Transportation Impact Assessment – Step 4: Analysis

319 Huntmar Drive

Prepared for Ironclad Developments Inc.
by Arcadis
April 2, 2026

TIA Plan Reports - Certification

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associate documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below:

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;

2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;

3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and

4. I am either a licensed[1] or registered[1] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning □.

[1] **License or registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

Dated at Ottawa this 2nd day of April, 2026.
(City)

Name: Ben Pascolo-Neveu, P.Eng.

Professional Title: Transportation Engineer

Ben Pascolo-Neveu

Signature of Individual certifier that she/he meets the above four criteria

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1 Introduction

Arcadis was retained by Ironclad Development Inc. to undertake a Transportation Impact Assessment (TIA) in support of a Site Plan Control application for a proposed mid-rise residential development to be located at 319 Huntmar Drive (formerly 8555 Campeau Drive) in Ottawa. Previously retained by Blevins Developments Ltd., Arcadis (formerly IBI) published a TIA for 8555 Campeau Drive development, in May 2021.

In accordance with the City of Ottawa's Transportation Impact Assessment Guidelines, published in June 2017, the following report is divided into four major components:

- **Screening** – Prior to the commencement of a TIA, an initial assessment of the proposed development is undertaken to establish the need for a comprehensive review of the site based on three triggers: Trip Generation, Location and Safety.
- **Scoping** – This component of the TIA report describes both the existing and planned conditions in the vicinity of the development and defines study parameters such as the study area, analysis periods and analysis years of the development. It also provides an opportunity to identify any scope exemptions that would eliminate elements of scope described in the TIA Guidelines that are not relevant to the development proposal, based on consultation with City staff.
- **Forecasting** – The Forecasting component of the TIA is intended to review both the development-generated travel demand and the background network travel demand, and provides an opportunity to rationalize this demand to ensure projections are within the capacity constraints of the transportation network.
- **Analysis** – This component documents the results of any analyses undertaken to ensure that the transportation related features of the proposed development are in conformance with prescribed technical standards and that its impacts on the transportation network are both sustainable and effectively managed. It also identifies a development strategy to ensure that what is being proposed is aligned with the City of Ottawa's city-building objectives, targets and policies.

Throughout the development of a TIA report, each of the four study components above are submitted in draft form to the City of Ottawa and undergo a review by a designated Transportation Project Manager. Any comments received are addressed to the satisfaction of the City's Transportation Project Manager before proceeding with subsequent components of the study.

It was confirmed with Mike Giampa via email correspondence on December 4, 2025 that an update to the previous TIA Step 4 published in 2021 would be deemed acceptable and that the multi-step TIA process would not need to be restarted in this case, given the similarity of uses proposed within the subject lands.

Dependent on the findings of this report, the complete submission of this Transportation Impact Assessment may also require Functional Design Drawings of recommended roadway improvements to support a Roadway Modification Application (RMA). The submission may also require a post-development Monitoring Plan to track performance of the planned TIA Strategy. The need for these two elements will be confirmed through the analysis undertaken for this report.

2 TIA Screening

An initial screening was completed to confirm the need for a Transportation Impact Assessment by reviewing the following three triggers:

- **Trip Generation Trigger**: Based on the proposed number of apartment dwelling units, the minimum development size threshold has been exceeded and therefore the Trip Generation trigger is satisfied.
- **Location Trigger**: The subject development proposed a driveway to Huntmar Drive which is designed as a Cross-Town Bikeway, therefore the Location trigger is satisfied.
- **Safety Trigger**: A vertical curve exists on Huntmar Drive at the Highway 417 overpass and will require further review to determine its potential to impact sight lines at the proposed access location. As such, the Safety Trigger is satisfied.

As the proposed development meets the Trip Generation, Location and Safety triggers, the need to undertake a Transportation Impact Assessment is confirmed.

A copy of the TIA Screening Form is provided in **Appendix A**.

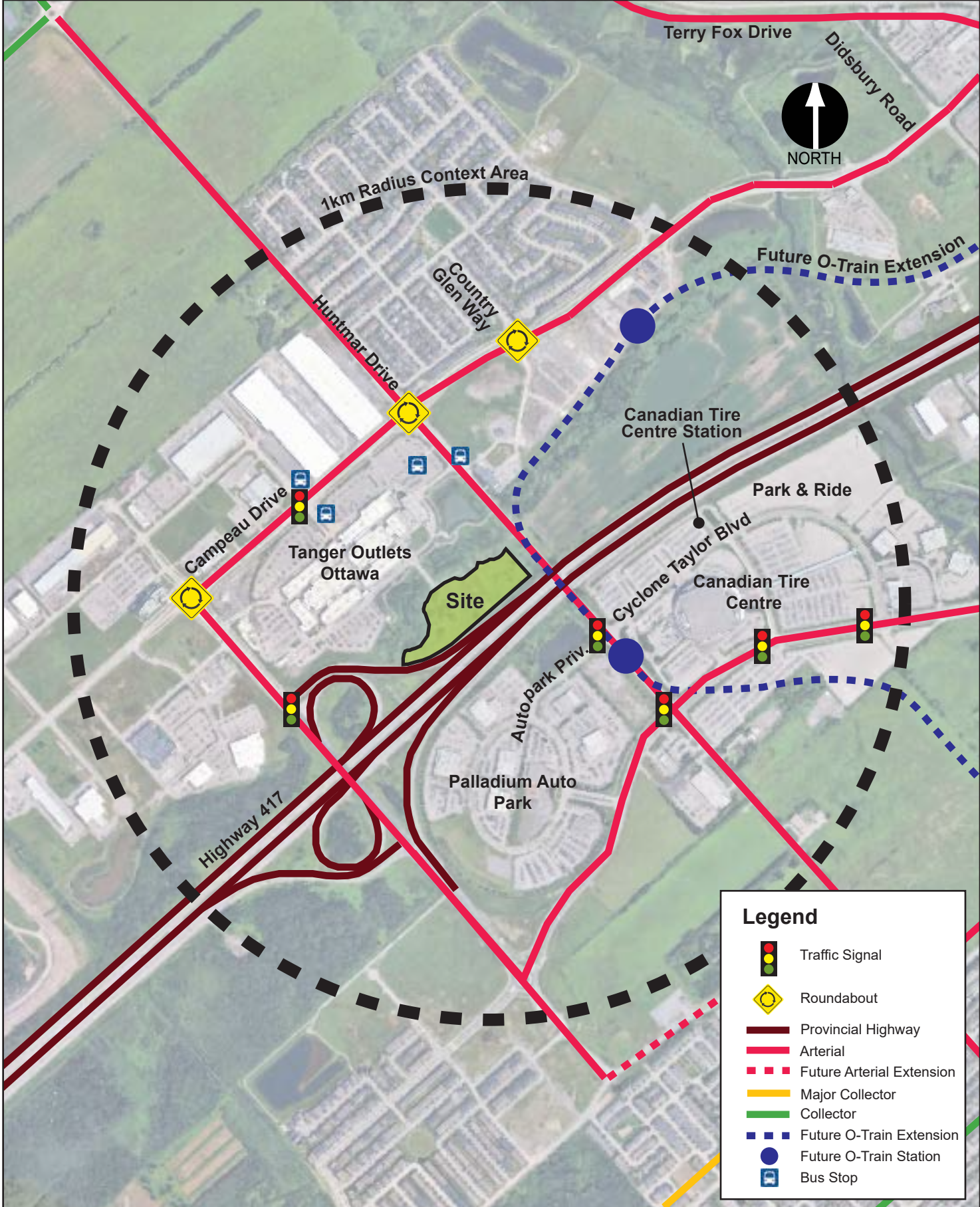
3 Project Scoping

3.1 Description of Proposed Development

3.1.1 Site Location

The proposed development is located on a parcel of land with an approximate size of 3 hectares. The site is generally bound by the Tanger Outlets shopping centre to the north, Huntmar Drive to the east, as well as, Highway 417 to the south and west.

The site location and its surrounding context are illustrated in **Exhibit 1** below.



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319 Huntmar Drive
Transportation Impact Assessment

Exhibit 1:
Site Location

PROJECT No. 30315381
DATE:
SCALE:

100m 0m 200m

3.1.2 Land Use Details

The subject parcel is currently an undeveloped greenfield site. According to GeoOttawa, the site is zoned MC H(45) – Mixed-Use Centre under Zoning By-law (2008-250) and NMU H(51) per the Council-approved and Final Draft Zoning By-law (2026-50).

The proposed development consists of six, six-storey apartment buildings. **Table 1** summarizes the relevant land use statistics for the site.

Table 1 - Land Use Statistics

LAND USE	SIZE
Mid-Rise Residential	472 dwelling units

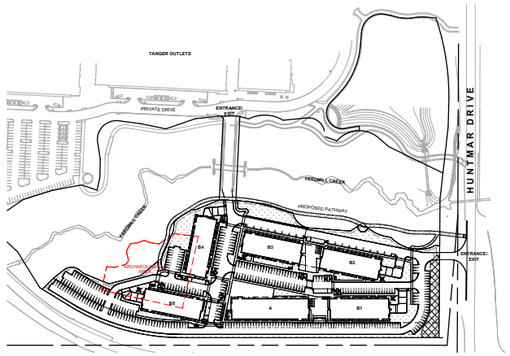
The site will provide a total of 551 parking spaces for vehicles, including 261 surface parking spaces, while the remaining 195 spaces are proposed within the underground parking garages. A total of 272 bicycle parking spaces will also be provided. Access to the site will be provided via a right-in/right-out access on Huntmar Drive to the east, as well as a connection to the Tanger Outlets shopping centre to the north.

The proposed development is illustrated in **Exhibit 2** below.

3.1.3 Development Phasing & Date of Occupancy

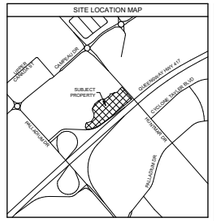
The proposed development is anticipated to be constructed and fully occupied in a single phase by 2029.

NORTH



OVERALL SITE PLAN - SITE ENTRANCES

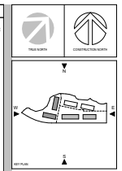
SITE LOCATION MAP



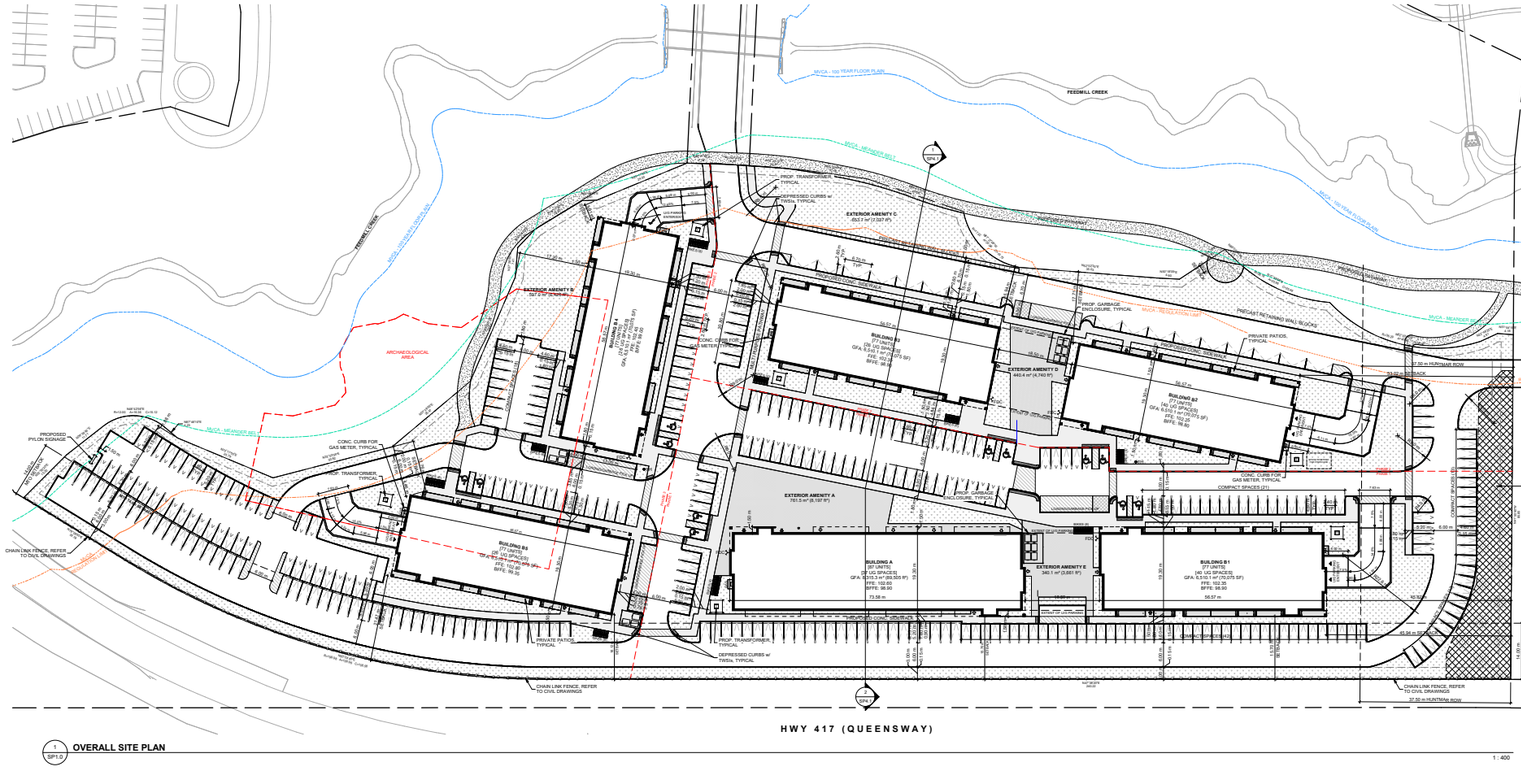
SITE PHASING MAP

SITE PLAN LEGEND

- EXTENT OF UNDERGROUND PARKING GARAGE
- LINE OF SETBACK
- CENTERLINE OF ROAD
- PROPERTY LINE
- DRIP LINE
- MAIN BUILDING ENTRANCE/ FIRE FIGHTER ENTRANCE
- SECONDARY BUILDING ENTRANCE
- FIRE EXIT
- PARKING ENTRANCE
- FDC: FIRE DEPT CONNECTION
- BOLLARD
- LBO: LIGHT BOLLARD
- MANHOLE COVER
- CATCH BASIN
- FIRE HYDRANT
- GAS: GAS METER
- EX. WATER VALVE
- SIGNAGE
- EX GUY: EX. GUY WIRE
- EX HUP: EX. WOOD UTILITY POLE
- F.F.E.: FINISHED FLOOR ELEVATION
- 100.0: SITE ELEVATIONS (SHOWN TO ESTABLISH AVERAGE GRADE)
- FIRE ACCESS ROUTE - SIGNAGE PLACED ON WITHIN SIDE.
- FIRE ACCESS ROUTE
- WASTE COLLECTION POINT
- SOFT LANDSCAPING
- REGULATED AREA
- DISTANCE FROM PRINCIPAL ENTRANCE TO FIRE ROUTE
- DISTANCE FROM FIRE HYDRANT TO FIRE DEPARTMENT CONNECTION
- MVCA - MEANDER BELT
- MVCA - REGULATION LIMIT
- MVCA - 100 YEAR FLOOD PLAIN



Issued for	Date
Issued for Site Plan Control	2020-04-02
Issued for Preliminary Design	2020-02-04
Issued for Design Development	
Issued for Permit	
Issued for Tender	
Issued for Construction	



1 SP1.0 OVERALL SITE PLAN — 1 : 400

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CONSULTANTS: JD DRIVER PLAN

PROJECT: 319 HUNTMAR
319 HUNTMAR DR, KANATA, ON, K2S 0P6

DRAWING TITLE: SITE PLAN

SHEET SIZE: ARCH D (24"x36") SCALE: As indicated

PROJECT NO.: 25066

DRAWING NO.: SP1.0

3.2 Existing Conditions

3.2.1 Existing Road Network

3.2.1.1 Roadways

Table 2 below summarizes the details of the boundary roadways, as well as other streets within the context area of the proposed development.

Table 2 - Existing Roadways

NAME	CLASS	JURISDICTION	ORIENTATION & EXTENTS	CROSS-SECTION	ROW	SPEED LIMIT
Huntmar Drive	Arterial	City of Ottawa	North-South, from March to Hazeldean	Rural Two-Lane	37.5	50 km/h
Campeau Drive	Arterial	City of Ottawa	West Segment: East-West, from Country Glen Way to Kanata West Centre East Segment: East-West, from Didsbury to March	West Segment: Urban Four-Lane Divided East Segment: Urban Two-Lane Undivided	37.5	60 km/h
Palladium Drive	Arterial	City of Ottawa	North-South from Campeau to Palladium Auto Park then East-West to Terry Fox	Urban Four-Lane Divided [1]	44.5	60 km/h

Notes:
[1] Segment of Palladium Drive within the vicinity of the Palladium Auto Park consists of a rural, four-lane cross-section with a 70km/h speed limit

3.2.1.2 Nearby Driveways

There are only two active driveways within proximity of the proposed site access, both of which are located on Huntmar Drive, approximately 200m north of the site. These driveways are both restricted to right-in/right-out movement only. The driveway on the west side of Huntmar Drive serves the Tanger Outlet shopping centre, while the driveway on the east side will serve a future hotel.

3.2.1.3 Intersections

The following major intersections are located within the study area:

- **Huntmar Drive & Campeau Drive** is a four-legged, multi-lane roundabout with two circulating lanes and a slip lane on each approach. This intersection is located approximately 400 metres north of the site and has been designed to its ultimate configuration to accommodate long-term area growth.

- **Huntmar Drive & Autopark Private/ Cyclone Taylor Boulevard** is a four-legged, signalized intersection with one through lane in the northbound direction and two through lanes in the southbound direction on Huntmar Drive. Single through lanes are provided on the sidestreets. Auxiliary left-turn lanes are present on all approaches with the exception of the eastbound approach, and a channelized right-turn lane is provided on the northbound approach. This intersection is located approximately 230 metres south of the site and is designed to accommodate heavy traffic associated with major events at the adjacent Canadian Tire Centre.

- **Huntmar Drive & Palladium Drive** is a four-legged, signalized intersection with two through lanes on Palladium Drive and single through lanes on Huntmar Drive. Auxiliary left-turn lanes have been provided on all approaches. The northbound approach has an auxiliary right-turn lane and the southbound approach has a channelized right-turn lane. This intersection is located approximately 560m south of the site and is also designed to accommodate heavy traffic associated with major events at the adjacent Canadian Tire Centre.

- **Campeau Drive & Journeyman Street / Tanger Outlets Access** is a four-legged, signalized intersection with two through lanes and auxiliary left-turn lanes on both the eastbound and westbound approaches, and a single through, right-turn and left-turn lane on both the northbound and southbound approaches.

- **Campeau Drive & Palladium Drive** is a four-legged roundabout with one to two circulating lanes. The westbound approach has a shared through/ right/ left lane and left-turn lane, the eastbound approach has a shared through/ right/ left lane and right-turn slip lane, the northbound approach has a shared through-left lane and right-turn slip lane, and the southbound approach has shared through/ right and through/ left lanes.

- **Palladium Drive & Highway 417 Westbound Ramp Terminal** is a three-legged signalized highway ramp terminal intersection with two through lanes in the north-south direction, a southbound left-turn lane, a channelized northbound right-turn lane, dual westbound left-turn lanes and a single westbound right-turn lane.

3.2.1.4 Traffic Management Measures

A desktop review indicates that traffic management or traffic calming measures within the vicinity of the proposed development are limited to the roundabout configurations at the intersections of Huntmar Drive & Campeau Drive and of Campeau Drive & Palladium Drive,

prioritizing active transportation users and featuring Level 2, Type 'B' Pedestrian Crossovers (PXOs) on all four approaches.

No additional traffic calming measures were identified on any other streets included within the context area.

3.2.2 Existing Bicycle and Pedestrian Facilities

There are presently no pedestrian or cycling facilities provided on Huntmar Drive within the vicinity of the proposed development. South of Autopark Private/ Cyclone Taylor Boulevard, concrete sidewalks are provided on the east side of Huntmar Drive only. On Campeau Drive, concrete sidewalks exist on both sides of the road within the context area, apart from the north segment from Journeyman Street to Huntmar Drive.

As no formal cycling facilities are provided on Huntmar Drive within the vicinity of the proposed development, cyclists are required to share the road with motorists. Cycle tracks separated from vehicular travel lanes by grassed boulevards exist further north, approaching the Huntmar & Campeau roundabout. Grade separated cycle tracks are also provided on both sides of Campeau Drive within the context area, with the exception of the north segment from Journeyman Street to Huntmar Drive. This missing segment is expected to be completed in conjunction with development of the adjacent lands.

3.2.3 Existing Transit Facilities and Service

The following transit routes, operated by OC Transpo, exist within the vicinity of the site:

- **Route #62** provides regular, all-day service between Tunney's Pasture and Stittsville/ Terry Fox, operating on 30-minute headways during weekday peak periods and on weekends.
- **Route #162** provides regular, all-day service on weekends and select service on weekdays between Stittsville and Terry Fox Station, operating on 1 hour headways during the weekday early afternoon and evenings. On Saturdays, service is increased to intervals of 30- to 60-minutes, while Sunday service generally consists of 30-minute headways.
- **Route #261** provides weekday peak period service between Tunney's Pasture and Stittsville Main with 15- to 30-minute headways. Service is provided towards Tunney's Pasture during the weekday morning peak period, and towards Stittsville Main during the weekday afternoon peak period. No service is provided on weekends or off-peak weekday periods.
- **Route #263** provides weekday peak period service between Tunney's Pasture and Stanley's Corners with 15- to 30-minute headways. Service is provided towards Tunney's Pasture during the weekday morning peak period, and towards Stanley's Corners during the weekday afternoon peak period. No service is provided on weekends or off-peak weekday periods.

The nearest bus stops to the proposed development are located at the Campeau Drive & Journeyman Street intersection and provide access to Routes #62 and #162. These stops are located approximately 660m walking distance north of the site and can be accessed via the Tanger Outlets shopping centre.

It should be noted that although the proposed development is located within the Canadian Tire Centre Transit-Oriented Development (TOD) zone, there is presently a lack of formal pedestrian linkages which severely impact the ability of these transit facilities to be accessed by active transportation modes.

Transit maps for the above noted routes are provided in **Appendix B**.

3.2.4 Collision History

A review of historical collision data has been undertaken for the boundary streets with the vicinity of the proposed development. The TIA Guidelines require a safety review if at least six collisions for any one movement or of a discernible pattern, have occurred over a five-year period. **Table 3** below summarizes all reported collisions between January 1, 2019 and December 31, 2024.

Table 3 - Reported Collisions within Vicinity of Proposed Development

LOCATION	# OF REPORTED COLLISIONS
INTERSECTIONS	
Palladium Drive & Highway 417 Westbound On/Off-Ramp	4
Huntmar Drive & Autopark Private / Cyclone Taylor Boulevard	4
SEGMENTS	
Huntmar Drive – Campeau to Autopark Private/ Cyclone Taylor Boulevard	2
Huntmar Drive – Autopark Private & Palladium Drive	2

Based on a preliminary review of the collision history noted above, none of the intersections or road segments listed above experienced 6 or more collisions over the 5-year period. As such, there are no discernible collision patterns at these locations, as defined in the TIA Guidelines.

Detailed collision records are provided in **Appendix C**.

3.3 Planned Conditions

3.3.1 Transportation Network

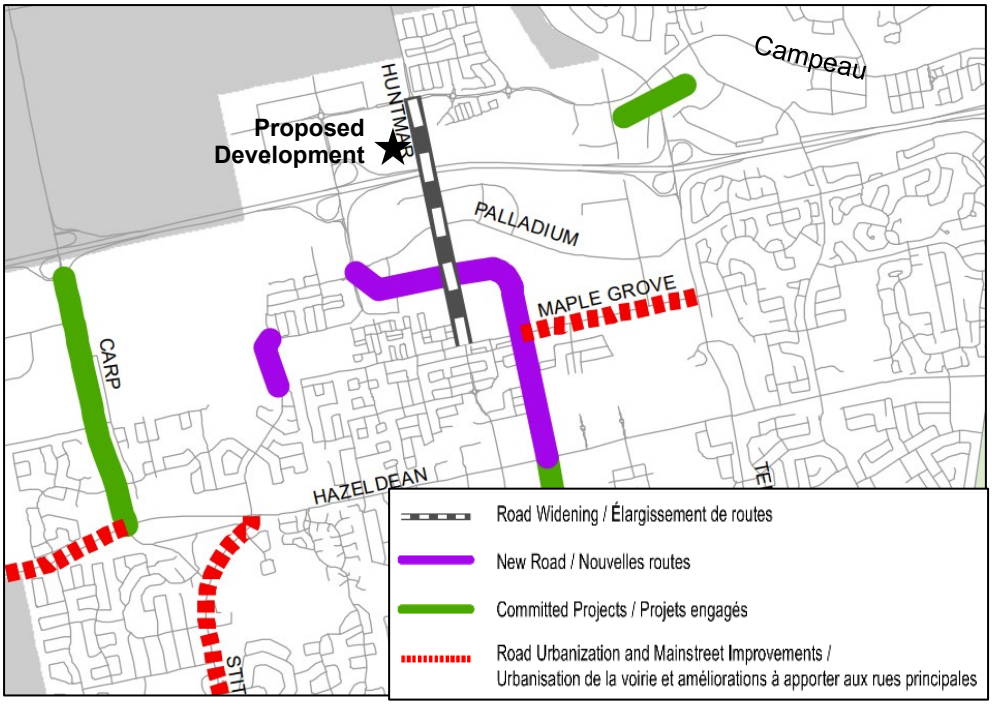
3.3.1.1 Future Road Network Projects

The 2025 Transportation Master Plan (TMP) Part 2 outlines future road network modifications required as 'Priority Road Network' projects. The following projects were noted that may have an impact on area traffic within the vicinity of the site:

- **Robert Grant Extension** – Extend this north-south arterial road from Hazeldean Road to Palladium Drive with a two-lane cross-section. An Environmental Assessment Study has been completed for this project.
- **Huntmar Drive Widening** – Widen Huntmar Drive from two to four lanes between Campeau Drive and Maple Grove Road. An Environmental Assessment Study has been completed for this project.

Figure 1 below illustrates the planned changes to the arterial road network projects in the broader area, as per the 2025 TMP 'Priority Road Network'.

Figure 1 - Future Road Network Projects



Source: 2025 Transportation Master Plan – Map B2 'Road Network - Priority'

3.3.1.2 Future Transit Facilities and Services

The 2025 TMP outlines the future Needs-Based Transit and Priority Transit Network. The O-Train Line 3 Extension from Moodie Station to Hazeldean Station extends service from Kanata to Stittsville. This project is expected to have a significant impact on future travel demand in the vicinity of the proposed development; however, there is no funding allocated for this major infrastructure project at this time.

The Kanata Light Rail Transit Planning and Environmental Assessment Study was completed in November 2018 and details the extension of light rail transit (LRT) facilities from the Stage 2 terminus at Moodie Drive to Hazeldean Road. The facility will follow the north side of Highway 417 before crossing at Huntmar Drive then continuing south adjacent to the future Stittsville North-South Arterial. This facility will include eight stations, including Campeau Station (west of Campeau Drive & Country Glen Way near the future Campeau Drive & Riverchase Drive intersection) and Palladium Station (near Huntmar Drive & Autopark Private/ Cyclone Taylor Boulevard). A new park-and-ride facility with capacity for approximately 250 vehicles will be provided at Palladium Station and new pedestrian/cycling facilities will be provided along the length of the corridor. There is currently no timeline provided for the implementation of this extension.

3.3.1.3 Future Cycling and Pedestrian Facilities

There are no specific cycling or pedestrian facilities planned to be implemented within the vicinity of the proposed development at this time; however, Huntmar Drive is identified as a Cross-Town Bikeway in the Urban Cycling Network included within the 2025 TMP.

3.3.2 Future Adjacent Developments

The City of Ottawa Transportation Impact Assessment (TIA) Guidelines specify that all significant developments proposed within the surrounding area which are likely to occur within the study's horizon year must be identified and taken into consideration in the development of future background traffic projections.

Kanata West Business Park

In December 2011, a Community Transportation Study was prepared for the Kanata West Business Park by Delcan (now Parsons). As the overall Business Park continues to evolve over time, 12 Addenda to the original study have been filed with the City for each of the initial site plan development applications. Subsequent to the CTS, the road network adjacent to Tanger Outlets was reconstructed with a long-term vision to accommodate the future build-out of the Kanata West Business Park. Ongoing monitoring of the trip generation for the active development sites within the Kanata West Business Park has reported that recent traffic projections remain consistent with the original Community Transportation Study.

Figure 3 below illustrates the significance of the area's transformation, complete with an expanded road network. It should be noted that this figure illustrates an early concept plan for the subject site prior to its acquisition by Ironclad Developments.

Figure 2 - Kanata West Business Park

Source: www.kanatawest.ca

There are currently three development applications of significance in the vicinity of the proposed development, most of which are located within the Kanata West Business Park:

- **195 Huntmar Drive** is a proposed mixed-use development south of Highway 417 and west of Huntmar Drive consisting of the following uses:
    - 155 single-family homes

  - 418 townhome units
  - 13,747 square metres of commercial uses
  - 41,948 square metres of general office uses
  - 8,000 square metres of automobile uses

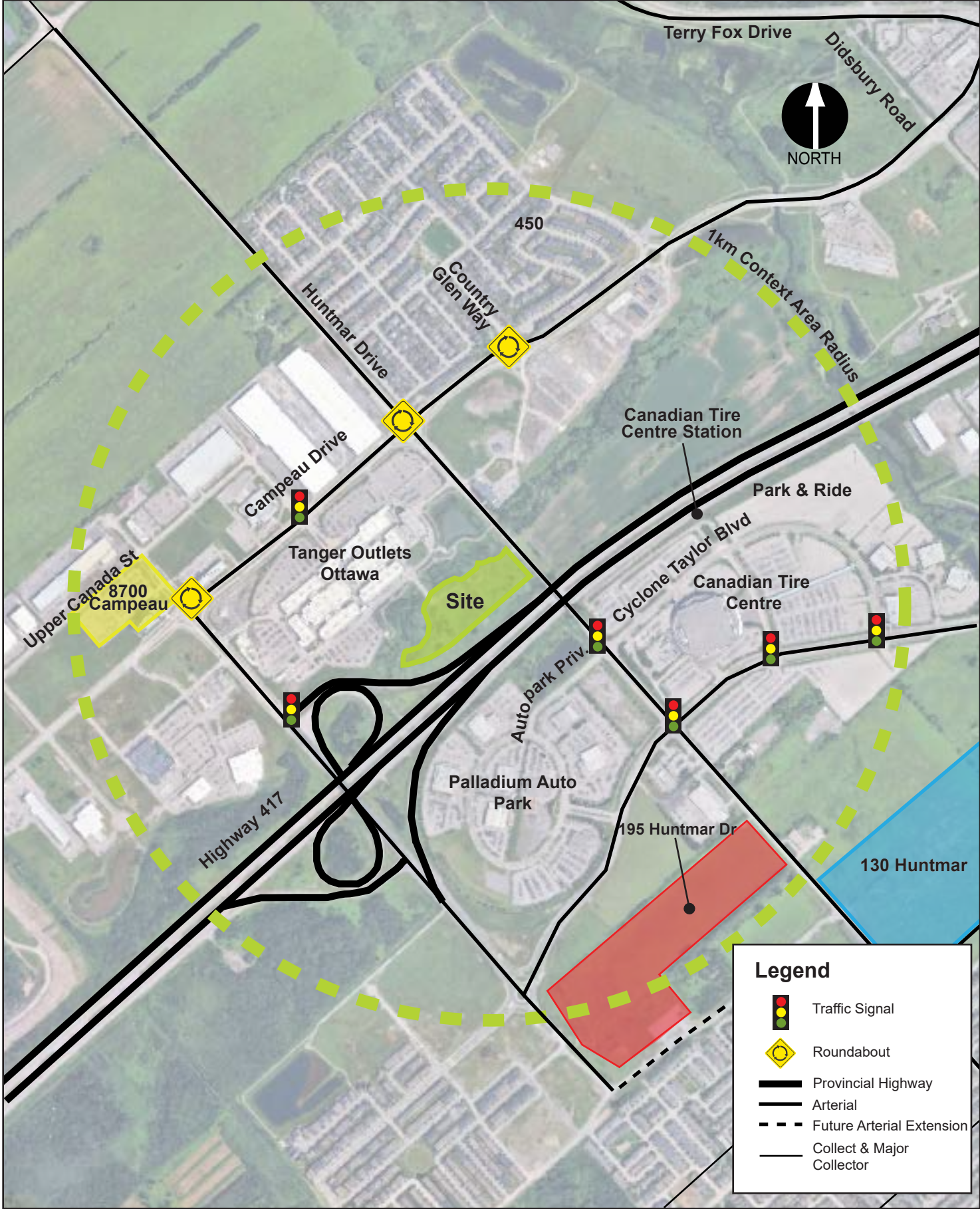
  A double lane roundabout has been constructed on Palladium Drive between the Highway 417 Eastbound Ramp Terminal intersection and the Palladium Drive & Huntmar Drive intersection to provide access to this development.

