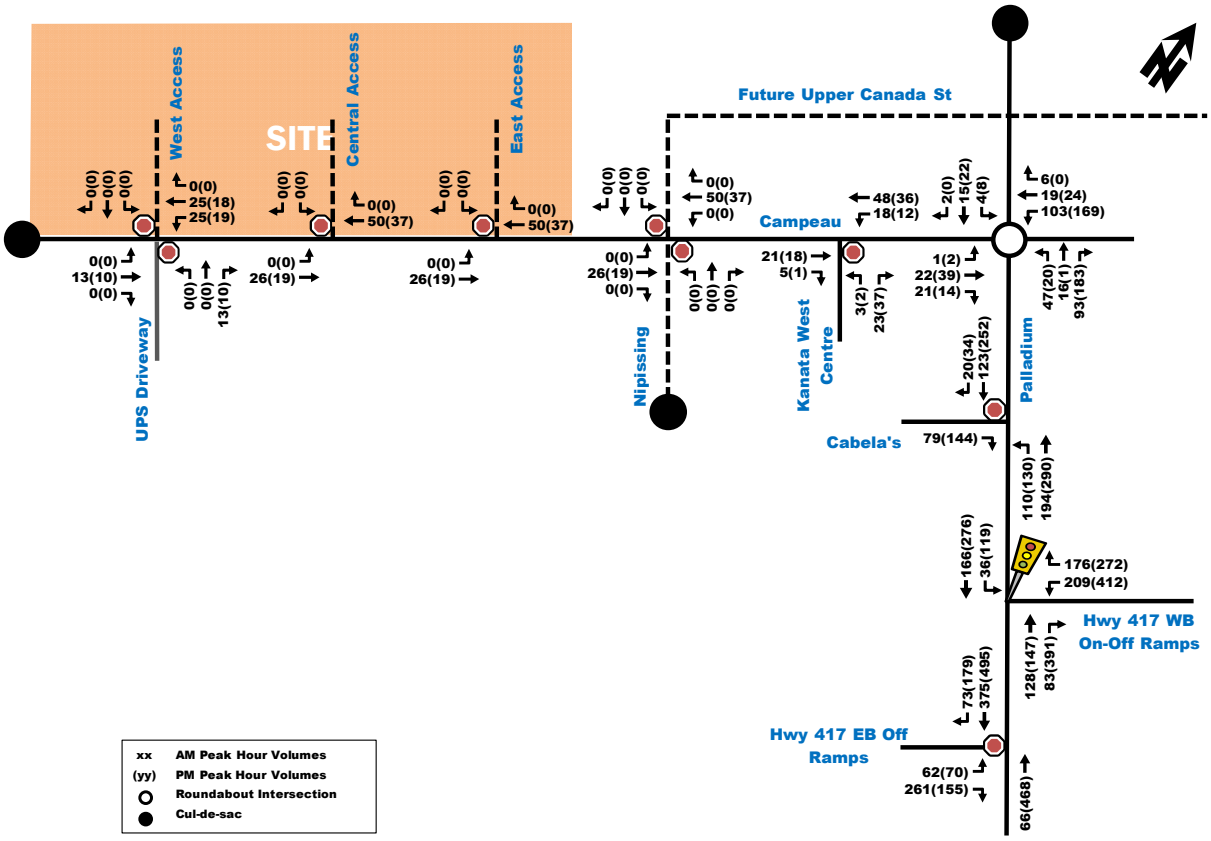


Figure 15: Future Background 2026

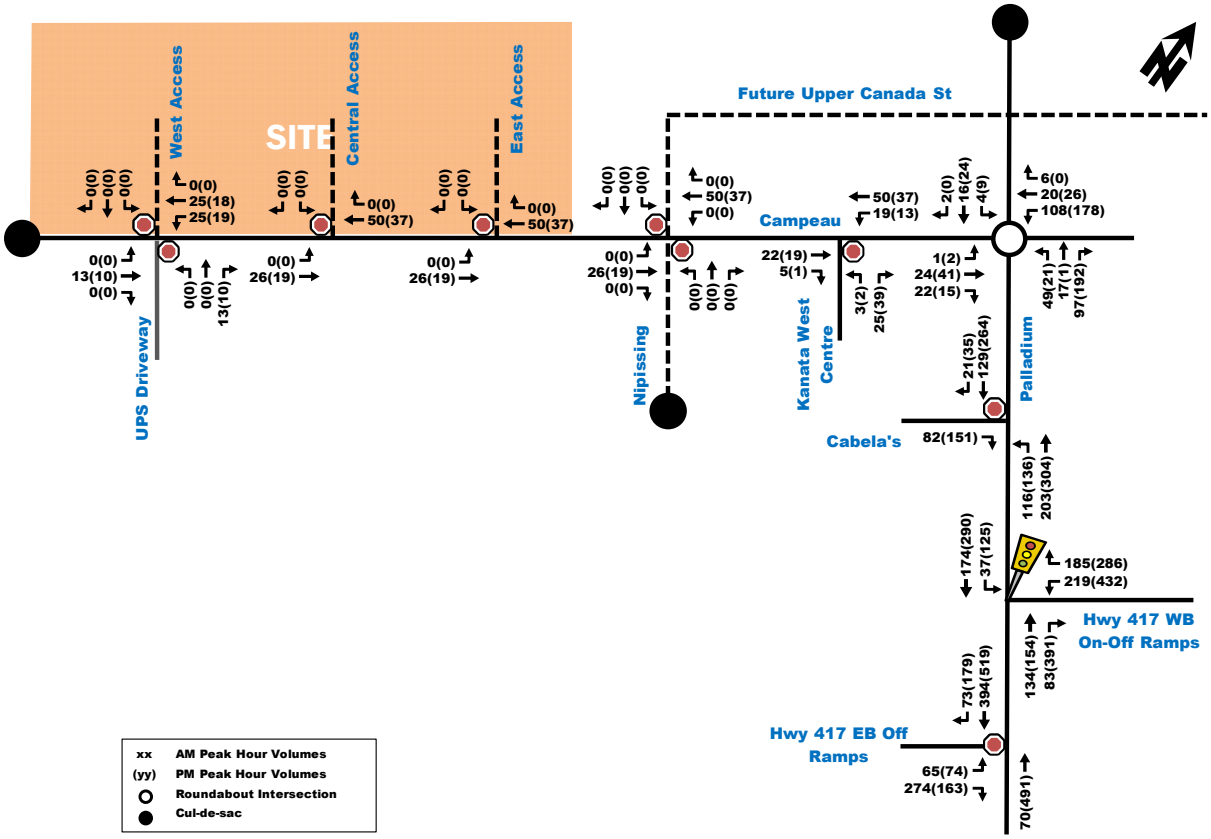
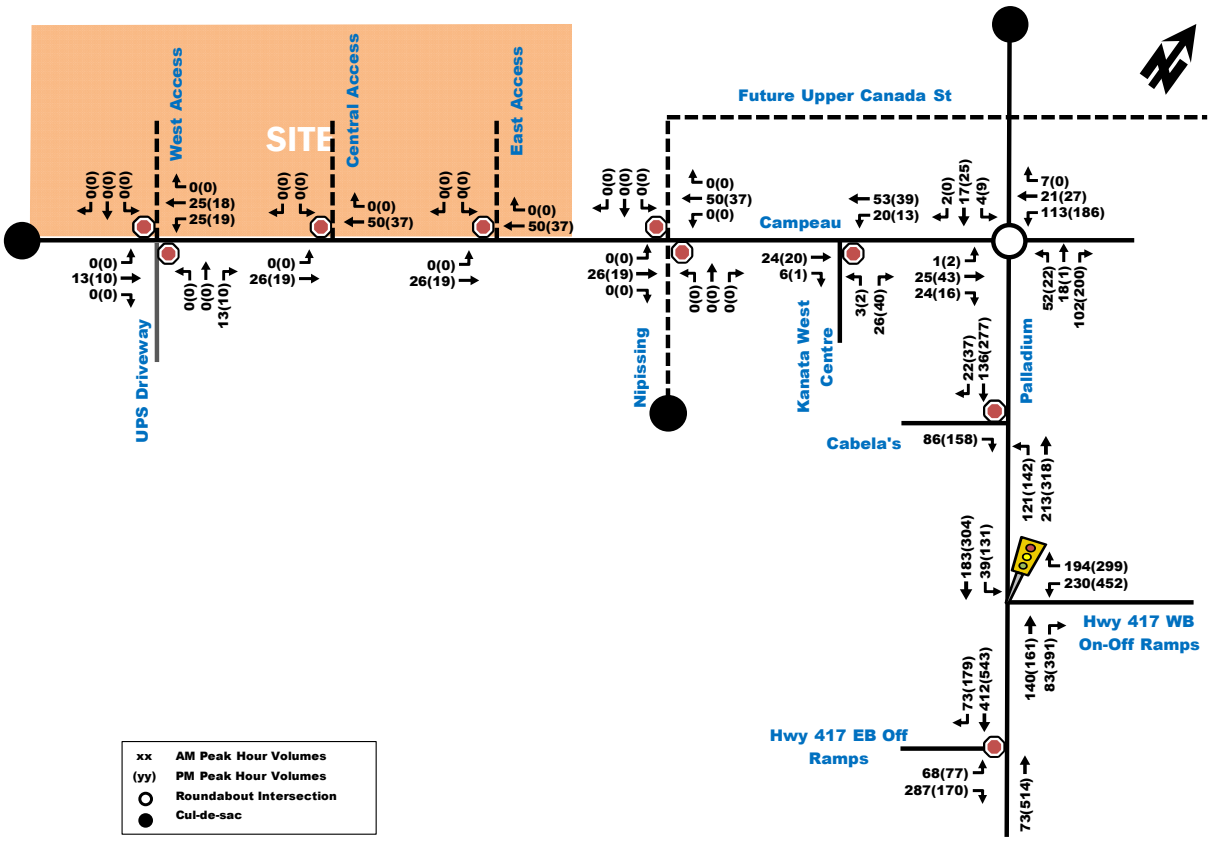


Figure 16: Future Background 2031



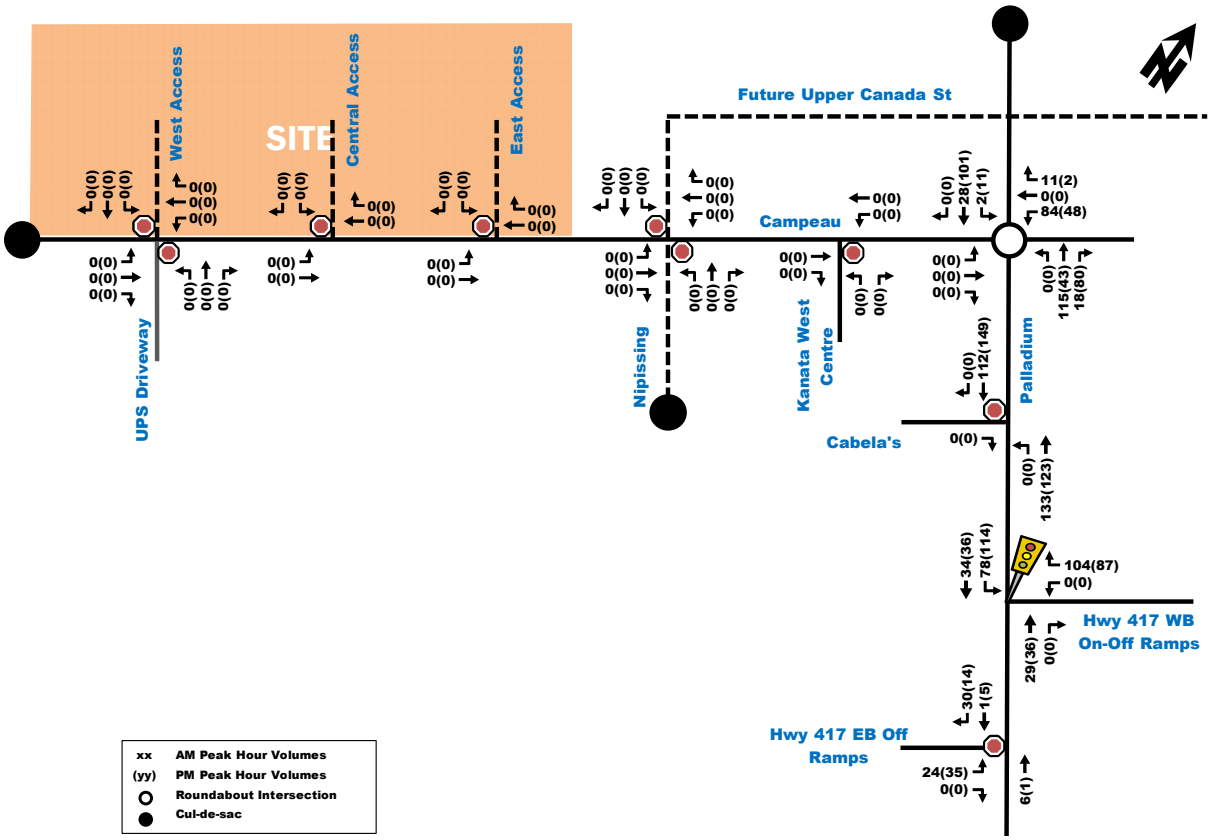
3.2.3. Other Area Developments

Other area developments that have initiated the City's development application process were outlined in Section 2.1.3 Based on the previous discussion, traffic volumes generated by the following other area developments were considered in future analysis (to be conducted in the Strategy section of the TIA process):

- 8600 Campeau Dr (Wingate Hotel)
- 8700 Campeau Dr (Kinaxis)
- 450 Huntmar Drive

Figure 17 illustrates the anticipated traffic volumes, generated within the study area by other area developments.

Figure 17: Other Area Developments Total Traffic Volumes



3.2.4. Total Background Traffic

Total background traffic represents the summation of background traffic growth (based on the 1% growth rate) in Figure 14, Figure 15 and Figure 16 and adjacent development traffic in Figure 17. The resulting total background traffic volumes for horizon years 2021, 2026 and 2031 are illustrated in Figure 18, Figure 19 and Figure 20.

Figure 18: Total Future Background 2021 Traffic Volumes

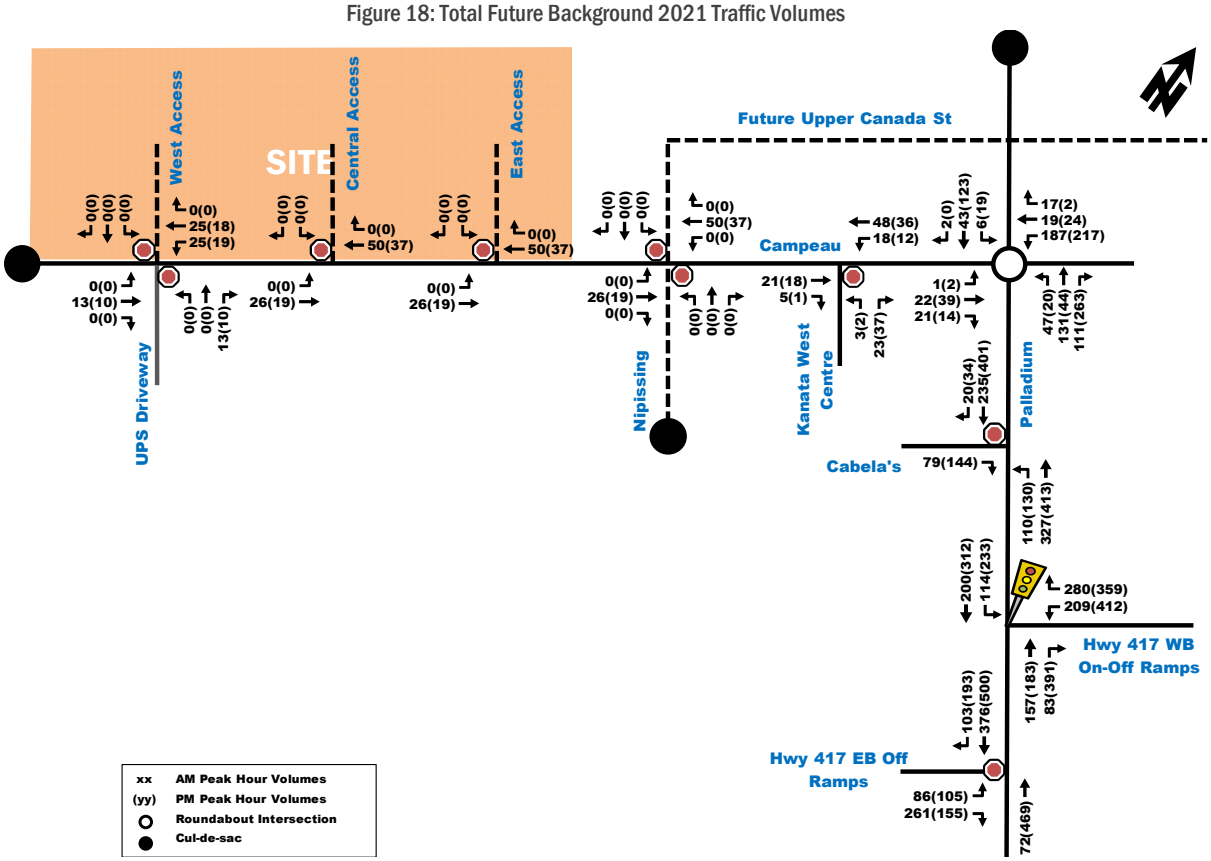


Figure 19: Total Future Background 2026 Traffic Volumes

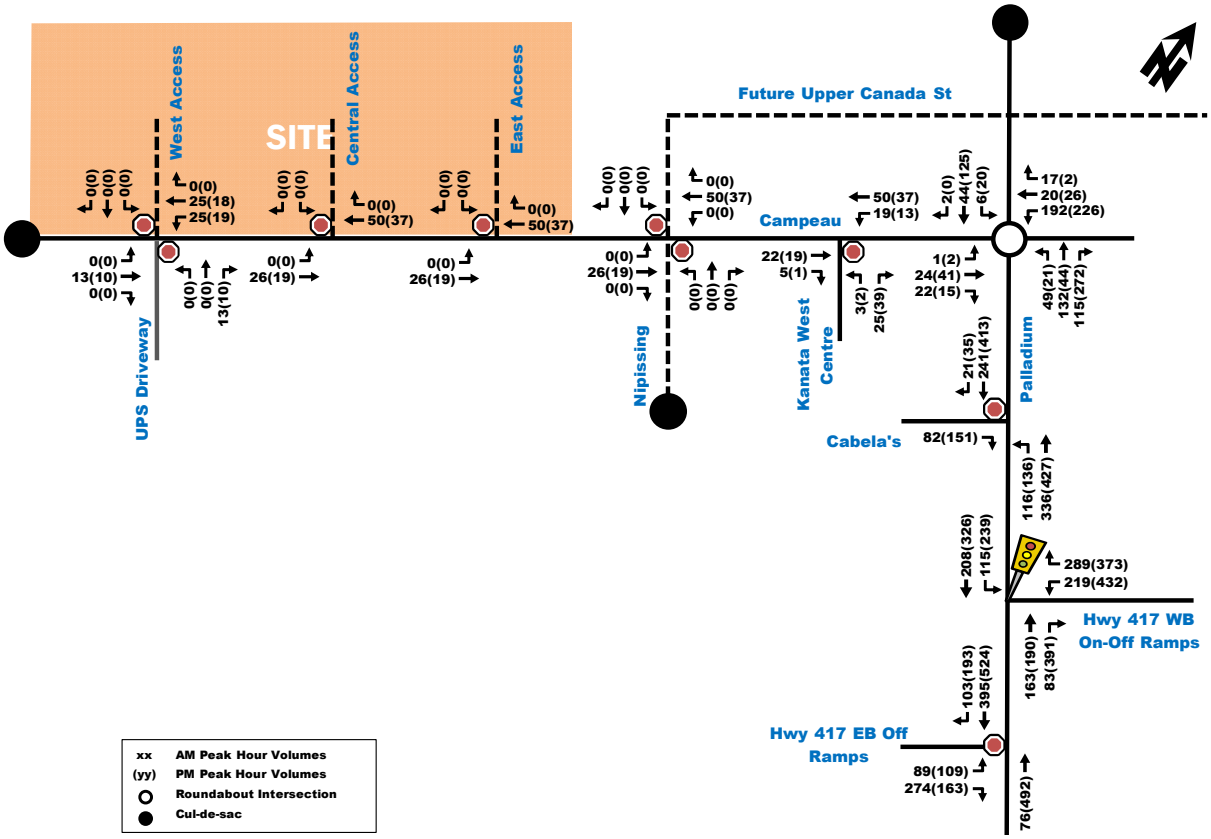
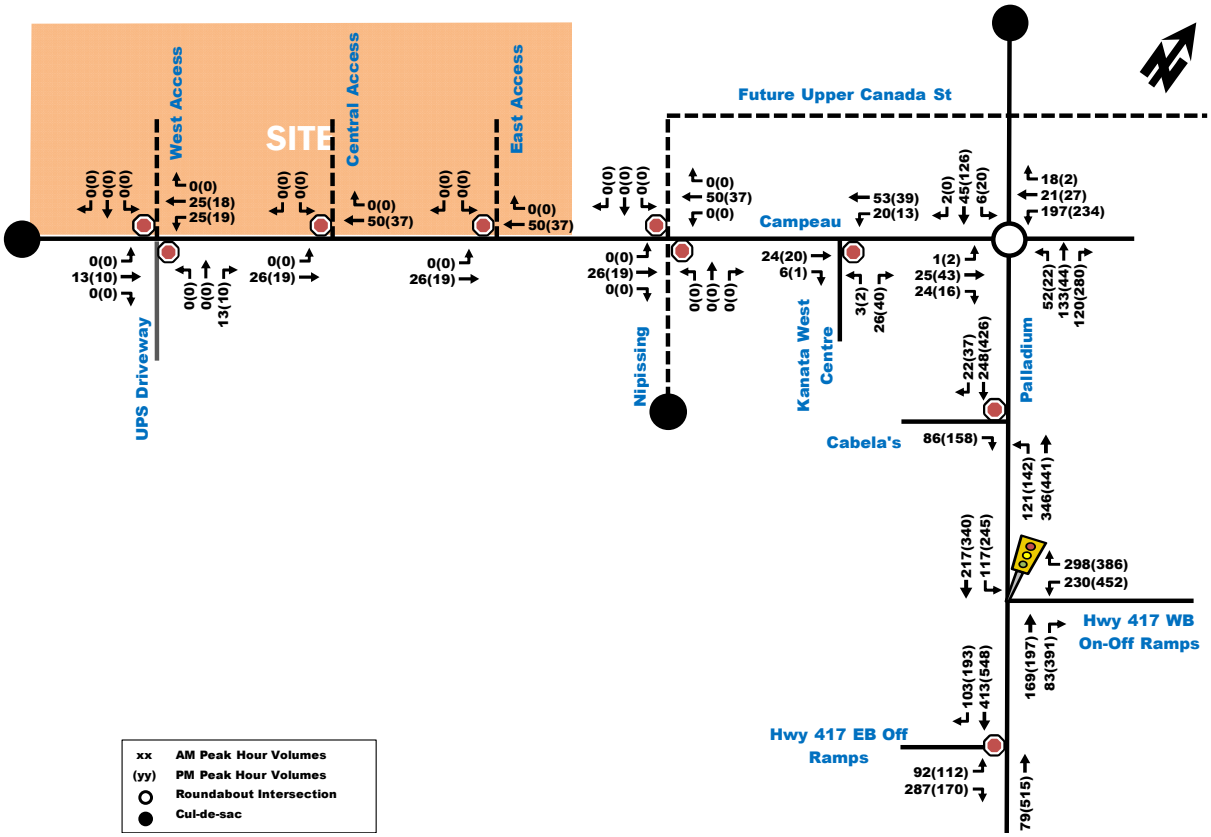


Figure 20: Total Future Background 2031 Traffic Volumes



3.3. Demand Rationalization

The study area road network is expected to accommodate projected volumes. There are currently no anticipated capacity issues. The capacity of the roadways will be further explored in a more detailed review of the total projected traffic volumes and intersection design in the following Analysis Section of the Report.

4. ANALYSIS

4.1. Development Design

4.1.1. Design for Sustainable Modes

Pedestrians and cyclists can access the development site through the series of sidewalks and unidirectional bike lanes that are currently provided throughout the study area. Sidewalks facilities will also be provided along both sides of the future Upper Canada Street, but there are no plans currently for bike lanes.

With regards to transit, two bus routes currently operate along Campeau Drive and Palladium Drive, as previously mentioned in Section 2.1.2. Furthermore, the nearest existing bus stop to the development site is along Campeau Drive, within approximately 900m walking distance.

4.1.2. Circulation and Access

Three accesses are proposed to serve the development site. Refer to the Site Plan in Figure 4 for the location of the accesses relative to the development and the boundary streets. The east and west accesses are to be used by transport and delivery trucks, while the central access leads to a parking lot that may be used primarily by employees. The site's truck maneuvering is anticipated to operate acceptably at the sites access and within the site as shown in Appendix D. The accesses are located at approximately 30m, 110m and 170m west of Campeau/Upper Canada. Trucks can access the trailer loading docks via the east access. An overnight parking lot for the tractors is accessed via the west access of the development. Further design review of the accesses is provided in Section 4.4.1.

As per the requirements of the TIA Guidelines, the TDM-supportive Development Design and Infrastructure Checklist is provided in Appendix E.

4.2. Parking

4.2.1. Parking Supply

Vehicle Parking

A total of 138 vehicle parking spaces (including three accessible spaces) are expected to be provided for employees of the planned development. The number of parking spaces provided exceeds the minimum parking space rates set by the City of Ottawa parking provisions. The parking spaces are 5.2m long and 2.60m wide, which meets the minimum requirements permitted by the City of Ottawa's parking provisions By-Law. Additionally, parking spaces for 50 tractors will be provided on-site.

The City Zoning By-law No. 2008-250 consolidation, part 4 parking queuing and loading provision section 101 - Minimum *Parking Spaces Rates for a Truck Transport Terminal is 0.8 per 100* m². Which is calculated as:

$$= \frac{0.8}{100\ m^2} * (557 + 5575)$$

~ 50 spaces.

Bicycle Parking

10 exterior bicycle parking spaces are proposed. The City Zoning By-law No. 2008-250 consolidation, part 4 parking queuing and loading provision section 111, the minimum *bicycle* parking spaces required is 1 per 2000 m², which equates to approximately 3 required spaces.

4.3. Boundary Street Design

The proposed site's boundary street is Campeau Drive. In the future, a new roadway, Upper Canada Street, will be constructed to the east of the development site. However, it is not considered a boundary street as it does not provide access to the site.

The geometry of the existing *Campeau Drive* (Arterial Road) consists of the following features:

- 1 vehicle travel lane in each direction,
- 2.0m sidewalks on both sides of the roadway,
- 0.5 - 2.0m wide boulevards,
- Less than 3000 avg daily curb lane traffic volumes,
- Posted speed limit of 60 km/h, and
- 3.7m wide lanes.

