

## Engineering

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Water Resources  
  
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Transportation  
  
Recreational

## Planning

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(LPAT)  
  
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Residential  
  
Commercial &  
Institutional  
  
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Restoration



## Proposed Curling Club 2740 Queensview Drive, Ottawa Transportation Impact Assessment

**Proposed Curling Club  
2740 Queensview Drive  
Transportation Impact Assessment**

Prepared By:

**NOVATECH**  
Suite 200, 240 Michael Cowpland Drive  
Ottawa, Ontario  
K2M 1P6

July 2021

Novatech File: 121127  
Ref: R-2021-094

July 23, 2021

City of Ottawa  
Planning and Growth Management Department  
110 Laurier Ave. W., 4<sup>th</sup> Floor,  
Ottawa, Ontario K1P 1J1

**Attention: Ms. Josiane Gervais**  
**Project Manager, Infrastructure Approvals**

Dear Ms. Gervais:

**Reference: 2740 Queensview Drive**  
**Transportation Impact Assessment**  
**Novatech File No. 121127**

---

We are pleased to submit the following Transportation Impact Assessment (TIA), in support of a Site Plan Control application at 2740 Queensview Drive, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

If you have any questions or comments regarding this report, please feel free to contact Jennifer Luong, or the undersigned.

Yours truly,

**NOVATECH**



Joshua Audia, B.Sc.  
E.I.T. | Transportation/Traffic



## **TIA Plan Reports**

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 associated 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<sup>1</sup> or registered<sup>2</sup> professional in good standing, whose field of expertise [check ☒ appropriate field(s)] is either transportation engineering ☒ or transportation planning ☐.

**1,2 License of 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.**

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Dated at Ottawa this 23<sup>rd</sup> day of July, 2021.  
(City)

Name: Jennifer Luong, P.Eng.  
(Please Print)

Professional Title: Senior Project Manager, Transportation/Traffic



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

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## EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared for the property located at 2740 Queensview Drive, in support of a Site Plan Control application. The subject site is approximately 0.52 hectares in size and is currently occupied by two commercial suites, which have been historically used as a furniture store/showroom and a video production company. The subject site is currently served by two driveways to Queensview Drive, approximately 100m and 130m east of Pinecrest Road.

The subject site is surrounded by the following:

- Queensview Drive, followed by commercial and industrial uses to the north,
- Commercial and light industrial uses to the east,
- Highway 417 to the south, and
- A church and elementary school, followed by Pinecrest Road to the west.

The proposed development consists of a curling club with approximately 1,687 m<sup>2</sup> (18,152 ft<sup>2</sup>) of gross floor area (GFA). A total of 74 surface parking spaces will be provided. Access to the site will be provided via one full-movement driveway and one egress to Queensview Drive, in similar locations to the existing driveways. The development will be constructed in a single phase, with a buildout year of 2022.

The subject site is designated as 'Urban Employment Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Light Industrial' (IL), which permits the proposed land use. The property is not located within any existing Community Design Plan or Secondary Plan areas.

The study area for this report includes the boundary roadway Queensview Drive, as well as the following intersections:

- Pinecrest Road/Dumaurier Avenue
- Pinecrest Road/Queensview Drive
- Pinecrest Road/Highway 417 WB Off-Ramp

It is anticipated that the peak hours for site-generated traffic will be the weekday PM and Saturday peak hours. However, Saturday counts at the study area intersections are not available and cannot be conducted during the COVID-19 pandemic. Since the proposed development is estimated to generate fewer than 60 net new peak hour person trips during the peak hours, and therefore does not meet the trip generation trigger, City staff have confirmed that Saturday analysis can be omitted. The selected time periods for the analysis are the weekday AM and PM peak hours, as data is available for these peak hours. Analysis will be completed for the 2022 build-out year and 2027 horizon year.