- **8700 Campeau Drive** is a proposed five-storey office building with a gross floor area of 150,000 square feet (13,940 square metres).
- **130 Huntmar Drive** is a proposed mixed-use development at the northeast corner of Maple Grove Road & Huntmar Drive consisting of the following land use types, including retail land uses, institutional (i.e. school), as well as low-density residential.

Adjacent developments are illustrated in **Exhibit 3** below.

3.3.3 Network Concept Screenline

A network screenline analysis is not expected to be necessary for this development, as the trip generation is anticipated to only slightly exceed the threshold prescribed in the TIA Guidelines of 200 person-trips or more during the weekday peak hours. Detailed trip generation calculations will be provided in the Forecasting section of the report.



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319 Huntmar Drive
Transportation Impact Assessment

Exhibit 5:
Adjacent Developments

PROJECT No. 30315381

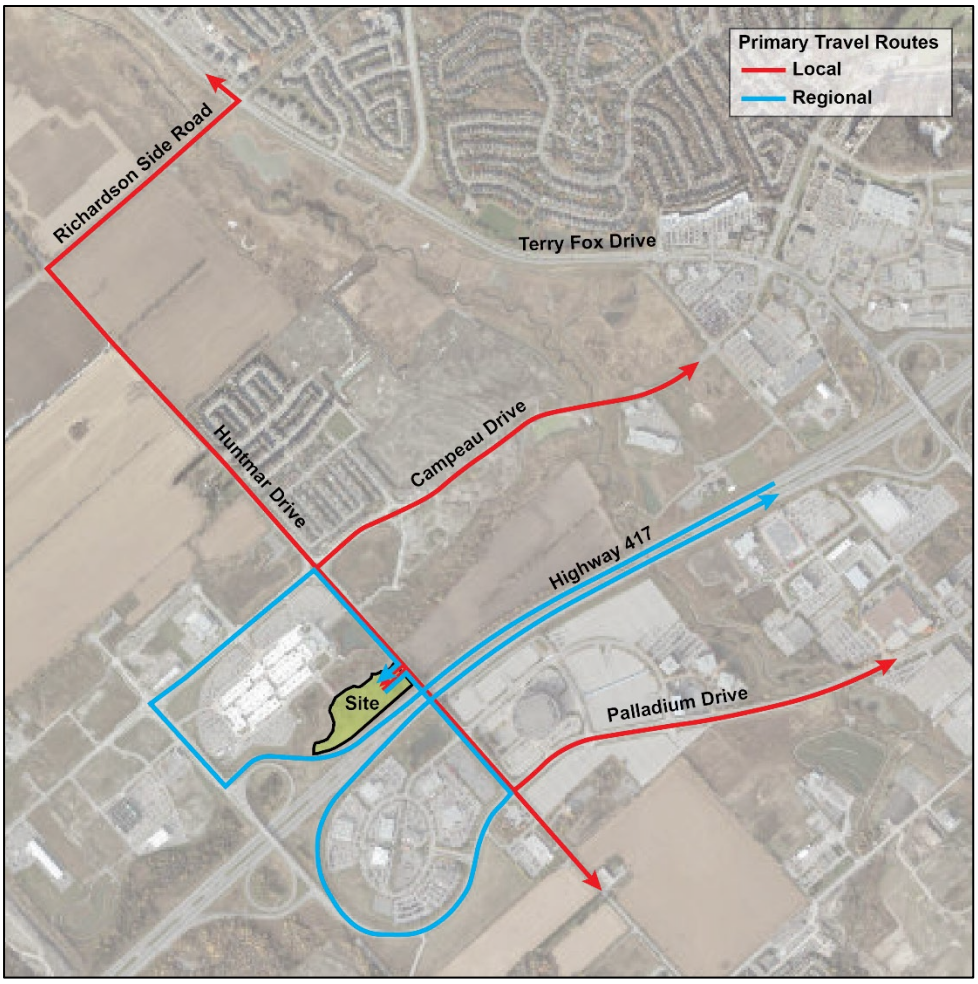
SCALE: 100m 0m 200m

3.4 Study Area

The information presented thus far provides a base level of information for the development's context. The Campeau Drive extension is expected to be fully implemented prior to the build-out of the proposed development and will provide an additional arterial access route to help disperse vehicular travel demands within the adjacent road network.

A review of potential travel routes to/from the proposed development has been undertaken. Based on the adjacent road network, the majority of 'regional' trips to/from central Ottawa will contribute additional traffic to non-critical right-turn movements at many of the key junctions within the study area, thereby having minimal impacts to these intersections. Trips within the local communities of Kanata and Stittsville will disperse among several routes, thereby mitigating impacts to study area intersections, as indicated in **Figure 5**. It is anticipated that the key impacts of this development will be at the proposed site access on Huntmar Drive.

Figure 3 - Primary Travel Routes



With consideration of the above, a reduced study area including the following intersections is proposed:

- Huntmar Drive & Site Access (unsignalized)
- Huntmar Drive & Autopark Private / Cyclone Taylor Boulevard (signalized)

- Palladium Drive & Highway 417 Westbound Ramp Terminal (signalized)

The Palladium Drive & Huntmar Drive intersection was not included in the study area, as the majority of site-generated traffic contributions at this intersection are expected to be on the southbound right-turn, a channelized movement that is yield-controlled and therefore not expected to govern the intersection's capacity. The preliminary trip generation and distribution exercise indicates that the remainder of movements at this intersection will experience nominal increases in traffic and as a result are not expected to have a significant impact on its traffic operations either.

The road network adjacent to Tanger Outlets was recently expanded to accommodate the future build-out of the Kanata West Business Park and has been established in such a way that it is fully inclusive of all modes of travel. As such, it is reasonable to assume that the proposed development, being among the earlier phases of development within the area, shall be easily accommodated on this portion of the road network. Furthermore, the preliminary trip generation and distribution exercise indicates that the majority of site-generated traffic contribution will be to the right-turn slip lanes or through lanes on Campeau Drive. The Campeau Drive & Huntmar Drive may experience nominal traffic increases on the other intersection movements, however, these increases are not expected to have a significant impact on traffic operations given that the intersection was designed to accommodate the full build-out of the Kanata West Business Park. As such, the three Campeau Drive intersections have also been excluded from the study area.

The specific distribution of site-generated traffic will be discussed further in the Forecasting component of the TIA.

Multi-Modal Level of Service (MMLOS) will be conducted for the two signalized intersections. Unsignalized intersections are exempt from this analysis, as no methodology currently exists for evaluating MMLOS for these types of intersection. Additional MMLOS analysis will be conducted for the segment of Huntmar Drive adjacent to the proposed development. The analysis conducted as part of this study follows the City of Ottawa MMLOS Guidelines, most recently published in 2025.

The remainder of the TIA will primarily focus on site-specific impacts, integration with its boundary streets, including a functional review of the site access geometry and intersection control, on-site drive aisle requirements to accommodate proposed design vehicles and a review of the site's parking and loading requirements.

3.5 Time Periods

The proposed development consists solely of residential land uses. As such, traffic generated during the weekday morning and afternoon peak hours is expected to result in the most significant impact to traffic operations on the adjacent road network in terms of combined development-generated and background traffic. These two time periods will therefore be considered for operational analysis in this study.

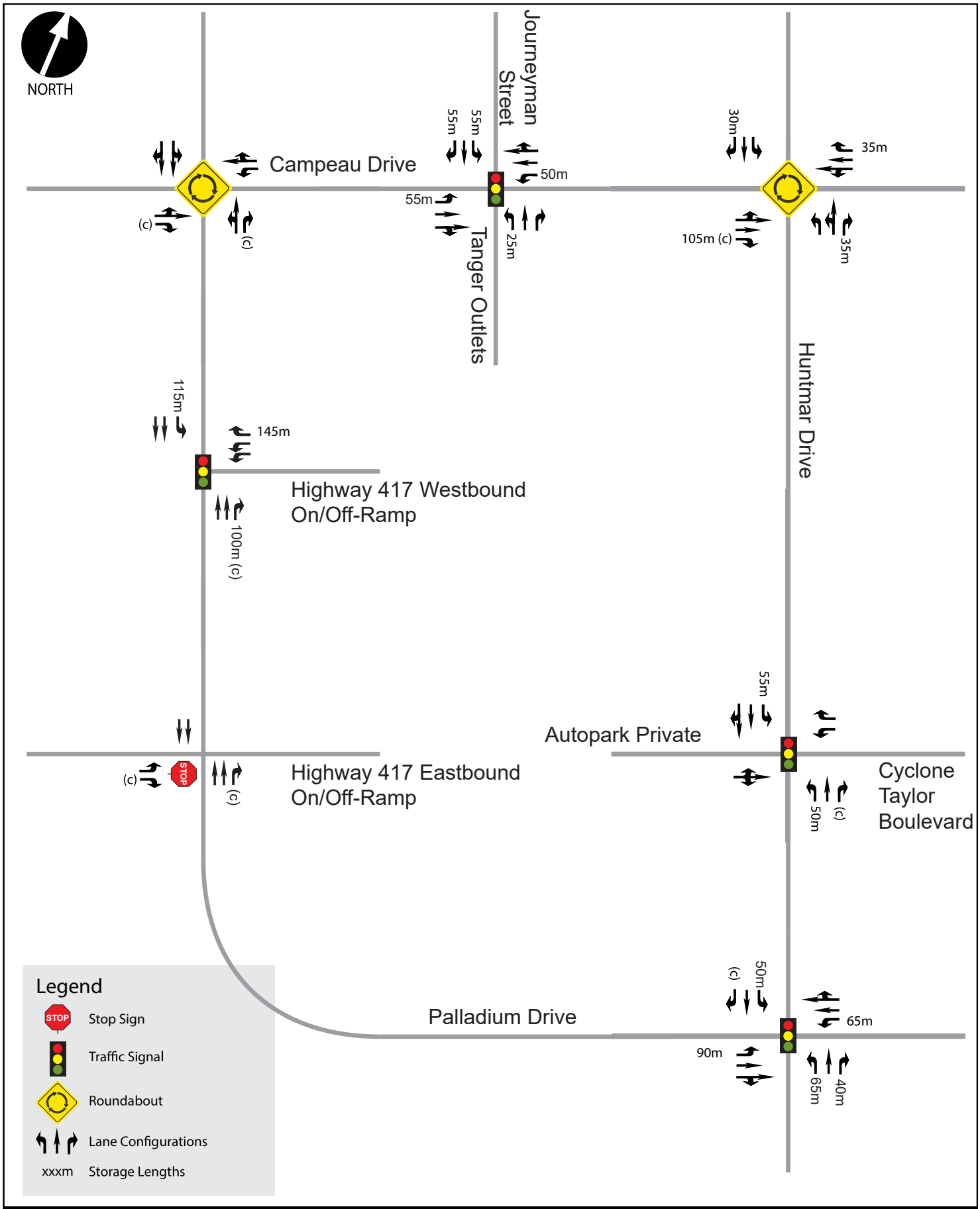
3.6 Existing Lane Configurations and Traffic Volumes

Weekday morning and afternoon peak hour turning movement counts were obtained from the City of Ottawa and Ontario Ministry of Transportation (MTO):

- Huntmar Drive & Autopark Private/ Cyclone Taylor Boulevard (City of Ottawa, December 2025)
- Palladium Drive & Highway 417 Westbound Ramp Terminal (City of Ottawa, February 2026)

A growth rate was applied to the above noted turning movement counts, where required, to approximate existing traffic volumes. Justification of background traffic volumes is discussed further in the Forecasting section of this TIA.

Existing lane configuration and intersection control are illustrated in **Exhibit 4**, while peak hour traffic volumes representative of existing conditions are shown in **Exhibit 5**. Weekday morning and afternoon peak hour turning movement counts have been provided in **Appendix D**.



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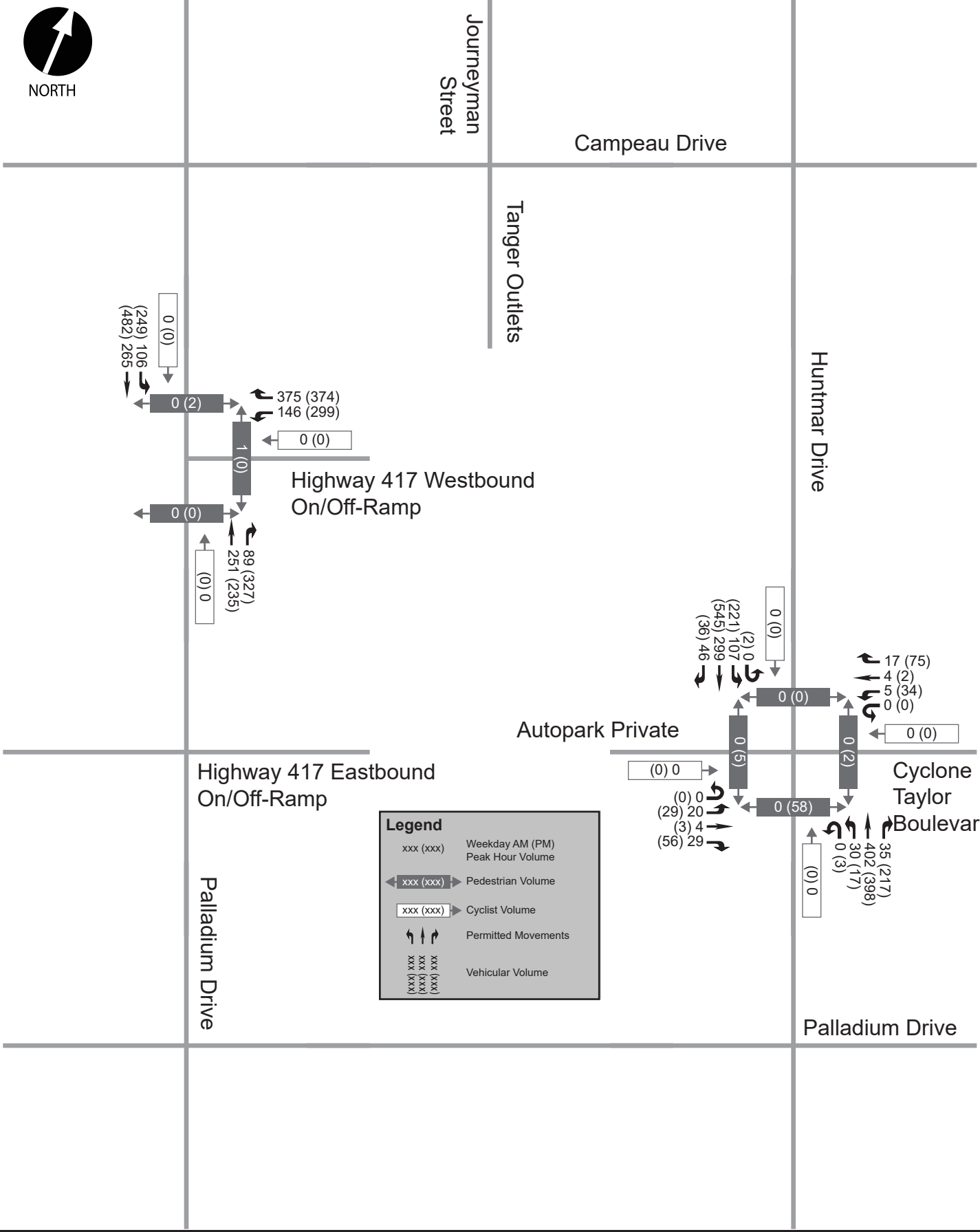
319 Huntmar Drive
Transportation Impact Assessment

Exhibit 4:
Existing Lane Configurations and Intersection Control

PROJECT No. 30315381

SCALE: 100m 0m 200m



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319 Huntmar Drive
Transportation Impact Assessment

Exhibit 5: Existing Traffic

PROJECT No. 30315381

SCALE: N.T.S.

3.7 Analysis Years

Based on the anticipated build-out year of the proposed development, the following two analysis years will be considered in this TIA:

- Year 2029 – Full Build-out of the Proposed Development
- Year 2034 – 5 Years Beyond Full Build-out / Occupancy

3.8 Exemptions Review

The TIA Guidelines provide exemption considerations for elements of the Design Review and Network Impact components. **Table 4** summarizes the TIA modules that are not applicable to this study.

Table 4 - Exemptions Review

TIA MODULE	ELEMENT	EXEMPTION CONSIDERATIONS	REQUIRED
DESIGN REVIEW COMPONENT			
4.1 Development Design	4.1.2 Circulation and Access	• Only required for site plans	✓
	4.1.3 New Street Networks	• Only required for plans of subdivision	✗
4.2 Parking	4.2.1 Parking Supply	• Only required for site plans	✓
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	✗
NETWORK IMPACT COMPONENT			
4.5 Transportation Demand Management	All Elements	• Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time	✓
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	• Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds	✗
4.8 Network Concept	n/a	• Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by established zoning	✗

4 Forecasting

4.1 Development Generated Traffic

4.1.1 Trip Generation Methodology

Peak hour residential site-generated traffic volumes were developed using the 2020 TRANS Trip Generation Manual. The TRANS trip generation rates are based on blended rates derived from the 49 trip generation studies undertaken between 2008 and 2012, the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition) and the 2011 TRANS O-D Travel Survey. Separate peak period person-trip generation rates were developed for single-detached housing, low-rise multifamily housing (i.e. two storeys or less) and high-rise multifamily housing (i.e. three storeys or more). Site-generated peak period person-trips were estimated using these rates and subsequently subdivided based on representative mode share percentages applicable to the study area. Mode-specific adjustment factors were then applied to these peak period person-trips to determine the number of peak hour vehicle, passenger, transit, cycling and pedestrian trips.

Local mode share targets were based on the 2020 TRANS Trip Generation Summary Report which provides blended mode shares based on the 2011 TRANS Origin-Destination (O-D) Survey for select land uses for each of the Traffic Assessment Zones (TAZs) in the O-D Survey. The proposed development is located within the Kanata - Stittsville TAZ, which has been referenced for this study.

4.1.2 Trip Generation Results

4.1.2.1 Vehicle Trip Generation

Weekday peak hour vehicular traffic volumes were determined using the trip generation rates published in the 2020 TRANS Trip Generation Study Report. Relevant extracts from this study are provided in **Appendix E**.

The base vehicular trip generation for the proposed development has been summarized in **Table 5** below.

Table 5 - Weekday Peak Period Person-Trip Results

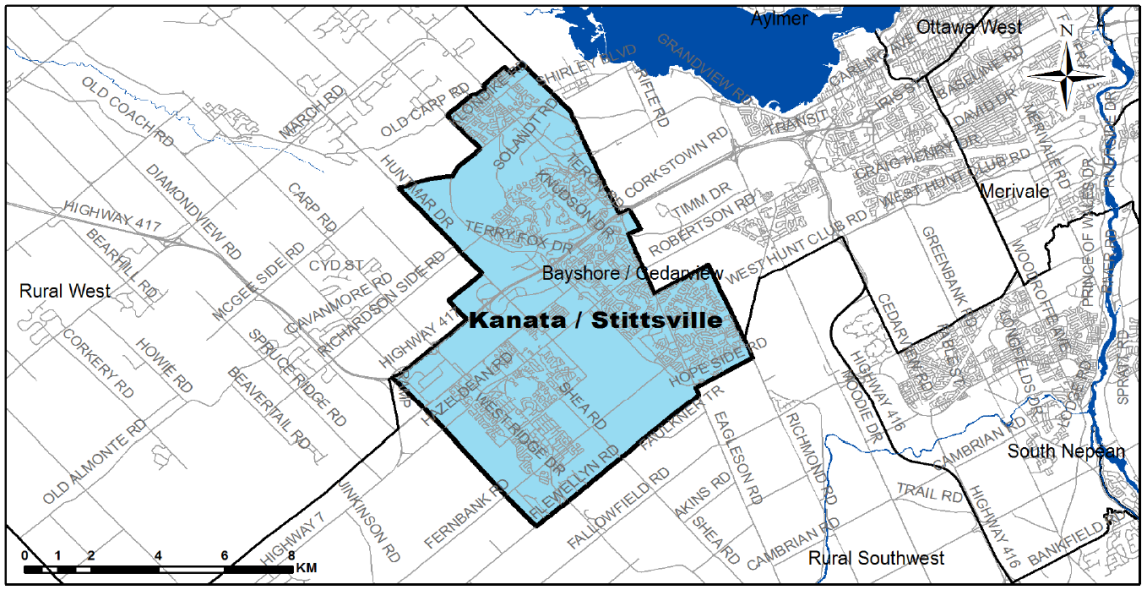
LAND USE	SIZE	PERIOD	GENERATED TRIPS (VPH)		
			IN	OUT	TOTAL
Multi-Unit (High-Rise)	472 units	AM	117	261	378
		PM	246	179	425

Notes: vph = vehicles per hour

4.1.2.2 Mode Share Proportions

The 2020 TRANS Origin-Destination (O-D) Survey provides approximations of the existing modal share within the Kanata / Stittsville Traffic Assessment Zone (TAZ). The extents of the Kanata / Stittsville TAZ are illustrated in **Figure 6** below.

Figure 4 – Kanata / Stittsville TAZ



Source: 2011 TRANS O-D Survey

The proposed weekday morning and afternoon mode share targets were derived using a weighted averages of mode share distributions from the Kanata / Stittsville TAZ.

The existing mode share and the mode share targets of the proposed development are outlined **Table 6** below.

Table 6 - Proposed Mode Share Targets

TRAVEL MODE	EXISTING MODE SHARE FROM 2020 TRANS [1]		PROPOSED MODE SHARE TARGETS	
	AM	PM	AM	PM
Auto Driver	43%	55%	43%	55%
Auto Passenger	26%	19%	26%	19%
Transit	28%	21%	26%	20%
Cycling	0%	0%	1%[2]	1%[2]
Walking	4%	5%	4%	5%
Total	**101%**	**100%**	**100%**	**100%**

Notes:

[1] Mode share values referenced for Kanata/Stittsville TAZ with 'High-Rise' Residential (i.e. 3+ storeys).

[2] Cycling mode share increased to reflect a non-zero value during both weekday peak hours.

4.1.2.3 Trip Reduction Factors

Deduction of Existing Development Trips

The subject site is currently an undeveloped greenfield site. As such, no deduction of existing traffic volumes from the adjacent road network will be undertaken as part of this study.

Pass-by Traffic

As the proposed development is entirely composed of residential land uses, no pass-by trip reductions are required.

Synergy/ Internalization

Synergy or internalization is typically applied to developments with two or more land uses to prevent double-counting of trips with multiple intermediate destinations within the same site. As the proposed development is entirely composed of residential land uses, no internalization reductions can be applied.

4.1.2.4 Trip Generation by Mode

The mode share targets outlined in previously in Section 4.1.2.2 were segregated by travel mode for the peak periods, as summarized in **Table 8** below.

Table 7 – Peak Period Person-Trips by Mode

MODE	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Auto Driver	50	112	162	135	98	233
Auto Passenger	30	68	98	47	34	81
Transit	30	68	98	49	36	85
Cycling	1	3	4	2	2	4
Walking	5	10	15	12	9	21
Total	**116**	**261**	**377**	**245**	**179**	**424**

4.1.2.5 Peak Hour Trip Generation

The peak period to peak hour conversion factors for TRANS trip generation rates vary by trip type and are applied to the peak period trips resulting from the mode share distribution. The conversion factors utilized are indicated in **Appendix E**.

The results after applying the appropriate conversion factors have been summarized in

Table 8 - Peak Hour Trip Generation

MODE	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Auto Driver	24	54	78	60	43	103
Auto Passenger	15	33	48	21	15	36
Transit	17	37	54	23	17	40

Cycling	1	2	3	1	1	2
Walking	3	6	9	6	5	11
Total	**60**	**132**	**192**	**111**	**81**	**192**

4.1.3 Trip Distribution and Assignment

Route selection and weighting for the proposed development distribution was derived based on a review of travel patterns from Kanata / Stittsville Traffic Assessment Zone (TAZ), the configuration of the existing and future road network within the vicinity of the site and the concentration of employment nodes within the TAZ. Approximately 54% of trips originating within the Kanata / Stittsville TAZ remain within the TAZ, therefore site-generated traffic was separated into 'local' and 'regional' traffic and assigned different distributions.

Based on the distribution of employment and commercial nodes within the TAZ, 'local' traffic was distributed as follows:

- 40% to/from the Northeast
    - 15% to/from the Northeast via Huntmar Drive
    - 10% to/from the Northeast via Highway 417
    - 15% from the Northeast via Campeau Drive
    - 15% to the Northeast via Palladium Drive
- 45% to/from the East
    - 45% from the East via Campeau Drive
    - 45% to the East via Palladium Drive
- 15% to/from the Southwest
    - 15% to/from the Southwest via Huntmar Drive

All site-generated 'regional' traffic was distributed to/from the east via Highway 417. All outbound traffic was assumed to use Huntmar Drive and Palladium Drive to take the Highway 417 eastbound on-ramp. All inbound traffic was assumed to come from the Highway 417 westbound off-ramp then take Palladium Drive, Campeau Drive and Huntmar Drive to travel to the proposed development.

Utilizing the estimated number of new auto trips and applying the above distributions, future site-generated traffic volumes are illustrated for each of the study area intersections in **Exhibit 6** below.

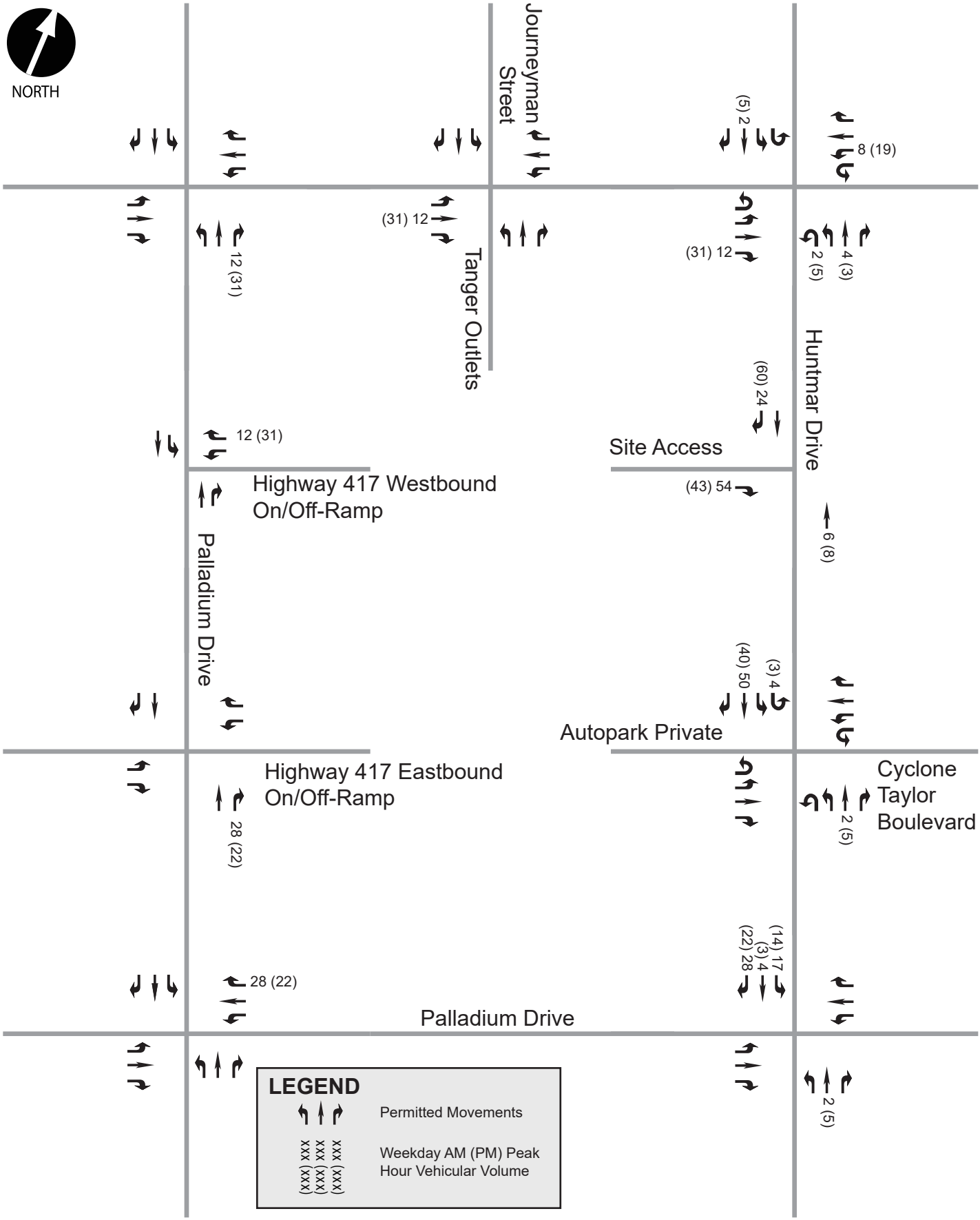


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Exhibit 6:
Site Generated Traffic

PROJECT No. 30315381

SCALE: N.T.S.

4.2 Background Network Traffic

4.2.1 Changes to the Background Transportation Network

There are no planned changes to the transportation network that are anticipated to occur within the timeframe of this study.

4.2.2 General Background Growth Rates

The background growth rate is intended to represent any regional growth from outside the study area that will travel along the adjacent road network. Consistent with adjacent development TIAs, a 1% background traffic growth rate was applied to through movements on the arterial road network as well as all movements at arterial-to-arterial intersections.

4.2.3 Other Area Development

Future adjacent developments in the vicinity of the proposed development have been identified previously in the Scoping section of this report. **Table 9** below summarizes the land use details and expected build-out year of these future adjacent developments.

The targeted build-out dates identified are those stated in the respective studies.

Table 9 - Future Adjacent Developments

DEVELOPMENT	LAND USE	EXPECTED BUILD-OUT YEAR
195 Huntmar Drive [1]	• 78 single-family homes • 209 townhome units • ~13,747 sqm of commercial land uses • ~41,948 sqm of general office land uses • ~8,000 sqm of automobile land uses	2024[2]
8700 Campeau Drive	• ~13,940 sqm office building	2021[2]
130 Huntmar Drive	• ~2,790 sqm of retail land uses • ~23,941 sqm of school land use • ~10,655 sqm of park land use • 79 single family homes • 162 townhomes • 512 stacked townhomes	2024[2]

Notes:

[1] – At of the time of this study, this development has been partially constructed. A 20% reduction factor has been applied.

[2] – Assume full build-out by 2029 to coincide with build-out of the subject site.