The multi-modal level of service analysis for the adjacent road segments of Campeau Drive is summarized in Table 16, with detailed analysis provided in Appendix F. The table also identifies the target LOS, with respect to each mode, based on the land-use designation and road classification of the development site and the boundary streets. The Transportation Master Plan (TMP) of the City of Ottawa identifies the land-use designation of the development site as an Urban Employment Area. The road classifications of the boundary streets were noted above.

Table 16: MMLOS – Boundary Road Analysis

Road Segment	Level of Service							
	Pedestrian (PLOS)		Bicycle (BLOS)		Transit (TLOS)		Truck (TkLOS)	
	PLOS	Target	BLOS	Target	TLOS	Target	TkLOS	Target
Campeau Drive	A	C	D	E	D	No target	B	D

Blue letters in the table above indicate that the respective LOS result meets its respective LOS target set by the MMLOS Guidelines. All travel modes related to each of the road segments are anticipated to meet the MMLOS requirements. Note that no targets are set for the Transit LOS as there is no transit corridor or transit priority area along the boundary streets.

4.4. Access Intersection Design

4.4.1. Location and Design of Access

As previously mentioned, three future accesses are planned to be provided for the development. Based on information provided by the site plan (Figure 4), the location and design of each of the accesses is described as follows:

- A 15.0m wide access on the east end of the site, providing three inbound lanes and one outbound lane for delivery trucks. The three inbound lanes are provided to prevent queuing of trucks at the entrance gate of the facility. The access width is greater than the maximum defined in the Private Approach Bylaw.
- A 7.5m wide access at the centre of the site, providing one inbound and one outbound lane for an employee parking lot.
- A 7.5m wide access at the west end of the site, providing one inbound and one outbound lane for a tractor parking lot.

Furthermore, no anticipated issues regarding onsite truck maneuvering. The figure showing the vehicle movements can be found in Appendix D.

4.4.2. Intersection Control and Design

STOP control will be provided for traffic exiting the site at all three Campeau Dr accesses. The future intersection of Campeau/Upper Canada/Nipissing is anticipated to provide STOP control for the north and south approaches, as well as single, full-movement lanes on all legs of the intersection. Intersection control at the existing study area intersections will remain unchanged.

Furthermore, intersection MMLOS analysis is typically conducted in TIAs for signalized intersections fronting the site, in either existing or future conditions. However, since there are no existing or proposed signalized intersections at the frontage of the development site, this analysis is not provided.

4.5. Transportation Demand Management

The TDM Measures Checklist is provided in Appendix G.

4.6. Neighbourhood Traffic Management

Exempt – see Section 2.3.

4.7. Transit

Refer to Section 2.1.2: Existing Conditions, for a description of the existing bus services within the study area. Based on the City of Ottawa TMP, there are no planned changes to the study area with regards to the transit network.

The total future

4.8. Review of Network Concept

Exempt – see Section 2.3.

4.9. Inteprsection Design

4.9.1. Intersection Control

Refer to Section 4.4.1: Location and Design of Access.

4.9.2. Intersection Design

Signalized and unsignalized intersections were assessed using the Synchro 10 Trafficware, while roundabouts were assessed using the Sidra 8.0 Intersection software. Critical movements at each intersection are identified based on the movement or approach providing either the highest volume-to-capacity (v/c) ratio (signalized intersections), or the highest

average delay (unsignalized and roundabout intersections) at the respective intersection. It should be noted that, as per the TIA Guidelines, the Peak Hour Factor (PHF) was set to 0.90 for existing conditions analysis and to 1.0 for all future analysis scenarios. All detailed analysis results from Synchro and Sidra for existing and future conditions have been provided in Appendix H.

EXISTING CONDITIONS

Table 17 below summarizes traffic operational results of the signalized, unsignalized and roundabout intersections within the study area, based on existing conditions traffic volumes (see Table 17).

Table 17: Existing Conditions Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.32(0.55)	WBR(NBR)	15.0(14.4)	A(A)	0.27(0.49)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.6(8.6)	NB(NB)	3.0(4.0)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.1(10.1)	EB(EB)	3.0(3.0)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(B)	12.1(13.9)	EB(EB)	4.6(2.3)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.3(8.5)	WB(WB)	6.1(5.9)	-	-

Note: Analysis of signalized intersections assumes a PHF of 0.90 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

As shown in Table 17, all critical movements at study area intersections are anticipated to result in a Level of Service (LOS) 'B' or better during morning and afternoon weekday peak hour periods. The signalized intersections 'as a whole' result in a LOS 'A' during both morning and afternoon weekday peak hour periods.

TOTAL FUTURE BACKGROUND 2021 CONDITIONS

Analysis of total future background 2021 was based on the traffic volumes shown in Figure 18. Table 18 below provides a summary of the analysis results.

Table 18: Total Future Background 2021 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.46(0.55)	WBR(NBR)	14.0(14.4)	A(A)	0.32(0.55)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.6(8.6)	NB(NB)	3.0(4.0)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.4(10.6)	EB(EB)	2.1(2.4)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(B)	11.7(14.4)	EB(EB)	4.5(2.6)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.1(5.6)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

As shown in Table 18, critical movements of the signalized intersection operate at a LOS 'A', with the intersection 'as a whole' operating at a LOS 'A' during both the morning and afternoon peak hours. Stop control intersections operate at a LOS 'B' or better, while the roundabouts operate at a LOS 'A' during the morning and afternoon peak hours.

TOTAL FUTURE BACKGROUND 2026 CONDITIONS

Analysis of total future background 2026 was based on the traffic volumes shown in Figure 19.

Table 19 below provides a summary of the analysis results.

Table 19: Total Future Background 2026 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.47(0.55)	WBR(WBR)	14.1(14.6)	A(A)	0.33(0.55)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.6(8.6)	NB(NB)	3.1(4.0)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.4(10.7)	EB(EB)	2.1(2.4)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(C)	12.0(15.1)	EB(EB)	4.6(2.8)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.1(5.6)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

The study area intersections are anticipated to operate similar to the 2021 total background conditions by showing only slight increase in delay and v/c ratios.

TOTAL FUTURE BACKGROUND 2031 CONDITIONS

Analysis of total future background 2031 was based on the traffic volumes shown in Figure 20. Table 20 below provides a summary of the analysis results.

Table 20: Total Future Background 2031 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.48(0.56)	WBR(WBR)	14.3(14.9)	A(A)	0.34(0.55)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.6(8.6)	NB(NB)	3.0(4.0)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.5(10.9)	EB(EB)	2.2(2.5)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(C)	12.3(15.7)	EB(EB)	4.8(2.9)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.1(5.6)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

The study area intersections are anticipated to operate similar to the 2021 total background conditions by showing only slight increase in delay and v/c ratios.

TOTAL PROJECTED 2021 CONDITIONS – PHASE 1 BUILD-OUT

The total projected 2021 traffic volumes were derived by superimposing the Phase 1 site-generated traffic volumes (Figure 12) onto total future background 2021 traffic volumes (Figure 18). The resulting total projected 2021 traffic volumes are illustrated in Figure 21.

Figure 21: Total Projected 2021 Traffic Volumes

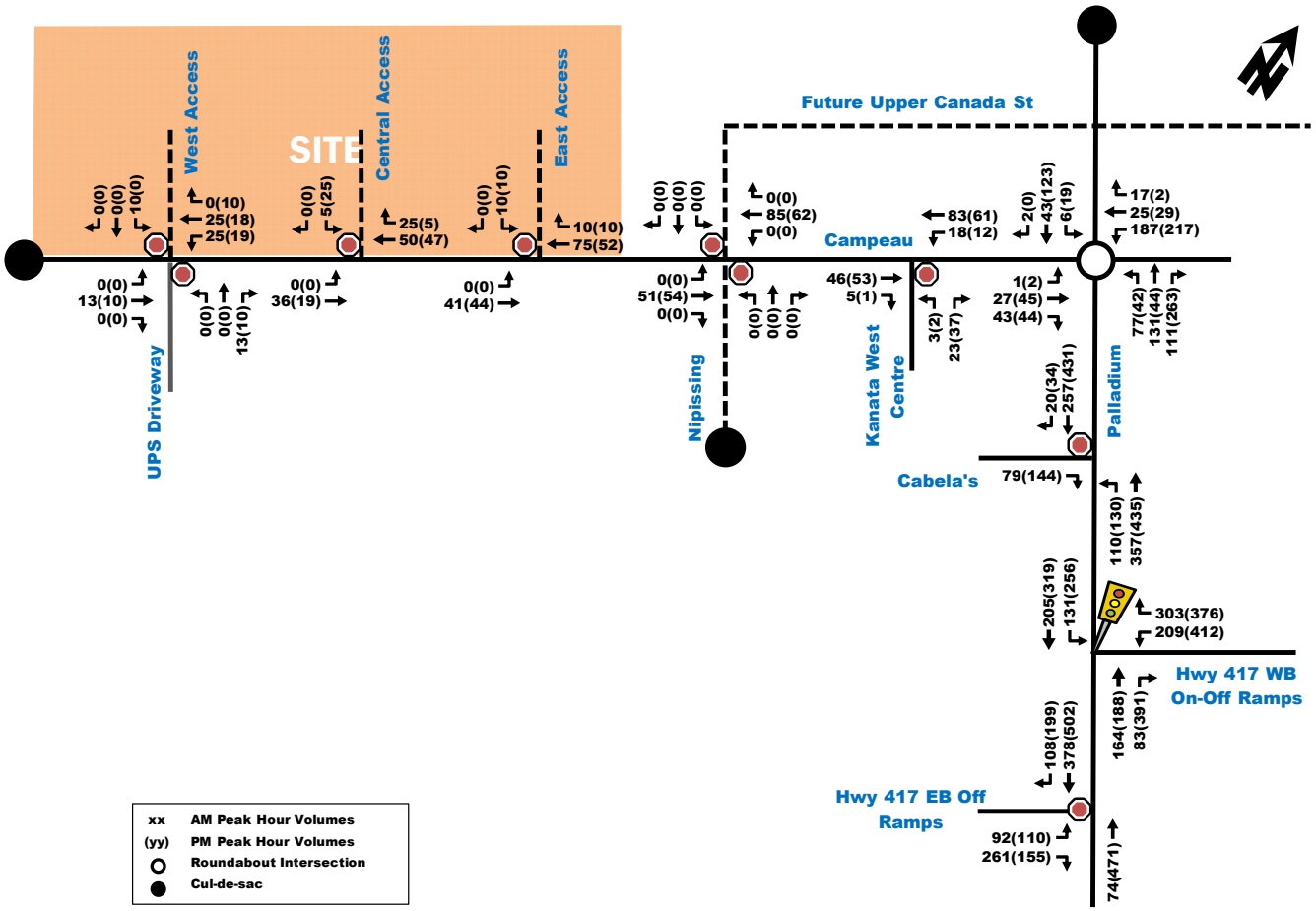


Table 21 below provides a summary of the critical Synchro analysis results at intersections within the study area, based on total projected 2021 traffic volumes.

Table 21: Total Projected 2021 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.48(0.55)	WBR(WBR)	13.9(14.5)	A(A)	0.34(0.55)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.7(8.7)	NB(NB)	2.0(2.6)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.5(10.8)	EB(EB)	2.0(2.3)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(B)	11.7(14.7)	EB(EB)	4.5(2.7)	-	-
Campeau Dr/East Access (U)	B(B)	10.3(10.2)	SB(SB)	0.8(0.9)	-	-
Campeau Dr/Central Access (U)	A(A)	9.0(9.0)	SB(SB)	0.4(2.3)	-	-
Campeau Dr/West Access (U)	B(A)	10.4(8.4)	SB(NB)	4.6(3.3)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.2(5.6)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

As shown in Table 21, all critical movements at study area intersections operate at a LOS 'B' or better during morning and afternoon weekday peak hour periods. The signalized intersection, 'as a whole' are anticipated to have a LOS 'A' during both morning and afternoon weekday peak hous. Moreover, the proposed development accesses are projected to operate at a LOS 'B' or better during the morning and afternoon weekday peak hour periods.

TOTAL PROJECTED 2026 CONDITIONS – PHASE 2 BUILD-OUT

The total projected 2026 traffic volumes shown in Figure 22, were derived by superimposing the Phase 2 site-generated traffic volumes (Figure 13) onto total future 2026 background traffic volumes (Figure 19).

Figure 22: Total Projected 2026 Traffic Volumes

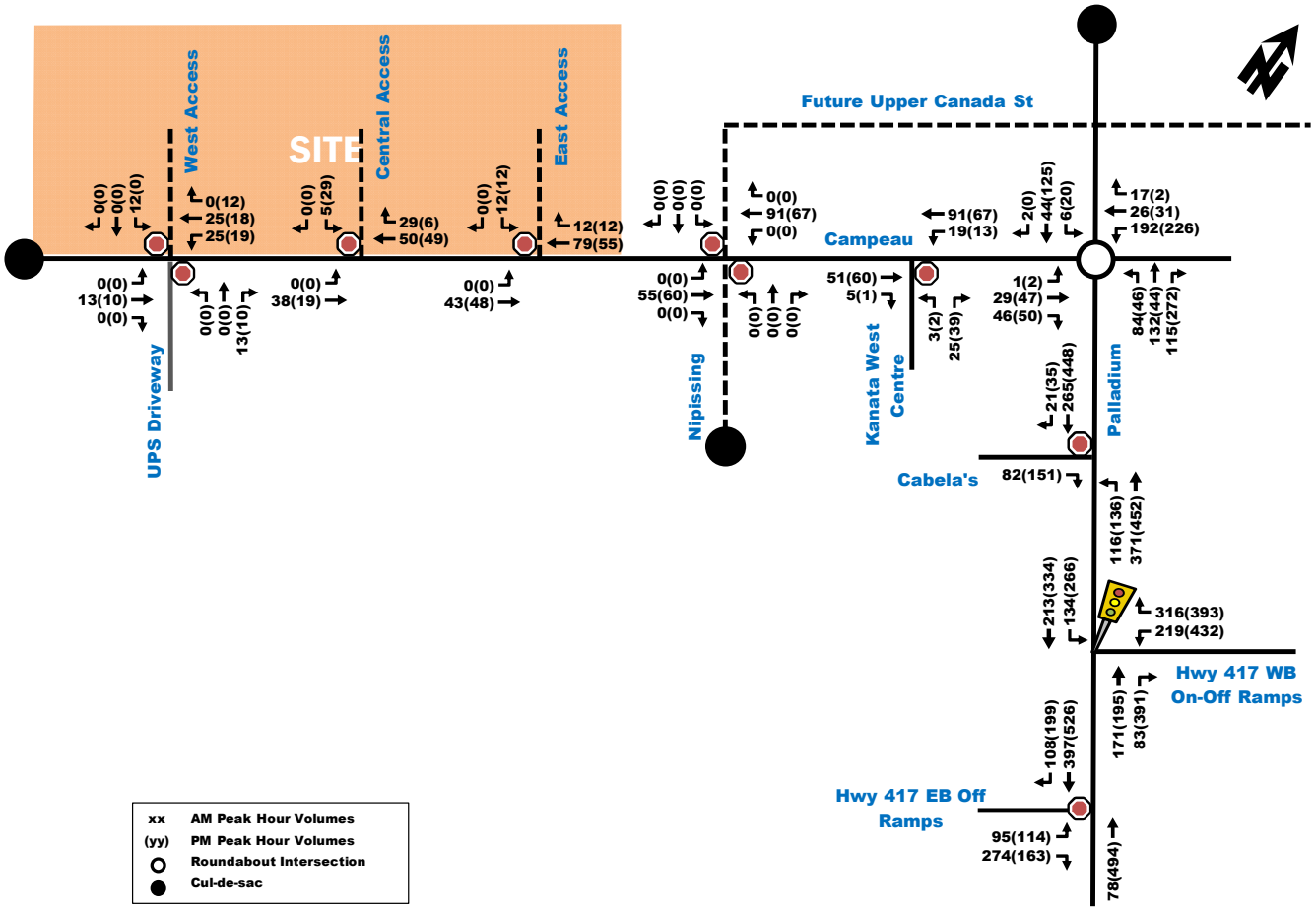


Table 22 below provides a summary of the critical Synchro analysis results at intersections within the study area, based on total projected 2026 traffic volumes.

Table 22: Total Projected 2026 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.50(0.57)	WBR(WBR)	14.0(14.7)	A(A)	0.35(0.56)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.8(8.8)	NB(NB)	2.0(2.5)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.5(10.9)	EB(EB)	2.0(2.3)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(C)	12.0(15.3)	EB(EB)	4.7(2.8)	-	-
Campeau Dr/East Access (U)	B(B)	10.4(10.2)	SB(SB)	0.9(1.0)	-	-
Campeau Dr/Central Access (U)	A(A)	9.0(9.0)	SB(SB)	0.4(2.5)	-	-
Campeau Dr/West Access (U)	B(A)	10.4(8.4)	SB(NB)	4.8(3.3)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.2(5.7)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

As shown in Table 22, the study area intersections are anticipated to operate similar to total projected 2021 conditions, with slight increase in delays and v/c ratios at some intersections.

TOTAL PROJECTED 2031 CONDITIONS – FULL BUILD-OUT PLUS FIVE YEARS

The total projected 2031 traffic volumes shown in Figure 23 were derived by superimposing the total site-generated traffic volumes at Phase 2 full build-out (Figure 13) onto total future 2031 background traffic volumes (Figure 20).

Figure 23: Total Projected 2031 Traffic Volumes

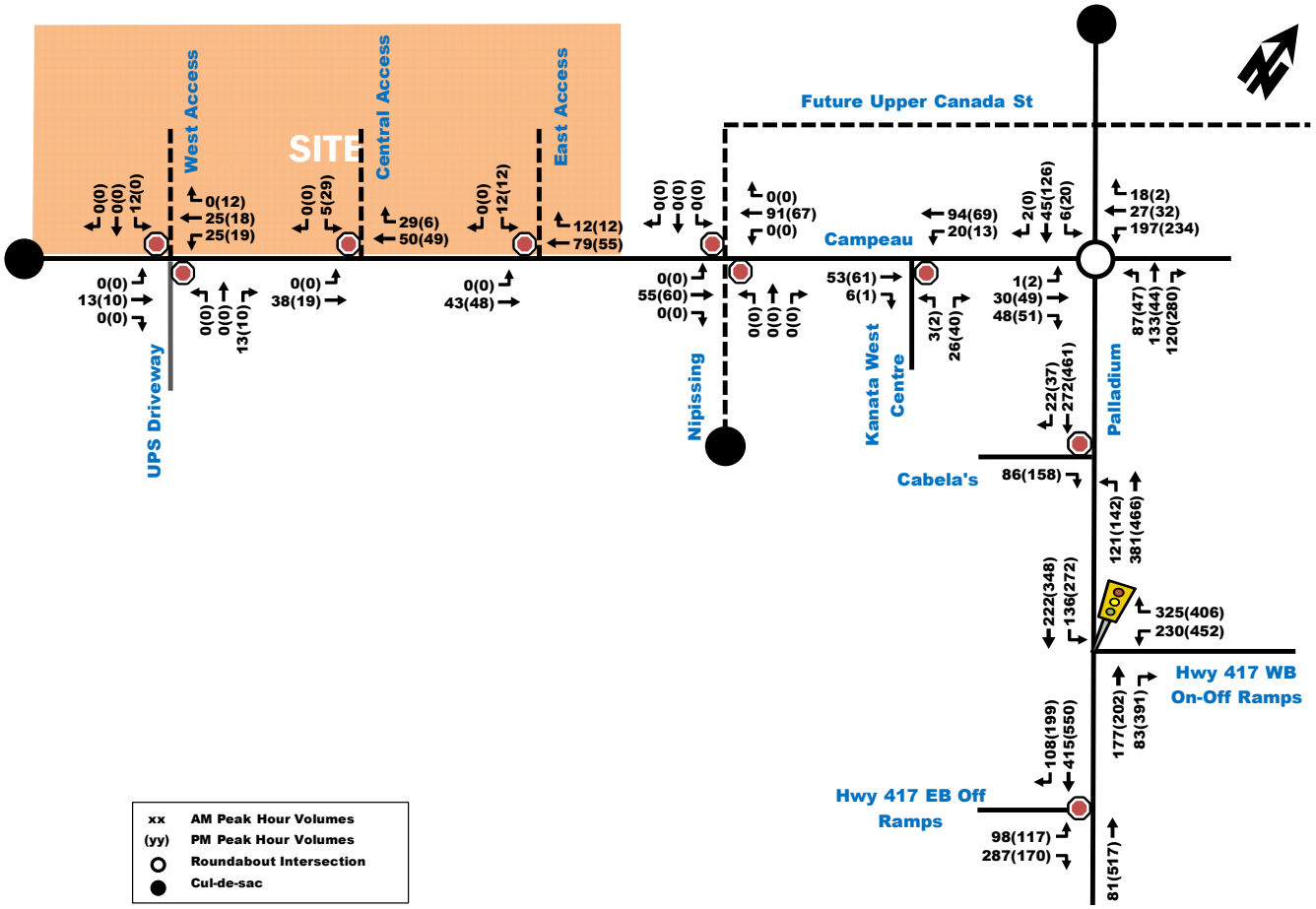


Table 23 below provides a summary of the critical Synchro analysis results at intersections within the study area, based on total projected 2031 traffic volumes.

Table 23: Total Projected 2031 Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'As a Whole'		
	LOS	max. v/c or avg. delay (s)	Movement	Delay (s)	LOS	v/c
Palladium Dr/Hwy 417 WB On-Off Ramps (S)	A(A)	0.50(0.58)	WBR(WBR)	14.2(14.9)	A(A)	0.36(0.57)
Kanata West Centre Dr/Campeau Dr (U)	A(A)	8.8(8.8)	NB(NB)	2.0(2.5)	-	-
Cabelas Way/Palladium Dr (U)	A(B)	9.6(11.1)	EB(EB)	2.1(2.4)	-	-
Palladium Dr/Hwy 417 EB Off Ramp (U)	B(C)	12.3(16.1)	EB(EB)	4.8(3.0)	-	-
Campeau Dr/East Access (U)	B(B)	10.3(10.2)	SB(SB)	0.9(1.0)	-	-
Campeau Dr/Central Access (U)	A(A)	9.0(9.0)	SB(SB)	0.4(2.5)	-	-
Campeau Dr/West Access (U)	B(A)	10.4(8.4)	SB(NB)	4.8(3.3)	-	-
Campeau Dr/Palladium Dr (R)	A(A)	8.9(8.8)	WB(WB)	6.2(5.7)	-	-

Note: Analysis of signalized intersections assumes a PHF of 1.0 and a saturation flow rate of 1800 veh/h/lane.
(S) – Signalized intersection.
(U) – Unsignalized intersection.
(R) – Roundabout intersection.

As shown in Table 23, the study area intersections are anticipated to operate similar to total projected 2026 conditions, with slight increase in delays and v/c ratios at some intersections.

5. FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Based on the results summarized herein the following transportation related conclusions are offered:

Proposed Development

- The proposed development will be constructed in two phases. Phase 1 will consist of a two-storey office building with a gross floor area of 6,000 ft^2, a 60,000 ft^2 warehouse building with a build-out year of 2021. Phase 2 will consist of the balance of Phase 1 capacity, plus the a 11,800 ft^2 expansion of the warehouse, with an assumed build-out year of 2026.
- The development is planned to provide a total of 138 vehicle parking spaces (including three accessible parking spaces), which meets the City of Ottawa's parking provisions requirements. There will also be trailer parking spaces and 50 tractor parking spaces on site.
- Three new, full-movement accesses are proposed to serve the development, all of which are located near the west end of Campeau Drive. The east access serves the trailer delivery vehicles, while the central access serves employee parking spaces and the west access serves tractor parking spaces.
- The projected number of vehicle trips anticipated to be generated by Phase 1 is 60 veh/h during both the morning and afternoon weekday peak hour periods. At Phase 2 buildout, the development is anticipated to generate 70 and 71 veh/h during the morning and afternoon weekday peak hour periods, respectively.
- Truck turning templates indicated that there are no issues regarding truck movements throughout the site.

Existing and Background Conditions

- All existing study area intersections were projected to operate at a LOS 'B' or better during morning and afternoon weekday peak hour periods.
- Background traffic growth rate was assumed to be 1% per year along Campeau Drive and Palladium Drive.
- The operational analysis of total future background 2021, 2026 and 2031 conditions indicated the following:
  - Study area intersections operate similar to existing conditions, with a LOS 'C' or better during morning and afternoon weekday peak hour periods; and,
  - MMLOS analysis of boundary streets was conducted based on future conditions of the study area. The boundary street analyzed was Campeau Drive and the analysis indicated that all MMLOS targets were met, with respect to each travel mode.

Projected Conditions

- Based on the analysis, all study area intersections in total projected 2021, 2026 and 2031 conditions are projected to operate at a LOS 'C' or better during morning and afternoon weekday peak hour periods.

Based on the foregoing, the proposed development fits well into the context of the surrounding area and has little impact on the study intersection operations. Therefore, it is recommended to proceed from a transportation perspective.

Prepared By:	Reviewed By:
Basel Ansari, E.I.T.	Matthew Mantle, P.Eng. Transportation Engineer

Appendix A

SCREENING FORM & CITY COMMENT RESPONSES

8800 Campeau Consolidated 1st Submission Comments:

Urban Design:

1. The pedestrian sidewalk located on the west side of the main access to the site should also be extended to connect to the public sidewalk.
   Site Plan updated.

Transportation:

Transportation Engineering Services

1. Section 4.2.1 Parking Supply:
   a. Show minimum required parking calculations.
      Report updated.

   b. Comment on the City's minimum bicycle parking requirements. The TDM-Supportive Development Design and Infrastructure Checklist claims "bicycle parking not required given the location and land use of the warehouse". This is incorrect. The site is within "Area C" of Schedule 1A and therefore has a minimum bicycle parking requirement.
      Checklist updated.

   c. The TIA notes that "no bicycle parking spaces are proposed", but the site plan shows at least 10 exterior spaces being provided. Please correct.
      Report updated.

2. Section 4.5 Transportation Demand Management: It is noted that no TDM measures are "checked" in the TMD Measures Checklist. Given that there are sustainable transportation alternatives within the study area, consider providing some minimal TDM measures to encourage their use. For example, consider display relevant transit schedules and route maps at entrances.
   Proponent advised.

Traffic Signal Operations

3. No comments.
   Noted.

Traffic Signal Design

4. No comments.
   Noted.

Street Lighting

5. No comments.
   Noted.

Transit Services

6. Section 4.7 is incomplete. Per the TIA guidelines, this section should review the potential impacts on existing and planned transit networks and service to ensure that level of service is not unacceptably impacted.

At full buildout, this site is anticipated to have negligible impact on the transit network as it is projected to generate less than 10 persons/h (two-way traffic) during both peak hour periods.

Development Review – Transportation

7. Paragraph below Figure 13 indicates the majority of employees and customers would use the east access off Campeau. Would these passenger vehicles not use the central access? Please confirm/correct as appropriate.
   typo corrected; Employee and customer trips are assigned to the central access.