The conclusions and recommendations of this TIA can be summarized as follows:

### Development Design

- Pedestrian walkways will be provided along each access between Queensview Drive and the entrances to the proposed development. At the proposed accesses, the sidewalk on Queensview Drive will be depressed and continuous, and any depressed curb at the existing accesses will be reinstated in accordance with City standards.

- Two bicycle parking spaces will be provided on the western side of the proposed building, approximately 50m south of Queensview Drive.
- The entrances to the proposed development will be within 400m walking distance of stops that are served by OC Routes 61, 62, 63, 64, 66, 82, 155, 173, 258, and 283, and will be within 400m walking distance of the future Pinecrest LRT Station.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The on-site fire route will be approximately 35m in length, including the westerly drive aisle between Queensview Drive and the main entrance. Garbage collection will take place near the northeastern corner of the proposed building. Garbage trucks will be able to enter the site via the westerly access, travel around the perimeter of the proposed building, and exit the site via the easterly access. In the event that MTO expropriates the 14m setback at the southern end of the site, garbage trucks will still be able to reverse into and drive forward out of the easterly access.

#### Parking

- The proposed number of vehicle parking spaces (74), accessible parking spaces (2), bicycle parking spaces (2), and loading spaces (1), all meet the minimum requirements outlined in the City's *Zoning By-Law* and *Accessibility Design Standards*.
- A total of 51 parking spaces are provided outside of the 14m MTO setback at the southern end of the subject site. In the event that MTO expropriates this setback, the 51 remaining spaces still meet the minimum parking requirement.

#### Boundary Streets

- Queensview Drive does not meet the target pedestrian level of service (PLOS) A, but does meet the target bicycle level of service (BLOS) B. Queensview Drive achieves a transit level of service (TLOS) E and a truck level of service (TkLOS) B, however no targets are identified for these modes.
- Both sides of Queensview Drive achieves a PLOS F. Based on Exhibit 4 of the *Multi-Model Level of Service (MMLOS) Guidelines*, the best possible PLOS that can be achieved for Queensview Drive is a PLOS B, by providing a 2.0m-wide sidewalk with a boulevard width of 2.0m. This is identified for the City's consideration. Utility poles along the back of the existing sidewalk will require relocation to implement a wider sidewalk.

#### Access Design

- The westerly access meets all relevant requirements of the City's *Private Approach By-Law*.
- The easterly access meets all relevant requirements of the City's *Private Approach By-Law*, except for Section 25(u), which identifies that the access shall not have a grade greater than 2% for the first 9m inside the property line. As the proposed maximum grade of 4.9% is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.
- Based on the foregoing, the proposed development is recommended from a transportation perspective.

## 1.0 SCREENING

### 1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared for the property located at 2740 Queensview Drive, in support of a Site Plan Control application. The subject site is approximately 0.52 hectares in size and is currently occupied by two commercial suites, which have been historically used as a furniture store/showroom and a video production company. The subject site is currently served by two driveways to Queensview Drive, approximately 100m and 130m east of Pinecrest Road.

The subject site is surrounded by the following:

- Queensview Drive, followed by commercial and industrial uses to the north,
- Commercial and light industrial uses to the east,
- Highway 417 to the south, and
- A church and elementary school, followed by Pinecrest Road to the west.

An aerial of the vicinity around the subject site is provided in **Figure 1**.

### 1.2 Proposed Development

The proposed development consists of a curling club with approximately 1,687 m<sup>2</sup> (18,152 ft<sup>2</sup>) of gross floor area (GFA). A total of 74 surface parking spaces will be provided. Access to the site will be provided via one full-movement driveway and one egress to Queensview Drive, in similar locations to the existing driveways. The development will be constructed in a single phase, with a buildout year of 2022.

The subject site is designated as 'Urban Employment Area' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Light Industrial' (IL), which permits the proposed land use. The property is located within the Pinecrest and Queensview Stations Secondary Plan Study area.

A copy of the preliminary site plan is included in **Appendix A**. A site context plan, which includes the site plan and shows all details of Queensview Drive, is included in **Figure 2**.