Traffic generated by adjacent developments is also expected to be impacted by the Campeau Drive extension as it offers a convenient alternative route east. None of the TIAs completed in support of the above developments took into consideration the Campeau Drive extension therefore adjustments to adjacent-development-generated traffic are required to account for this extension. The Campeau Drive Extension Roundabout Analysis Preliminary Design report by Stantec (December 2012) estimated that for developments west of Huntmar Drive 15% of site-generated traffic would use the Campeau Drive extension and for developments east of Huntmar Drive 40% of site-generated traffic would

use the Campeau Drive extension. Adjacent-development-generated traffic has therefore been adjusted accordingly for all adjacent developments north of Highway 417.

4.3 Demand Rationalization

The purpose of this section is to rationalize future travel demands within the study area to account for potential capacity limitations in the transportation network and its ability to effectively accommodate the additional demand generated by a new development.

4.3.1 Description of Capacity Issues

There are no documented capacity issues at any of the study area intersections. A review of intersection capacity analysis results for adjacent development TIAs indicates that the Highway 417 westbound ramp terminal intersection is expected to operate at acceptable levels of service (i.e. LOS 'E' or better) under existing and future traffic conditions. None of the adjacent development TIAs undertook intersection capacity analysis of the Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private intersection, therefore, it is not known whether any capacity issues exist at this location.

4.3.2 Adjustment to Development-Generated Demands

Development-generated demands were determined based on travel patterns for the Ottawa East TAZ in the O-D Survey. No alternations were made to the mode share beyond the use of a blended rate, which considered both internal trips (i.e. within the TAZ), as well as inter-zonal trips.

4.3.3 Adjustment to Background Network Demands

As prescribed in the TIA Guidelines, the effects of peak-hour spreading have been considered in in future analysis years of this study. It is anticipated that as traffic volumes continue to gradually increase, traffic volumes will have a natural tendency to be more evenly distributed across the peak hour (PHF = 1.0) and eventually increase demands in the shoulders of the peak as well. The impacts of peak hour spreading are accounted for in the Synchro modelling, completed as part of the Analysis component of this study.

As no specific capacity issues have been identified through previous studies, no further adjustments to background network demands are necessary. As discussed previously in Section 4.2, the Campeau Drive extension is expected to result in a redistribution of traffic throughout the study area and has been taken into account in the development of background traffic volumes.

4.4 Traffic Volume Summary

4.4.1 Future Background Traffic Volumes

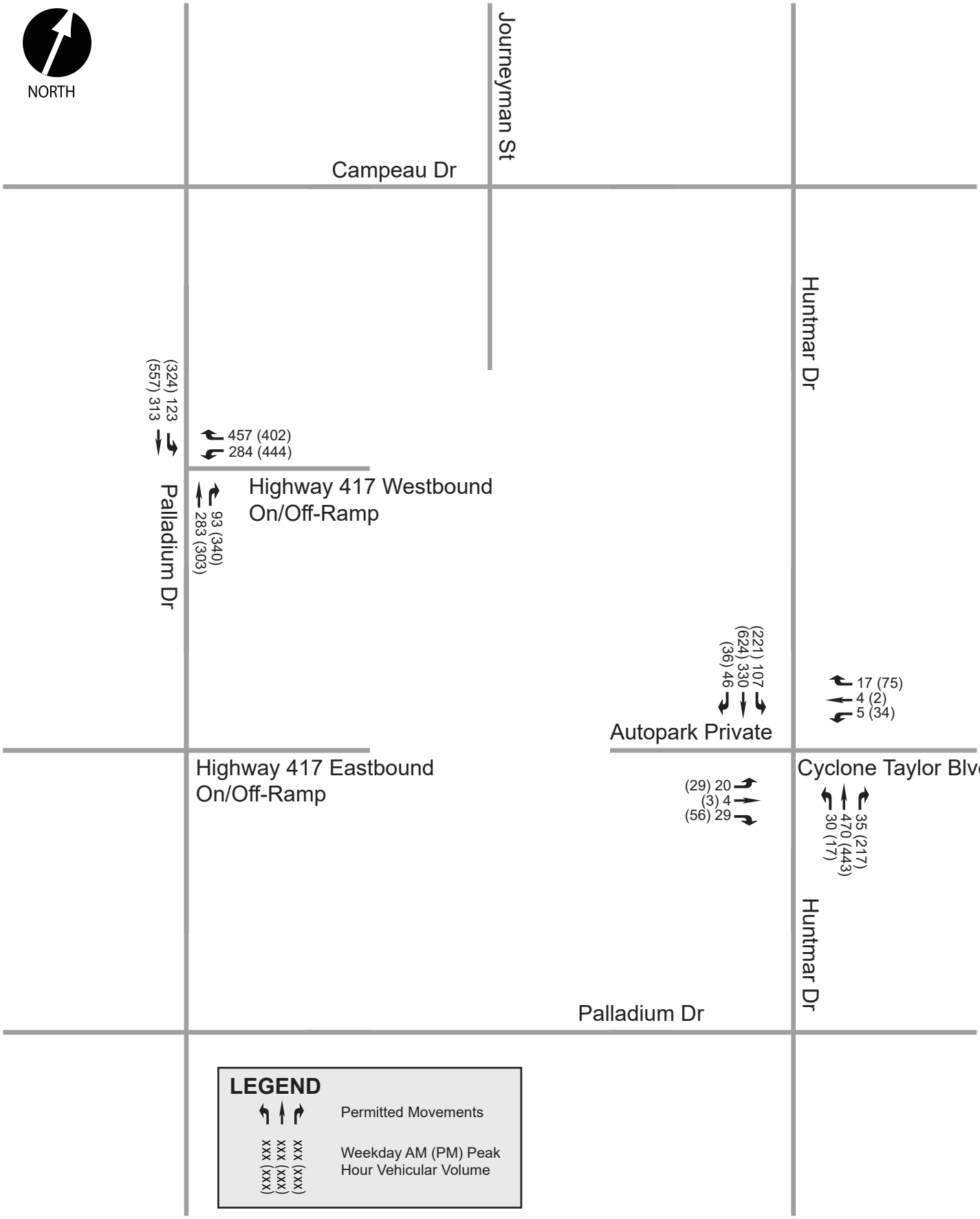
Future background traffic volumes were derived by applying a growth rate to existing traffic volumes, superimposing these volumes with future adjacent development volumes and applying adjustment factors in order to account for the impact of the Campeau Drive extension.

Exhibit 7 and **Exhibit 8** below presents the future background traffic volumes anticipated for the 2029 and 2034 analysis years, respectively.

4.4.2 Future Total Traffic Volumes

Future total traffic volumes have been established by combining the site-generated traffic volumes with the future background traffic volumes.

Exhibit 9 and **Exhibit 10** below presents the future total traffic volumes anticipated for the 2029 and 2034 analysis years, respectively.



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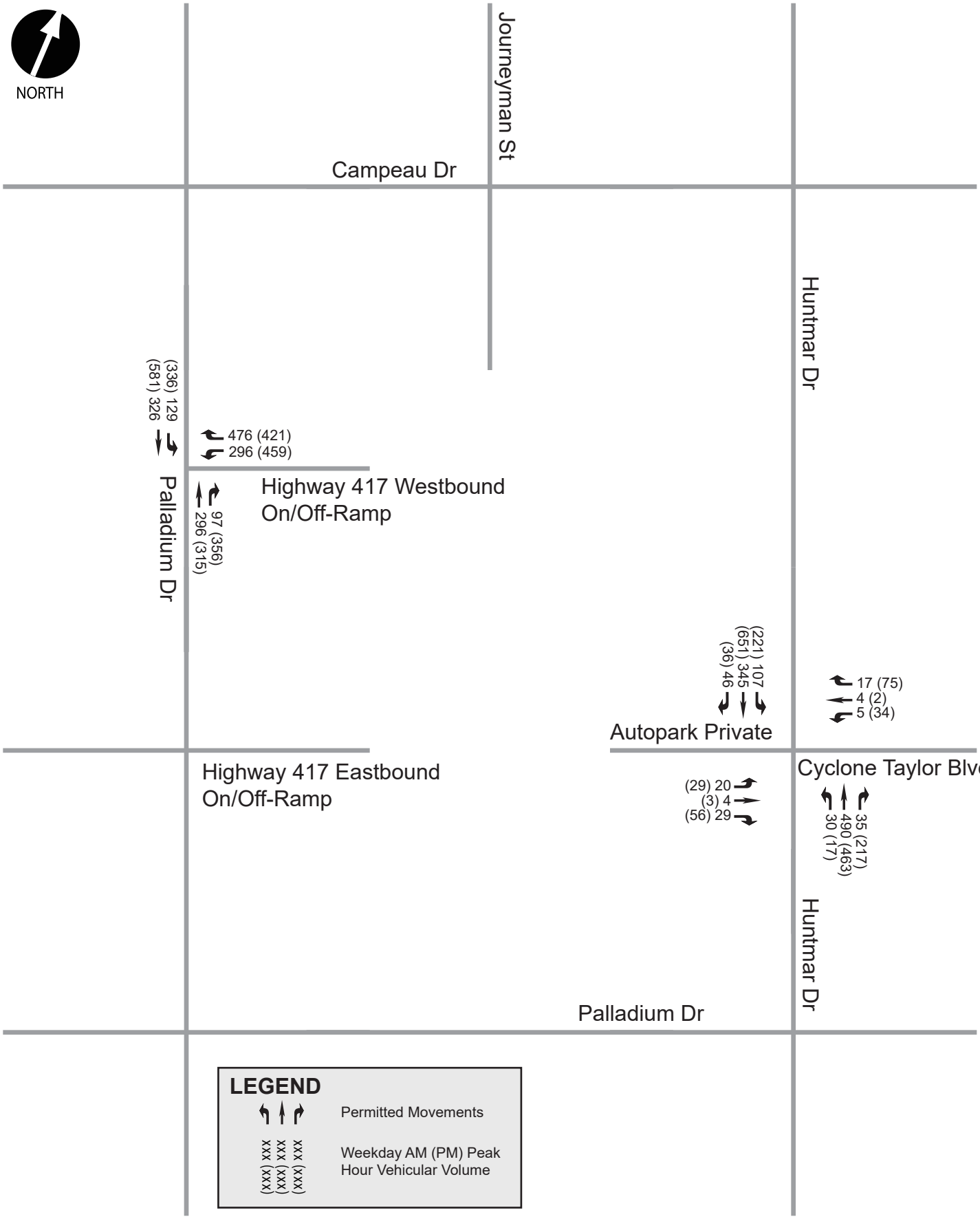
319 Huntmar Drive
Transportation Impact Assessment

Exhibit 7:
Future (2029) Background Traffic

PROJECT No. 30315381

SCALE: N.T.S.



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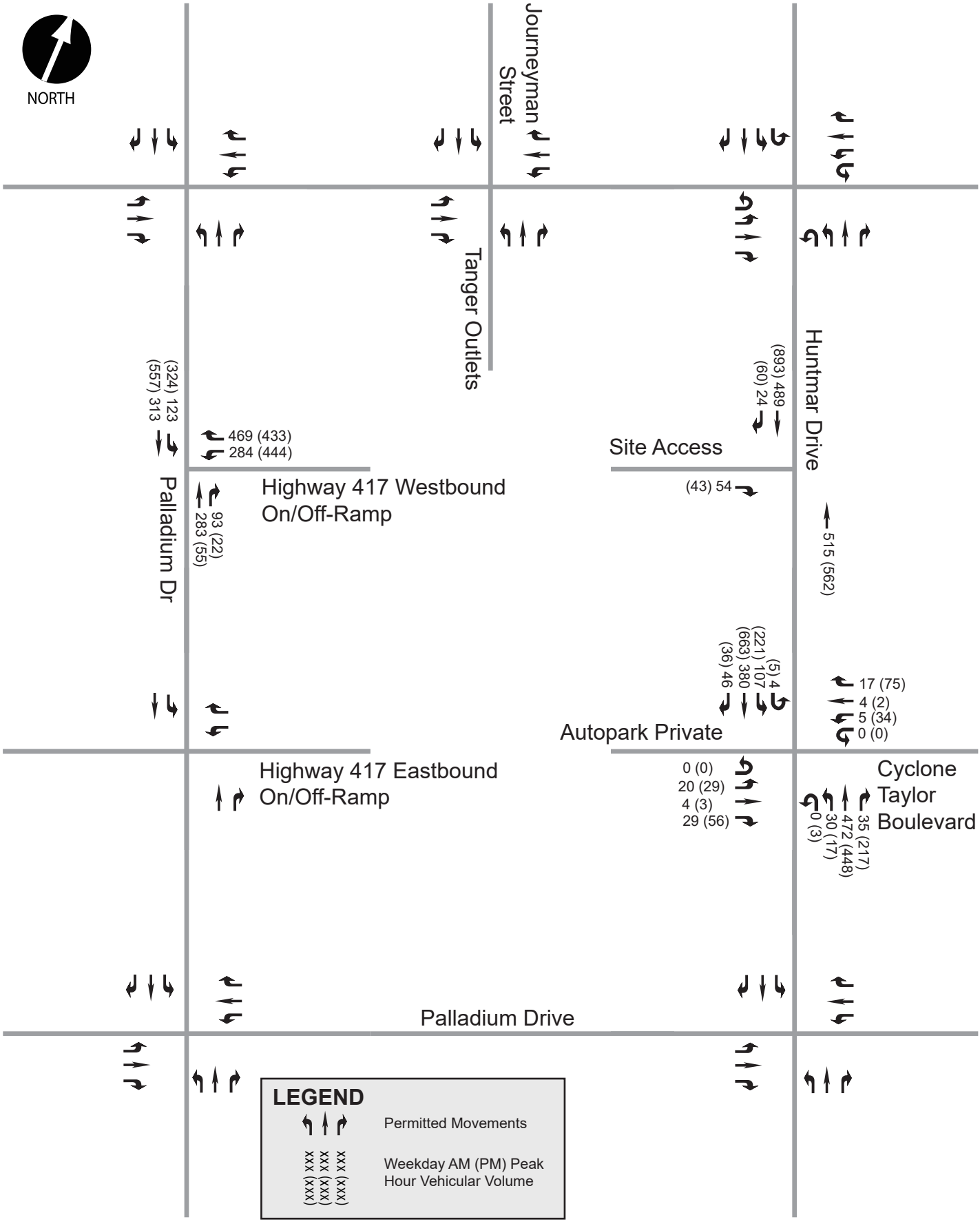
319 Huntmar Drive
Transportation Impact Assessment

Exhibit 8:
Future (2034) Background Traffic

PROJECT No. 30315381

SCALE: N.T.S.



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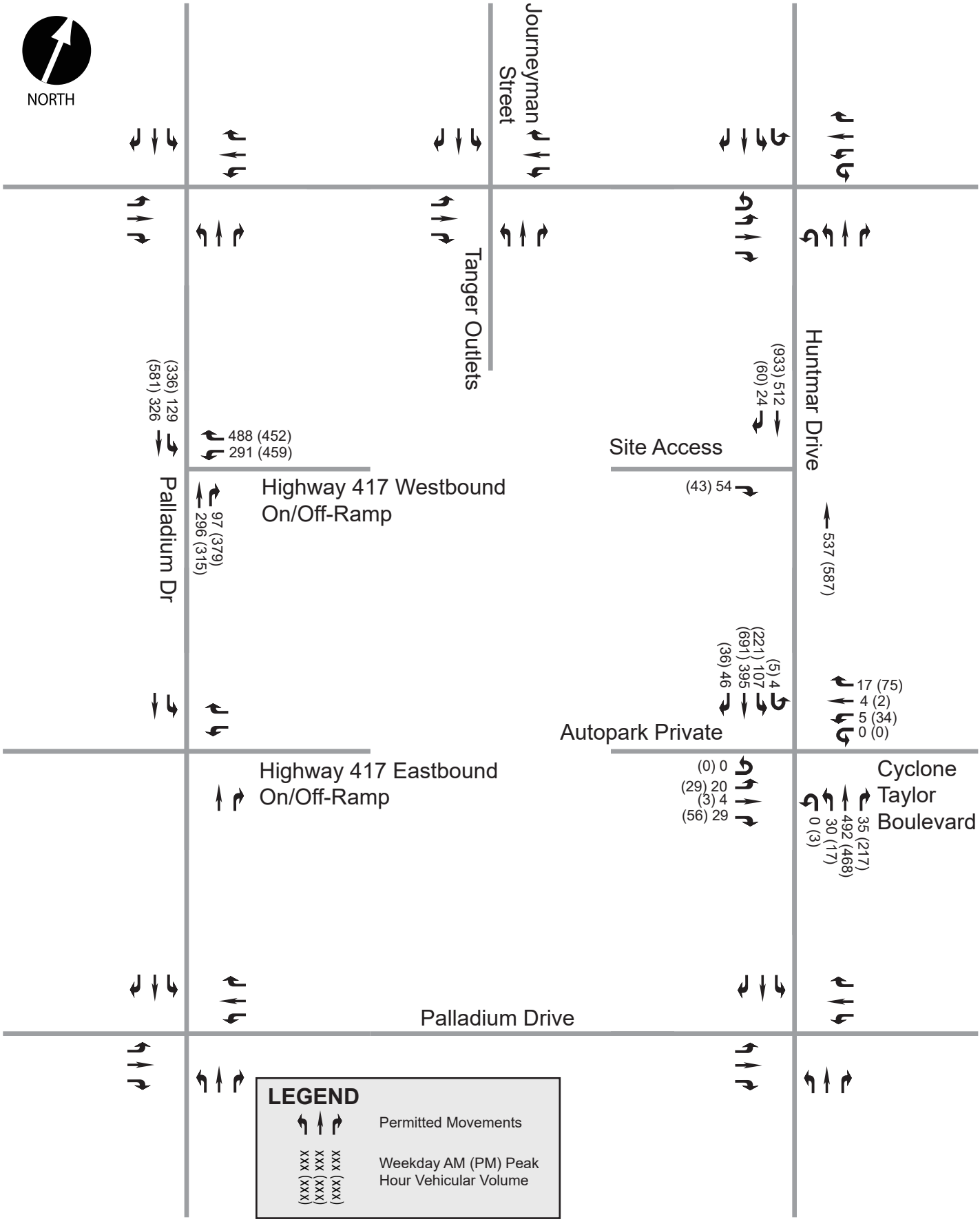
319 Huntmar Drive
Transportation Impact Assessment

Exhibit 9:
Future (2029) Total Traffic

PROJECT No. 30315381

SCALE: N.T.S.



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319 Huntmar Drive
Transportation Impact Assessment

Exhibit 10:
Future (2034) Total Traffic

PROJECT No. 30315381

SCALE: N.T.S.

5 Analysis

5.1 Development Design

5.1.1 Design for Sustainable Modes

For consistency with the City of Ottawa's Urban Design Guidelines and transportation policies, new developments shall provide safe and efficient access for all users, while creating an environment that encourages walking, cycling and transit use.

The proposed development is located adjacent to Tanger Outlets and is within the Kanata West Business Park which provide numerous amenities within a short walking distance of the site. Exclusive pedestrian and cycling facilities have been provided on both Palladium Drive (north of Highway 417) and Campeau Drive, and similar facilities are expected to be provided on Huntmar Drive following the four-lane widening. Shared pedestrian and cycling facilities will ultimately be provided for by the City adjacent to the future extension of the Confederation Line.

The walking distances from the front doors of the proposed apartment buildings to the transit stops at the Campeau Drive & Journeyman Street intersection range from 585m to 685m. Overall walking time to the transit stops will therefore range from 7.3 to 8.6 minutes which is in excess of the 5-minute walking distance transit service coverage standard. Although slightly in excess of the service coverage standard, it should be noted that the walking route to the proposed development will be through the Tanger Outlets shopping centre providing a pleasant pedestrian environment with a variety of shops and services along the way. It is expected that transit service along Huntmar Drive may be expanded following the four-lane widening which will reduce walking distance to transit for residents.

Traffic calming features will be implemented throughout the site to break up long drive aisles within the parking areas to facilitate a safer pedestrian environment. Extensive on-site pedestrian facilities will also be provided to provide a safe and comfortable environment for pedestrians to travel to/from buildings and the surrounding transportation network, including sidewalks on both sides of the internal connection with Tanger Outlets. There is presently no active transportation infrastructure on Huntmar Drive adjacent to the site, however pedestrian facilities are provided at the site access to provision for future upgrades to the roadway.

The TDM-Supportive Development Design and Infrastructure Checklist was completed and is provided in **Appendix F**. This checklist identifies specific measures that are being considered in association with the proposed development to offset the vehicular impact on the adjacent road network. Notable measures that are being considered are:

- Orienting building entrances to minimize walking distances to sidewalks and transits;
- Designing roads for 30 km/h operating speeds;
- Providing wayfinding signage;
- Providing protected and sheltered bicycle parking within the parking garage;
- Providing a permanent bike repair station; and
- Providing a designated pick-up/drop-off area.

Additionally, a carshare program may be provided pending interest from a car share provider and demand by residents.

5.1.2 Circulation and Access

All site-generated traffic will access the proposed development via a two-way right-in/right-out private approach on Huntmar Drive. An internal roadway connection will also be provided between the subject site and the adjacent Tanger Outlets shopping centre. The surface drive aisles and the underground parking facility drive aisles will be 6.0m wide, in accordance with the Zoning Bylaw.

The vehicle turning templates for a garbage truck accessing the waste collection areas for each building and a fire truck navigating the fire route are provided in **Appendix G**.

5.1.3 New Street Networks

Not Applicable: The New Street Networks element is exempt from this TIA, as defined in the study scope. This element is not required for development applications involving site plans. It should be noted, however, that a primary east-west internal drive aisle has been designed as an internal road with on-street parallel parking to facilitate access to the western parking areas, as per the recommendation of the previous Urban Design Review Panel (UDRP) discussions in 2021.

5.2 Parking

5.2.1 Parking Supply

The Zoning By-law (2008-250) indicates that for a residential apartment development of this size, a minimum of 567 resident parking spaces and 95 visitor parking spaces are required. Based on the site plan, a total of 456 resident parking and 95 visitor parking spaces will be provided which is 111 spaces short of meeting the by-law requirements. Furthermore, 120 of these parking spaces are located within the 14.0-metre MTO setback and therefore cannot count towards meeting the zoning by-law requirements.

Based on recent discussions with MTO, there are currently no plans to acquire lands beyond the current right-of-way limits abutting the subject site and they are generally supportive of the proposed parking within the buffer. As such, it is expected that 551 parking spaces will be available for the foreseeable future.

A variance is being sought for a reduced parking supply requirement of 0.81 resident parking spaces per unit. With this reduced rate, a minimum of 384 resident parking spaces would be required and could be accommodated by the parking supply located outside of the MTO buffer. All 95 visitor parking spaces will be provided outside of the MTO buffer.

A Parking Reduction Justification memo was prepared by IBI (now Arcadis) and submitted to the City's File Lead on March 22, 2021 as part of the previous application and can be referred to for further details.

5.3 Boundary Streets

The proposed development is located adjacent to a single boundary street: Huntmar Drive.

5.3.1 Mobility

Segment-based Multi-Modal Level of Service (MMLOS) results are presented in Section 5.9.4.

5.3.2 Road Safety

A summary of all reported collisions within the study period over the past five years was presented in the Scoping section of this TIA. The City requires a safety review if at least six

collisions for any one movement or of a discernible pattern have occurred over a five-year period. The collision analyses presented in the preceding sections of this TIA did not identify any study area intersections or adjoining road segments with 6 or more collisions over a 5-year period. As such, it was determined that no further review would be required for the purposes of this study.

5.4 Access Intersections

5.4.1 Location and Design of Access

The proposed development will provide a new two-way private approach on Huntmar Drive. Three alternative access configurations were considered for this access:

- All-movement access (unsignalized and signalized);
- Left-out restricted; and
- Right-in/right-out only.

The location of the access is constrained by the physical limits of the site, with a creek to the north and a highway overpass to the south, as well as sightline restrictions created by the vertical curvature of the bridge. As a result of these constraints, an assessment of sightlines was conducted using recent topographic mapping of the roadway and comparing against minimum intersection sight distance and stopping sight distance values as prescribed by the Transportation Associated of Canada. Based on this analysis, it was found that there is insufficient intersection sight distance for vehicles turning left out of the site, even if the access was shifted as far north as possible. A '3/4' access configuration was therefore considered which would permit northbound-left traffic into the site, however insufficient stopping sight distance was available to accommodate the unpredictable volume of retail traffic that may cut through this development and high potential for queue spillback into the northbound lanes over the crest of the overpass. Full or partial closure of the internal connection would therefore be required for these two options to be feasible, but was determined to be undesirable for a development of this magnitude. The right-in/right-out access configuration was therefore selected as it would avoid these issues, permit the internal connection to remain open and was also the least costly alternative available.

Is should be noted, however, that the future reconstruction of Huntmar Drive may present an opportunity for a less restrictive site access configuration but may require the grade of the road to be raised by approximately 1 metre to reduce the severity of the grade differential over the crest of the highway overpass. It is recommended that the City give consideration to land access on either side of Huntmar Drive upon the design of this future roadway widening to facilitate potential traffic signalization, transit stops and a controlled pedestrian crossing, acknowledging that the area will be a future rapid transit node.

Providing a right-in/right-out access on Huntmar Drive will require the construction of a median to prevent left-turn in and out of the site access. Road Modification Approval figures for this modification have been provided in **Appendix H**.

The proposed site access is in conformance with the City of Ottawa Private Approach By-law (2003-447), with particular confirmation of the following items:

- Width: A private approach shall have a minimum width of 2.4m and a maximum width of 9.0m. The City of Ottawa Zoning By-law.
    - The private approach will be 6.7m wide. ✓
- Quantity and Spacing of Private Approaches: For sites with frontage between 46 and 150 metres, one (1) two-way private approach and two (2) one-way private approaches or two (2) two-way private approaches are permitted. Any two private

approaches must be separated by at least 9.0m and can be reduced to 2.0m in the case of two one-way driveways. On lots that abut more than one roadway, these provisions apply to each frontage separately.

  - The site's frontage on Huntmar Drive is approximately 87m, therefore the single two-way private approach is compliant with the by-law. ✓

- Distance from Property Line: Private approaches must be at least 3.0m from the abutting property line, however this requirement can be reduced to 0.3m provided that the access is a safe distance from the access serving the adjacent property, sight lines are adequate and that it does not create a traffic hazard.

  - The private approach is approximately 6.4 from the property line. ✓

- Distance from Nearest Intersecting Street Line: For apartment buildings with more than 300 parking spaces located on a parcel adjacent to or within 46m of an arterial or major collector, all private approaches must be a minimum of 60m from the nearest intersecting street line.

  - The private approach is approximately 285m from the nearest intersecting street line. ✓

- Distance from Any Other Private Approach: For apartment buildings with more than 300 parking spaces located on a parcel adjacent to or within 46m of an arterial or major collector, all two-way private approaches must be a minimum of 60m from the any other private approach.

  - The private approach is approximately 205m from the nearest private approach. ✓

- Grade of Private Approach: The grade of a private approach serving a parking area of more than 50 spaces must not exceed 2% within the private property for a distance of 9m from the highway/curb line.

  - The grade of the private approaches will be less than 2% within 9m of the curb. ✓

5.4.2 Access Intersection Control

It is expected that the site access intersection will operate acceptably as an unsignalized intersection.

5.4.3 Access Intersection Design (MMLOS)

Not Applicable – The site access driveway will be unsignalized, therefore MMLOS analysis is not required for this intersection.

5.5 Transportation Demand Management (TDM)

The City of Ottawa is committed to implementing Transportation Demand Management (TDM) measures on a City-wide basis in an effort to reduce automobile dependence, particularly during the weekday peak travel periods. TDM initiatives are aimed at encouraging individuals to use non-auto modes of travel during the peak periods.

5.5.1 Context for TDM

As discussed previously, the proposed development is located within a Transit-Oriented Development (TOD) zone, and is also located adjacent to Huntmar Drive, a Cross-Town Bikeway. The proposed mode share targets for the subject development were calculated based on a blended mode share distribution of the Kanata / Stittsville Traffic Assessment

Zone (TAZ) in which the development is located. The proposed development will have a mixture of 1, 2 and 3 bedroom units for a variety of household sizes which will in turn foster a diverse community.

5.5.2 Need and Opportunity

The surrounding transportation network is expected to undergo significant changes in the future, with the planned LRT Stage 3 extension and rapid station within a 600-metre radial distance of the subject site, the widening of Huntmar Drive, as well as the construction of the Rober Grant Avenue extension. Dedicated pedestrian and cycling facilities within the area are expected to be expanded as a result of the above transportation projects. Given all the planned transportation network improvements planned within the vicinity of the proposed development, it is expected that the proposed mode share targets can be easily achieved.

5.5.3 TDM Program

The proposed development conforms to the City's TDM principles by providing convenient and direct connections to adjacent pedestrian and transit facilities. The City of Ottawa's TDM Measures Checklist was completed for the proposed development and provided in **Appendix F**. This checklist indicates measures that are being contemplated as part of this development. Notable measures that are being considered include:

- Providing a TDM program coordinator;
- Displaying local area maps of walking and cycling routes at major entrances;
- Displaying transit schedules and route maps at entrances;
- Unbundling parking from monthly rent; and
- Providing a multimodal travel information package to new residents.

As discussed previously, a carshare service may be provided on-site pending interest from a carshare provider as well as demand from residents.

5.6 Neighbourhood Traffic Management

5.6.1 Adjacent Neighbourhoods

Not Applicable: The proposed development is not dependent on local or collector roads for access, therefore this section is exempt from this TIA.

5.7 Transit

5.7.1 Route Capacity

The estimated future site-generated transit demand was provided in the Forecasting component of this study. The results have been summarized in **Table 11** below.

Table 10 – Development Generated Transit Demand

PERIOD	PEAK PERIOD DEMAND		
	IN	OUT	TOTAL
AM	17	37	54
PM	23	17	40

As indicated in **Table 11** above, site-generated two-way transit ridership volumes of 54 and 40 passengers are expected during the weekday morning and afternoon peak hours, respectively. With consideration that the study area is served by four transit routes during the weekday peak hours with average headways of 15 to 30 minutes, these transit trips are expected to be easily accommodated. As such, no additional transit capacity will be required to accommodate the proposed development.

5.7.1 Transit Priority Measures

The expected increase in transit ridership or projected intersection capacity results (discussed below) associated with the proposed development is not expected to trigger the need for any isolated transit priority measures to offset any transit delays.

5.8 Review of Network Concept

Not Applicable – The proposed development is not expected to generate 200 person-trips in excess of the permitted zoning for this site.

5.9 Intersection Design

The following sections summarize the methodology and results of the multi-modal intersection capacity analysis conducted within the study area.

5.9.1 Intersection Control

The following section evaluates the need to conduct traffic signal warrant analyses and roundabout analyses at any applicable study area intersections.

5.9.1.1 Traffic Signal Warrants

Not Applicable – All intersections within the study area are presently signalized with the exception of the site access which will be configured as a right-in/right-out access.

5.9.1.2 Roundabout Analysis

Not Applicable - As per the City's Roundabout Implementation Policy, intersections that satisfy any of the following criteria should be screened utilizing the Roundabout Initial Feasibility Screening Tool:

- At any new City intersection;
- Where traffic signals are warranted; or
- At intersections where capacity or safety problems are being experienced.

None of the study area intersections meet any of the above criteria, therefore no roundabout analysis is required for this study.

5.9.2 Intersection Analysis Criteria (Automobile)

The following section outlines the City of Ottawa's methodology for determining motor vehicle Level-of-Service (LOS) at signalized and unsignalized intersections.

5.9.2.1 Signalized Intersections

In qualitative terms, the Level-of-Service (LOS) defines operational conditions within a traffic stream and their perception by motorists. A LOS definition generally describes these conditions in terms of such factors as delay, speed and travel time, freedom to manoeuvre,

traffic interruptions, safety, comfort and convenience. LOS can also be related to the ratio of the volume to capacity (v/c) which is simply the relationship of the traffic volume (either measured or forecast) to the capability of the intersection or road section to accommodate a given traffic volume. This capability varies depending on the factors described above. LOS are given letter designations from 'A' to 'F'. LOS 'A' represents the best operating conditions and LOS 'E' represents the level at which the intersection or an approach to the intersection is carrying the maximum traffic volume that can, practicably, be accommodated. LOS 'F' indicates that the intersection is operating beyond its theoretical capacity.