8. East Access width does not meet Private Approach Bylaw. This should be noted in section 4.4.1 of the TIA. Should this be pursued, adequate signage and pavement markings should be included in support of this access width.
   Noted.

9. Please address the above comments and re-submit the TIA and ICA outputs (Synchro/Sidra/Rodel, if applicable).
   Noted.

Site Plan

Site Plan, Drawing No. SP-01, prepared by McRobie Architects + Interior Designers, Consultant's project no. 19-247, dated 2020-07-21, revision 1, dated 2020-12-16.

Transportation Engineering Services

1. Ensure all accesses have a continuous depressed curb and sidewalk across the access parallel to the Campeau Drive curb lane. Refer to City of Ottawa standard SC7.1. Refer also to the design of the UPS accesses on the other side of Campeau Drive.
   Site Plan updated as per City spec SC 7.1.

2. Ensure concrete sidewalks across truck entrances are heavily reinforced to withstand impacts from tractor-trailers.
   Noted.

3. The central access is missing a crosswalk and small piece of sidewalk on its west side to complete a second pedestrian connection to the Campeau Drive sidewalk.
   Site Plan updated.

4. Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.
   Site Plan updated.

Development Review – Transportation

5. East Access width does not meet Private Approach Bylaw. Should the 15m access width be pursued, adequate signage and pavement markings should be included in support of this access width.
   Noted.

6. Include TWSIs at depressed curbs along pedestrian pathway within the staff/visitor parking lot across from the office building and at all other areas on the site where a pedestrian pathway meets a driving aisle.
   Site Plan updated.

Lisa Stern MCIP, RPP
Planner/ Urbaniste
Development Review West/ Examen des demandes d'aménagement ouest
City of Ottawa | Ville d'Ottawa
613.580.2424 ext./poste 21108
ottawa.ca/planning [ottawa.ca] / ottawa.ca/urbanisme [ottawa.ca]

Responses can be found in green following the comments below.

Please review the following comments;

Project No.: 477391 - 01000	Project Address: 8700 Campeau Dr, Blocks 37, 38 and 39
Applicant/Consultants/Developer: Parsons	Ward/Councillor: 4/Jenna Sudds

This comment response sheet is to address the Forecasting Report comments received on March 17, 2020.

Comments:

Transportation Engineering Services:

- Correct the intersection diagram of Campeau and Nipissing (two-way stop).

  Corrections have been made.

- Correct Figure 13. The volumes shown do not correspond to a 75% HWY 417 25% Huntmar split. However, the 15% split shown in the figure seems reasonable.

  Text has been corrected to match the 15% split shown in the figure.

- Ensure that the background developments listed in section 2.1.3 and shown in 3.2.3 match. The inclusion of 450 Huntmar Drive is supported as it will have a strong influence on the Campeau Drive / Palladium Drive roundabout.

  Description of 450 Huntmar Drive has been added in Section 2.1.3.

Traffic Signal Operations:

- No comment.

  Noted.

Development Review – Transportation:

- Correct reference to the "Hawthorne facility" on page 16.

  Reference has been corrected.

PARSONS

1223 Michael Street, Suite 100, Ottawa, Ontario, K1J 7T2
P: +1 613.738.4160 l F: +1 613.739.7105 l www.parsons.com

City of Ottawa 2017 TIA Guidelines

TIA Screening Form

Date	Novemeber 27, 2019
Project	Maritime Ontario Kanata West
Project Number	908489-50081

Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	No
Development Satisfies the Safety Trigger	No

Module 1.1 - Description of Proposed Development	
Municipal Address	8700 Campeau Drive
Description of location	Located in the north-west quadrant of the future Upper Canada/Campeau intersection. Currently a vacant lot.
Land Use	Package sorting facility
Development Size	5,574 sq. m sorting/warehouse facility, 465 sq. m office space and future 1,858 sq. m additional sorting/warehouse expansion
Number of Accesses and Locations	Two proposed full movement accesses to Campeau Drive
Development Phasing	Two phases
Buildout Year	Assumed 2021 for Phase 1 and 2031 for Phase 2
Sketch Plan / Site Plan	See attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Industrial	
Development Size	7897	sq. m
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers	
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	No
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	No
Location Trigger Met?	No

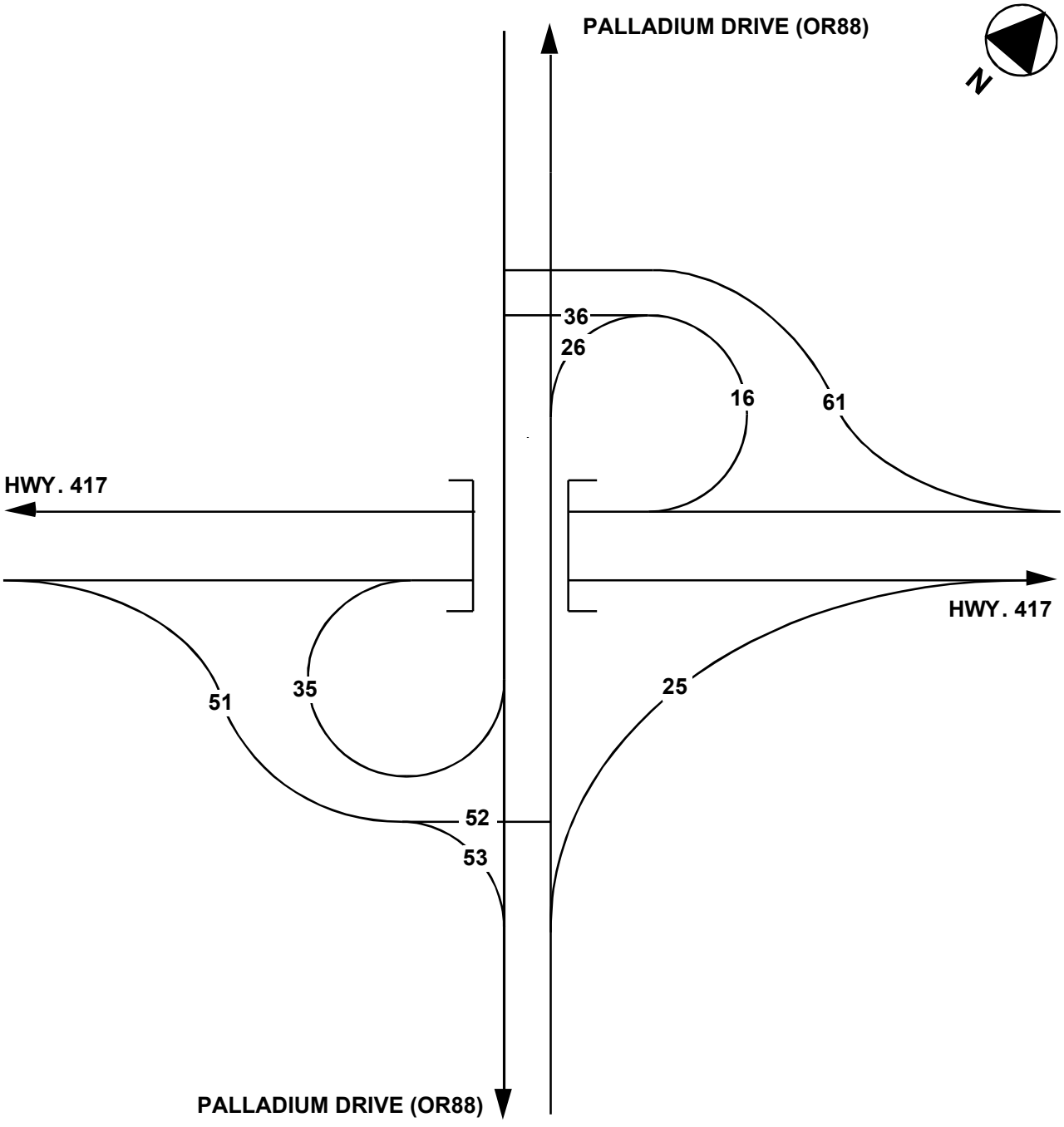
Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection;	No	
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	
The development includes a drive-thru facility	No	
Safety Trigger Met?	No	

Appendix B

TRAFFIC VOLUMES

MINISTRY OF TRANSPORTATION
INTERCHANGE FILE

HWY. 417 IC 142		KEYPOINT NUMBER	49562/000
AT PALLADIUM DRIVE (OR88)		M.T.O. DISTRICT	OTTAWA
		O.P.P. DISTRICT	11 LONG SAULT



UPDATED 19 - 01 - 07 PROGRAM DEVELOPMENT &EVALUATION OFFICE

96 -10 - 02
DATE

ACCURATE TRUSTED TRAFFIC DATA

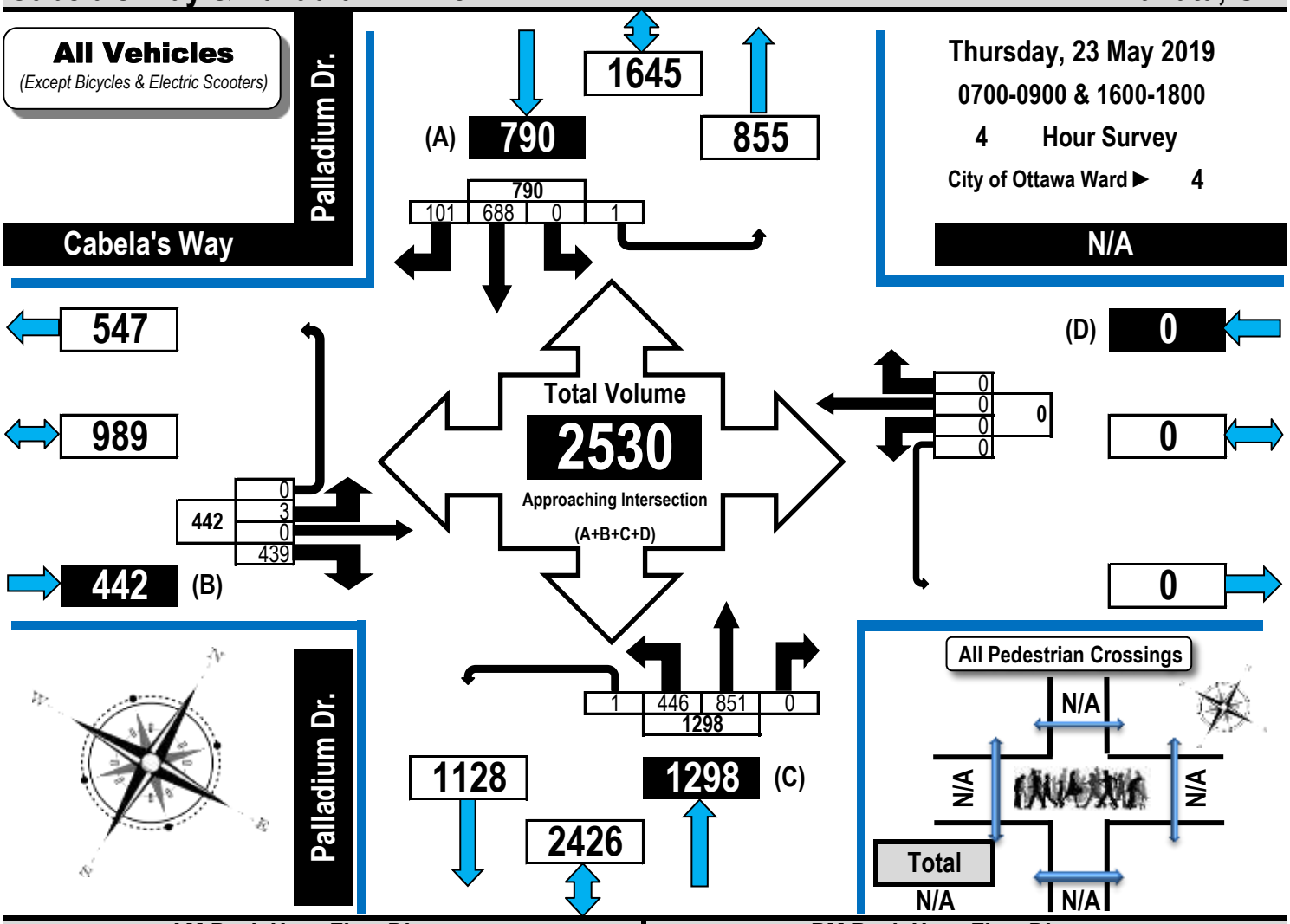
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

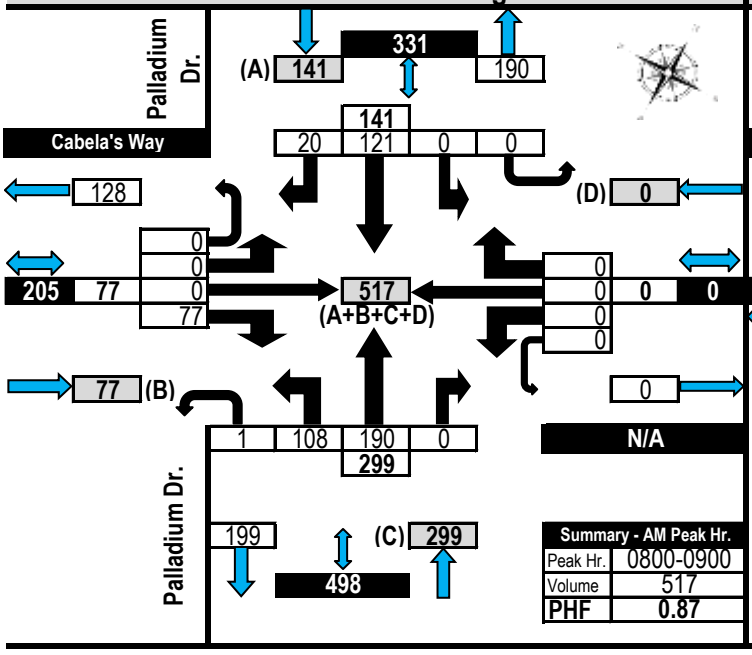
Cabela's Way & Palladium Drive — Kanata, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Thursday, 23 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 4

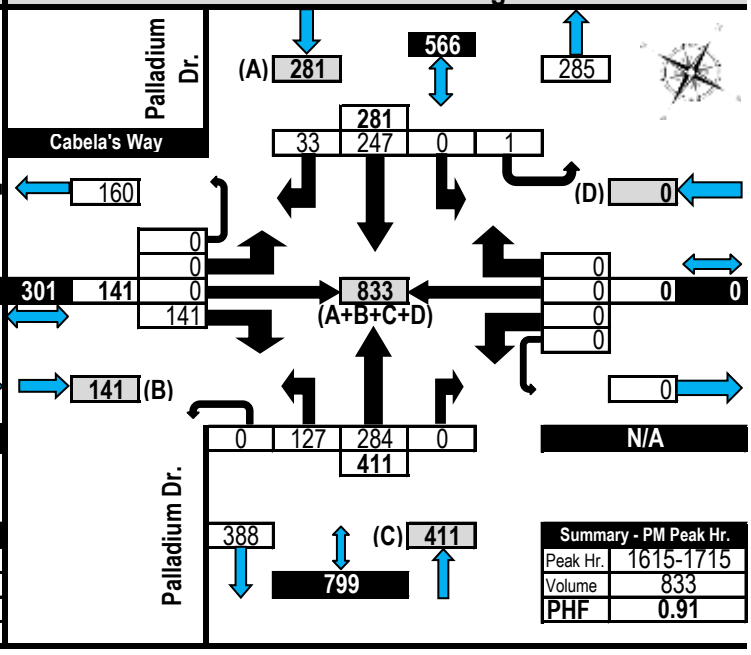


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	517
PHF	0.87

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	833
PHF	0.91

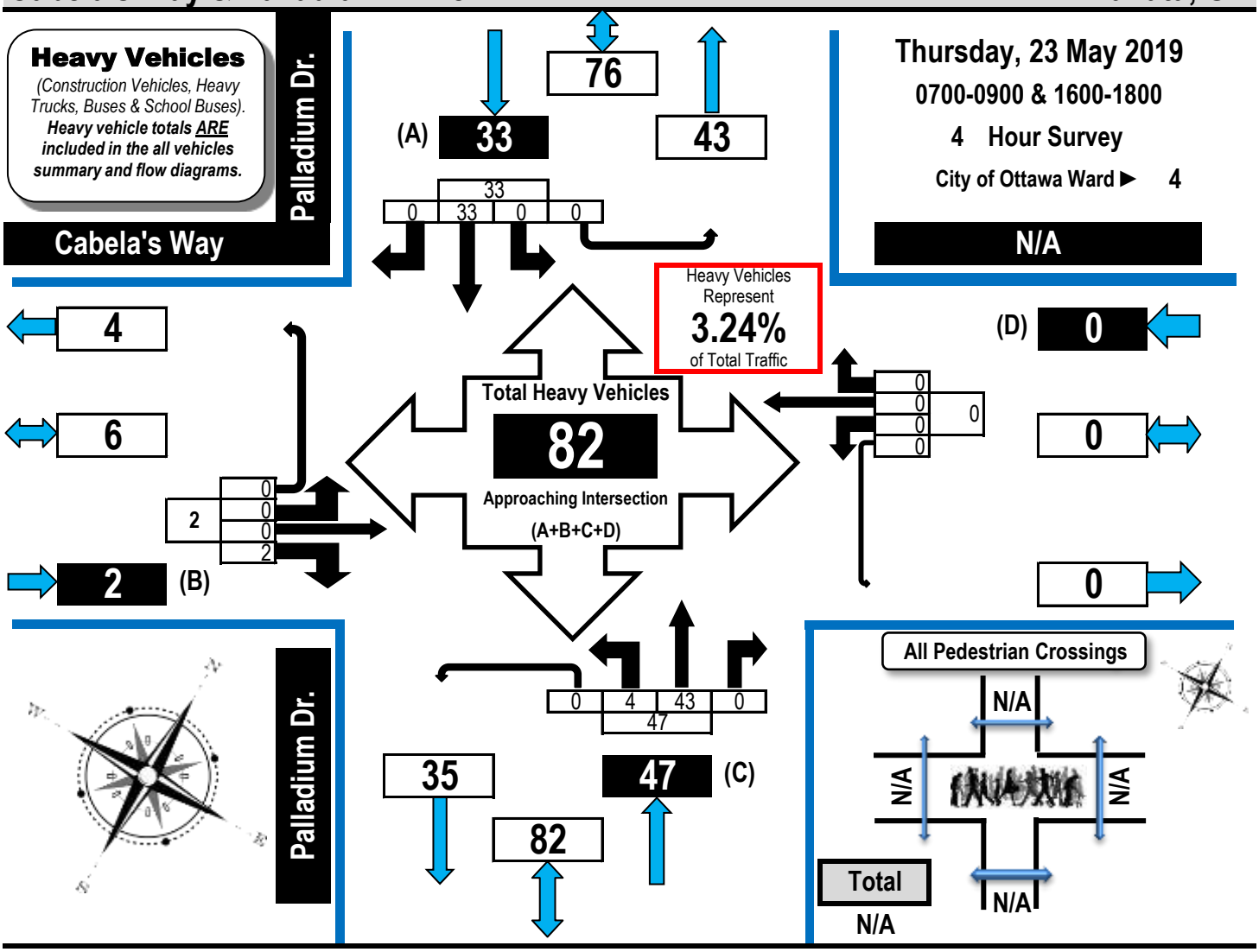
Turning Movement Count
Heavy Vehicle Summary
Flow Diagram

Heavy Trucks, Buses, and School Buses

Cabela's Way & Palladium Drive — Kanata, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Thursday, 23 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 4



	Cabela's Way Eastbound					N/A Westbound					Palladium Dr. Northbound					Palladium Dr. Southbound					
Time Period	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	G.Tot.
0700-0800	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	2	0	0	2	8
0800-0900	0	0	1	0	1	0	0	0	0	0	2	7	0	0	9	0	18	0	0	18	28
1600-1700	0	0	1	0	1	0	0	0	0	0	0	5	0	0	5	0	7	0	0	7	13
1700-1800	0	0	0	0	0	0	0	0	0	0	2	25	0	0	27	0	6	0	0	6	33
Totals	0	0	2	0	2	0	0	0	0	0	4	43	0	0	47	0	33	0	0	33	82

Comments:
No bicycles observed during this traffic count. Campeau Drive is not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open. The majority of the heavy vehicle traffic are from the UPS facility on Campeau Drive.

Turning Movement Count
Summary Report
AADT and Expansion Factors

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

Cabela's Way & Palladium Drive — Kanata, ON

Survey Date: Thursday, 23 May 2019 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Clear +12ºC **Survey Duration:** 4 Hrs. **Survey Hours:** 0700-0900 & 1600-1800
Weather PM: Overcast +18ºC **Surveyor(s):** Carmody

	Cabela's Way					N/A						Palladium Dr.					Palladium Dr.						
	Eastbound					Westbound						Northbound					Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	1	0	79	0	**80**	0	0	0	0	**0**	**80**	100	128	0	0	**228**	0	90	21	0	**111**	**339**	**419**
0800-0900	0	0	77	0	**77**	0	0	0	0	**0**	**77**	108	190	0	1	**299**	0	121	20	0	**141**	**440**	**517**
1600-1700	0	0	145	0	**145**	0	0	0	0	**0**	**145**	130	272	0	0	**402**	0	244	27	1	**272**	**674**	**819**
1700-1800	2	0	138	0	**140**	0	0	0	0	**0**	**140**	108	261	0	0	**369**	0	233	33	0	**266**	**635**	**775**
Totals	**3**	**0**	**439**	**0**	**442**	**0**	**0**	**0**	**0**	**0**	**442**	**446**	**851**	**0**	**1**	**1298**	**0**	**688**	**101**	**1**	**790**	**2088**	**2530**

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡					0.87								Highest Hourly Vehicle Volume Between 0700h & 0900h										
AM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
0800-0900	0	0	77	0	**77**	0	0	0	0	**0**	**77**	108	190	0	1	**299**	0	121	20	0	**141**	**440**	**517**

PM Peak Hour Factor ➡					0.91								Highest Hourly Vehicle Volume Between 1600h & 1800h										
PM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
1615-1715	0	0	141	0	**141**	0	0	0	0	**0**	**141**	127	284	0	0	**411**	0	247	33	1	**281**	**692**	**833**

Comments:

No bicycles observed during this traffic count. Campeau Drive is not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open. The majority of the heavy vehicle traffic are from the UPS facility on Campeau Drive.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2.When expansion and AADT factors are applied, the results will differ slightly due to rounding.

ACCURATE TRUSTED TRAFFIC DATA

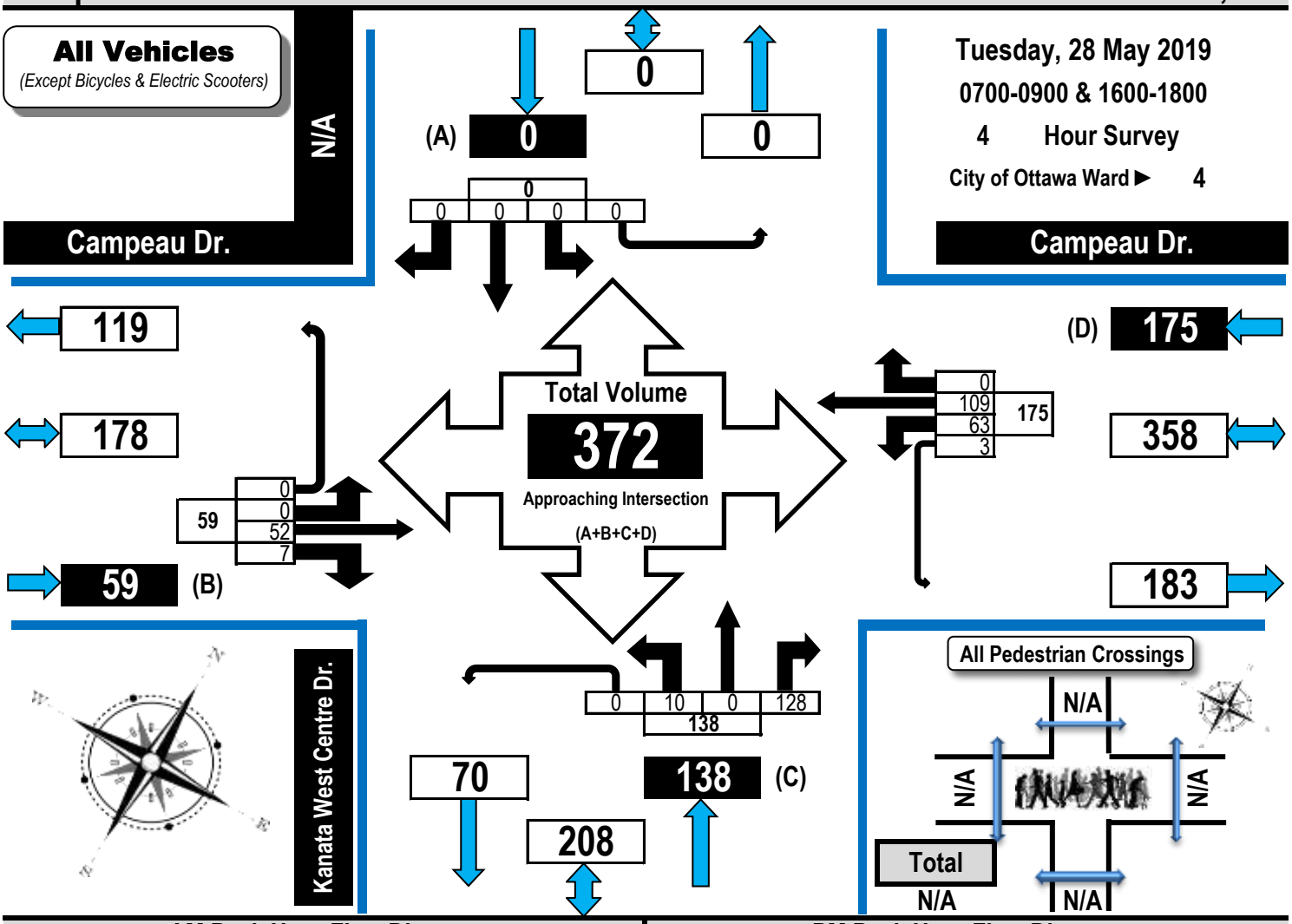
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