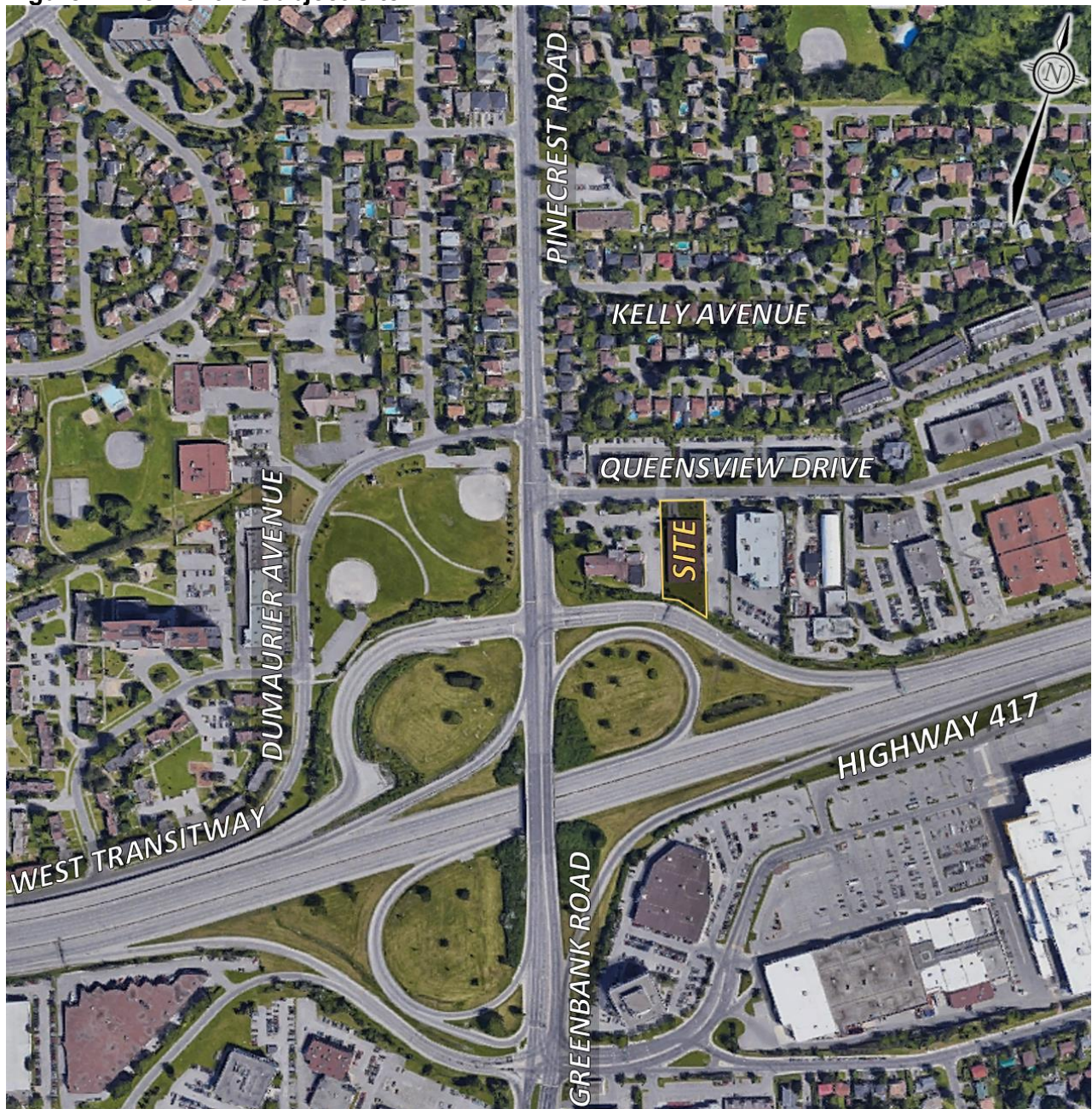
### 1.3 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Appendix B**. The trigger results are as follows:

- Trip Generation Trigger – The development is not expected to generate a net additional 60 peak hour person trips; further assessment is **not required** based on this trigger.
- Location Triggers – The development is located within 400m of the existing Pinecrest Transitway Station, and will be located within 400m of the future Pinecrest LRT Station; further assessment is **required** based on this trigger.
- Safety Triggers – The proposed driveways are located within 150m of an adjacent traffic signal; further assessment is **required** based on this trigger.