The City of Ottawa has developed criteria as part of the Transportation Impact Assessment Guidelines, which directly relate the volume to capacity (v/c) ratio of a signalized intersection to a LOS designation. These criteria are presented in **Table 12** as follows:

Table 11 - LOS Criteria for Signalized Intersections

LOS	VOLUME TO CAPACITY RATIO (v/c)
A	0 to 0.60
B	0.61 to 0.70
C	0.71 to 0.80
D	0.81 to 0.90
E	0.91 to 1.00
F	> 1.00

The intersection capacity analysis technique provides an indication of the LOS for each movement at the intersection under consideration and for the intersection as a whole. The overall v/c ratio for an intersection is defined as the sum of equivalent volumes for all critical movements at the intersection divided by the sum of capacities for all critical movements.

The Level of Service calculation is based on locally-specific parameters as described in the TIA Guidelines and incorporates existing signal timing plans obtained from the City of Ottawa. The analysis existing conditions utilized a Peak Hour Factor (PHF) of 0.90, while future conditions considers optimized signal timing plans and use of a Peak Hour Factor (PHF) of 1.0 to recognize peak spreading beyond a 15-minute period in congested conditions.

5.9.2.2 Unsignalized Intersections

The capacity of an unsignalized intersection can also be expressed in terms of the LOS it provides. For an unsignalized intersection, the Level of Service is defined in terms of the average movement delays at the intersection. This is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line; this includes the time required for a vehicle to travel from the last-in-queue position to the first-in-queue position. The average delay for any particular minor movement at the un-signalized intersection is a function of the capacity of the approach and the degree of saturation.

The Highway Capacity Manual 2010 (HCM), prepared by the Transportation Research Board, includes the following Levels of Service criteria for un-signalized intersections, related to average movement delays at the intersection, as indicated in **Table 13** below.

Table 12 - LOS Criteria for Unsignalized Intersections

LOS	DELAY (seconds)
A	<10
B	>10 and <15
C	>15 and <25
D	>25 and <35
E	>35 and <50
F	>50

The unsignalized intersection capacity analysis technique included in the HCM and used in the current study provides an indication of the Level of Service for each movement of the intersection under consideration. By this technique, the performance of the unsignalized intersection can be compared under varying traffic scenarios, using the Level of Service concept in a qualitative sense. One unsignalized intersection can be compared with another unsignalized intersection using this concept. Level of Service 'E' represents the capacity of the movement under consideration and generally, in large urban areas, Level of Service 'D' is considered to represent an acceptable operating condition. Level of Service 'E' is considered an acceptable operating condition for planning purposes for intersections located within Ottawa's Urban Core the downtown and its vicinity). Level of Service 'F' indicates that the movement is operating beyond its design capacity.

5.9.3 Intersection Capacity Analysis

Following the established intersection capacity analysis criteria described above, the existing and future conditions are analyzed during the weekday peak hour traffic volumes derived in this study.

The following section presents the results of the intersection capacity analysis. All tables summarize study area intersection LOS results during the weekday morning and afternoon peak hour periods.

The Synchro output files have been provided in **Appendix I**.

5.9.3.1 Existing Traffic

An intersection capacity analysis has been undertaken using the Existing Traffic volumes presented in **Exhibit 5.**

Table 14 below summarizes the results of the intersection capacity analysis.

Table 13 - Intersection Capacity Analysis: Existing Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	Signalized	A (0.31)	NBT (0.31)	A (0.38)	SBL (0.38)

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Palladium Drive & Highway 417 Westbound Ramp Terminal	Signalized	B (0.39)	WBR (0.55)	B (0.57)	WBR (0.63)

Based on the results of the analysis above, Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private currently operates at LOS 'A' during both peak hours, while the Palladium Drive & Highway 417 Westbound Ramp Terminal which will be operating at LOS 'B' during both peak hours.

5.9.3.2 Future (2029) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2029) Background Traffic volumes presented in **Exhibit 7**, yielding the following results:

Table 14 - Intersection Capacity Analysis: Future (2029) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	Signalized	A (0.32)	NBT (0.32)	A (0.35)	SBL (0.35)
Palladium Drive & Highway 417 Westbound Ramp Terminal	Signalized	B (0.49)	WBR (0.63)	A (0.59)	WBR (0.60)

Under Future (2029) Background Traffic conditions, traffic operations at the Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private intersection is expected to remain at LOS 'A', while the Palladium Drive & Highway 417 Westbound Ramp Terminal intersection operates at LOS 'B' during the morning peak hours and LOS 'A' during afternoon peak hours.

5.9.3.3 Future (2034) Background Traffic

An intersection capacity analysis has been undertaken using the Future (2034) Background Traffic volumes presented in **Exhibit 8**, yielding the following results:

Table 15 - Intersection Capacity Analysis: Future (2034) Background Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	Signalized	A (0.34)	NBT (0.34)	A (0.35)	NBT (0.35)
Palladium Drive & Highway 417 Westbound Ramp Terminal	Signalized	B (0.50)	WBR (0.64)	B (0.61)	WBR (0.61)

Under Future (2034) Background Traffic conditions, theHuntmar Drive & Cyclone Taylor Boulevard / Autopark Private operates at LOS 'A' during both peak hours, while the Palladium Drive & Highway 417 Westbound Ramp Terminal which will be operating at LOS 'B' during both weekday peak hours.

5.9.3.4 Future (2029) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2029) Total Traffic volumes presented in **Exhibit 9**, yielding the following results:

Table 16 - Intersection Capacity Analysis: Future (2029) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	Signalized	A (0.32)	NBT (0.32)	A (0.35)	SBL (0.35)
Palladium Drive & Highway 417 Westbound Ramp Terminal	Signalized	B (0.50)	WBR (0.64)	B (0.60)	WBR (0.62)
Huntmar Drive & Site Access	Unsignalized	B (11.9s)	EBR (11.9s)	C (17.5s)	EBR (17.5s)

The addition of site-generated traffic is expected to have a negligible impact on the signalized intersections within the study area.

The site access on Huntmar Drive is anticipated to operate at LOS 'B' during the morning peak hour and at LOS 'C' during the afternoon peak hour.

5.9.3.5 Future (2034) Total Traffic

An intersection capacity analysis has been undertaken using the Future (2034) Total Traffic volumes presented in **Exhibit 10**, yielding the following results:

Table 17 - Intersection Capacity Analysis: Future (2034) Total Traffic

INTERSECTION	TRAFFIC CONTROL	AM PEAK HOUR		PM PEAK HOUR	
		OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)	OVERALL LOS (V/C OR DELAY)	CRITICAL MOVEMENTS (V/C OR DELAY)
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	Signalized	A (0.34)	NBT (0.34)	A (0.36)	SBL (0.36)
Palladium Drive & Highway 417 Westbound Ramp Terminal	Signalized	A (0.51)	WBR (0.65)	B (0.62)	WBR (0.64)
Huntmar Drive & Site Access	Unsignalized	B (12.2s)	EBR (12.2s)	C (18.3s)	EBR (18.3s)

As observed under Future (2029) Total Traffic conditions, the addition of site-generated traffic is anticipated to have a negligible impact on study area intersections and will not significantly impact the queue on the Highway 417 off-ramp. The site access on Huntmar Drive is anticipated to operate at LOS 'B' during the morning peak hour and at LOS 'C' during the afternoon peak hour.

Based on the results of the intersection capacity analyses presented above, all study area intersections are anticipated to continue operating well within acceptable levels of service (i.e. LOS 'E' or better) within the timeframe of this study.

5.9.4 Multi-Modal Level of Service (MMLOS)

The following sections summarize the results of the Multi-Modal Level of Service (MMLOS) analysis conducted within the study area for pedestrians, cyclists, transit, public realm and auto under existing conditions. Details of the MMLOS analysis are provided in **Appendix J**.

The traffic operations analysis found in subsequent sections is for the weekday morning and afternoon peak hours. For the MMLOS analysis, Auto Level of Service (ALOS) is evaluated on a peak period basis (i.e. 2.5 hours) rather than a one-hour basis. To convert the peak hour results to peak period results, 0.84 and 0.92 conversion factors have been applied to the weekday morning and afternoon peak hour volume-to-capacity results, respectively, in accordance with the MMLOS Guidelines Update (May 2025) and the corresponding MMLOS analysis tool.

5.9.4.1 Segment-Based MMLOS Results

Segment-based MMLOS results for boundary street segments adjacent to the subject site are provided in **Table 18** below.

Since a Complete Street design has already been established for Scott Street and is in the process of being implemented, segment-based Multi-Modal Level of Service (MMLOS) will not be required as part of this study for this southern boundary street.

It should be noted as well that the 'Critical LOS' results represent gaps or deficiencies along a roadway segment and are provided for information purposes only. The 'Overall LOS' results were used for comparison against the 'Target LOS'.

Table 18 - Segment-Based MMLOS Analysis Results: Existing & Future Conditions

Segment	Travel Mode	Side	Overall LOS	Critical LOS	Target LOS	Deviation [1]
Huntmar Drive	Pedestrian	East	F	F	C	-3
		West	F	F		-3
	Bicycle	North	E	E	C	-2
		South	E	E		-2
	Transit	North	B	-	E	+2
		South	B			+2
	Public Realm	Both Sides	E	-	-	-

Note: [1] A comparison between the 'Overall LOS' and 'Target LOS'. 'Critical LOS' is shown for information purposes only.

The results of the segment-based MMLOS presented in **Table 18** above show mixed performance across modes. PLOS on both the east and west sides achieve an overall and critical rating of F, which is three deviation points lower than the target LOS C. Transit along Huntmar Drive also performs well, having the northbound transit segment rated LOS B and the southbound segment LOS B exceed the target LOS. The BLOS on both sides perform poorly, with overall and critical LOS rated E.

The Public Realm LOS scores are based on whether there is available right-of-way to potentially introduce improvements to the pedestrian environment and therefore the scores are based on the right-of-way protection for Huntmar Drive of 37.5m, as identified in Schedule C16 of the Official Plan.

Following the four-lane widening of Huntmar Drive it is assumed that the roadway cross-section will be similar to Campeau Drive, resulting in a PLOS and BLOS of 'D' and 'A', respectively. Reducing operating speeds on Huntmar Drive to less than 60 km/h would also contribute to safety improvements for vulnerable road users, but this may not be sufficient to achieve the PLOS or BLOS targets.

5.9.4.2 Intersection-Based MMLOS Results

The intersection-based MMLOS results for existing signalized study area intersections are summarized in **Table 19** below.

The 'Critical LOS' represents the worst-performing approach at each study area intersection and is provided for information purposes only. The 'Overall LOS' results were used for comparison against the 'Target LOS'.

Table 19 - Intersection-Based MMLOS Results: Existing & Future Conditions

Intersection	Travel Mode	Overall LOS	Critical LOS	Target LOS	Deviation [2]
Palladium Dr & Hwy 417	Pedestrian (PLOS)	C	C	C	**0**

Intersection	Travel Mode	Overall LOS	Critical LOS	Target LOS	Deviation [2]
Westbound On/Off-Ramp	Bicycle (BLOS)	**E**	**F**	C	**-2**
	Transit (TLOS)	E	E	E	**0**
	Auto (ALOS) [1]	A	A	E	**+4**
Cyclone Taylor Blvd/Autopark Priv & Huntmar	Pedestrian (PLOS)	B	C	C	**+1**
	Bicycle (BLOS)	**E**	**F**	C	**-2**
	Transit (TLOS)	E	E	E	**0**
	Auto (ALOS) [1]	A	A	E	**+4**

[1] Auto Level of Service (ALOS) is based on weekday peak period volumes in accordance with the MMLOS Guidelines Update (May 2025).
[2] A comparison between the 'Overall LOS' and 'Target LOS'.

The results of the segment-based MMLOS analysis presented in **Table 19** indicate that PLOS generally meet or are close to the targets with deviations ranging from 0 to +1 across the Palladium Drive & Cyclone Taylor Boulevard intersections. The BLOS consistently fall short of the target C, with critical LOS rated as F and deviations of -2 points. TLOS meet the target E across all intersections. ALOS exceed expectations with an overall rating of A and positive deviations of +4. Overall, while pedestrian, transit and auto travel modes are performing at or above target LOS, cycling remains to be improved.

5.9.4.3 Summary of Potential Improvements

Based on the MMLOS results outlined in **Table 18** and **Table 19**, the following measures have been identified that could improve conditions for pedestrians and cyclists:

Pedestrians

- The analysis indicates that both study area intersections are presently operating above or equal to the City's PLOS target. Given that both roadways are arterials intended to accommodate high volumes of vehicular traffic, it is not feasible to reduce the roadway width in order to improve PLOS. Potential measures that could be implemented to improve PLOS, however, include removing the northbound right-turn channel at the Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private intersection, reducing corner radii and implementing zebra stripe high-visibility crosswalk pavement markings. Based on the functional requirements of this intersection to provide access to the Palladium Auto Park for vehicle inventory deliveries as well as large trucks for special events at the Canadian Tire Centre, only the improvements to crosswalk markings may be feasible.

Cyclists

- Based on the analysis, both study area intersections are presently operating below the City's BLOS target. At the Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private intersection, a protected intersection design or bike lanes paired with two-stage left-turn bike boxes would improve the BLOS to 'C' and thereby meet the BLOS target. At the Palladium Drive & Highway 417 Westbound On/Off-Ramp, a bike lane on the southbound approach would improve the BLOS to 'A'.

The recommended measures listed above are intended only as suggestions to the City on how the MMLOS within the study area could be improved and do not identify measures to be implemented as a direct consequence of this development. The MMLOS analysis

identifies existing deficiencies in the study area and are not expected to be exacerbated by the proposed development.

5.10 Geometric Review

The following section reviews all geometric requirements for the study area intersections.

5.10.1 Sight Distance and Corner Clearances

The proposed site access is located along a straight segment of Huntmar Drive with clear sightlines towards the north. The access will be restricted to right-in/right-out only therefore sightlines towards the south are inconsequential. The Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads indicates that a minimum corner clearance of 70m should be maintained between a private approach on an arterial road and any signalized intersection and a minimum corner clearance of 35m should be maintained between a private approach on an arterial road and any unsignalized intersection. The site access is well in excess of these distances from the nearest intersections.

5.10.2 Auxiliary Lane Analysis

5.10.2.1 Signalized Auxiliary Left-Turn Requirements

A review of auxiliary left-turn lane storage requirements was completed at all signalized intersections within the study area under Future (2034) Total Traffic conditions. The review compared the projected 95th percentile queue lengths from Synchro operational results, and the standard queue length calculation based on the following equation:

$$Storage\ Length = \frac{NL}{C} \times 1.5$$

Where:
N = number of vehicles per hour
L = Length occupied by a vehicle in the queue = 7 m
C = number of traffic signal cycles per hour

The results of the auxiliary left-turn lane analysis are summarized below in **Table 20** below.

Table 20 - Auxiliary Left-Turn Storage Analysis at Signalized Intersections

INTERSECTION	APPROACH	95TH %ILE QUEUE LENGTH / CALCULATED QUEUE (M)		EXISTING PARALLEL LANE LENGTH (M)	STORAGE DEFICIENCY (M)
		AM PEAK HR	PM PEAK HR		
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	NB	5 / 10	10 / 5	50	-
	SB	10 / 20	25 / 40	55	-
Palladium Drive & Highway 417 Westbound Ramp Terminal	SB	15 / 40	40 / 95	115	-
	WB	25 / 85	40 / 130	600[1]	-

Notes:
[1] Distance from stop bar to start of off-ramp.

The results of the queue length analysis presented in **Table 18** above indicate that all of the left-turn lanes at the study area intersections have more than sufficient storage to accommodate the projected queues.

5.10.2.2 Signalized Auxiliary Right-Turn Lane Requirements

Similarly for signalized intersections, Section 9.14 of TAC suggests that auxiliary right-turn lanes shall be considered when more than 10% of vehicles on an approach are turning right and when the peak hour demand exceeds 60 vehicles. The purpose of this guideline is to mitigate operational impacts to through-traffic, particularly on high-speed arterial roadways, and may not be applicable in all circumstances.

The results of the auxiliary right-turn lane analysis are summarized below in **Table 21** below:

Table 21 – Auxiliary Right-Turn Lane Storage Analysis at Signalized Intersections

INTERSECTION	APPROACH	NUMBER OF RIGHT-TURNS / % RIGHT-TURNS		95TH %ILE QUEUE (m) AM / PM [1]	EXISTING PARALLEL LANE LENGTH (m)	STORAGE DEFICIENCY (m)
		AM PEAK HOUR	PM PEAK HOUR			
Huntmar Drive & Cyclone Taylor Boulevard / Autopark Private	NB	35 / 6%	217 / 31%	5 / 10	-[1]	-
	SB	46 / 8%	36 / 4%	- / -	-	-
	EB	29 / 55%	56 / 64%	- / -	-	-
	WB	17 / 65%	75 / 68%	5 / 10	-[1]	-
Palladium Drive & Highway 417 Westbound Ramp Terminal	NB	97 / 25%	356 / 53%	15 / 20	100	-
	WB	488 / 63%	452 / 50%	20 / 20	145	-

Notes:

[1] Northbound and westbound thru lane transitions to dedicated right-turn lane.

Based on the results of the analysis presented in **Table 19** above, no additional right-turn auxiliary lanes are required at either of the signalized study area intersections to accommodate Future (2034) Total Traffic volumes.

5.10.2.3 Unsignalized Auxiliary Right-Turn Lane Requirements

The Transportation Association of Canada (TAC) suggests that auxiliary right-turn lanes should be considered “when the volume of decelerating or accelerating vehicles compared with through vehicles causes undue hazard.” Consideration for auxiliary right-turn lanes is typically given when the right-turning traffic exceeds 10% of the through volume and is at least 60 vehicles per hour.

During the weekday afternoon peak hour, the southbound right-turn movement at the proposed site access on Huntmar Drive is anticipated to experience volumes in the order of 60 vehicles per hour during the most critical weekday afternoon peak hour; however, these volumes represent approximately 7% of traffic on that approach and there a right-turn auxiliary lane is not warranted based on the TAC criteria.

It is also worth noting that the visibility on the southbound approach is unrestricted and the proposed concrete median at the site access is expected to have a traffic-calming effect, right-turning traffic is not expected to present a hazard to through traffic.

5.11 Summary of Recommended Modifications

All study area intersections were shown to operate at an acceptable level of service (i.e. LOS ‘E’ or better) during the weekday morning and afternoon peak hours and throughout the timeframe of the study and no queuing issues are anticipated.

The MMLOS analysis indicated existing deficiencies with respect to user comfort that the City could consider addressing but are not required to safely accommodate the proposed development.

6 Conclusion

The proposed mid-rise residential development at 319 Huntmar Drive is expected to generate up to 78 and 103 two-way vehicular trips during the weekday morning and afternoon peak hours, respectively. Travel demand was stratified by mode share from the Kanata / Stittsville Traffic Assessment Zone (TAZ) from the 2020 TRANS Trip Generation Summary Report.

Two alternative configurations were considered for the proposed private approach. Based on a review of the physical limits of the site, queueing and sightlines, it was determined that a right-in/right-out access presents the safest access configuration for this site. A functional design of the proposed roadway improvements has been prepared and included in an appendix to this report. It is recommended that the City give consideration towards improving the vertical curvature of Huntmar Drive upon design of the 4-lane widening of this road to facilitate safer and less restrictive access to the lands on either side of the road, north of Highway 417.

A multi-modal analysis of each study area intersection identified deficiencies in the existing road network and potential remediation measures have been suggested which the City could consider in order to meet the prescribed targets. These remediation measures would improve mobility and comfort for all transportation modes but are not required to safely accommodate the proposed development. The most significant barrier to active transportation is the current configuration of Huntmar Drive and the lack of pedestrian and cycling facilities over Highway 417. In order for this development to take advantage of the proximity to the future Palladium LRT station, it is recommended that the City include appropriate infrastructure in advance to mitigate future traffic volumes in the study area.

All study area intersections were shown to operate well within acceptable levels of service (i.e. LOS ‘E’) under Future (2034) Total Traffic conditions and no queuing issues are exhibit anticipated at any intersection, including the Highway 417 off-ramp at Palladium Drive.

Zoning By-law (2008-250) indicates that 567 vehicular parking spaces are required for a development of this size. The proposed development will provide a total of 551 vehicular parking spaces, 120 of which will be located within the 14m MTO setback for Highway 417. Based on discussions with MTO, there are currently no plans to acquire lands beyond the current right-of-way limits and they are generally supportive of the proposed parking within the buffer.

In the long-term there is the potential that MTO may require the land within the setback, reducing the overall parking supply to 384 spaces resident parking spaces. All 95 visitor parking spaces are proposed outside of the MTO buffer. A variance is being sought for a reduced parking rate for the development. With consideration of the planned improvements to transit service in the area and the TDM measures proposed, it is expected that on-site automobile dependence will reduce over time and site-generated parking demand will not exceed the reduced parking capacity.

Based on the findings of this study, it is the overall opinion of Arcadis that the proposed development will integrate well with and can be safely accommodated by the adjacent transportation network.

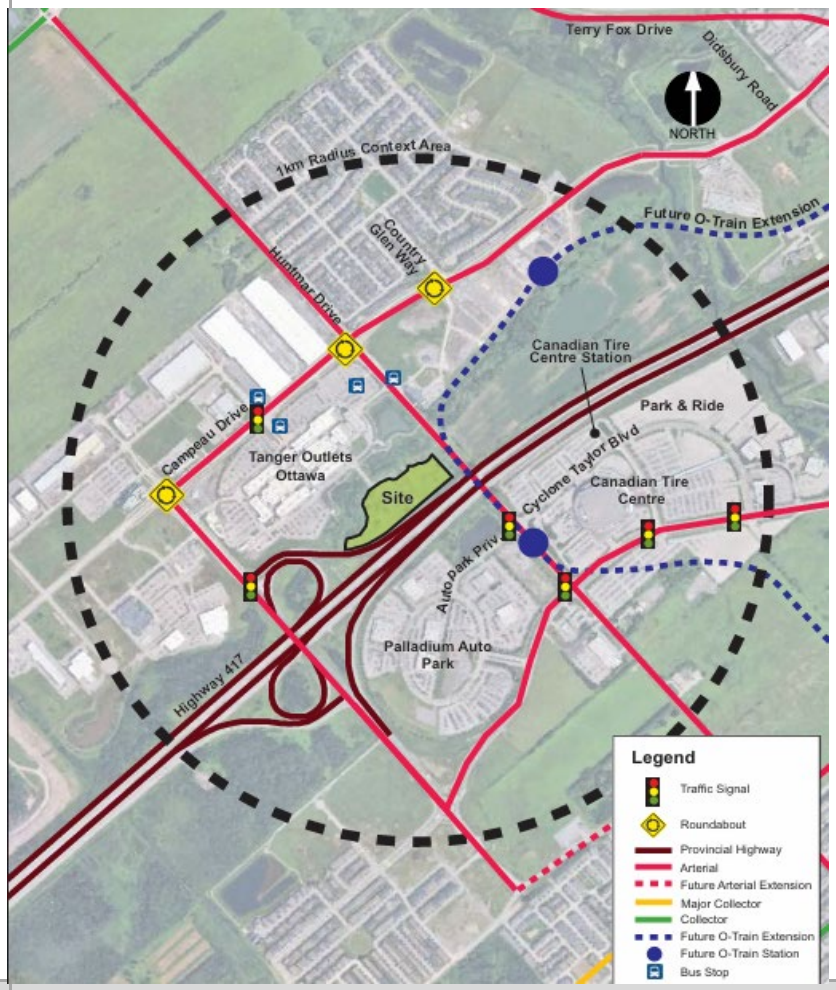
Appendix A – TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

*Revised per City of Ottawa update to the TIA Guidelines, effective June 14, 2023

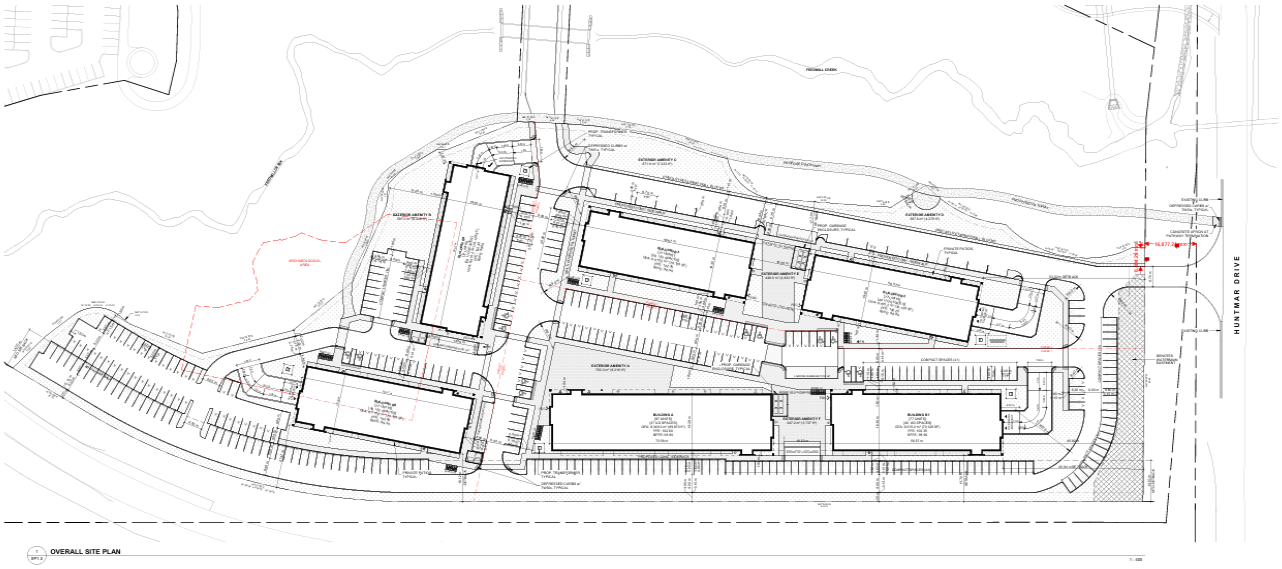
1. Description of Proposed Development

Municipal Address	319 Huntmar Drive
Description of Location	The site is generally bound by Huntmar Drive to the east and Highway 417 to the south
Land Use Classification	Mid-Rise Residential Development
Development Size (units)	472
Development Size (m^2)	N/A



Number of Accesses and Locations	1) One right-in/right-out movement access on Huntmar Drive to the east 2) One full-movement connection to Tanger Outlets shopping centre to the north
Phase of Development	Single Phase
Buildout Year	2029

If available, <u>please attach a sketch of the development or site plan</u> to this form.



2. Trip Gen Trigger

Considering the Development's Land Use Type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type*	Minimum Development Size (60 person trips)	
Single-Detached[1]	60 units	
Multi-Use Family (Low-Rise)[1]	90 units	
Multi-Use Family (High-Rise)[1]	150 Units	✓
Office[2]	1,400 m^2	
Industrial[2]	7,000 m^2	
Fast-food restaurant or coffee shop[2]	110 m^2	
Destination Retail[2]	1,800 m^2	
Gas Station or convenience market[2]	90 m^2	

**If the development has a land use type other than what is presented in the table above, estimates of person trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

[1] *Table 2, Table 3 & Table 4 TRANS Trip Generation Summary Report*

[2] *ITE Trip Generation Manual 11.1 Ed.*

Based on the above, the Trip Generation Trigger is satisfied.

3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Cross-Town Bikeways?	✓	
Is the development in a Design Priority Area (DPA), Protected Major Transit Station Area or Hub?*	✓	

**DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6) See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.*
Hubs are identified as Protected Major Transit Station Areas (PTMSAs) and identified in Schedule C1-Protected Major Transit Station Areas (PMTSAs).

Based on the above, the Location Trigger is satisfied.

4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street 80km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street that limit sight lines at a proposed driveway?	✓	
Is the proposed driveway 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?)		✓
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✓
Does the development include a drive-thru facility?		✓

Based on the above, the Safety Trigger is satisfied.

5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?	✓	
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?	✓	

Based on the results of the TIA Screening Form, the Trip Generation, Location and Safety Triggers are satisfied. As such, a TIA is required for the proposed development.