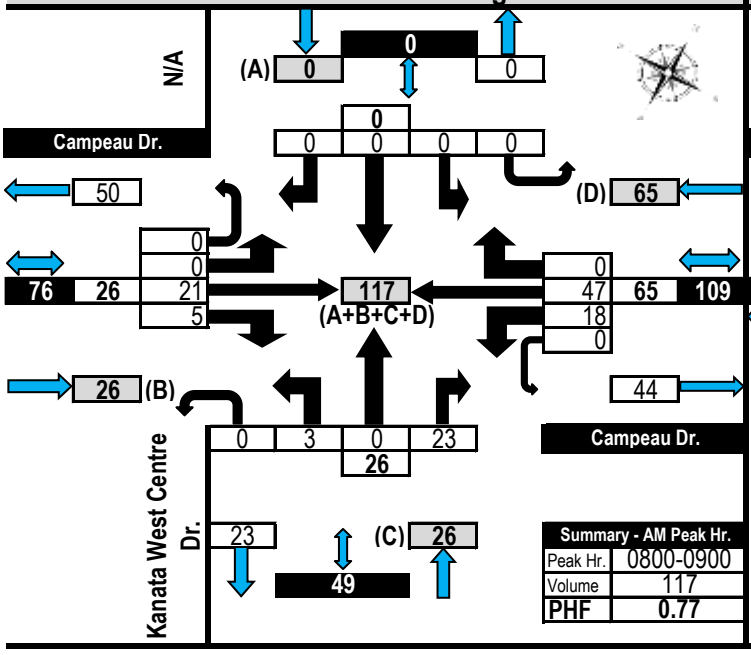
Campeau Drive & Kanata West Centre Drive — Kanata, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, 28 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 4

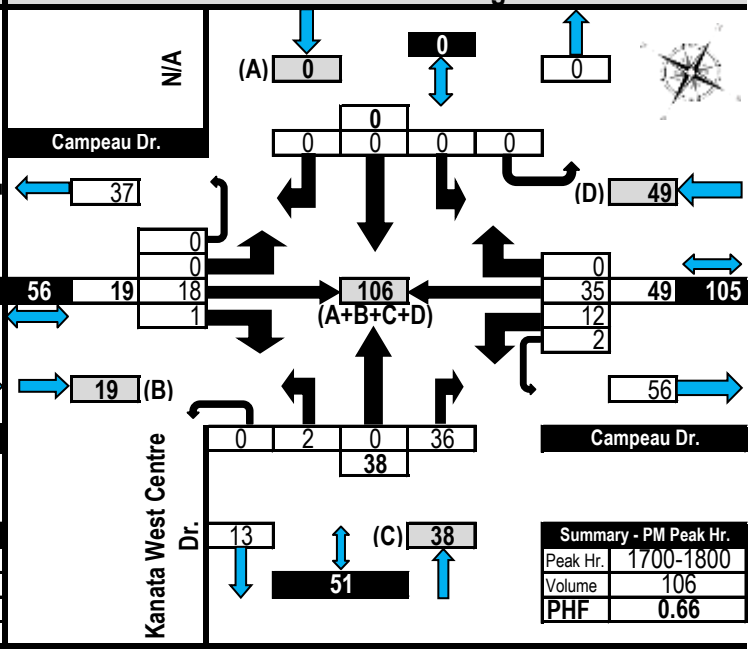


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	117
PHF	0.77

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1700-1800
Volume	106
PHF	0.66

Turning Movement Count
Heavy Vehicle Summary
Flow Diagram

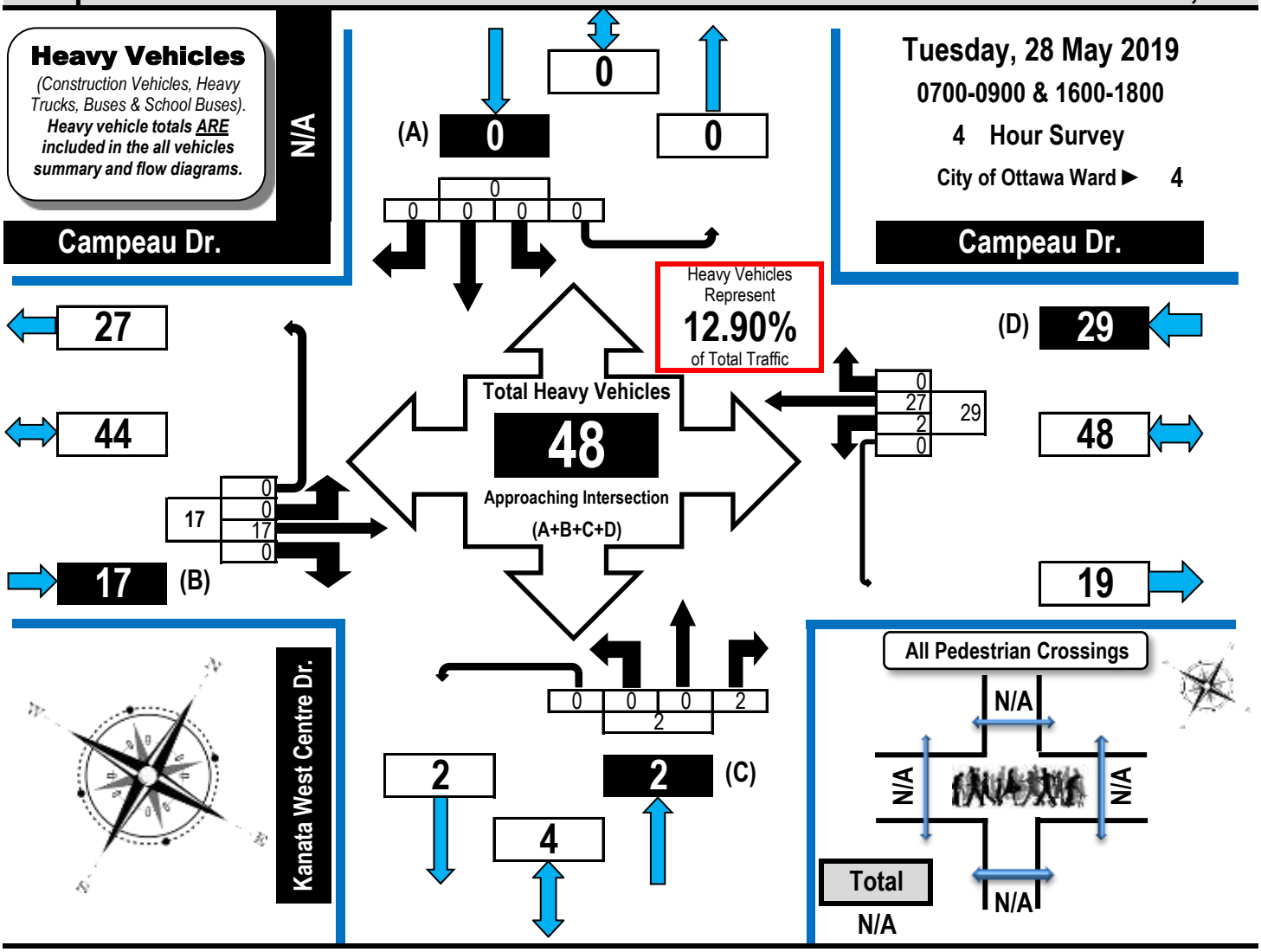
Heavy Trucks, Buses, and School Buses

Campeau Drive & Kanata West Centre Drive — Kanata, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

N/A

Tuesday, 28 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 4



	Campeau Dr.					Campeau Dr.					Kanata West Centre Dr.					N/A				
	Eastbound					Westbound					Northbound					Southbound				
Time Period	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	G.Tot.
0700-0800	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
0800-0900	0	13	0	0	13	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	15
1600-1700	0	3	0	0	3	1	3	0	0	4	0	0	1	0	1	0	0	0	0	0	8
1700-1800	0	1	0	0	1	1	22	0	0	23	0	0	0	0	0	0	0	0	0	0	24
Totals	0	17	0	0	17	2	27	0	0	29	0	0	2	0	2	0	0	0	0	0	48

Comments:
Campeau Drive not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open. The majority of the heavy vehicles are associated with the UPS facility on Campeau Drive.

Turning Movement Count
Summary Report
AADT and Expansion Factors

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

Campeau Drive & Kanata West Centre Drive — Kanata, ON

Survey Date: Tuesday, 28 May 2019 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Overcast +9ºC **Survey Duration:** 4 Hrs. **Survey Hours:** 0700-0900 & 1600-1800
Weather PM: Overcast +11ºC **Surveyor(s):** Mousseau

	Campeau Dr.					Campeau Dr.						Kanata West Centre Dr.					N/A					
	Eastbound					Westbound						Northbound					Southbound					
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	0	4	1	0	**5**	8	6	0	0	**14**	**19**	1	0	25	0	**26**	0	0	0	0	**0**	**26**	**45**
0800-0900	0	21	5	0	**26**	18	47	0	0	**65**	**91**	3	0	23	0	**26**	0	0	0	0	**0**	**26**	**117**
1600-1700	0	9	0	0	**9**	25	21	0	1	**47**	**56**	4	0	44	0	**48**	0	0	0	0	**0**	**48**	**104**
1700-1800	0	18	1	0	**19**	12	35	0	2	**49**	**68**	2	0	36	0	**38**	0	0	0	0	**0**	**38**	**106**
Totals	**0**	**52**	**7**	**0**	59	**63**	**109**	**0**	**3**	175	234	**10**	**0**	**128**	**0**	138	**0**	**0**	**0**	**0**	**0**	138	372

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡					0.77								Highest Hourly Vehicle Volume Between 0700h & 0900h										
AM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
0800-0900	0	21	5	0	**26**	18	47	0	0	**65**	**91**	3	0	23	0	**26**	0	0	0	0	**0**	**26**	**117**

PM Peak Hour Factor ➡					0.66								Highest Hourly Vehicle Volume Between 1600h & 1800h										
PM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
1700-1800	0	18	1	0	**19**	12	35	0	2	**49**	**68**	2	0	36	0	**38**	0	0	0	0	**0**	**38**	**106**

Comments:

Campeau Drive not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open. The majority of the heavy vehicles are associated with the UPS facility on Campeau Drive.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2.When expansion and AADT factors are applied, the results will differ slightly due to rounding.

ACCURATE TRUSTED TRAFFIC DATA

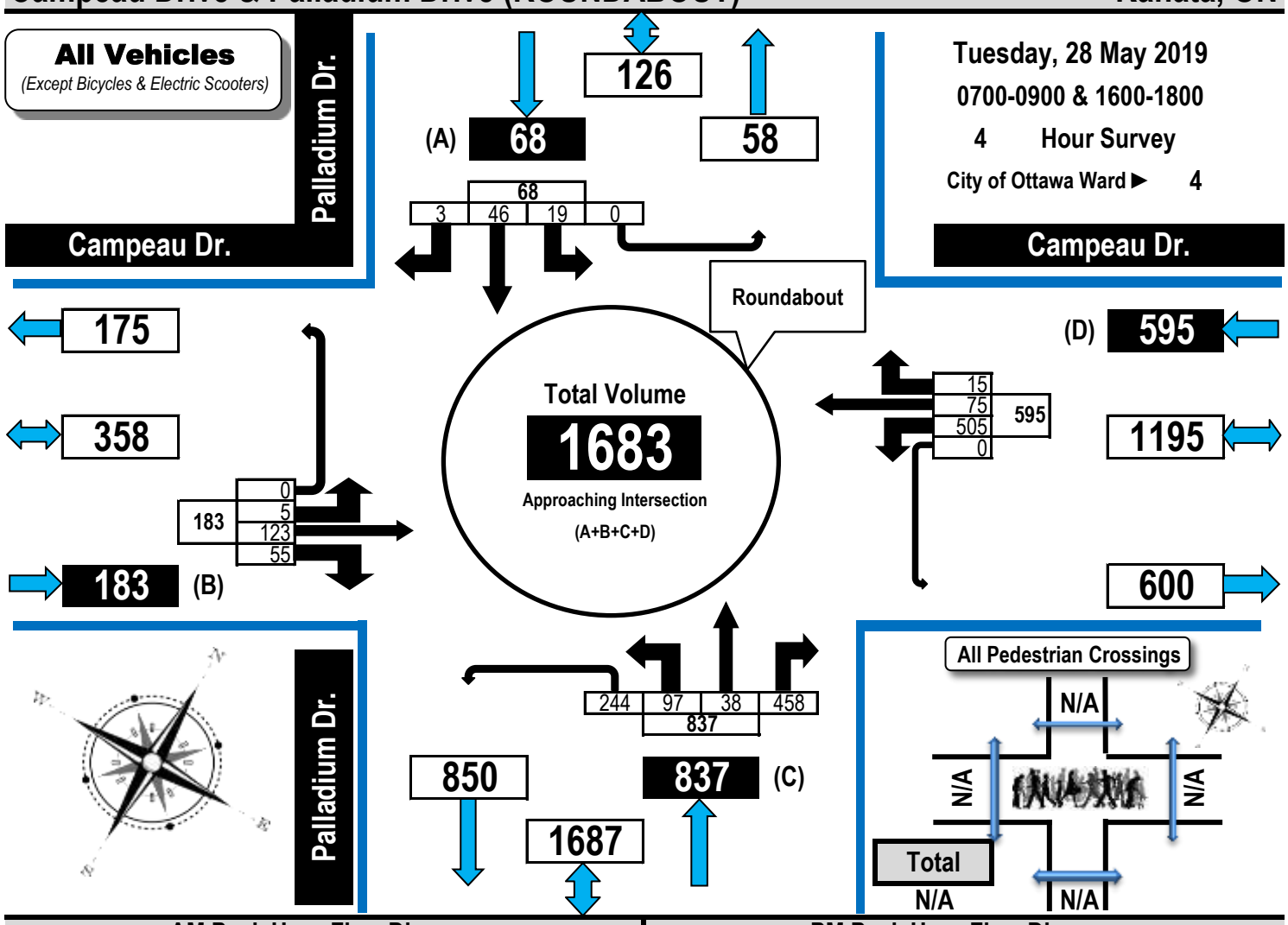
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

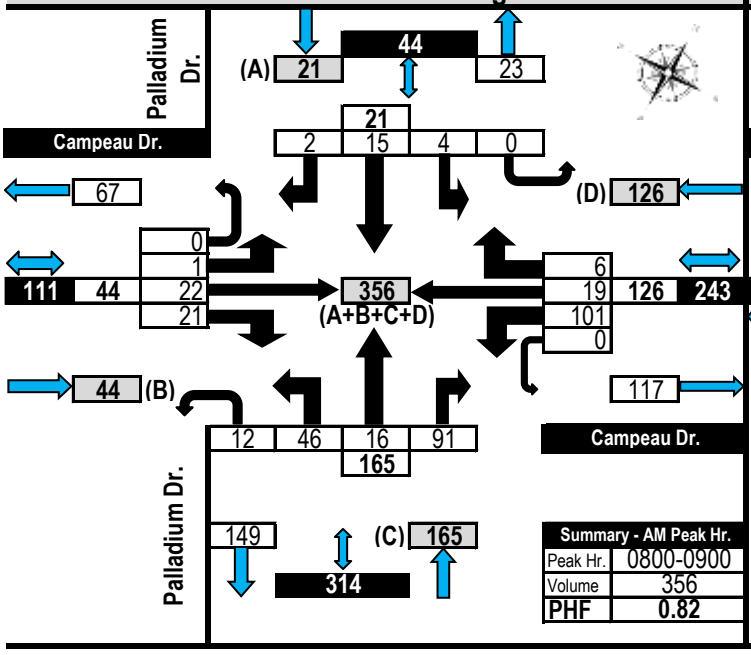
Campeau Drive & Palladium Drive (ROUNDABOUT) — Kanata, ON

All Vehicles
(Except Bicycles & Electric Scooters)

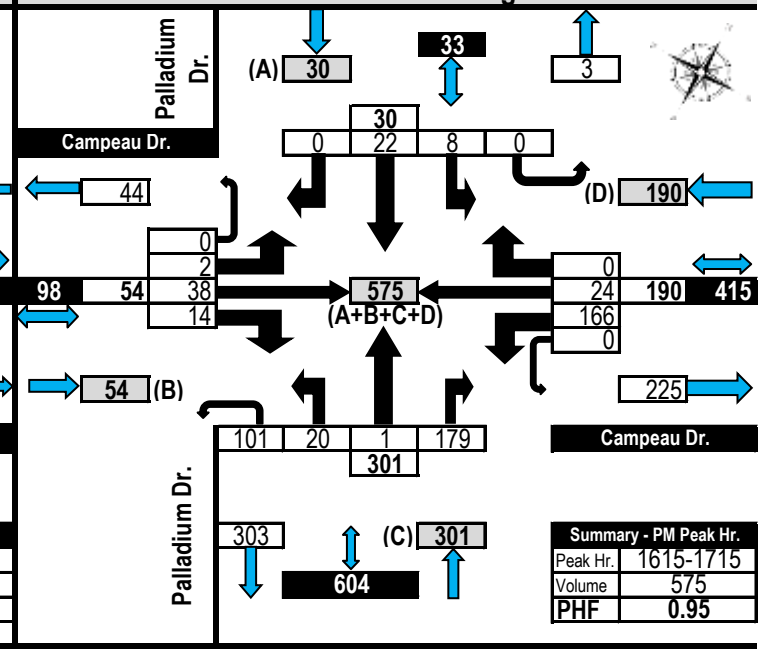
Tuesday, 28 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 4



AM Peak Hour Flow Diagram



PM Peak Hour Flow Diagram



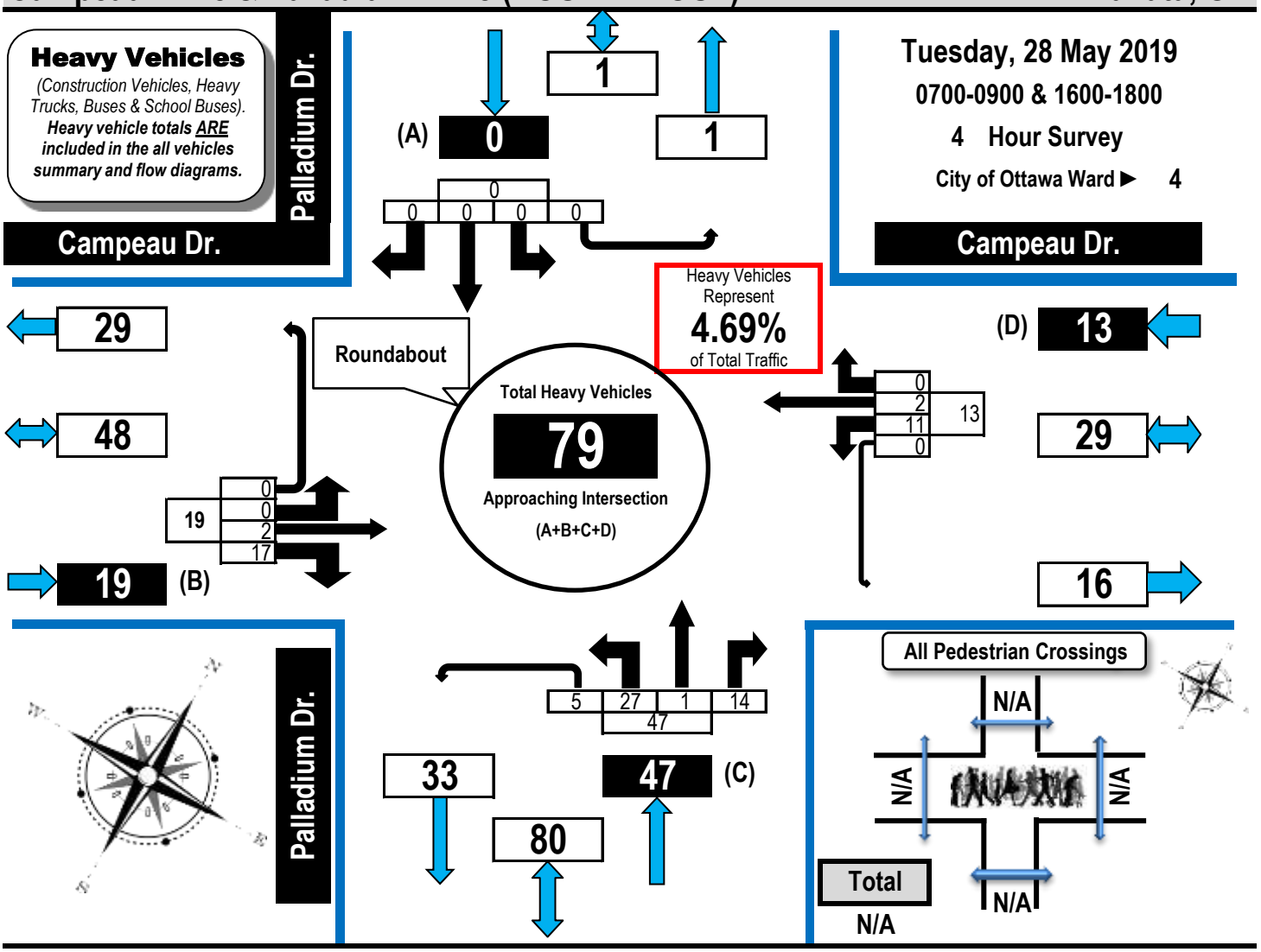
Turning Movement Count
Heavy Vehicle Summary
Flow Diagram

Heavy Trucks, Buses, and School Buses

Campeau Drive & Palladium Drive (ROUNDABOUT) — Kanata, ON

Heavy Vehicles
(Construction Vehicles, Heavy Trucks, Buses & School Buses).
Heavy vehicle totals ARE included in the all vehicles summary and flow diagrams.

Tuesday, 28 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ► 4



	Campeau Dr. Eastbound					Campeau Dr. Westbound					Palladium Dr. Northbound					Palladium Dr. Southbound					
Time Period	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	LT	ST	RT	UT	S. Tot	G.Tot.
0700-0800	0	1	0	0	1	1	0	0	0	1	0	0	3	0	3	0	0	0	0	0	5
0800-0900	0	0	14	0	14	5	0	0	0	5	2	1	5	1	9	0	0	0	0	0	28
1600-1700	0	1	3	0	4	3	1	0	0	4	3	0	3	3	9	0	0	0	0	0	17
1700-1800	0	0	0	0	0	2	1	0	0	3	22	0	3	1	26	0	0	0	0	0	29
Totals	0	2	17	0	19	11	2	0	0	13	27	1	14	5	47	0	0	0	0	0	79

Comments:
Campeau Drive not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open in the Kanata West Business Park. The large number of northbound U-turns primarily originate from the Tanger Outlet access located south of Campeau Drive.

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary Report
AADT and Expansion Factors

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

Campeau Drive & Palladium Drive (ROUNDABOUT) — Kanata, ON

Survey Date: Tuesday, 28 May 2019 **Start Time:** 0700 **AADT Factor:** 0.9
Weather AM: Overcast +9ºC **Survey Duration:** 4 Hrs. **Survey Hours:** 0700-0900 & 1600-1800
Weather PM: Overcast +11ºC **Surveyor(s):** Carmody

	Campeau Dr. Eastbound					Campeau Dr. Westbound						Palladium Dr. Northbound					Palladium Dr. Southbound						
Time Period	LT	ST	RT	UT	E/B Tot	LT	ST	RT	UT	W/B Tot	Street Total	LT	ST	RT	UT	N/B Tot	LT	ST	RT	UT	S/B Tot	Street Total	Grand Total
0700-0800	2	23	6	0	**31**	91	9	7	0	**107**	**138**	6	17	70	5	**98**	1	2	0	0	**3**	**101**	**239**
0800-0900	1	22	21	0	**44**	101	19	6	0	**126**	**170**	46	16	91	12	**165**	4	15	2	0	**21**	**186**	**356**
1600-1700	2	37	14	0	**53**	169	30	1	0	**200**	**253**	17	1	151	111	**280**	10	15	0	0	**25**	**305**	**558**
1700-1800	0	41	14	0	**55**	144	17	1	0	**162**	**217**	28	4	146	116	**294**	4	14	1	0	**19**	**313**	**530**
Totals	**5**	**123**	**55**	**0**	**183**	**505**	**75**	**15**	**0**	**595**	**778**	**97**	**38**	**458**	**244**	**837**	**19**	**46**	**3**	**0**	**68**	**905**	**1683**

Equivalent 12 & 24-hour Vehicle Volumes Including the Annual Average Daily Traffic (AADT) Factor Applicable to the Day and Month of the Turning Movement Count

Expansion factors are applied exclusively to standard weekday 8-hour turning movement counts conducted during the hours of 0700h - 1000h, 1130h - 1330h and 1500h - 1800h

Equivalent 12-hour vehicle volumes. These volumes are calculated by multiplying the 8-hour totals by the 8 ➡12 expansion factor of 1.39

Equ. 12 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

Average daily 12-hour vehicle volumes. These volumes are calculated by multiplying the equivalent 12-hour totals by the AADT factor of: 0.9

AADT 12-hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

24-Hour AADT. These volumes are calculated by multiplying the average daily 12-hour vehicle volumes by the 12 ➡24 expansion factor of 1.31

AADT 24 Hr	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	n/a	n/a	n/a	n/a	**n/a**	n/a	n/a	n/a	n/a	**n/a**	**n/a**	**n/a**

AADT and expansion factors provided by the City of Ottawa

AM Peak Hour Factor ➡ 0.82													Highest Hourly Vehicle Volume Between 0700h & 0900h										
AM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
0800-0900	1	22	21	0	**44**	101	19	6	0	**126**	**170**	46	16	91	12	**165**	4	15	2	0	**21**	**186**	**356**

PM Peak Hour Factor ➡ 0.95													Highest Hourly Vehicle Volume Between 1600h & 1800h										
PM Peak Hr	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	LT	ST	RT	UT	TOT	LT	ST	RT	UT	TOT	S.TOT	G.TOT
1615-1715	2	38	14	0	**54**	166	24	0	0	**190**	**244**	20	1	179	101	**301**	8	22	0	0	**30**	**331**	**575**

Comments:

Campeau Drive not yet open to Terry Fox Drive. Cabela's, Princess Auto and McDonalds represent the businesses now open in the Kanata West Business Park. The large number of northbound U-turns primarily originate from the Tanger Outlet access located south of Campeau Drive.

Notes:

1. Includes all vehicle types except bicycles, electric bicycles, and electric scooters.
2.When expansion and AADT factors are applied, the results will differ slightly due to rounding.