Figure 1: View of the Subject Site



M:\2021\121127\CAD\Design\121127-FD.dwg, Concept, Jul 20, 2021 - 2:48pm, dnmills

NOTES:

1. PROPERTY LINES ARE APPROXIMATED FROM geo OTTAWA.

QUEENSVIEW DRIVE

2740 QUEENSVIEW

BIKE  
RACK

EXC. DRIVE

HWY 417 (OFF RAMP)

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2740 QUEENSVIEW DRIVE

CONCEPT PLAN CONTEXT

SCALE 1 : 500 0 5m 10m 20m

DATE AUG 2021 JOB 121127 FIGURE FIGURE-2

SHT11V17 DWG 270mmX132mm



## 2.0 SCOPING

### 2.1 Existing Conditions

#### 2.1.1 Roadways

Highway 417 is a provincial highway that generally runs on an east-west alignment between Highway 17 west of Arnprior and the Quebec border near Pointe-Fortune. The highway continues west as Highway 17 and east as Autoroute 40. Highway 417 has a six- to eight-lane divided rural cross-section within the study area, with one- or two-lane westbound and eastbound on- and off-ramps at Pinecrest Road. The posted speed limit is 100 km/h within the study area, with an advisory speed of 50 km/h on the westbound off-ramp. The highway is classified as a highway truck route. Paved shoulders are provided on Highway 417.

All other roadways within the study area fall under the jurisdiction of the City of Ottawa.

The West Transitway is a transit-exclusive roadway that generally runs on an east-west alignment between Pinecrest Road and Moodie Drive. Within the study area, the West Transitway has a two-lane undivided urban cross-section, and has a posted speed limit of 50km/h. Concrete sidewalks are provided on both sides of the roadway between Pinecrest Road and the Pinecrest platforms, while asphalt sidewalks are generally provided on both sides of the roadway otherwise. As bus-exclusive infrastructure, the West Transitway is not classified as a truck route and on-street parking is not permitted.