Appendix B – OC Transpo Routes

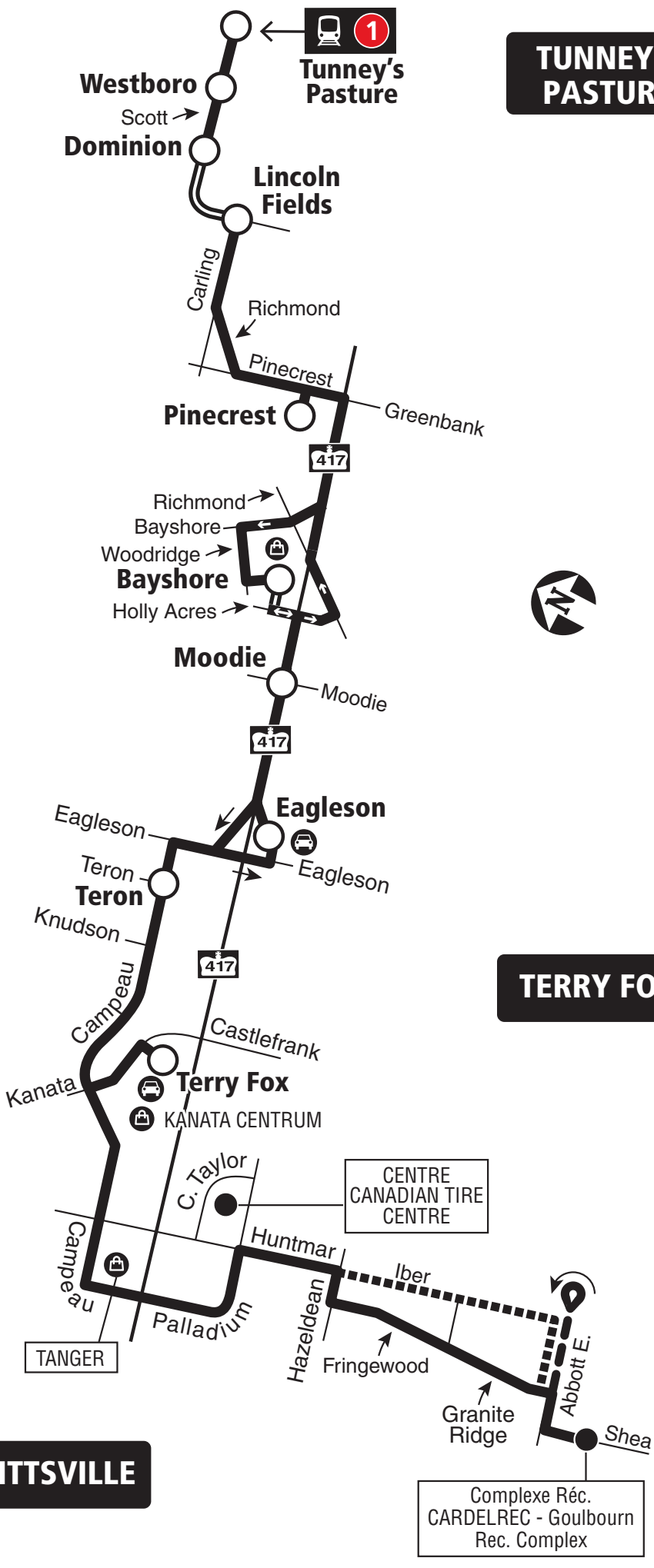
62

STITTSVILLE
TUNNEY'S PASTURE

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée



04/2025

- Transitway & Station
- Weekday southbound trips before noon and weekday northbound trips between noon and 8 p.m. travel via Iber and Abbott E.
  Trajets en semaine vers le sud en avant midi et trajets en semaine vers le nord entre midi et 20 h via Iber et Abbott E.
- Saturday and Sunday / Samedi et dimanche
- Shopping Centre / Centre commercial
- Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

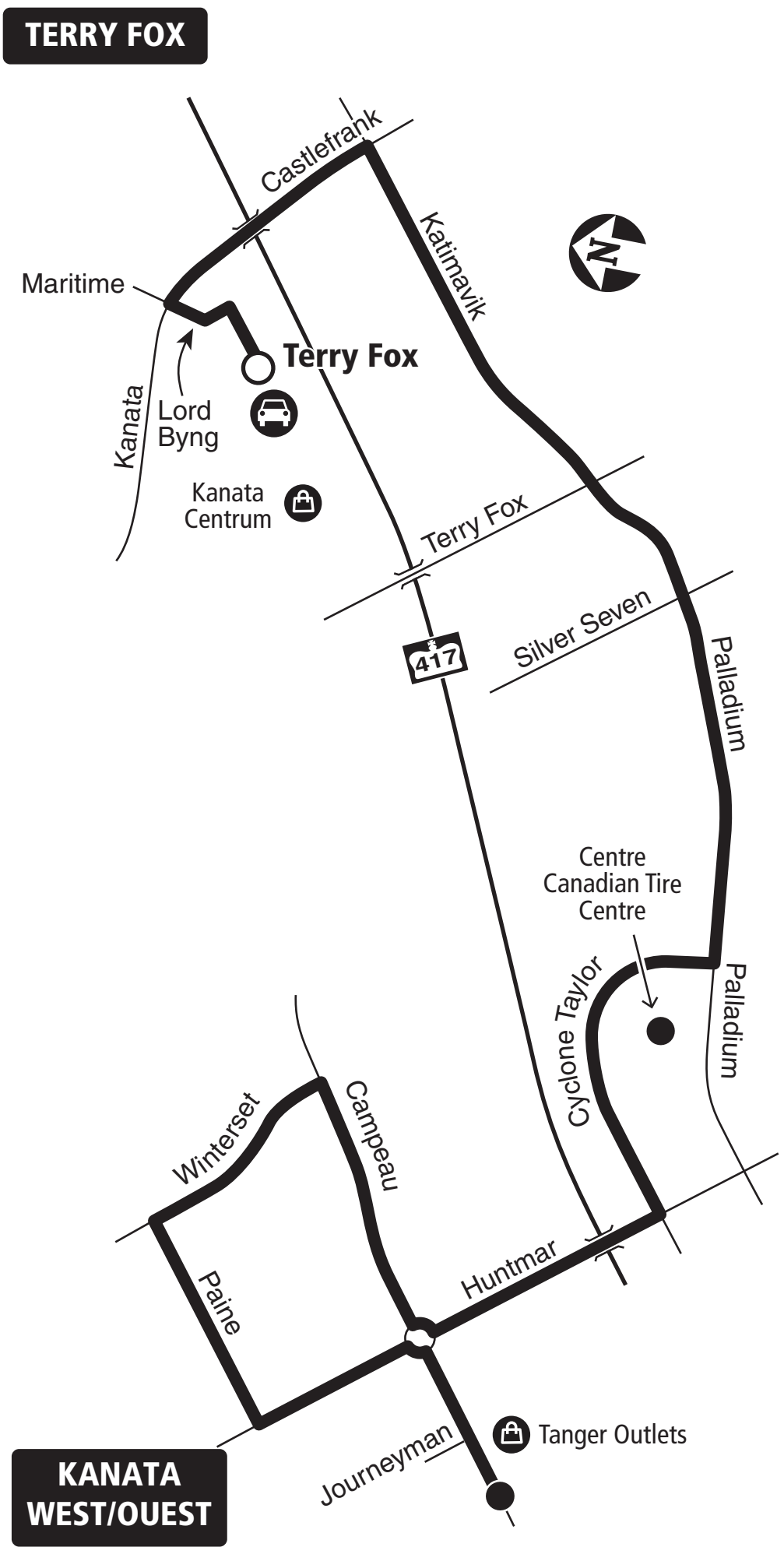
162

KANATA WEST/OUEST
TERRY FOX

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



Station

Park & Ride / Parc relais

Shopping Centre / Centre commercial

04.2025

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

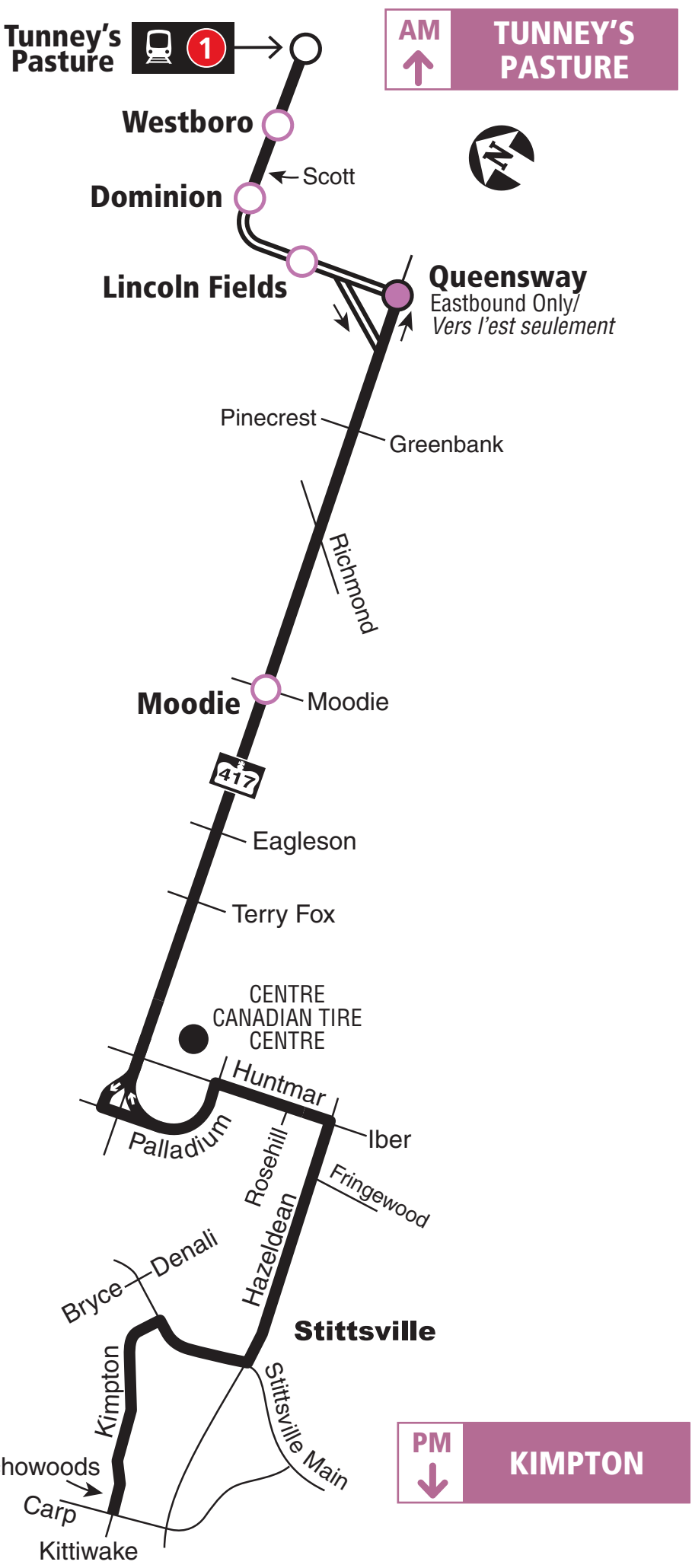
OC Transpo **octranspo.com**

261 Connexion

KIMPTON
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

- Transitway & Station
- AM Peak Only / Pointe seulement
- Limited stops: Off only in AM / No stop in PM
  Arrêts limités : débarquement en AM seul. / aucun arrêt en PM
- AM: Off only - PM: Full Service
  AM : débarquement seul. - PM : service complet

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service / Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

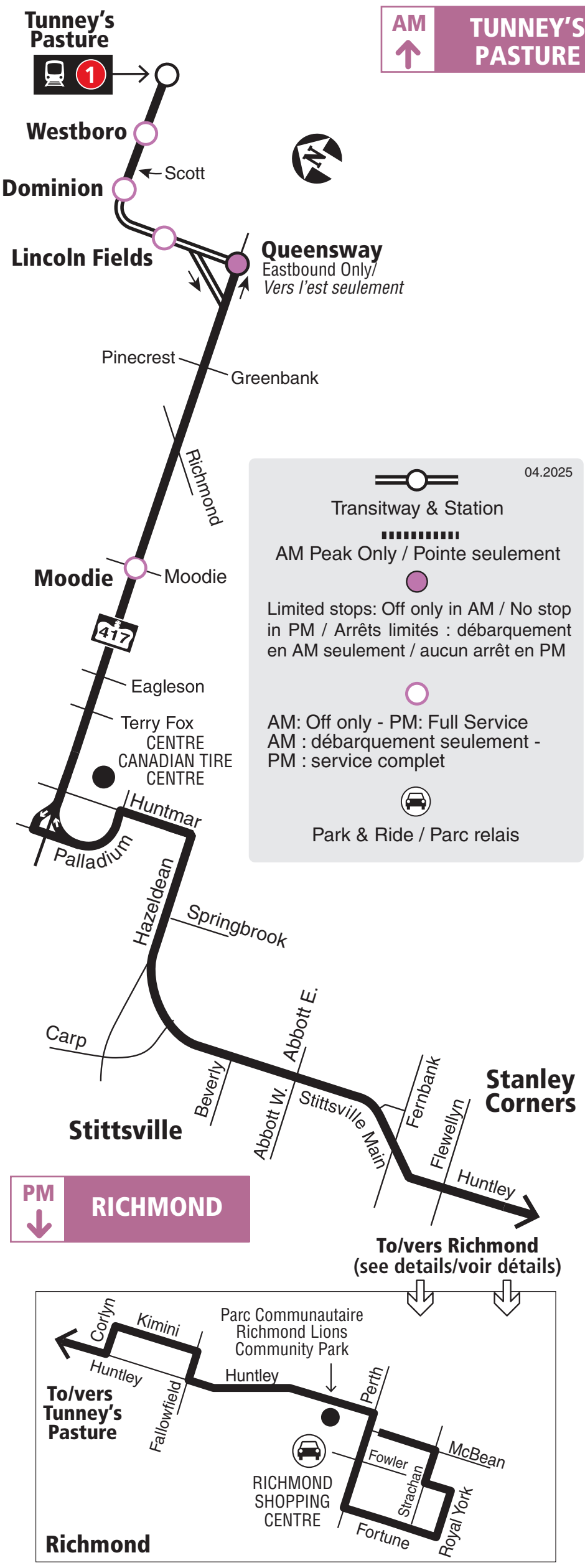
OC Transpo **octranspo.com**

263 Connexion

TUNNEY'S PASTURE
RICHMOND

Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement



04.2025

Transitway & Station

AM Peak Only / Pointe seulement

Limited stops: Off only in AM / No stop in PM / Arrêts limités : débarquement en AM seulement / aucun arrêt en PM

AM: Off only - PM: Full Service
AM : débarquement seulement -
PM : service complet

Park & Ride / Parc relais

2025.04

This route starts on April 27, 2025 when the New Ways to Bus network comes into effect.

Ce circuit sera mis en service le 27 avril 2025, lorsque le réseau L'autobus réinventé entrera en vigueur.

Customer Service /
Service à la clientèle **613-560-5000**

Security / Sécurité **613-741-2478**

OC Transpo **octranspo.com**

Appendix C – Collision Data

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: CAMPEAU DR @ JOURNEYMAN ST

Traffic Control: Traffic signal **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2022-May-14, Sat,15:39	Clear	Rear end	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Location: CYCLONE TAYLOR BLVD @ HUNTMAR DR

Traffic Control: Traffic signal **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-14, Mon,09:29	Clear	Rear end	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Feb-15, Sat,18:15	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Passenger van	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jun-10, Wed,16:47	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2021-Nov-15, Mon,10:30	Clear	Angle	P.D. only	Dry	North	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	

Location: HUNTMAR DR @ PALLADIUM DR

Traffic Control: Traffic signal **Total Collisions:** 25

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-27, Sun,11:20	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Passenger van	Other motor vehicle	
2019-Mar-05, Tue,23:00	Clear	Rear end	P.D. only	Dry	North	Turning left	Pick-up truck	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
					North	Turning left	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: HUNTMAR DR btwn AUTOPARK PRIV & PALLADIUM DR

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
2022-Feb-12, Sat,20:14	Snow	SMV other	P.D. only	Packed snow	South	Going ahead	Automobile, station wagon	Construction marker	0
2022-May-13, Fri,16:50	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: HUNTMAR DR btwn CAMPEAU DR & AUTOPARK PRIV/CYCLONE TAYLOR BLVD

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
2021-Jan-29, Fri,08:28	Clear	Turning movement	P.D. only	Dry	South	Making "U" turn	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2021-Jun-03, Thu,22:10	Clear	SMV other	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Steel guide rail	0

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2019 **To:** December 31, 2024

Location: PALLADIUM DR @ HWY 417 PALLADIU IC142R36/63

Traffic Control: Stop sign **Total Collisions:** 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Jan-20, Sun,13:54	Snow	Angle	P.D. only	Slush	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2022-Dec-20, Tue,13:40	Clear	Turning movement	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2024-May-12, Sun,15:00	Clear	Turning movement	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2024-Sep-18, Wed,12:50	Clear	SMV other	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other	0
					North	Going ahead	Unknown	Other	

Appendix D – Turning Movement Counts

Transportation Services - Traffic Services

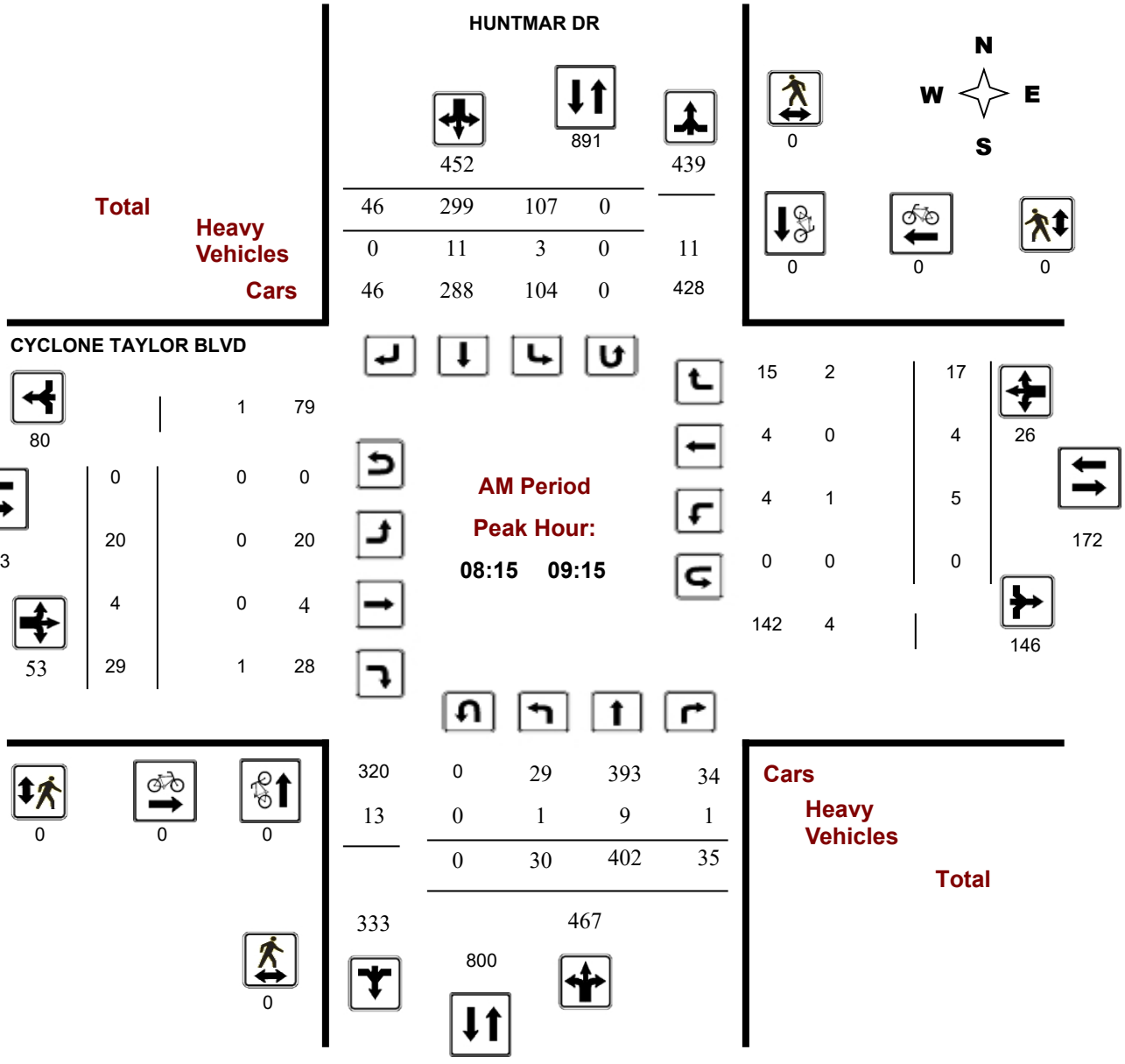
Turning Movement Count - Study Results

CYCLONE TAYLOR BLVD @ HUNTMAR DR

Survey Date: Tuesday, December 09, 2025 **WO No:** 43214

Start Time: 07:00 **Device:** Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

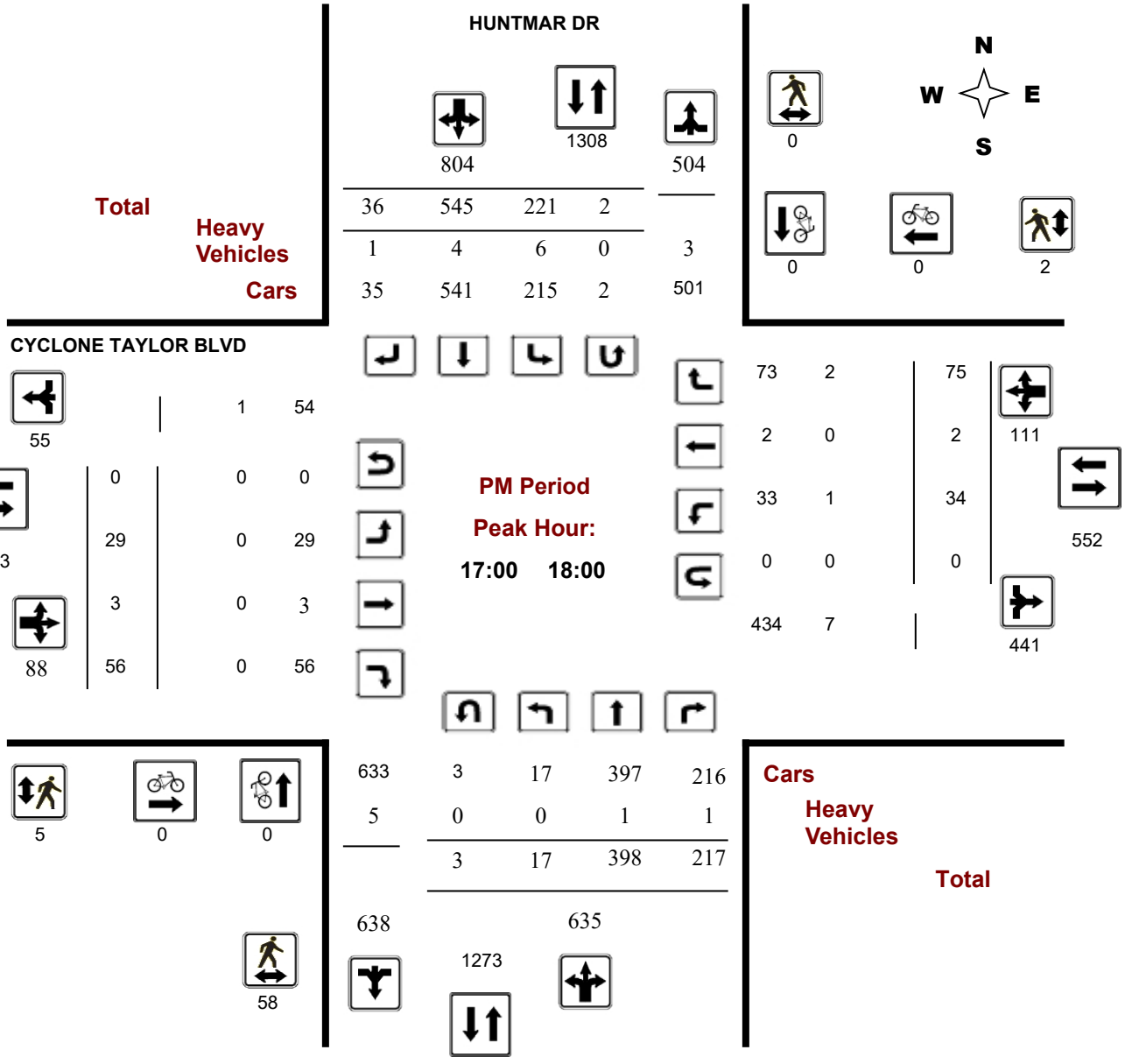
Turning Movement Count - Study Results

CYCLONE TAYLOR BLVD @ HUNTMAR DR

Survey Date: Tuesday, December 09, 2025 **WO No:** 43214

Start Time: 07:00 **Device:** Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

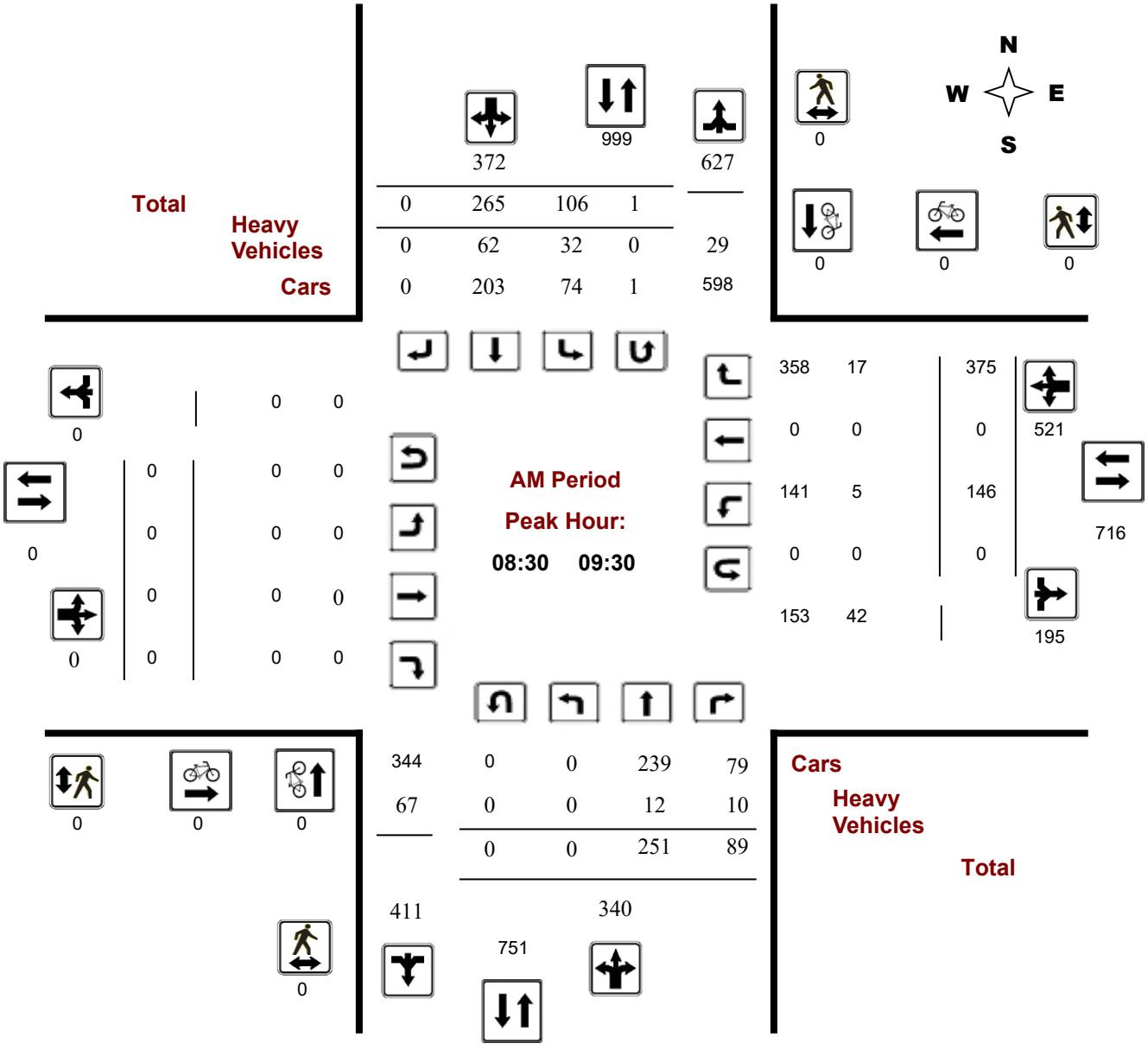
Turning Movement Count - Study Results

PALLADIUM DR @ HWY 417 PALLADIU IC142R36/63

Survey Date: Wednesday, February 18, 2026 **WO No:** 43265

Start Time: 07:00 **Device:** Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

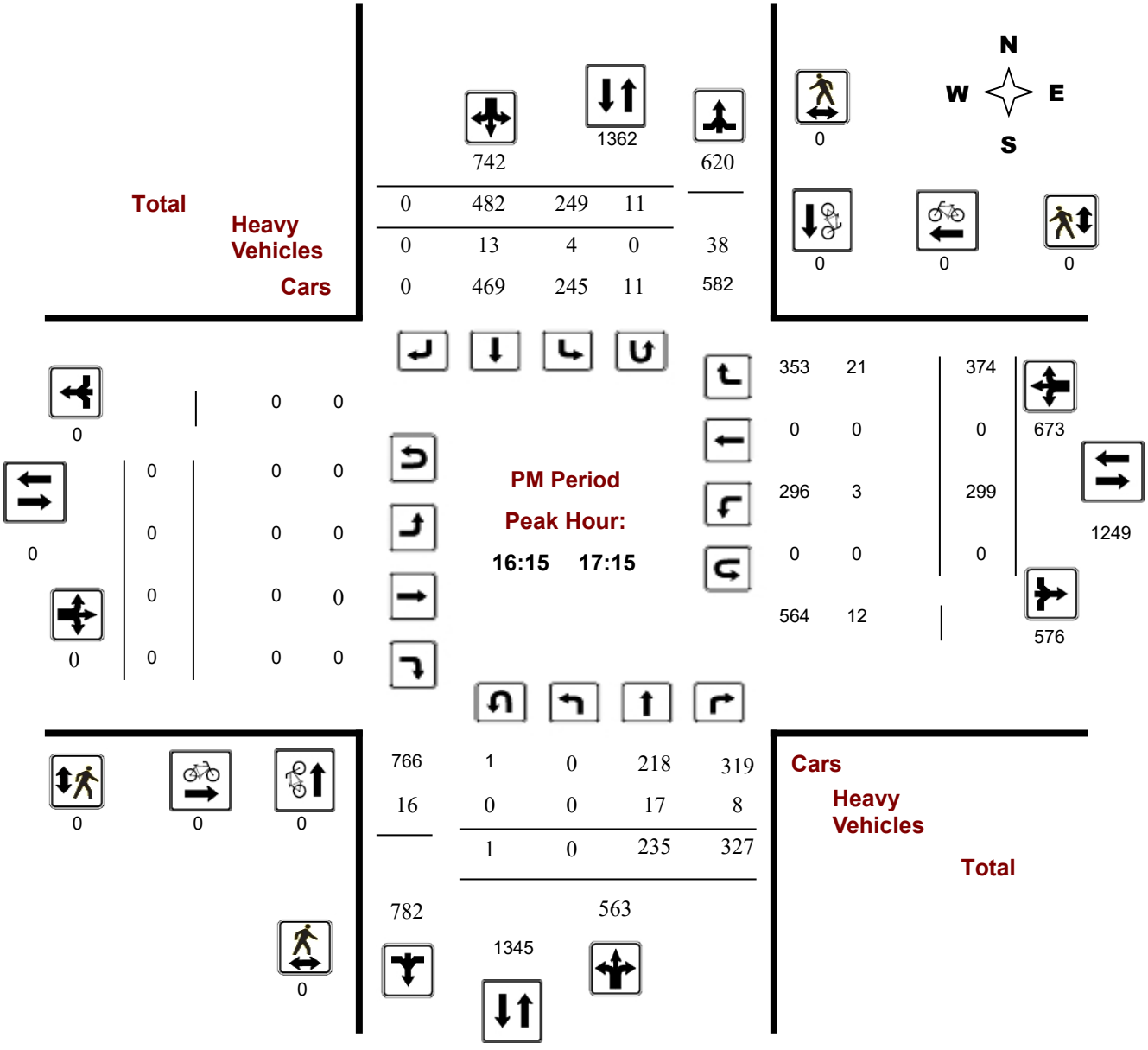
Turning Movement Count - Study Results

PALLADIUM DR @ HWY 417 PALLADIU IC142R36/63

Survey Date: Wednesday, February 18, 2026 **WO No:** 43265

Start Time: 07:00 **Device:** Miovision

PM Period Peak Hour Diagram



Appendix E – Trip Generation Data

3.2 Recommended Residential Trip Generation Rates

A blended trip rate was developed from the three data sources through application of a rank-sum weighting process, considering the strengths and weaknesses of each dataset for the dwelling type in question. The recommended blended **residential person-trip rates** are presented in **Table 3**. All rates represent person-trips per dwelling unit and are to be applied to the **AM or PM peak period.**

Table 3: Recommended Residential Person-trip Rates

ITE Land Use Code	Dwelling Unit Type	Period	Person-Trip Rate
210	Single-detached	AM	2.05
		PM	2.48
220	Multi-Unit (Low-Rise)	AM	1.35
		PM	1.58
221 & 222	Multi-Unit (High-Rise)	AM	0.80
		PM	0.90

3.3 Adjustment Factors – Peak Period to Peak Hour

The various trip generation data sources require some adjustment to standardize the data for developing robust blended trip rates. The peak period conversion factor in **Table 4** may be used where applicable to develop trip generation rate estimates in the desired format.