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 16

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562016

Count Direction: N/A **Report Dates:** Sep 13, 2018 **to** Sep 19, 2018

Hour Interval	Thu 18/09/13	Fri 14	Sat 15	Sun 16	Mon 17	Tue 18	Wed 19	Thu 20
0:00- 1:00		10	20	9	1	10	4	10
1:00- 2:00		3	14	3	1	9	3	4
2:00- 3:00		3	0	0	4	0	3	2
3:00- 4:00		7	5	2	1	4	0	2
4:00- 5:00		1	3	2	1	4	4	3
5:00- 6:00		8	3	3	8	7	10	5
6:00- 7:00		41	17	10	36	40	40	34
7:00- 8:00		79	32	23	74	90	79	81
8:00- 9:00		91	74	38	99	102	95	95
9:00-10:00		104	131	66	77	99	73	94
10:00-11:00		196	222	128	147	159	166	116
11:00-12:00		265	246	176	203	193	208	198
AM Total	0	808	767	460	652	717	685	644
12:00-13:00	229	303	287	250	255	222	227	
13:00-14:00	271	307	277	295	239	246	243	
14:00-15:00	335	410	335	283	281	297	281	
15:00-16:00	432	442	315	288	385	393	407	
16:00-17:00	483	461	277	218	438	503	478	
17:00-18:00	403	412	220	150	386	404	398	
18:00-19:00	186	242	125	94	213	230	198	
19:00-20:00	188	180	87	44	169	156	173	
20:00-21:00	157	162	97	23	142	109	146	
21:00-22:00	75	91	49	28	84	87	188	
22:00-23:00	22	197	31	23	14	21	322	
23:00-24:00	13	542	12	9	60	20	49	
PM Total	2,794	3,749	2,112	1,705	2,666	2,688	3,110	0
24 Hr. Total	2,794	4,557	2,879	2,165	3,318	3,405	3,795	644
Noon - Noon	3,602	4,516	2,572	2,357	3,383	3,373	3,754	

ADT	AWD	AADT	AAWD	SADT	SAWDT	WADT	DHV
3,365	3,528						

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 25

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562025

Count Direction: N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		8	3	12	13	17	5	2
1:00- 2:00		3	5	7	4	6	3	5
2:00- 3:00		4	5	4	8	12	6	2
3:00- 4:00		9	5	8	7	13	8	8
4:00- 5:00		5	11	10	9	5	11	11
5:00- 6:00		63	68	60	17	11	60	70
6:00- 7:00		280	271	260	41	36	290	277
7:00- 8:00		366	384	354	73	53	354	363
8:00- 9:00		247	277	304	126	76	308	255
9:00-10:00		194	192	207	164	136	179	183
10:00-11:00		155	201	179	194	154	199	169
11:00-12:00		205	177	207	224	158	177	186
AM Total	0	1,539	1,599	1,612	880	677	1,600	1,531
12:00-13:00	193	186	205	199	228	174	197	
13:00-14:00	168	167	153	196	211	159	176	
14:00-15:00	205	175	192	211	247	171	192	
15:00-16:00	223	215	201	216	198	171	212	
16:00-17:00	218	224	267	232	219	150	238	
17:00-18:00	277	242	257	269	192	117	251	
18:00-19:00	162	186	201	199	148	84	166	
19:00-20:00	129	131	148	112	107	79	157	
20:00-21:00	88	91	118	100	70	43	96	
21:00-22:00	74	78	74	69	50	27	56	
22:00-23:00	24	30	29	65	43	13	15	
23:00-24:00	11	15	24	29	19	7	6	
PM Total	1,772	1,740	1,869	1,897	1,732	1,195	1,762	0
24 Hr. Total	1,772	3,279	3,468	3,509	2,612	1,872	3,362	1,531
Noon - Noon	3,311		3,339	3,481	2,777	2,409	2,795	3,293

ADT	AWD	AADT	AAWD	SADT	SAWDT	WADT	DHV
3,058	3,356						

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 35

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562035

Count Direction: N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		4	3	3	11	10	1	3
1:00- 2:00		2	2	0	4	4	2	0
2:00- 3:00		0	0	8	3	1	1	0
3:00- 4:00		0	1	1	2	4	1	0
4:00- 5:00		6	4	4	3	1	3	3
5:00- 6:00		11	14	13	4	2	13	14
6:00- 7:00		62	70	55	17	9	65	66
7:00- 8:00		82	78	81	29	11	95	76
8:00- 9:00		89	106	83	42	32	101	77
9:00-10:00		90	71	83	80	51	76	72
10:00-11:00		105	115	123	141	133	99	104
11:00-12:00		179	157	193	268	217	144	151
AM Total	0	630	621	647	604	475	601	566
12:00-13:00	206	189	180	210	286	338	196	
13:00-14:00	221	160	194	217	408	363	194	
14:00-15:00	239	179	211	224	413	440	177	
15:00-16:00	194	179	195	197	453	450	195	
16:00-17:00	183	163	156	206	454	431	146	
17:00-18:00	188	163	164	207	376	345	174	
18:00-19:00	167	136	151	156	314	226	109	
19:00-20:00	172	155	155	222	259	47	130	
20:00-21:00	168	152	164	207	197	28	129	
21:00-22:00	134	103	104	147	115	19	99	
22:00-23:00	16	27	15	34	28	11	7	
23:00-24:00	8	9	9	14	17	8	4	
PM Total	1,896	1,615	1,698	2,041	3,320	2,706	1,560	0
24 Hr. Total	1,896	2,245	2,319	2,688	3,924	3,181	2,161	566
Noon - Noon	2,526	2,236	2,345	2,645	3,795	3,307	2,126	

ADT	AWD	AADT	AAWD	SADT	SAWDT	WADT	DHV
2,711	2,308						

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 51

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562051

Count Direction: N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		1	7	2	7	8	4	1
1:00- 2:00		3	3	1	4	12	1	0
2:00- 3:00		3	1	2	4	2	0	0
3:00- 4:00		3	3	2	1	6	4	3
4:00- 5:00		7	9	6	4	3	14	15
5:00- 6:00		72	60	46	8	7	60	65
6:00- 7:00		237	242	206	30	19	246	237
7:00- 8:00		315	318	251	64	42	323	319
8:00- 9:00		290	264	258	149	64	268	302
9:00-10:00		253	217	239	229	149	213	228
10:00-11:00		252	256	257	273	264	239	232
11:00-12:00		234	200	247	335	306	210	208
AM Total	0	1,670	1,580	1,517	1,108	882	1,582	1,610
12:00-13:00	235	187	186	229	327	287	219	
13:00-14:00	179	174	184	212	315	310	199	
14:00-15:00	206	180	187	189	261	289	176	
15:00-16:00	201	186	163	212	246	242	181	
16:00-17:00	209	230	236	244	212	170	210	
17:00-18:00	195	198	198	200	134	126	177	
18:00-19:00	156	129	159	167	113	65	120	
19:00-20:00	114	96	143	101	93	60	96	
20:00-21:00	49	39	66	70	53	39	31	
21:00-22:00	38	29	26	36	36	18	31	
22:00-23:00	15	21	15	17	17	16	12	
23:00-24:00	2	8	13	12	23	5	8	
PM Total	1,599	1,477	1,576	1,689	1,830	1,627	1,460	0
24 Hr. Total	1,599	3,147	3,156	3,206	2,938	2,509	3,042	1,610
Noon - Noon	3,269	3,057	3,093	2,797	2,712	3,209	3,070	

ADT	AWD	AADT	AAWD	SADT	SAWDT	WADT	DHV
3,030	3,122						

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 61

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562061

Count Direction: N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		28	24	40	71	63	34	22
1:00- 2:00		13	19	10	36	33	10	6
2:00- 3:00		12	14	11	20	18	10	8
3:00- 4:00		13	13	15	16	20	6	15
4:00- 5:00		15	9	21	11	8	5	13
5:00- 6:00		42	41	50	24	13	46	48
6:00- 7:00		153	162	171	45	36	162	149
7:00- 8:00		225	273	260	135	67	298	261
8:00- 9:00		330	367	363	223	92	344	329
9:00-10:00		315	336	397	370	251	327	297
10:00-11:00		422	403	438	600	540	350	353
11:00-12:00		457	435	520	756	666	417	424
AM Total	0	2,025	2,096	2,296	2,307	1,807	2,009	1,925
12:00-13:00	499	466	506	576	774	723	506	
13:00-14:00	529	485	493	526	847	778	427	
14:00-15:00	559	519	551	585	824	775	547	
15:00-16:00	698	618	627	667	750	661	744	
16:00-17:00	727	685	651	729	603	513	681	
17:00-18:00	673	665	643	658	508	329	616	
18:00-19:00	501	531	507	549	426	215	456	
19:00-20:00	406	392	436	433	343	174	301	
20:00-21:00	239	257	312	231	222	155	229	
21:00-22:00	176	167	202	177	171	107	160	
22:00-23:00	80	92	94	128	94	71	73	
23:00-24:00	58	58	67	110	98	47	53	
PM Total	5,145	4,935	5,089	5,369	5,660	4,548	4,793	0
24 Hr. Total	5,145	6,960	7,185	7,665	7,967	6,355	6,802	1,925
Noon - Noon		7,170	7,031	7,385	7,676	7,467	6,557	6,718

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 61

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562061

Count Direction: N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		0	0	0	0	0	0	0
1:00- 2:00		0	0	0	0	0	0	0
2:00- 3:00		0	0	0	0	0	0	0
3:00- 4:00		0	0	0	0	0	0	0
4:00- 5:00		0	0	0	0	0	0	0
5:00- 6:00		0	0	0	0	0	0	0
6:00- 7:00		0	0	0	0	0	0	0
7:00- 8:00		0	0	0	0	0	0	0
8:00- 9:00		0	0	0	0	0	0	0
9:00-10:00		0	0	0	0	0	0	0
10:00-11:00		0	0	0	0	0	0	0
11:00-12:00		0	0	0	0	0	0	0
AM Total	0	0	0	0	0	0	0	0
12:00-13:00	0	0	0	0	0	0	0	
13:00-14:00	0	0	0	0	0	0	0	
14:00-15:00	0	0	0	0	0	0	0	
15:00-16:00	0	0	0	0	0	0	0	
16:00-17:00	0	0	0	0	0	0	0	
17:00-18:00	0	0	0	0	0	0	0	
18:00-19:00	0	0	0	0	0	0	0	
19:00-20:00	0	0	0	0	0	0	0	
20:00-21:00	0	0	0	0	0	0	0	
21:00-22:00	0	0	0	0	0	0	0	
22:00-23:00	0	0	0	0	0	0	0	
23:00-24:00	0	0	0	0	0	0	0	
PM Total	0	0	0	0	0	0	0	0
24 Hr. Total	0	0	0	0	0	0	0	0
Noon - Noon	0	0	0	0	0	0	0	

Traffic Engineering Software

Weekly Volume Summary

Fri, May 17, 2019

Location: Hwy 417 at Palladium Dr - Ramp 61

LHRS/Offset: 49562 / 0.0 **Region:** Eastern

Pattern Type: n/a **PCS#:** n/a **Hwy. TVIS#:** 49562061

Count Direction: N/A/N/A **Report Dates:** Sep 4, 2018 **to** Sep 10, 2018

Hour Interval	Tue 18/09/04	Wed 5	Thu 6	Fri 7	Sat 8	Sun 9	Mon 10	Tue 11
0:00- 1:00		28	24	40	71	63	34	22
1:00- 2:00		13	19	10	36	33	10	6
2:00- 3:00		12	14	11	20	18	10	8
3:00- 4:00		13	13	15	16	20	6	15
4:00- 5:00		15	9	21	11	8	5	13
5:00- 6:00		42	41	50	24	13	46	48
6:00- 7:00		153	162	171	45	36	162	149
7:00- 8:00		225	273	260	135	67	298	261
8:00- 9:00		330	367	363	223	92	344	329
9:00-10:00		315	336	397	370	251	327	297
10:00-11:00		422	403	438	600	540	350	353
11:00-12:00		457	435	520	756	666	417	424
AM Total	0	2,025	2,096	2,296	2,307	1,807	2,009	1,925
12:00-13:00	499	466	506	576	774	723	506	
13:00-14:00	529	485	493	526	847	778	427	
14:00-15:00	559	519	551	585	824	775	547	
15:00-16:00	698	618	627	667	750	661	744	
16:00-17:00	727	685	651	729	603	513	681	
17:00-18:00	673	665	643	658	508	329	616	
18:00-19:00	501	531	507	549	426	215	456	
19:00-20:00	406	392	436	433	343	174	301	
20:00-21:00	239	257	312	231	222	155	229	
21:00-22:00	176	167	202	177	171	107	160	
22:00-23:00	80	92	94	128	94	71	73	
23:00-24:00	58	58	67	110	98	47	53	
PM Total	5,145	4,935	5,089	5,369	5,660	4,548	4,793	0
24 Hr. Total	5,145	6,960	7,185	7,665	7,967	6,355	6,802	1,925
Noon - Noon	7,170	7,031	7,385	7,676	7,467	6,557	6,718	

ADT	AWD	AADT	AAWD	SADT	SAWDT	WADT	DHV
7,143	7,076						

15 MIN REPORT

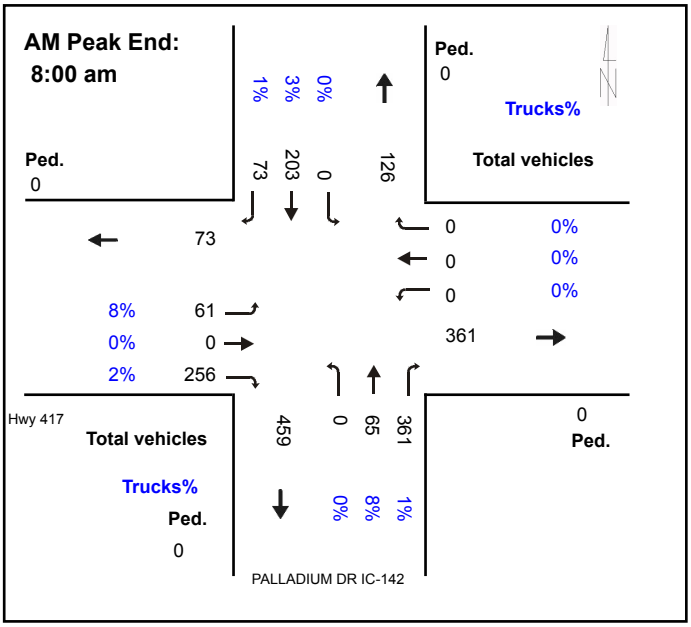
Intersection ID:495620000(--S--) **Hwy 417 @ PALLADIUM DR IC-142** **Municipality: Eastern** **Date: 24-Apr-2018**

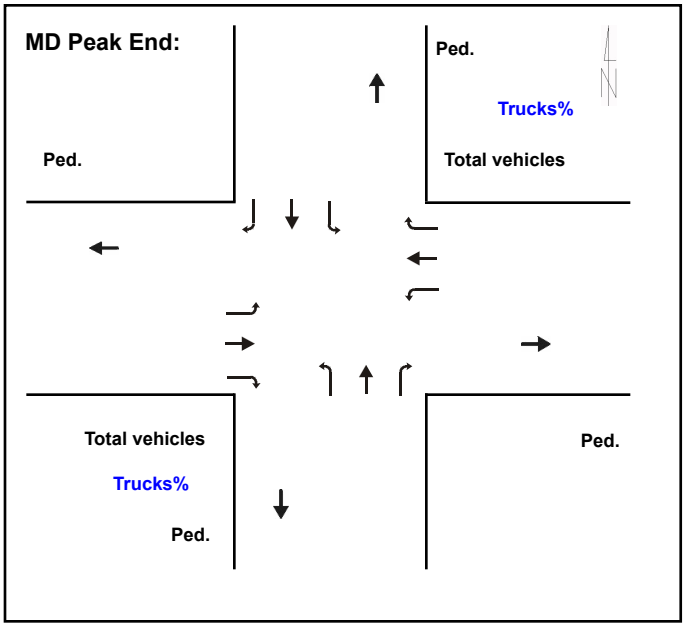
	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										
Time	**Cars**			**Trucks**			**Heavies**			**Ped**	**Cars**			**Trucks**			**Heavies**			**Ped**	**Cars**			**Trucks**			**Heavies**			**Ped**	**Cars**			**Trucks**			**Heavies**			**Ped**	**Total**
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Period1																																									
14:15	0	70	44	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	57	32	0	0	0	0	1	1	0	12	0	23	0	0	0	0	0	1	0	245
14:30	0	76	40	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	61	35	0	0	1	0	3	0	0	10	0	33	1	0	0	0	0	1	0	266
14:45	0	82	57	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	58	46	0	1	2	0	1	0	0	13	0	24	0	0	0	0	0	0	0	288
15:00	0	65	36	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	67	30	0	2	3	0	2	2	0	12	0	32	0	0	0	0	0	3	0	258
15:15	0	99	47	0	1	1	0	7	0	0	0	0	0	0	0	0	0	0	0	0	0	64	47	0	0	3	0	1	1	0	13	0	23	1	0	1	0	0	3	0	312
15:30	0	104	39	0	1	3	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	79	47	0	0	3	0	1	0	0	11	0	26	0	0	2	0	0	0	0	321
15:45	0	75	44	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	92	44	0	0	1	0	2	0	0	11	0	20	0	0	0	0	0	1	0	294
16:00	0	125	27	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	89	44	0	1	1	0	2	1	0	14	0	29	0	0	1	0	0	0	0	338
16:15	0	109	43	0	2	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	113	61	0	0	2	0	1	0	0	14	0	18	1	0	0	1	0	0	0	371
16:30	0	131	43	0	1	1	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0	112	42	0	1	2	0	3	1	0	14	0	35	1	0	0	1	0	0	0	394
16:45	0	113	46	0	0	1	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	118	53	0	1	1	0	0	1	0	18	0	32	0	0	1	0	0	0	0	391
17:00	0	111	42	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	85	45	0	0	3	0	4	2	0	21	0	42	1	0	1	0	0	0	0	362
17:15	0	109	43	0	0	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	133	45	0	1	0	0	1	0	0	13	0	40	0	0	0	0	0	1	0	392
17:30	0	107	35	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	81	49	0	1	0	0	3	1	0	25	0	29	0	0	0	0	0	0	0	333
17:45	0	97	37	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	77	47	0	0	0	0	0	2	0	17	0	41	0	0	0	0	0	0	0	319
18:00	0	81	42	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	60	27	0	0	0	0	1	0	0	10	0	22	0	0	0	0	0	0	0	247
Period2																																									
7:15	0	34	24	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	100	0	0	0	0	1	0	0	12	0	58	0	0	0	2	0	1	0	243
7:30	0	50	16	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16	85	0	1	1	0	0	0	0	8	0	52	0	0	0	0	0	0	0	230
7:45	0	50	19	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	20	86	0	0	1	0	0	0	0	20	0	81	0	0	3	0	0	1	0	283
8:00	0	62	13	0	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	14	85	0	2	1	0	1	2	0	16	0	60	1	0	0	2	0	0	0	263
8:15	0	35	23	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	19	80	0	2	2	0	0	1	0	14	0	40	1	0	0	1	0	0	0	222
8:30	0	45	15	0	0	1	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	18	72	0	0	0	0	1	1	0	10	0	66	0	0	2	2	0	2	0	241
8:45	0	54	18	0	3	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	26	51	0	3	1	0	0	1	0	10	0	44	0	0	0	1	0	0	0	216
9:00	0	60	16	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	15	63	0	1	1	0	2	1	0	24	0	51	0	0	0	0	0	0	0	238
9:15	0	52	17	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	15	44	0	1	2	0	3	0	0	14	0	58	0	0	0	0	0	1	0	208
9:30	0	55	7	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	20	31	0	2	2	0	1	4	0	9	0	37	0	0	0	0	0	0	0	176
9:45	0	50	20	0	1	1	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	21	43	0	2	1	0	0	2	0	18	0	31	1	0	0	0	0	0	0	196
10:00	0	45	15	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	22	27	0	0	4	0	1	2	0	23	0	48	1	0	0	0	0	3	0	194
10:15	0	32	17	0	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	29	21	0	0	1	0	0	1	0	11	0	45	0	0	0	0	0	1	0	163
10:30	0	52	26	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	31	39	0	2	5	0	2	2	0	22	0	47	0	0	1	0	0	0	0	234
10:45	0	48	23	0	2	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	40	29	0	0	1	0	3	3	0	17	0	34	0	0	2	1	0	0	0	207
11:00	0	47	25	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	41	35	0	3	2	0	1	0	0	17	0	34	0	0	1	0	0	0	0	211

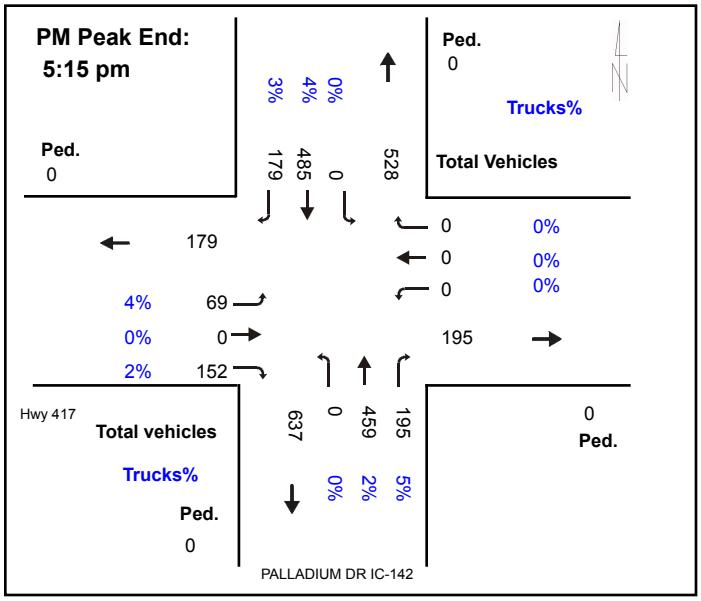
Hwy 417 @ PALLADIUM DR IC-142

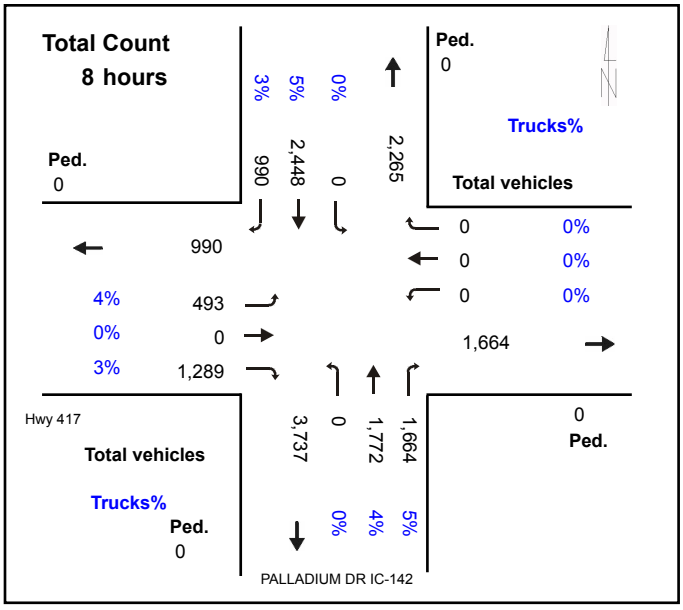
Eastern

Intersection ID:495620000(--S--) **Count Day: Tuesday** **Count Date: 24-Apr-2018**









15 MIN REPORT

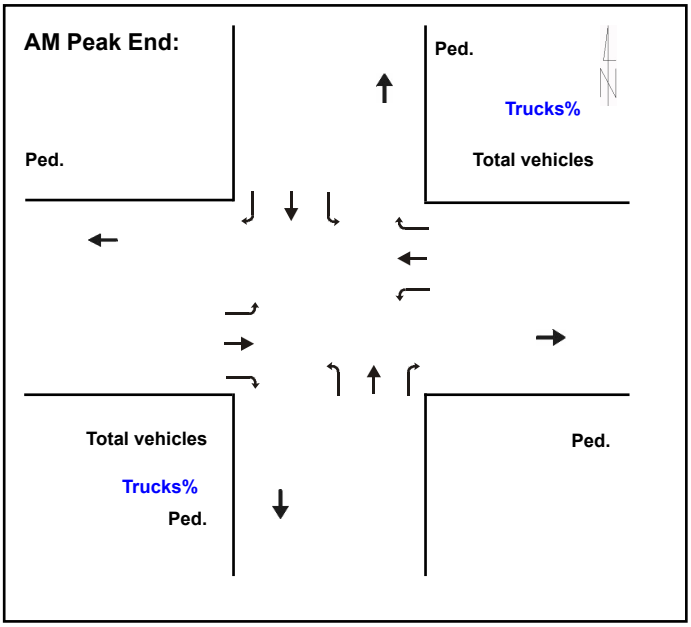
Intersection ID:495620000(--N--) **Hwy 417 @ PALLADIUM DR IC-142** **Municipality: Eastern** **Date: 24-Apr-2018**

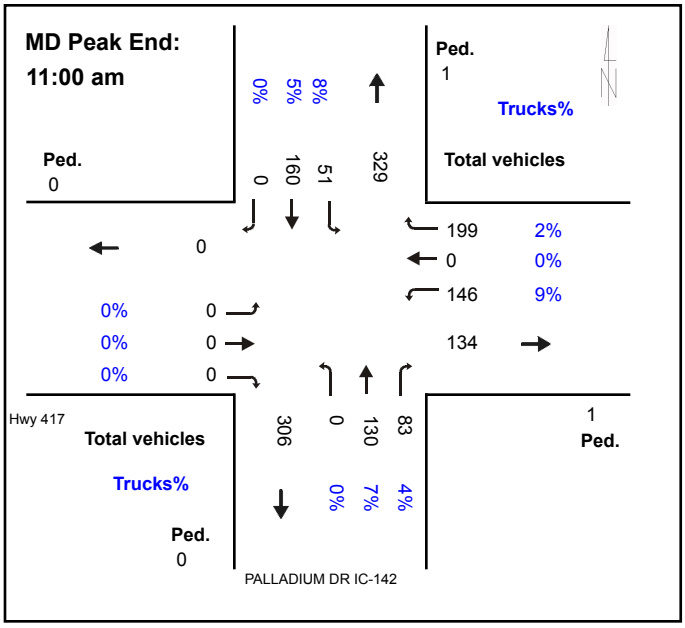
	NORTH APPROACH										EAST APPROACH										SOUTH APPROACH										WEST APPROACH										
Time	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Cars			Trucks			Heavies			Ped	Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Period1																																									
14:15	13	60	0	0	1	0	0	3	0	0	54	0	59	0	0	1	0	0	0	0	0	27	41	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	260
14:30	22	54	0	0	1	0	0	0	0	0	60	0	55	1	0	1	3	0	0	0	0	29	38	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	267
14:45	27	77	0	2	0	0	0	2	0	0	60	0	44	0	0	2	2	0	0	0	0	22	49	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	289
15:00	24	47	0	0	1	0	0	1	0	0	56	0	56	1	0	0	3	0	0	0	0	22	56	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	271
15:15	21	65	0	0	1	0	0	2	0	0	78	0	48	0	0	0	4	0	0	0	0	23	53	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	297
15:30	13	54	0	0	2	0	0	1	0	0	86	0	57	1	0	0	5	0	3	0	0	26	61	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	310
15:45	15	62	0	0	2	0	0	2	0	0	66	0	65	0	0	0	2	0	0	1	0	25	71	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	313
16:00	35	52	0	0	0	0	1	1	0	0	105	0	48	0	0	1	4	0	0	0	0	31	72	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	352
16:15	26	63	0	0	3	0	0	0	0	0	83	0	62	0	0	0	5	0	0	0	0	27	96	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	369
16:30	32	59	0	1	1	0	1	1	0	0	113	0	68	0	0	0	5	0	0	0	0	32	93	0	0	2	0	1	3	0	0	0	0	0	0	0	0	0	0	412
16:45	33	67	0	1	1	0	0	1	0	0	96	0	53	0	0	0	5	0	0	0	0	35	98	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	392
17:00	23	53	0	0	0	0	0	1	0	0	94	0	63	0	0	0	4	0	0	0	0	27	83	0	1	0	0	1	3	0	0	0	0	0	0	0	0	0	0	353
17:15	21	72	0	0	0	0	0	2	0	0	83	0	64	0	0	0	4	0	0	0	0	36	106	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	390
17:30	24	47	0	0	1	0	0	0	0	2	97	0	65	0	0	0	2	0	0	0	0	38	73	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	352
17:45	33	51	0	1	0	0	0	0	0	2	83	0	67	0	0	0	1	0	0	0	0	25	63	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	326
18:00	16	49	0	0	0	0	0	0	0	0	76	0	49	1	0	0	3	0	0	0	0	23	42	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	260
Period2																																									
7:15	3	31	0	0	0	0	0	1	0	0	35	0	14	1	0	0	0	0	0	0	0	11	9	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	108
7:30	2	15	0	0	0	0	0	0	0	0	47	0	17	0	0	1	1	0	0	0	0	10	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	102
7:45	6	27	0	0	0	0	0	0	0	0	46	0	12	0	0	0	2	0	0	0	0	24	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	132
8:00	6	21	0	1	0	0	0	0	0	0	56	0	20	1	0	1	3	0	1	0	0	19	12	0	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	146
8:15	2	26	0	0	0	0	0	2	0	0	32	0	14	1	0	0	1	0	2	0	0	18	14	0	1	2	0	1	1	0	0	0	0	0	0	0	0	0	0	117
8:30	4	26	0	0	0	0	1	2	0	0	45	0	17	1	0	1	4	0	0	0	0	16	12	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	132
8:45	5	17	0	0	1	0	0	1	0	0	46	0	26	1	0	0	2	0	0	0	0	13	20	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	136
9:00	8	23	0	0	1	0	0	0	0	0	54	0	34	0	0	1	3	0	0	0	0	28	10	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	166
9:15	2	25	0	0	0	0	1	1	0	0	49	0	31	0	0	0	0	0	0	0	0	18	11	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	141
9:30	1	22	0	0	1	0	1	0	0	0	46	0	39	3	0	0	4	0	1	0	0	22	7	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	150
9:45	3	21	0	0	1	0	1	2	0	0	44	0	40	1	0	1	3	0	0	0	0	24	14	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	158
10:00	4	24	0	1	2	0	1	0	0	0	34	0	41	0	0	4	1	0	1	0	0	40	8	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	163
10:15	9	28	0	1	1	0	0	0	0	0	23	0	41	2	0	0	3	0	0	0	0	29	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151
10:30	8	36	0	0	1	0	0	1	0	1	41	0	59	1	0	0	2	0	0	1	0	30	20	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	205
10:45	15	45	0	0	2	0	2	0	0	0	33	0	42	0	0	2	2	0	0	0	0	29	26	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	202
11:00	15	43	0	1	3	0	0	0	0	0	36	0	54	1	0	1	2	0	0	0	0	33	20	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	213