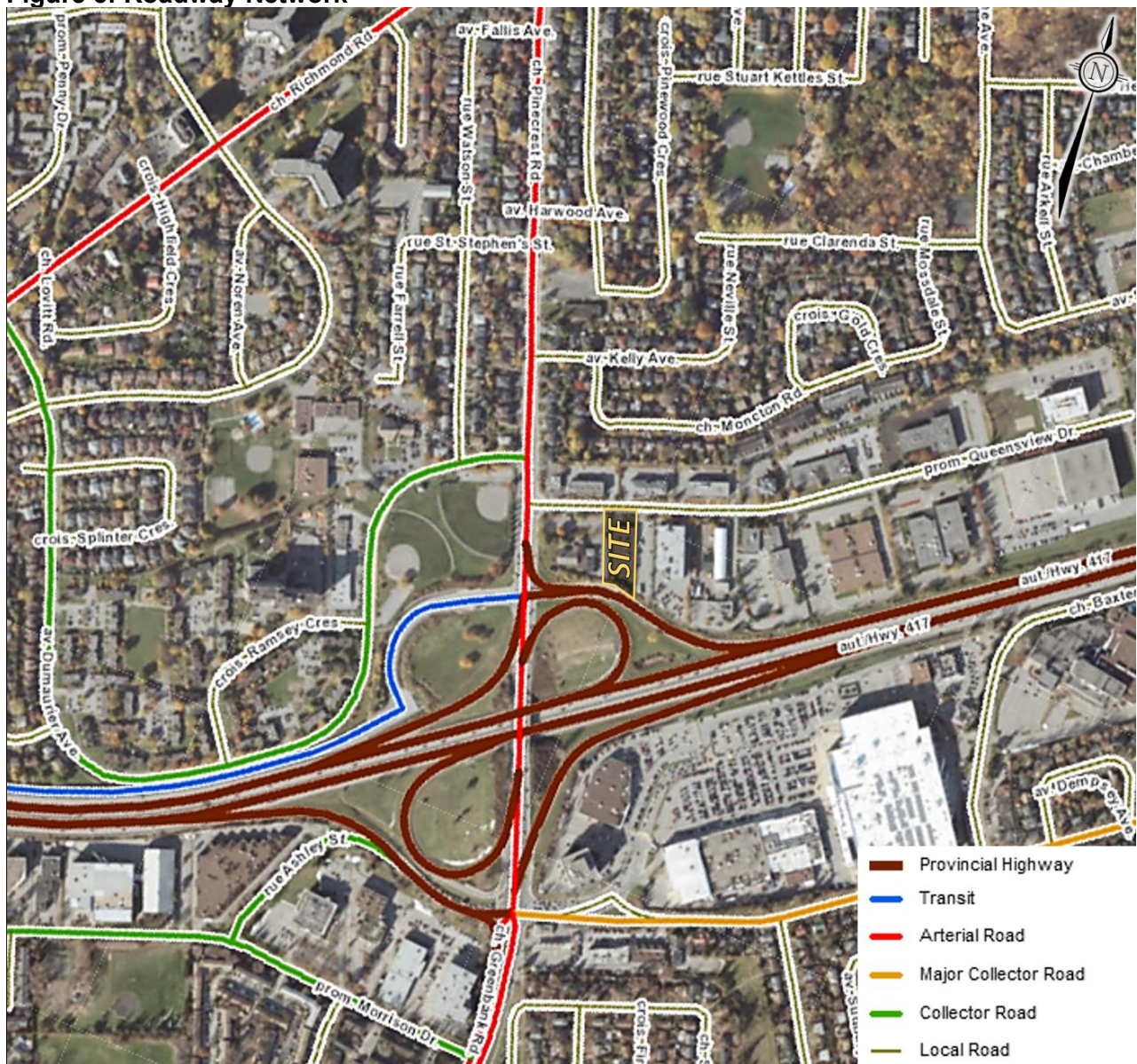
Pinecrest Road is an arterial roadway that generally runs on a north-south alignment between Carling Avenue and Highway 417. North of Carling Avenue, the roadway continues as Greenview Avenue. South of Highway 417, the roadway continues as Greenbank Road. Within the study area, Pinecrest Road has a four- to six-lane urban cross-section, which is divided south of Queensview Drive and undivided north of Queensview Drive. Concrete sidewalks are provided on both sides of the roadway, and the posted speed limit is 50 km/h. Pinecrest Road is classified as a truck route, allowing full loads. On-street parking is not permitted.

Dumaurier Avenue is a collector roadway that generally runs on an east-west alignment between Pinecrest Road and Richmond Road. Within the study area, Dumaurier Avenue has a two-lane undivided urban cross-section, a concrete sidewalk on the south side and an asphalt sidewalk on the north side, and an unposted regulatory speed limit of 50km/h under the Highway Traffic Act. Dumaurier Avenue is not classified as a truck route. On-street parking is generally permitted on the north side of the roadway, and is not permitted on the south side of the roadway.

Queensview Drive is a local roadway that generally runs on an east-west alignment between Pinecrest Road and the Pinecrest OC Transpo Garage, approximately 800m east of Pinecrest Road. Within the study area, Queensview Drive has a two-lane undivided urban cross-section, concrete sidewalks on the south side of the roadway, and an unposted regulatory speed limit of 50 km/h. Queensview Drive is not classified as a truck route. On-street parking is generally permitted on the south side of the roadway east of the subject site, and is otherwise not permitted. At the subject site, the right-of-way (ROW) of Queensview Drive is approximately 20m. No ROW protection is identified in the City of Ottawa's Official Plan for Queensview Drive.