Table 4: Adjustment Factors for Residential Trip Generation Rates

Factor	Application	Apply To	Period	Value
Peak Period Conversion Factor	**Peak period to peak hour conversion.** Because the 2020 TRANS Trip Generation Study reports trip generation rates by peak period, factors must be applied if the practitioner requires peak hour rates. In practice, the conversion to peak hour trip rates should occur **after** the application of modal shares.	Person-trip rates per peak period	AM	0.50
			PM	0.44
		Vehicle trip rates per peak period	AM	0.48
			PM	0.44
		Transit trip rates per peak period	AM	0.55
			PM	0.47
		Cycling trip rates per peak period	AM	0.58
			PM	0.48
		Walking trip rates per peak period	AM	0.58
			PM	0.52

Table 8: Residential Mode Share for High-Rise Multifamily Housing

District	Period	Mode				
		Auto Driver	Auto Pass.	Transit	Cycling	Walking
Ottawa Centre	AM	18%	2%	26%	1%	52%
	PM	17%	9%	21%	1%	52%
Ottawa Inner Area	AM	26%	6%	28%	5%	34%
	PM	25%	8%	21%	6%	39%
Île de Hull	AM	27%	3%	37%	12%	21%
	PM	26%	8%	27%	11%	28%
Ottawa East	AM	39%	7%	38%	2%	13%
	PM	40%	14%	28%	3%	15%
Beacon Hill	AM	48%	9%	30%	3%	10%
	PM	52%	16%	28%	0%	4%
Alta Vista	AM	38%	12%	42%	2%	7%
	PM	45%	16%	28%	2%	9%
Hunt Club	AM	39%	6%	44%	1%	9%
	PM	44%	11%	35%	2%	9%
Merivale	AM	41%	6%	42%	2%	8%
	PM	41%	11%	33%	2%	13%
Ottawa West	AM	28%	11%	41%	3%	16%
	PM	33%	11%	26%	7%	23%
Bayshore/Cedarview	AM	40%	12%	38%	2%	8%
	PM	40%	15%	33%	1%	11%
Hull Périphérie	AM	48%	11%	30%	1%	10%
	PM	47%	15%	23%	3%	13%
Orleans	AM	54%	7%	29%	0%	10%
	PM	61%	13%	21%	0%	6%
South Gloucester / Leitrim	AM	50%	15%	25%	1%	9%
	PM	53%	17%	21%	1%	9%
South Nepean	AM	58%	6%	30%	2%	4%
	PM	54%	15%	25%	0%	7%
Kanata - Stittsville	AM	43%	26%	28%	0%	4%
	PM	55%	19%	21%	0%	5%
Plateau	AM	53%	9%	35%	3%	1%
	PM	65%	7%	25%	2%	1%
Aylmer	AM	45%	17%	25%	0%	13%
	PM	31%	21%	23%	4%	20%
Pointe Gatineau	AM	44%	15%	24%	3%	14%
	PM	52%	15%	20%	2%	11%
Gatineau Est	AM	53%	10%	25%	0%	12%
	PM	61%	10%	25%	0%	4%
Masson-Angers	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%
Other Rural Districts	AM	63%	15%	19%	0%	3%
	PM	64%	18%	16%	0%	1%

Appendix F – TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

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: *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)*	☒
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: *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: *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)*	☒
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)*	☒
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)*	☒
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single residential 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)*	☒
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☐
	2.3	**Bicycle repair station**	
BETTER	2.3.1	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)	☒
	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	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	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	☒
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses *(see Zoning By-law Section 94)*	☐ Potential future program pending interest from a Car Share Provider and demand by residents.
	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	☐
	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	☒
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	Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	☐

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

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

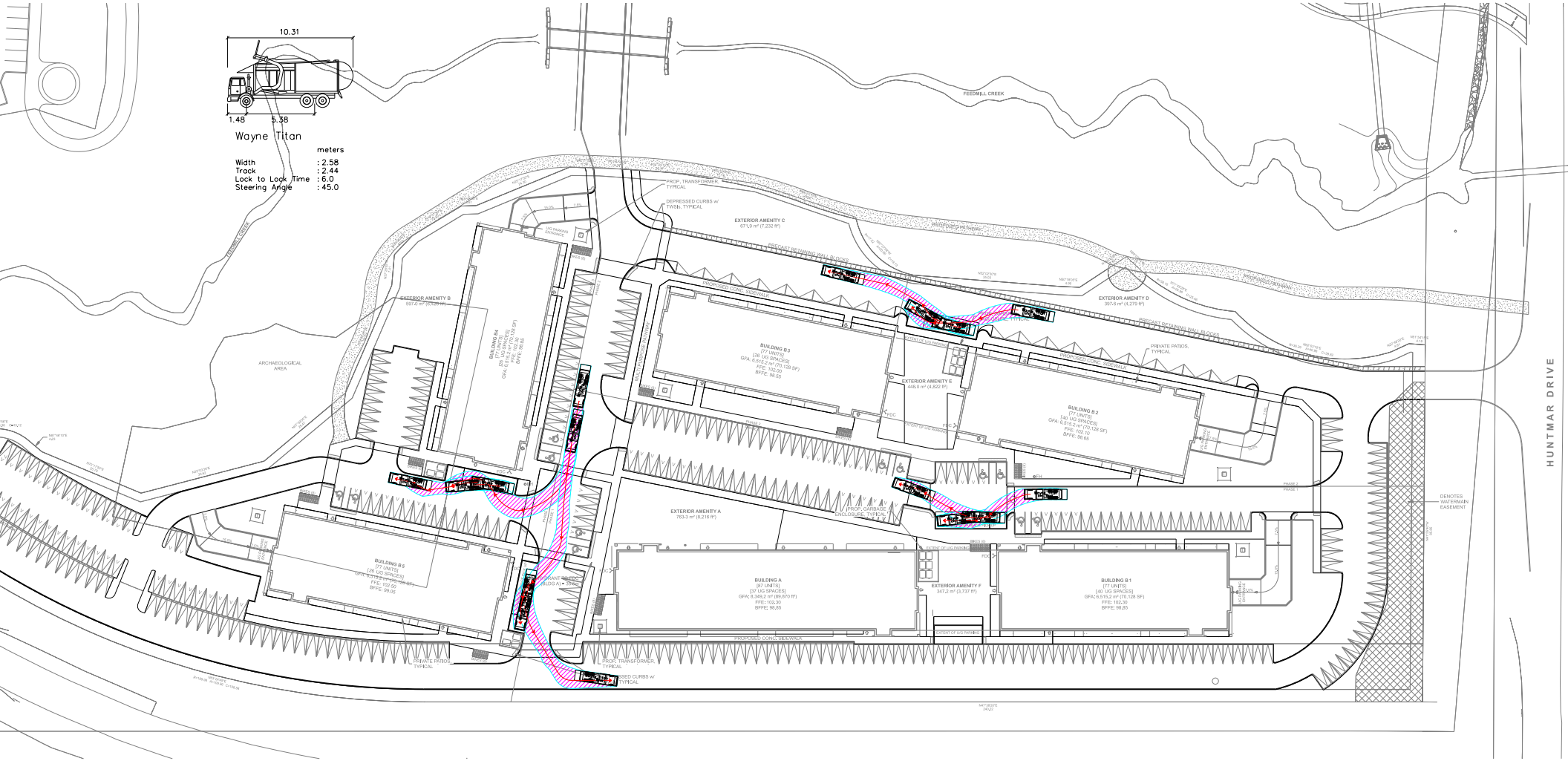
★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

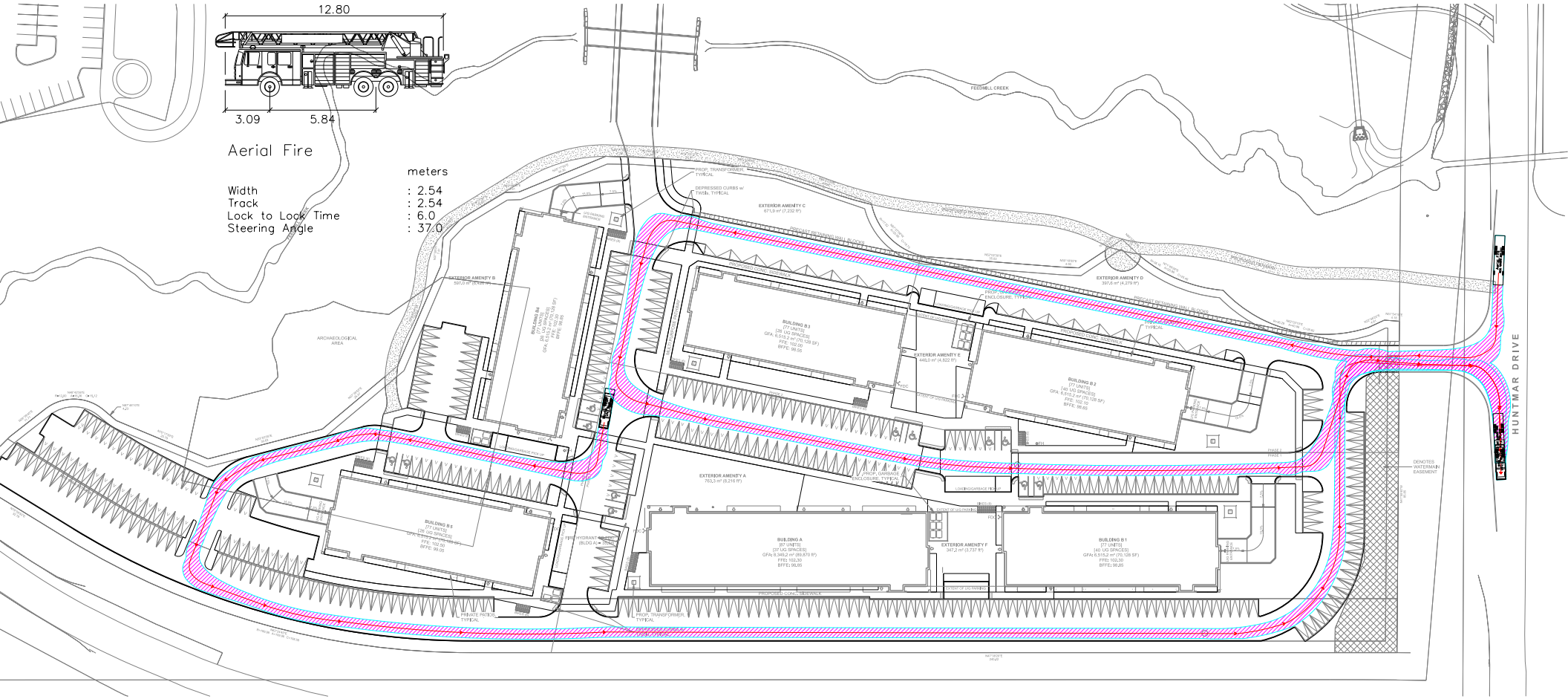
		TDM measures: *Residential developments*	Check if proposed & add descriptions
	1.	**TDM PROGRAM MANAGEMENT**	
	1.1	**Program coordinator**	
BASIC ★	1.1.1	Designate an internal coordinator, or contract with an external coordinator	☒
	1.2	**Travel surveys**	
BETTER	1.2.1	Conduct periodic surveys to identify 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 *(multi-family, condominium)*	☒
	2.2	**Bicycle skills training**	
BETTER	2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

			TDM measures: *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 *(multi-family, condominium)*	☒
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
		3.2	**Transit fare incentives**	
BASIC	★	3.2.1	Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	☐
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
		3.3	**Enhanced public transit service**	
BETTER	★	3.3.1	Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels *(subdivision)*	☐
		3.4	**Private transit service**	
BETTER		3.4.1	Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	☐
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐ Potential Future Program pending interest from a Car Share Provider.
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☒

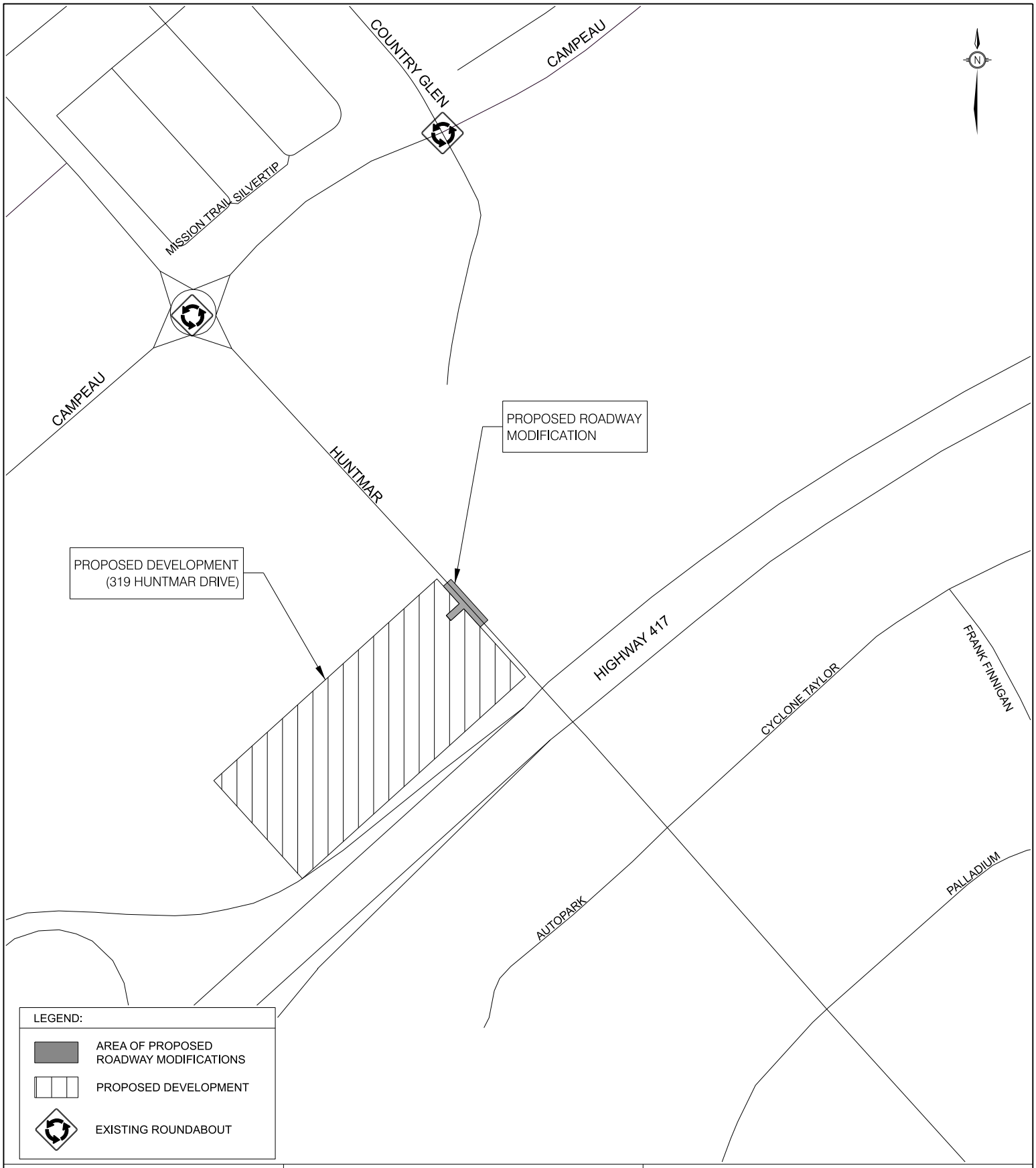
			TDM measures: *Residential developments*	Check if proposed & add descriptions
		6.	**TDM MARKETING & COMMUNICATIONS**	
		6.1	**Multimodal travel information**	
BASIC	★	6.1.1	Provide a multimodal travel option information package to new residents	☒
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

Appendix G – Swept Path Analysis


10.31
1.48
5.38
Wayne Titan
meters
Width : 2.58
Track : 2.44
Lock to Lock Time : 6.0
Steering Angle : 45.0
FEEDMILL CREEK
HUNTMAR DRIVE
BUILDING B4
BUILDING B3
BUILDING B2
BUILDING B1
BUILDING A
BUILDING B5
EXTERIOR AMENITY A
EXTERIOR AMENITY B
EXTERIOR AMENITY C
EXTERIOR AMENITY D
EXTERIOR AMENITY E
EXTERIOR AMENITY F
ARCHAEOLOGICAL AREA
PROPOSED CONC. SIDEWALK
PROPOSED RETAINING WALL BUILDING
PRIVATE PATIOS, TYPICAL
PROP. TRANSFORMER, TYPICAL
DEPRESSED CURBS w/ TWSIs, TYPICAL
PROP. GARBAGE ENCLOSURE, TYPICAL
DENOTES WATERMAIN EASEMENT


12.80
3.09
5.84
Aerial Fire
meters
Width : 2.54
Track : 2.54
Lock to Lock Time : 6.0
Steering Angle : 37.0
FEEDMILL CREEK
HUNTMAR DRIVE
BUILDING A
BUILDING B1
BUILDING B2
BUILDING B3
BUILDING B4
BUILDING B5
EXTERIOR AMENITY A
EXTERIOR AMENITY B
EXTERIOR AMENITY C
EXTERIOR AMENITY D
EXTERIOR AMENITY E
EXTERIOR AMENITY F
ARCHAEOLOGICAL AREA
DENOTES WATERMAIN EASEMENT

Appendix H – RMA Figures



Ottawa

PLANNING, DEVELOPMENT AND BUILDING SERVICES

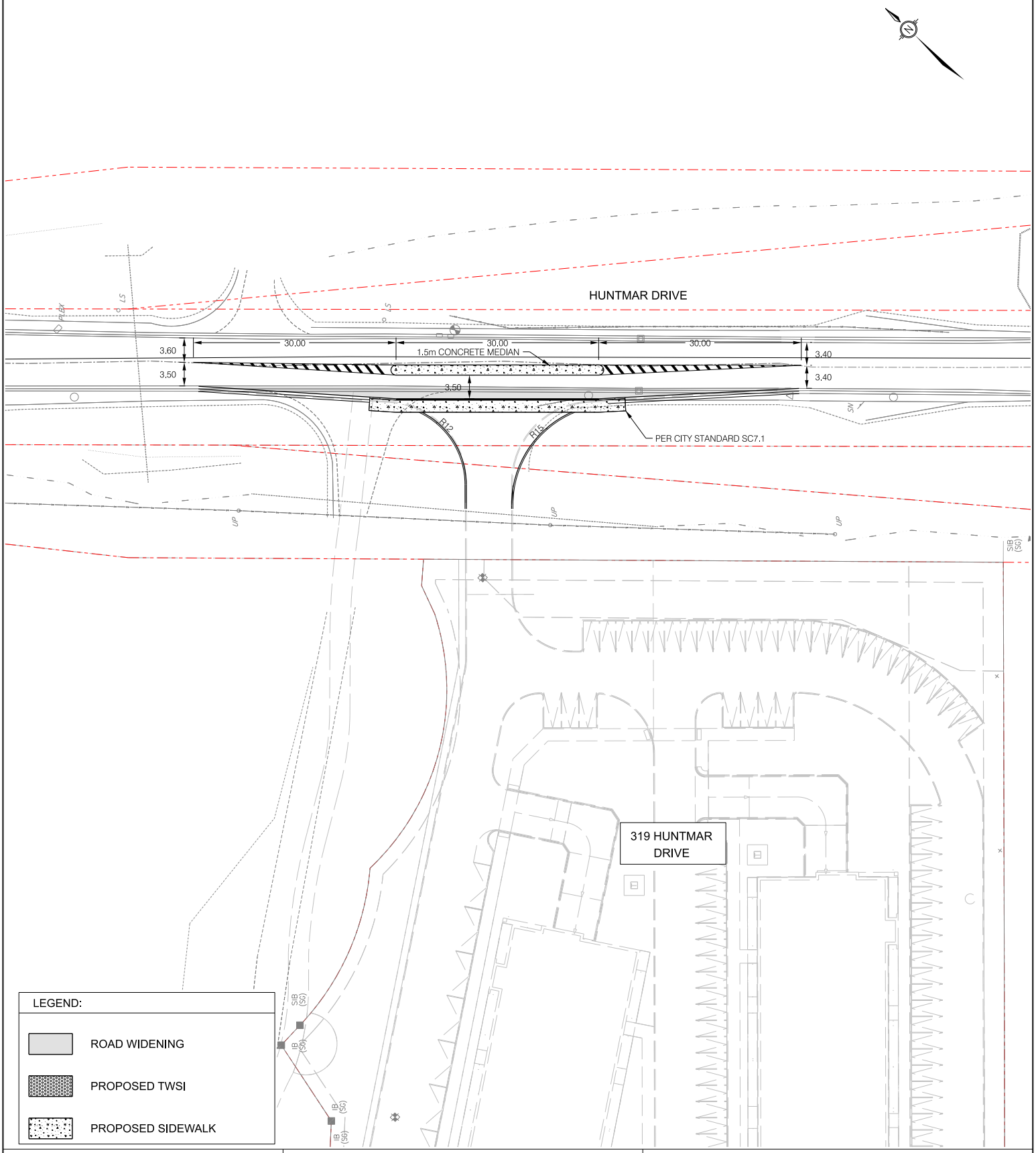
KEY PLAN

319 HUNTMAR DRIVE

MODIFICATIONS (DRAFT)

Transportation Engineering Services

Approved By: ----	Drawing No.: RMA-2026-TPD-XXXA
Completed By: ARCADIS	
Scale: N.T.S.	Date: MARCH 2026



PLANNING, DEVELOPMENT AND BUILDING SERVICES

PROPOSED ROADWAY MODIFICATIONS

319 HUNTMAR DRIVE

MODIFICATIONS (DRAFT)

Transportation Engineering Services

Approved By: ----	Drawing No.: RMA-2026-TPD-XXXB
Completed By: ARCADIS	
Scale: N.T.S.	Date: MARCH 2026

Appendix I – Intersection Capacity Analyses

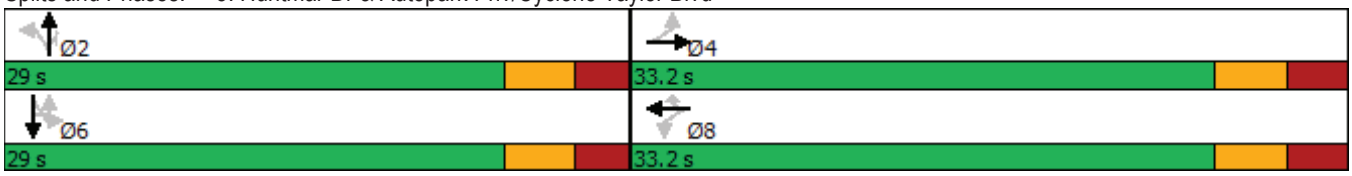
Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	4	29	5	4	17	30	402	35	107	299	46
Future Volume (vph)	20	4	29	5	4	17	30	402	35	107	299	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	55.0		0.0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.926				0.850			0.850		0.980	
Flt Protected		0.981			0.971		0.950			0.950		
Satd. Flow (prot)	0	1626	0	0	1578	1381	1679	1784	1502	1679	3275	0
Flt Permitted		0.951					0.525			0.504		
Satd. Flow (perm)	0	1577	0	0	1625	1381	928	1784	1502	891	3275	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32				51			56		31	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.7			154.4			238.9			119.6	
Travel Time (s)		11.5			11.1			17.2			8.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	20%	0%	12%	3%	2%	3%	3%	4%	0%
Adj. Flow (vph)	22	4	32	6	4	19	33	447	39	119	332	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	58	0	0	10	19	33	447	39	119	383	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	
Total Split (s)	33.2	33.2		33.2	33.2	33.2	29.0	29.0	29.0	29.0	29.0	
Total Split (%)	53.4%	53.4%		53.4%	53.4%	53.4%	46.6%	46.6%	46.6%	46.6%	46.6%	
Maximum Green (s)	27.0	27.0		27.0	27.0	27.0	23.1	23.1	23.1	23.1	23.1	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.2			6.2	6.2	5.9	5.9	5.9	5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effct Green (s)		6.5			6.4	6.4	33.5	33.5	33.5	33.5	33.5	
Actuated g/C Ratio		0.16			0.16	0.16	0.82	0.82	0.82	0.82	0.82	
v/c Ratio		0.21			0.04	0.07	0.04	0.31	0.03	0.16	0.14	
Control Delay		11.1			14.6	2.7	4.1	4.5	1.5	4.7	3.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.1			14.6	2.7	4.1	4.5	1.5	4.7	3.0	
LOS		B			B	A	A	A	A	A	A	
Approach Delay		11.1			6.8			4.2			3.4	
Approach LOS		B			A			A			A	
Queue Length 50th (m)		1.2			0.5	0.0	0.0	0.0	0.0	0.0	0.0	
Queue Length 95th (m)		8.2			3.2	1.6	3.6	33.6	2.0	10.7	11.1	
Internal Link Dist (m)		135.7			130.4			214.9			95.6	
Turn Bay Length (m)							50.0			55.0		
Base Capacity (vph)		1059			1080	935	758	1457	1237	728	2681	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.05			0.01	0.02	0.04	0.31	0.03	0.16	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 62.2			
Actuated Cycle Length: 41.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.31			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 70.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd

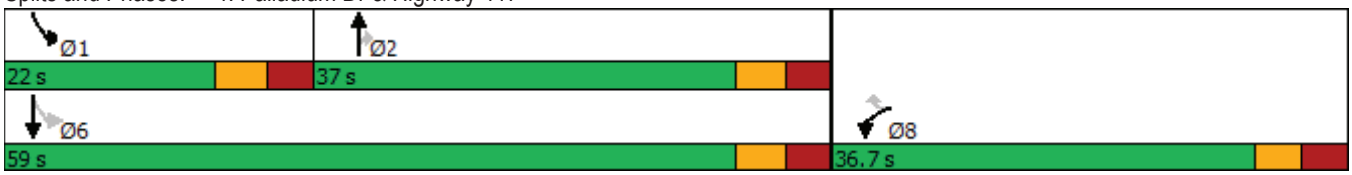


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	146	375	251	89	106	265
Future Volume (vph)	146	375	251	89	106	265
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor				0.98	1.00	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.476	
Satd. Flow (perm)	3354	1547	3458	1514	866	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		417		99		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	162	417	279	99	118	294
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	417	279	99	118	294
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	Max	Max	Max
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
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	0.16	0.55	0.25	0.18	0.19	0.15

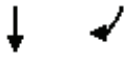
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	25.2	5.7	24.8	5.8	11.4	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	5.7	24.8	5.8	11.4	10.9
LOS	C	A	C	A	B	B
Approach Delay	11.1		19.8			11.1
Approach LOS	B		B			B
Queue Length 50th (m)	11.4	0.0	20.1	0.0	10.1	13.4
Queue Length 95th (m)	18.9	20.7	30.1	10.5	18.3	20.0
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1029	763	1132	562	611	1911
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	0.16	0.55	0.25	0.18	0.19	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 97.7			
Natural Cycle: 85			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	29	3	56	34	2	75	3	17	398	217	2	221
Future Volume (vph)	29	3	56	34	2	75	3	17	398	217	2	221
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0		50.0		0.0		55.0
Storage Lanes	0		0	0		1		1		1		1
Taper Length (m)	2.5			2.5				2.5				2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor								0.97		0.98		1.00
Frt		0.914				0.850				0.850		
Flt Protected		0.984			0.955			0.950				0.950
Satd. Flow (prot)	0	1637	0	0	1690	1502	0	1729	1820	1547	0	1679
Flt Permitted		0.874			0.867			0.406				0.507
Satd. Flow (perm)	0	1454	0	0	1534	1502	0	715	1820	1512	0	895
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		49				83				241		
Link Speed (k/h)		50			50				50			
Link Distance (m)		159.7			154.4				238.9			
Travel Time (s)		11.5			11.1				17.2			
Confl. Peds. (#/hr)								63		2		2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	32	3	62	38	2	83	3	19	442	241	2	246
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	97	0	0	40	83	0	22	442	241	0	248
Turn Type	Perm	NA		Perm	NA	Perm	Perm	Perm	NA	Perm	Perm	Perm
Protected Phases		4			8				2			
Permitted Phases	4			8		8	2	2		2	6	6
Detector Phase	4	4		8	8	8	2	2	2	2	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		6.2			6.2	6.2		5.9	5.9	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		7.1			7.1	7.1		29.2	29.2	29.2		29.2
Actuated g/C Ratio		0.18			0.18	0.18		0.72	0.72	0.72		0.72
v/c Ratio		0.33			0.15	0.25		0.04	0.34	0.21		0.38

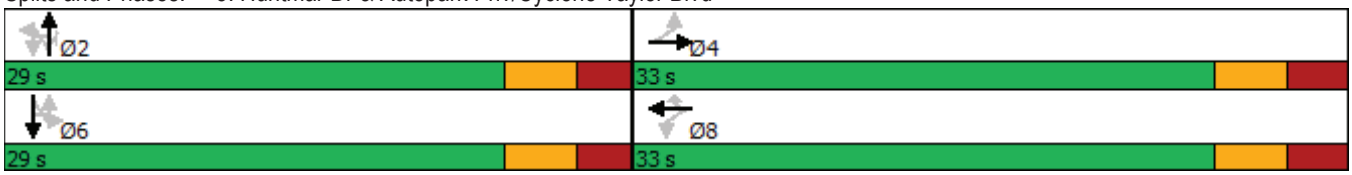


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	545	36
Future Volume (vph)	545	36
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.99	
Frt	0.991	
Flt Protected		
Satd. Flow (prot)	3367	0
Flt Permitted		
Satd. Flow (perm)	3367	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	12	
Link Speed (k/h)	50	
Link Distance (m)	119.6	
Travel Time (s)	8.6	
Confl. Peds. (#/hr)		63
Peak Hour Factor	0.90	0.90
Heavy Vehicles (%)	1%	3%
Adj. Flow (vph)	606	40
Shared Lane Traffic (%)		
Lane Group Flow (vph)	646	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	23.0	
Minimum Split (s)	28.9	
Total Split (s)	29.0	
Total Split (%)	46.8%	
Maximum Green (s)	23.1	
Yellow Time (s)	3.3	
All-Red Time (s)	2.6	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.9	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Min	
Walk Time (s)	7.0	
Flash Dont Walk (s)	16.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	29.2	
Actuated g/C Ratio	0.72	
v/c Ratio	0.27	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Control Delay		12.4			16.0	6.9		5.5	6.0	1.6		8.3
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		12.4			16.0	6.9		5.5	6.0	1.6		8.3
LOS		B			B	A		A	A	A		A
Approach Delay		12.4			9.9				4.5			
Approach LOS		B			A				A			
Queue Length 50th (m)		3.1			2.5	0.0		0.6	15.8	0.0		9.3
Queue Length 95th (m)		11.8			8.0	7.5		3.1	35.5	6.8		27.6
Internal Link Dist (m)		135.7			130.4				214.9			
Turn Bay Length (m)								50.0				55.0
Base Capacity (vph)		1003			1041	1046		515	1312	1157		645
Starvation Cap Reductn		0			0	0		0	0	0		0
Spillback Cap Reductn		0			0	0		0	0	0		0
Storage Cap Reductn		0			0	0		0	0	0		0
Reduced v/c Ratio		0.10			0.04	0.08		0.04	0.34	0.21		0.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 40.5			
Natural Cycle: 70			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBT	SBR
Control Delay	4.7	
Queue Delay	0.0	
Total Delay	4.7	
LOS	A	
Approach Delay	5.7	
Approach LOS	A	
Queue Length 50th (m)	11.1	
Queue Length 95th (m)	21.6	
Internal Link Dist (m)	95.6	
Turn Bay Length (m)		
Base Capacity (vph)	2431	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.27	

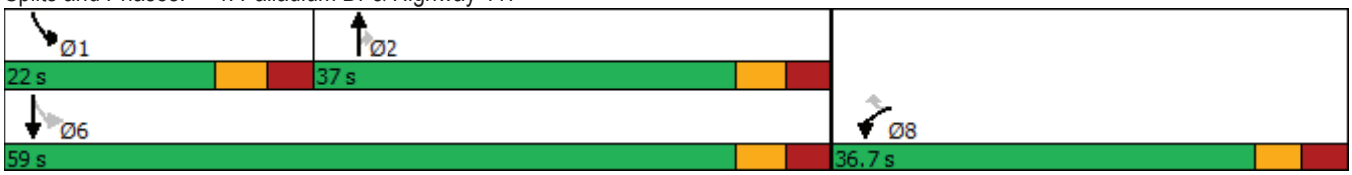
Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	299	374	235	327	249	482
Future Volume (vph)	299	374	235	327	249	482
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor		0.99				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.350	
Satd. Flow (perm)	3354	1525	3458	1547	637	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		416		363		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)		2				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	332	416	261	363	277	536
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	416	261	363	277	536
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	11.8	11.8	10.1	10.1	28.0	28.0
Actuated g/C Ratio	0.22	0.22	0.19	0.19	0.52	0.52
v/c Ratio	0.45	0.63	0.40	0.62	0.50	0.30

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	21.3	7.5	21.9	8.2	10.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.3	7.5	21.9	8.2	10.9	7.8
LOS	C	A	C	A	B	A
Approach Delay	13.6		13.9			8.9
Approach LOS	B		B			A
Queue Length 50th (m)	13.9	0.0	11.2	0.0	12.8	12.9
Queue Length 95th (m)	28.2	19.4	23.4	18.7	28.3	24.2
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1902	1045	1961	1034	641	3240
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	0.17	0.40	0.13	0.35	0.43	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 53.8			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 11.9		Intersection LOS: B	
Intersection Capacity Utilization 48.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