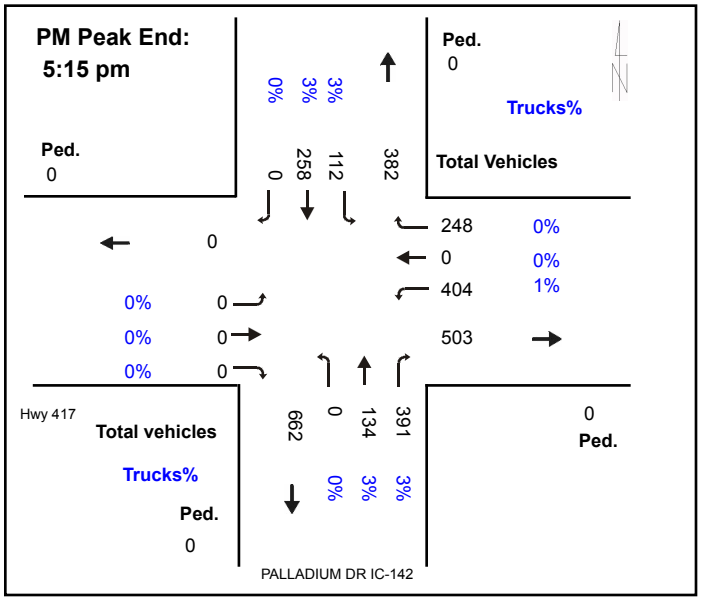
Hwy 417 @ PALLADIUM DR IC-142

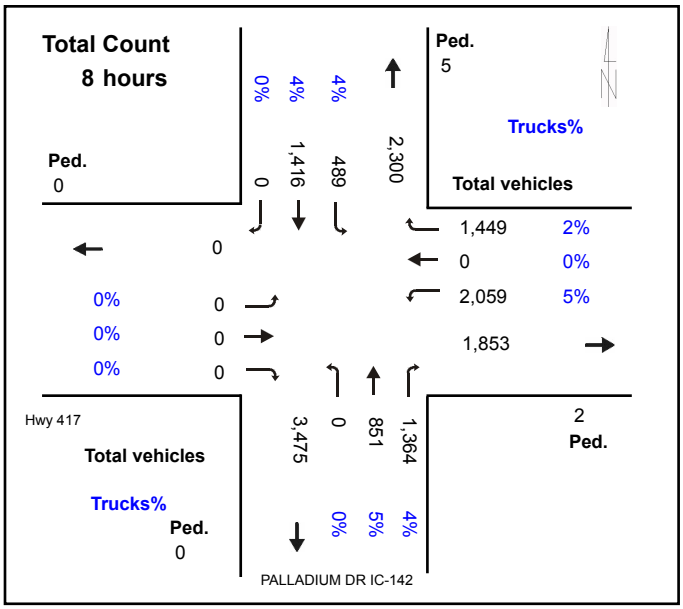
Eastern

Intersection ID:495620000(--N--) **Count Day: Tuesday** **Count Date: 24-Apr-2018**









Appendix C

COLLISION HISTORY DATA

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	5	3	3	1	0	0	0	1	13	93%
Non-fatal injury	0	1	0	0	0	0	0	0	1	7%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**5**	**4**	**3**	**1**	**0**	**0**	**0**	**1**	**14**	100%
	#1 or 36%	#2 or 29%	#3 or 21%	#4 or 7%	#6 or 0%	#6 or 0%	#6 or 0%	#4 or 7%		

CAMPEAU DR / HUNTMAR DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	0	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	
Non-fatal injury	0	0	0	0	0	0	0	0	0	
Non reportable	0	0	0	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0%

CAMPEAU DR / JOURNEYMAN ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	0	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	
Non-fatal injury	0	0	0	0	0	0	0	0	0	
Non reportable	0	0	0	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0%

HUNTMAR DR / PALLADIUM DR N

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	0	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	
Non-fatal injury	0	0	0	0	0	0	0	0	0	
Non reportable	0	0	0	0	0	0	0	0	0	
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0%

HWY 417 PALLADI IC142R36 / PALLADIUM DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	7	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	2	2	1	0	0	0	1	7	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**2**	**2**	**1**	**0**	**0**	**0**	**1**	**7**	100%
	14%	29%	29%	14%	0%	0%	0%	14%		

PALLADIUM DR, HWY417 IC142 RAMP52 to HWY417 IC142 RAMP53

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	0%
Non-fatal injury	0	1	0	0	0	0	0	0	1	100%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	100%
	0%	100%	0%	0%	0%	0%	0%	0%		

PALLADIUM DR, HWY417 IC142 RAMP53 to HWY417 IC142 RAMP25

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	2	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	2	0	0	0	0	0	0	0	2	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	100%
	100%	0%	0%	0%	0%	0%	0%	0%		

PALLADIUM DR, HWY417 IC142 RAMP62 to HUNTMAR DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	3	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	1	1	0	0	0	0	0	3	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**3**	100%
	33%	33%	33%	0%	0%	0%	0%	0%		

PALLADIUM DR / HWY 417 PALLADIU IC142R52

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2014-2019	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	Single Vehicle (other)	Single vehicle (Unattended vehicle)	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	100%
	100%	0%	0%	0%	0%	0%	0%	0%		

City Operations - Transportation Services

Collision Details Report - Public Version

From: January 1, 2013 **To:** December 31, 2017

Location: CAMPEAU DR @ HUNTMAR DR

Traffic Control: Roundabout **Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Oct-17, Fri,10:50	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Slowing or stopping	Pick-up truck	Other motor vehicle	
2014-Oct-17, Fri,14:04	Rain	Sideswipe	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2014-Dec-06, Sat,10:00	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-May-12, Tue,07:38	Clear	Angle	P.D. only	Dry	East	Going ahead	Delivery van	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-14, Sat,13:27	Rain	Angle	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Apr-29, Wed,18:22	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	

					North	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jan-04, Sun,22:34	Freezing Rain	Sideswipe	P.D. only	Slush	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2014-Dec-26, Fri,13:11	Clear	Sideswipe	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2015-Jul-14, Tue,09:09	Clear	Angle	P.D. only	Dry	South	Merging	Pick-up truck	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2016-May-24, Tue,17:27	Clear	Sideswipe	P.D. only	Dry	North	Overtaking	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Farm tractor	Other motor vehicle
2016-Sep-12, Mon,18:14	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Oct-02, Mon,07:36	Clear	Angle	P.D. only	Dry	South	Merging	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Jun-14, Wed,09:50	Clear	Sideswipe	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle
					West	Going ahead	Automobile, station wagon	Other motor vehicle

2017-Jul-10, Mon,17:47	Clear	Sideswipe	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Pick-up truck	Other motor vehicle	

Location: CAMPEAU DR @ JOURNEYMAN ST

Traffic Control: Traffic signal **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Dec-26, Sat,11:05	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HUNTMAR DR @ PALLADIUM DR N

Traffic Control: Stop sign **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Jan-30, Thu,19:30	Clear	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2016-Dec-18, Sun,15:12	Clear	SMV other	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Curb	

Location: HWY 417 PALLADI IC142R36 @ PALLADIUM DR

Traffic Control: Traffic signal **Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Mar-19, Wed,10:30	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	

2016-May-07, Sat,14:32	Clear	Turning movement	P.D. only	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle
					South	Going ahead	Pick-up truck	Other motor vehicle
2016-Sep-21, Wed,17:30	Clear	Sideswipe	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle
					South	Turning left	Pick-up truck	Other motor vehicle
2016-Dec-19, Mon,16:35	Clear	Other	P.D. only	Wet	East	Reversing	Pick-up truck	Other motor vehicle
					West	Turning left	Pick-up truck	Other motor vehicle
2017-Nov-01, Wed,17:18	Rain	Turning movement	P.D. only	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-29, Fri,14:40	Clear	Sideswipe	P.D. only	Dry	South	Making "U" turn	Pick-up truck	Other motor vehicle
					South	Going ahead	Automobile, station wagon	Other motor vehicle
2017-Dec-08, Fri,12:04	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle
					North	Going ahead	Automobile, station wagon	Other motor vehicle

Location: PALLADIUM DR btwn HWY417 IC142 RAMP52 & HWY417 IC142 RAMP53

Traffic Control: No control **Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Nov-24, Fri,16:16	Clear	Turning movement	Non-fatal injury	Dry	South	Making "U" turn	Automobile, station wagon	Other motor vehicle	

					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: PALLADIUM DR btwn HWY417 IC142 RAMP53 & HWY417 IC142 RAMP25

Traffic Control: No control **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Nov-09, Sun,17:36	Clear	Rear end	P.D. only	Wet	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Pick-up truck	Other motor vehicle	
2013-Feb-25, Mon,19:00	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

Location: PALLADIUM DR btwn HWY417 IC142 RAMP62 & HUNTMAR DR

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2014-Oct-17, Fri,10:50	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	
					East	Changing lanes	Pick-up truck	Other motor vehicle	
2015-Jul-26, Sun,15:15	Clear	Turning movement	P.D. only	Dry	North	Making "U" turn	Automobile, station wagon	Other motor vehicle	
					North	Going ahead	Motorcycle	Other motor vehicle	
2016-Nov-24, Thu,08:09	Snow	Rear end	P.D. only	Loose snow	North	Going ahead	Pick-up truck	Other motor vehicle	
					North	Making "U" turn	Automobile, station wagon	Other motor vehicle	

Location: PALLADIUM DR/HWY 417 PALLADIU IC142R52 @ HWY 4

Traffic Control: Stop sign

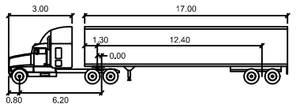
Total Collisions: 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-18, Sat,17:31	Clear	Rear end	P.D. only	Dry	South	Making "U" turn	Pick-up truck	Other motor vehicle	
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Appendix D

Site Truck Turning Figure

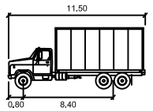
Maritime Ontario Site Truck Maneuvering - September 23, 2020



WB-20

meters

Tractor Width	: 2.60	Lock to Lock Time	: 6.0
Trailer Width	: 2.60	Steering Angle	: 28.2
Tractor Track	: 2.60	Articulating Angle	: 70.0
Trailer Track	: 2.60		



HSU

meters

Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

ROAD ALLOWANCE BETWEEN CONCESSIONS 1 AND 2 (NOT TRAVELLED)

OHW

OUTLINE OF EXISTING DITCH

OUTLINE OF EXISTING DITCH

OUTLINE OF EXISTING SHALLOW DITCH

24

24

1 STOREY WAREHOUSE
+/- 5575m2
60,000S.F.

48 TRAILER LOADING DOCKS

DELIVERY ACCESS RAMP

2 STOREY OFFICE
+/- 557m2
+/-6,000S.F.

50 TRACTOR PARKING

138 PARKING SPACES

PROPERTY LINE

EDGE OF EXISTING

CAMPEAU DRIVE

EXISTING FIRE HYDRANT

GATE

PROPERTY LINE

BLOCK 6

CONCESSION 1

UPPER CANADA STREET

SOUTH HALF LOT 4

BLOCK 1

LS

MH

UPPER CANADA STREET

EDGE OF EXISTING ASPHALT ROAD

CAMPEAU DRIVE

Appendix E

TDM-SUPPORTIVE DEVELOPMENT DESIGN AND INFRASTRUCTURE CHECKLIST

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☐
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☐
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☐
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☐ There are no major stops or rapid transit stations within 600m of the development site.
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☐
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☐
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☐ Bicycle parking not required given the location and land use of the warehouse.
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☐ Bicycle parking not required given the location and land use of the warehouse.
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☐ Bicycle parking not required given the location and land use of the warehouse.
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ Bicycle parking not required given the location and land use of the warehouse.
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☐ More parking is provided based on the requirements of the development.
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

Appendix F

MMLOS ANALYSIS RESULTS

Multi-Modal Level of Service - Segments Form

Consultant	**Parsons**	**Project**	**477391 - 01000**
Scenario	**Future**	**Date**	**16-Sep-20**
Comments			

SEGMENTS		Street	Campeau	Section	Section
			1	2	3
Pedestrian	Sidewalk Width Boulevard Width	-	≥ 2 m 0.5 - 2 m		
	Avg Daily Curb Lane Traffic Volume		≤ 3000		
	Operating Speed On-Street Parking		> 50 to 60 km/h no		
	Exposure to Traffic PLoS		**A**	-	-
	Effective Sidewalk Width				
	Pedestrian Volume				
	Crowding PLoS		-	-	-
	Level of Service		**-**	**-**	**-**
Bicycle	Type of Cycling Facility	D	Mixed Traffic		
	Number of Travel Lanes		≤ 2 (no centreline)		
	Operating Speed		≥ 50 to 60 km/h		
	# of Lanes & Operating Speed LoS		**D**	-	-
	Bike Lane (+ Parking Lane) Width				
	Bike Lane Width LoS		-	-	-
	Bike Lane Blockages				
	Blockage LoS		-	-	-
	Median Refuge Width (no median = < 1.8 m)		< 1.8 m refuge		
	No. of Lanes at Unsignalized Crossing		≤ 3 lanes		
	Sidestreet Operating Speed		>40 to 50 km/h		
	Unsignalized Crossing - Lowest LoS		**B**	-	-
	Level of Service		**D**	**-**	**-**
Transit	Facility Type	D	Mixed Traffic		
	Friction or Ratio Transit:Posted Speed		Vt/Vp ≥ 0.8		
	Level of Service		**D**	**-**	**-**
Truck	Truck Lane Width	B	> 3.7 m		
	Travel Lanes per Direction		1		
	Level of Service		**B**	**-**	**-**

Appendix G

TDM MEASURES CHECKLIST

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		1. TDM PROGRAM MANAGEMENT	
		1.1 Program coordinator	
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☐
		1.2 Travel surveys	
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2. WALKING AND CYCLING	
		2.1 Information on walking/cycling routes & destinations	
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	☐
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances	☐
BASIC		3.1.2	Provide online links to OC Transpo and STO information	☐
BETTER		3.1.3	Provide real-time arrival information display at entrances	☐
		3.2	**Transit fare incentives**	
			Commuter travel	
BETTER		3.2.1	Offer preloaded PRESTO cards to encourage commuters to use transit	☐
BETTER	★	3.2.2	Subsidize or reimburse monthly transit pass purchases by employees	☐
			Visitor travel	
BETTER		3.2.3	Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐
		3.3	**Enhanced public transit service**	
			Commuter travel	
BETTER		3.3.1	Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.3.2	Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐
		3.4	**Private transit service**	
			Commuter travel	
BETTER		3.4.1	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐
			Visitor travel	
BETTER		3.4.2	Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐

			TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4.	**RIDESHARING**	
		4.1	**Ridematching service**	
			Commuter travel	
BASIC	★	4.1.1	Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2	**Carpool parking price incentives**	
			Commuter travel	
BETTER		4.2.1	Provide discounts on parking costs for registered carpools	☐
		4.3	**Vanpool service**	
			Commuter travel	
BETTER		4.3.1	Provide a vanpooling service for long-distance commuters	☐
		5.	**CARSHARING & BIKESHARING**	
		5.1	**Bikeshare stations & memberships**	
BETTER		5.1.1	Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
			Commuter travel	
BETTER		5.1.2	Provide employees with bikeshare memberships for local business travel	☐
		5.2	**Carshare vehicles & memberships**	
			Commuter travel	
BETTER		5.2.1	Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2	Provide employees with carshare memberships for local business travel	☐
		6.	**PARKING**	
		6.1	**Priced parking**	
			Commuter travel	
BASIC	★	6.1.1	Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2	Unbundle parking cost from lease rates at multi-tenant sites	☐
			Visitor travel	
BETTER		6.1.3	Charge for short-term parking (hourly)	☐

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7. TDM MARKETING & COMMUNICATIONS	
		7.1 Multimodal travel information	
		Commuter travel	
BASIC	★	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☐
		Visitor travel	
BETTER	★	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐
		7.2 Personalized trip planning	
		Commuter travel	
BETTER	★	7.2.1 Offer personalized trip planning to new/relocating employees	☐
		7.3 Promotions	
		Commuter travel	
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☐
		8. OTHER INCENTIVES & AMENITIES	
		8.1 Emergency ride home	
		Commuter travel	
BETTER	★	8.1.1 Provide emergency ride home service to non-driving commuters	☐
		8.2 Alternative work arrangements	
		Commuter travel	
BASIC	★	8.2.1 Encourage flexible work hours	☐
BETTER		8.2.2 Encourage compressed workweeks	☐
BETTER	★	8.2.3 Encourage telework	☐
		8.3 Local business travel options	
		Commuter travel	
BASIC	★	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4 Commuter incentives	
		Commuter travel	
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5 On-site amenities	
		Commuter travel	
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐

Appendix H

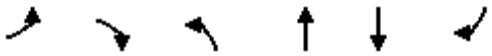
SYNCHRO ANALYSIS RESULTS

Existing Conditions

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	21	5	18	47	3	23
Future Volume (Veh/h)	21	5	18	47	3	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	23	6	20	52	3	26
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			29		118	26
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			29		118	26
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1584		867	1050

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	29	20	52	29
Volume Left	0	20	0	3
Volume Right	6	0	0	26
cSH	1700	1584	1700	1027
Volume to Capacity	0.02	0.01	0.03	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.7
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	2.0		8.6
Approach LOS				A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	77	108	190	121	20
Future Volume (Veh/h)	0	77	108	190	121	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	86	120	211	134	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)				199		
pX, platoon unblocked						
vC, conflicting volume	490	78	156			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	490	78	156			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	92			
cM capacity (veh/h)	464	967	1422			

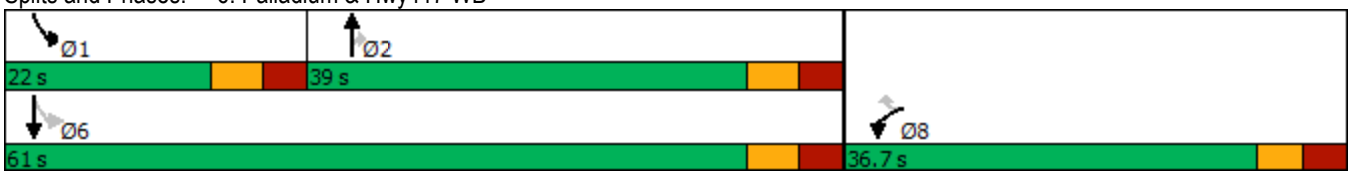
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	86	120	106	106	89	67
Volume Left	0	120	0	0	0	0
Volume Right	86	0	0	0	0	22
cSH	967	1422	1700	1700	1700	1700
Volume to Capacity	0.09	0.08	0.06	0.06	0.05	0.04
Queue Length 95th (m)	2.2	2.1	0.0	0.0	0.0	0.0
Control Delay (s)	9.1	7.8	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.1	2.8			0.0	
Approach LOS	A					

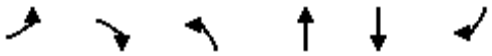
Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	205	173	125	83	35	163
Future Volume (vph)	205	173	125	83	35	163
Lane Group Flow (vph)	228	192	139	92	39	181
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.23	0.32	0.13	0.16	0.06	0.10
Control Delay	26.0	5.4	23.5	6.0	10.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	5.4	23.5	6.0	10.3	10.5
LOS	C	A	C	A	B	B
Approach Delay	16.6		16.5			10.5
Approach LOS	B		B			B
Queue Length 50th (m)	16.4	0.0	9.6	0.0	3.2	8.0
Queue Length 95th (m)	25.5	14.7	16.4	10.2	7.7	13.0
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	598	1110	558	648	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.32	0.13	0.16	0.06	0.10

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	256	0	65	368	73
Future Volume (Veh/h)	61	256	0	65	368	73
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	68	284	0	72	409	81
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	445	204	409			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	445	204	409			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	65	100			
cM capacity (veh/h)	542	802	1146			

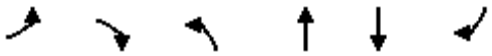
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	352	36	36	204	204	81
Volume Left	68	0	0	0	0	0
Volume Right	284	0	0	0	0	81
cSH	994	1700	1700	1700	1700	1700
Volume to Capacity	0.35	0.02	0.02	0.12	0.12	0.05
Queue Length 95th (m)	12.3	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.1	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	34.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	18	1	12	35	2	36
Future Volume (Veh/h)	18	1	12	35	2	36
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	1	13	39	2	40
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			21		86	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		86	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1595		908	1057

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	21	13	39	42
Volume Left	0	13	0	2
Volume Right	1	0	0	40
cSH	1700	1595	1700	1049
Volume to Capacity	0.01	0.01	0.02	0.04
Queue Length 95th (m)	0.0	0.2	0.0	1.0
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	1.8		8.6
Approach LOS				A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	141	127	284	247	33
Future Volume (Veh/h)	0	141	127	284	247	33
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	157	141	316	274	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	732	156	311			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	732	156	311			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	82	89			
cM capacity (veh/h)	316	862	1246			

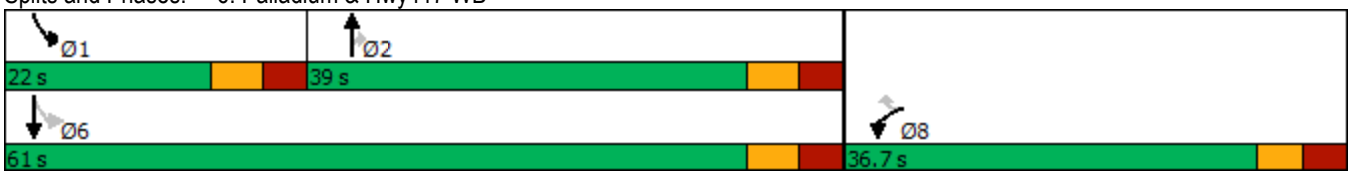
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	157	141	158	158	183	128
Volume Left	0	141	0	0	0	0
Volume Right	157	0	0	0	0	37
cSH	862	1246	1700	1700	1700	1700
Volume to Capacity	0.18	0.11	0.09	0.09	0.11	0.08
Queue Length 95th (m)	5.0	2.9	0.0	0.0	0.0	0.0
Control Delay (s)	10.1	8.3	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.1	2.5			0.0	
Approach LOS	B					

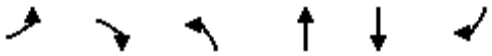
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	24.2%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	404	267	144	391	117	271
Future Volume (vph)	404	267	144	391	117	271
Lane Group Flow (vph)	449	297	160	434	130	301
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.44	0.44	0.14	0.55	0.20	0.16
Control Delay	28.9	5.4	23.7	5.4	11.5	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	5.4	23.7	5.4	11.5	11.0
LOS	C	A	C	A	B	B
Approach Delay	19.5		10.3			11.2
Approach LOS	B		B			B
Queue Length 50th (m)	34.9	0.0	11.1	0.0	11.2	13.8
Queue Length 95th (m)	48.8	17.8	18.4	20.5	20.1	20.4
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	671	1110	788	640	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.44	0.14	0.55	0.20	0.16

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 14.4		Intersection LOS: B	
Intersection Capacity Utilization 44.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	69	152	0	459	485	179
Future Volume (Veh/h)	69	152	0	459	485	179
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	77	169	0	510	539	199
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	794	270	539			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	794	270	539			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	76	77	100			
cM capacity (veh/h)	325	728	1025			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	246	255	255	270	270	199
Volume Left	77	0	0	0	0	0
Volume Right	169	0	0	0	0	199
cSH	1039	1700	1700	1700	1700	1700
Volume to Capacity	0.24	0.15	0.15	0.16	0.16	0.12
Queue Length 95th (m)	7.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	13.9	0.0		0.0		
Approach LOS	B					

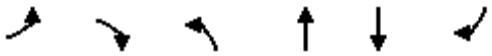
Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	30.8%	ICU Level of Service		A
Analysis Period (min)	15			

Future Background 2021

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	21	5	18	48	3	23
Future Volume (Veh/h)	21	5	18	48	3	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	21	5	18	48	3	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			26		108	24
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			26		108	24
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1588		880	1053