The roadway network of the greater area surrounding the subject site is illustrated in **Figure 3**.

Figure 3: Roadway Network





## 2.1.2 Intersections

### Pinecrest Road/Dumaurier Avenue

- Signalized three-legged intersection
- North Approach (Pinecrest Road): one through lane and one shared through/right turn lane
- South Approach (Pinecrest Road): one left turn lane and two through lanes
- West Approach (Dumaurier Avenue): one left turn lane and one right turn lane
- Standard crosswalks on all approaches

### Pinecrest Road/Queensview Drive

- Signalized three-legged intersection
- North Approach (Pinecrest Road): one left turn lane and two through lanes
- South Approach (Pinecrest Road): two through lanes and one shared through/right turn lane
- East Approach (Queensview Drive): one left turn lane and one right turn lane
- Standard crosswalks on all approaches

### Pinecrest Road/

### Highway 417 WB Off-Ramp/West Transitway

- Signalized four-legged intersection
- North Approach (Pinecrest Road): three through lanes (right turns prohibited for general traffic and permitted for transit)
- South Approach (Pinecrest Road): one transit-only left turn lane and two through lanes
- East Approach (Hwy 417 WB Off-Ramp): two left turn lanes, one transit-only through lane, and one right turn lane
- West Approach (West Transitway): one left turn lane and one right turn lane
- Standard crosswalks on north, east, and west approaches



### 2.1.3 Driveways

In accordance with the 2017 TIA Guidelines, a review of adjacent driveways along the boundary roads are provided as follows:

#### Queensview Drive, North Side:

- One driveway to an auto repair centre at 1037 Pinecrest Road
- Two driveways to an office building at 2725 Queensview Drive
- Two driveways to an office building at 2705 Queensview Drive
- Two driveways to an office building at 2685 Queensview Drive
- One driveway to an office building at 2675 Queensview Drive
- Two driveways to a recreational facility at 2655 Queensview Drive

#### Queensview Drive, South Side:

- Two driveways to a church/school at 1061 Pinecrest Road
- Two driveways to a storage facility at 2720 Queensview Drive
- One driveway to a storage yard at 2700 Queensview Drive
- Two driveways to an office building at 2680 Queensview Drive
- Two driveways to a police services centre at 2670 Queensview Drive

### 2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided on both sides of Pinecrest Road, Dumaaurier Avenue, and the West Transitway, and on the south side of Queensview Drive. An asphalt pathway connects the south side of Dumaaurier Avenue with the north side of the West Transitway, approximately 170m west of Pinecrest Road.

In the City's primary cycling network, Pinecrest Road is a Spine Route, and Dumaaurier Avenue and Queensview Drive are Local Routes. No cycling facilities are provided within the study area.

### 2.1.5 Transit

OC Transpo bus stops in proximity of the subject site are summarized as follows:

#### 2655 Queensview Drive

- Stop #5231 – for route 61  
(located on the north side of Queensview Drive, approximately 440m east of Pinecrest Road)

#### 2670 Queensview Drive

- Stop #2384 – for route 61  
(located on the south side of Queensview Drive, approximately 400m east of Pinecrest Road)

#### Kelly/Pinecrest

- Stop #5222 – for route 155  
(located at the northeast corner of Pinecrest Road/Kelly Avenue)
- Stop #5223 – for route 155  
(located at the southwest corner of Kelly Avenue/Moncton Road)

Dumaurier/Pinecrest

- Stop #4822 – for routes 82 and 173  
(located on the south side of Dumaurier Avenue, approximately 30m east of Pinecrest Road)
- Stop #4973 – for routes 82 and 173  
(located on the north side of Dumaurier Avenue, approximately 30m east of Pinecrest Road)

Pinecrest/Ramp

- Stop #5955 – for routes 82, 155, and 173  
(located at the northwest corner of Pinecrest Road/West Transitway)