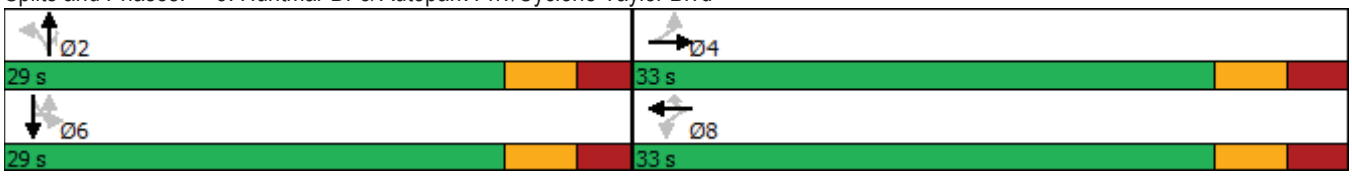
Future Background 2029

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	4	29	5	4	17	30	470	35	107	330	46
Future Volume (vph)	20	4	29	5	4	17	30	470	35	107	330	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	55.0		0.0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.926				0.850			0.850		0.982	
Flt Protected		0.981			0.973		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1594	1381	1679	1784	1502	1679	3281	0
Flt Permitted		0.950					0.529			0.494		
Satd. Flow (perm)	0	1575	0	0	1638	1381	935	1784	1502	873	3281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				51			56		28	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.7			154.4			238.9			119.6	
Travel Time (s)		11.5			11.1			17.2			8.6	
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
Heavy Vehicles (%)	0%	0%	3%	20%	0%	12%	3%	2%	3%	3%	4%	0%
Adj. Flow (vph)	20	4	29	5	4	17	30	470	35	107	330	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	17	30	470	35	107	376	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.2			6.2	6.2	5.9	5.9	5.9	5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effct Green (s)		6.4			6.3	6.3	34.0	34.0	34.0	34.0	34.0	
Actuated g/C Ratio		0.15			0.15	0.15	0.82	0.82	0.82	0.82	0.82	
v/c Ratio		0.20			0.04	0.07	0.04	0.32	0.03	0.15	0.14	
Control Delay		11.3			14.8	2.2	4.1	4.5	1.3	4.6	3.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.3			14.8	2.2	4.1	4.5	1.3	4.6	3.0	
LOS		B			B	A	A	A	A	A	A	
Approach Delay		11.3			6.6			4.3			3.3	
Approach LOS		B			A			A			A	
Queue Length 50th (m)		1.2			0.5	0.0	0.0	0.0	0.0	0.0	0.0	
Queue Length 95th (m)		7.8			3.1	1.3	3.4	35.6	1.7	9.7	10.8	
Internal Link Dist (m)		135.7			130.4			214.9			95.6	
Turn Bay Length (m)							50.0			55.0		
Base Capacity (vph)		1029			1060	912	764	1458	1238	713	2687	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.05			0.01	0.02	0.04	0.32	0.03	0.15	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 41.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 73.8%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd

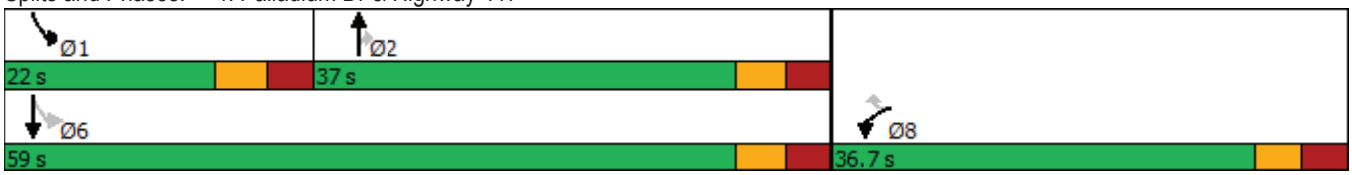


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	284	457	283	93	123	313
Future Volume (vph)	284	457	283	93	123	313
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor				0.98	1.00	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.336	
Satd. Flow (perm)	3354	1547	3458	1514	611	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		457		93		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	284	457	283	93	123	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	457	283	93	123	313
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	11.6	11.6	9.7	9.7	20.9	20.9
Actuated g/C Ratio	0.25	0.25	0.21	0.21	0.45	0.45
v/c Ratio	0.34	0.63	0.39	0.24	0.27	0.20

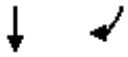
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	17.6	6.7	19.5	7.0	8.7	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	6.7	19.5	7.0	8.7	7.7
LOS	B	A	B	A	A	A
Approach Delay	10.9		16.4			8.0
Approach LOS	B		B			A
Queue Length 50th (m)	10.6	0.0	11.0	0.0	5.0	6.7
Queue Length 95th (m)	21.2	18.4	23.0	9.3	13.6	14.5
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	2247	1187	2317	1045	677	3458
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	0.13	0.39	0.12	0.09	0.18	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 46.9			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 50.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	29	3	56	34	2	75	3	17	443	217	2	221
Future Volume (vph)	29	3	56	34	2	75	3	17	443	217	2	221
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0		50.0		0.0		55.0
Storage Lanes	0		0	0		1		1		1		1
Taper Length (m)	2.5			2.5				2.5				2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor								0.97		0.98		1.00
Frt		0.914				0.850				0.850		
Flt Protected		0.984			0.955			0.950				0.950
Satd. Flow (prot)	0	1637	0	0	1690	1502	0	1729	1820	1547	0	1679
Flt Permitted		0.876			0.884			0.401				0.506
Satd. Flow (perm)	0	1457	0	0	1565	1502	0	707	1820	1512	0	893
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		46				75				217		
Link Speed (k/h)		50			50				50			
Link Distance (m)		159.7			154.4				238.9			
Travel Time (s)		11.5			11.1				17.2			
Confl. Peds. (#/hr)								63		2		2
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
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	29	3	56	34	2	75	3	17	443	217	2	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	36	75	0	20	443	217	0	223
Turn Type	Perm	NA		Perm	NA	Perm	Perm	Perm	NA	Perm	Perm	Perm
Protected Phases		4			8				2			
Permitted Phases	4			8		8	2	2		2	6	6
Detector Phase	4	4		8	8	8	2	2	2	2	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		6.2			6.2	6.2		5.9	5.9	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		6.9			7.0	7.0		29.2	29.2	29.2		29.2
Actuated g/C Ratio		0.17			0.17	0.17		0.72	0.72	0.72		0.72
v/c Ratio		0.31			0.13	0.23		0.04	0.34	0.19		0.35

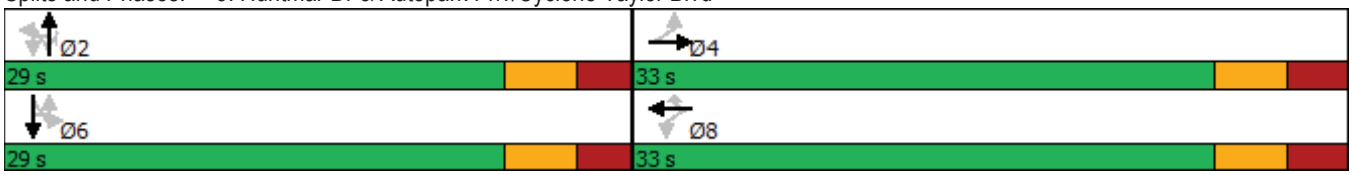


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	624	36
Future Volume (vph)	624	36
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.99	
Frt	0.992	
Flt Protected		
Satd. Flow (prot)	3374	0
Flt Permitted		
Satd. Flow (perm)	3374	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	11	
Link Speed (k/h)	50	
Link Distance (m)	119.6	
Travel Time (s)	8.6	
Confl. Peds. (#/hr)		63
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	3%
Adj. Flow (vph)	624	36
Shared Lane Traffic (%)		
Lane Group Flow (vph)	660	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	23.0	
Minimum Split (s)	28.9	
Total Split (s)	29.0	
Total Split (%)	46.8%	
Maximum Green (s)	23.1	
Yellow Time (s)	3.3	
All-Red Time (s)	2.6	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.9	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Min	
Walk Time (s)	7.0	
Flash Dont Walk (s)	16.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	29.2	
Actuated g/C Ratio	0.72	
v/c Ratio	0.27	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Control Delay		12.2			15.9	7.0		5.3	5.9	1.6		7.6
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		12.2			15.9	7.0		5.3	5.9	1.6		7.6
LOS		B			B	A		A	A	A		A
Approach Delay		12.2			9.9				4.5			
Approach LOS		B			A				A			
Queue Length 50th (m)		2.7			2.3	0.0		0.6	15.8	0.0		8.0
Queue Length 95th (m)		10.9			7.5	7.2		2.8	35.3	6.4		23.4
Internal Link Dist (m)		135.7			130.4				214.9			
Turn Bay Length (m)								50.0				55.0
Base Capacity (vph)		1007			1066	1047		482	1241	1100		609
Starvation Cap Reductn		0			0	0		0	0	0		0
Spillback Cap Reductn		0			0	0		0	0	0		0
Storage Cap Reductn		0			0	0		0	0	0		0
Reduced v/c Ratio		0.09			0.03	0.07		0.04	0.36	0.20		0.37

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 40.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 5.7		Intersection LOS: A	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBT	SBR
Control Delay	4.7	
Queue Delay	0.0	
Total Delay	4.7	
LOS	A	
Approach Delay	5.4	
Approach LOS	A	
Queue Length 50th (m)	11.3	
Queue Length 95th (m)	21.7	
Internal Link Dist (m)	95.6	
Turn Bay Length (m)		
Base Capacity (vph)	2306	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.29	

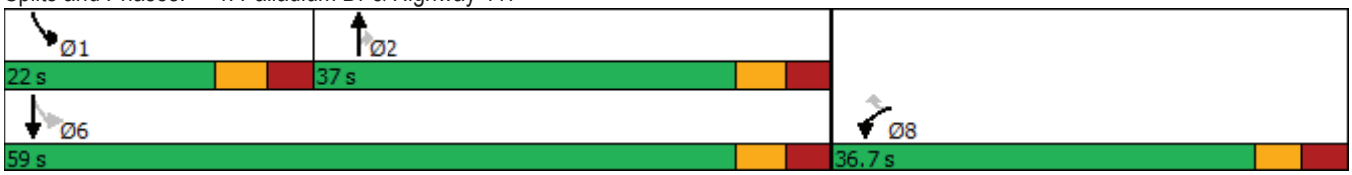
Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	444	402	303	340	324	557
Future Volume (vph)	444	402	303	340	324	557
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor		0.99				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.349	
Satd. Flow (perm)	3354	1525	3458	1547	635	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		402		340		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)		2				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	444	402	303	340	324	557
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	402	303	340	324	557
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.0	14.0	11.1	11.1	30.3	30.3
Actuated g/C Ratio	0.24	0.24	0.19	0.19	0.52	0.52
v/c Ratio	0.55	0.60	0.46	0.60	0.58	0.31

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	22.9	6.8	24.4	8.1	13.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	6.8	24.4	8.1	13.3	8.8
LOS	C	A	C	A	B	A
Approach Delay	15.2		15.8			10.4
Approach LOS	B		B			B
Queue Length 50th (m)	21.0	0.0	15.2	0.0	18.4	16.1
Queue Length 95th (m)	37.4	18.4	28.7	18.7	38.5	29.1
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1762	991	1817	974	617	3072
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	0.25	0.41	0.17	0.35	0.53	0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 58.3			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 13.6		Intersection LOS: B	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



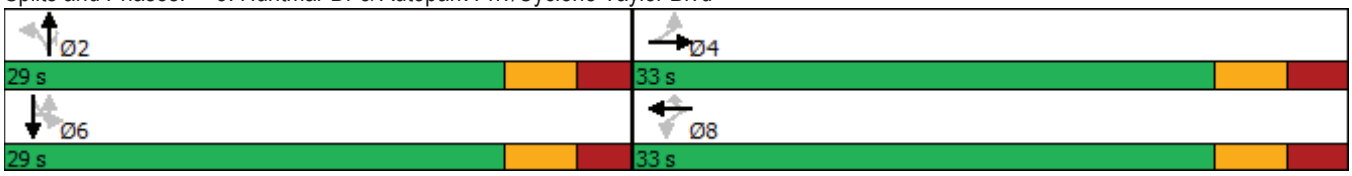
Future Background 2034

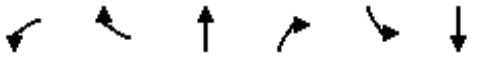
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	4	29	5	4	17	30	490	35	107	345	46
Future Volume (vph)	20	4	29	5	4	17	30	490	35	107	345	46
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	55.0		0.0
Storage Lanes	0		0	0		1	1		1	1		0
Taper Length (m)	2.5			2.5			2.5			2.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Frt		0.926				0.850			0.850		0.982	
Flt Protected		0.981			0.973		0.950			0.950		
Satd. Flow (prot)	0	1627	0	0	1594	1381	1679	1784	1502	1679	3280	0
Flt Permitted		0.950					0.521			0.485		
Satd. Flow (perm)	0	1575	0	0	1638	1381	921	1784	1502	857	3280	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				51			56		27	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		159.7			154.4			238.9			119.6	
Travel Time (s)		11.5			11.1			17.2			8.6	
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
Heavy Vehicles (%)	0%	0%	3%	20%	0%	12%	3%	2%	3%	3%	4%	0%
Adj. Flow (vph)	20	4	29	5	4	17	30	490	35	107	345	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	17	30	490	35	107	391	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2		2	6		
Detector Phase	4	4		8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.2			6.2	6.2	5.9	5.9	5.9	5.9	5.9	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effct Green (s)		6.4			6.3	6.3	34.1	34.1	34.1	34.1	34.1	
Actuated g/C Ratio		0.15			0.15	0.15	0.82	0.82	0.82	0.82	0.82	
v/c Ratio		0.20			0.04	0.07	0.04	0.34	0.03	0.15	0.15	
Control Delay		11.4			14.8	2.2	4.1	4.6	1.3	4.6	3.0	
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		11.4			14.8	2.2	4.1	4.6	1.3	4.6	3.0	
LOS		B			B	A	A	A	A	A	A	
Approach Delay		11.4			6.6			4.4			3.3	
Approach LOS		B			A			A			A	
Queue Length 50th (m)		1.2			0.5	0.0	0.0	0.0	0.0	0.0	0.0	
Queue Length 95th (m)		7.8			3.1	1.3	3.4	37.7	1.7	9.7	11.3	
Internal Link Dist (m)		135.7			130.4			214.9			95.6	
Turn Bay Length (m)							50.0			55.0		
Base Capacity (vph)		1029			1059	911	752	1458	1238	700	2685	
Starvation Cap Reductn		0			0	0	0	0	0	0	0	
Spillback Cap Reductn		0			0	0	0	0	0	0	0	
Storage Cap Reductn		0			0	0	0	0	0	0	0	
Reduced v/c Ratio		0.05			0.01	0.02	0.04	0.34	0.03	0.15	0.15	

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 41.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



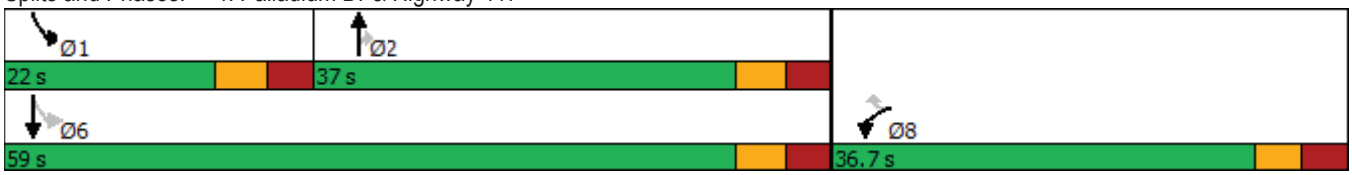


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	291	476	296	97	129	326
Future Volume (vph)	291	476	296	97	129	326
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor				0.98	1.00	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.336	
Satd. Flow (perm)	3354	1547	3458	1514	611	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		476		97		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	291	476	296	97	129	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	291	476	296	97	129	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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	11.8	11.8	10.0	10.0	21.2	21.2
Actuated g/C Ratio	0.25	0.25	0.21	0.21	0.45	0.45
v/c Ratio	0.35	0.64	0.41	0.25	0.28	0.21

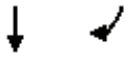
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	17.8	6.8	19.7	6.9	8.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	6.8	19.7	6.9	8.9	7.8
LOS	B	A	B	A	A	A
Approach Delay	11.0		16.5			8.1
Approach LOS	B		B			A
Queue Length 50th (m)	11.0	0.0	11.5	0.0	5.2	7.1
Queue Length 95th (m)	21.9	18.8	24.4	9.6	14.4	15.4
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	2228	1187	2297	1038	674	3364
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	0.13	0.40	0.13	0.09	0.19	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 47.4			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 51.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	29	3	56	34	2	75	3	17	463	217	2	221
Future Volume (vph)	29	3	56	34	2	75	3	17	463	217	2	221
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0		50.0		0.0		55.0
Storage Lanes	0		0	0		1		1		1		1
Taper Length (m)	2.5			2.5				2.5				2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor								0.97		0.98		1.00
Frt		0.914				0.850				0.850		
Flt Protected		0.984			0.955			0.950				0.950
Satd. Flow (prot)	0	1637	0	0	1690	1502	0	1729	1820	1547	0	1679
Flt Permitted		0.876			0.884			0.390				0.497
Satd. Flow (perm)	0	1457	0	0	1565	1502	0	689	1820	1512	0	877
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		41				75				217		
Link Speed (k/h)		50			50				50			
Link Distance (m)		159.7			154.4				238.9			
Travel Time (s)		11.5			11.1				17.2			
Confl. Peds. (#/hr)								63		2		2
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
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	29	3	56	34	2	75	3	17	463	217	2	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	36	75	0	20	463	217	0	223
Turn Type	Perm	NA		Perm	NA	Perm	Perm	Perm	NA	Perm	Perm	Perm
Protected Phases		4			8				2			
Permitted Phases	4			8		8	2	2		2	6	6
Detector Phase	4	4		8	8	8	2	2	2	2	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		6.2			6.2	6.2		5.9	5.9	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		7.0			7.0	7.0		29.2	29.2	29.2		29.2
Actuated g/C Ratio		0.17			0.17	0.17		0.72	0.72	0.72		0.72
v/c Ratio		0.31			0.13	0.23		0.04	0.35	0.19		0.35

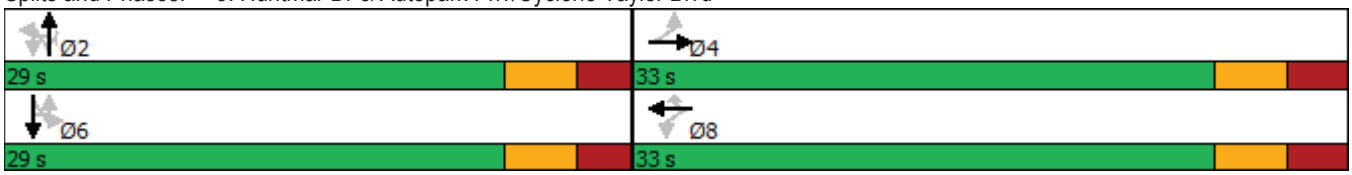


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	651	36
Future Volume (vph)	651	36
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.99	
Frt	0.992	
Flt Protected		
Satd. Flow (prot)	3375	0
Flt Permitted		
Satd. Flow (perm)	3375	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	10	
Link Speed (k/h)	50	
Link Distance (m)	119.6	
Travel Time (s)	8.6	
Confl. Peds. (#/hr)		63
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	3%
Adj. Flow (vph)	651	36
Shared Lane Traffic (%)		
Lane Group Flow (vph)	687	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	23.0	
Minimum Split (s)	28.9	
Total Split (s)	29.0	
Total Split (%)	46.8%	
Maximum Green (s)	23.1	
Yellow Time (s)	3.3	
All-Red Time (s)	2.6	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.9	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Min	
Walk Time (s)	7.0	
Flash Dont Walk (s)	16.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	29.2	
Actuated g/C Ratio	0.72	
v/c Ratio	0.28	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Control Delay		12.7			15.8	7.0		5.4	6.1	1.6		7.8
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		12.7			15.8	7.0		5.4	6.1	1.6		7.8
LOS		B			B	A		A	A	A		A
Approach Delay		12.7			9.9				4.7			
Approach LOS		B			A				A			
Queue Length 50th (m)		3.0			2.3	0.0		0.6	16.9	0.0		8.1
Queue Length 95th (m)		11.3			7.5	7.2		2.8	37.3	6.5		23.9
Internal Link Dist (m)		135.7			130.4				214.9			
Turn Bay Length (m)								50.0				55.0
Base Capacity (vph)		1003			1064	1045		497	1313	1151		633
Starvation Cap Reductn		0			0	0		0	0	0		0
Spillback Cap Reductn		0			0	0		0	0	0		0
Storage Cap Reductn		0			0	0		0	0	0		0
Reduced v/c Ratio		0.09			0.03	0.07		0.04	0.35	0.19		0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 40.5			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 5.8		Intersection LOS: A	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBT	SBR
Control Delay	4.8	
Queue Delay	0.0	
Total Delay	4.8	
LOS	A	
Approach Delay	5.5	
Approach LOS	A	
Queue Length 50th (m)	12.1	
Queue Length 95th (m)	22.9	
Internal Link Dist (m)	95.6	
Turn Bay Length (m)		
Base Capacity (vph)	2438	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.28	

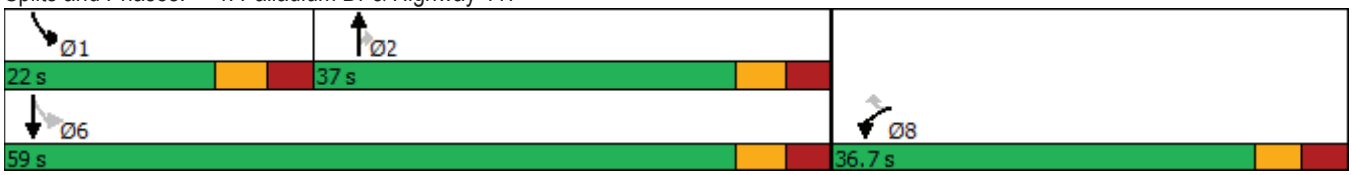
Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	459	421	315	356	336	581
Future Volume (vph)	459	421	315	356	336	581
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor		0.99				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.351	
Satd. Flow (perm)	3354	1525	3458	1547	639	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		421		356		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)		2				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	459	421	315	356	336	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	459	421	315	356	336	581
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.4	14.4	11.5	11.5	31.1	31.1
Actuated g/C Ratio	0.24	0.24	0.19	0.19	0.52	0.52
v/c Ratio	0.57	0.61	0.47	0.61	0.60	0.32

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	23.5	6.9	24.7	8.0	13.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	6.9	24.7	8.0	13.7	9.0
LOS	C	A	C	A	B	A
Approach Delay	15.5		15.8			10.7
Approach LOS	B		B			B
Queue Length 50th (m)	22.3	0.0	16.2	0.0	19.6	17.2
Queue Length 95th (m)	39.6	19.0	30.1	19.0	40.8	31.1
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1731	991	1785	970	615	3024
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	0.27	0.42	0.18	0.37	0.55	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 59.5			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417



Future Total 2029

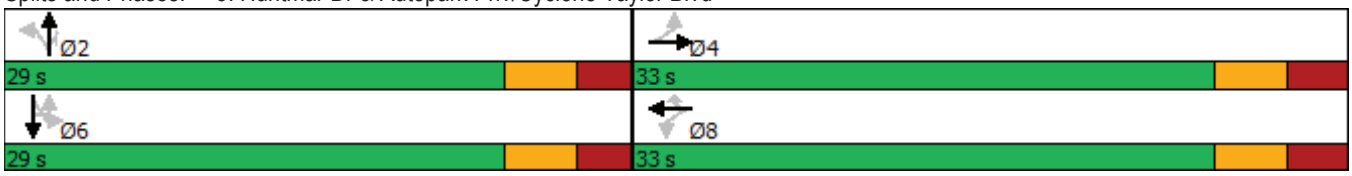
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	4	29	5	4	17	30	472	35	4	107	380
Future Volume (vph)	20	4	29	5	4	17	30	472	35	4	107	380
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0		55.0	
Storage Lanes	0		0	0		1	1		1		1	
Taper Length (m)	2.5			2.5			2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95
Frt		0.926				0.850			0.850			0.984
Flt Protected		0.981			0.973		0.950				0.950	
Satd. Flow (prot)	0	1627	0	0	1594	1381	1679	1784	1502	0	1680	3285
Flt Permitted		0.950					0.504				0.493	
Satd. Flow (perm)	0	1575	0	0	1638	1381	891	1784	1502	0	872	3285
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		29				51			56			24
Link Speed (k/h)		50			50			50				50
Link Distance (m)		159.7			154.4			238.9				119.6
Travel Time (s)		11.5			11.1			17.2				8.6
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
Heavy Vehicles (%)	0%	0%	3%	20%	0%	12%	3%	2%	3%	0%	3%	4%
Adj. Flow (vph)	20	4	29	5	4	17	30	472	35	4	107	380
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	17	30	472	35	0	111	426
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2		2	6	6	
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.2			6.2	6.2	5.9	5.9	5.9		5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		6.4			6.3	6.3	34.0	34.0	34.0		34.0	34.0
Actuated g/C Ratio		0.15			0.15	0.15	0.82	0.82	0.82		0.82	0.82
v/c Ratio		0.20			0.04	0.07	0.04	0.32	0.03		0.16	0.16
Control Delay		11.3			14.8	2.2	4.2	4.6	1.3		4.6	3.1
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	46
Future Volume (vph)	46
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	1.00
Heavy Vehicles (%)	0%
Adj. Flow (vph)	46
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Total Delay		11.3			14.8	2.2	4.2	4.6	1.3		4.6	3.1
LOS		B			B	A	A	A	A		A	A
Approach Delay		11.3			6.6			4.3				3.4
Approach LOS		B			A			A				A
Queue Length 50th (m)		1.2			0.5	0.0	0.0	0.0	0.0		0.0	0.0
Queue Length 95th (m)		7.8			3.1	1.3	3.4	35.9	1.7		10.0	12.3
Internal Link Dist (m)		135.7			130.4			214.9				95.6
Turn Bay Length (m)							50.0				55.0	
Base Capacity (vph)		1029			1060	912	728	1458	1238		713	2689
Starvation Cap Reductn		0			0	0	0	0	0		0	0
Spillback Cap Reductn		0			0	0	0	0	0		0	0
Storage Cap Reductn		0			0	0	0	0	0		0	0
Reduced v/c Ratio		0.05			0.01	0.02	0.04	0.32	0.03		0.16	0.16

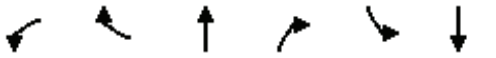
Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 41.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 73.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBR
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

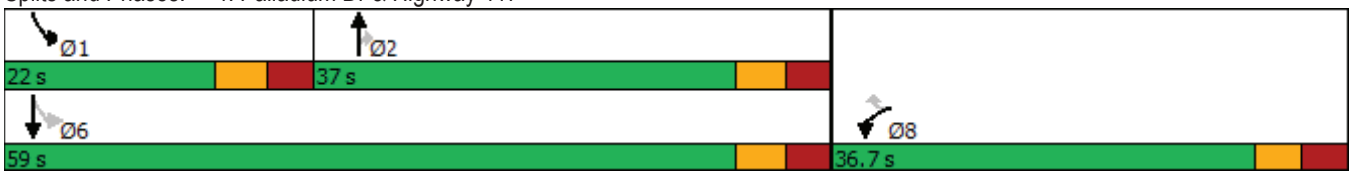


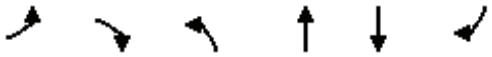
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	284	469	283	93	123	313
Future Volume (vph)	284	469	283	93	123	313
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor				0.98	1.00	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.336	
Satd. Flow (perm)	3354	1547	3458	1514	611	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		469		93		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	284	469	283	93	123	313
Shared Lane Traffic (%)						
Lane Group Flow (vph)	284	469	283	93	123	313
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	11.7	11.7	9.7	9.7	20.9	20.9
Actuated g/C Ratio	0.25	0.25	0.21	0.21	0.45	0.45
v/c Ratio	0.34	0.64	0.39	0.24	0.27	0.20

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	17.6	6.8	19.5	7.0	8.8	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.6	6.8	19.5	7.0	8.8	7.8
LOS	B	A	B	A	A	A
Approach Delay	10.8		16.4			8.1
Approach LOS	B		B			A
Queue Length 50th (m)	10.6	0.0	11.0	0.0	5.0	6.7
Queue Length 95th (m)	21.2	18.5	23.1	9.3	13.7	14.7
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	2245	1190	2315	1044	676	3374
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	0.13	0.39	0.12	0.09	0.18	0.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 46.9			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 11.4		Intersection LOS: B	
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	54	0	515	489	24
Future Volume (vph)	0	54	0	515	489	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.994	
Flt Protected						
Satd. Flow (prot)	0	1574	0	1767	1759	0
Flt Permitted						
Satd. Flow (perm)	0	1574	0	1767	1759	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	104.5			194.1	135.7	
Travel Time (s)	7.5			14.0	9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	54	0	515	489	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	0	515	513	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

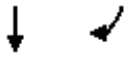
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	54	0	515	489	24
Future Vol, veh/h	0	54	0	515	489	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	54	0	515	489	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	501	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	574	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	574	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	574	-	-
HCM Lane V/C Ratio	-	0.094	-	-
HCM Control Delay (s)	-	11.9	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	29	3	56	34	2	75	3	17	448	217	5	221
Future Volume (vph)	29	3	56	34	2	75	3	17	448	217	5	221
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0		50.0		0.0		55.0
Storage Lanes	0		0	0		1		1		1		1
Taper Length (m)	2.5			2.5				2.5				2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor								0.97		0.98		1.00
Frt		0.914				0.850				0.850		
Flt Protected		0.984			0.955			0.950				0.950
Satd. Flow (prot)	0	1637	0	0	1690	1502	0	1729	1820	1547	0	1680
Flt Permitted		0.876			0.864			0.386				0.504
Satd. Flow (perm)	0	1457	0	0	1529	1502	0	682	1820	1512	0	890
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		40				75				217		
Link Speed (k/h)		50			50				50			
Link Distance (m)		159.7			154.4				238.9			
Travel Time (s)		11.5			11.1				17.2			
Confl. Peds. (#/hr)								63		2		2
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
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	29	3	56	34	2	75	3	17	448	217	5	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	36	75	0	20	448	217	0	226
Turn Type	Perm	NA		Perm	NA	Perm	Perm	Perm	NA	Perm	Perm	Perm
Protected Phases		4			8				2			
Permitted Phases	4			8		8	2	2		2	6	6
Detector Phase	4	4		8	8	8	2	2	2	2	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		6.2			6.2	6.2		5.9	5.9	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		7.1			7.1	7.1		29.2	29.2	29.2		29.2
Actuated g/C Ratio		0.18			0.18	0.18		0.72	0.72	0.72		0.72
v/c Ratio		0.31			0.13	0.23		0.04	0.34	0.19		0.35