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	26	18	48	26
Volume Left	0	18	0	3
Volume Right	5	0	0	23
cSH	1700	1588	1700	1030
Volume to Capacity	0.02	0.01	0.03	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.6
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	2.0		8.6
Approach LOS				A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	79	110	327	235	20
Future Volume (Veh/h)	0	79	110	327	235	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	79	110	327	235	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)				199		
pX, platoon unblocked						
vC, conflicting volume	628	128	255			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628	128	255			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	92			
cM capacity (veh/h)	380	899	1307			

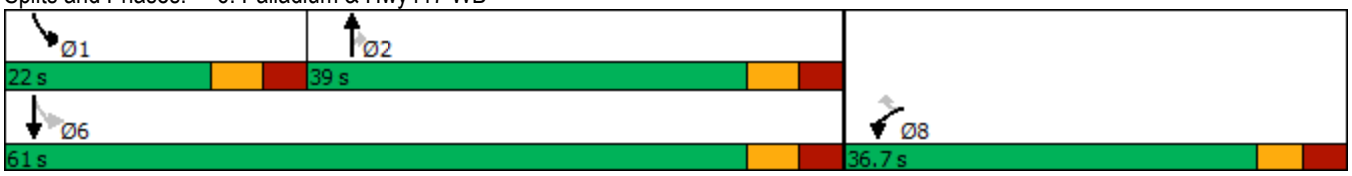
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	79	110	164	164	157	98
Volume Left	0	110	0	0	0	0
Volume Right	79	0	0	0	0	20
cSH	899	1307	1700	1700	1700	1700
Volume to Capacity	0.09	0.08	0.10	0.10	0.09	0.06
Queue Length 95th (m)	2.2	2.1	0.0	0.0	0.0	0.0
Control Delay (s)	9.4	8.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.4	2.0			0.0	
Approach LOS	A					

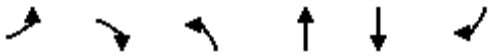
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	209	280	157	83	114	200
Future Volume (vph)	209	280	157	83	114	200
Lane Group Flow (vph)	209	280	157	83	114	200
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.21	0.42	0.14	0.15	0.18	0.11
Control Delay	25.7	5.4	23.6	6.1	11.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	5.4	23.6	6.1	11.3	10.6
LOS	C	A	C	A	B	B
Approach Delay	14.1		17.6			10.8
Approach LOS	B		B			B
Queue Length 50th (m)	15.0	0.0	10.8	0.0	9.7	8.8
Queue Length 95th (m)	23.6	17.3	18.2	9.8	18.0	14.1
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	659	1110	552	641	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.42	0.14	0.15	0.18	0.11

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	86	261	0	72	376	103
Future Volume (Veh/h)	86	261	0	72	376	103
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	86	261	0	72	376	103
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	412	188	376			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	412	188	376			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	68	100			
cM capacity (veh/h)	568	822	1179			

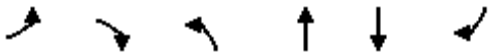
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	347	36	36	188	188	103
Volume Left	86	0	0	0	0	0
Volume Right	261	0	0	0	0	103
cSH	1093	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.02	0.02	0.11	0.11	0.06
Queue Length 95th (m)	10.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	11.7	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	34.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	18	1	12	36	2	37
Future Volume (Veh/h)	18	1	12	36	2	37
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	18	1	12	36	2	37
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			19		78	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			19		78	18
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1597		917	1060

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	19	12	36	39
Volume Left	0	12	0	2
Volume Right	1	0	0	37
cSH	1700	1597	1700	1051
Volume to Capacity	0.01	0.01	0.02	0.04
Queue Length 95th (m)	0.0	0.2	0.0	0.9
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	1.8		8.6
Approach LOS				A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	144	130	413	401	34
Future Volume (Veh/h)	0	144	130	413	401	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	144	130	413	401	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	884	218	435			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	884	218	435			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	82	88			
cM capacity (veh/h)	252	787	1121			

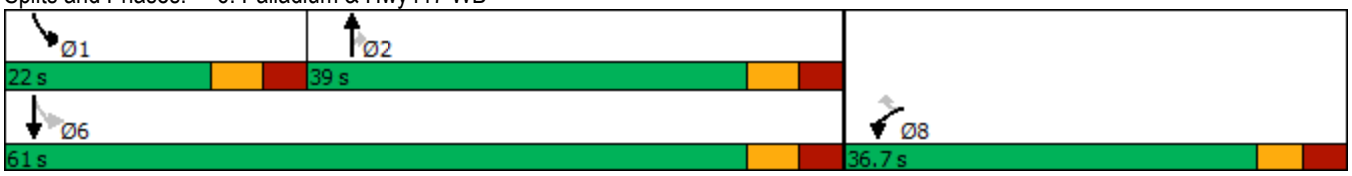
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	144	130	206	206	267	168
Volume Left	0	130	0	0	0	0
Volume Right	144	0	0	0	0	34
cSH	787	1121	1700	1700	1700	1700
Volume to Capacity	0.18	0.12	0.12	0.12	0.16	0.10
Queue Length 95th (m)	5.1	3.0	0.0	0.0	0.0	0.0
Control Delay (s)	10.6	8.6	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.6	2.1			0.0	
Approach LOS	B					

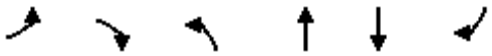
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	28.9%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	412	359	183	391	233	312
Future Volume (vph)	412	359	183	391	233	312
Lane Group Flow (vph)	412	359	183	391	233	312
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.41	0.50	0.16	0.52	0.37	0.17
Control Delay	28.3	5.5	23.9	5.3	13.2	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	5.5	23.9	5.3	13.2	11.1
LOS	C	A	C	A	B	B
Approach Delay	17.7		11.2			12.0
Approach LOS	B		B			B
Queue Length 50th (m)	31.6	0.0	12.8	0.0	21.5	14.4
Queue Length 95th (m)	44.7	19.2	20.7	19.2	34.8	21.1
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	714	1110	759	631	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.50	0.16	0.52	0.37	0.17

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	155	0	469	500	193
Future Volume (Veh/h)	105	155	0	469	500	193
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	105	155	0	469	500	193
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	734	250	500			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	734	250	500			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	70	79	100			
cM capacity (veh/h)	355	750	1060			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	260	234	234	250	250	193
Volume Left	105	0	0	0	0	0
Volume Right	155	0	0	0	0	193
cSH	879	1700	1700	1700	1700	1700
Volume to Capacity	0.30	0.14	0.14	0.15	0.15	0.11
Queue Length 95th (m)	9.4	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	14.4	0.0		0.0		
Approach LOS	B					

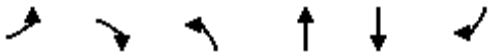
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Future Background 2026

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	22	5	19	50	3	25
Future Volume (Veh/h)	22	5	19	50	3	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	22	5	19	50	3	25
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			27		112	24
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			27		112	24
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1587		874	1052

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	27	19	50	28
Volume Left	0	19	0	3
Volume Right	5	0	0	25
cSH	1700	1587	1700	1029
Volume to Capacity	0.02	0.01	0.03	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.6
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	2.0		8.6
Approach LOS				A

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	82	116	336	241	21
Future Volume (Veh/h)	0	82	116	336	241	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	82	116	336	241	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	652	131	262			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652	131	262			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	91			
cM capacity (veh/h)	365	894	1299			

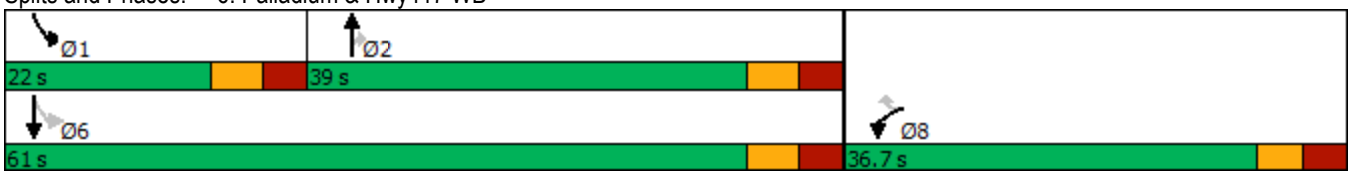
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	82	116	168	168	161	101
Volume Left	0	116	0	0	0	0
Volume Right	82	0	0	0	0	21
cSH	894	1299	1700	1700	1700	1700
Volume to Capacity	0.09	0.09	0.10	0.10	0.09	0.06
Queue Length 95th (m)	2.3	2.2	0.0	0.0	0.0	0.0
Control Delay (s)	9.4	8.0	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.4	2.1			0.0	
Approach LOS	A					

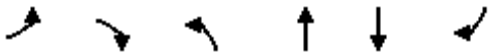
Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	21.2%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	219	289	163	83	115	208
Future Volume (vph)	219	289	163	83	115	208
Lane Group Flow (vph)	219	289	163	83	115	208
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.22	0.43	0.15	0.15	0.18	0.11
Control Delay	25.9	5.4	23.7	6.1	11.3	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	5.4	23.7	6.1	11.3	10.6
LOS	C	A	C	A	B	B
Approach Delay	14.2		17.8			10.9
Approach LOS	B		B			B
Queue Length 50th (m)	15.7	0.0	11.3	0.0	9.8	9.2
Queue Length 95th (m)	24.6	17.6	18.7	9.8	18.0	14.6
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	666	1110	552	639	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.43	0.15	0.15	0.18	0.11

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 40.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	89	274	0	76	395	103
Future Volume (Veh/h)	89	274	0	76	395	103
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	89	274	0	76	395	103
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	433	198	395			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	433	198	395			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	66	100			
cM capacity (veh/h)	551	811	1160			

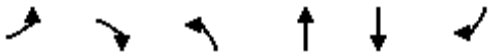
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	363	38	38	198	198	103
Volume Left	89	0	0	0	0	0
Volume Right	274	0	0	0	0	103
cSH	1074	1700	1700	1700	1700	1700
Volume to Capacity	0.34	0.02	0.02	0.12	0.12	0.06
Queue Length 95th (m)	11.4	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.0	0.0		0.0		
Approach LOS	B					

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	19	1	13	37	2	39
Future Volume (Veh/h)	19	1	13	37	2	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	19	1	13	37	2	39
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			20		82	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			20		82	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1596		912	1058

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	20	13	37	41
Volume Left	0	13	0	2
Volume Right	1	0	0	39
cSH	1700	1596	1700	1050
Volume to Capacity	0.01	0.01	0.02	0.04
Queue Length 95th (m)	0.0	0.2	0.0	0.9
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	1.9		8.6
Approach LOS				A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	151	136	427	413	35
Future Volume (Veh/h)	0	151	136	427	413	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	151	136	427	413	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	916	224	448			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	916	224	448			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	88			
cM capacity (veh/h)	238	779	1109			

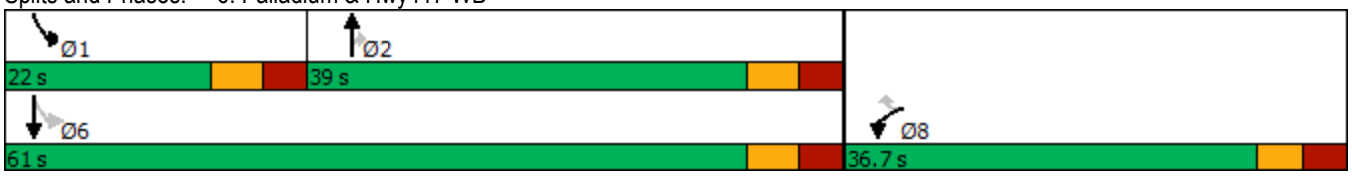
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	151	136	214	214	275	173
Volume Left	0	136	0	0	0	0
Volume Right	151	0	0	0	0	35
cSH	779	1109	1700	1700	1700	1700
Volume to Capacity	0.19	0.12	0.13	0.13	0.16	0.10
Queue Length 95th (m)	5.4	3.2	0.0	0.0	0.0	0.0
Control Delay (s)	10.7	8.7	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.7	2.1			0.0	
Approach LOS	B					

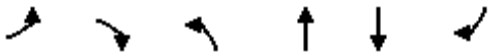
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	29.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	432	373	190	391	239	326
Future Volume (vph)	432	373	190	391	239	326
Lane Group Flow (vph)	432	373	190	391	239	326
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.43	0.52	0.17	0.52	0.38	0.17
Control Delay	28.6	5.6	23.9	5.3	13.4	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	5.6	23.9	5.3	13.4	11.1
LOS	C	A	C	A	B	B
Approach Delay	18.0		11.4			12.1
Approach LOS	B		B			B
Queue Length 50th (m)	33.4	0.0	13.3	0.0	22.1	15.1
Queue Length 95th (m)	46.8	19.6	21.4	19.2	35.6	22.0
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	724	1110	759	629	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.52	0.17	0.52	0.38	0.17

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 52.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	109	163	0	492	524	193
Future Volume (Veh/h)	109	163	0	492	524	193
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	109	163	0	492	524	193
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	770	262	524			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	770	262	524			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	68	78	100			
cM capacity (veh/h)	337	737	1039			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	272	246	246	262	262	193
Volume Left	109	0	0	0	0	0
Volume Right	163	0	0	0	0	193
cSH	841	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.14	0.14	0.15	0.15	0.11
Queue Length 95th (m)	10.7	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	15.1	0.0		0.0		
Approach LOS	C					

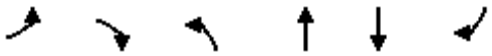
Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	32.6%	ICU Level of Service	A
Analysis Period (min)	15		

Future Background 2031

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	24	6	20	53	3	26
Future Volume (Veh/h)	24	6	20	53	3	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	24	6	20	53	3	26
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			30		120	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			30		120	27
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1583		864	1048

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	30	20	53	29
Volume Left	0	20	0	3
Volume Right	6	0	0	26
cSH	1700	1583	1700	1026
Volume to Capacity	0.02	0.01	0.03	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.7
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	2.0		8.6
Approach LOS				A

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	86	121	346	248	22
Future Volume (Veh/h)	0	86	121	346	248	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	86	121	346	248	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)				199		
pX, platoon unblocked						
vC, conflicting volume	674	135	270			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	674	135	270			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	90	91			
cM capacity (veh/h)	352	889	1290			

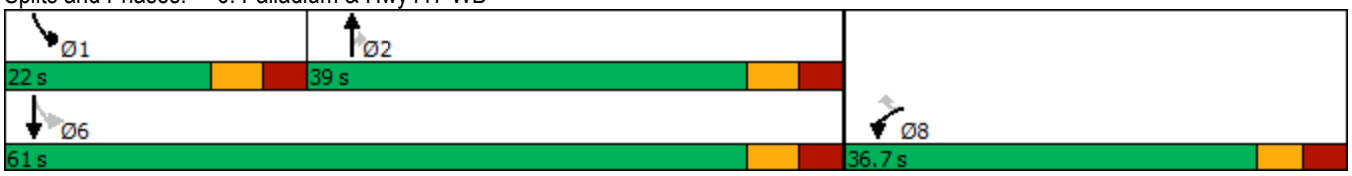
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	86	121	173	173	165	105
Volume Left	0	121	0	0	0	0
Volume Right	86	0	0	0	0	22
cSH	889	1290	1700	1700	1700	1700
Volume to Capacity	0.10	0.09	0.10	0.10	0.10	0.06
Queue Length 95th (m)	2.4	2.4	0.0	0.0	0.0	0.0
Control Delay (s)	9.5	8.1	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.5	2.1			0.0	
Approach LOS	A					

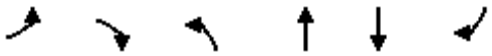
Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	230	298	169	83	117	217
Future Volume (vph)	230	298	169	83	117	217
Lane Group Flow (vph)	230	298	169	83	117	217
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.23	0.44	0.15	0.15	0.18	0.12
Control Delay	26.0	5.4	23.7	6.1	11.3	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	5.4	23.7	6.1	11.3	10.7
LOS	C	A	C	A	B	B
Approach Delay	14.4		17.9			10.9
Approach LOS	B		B			B
Queue Length 50th (m)	16.5	0.0	11.7	0.0	10.0	9.7
Queue Length 95th (m)	25.7	17.8	19.3	9.8	18.4	15.2
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	672	1110	552	637	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.44	0.15	0.15	0.18	0.12

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 40.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	287	0	79	413	103
Future Volume (Veh/h)	92	287	0	79	413	103
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	92	287	0	79	413	103
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	452	206	413			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452	206	413			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	64	100			
cM capacity (veh/h)	536	800	1142			

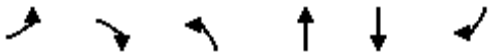
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	379	40	40	206	206	103
Volume Left	92	0	0	0	0	0
Volume Right	287	0	0	0	0	103
cSH	1056	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.02	0.02	0.12	0.12	0.06
Queue Length 95th (m)	12.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.3	0.0		0.0		
Approach LOS	B					

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	37.5%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	20	1	13	39	2	40
Future Volume (Veh/h)	20	1	13	39	2	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	20	1	13	39	2	40
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			21		86	20
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			21		86	20
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1595		908	1057

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	21	13	39	42
Volume Left	0	13	0	2
Volume Right	1	0	0	40
cSH	1700	1595	1700	1049
Volume to Capacity	0.01	0.01	0.02	0.04
Queue Length 95th (m)	0.0	0.2	0.0	1.0
Control Delay (s)	0.0	7.3	0.0	8.6
Lane LOS		A		A
Approach Delay (s)	0.0	1.8		8.6
Approach LOS				A

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	158	142	441	426	37
Future Volume (Veh/h)	0	158	142	441	426	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	158	142	441	426	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	949	232	463			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	949	232	463			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	87			
cM capacity (veh/h)	225	771	1095			

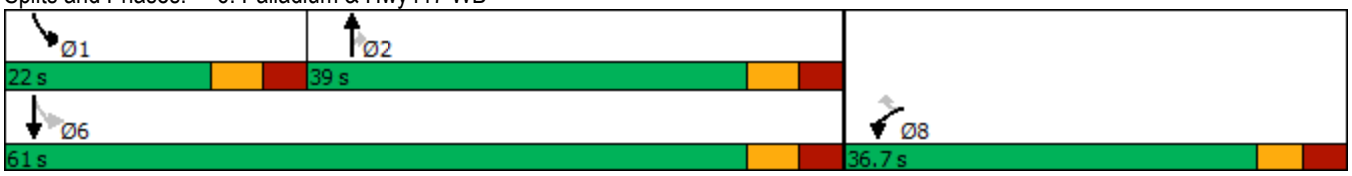
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	158	142	220	220	284	179
Volume Left	0	142	0	0	0	0
Volume Right	158	0	0	0	0	37
cSH	771	1095	1700	1700	1700	1700
Volume to Capacity	0.21	0.13	0.13	0.13	0.17	0.11
Queue Length 95th (m)	5.8	3.4	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	8.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.9	2.1			0.0	
Approach LOS	B					

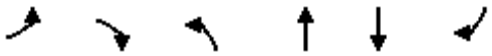
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	452	386	197	391	245	340
Future Volume (vph)	452	386	197	391	245	340
Lane Group Flow (vph)	452	386	197	391	245	340
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.45	0.53	0.18	0.52	0.39	0.18
Control Delay	28.9	5.7	24.0	5.3	13.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	5.7	24.0	5.3	13.5	11.2
LOS	C	A	C	A	B	B
Approach Delay	18.2		11.5			12.2
Approach LOS	B		B			B
Queue Length 50th (m)	35.2	0.0	13.8	0.0	22.8	15.7
Queue Length 95th (m)	49.1	20.1	22.0	19.2	36.6	22.9
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	733	1110	759	627	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.53	0.18	0.52	0.39	0.18

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	112	170	0	515	548	193
Future Volume (Veh/h)	112	170	0	515	548	193
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	112	170	0	515	548	193
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	806	274	548			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	806	274	548			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	77	100			
cM capacity (veh/h)	320	724	1018			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	282	258	258	274	274	193
Volume Left	112	0	0	0	0	0
Volume Right	170	0	0	0	0	193
cSH	805	1700	1700	1700	1700	1700
Volume to Capacity	0.35	0.15	0.15	0.16	0.16	0.11
Queue Length 95th (m)	12.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	15.7	0.0		0.0		
Approach LOS	C					

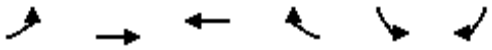
Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Total Projected 2021

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	46	5	18	83	3	23
Future Volume (Veh/h)	46	5	18	83	3	23
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	46	5	18	83	3	23
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			51		168	48
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			51		168	48
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1555		813	1020

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	51	18	83	26
Volume Left	0	18	0	3
Volume Right	5	0	0	23
cSH	1700	1555	1700	991
Volume to Capacity	0.03	0.01	0.05	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.6
Control Delay (s)	0.0	7.3	0.0	8.7
Lane LOS		A		A
Approach Delay (s)	0.0	1.3		8.7
Approach LOS				A

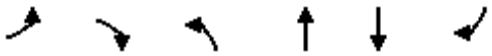
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	17.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	41	75	10	10	0
Future Volume (Veh/h)	0	41	75	10	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	41	75	10	10	0
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	85				121	80
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85				121	80
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1512				686	980

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	41	85	10
Volume Left	0	0	10
Volume Right	0	10	0
cSH	1512	1700	686
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	10.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay		0.8	
Intersection Capacity Utilization		14.8%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	79	110	357	257	20
Future Volume (Veh/h)	0	79	110	357	257	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	79	110	357	257	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)				199		
pX, platoon unblocked						
vC, conflicting volume	666	138	277			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	666	138	277			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	91			
cM capacity (veh/h)	359	884	1283			

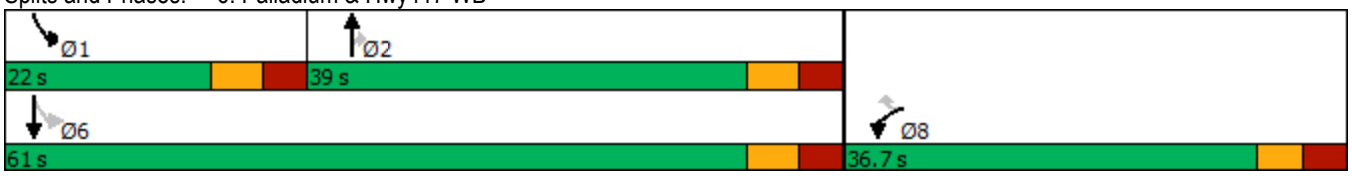
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	79	110	178	178	171	106
Volume Left	0	110	0	0	0	0
Volume Right	79	0	0	0	0	20
cSH	884	1283	1700	1700	1700	1700
Volume to Capacity	0.09	0.09	0.10	0.10	0.10	0.06
Queue Length 95th (m)	2.2	2.1	0.0	0.0	0.0	0.0
Control Delay (s)	9.5	8.1	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.5	1.9			0.0	
Approach LOS	A					

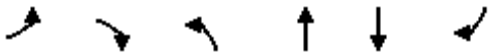
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	21.3%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	209	303	164	83	131	205
Future Volume (vph)	209	303	164	83	131	205
Lane Group Flow (vph)	209	303	164	83	131	205
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.21	0.45	0.15	0.15	0.21	0.11
Control Delay	25.7	5.4	23.7	6.1	11.5	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.7	5.4	23.7	6.1	11.5	10.6
LOS	C	A	C	A	B	B
Approach Delay	13.7		17.8			11.0
Approach LOS	B		B			B
Queue Length 50th (m)	15.0	0.0	11.4	0.0	11.3	9.1
Queue Length 95th (m)	23.6	17.9	18.9	9.8	20.2	14.4
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	675	1110	552	639	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.45	0.15	0.15	0.21	0.11

Intersection Summary	
Cycle Length: 97.7	
Actuated Cycle Length: 97.7	
Natural Cycle: 85	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 13.8	Intersection LOS: B
Intersection Capacity Utilization 41.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Palladium & Hwy417 WB

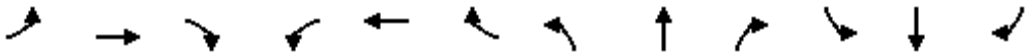




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	261	0	74	378	108
Future Volume (Veh/h)	92	261	0	74	378	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	92	261	0	74	378	108
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	415	189	378			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415	189	378			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	68	100			
cM capacity (veh/h)	566	821	1177			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	353	37	37	189	189	108
Volume Left	92	0	0	0	0	0
Volume Right	261	0	0	0	0	108
cSH	1110	1700	1700	1700	1700	1700
Volume to Capacity	0.32	0.02	0.02	0.11	0.11	0.06
Queue Length 95th (m)	10.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	11.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	11.7	0.0		0.0		
Approach LOS	B					

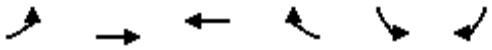
Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	13	0	25	25	0	0	0	13	10	0	0
Future Volume (Veh/h)	0	13	0	25	25	0	0	0	13	10	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	0	25	25	0	0	0	13	10	0	0
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	25			13			88	88	13	101	88	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			13			88	88	13	101	88	25
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			98			100	100	99	99	100	100
cM capacity (veh/h)	1133			1606			887	790	1067	676	790	827

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	50	13	10
Volume Left	0	25	0	10
Volume Right	0	0	13	0
cSH	1133	1606	1067	676
Volume to Capacity	0.00	0.02	0.01	0.01
Queue Length 95th (m)	0.0	0.4	0.3	0.3
Control Delay (s)	0.0	3.7	8.4	10.4
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.7	8.4	10.4
Approach LOS			A	B

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	23.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	36	50	25	5	0
Future Volume (Veh/h)	0	36	50	25	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	36	50	25	5	0
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	75				98	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				98	62
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1524				900	1002

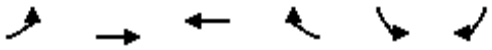
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	36	75	5
Volume Left	0	0	5
Volume Right	0	25	0
cSH	1524	1700	900
Volume to Capacity	0.00	0.04	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	53	1	12	61	2	37
Future Volume (Veh/h)	53	1	12	61	2	37
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	53	1	12	61	2	37
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			54		138	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			54		138	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1551		848	1014

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	54	12	61	39
Volume Left	0	12	0	2
Volume Right	1	0	0	37
cSH	1700	1551	1700	1004
Volume to Capacity	0.03	0.01	0.04	0.04
Queue Length 95th (m)	0.0	0.2	0.0	0.9
Control Delay (s)	0.0	7.3	0.0	8.7
Lane LOS		A		A
Approach Delay (s)	0.0	1.2		8.7
Approach LOS				A

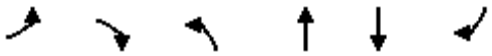
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	44	52	10	10	0
Future Volume (Veh/h)	0	44	52	10	10	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	44	52	10	10	0
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	62				101	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	62				101	57
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1541				707	1009

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	44	62	10
Volume Left	0	0	10
Volume Right	0	10	0
cSH	1541	1700	707
Volume to Capacity	0.00	0.04	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	144	130	435	431	34
Future Volume (Veh/h)	0	144	130	435	431	34
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	144	130	435	431	34
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	926	232	465			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	926	232	465			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	81	88			
cM capacity (veh/h)	236	770	1093			