Pinecrest/Highway 417

- Stop #4970 – for route 283  
(located on the west side of Pinecrest Road, approximately 45m south of West Transitway)

Pinecrest 1A

- Stop #3019 – for routes 61, 62, 63, 64, 66, 155, and 258  
(located on the north side of the West Transitway, approximately 50m west of Pinecrest Road)

Pinecrest 2A

- Stop #3019 – for routes 61, 62, 63, 64, 66, 155, 258, and 283  
(located on the south side of the West Transitway, approximately 50m west of Pinecrest Road)

Locations of bus stops in proximity of the site are shown in **Figure 4**.

OC Transpo Route 61 is a rapid route which operates seven days a week, and generally travels between Cardelrec-Goulbourn Complex, Terry Fox Station, or Eagleson Station and Tunney's Pasture Station or Pimisi Station. Select buses during the PM peak period extend service to Maisonneuve/Place d'Accueil in Gatineau. Route 61 is extended to Parliament Station for overnight service when O-Train Line 1 is not running. The route serves Pinecrest Station every five to 30 minutes between 4:00am and 3:00am. The route also serves stops on Queensview Drive between 4:45am and 5:45am.

OC Transpo Route 62 is a rapid route which operates seven days a week, and generally travels between Cardelrec-Goulbourn Complex or Terry Fox Station, and Tunney's Pasture Station. The route serves Pinecrest Station every 15 to 30 minutes between 7:30am and 12:30am.

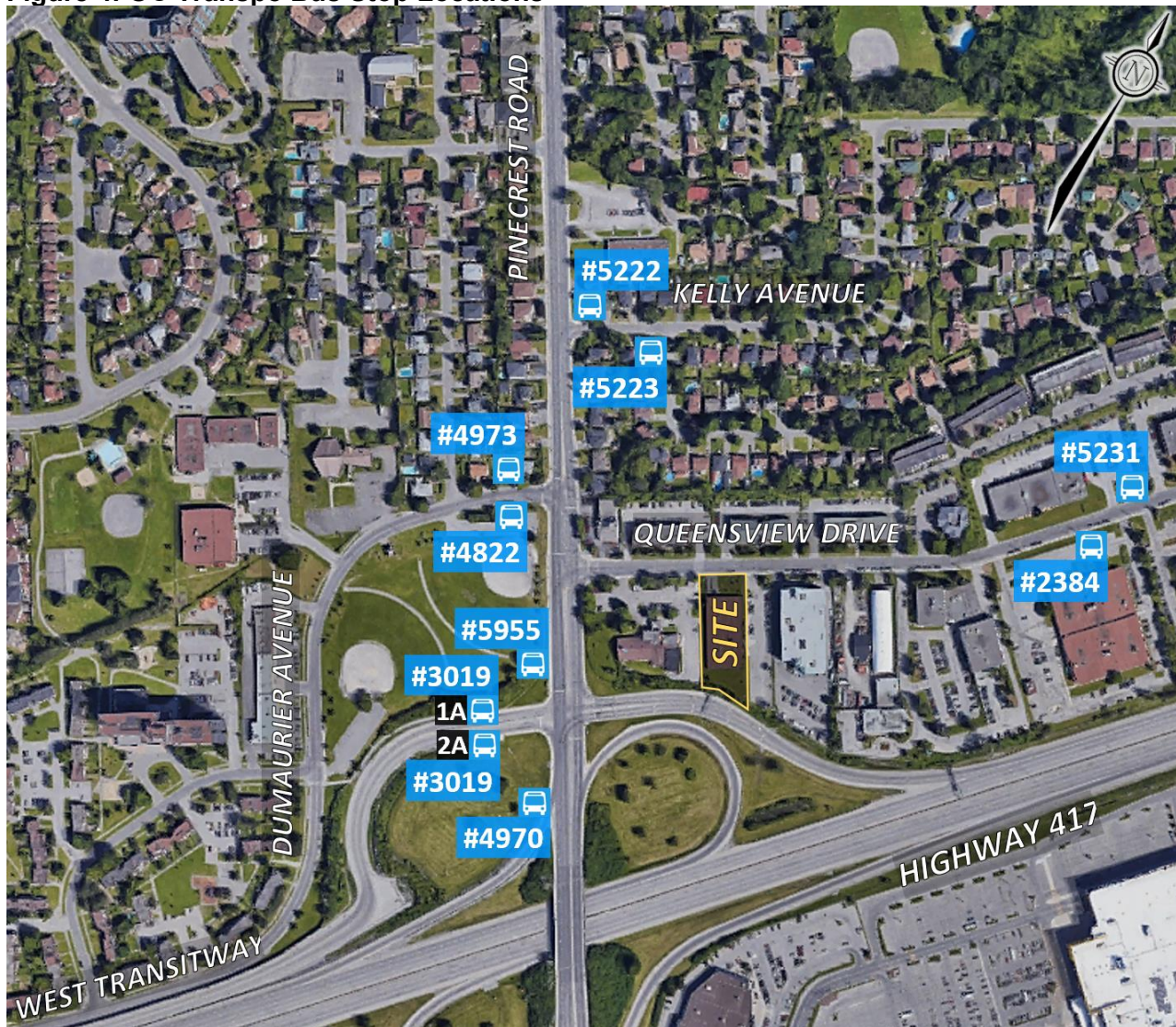
OC Transpo Route 63 is a rapid route which operates seven days a week, and generally travels between Innovation Station and Tunney's Pasture or Sacre Couer/Laurier in Gatineau. The route serves Pinecrest Station every 15 to 30 minutes between 5:30am and 12:30am.