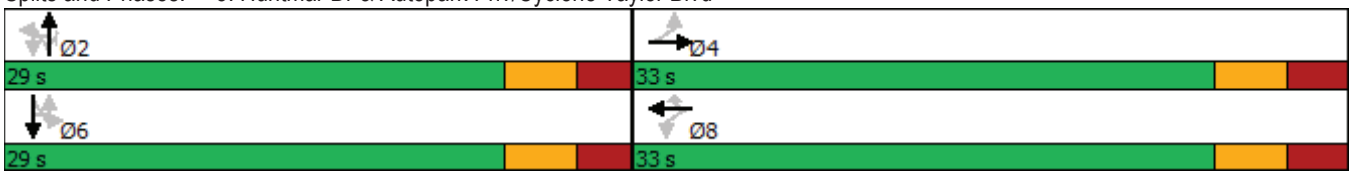


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	663	36
Future Volume (vph)	663	36
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.99	
Frt	0.992	
Flt Protected		
Satd. Flow (prot)	3375	0
Flt Permitted		
Satd. Flow (perm)	3375	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	10	
Link Speed (k/h)	50	
Link Distance (m)	119.6	
Travel Time (s)	8.6	
Confl. Peds. (#/hr)		63
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	3%
Adj. Flow (vph)	663	36
Shared Lane Traffic (%)		
Lane Group Flow (vph)	699	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	23.0	
Minimum Split (s)	28.9	
Total Split (s)	29.0	
Total Split (%)	46.8%	
Maximum Green (s)	23.1	
Yellow Time (s)	3.3	
All-Red Time (s)	2.6	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.9	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Min	
Walk Time (s)	7.0	
Flash Dont Walk (s)	16.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	29.2	
Actuated g/C Ratio	0.72	
v/c Ratio	0.29	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Control Delay		12.8			15.9	7.0		5.5	6.0	1.6		7.8
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		12.8			15.9	7.0		5.5	6.0	1.6		7.8
LOS		B			B	A		A	A	A		A
Approach Delay		12.8			9.8				4.6			
Approach LOS		B			A				A			
Queue Length 50th (m)		3.1			2.3	0.0		0.6	16.1	0.0		8.2
Queue Length 95th (m)		11.4			7.5	7.2		2.9	35.9	6.5		24.1
Internal Link Dist (m)		135.7			130.4				214.9			
Turn Bay Length (m)								50.0				55.0
Base Capacity (vph)		1003			1039	1044		492	1312	1151		642
Starvation Cap Reductn		0			0	0		0	0	0		0
Spillback Cap Reductn		0			0	0		0	0	0		0
Storage Cap Reductn		0			0	0		0	0	0		0
Reduced v/c Ratio		0.09			0.03	0.07		0.04	0.34	0.19		0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 40.5			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 5.8		Intersection LOS: A	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBT	SBR
Control Delay	4.9	
Queue Delay	0.0	
Total Delay	4.9	
LOS	A	
Approach Delay	5.6	
Approach LOS	A	
Queue Length 50th (m)	12.3	
Queue Length 95th (m)	23.5	
Internal Link Dist (m)	95.6	
Turn Bay Length (m)		
Base Capacity (vph)	2437	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.29	

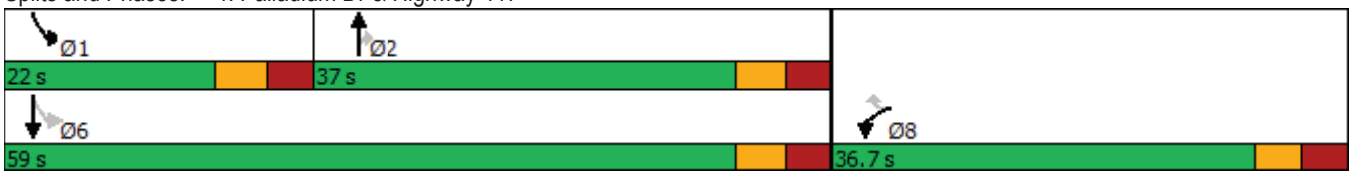
Intersection Summary

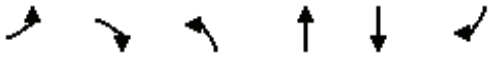
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	444	433	303	340	324	557
Future Volume (vph)	444	433	303	340	324	557
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor		0.99				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.349	
Satd. Flow (perm)	3354	1525	3458	1547	635	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		433		340		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)		2				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	444	433	303	340	324	557
Shared Lane Traffic (%)						
Lane Group Flow (vph)	444	433	303	340	324	557
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.0	14.0	11.1	11.1	30.3	30.3
Actuated g/C Ratio	0.24	0.24	0.19	0.19	0.52	0.52
v/c Ratio	0.55	0.62	0.46	0.60	0.58	0.31

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	22.9	6.9	24.4	8.1	13.3	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	6.9	24.4	8.1	13.3	8.8
LOS	C	A	C	A	B	A
Approach Delay	15.0		15.8			10.4
Approach LOS	B		B			B
Queue Length 50th (m)	21.0	0.0	15.2	0.0	18.4	16.1
Queue Length 95th (m)	37.4	18.9	28.7	18.7	38.5	29.1
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1762	1007	1817	974	617	3072
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	0.25	0.43	0.17	0.35	0.53	0.18

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 58.3			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 58.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	43	0	562	893	60
Future Volume (vph)	0	43	0	562	893	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.992	
Flt Protected						
Satd. Flow (prot)	0	1574	0	1802	1789	0
Flt Permitted						
Satd. Flow (perm)	0	1574	0	1802	1789	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	104.5			194.1	135.7	
Travel Time (s)	7.5			14.0	9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Adj. Flow (vph)	0	43	0	562	893	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	43	0	562	953	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	43	0	562	893	60
Future Vol, veh/h	0	43	0	562	893	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	43	0	562	893	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	923	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	330	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	330	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	330	-	-
HCM Lane V/C Ratio	-	0.13	-	-
HCM Control Delay (s)	-	17.5	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-

Future Total 2034

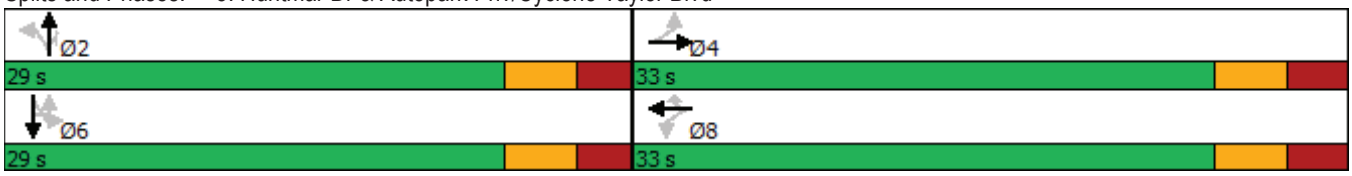
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	4	29	5	4	17	30	492	35	4	107	395
Future Volume (vph)	20	4	29	5	4	17	30	492	35	4	107	395
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0		55.0	
Storage Lanes	0		0	0		1	1		1		1	
Taper Length (m)	2.5			2.5			2.5				2.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.95
Frt		0.926				0.850			0.850			0.984
Flt Protected		0.981			0.973		0.950				0.950	
Satd. Flow (prot)	0	1627	0	0	1594	1381	1679	1784	1502	0	1680	3285
Flt Permitted		0.950					0.496				0.484	
Satd. Flow (perm)	0	1575	0	0	1638	1381	876	1784	1502	0	856	3285
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		29				51			56			23
Link Speed (k/h)		50			50			50				50
Link Distance (m)		159.7			154.4			238.9				119.6
Travel Time (s)		11.5			11.1			17.2				8.6
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
Heavy Vehicles (%)	0%	0%	3%	20%	0%	12%	3%	2%	3%	0%	3%	4%
Adj. Flow (vph)	20	4	29	5	4	17	30	492	35	4	107	395
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	53	0	0	9	17	30	492	35	0	111	441
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA	Perm	Perm	Perm	NA
Protected Phases		4			8			2				6
Permitted Phases	4			8		8	2		2	6	6	
Detector Phase	4	4		8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)		6.2			6.2	6.2	5.9	5.9	5.9		5.9	5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		6.4			6.3	6.3	34.1	34.1	34.1		34.1	34.1
Actuated g/C Ratio		0.15			0.15	0.15	0.82	0.82	0.82		0.82	0.82
v/c Ratio		0.20			0.04	0.07	0.04	0.34	0.03		0.16	0.16
Control Delay		11.4			14.8	2.2	4.2	4.7	1.3		4.6	3.1
Queue Delay		0.0			0.0	0.0	0.0	0.0	0.0		0.0	0.0

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	46
Future Volume (vph)	46
Ideal Flow (vphpl)	1800
Storage Length (m)	0.0
Storage Lanes	0
Taper Length (m)	
Lane Util. Factor	0.95
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Right Turn on Red	Yes
Satd. Flow (RTOR)	
Link Speed (k/h)	
Link Distance (m)	
Travel Time (s)	
Peak Hour Factor	1.00
Heavy Vehicles (%)	0%
Adj. Flow (vph)	46
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Turn Type	
Protected Phases	
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	
Minimum Split (s)	
Total Split (s)	
Total Split (%)	
Maximum Green (s)	
Yellow Time (s)	
All-Red Time (s)	
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	
Recall Mode	
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Total Delay		11.4			14.8	2.2	4.2	4.7	1.3		4.6	3.1
LOS		B			B	A	A	A	A		A	A
Approach Delay		11.4			6.6			4.4				3.4
Approach LOS		B			A			A				A
Queue Length 50th (m)		1.2			0.5	0.0	0.0	0.0	0.0		0.0	0.0
Queue Length 95th (m)		7.8			3.1	1.3	3.4	37.9	1.7		10.1	12.8
Internal Link Dist (m)		135.7			130.4			214.9				95.6
Turn Bay Length (m)							50.0				55.0	
Base Capacity (vph)		1029			1059	911	716	1458	1238		699	2689
Starvation Cap Reductn		0			0	0	0	0	0		0	0
Spillback Cap Reductn		0			0	0	0	0	0		0	0
Storage Cap Reductn		0			0	0	0	0	0		0	0
Reduced v/c Ratio		0.05			0.01	0.02	0.04	0.34	0.03		0.16	0.16

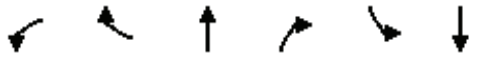
Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 41.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.34			
Intersection Signal Delay: 4.3		Intersection LOS: A	
Intersection Capacity Utilization 75.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBR
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (m)	
Queue Length 95th (m)	
Internal Link Dist (m)	
Turn Bay Length (m)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

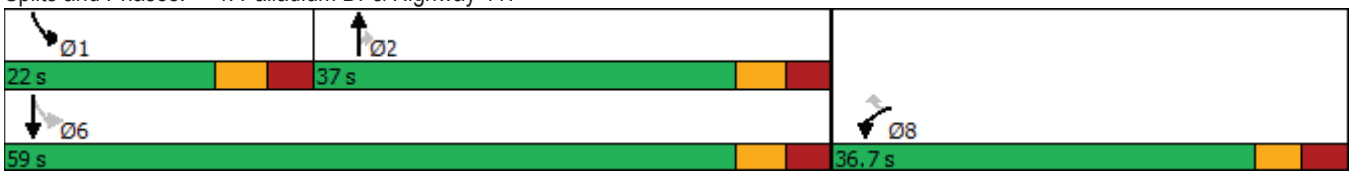


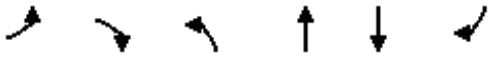
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	291	488	296	97	129	326
Future Volume (vph)	291	488	296	97	129	326
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor				0.98	1.00	
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.336	
Satd. Flow (perm)	3354	1547	3458	1514	611	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		488		97		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	291	488	296	97	129	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	291	488	296	97	129	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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	11.8	11.8	10.0	10.0	21.3	21.3
Actuated g/C Ratio	0.25	0.25	0.21	0.21	0.45	0.45
v/c Ratio	0.35	0.65	0.41	0.25	0.28	0.21

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	17.8	6.9	19.7	6.9	8.9	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	6.9	19.7	6.9	8.9	7.8
LOS	B	A	B	A	A	A
Approach Delay	11.0		16.6			8.2
Approach LOS	B		B			A
Queue Length 50th (m)	11.0	0.0	11.5	0.0	5.2	7.1
Queue Length 95th (m)	22.0	18.9	24.5	9.6	14.5	15.5
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	2226	1190	2294	1037	674	3360
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	0.13	0.41	0.13	0.09	0.19	0.10

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 47.5			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	54	0	537	512	24
Future Volume (vph)	0	54	0	537	512	24
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.994	
Flt Protected						
Satd. Flow (prot)	0	1574	0	1767	1759	0
Flt Permitted						
Satd. Flow (perm)	0	1574	0	1767	1759	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	104.5			194.1	135.7	
Travel Time (s)	7.5			14.0	9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	3%	3%	0%
Adj. Flow (vph)	0	54	0	537	512	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	54	0	537	536	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.6

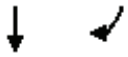
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	54	0	537	512	24
Future Vol, veh/h	0	54	0	537	512	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	3	3	0
Mvmt Flow	0	54	0	537	512	24

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	524	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	557	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	557	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	557	-	-
HCM Lane V/C Ratio	-	0.097	-	-
HCM Control Delay (s)	-	12.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	29	3	56	34	2	75	3	17	468	217	5	221
Future Volume (vph)	29	3	56	34	2	75	3	17	468	217	5	221
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0		0.0	0.0		0.0		50.0		0.0		55.0
Storage Lanes	0		0	0		1		1		1		1
Taper Length (m)	2.5			2.5				2.5				2.5
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Ped Bike Factor								0.97		0.98		1.00
Frt		0.914				0.850				0.850		
Flt Protected		0.984			0.955			0.950				0.950
Satd. Flow (prot)	0	1637	0	0	1690	1502	0	1729	1820	1547	0	1680
Flt Permitted		0.876			0.864			0.375				0.495
Satd. Flow (perm)	0	1457	0	0	1529	1502	0	663	1820	1512	0	874
Right Turn on Red			Yes			Yes				Yes		
Satd. Flow (RTOR)		35				75				217		
Link Speed (k/h)		50			50				50			
Link Distance (m)		159.7			154.4				238.9			
Travel Time (s)		11.5			11.1				17.2			
Confl. Peds. (#/hr)								63		2		2
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
Heavy Vehicles (%)	0%	0%	0%	3%	0%	3%	0%	0%	0%	0%	0%	3%
Adj. Flow (vph)	29	3	56	34	2	75	3	17	468	217	5	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	36	75	0	20	468	217	0	226
Turn Type	Perm	NA		Perm	NA	Perm	Perm	Perm	NA	Perm	Perm	Perm
Protected Phases		4			8				2			
Permitted Phases	4			8		8	2	2		2	6	6
Detector Phase	4	4		8	8	8	2	2	2	2	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	23.0	23.0	23.0	23.0	23.0	23.0
Minimum Split (s)	33.2	33.2		33.2	33.2	33.2	28.9	28.9	28.9	28.9	28.9	28.9
Total Split (s)	33.0	33.0		33.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	53.2%	53.2%		53.2%	53.2%	53.2%	46.8%	46.8%	46.8%	46.8%	46.8%	46.8%
Maximum Green (s)	26.8	26.8		26.8	26.8	26.8	23.1	23.1	23.1	23.1	23.1	23.1
Yellow Time (s)	3.3	3.3		3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
All-Red Time (s)	2.9	2.9		2.9	2.9	2.9	2.6	2.6	2.6	2.6	2.6	2.6
Lost Time Adjust (s)		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Lost Time (s)		6.2			6.2	6.2		5.9	5.9	5.9		5.9
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	20.0	20.0		20.0	20.0	20.0	16.0	16.0	16.0	16.0	16.0	16.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effct Green (s)		7.1			7.1	7.1		29.3	29.3	29.3		29.3
Actuated g/C Ratio		0.17			0.17	0.17		0.72	0.72	0.72		0.72
v/c Ratio		0.31			0.13	0.23		0.04	0.36	0.19		0.36

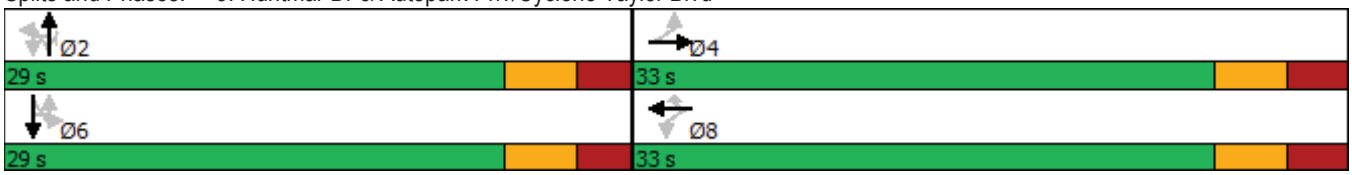


Lane Group	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	691	36
Future Volume (vph)	691	36
Ideal Flow (vphpl)	1800	1800
Storage Length (m)		0.0
Storage Lanes		0
Taper Length (m)		
Lane Util. Factor	0.95	0.95
Ped Bike Factor	0.99	
Frt	0.993	
Flt Protected		
Satd. Flow (prot)	3379	0
Flt Permitted		
Satd. Flow (perm)	3379	0
Right Turn on Red		Yes
Satd. Flow (RTOR)	10	
Link Speed (k/h)	50	
Link Distance (m)	119.6	
Travel Time (s)	8.6	
Confl. Peds. (#/hr)		63
Peak Hour Factor	1.00	1.00
Heavy Vehicles (%)	1%	3%
Adj. Flow (vph)	691	36
Shared Lane Traffic (%)		
Lane Group Flow (vph)	727	0
Turn Type	NA	
Protected Phases	6	
Permitted Phases		
Detector Phase	6	
Switch Phase		
Minimum Initial (s)	23.0	
Minimum Split (s)	28.9	
Total Split (s)	29.0	
Total Split (%)	46.8%	
Maximum Green (s)	23.1	
Yellow Time (s)	3.3	
All-Red Time (s)	2.6	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	5.9	
Lead/Lag		
Lead-Lag Optimize?		
Vehicle Extension (s)	3.0	
Recall Mode	Min	
Walk Time (s)	7.0	
Flash Dont Walk (s)	16.0	
Pedestrian Calls (#/hr)	0	
Act Effct Green (s)	29.3	
Actuated g/C Ratio	0.72	
v/c Ratio	0.30	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Control Delay		13.5			15.8	6.9		5.5	6.2	1.6		8.0
Queue Delay		0.0			0.0	0.0		0.0	0.0	0.0		0.0
Total Delay		13.5			15.8	6.9		5.5	6.2	1.6		8.0
LOS		B			B	A		A	A	A		A
Approach Delay		13.5			9.8				4.8			
Approach LOS		B			A				A			
Queue Length 50th (m)		3.4			2.3	0.0		0.6	17.2	0.0		8.3
Queue Length 95th (m)		11.7			7.5	7.2		2.9	38.2	6.5		24.6
Internal Link Dist (m)		135.7			130.4				214.9			
Turn Bay Length (m)								50.0				55.0
Base Capacity (vph)		1000			1037	1043		477	1311	1150		629
Starvation Cap Reductn		0			0	0		0	0	0		0
Spillback Cap Reductn		0			0	0		0	0	0		0
Storage Cap Reductn		0			0	0		0	0	0		0
Reduced v/c Ratio		0.09			0.03	0.07		0.04	0.36	0.19		0.36

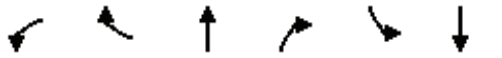
Intersection Summary			
Area Type:	Other		
Cycle Length: 62			
Actuated Cycle Length: 40.6			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.36			
Intersection Signal Delay: 5.9		Intersection LOS: A	
Intersection Capacity Utilization 75.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Huntmar Dr & Autopark Priv/Cyclone Taylor Blvd



Lane Group	SBT	SBR
Control Delay	4.9	
Queue Delay	0.0	
Total Delay	4.9	
LOS	A	
Approach Delay	5.7	
Approach LOS	A	
Queue Length 50th (m)	13.1	
Queue Length 95th (m)	24.7	
Internal Link Dist (m)	95.6	
Turn Bay Length (m)		
Base Capacity (vph)	2437	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.30	

Intersection Summary

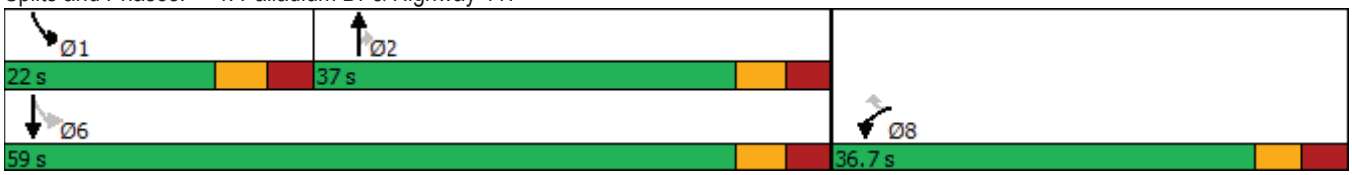


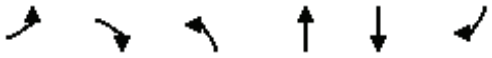
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	459	452	315	356	336	581
Future Volume (vph)	459	452	315	356	336	581
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	145.0		100.0	115.0	
Storage Lanes	2	1		1	1	
Taper Length (m)	2.5				2.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor		0.99				
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	3354	1547	3458	1547	1729	3458
Flt Permitted	0.950				0.351	
Satd. Flow (perm)	3354	1525	3458	1547	639	3458
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		452		356		
Link Speed (k/h)	50		50			50
Link Distance (m)	302.0		343.9			64.5
Travel Time (s)	21.7		24.8			4.6
Confl. Peds. (#/hr)		2				
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	459	452	315	356	336	581
Shared Lane Traffic (%)						
Lane Group Flow (vph)	459	452	315	356	336	581
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	5.0	5.0	5.0	5.0
Minimum Split (s)	32.7	32.7	39.0	39.0	12.0	12.0
Total Split (s)	36.7	36.7	37.0	37.0	22.0	59.0
Total Split (%)	38.3%	38.3%	38.7%	38.7%	23.0%	61.7%
Maximum Green (s)	30.0	30.0	30.0	30.0	15.0	52.0
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	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0		
Flash Dont Walk (s)	19.0	19.0	25.0	25.0		
Pedestrian Calls (#/hr)	0	0	0	0		
Act Effct Green (s)	14.4	14.4	11.5	11.5	31.1	31.1
Actuated g/C Ratio	0.24	0.24	0.19	0.19	0.52	0.52
v/c Ratio	0.57	0.64	0.47	0.61	0.60	0.32

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Control Delay	23.5	7.1	24.7	8.0	13.7	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.5	7.1	24.7	8.0	13.7	9.0
LOS	C	A	C	A	B	A
Approach Delay	15.3		15.8			10.7
Approach LOS	B		B			B
Queue Length 50th (m)	22.3	0.0	16.2	0.0	19.6	17.2
Queue Length 95th (m)	39.6	19.7	30.1	19.0	40.8	31.1
Internal Link Dist (m)	278.0		319.9			40.5
Turn Bay Length (m)		145.0		100.0	115.0	
Base Capacity (vph)	1731	1005	1785	970	615	3024
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	0.27	0.45	0.18	0.37	0.55	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 95.7			
Actuated Cycle Length: 59.5			
Natural Cycle: 85			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 13.8		Intersection LOS: B	
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Palladium Dr & Highway 417





Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	43	0	587	933	60
Future Volume (vph)	0	43	0	587	933	60
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800
Storage Length (m)	0.0	0.0	25.0			0.0
Storage Lanes	0	1	0			0
Taper Length (m)	2.5		2.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865			0.992	
Flt Protected						
Satd. Flow (prot)	0	1574	0	1802	1789	0
Flt Permitted						
Satd. Flow (perm)	0	1574	0	1802	1789	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	104.5			194.1	135.7	
Travel Time (s)	7.5			14.0	9.8	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Adj. Flow (vph)	0	43	0	587	933	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	43	0	587	993	0
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	43	0	587	933	60
Future Vol, veh/h	0	43	0	587	933	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	43	0	587	933	60

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	963	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.2	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	313	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	313	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	313	-	-
HCM Lane V/C Ratio	-	0.137	-	-
HCM Control Delay (s)	-	18.3	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

Appendix J – MMLOS Analysis

Multi-Modal Level of Service - Intersections Form

Project: 319 Huntmar Drive
Consultant:
Date: Apr 2, 2026
Scenario: Future 2034 AM

	Intersection Name	**Palladium Dr & Hwy 417 Westbound On/Off-Ramp**				**Cyclone Taylor Blvd/Autopark Priv & Huntmar Dr**			
	OP Transect / Policy Area	**Outer Urban or Suburban**				**Outer Urban or Suburban**			
Pedestrian	**PLOS Inputs**								
	Pedestrians Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Number of Travel Lanes Crossed	5	No Crosswalk	4	No Crosswalk	No Crosswalk	5	4	1-3
	Median Refuge (≥2.7m)	Yes	-	No	-	-	No	No	No
	Crosswalk Treatment	Std Transverse Markings	-	Std Transverse Markings	-	-	Std Transverse Markings	Std Transverse Markings	Std Transverse Markings
	Signal Cycle Length (sec)	95.7				62.0			
	Effective Walk Time (sec)	5.0	-	11.0	-	-	7.1	6.8	6.8
	Conflict with Right-Turn Vehicles (For PLOS & BLOS)	**WBR**	**EBR**	**NBR**	**SBR**	**WBR**	**EBR**	**NBR**	**SBR**
	Right-Turn Geometry	Conventional Right-Turn Channel	No Right-Turn / Prohib.	Conventional Right-Turn Channel	No Right-Turn / Prohib.	Right-Turn With No Channel	Conventional Right-Turn Channel	Right-Turn With No Channel	Right-Turn With No Channel
	Right-Turn Signal Phasing	-	-	-	-	Permissive	-	Permissive	Permissive
	Right-Turn Volume	> 300 veh/h	-	≤ 150 veh/h	-	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h	≤ 150 veh/h
	Right-Turn Effective Corner Radius	-	-	-	-	≤ 8m	-	≤ 8m	≤ 8m
	Cross-street Posted Speed (km/h)	60 km/h		60 km/h		60 km/h		60 km/h	
	Conflict with Left-Turn Vehicles (For PLOS & BLOS)	**EBL**	**WBL**	**SBL**	**NBL**	**EBL**	**WBL**	**SBL**	**NBL**
	Left-Turn Signal Phasing	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	No Left-Turn / Prohib.	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm	Perm or Prot+Perm
	Left-Turn Volume	-	> 100 veh/h	> 100 veh/h	-	≤ 50 veh/h	≤ 50 veh/h	> 100 veh/h	≤ 50 veh/h
	Left-Turn Opposing Lanes	-	-	-	-	-	-	-	-
	Score	**2.95**	**-**	**3.05**	**-**	**-**	**2.80**	**3.65**	**4.45**
	PLOS	**C**	**-**	**C**	**-**	**-**	**C**	**B**	**B**
		C				**B**			
	Target PLOS	**C**				**C**			
Bicycle	**BLOS Inputs**								
	Cycling Route Classification	**Elsewhere**				**Elsewhere**			
	Cyclists Crossing the	**North Leg**	**South Leg**	**East Leg**	**West Leg**	**North Leg**	**South Leg**	**East Leg**	**West Leg**
	Type of Cycling Facility Across Leg	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic	Mixed Traffic
	Two-Way ADT (in Cyclist Travel Direction)	15,880				16,580		1,990	
	Floating Bike Lane or Right-Turn Lane Crossover Approaching the Crossing?	No	No	No	No	No	No	No	No
	Crossride Operation	-	-	-	-	-	-	-	-
	Target Crossride Setback Met?	-	-	-	-	-	-	-	-
	Right-Turn Vehicle Volume from Adjacent Roadway > 100 veh/h?	-	-	-	-	-	-	-	-
	Cyclist Left-Turn Operation	**WBL**	**EBL**	**NBL**	**SBL**	**WBL**	**EBL**	**NBL**	**SBL**
	Cyclist Left-Turn Treatment Type	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane	General Purpose Through-Left or Single Left-Turn Lane
	Vehicle Lanes Crossed by Cyclists	One Lane Crossed	One Lane Crossed	No Lane Crossed	No Lane Crossed	One Lane Crossed	One Lane Crossed	Two or More Lanes Crossed	Two or More Lanes Crossed
	Score	**10**	**20**	**-**	**-**	**50**	**20**	**0**	**40**
	BLOS	**F**	**E**	**-**	**-**	**D**	**E**	**F**	**D**
		E				**E**			
	Target BLOS	**C**				**C**			
Transit	**TLOS Inputs**								
	Transit Facility	**Mixed Traffic**				**Mixed Traffic**			
	Vehicles Travelling	**Southbound**	**Northbound**	**Westbound**	**Eastbound**	**Southbound**	**Northbound**	**Westbound**	**Eastbound**
	Average Transit Delay (if available)	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable	Unavailable
	Example Transit Priority Treatment	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length	No transit priority measures and long cycle length
	TLOS	**E**	**E**	**E**	**E**	**E**	**E**	**E**	**E**
		E				**E**			
	Target TLOS	**E (D for frequent transit routes)**				**E (D for frequent transit routes)**			
Auto	**AutoLOS Inputs**								
	Overall Intersection Volume to Capacity Ratio	0 to 0.60				0 to 0.60			
	Individual Movements V/C Ratios and Queue Lengths	See Separate Traffic Operations Table				See Separate Traffic Operations Table			
	AutoLOS	**A**				**A**			
	Target AutoLOS	**E**				**E**			

Multi-Modal Level of Service - Segments Form

Project: 319 Huntmar Drive
Consultant:
Date: Apr 2, 2026
Scenario: Future 2034 AM

	Segment Name	**Huntmar Dr**			
	OP Transect / Policy Area	**Outer Urban or Suburban**			
	Segment Component	**Majority (>50%)**		**Critical**	
	Side of Street	**W or N**	**E or S**	**W or N**	**E or S**
Pedestrian	**PLOS Inputs**				
	Posted Speed (km/h)	60 km/h		60 km/h	
	Two-Way ADT	18,570		18,570	
	Pedestrian Facility	None	None	Sidewalk	Sidewalk
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?	No	No	Yes	Yes
	Facility Width (m)	-	-	-	-
	Offset from Motor Vehicle Travel Lanes (m)	-	-	-	-
	Presence of Adjacent Parking?	-	-	-	-
	General Purpose Curb Lane ADT	-	-	-	-
	Max. Distance between Controlled Crossings (m)	-	-	-	-
	Score	**0.00**	**0.00**	**0.00**	**0.00**
	PLOS	**F**	**F**	**F**	**F**
	Target PLOS	**C**			
Bicycle	**BLOS Inputs**				
	Cycling Route Classification	**Elsewhere**			
	Cycling Facility	Shared Operating Space	Shared Operating Space	Shared Operating Space	Shared Operating Space
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)	-	-	-	-
	Facility Operation	-	-	-	-
	Pedestrian/Cyclist Volume	-	-	-	-
	Facility Width	-	-	-	-
	Boulevard/Buffer Width (excluding curb)	-	-	-	-
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)	None	None	None	None
	Number of Travel Lanes at Crossing	-	-	-	-
	Crossing includes Median Refuge (≥ 2.7m)	-	-	-	-
	Cross-street Posted Speed (km/h)	-	-	-	-
	Cycling Path Blockages (e.g. bus stops and/or loading zones)	Rare	Rare	Rare	Rare
	Score	**0.75**	**0.75**	**0.75**	**0.75**
	BLOS	**E**	**E**	**E**	**E**
	Target BLOS	**C**			
Transit	**TLOS Inputs**				
	Transit Facility	**Mixed Traffic**			
	Facility Type	Mixed Traffic	Mixed Traffic		
	Expected Transit Running Time	Unimpeded	Unimpeded		
	Transit Travel Speed (if available)	Enter Speed (if available)	Enter Speed (if available)		
	TLOS	**B**	**B**		
	Target TLOS	**E (D for frequent transit routes)**			
Public Realm	**PRLOS Inputs**				
	Context	Other Streets	Other Streets		
	Inner Boulevard Width	≥ 4.0m	≥ 4.0m		
	Middle Boulevard Width	≥ 3.0m	≥ 3.0m		
	Outer Boulevard (Frontage) Width	≥ 3.0m	≥ 3.0m		
	Transit Route on Segment?	Yes	Yes		
	Bus Stop Elements	No platform, landing zone or shelter	No platform, landing zone or shelter		
	Number of Midblock Traffic Lanes (both travel directions)	≤ 2			
	Score	**9.90**	**9.90**		
	PRLOS	**E**	**E**		
		E			