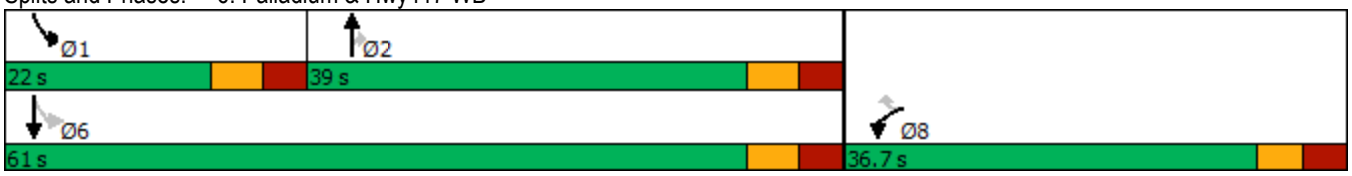
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	144	130	218	218	287	178
Volume Left	0	130	0	0	0	0
Volume Right	144	0	0	0	0	34
cSH	770	1093	1700	1700	1700	1700
Volume to Capacity	0.19	0.12	0.13	0.13	0.17	0.10
Queue Length 95th (m)	5.2	3.1	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	8.7	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.8	2.0			0.0	
Approach LOS	B					

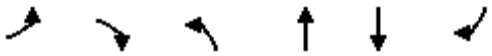
Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	29.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	412	376	188	391	256	319
Future Volume (vph)	412	376	188	391	256	319
Lane Group Flow (vph)	412	376	188	391	256	319
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.41	0.52	0.17	0.52	0.41	0.17
Control Delay	28.3	5.6	23.9	5.3	13.7	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.3	5.6	23.9	5.3	13.7	11.1
LOS	C	A	C	A	B	B
Approach Delay	17.5		11.3			12.3
Approach LOS	B		B			B
Queue Length 50th (m)	31.6	0.0	13.2	0.0	24.0	14.7
Queue Length 95th (m)	44.7	19.9	21.2	19.2	38.2	21.5
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	726	1110	759	630	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.52	0.17	0.52	0.41	0.17

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 14.1		Intersection LOS: B	
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB

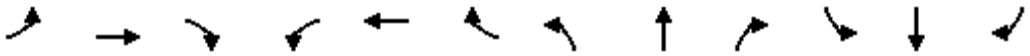




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	155	0	471	502	199
Future Volume (Veh/h)	110	155	0	471	502	199
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	110	155	0	471	502	199
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	738	251	502			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	738	251	502			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	69	79	100			
cM capacity (veh/h)	354	749	1059			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	265	236	236	251	251	199
Volume Left	110	0	0	0	0	0
Volume Right	155	0	0	0	0	199
cSH	852	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.14	0.14	0.15	0.15	0.12
Queue Length 95th (m)	10.1	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	14.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	14.7	0.0		0.0		
Approach LOS	B					

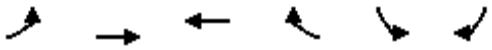
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	10	0	19	18	10	0	0	10	0	0	0
Future Volume (Veh/h)	0	10	0	19	18	10	0	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	10	0	19	18	10	0	0	10	0	0	0
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	28			10			71	76	10	81	71	23
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	28			10			71	76	10	81	71	23
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1130			1610			912	805	1071	703	810	830

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	47	10	0
Volume Left	0	19	0	0
Volume Right	0	10	10	0
cSH	1130	1610	1071	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (m)	0.0	0.3	0.2	0.0
Control Delay (s)	0.0	3.0	8.4	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	3.0	8.4	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	19.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	19	47	5	25	0
Future Volume (Veh/h)	0	19	47	5	25	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	19	47	5	25	0
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	52				68	50
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	52				68	50
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1554				936	1019

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	19	52	25
Volume Left	0	0	25
Volume Right	0	5	0
cSH	1554	1700	936
Volume to Capacity	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

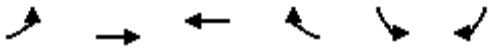
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Total Projected 2026

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	51	5	19	91	3	25
Future Volume (Veh/h)	51	5	19	91	3	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	51	5	19	91	3	25
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			56		182	54
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			56		182	54
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	98
cM capacity (veh/h)			1549		797	1014

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	56	19	91	28
Volume Left	0	19	0	3
Volume Right	5	0	0	25
cSH	1700	1549	1700	985
Volume to Capacity	0.03	0.01	0.05	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.7
Control Delay (s)	0.0	7.4	0.0	8.8
Lane LOS		A		A
Approach Delay (s)	0.0	1.3		8.8
Approach LOS				A

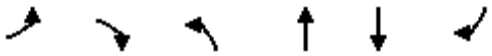
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	43	79	12	12	0
Future Volume (Veh/h)	0	43	79	12	12	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	43	79	12	12	0
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	91				128	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	91				128	85
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1504				679	974

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	43	91	12
Volume Left	0	0	12
Volume Right	0	12	0
cSH	1504	1700	679
Volume to Capacity	0.00	0.05	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	10.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay		0.9	
Intersection Capacity Utilization		15.2%	ICU Level of Service
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	82	116	371	265	21
Future Volume (Veh/h)	0	82	116	371	265	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	82	116	371	265	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	693	143	286			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	693	143	286			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	91	91			
cM capacity (veh/h)	343	879	1273			

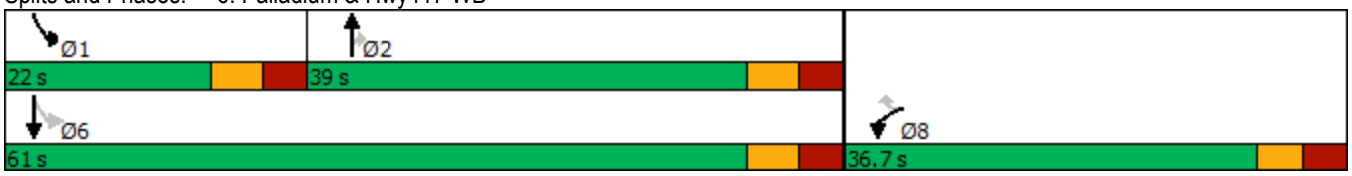
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	82	116	186	186	177	109
Volume Left	0	116	0	0	0	0
Volume Right	82	0	0	0	0	21
cSH	879	1273	1700	1700	1700	1700
Volume to Capacity	0.09	0.09	0.11	0.11	0.10	0.06
Queue Length 95th (m)	2.3	2.3	0.0	0.0	0.0	0.0
Control Delay (s)	9.5	8.1	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.5	1.9			0.0	
Approach LOS	A					

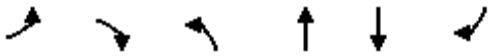
Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	21.9%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	219	316	171	83	134	213
Future Volume (vph)	219	316	171	83	134	213
Lane Group Flow (vph)	219	316	171	83	134	213
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.22	0.46	0.15	0.15	0.21	0.11
Control Delay	25.9	5.4	23.8	6.1	11.6	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	5.4	23.8	6.1	11.6	10.6
LOS	C	A	C	A	B	B
Approach Delay	13.8		18.0			11.0
Approach LOS	B		B			B
Queue Length 50th (m)	15.7	0.0	11.9	0.0	11.6	9.5
Queue Length 95th (m)	24.6	18.4	19.6	9.8	20.6	15.0
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	684	1110	552	636	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.46	0.15	0.15	0.21	0.11

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB

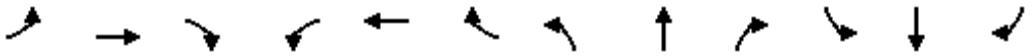




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	95	274	0	78	397	108
Future Volume (Veh/h)	95	274	0	78	397	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	95	274	0	78	397	108
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	436	198	397			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436	198	397			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	66	100			
cM capacity (veh/h)	549	809	1158			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	369	39	39	198	198	108
Volume Left	95	0	0	0	0	0
Volume Right	274	0	0	0	0	108
cSH	1090	1700	1700	1700	1700	1700
Volume to Capacity	0.34	0.02	0.02	0.12	0.12	0.06
Queue Length 95th (m)	11.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.0	0.0		0.0		
Approach LOS	B					

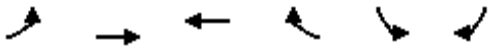
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	13	0	25	25	0	0	0	13	12	0	0
Future Volume (Veh/h)	0	13	0	25	25	0	0	0	13	12	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	0	25	25	0	0	0	13	12	0	0
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	25			13			88	88	13	101	88	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			13			88	88	13	101	88	25
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			98			100	100	99	98	100	100
cM capacity (veh/h)	1133			1606			887	790	1067	676	790	827

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	50	13	12
Volume Left	0	25	0	12
Volume Right	0	0	13	0
cSH	1133	1606	1067	676
Volume to Capacity	0.00	0.02	0.01	0.02
Queue Length 95th (m)	0.0	0.4	0.3	0.4
Control Delay (s)	0.0	3.7	8.4	10.4
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.7	8.4	10.4
Approach LOS			A	B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	38	50	29	5	0
Future Volume (Veh/h)	0	38	50	29	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	38	50	29	5	0
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	79				102	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				102	64
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1519				896	1000

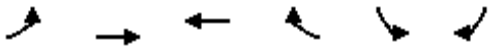
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	38	79	5
Volume Left	0	0	5
Volume Right	0	29	0
cSH	1519	1700	896
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	60	1	13	67	2	39
Future Volume (Veh/h)	60	1	13	67	2	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	60	1	13	67	2	39
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			61		154	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			61		154	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1542		831	1005

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	61	13	67	41
Volume Left	0	13	0	2
Volume Right	1	0	0	39
cSH	1700	1542	1700	995
Volume to Capacity	0.04	0.01	0.04	0.04
Queue Length 95th (m)	0.0	0.2	0.0	1.0
Control Delay (s)	0.0	7.4	0.0	8.8
Lane LOS		A		A
Approach Delay (s)	0.0	1.2		8.8
Approach LOS				A

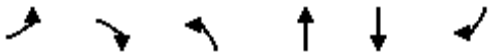
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	48	55	12	12	0
Future Volume (Veh/h)	0	48	55	12	12	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	48	55	12	12	0
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	67				109	61
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	67				109	61
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1535				698	1004

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	48	67	12
Volume Left	0	0	12
Volume Right	0	12	0
cSH	1535	1700	698
Volume to Capacity	0.00	0.04	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	151	136	452	448	35
Future Volume (Veh/h)	0	151	136	452	448	35
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	151	136	452	448	35
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	964	242	483			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	964	242	483			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	80	87			
cM capacity (veh/h)	221	759	1076			

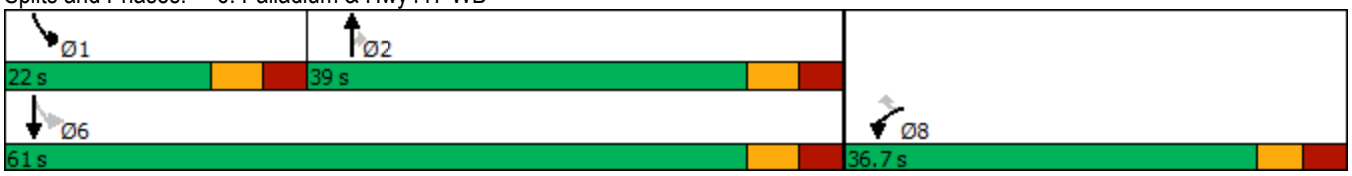
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	151	136	226	226	299	184
Volume Left	0	136	0	0	0	0
Volume Right	151	0	0	0	0	35
cSH	759	1076	1700	1700	1700	1700
Volume to Capacity	0.20	0.13	0.13	0.13	0.18	0.11
Queue Length 95th (m)	5.6	3.3	0.0	0.0	0.0	0.0
Control Delay (s)	10.9	8.8	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	10.9	2.0			0.0	
Approach LOS	B					

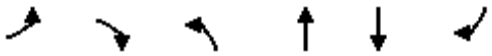
Intersection Summary				
Average Delay	2.3			
Intersection Capacity Utilization	30.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	432	393	195	391	266	334
Future Volume (vph)	432	393	195	391	266	334
Lane Group Flow (vph)	432	393	195	391	266	334
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.43	0.53	0.18	0.52	0.42	0.18
Control Delay	28.6	5.7	24.0	5.3	14.0	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.6	5.7	24.0	5.3	14.0	11.1
LOS	C	A	C	A	B	B
Approach Delay	17.7		11.5			12.4
Approach LOS	B		B			B
Queue Length 50th (m)	33.4	0.0	13.7	0.0	25.1	15.5
Queue Length 95th (m)	46.8	20.3	21.9	19.2	39.8	22.5
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	738	1110	759	627	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.53	0.18	0.52	0.42	0.18

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 14.3		Intersection LOS: B	
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB

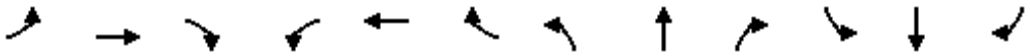




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	114	163	0	494	526	199
Future Volume (Veh/h)	114	163	0	494	526	199
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	114	163	0	494	526	199
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	773	263	526			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	773	263	526			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	66	78	100			
cM capacity (veh/h)	336	735	1037			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	277	247	247	263	263	199
Volume Left	114	0	0	0	0	0
Volume Right	163	0	0	0	0	199
cSH	815	1700	1700	1700	1700	1700
Volume to Capacity	0.34	0.15	0.15	0.15	0.15	0.12
Queue Length 95th (m)	11.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	15.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	15.3	0.0		0.0		
Approach LOS	C					

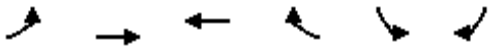
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	32.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	10	0	19	18	12	0	0	10	0	0	0
Future Volume (Veh/h)	0	10	0	19	18	12	0	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	10	0	19	18	12	0	0	10	0	0	0
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	30			10			72	78	10	82	72	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			10			72	78	10	82	72	24
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1127			1610			911	803	1071	702	809	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	49	10	0
Volume Left	0	19	0	0
Volume Right	0	12	10	0
cSH	1127	1610	1071	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (m)	0.0	0.3	0.2	0.0
Control Delay (s)	0.0	2.9	8.4	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	2.9	8.4	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	19	49	6	29	0
Future Volume (Veh/h)	0	19	49	6	29	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	19	49	6	29	0
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	55				71	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55				71	52
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1550				933	1016

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	19	55	29
Volume Left	0	0	29
Volume Right	0	6	0
cSH	1550	1700	933
Volume to Capacity	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

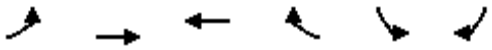
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Total Projected 2031

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	53	6	20	94	3	26
Future Volume (Veh/h)	53	6	20	94	3	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	53	6	20	94	3	26
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			59		190	56
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		190	56
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	97
cM capacity (veh/h)			1545		789	1011

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	59	20	94	29
Volume Left	0	20	0	3
Volume Right	6	0	0	26
cSH	1700	1545	1700	982
Volume to Capacity	0.03	0.01	0.06	0.03
Queue Length 95th (m)	0.0	0.3	0.0	0.7
Control Delay (s)	0.0	7.4	0.0	8.8
Lane LOS		A		A
Approach Delay (s)	0.0	1.3		8.8
Approach LOS				A

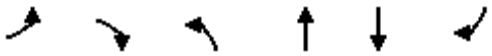
Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	43	79	12	12	0
Future Volume (Veh/h)	0	43	79	12	12	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	43	79	12	12	0
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	91				128	85
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	91				128	85
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1504				679	974

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	43	91	12
Volume Left	0	0	12
Volume Right	0	12	0
cSH	1504	1700	679
Volume to Capacity	0.00	0.05	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	10.4
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	86	121	381	272	22
Future Volume (Veh/h)	0	86	121	381	272	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	86	121	381	272	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)				199		
pX, platoon unblocked						
vC, conflicting volume	716	147	294			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	716	147	294			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	90	90			
cM capacity (veh/h)	330	873	1264			

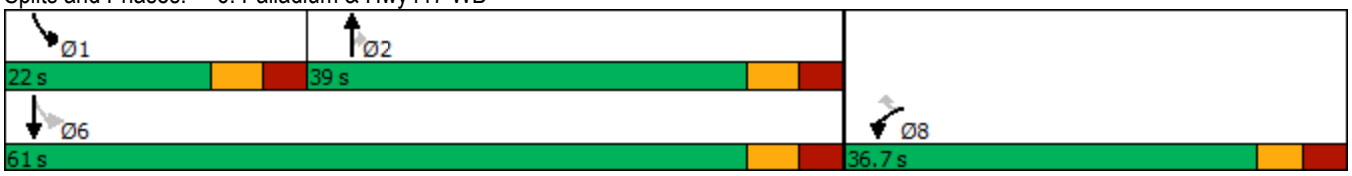
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	86	121	190	190	181	113
Volume Left	0	121	0	0	0	0
Volume Right	86	0	0	0	0	22
cSH	873	1264	1700	1700	1700	1700
Volume to Capacity	0.10	0.10	0.11	0.11	0.11	0.07
Queue Length 95th (m)	2.5	2.4	0.0	0.0	0.0	0.0
Control Delay (s)	9.6	8.1	0.0	0.0	0.0	0.0
Lane LOS	A	A				
Approach Delay (s)	9.6	2.0			0.0	
Approach LOS	A					

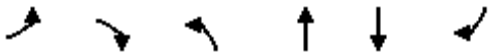
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	230	325	177	83	136	222
Future Volume (vph)	230	325	177	83	136	222
Lane Group Flow (vph)	230	325	177	83	136	222
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.23	0.47	0.16	0.15	0.21	0.12
Control Delay	26.0	5.4	23.8	6.1	11.6	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	5.4	23.8	6.1	11.6	10.7
LOS	C	A	C	A	B	B
Approach Delay	14.0		18.2			11.0
Approach LOS	B		B			B
Queue Length 50th (m)	16.5	0.0	12.4	0.0	11.8	9.9
Queue Length 95th (m)	25.7	18.5	20.1	9.8	20.9	15.5
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	691	1110	552	634	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.47	0.16	0.15	0.21	0.12

Intersection Summary	
Cycle Length: 97.7	
Actuated Cycle Length: 97.7	
Natural Cycle: 85	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Palladium & Hwy417 WB

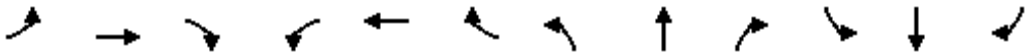




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	98	287	0	81	415	108
Future Volume (Veh/h)	98	287	0	81	415	108
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	98	287	0	81	415	108
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	456	208	415			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	456	208	415			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	64	100			
cM capacity (veh/h)	533	799	1140			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	385	40	40	208	208	108
Volume Left	98	0	0	0	0	0
Volume Right	287	0	0	0	0	108
cSH	1071	1700	1700	1700	1700	1700
Volume to Capacity	0.36	0.02	0.02	0.12	0.12	0.06
Queue Length 95th (m)	12.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	12.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.3	0.0		0.0		
Approach LOS	B					

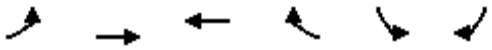
Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	37.5%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	13	0	25	25	0	0	0	13	12	0	0
Future Volume (Veh/h)	0	13	0	25	25	0	0	0	13	12	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	0	25	25	0	0	0	13	12	0	0
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	25			13			88	88	13	101	88	25
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	25			13			88	88	13	101	88	25
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			98			100	100	99	98	100	100
cM capacity (veh/h)	1133			1606			887	790	1067	676	790	827

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	13	50	13	12
Volume Left	0	25	0	12
Volume Right	0	0	13	0
cSH	1133	1606	1067	676
Volume to Capacity	0.00	0.02	0.01	0.02
Queue Length 95th (m)	0.0	0.4	0.3	0.4
Control Delay (s)	0.0	3.7	8.4	10.4
Lane LOS		A	A	B
Approach Delay (s)	0.0	3.7	8.4	10.4
Approach LOS			A	B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	23.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	38	50	29	5	0
Future Volume (Veh/h)	0	38	50	29	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	38	50	29	5	0
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	79				102	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				102	64
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1519				896	1000

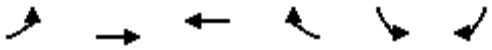
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	38	79	5
Volume Left	0	0	5
Volume Right	0	29	0
cSH	1519	1700	896
Volume to Capacity	0.00	0.05	0.01
Queue Length 95th (m)	0.0	0.0	0.1
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	61	1	13	69	2	40
Future Volume (Veh/h)	61	1	13	69	2	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	61	1	13	69	2	40
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			62		156	62
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		156	62
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1541		828	1004

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	62	13	69	42
Volume Left	0	13	0	2
Volume Right	1	0	0	40
cSH	1700	1541	1700	993
Volume to Capacity	0.04	0.01	0.04	0.04
Queue Length 95th (m)	0.0	0.2	0.0	1.0
Control Delay (s)	0.0	7.4	0.0	8.8
Lane LOS		A		A
Approach Delay (s)	0.0	1.2		8.8
Approach LOS				A

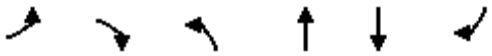
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	17.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	48	55	12	12	0
Future Volume (Veh/h)	0	48	55	12	12	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	48	55	12	12	0
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	67				109	61
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	67				109	61
tC, single (s)	4.1				7.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				4.4	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1535				698	1004

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	48	67	12
Volume Left	0	0	12
Volume Right	0	12	0
cSH	1535	1700	698
Volume to Capacity	0.00	0.04	0.02
Queue Length 95th (m)	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	158	142	466	461	37
Future Volume (Veh/h)	0	158	142	466	461	37
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	158	142	466	461	37
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				199		
pX, platoon unblocked						
vC, conflicting volume	996	249	498			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	996	249	498			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	79	87			
cM capacity (veh/h)	209	751	1062			

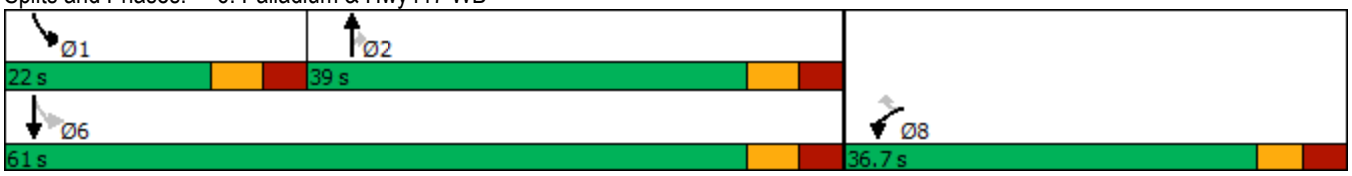
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	158	142	233	233	307	191
Volume Left	0	142	0	0	0	0
Volume Right	158	0	0	0	0	37
cSH	751	1062	1700	1700	1700	1700
Volume to Capacity	0.21	0.13	0.14	0.14	0.18	0.11
Queue Length 95th (m)	6.0	3.5	0.0	0.0	0.0	0.0
Control Delay (s)	11.1	8.9	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	11.1	2.1			0.0	
Approach LOS	B					

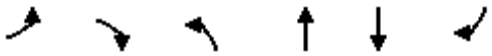
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	31.7%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	452	406	202	391	272	348
Future Volume (vph)	452	406	202	391	272	348
Lane Group Flow (vph)	452	406	202	391	272	348
Turn Type	Prot	Perm	NA	Perm	pm+pt	NA
Protected Phases	8		2		1	6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	5.0	10.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	25.0
Total Split (s)	36.7	36.7	39.0	39.0	22.0	61.0
Total Split (%)	37.6%	37.6%	39.9%	39.9%	22.5%	62.4%
Yellow Time (s)	3.3	3.3	3.7	3.7	3.7	3.7
All-Red Time (s)	3.4	3.4	3.3	3.3	3.3	3.3
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.7	6.7	7.0	7.0	7.0	7.0
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)	30.0	30.0	32.0	32.0	54.0	54.0
Actuated g/C Ratio	0.31	0.31	0.33	0.33	0.55	0.55
v/c Ratio	0.45	0.54	0.18	0.52	0.44	0.19
Control Delay	28.9	5.7	24.0	5.3	14.1	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	5.7	24.0	5.3	14.1	11.2
LOS	C	A	C	A	B	B
Approach Delay	17.9		11.7			12.5
Approach LOS	B		B			B
Queue Length 50th (m)	35.2	0.0	14.2	0.0	25.8	16.2
Queue Length 95th (m)	49.1	20.5	22.6	19.2	40.7	23.4
Internal Link Dist (m)	453.2		407.4			174.6
Turn Bay Length (m)		125.0		85.0	140.0	
Base Capacity (vph)	1009	747	1110	759	625	1873
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.54	0.18	0.52	0.44	0.19

Intersection Summary			
Cycle Length: 97.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 6: Palladium & Hwy417 WB

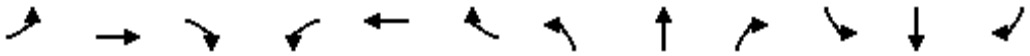




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	117	170	0	517	550	199
Future Volume (Veh/h)	117	170	0	517	550	199
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	117	170	0	517	550	199
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	808	275	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	808	275	550			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	76	100			
cM capacity (veh/h)	318	722	1016			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	287	258	258	275	275	199
Volume Left	117	0	0	0	0	0
Volume Right	170	0	0	0	0	199
cSH	781	1700	1700	1700	1700	1700
Volume to Capacity	0.37	0.15	0.15	0.16	0.16	0.12
Queue Length 95th (m)	12.9	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	16.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	16.1	0.0		0.0		
Approach LOS	C					

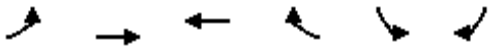
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	33.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	10	0	19	18	12	0	0	10	0	0	0
Future Volume (Veh/h)	0	10	0	19	18	12	0	0	10	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	10	0	19	18	12	0	0	10	0	0	0
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	30			10			72	78	10	82	72	24
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	30			10			72	78	10	82	72	24
tC, single (s)	5.1			4.1			7.1	6.5	6.2	8.1	6.5	7.2
tC, 2 stage (s)												
tF (s)	3.1			2.2			3.5	4.0	3.3	4.4	4.0	4.2
p0 queue free %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	1127			1610			911	803	1071	702	809	828

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	49	10	0
Volume Left	0	19	0	0
Volume Right	0	12	10	0
cSH	1127	1610	1071	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (m)	0.0	0.3	0.2	0.0
Control Delay (s)	0.0	2.9	8.4	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	2.9	8.4	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	19	49	6	29	0
Future Volume (Veh/h)	0	19	49	6	29	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	19	49	6	29	0
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	55				71	52
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	55				71	52
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1550				933	1016

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	19	55	29
Volume Left	0	0	29
Volume Right	0	6	0
cSH	1550	1700	933
Volume to Capacity	0.00	0.03	0.03
Queue Length 95th (m)	0.0	0.0	0.7
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		