OC Transpo Route 64 is a local route which operates on weekdays, and generally travels between Innovation Station and Tunney's Pasture Station. The route serves Pinecrest Station every 15 to 30 minutes between 6:30am and 11:30pm.

OC Transpo Route 66 is a local route which operates on weekdays during peak periods only, and generally travels from Sacre Couer/Laurier or Tunney's Pasture to Solandt Loop in Kanata during the AM peak period, and in the opposite direction during the PM peak period. The route serves Pinecrest Station every 10 to 30 minutes from 5:45am to 9:15am and 2:45pm to 7:30pm.



Figure 4: OC Transpo Bus Stop Locations



OC Transpo Route 82 is a local route which operates seven days a week, and generally travels between Bayshore Station and Tunney's Pasture Station or Lincoln Fields Station. The route serves stops in the study area every 30 minutes between 5:45am and 11:30pm.

OC Transpo Route 155 is a local route which operates on weekdays during select time periods, and travels between Connaught/Severn and Bayshore Station. The route is scheduled to serve Pinecrest Station at 6:27am, 7:14am, 9:48am, 3:09pm, and 5:49pm.

OC Transpo Route 173 is a local route which operates on weekdays, and generally travels between Barrhaven Centre and Bayshore Station or Fallowfield Station. The route serves stops in the study area every 30 to 60 minutes between 7:30am and 6:00pm.

OC Transpo Route 258 is a connexion route which operates on weekdays during peak periods only, and travels from Grandview Road to Tunney's Pasture Station during the AM peak period, and in the opposite direction during the PM peak period. The route serves Pinecrest Station every 15 to 30 minutes from 6:00am to 9:00am and 3:00pm to 6:30pm.

OC Transpo Route 283 is a connexion route which operates on weekdays during peak periods only, and travels from Richmond to Tunney's Pasture during the AM peak period, and in the opposite direction during the PM peak period. The route serves stops in the study area every 30 minutes from 6:00am to 7:45am and 4:00pm to 6:00pm.

Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

### 2.1.6 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress.

### 2.1.7 Existing Traffic Volumes

Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the dates listed below:

- |  |                  |
|--|------------------|
| • Pinecrest Road/Dumaurier Avenue                        | August 25, 2016  |
| • Pinecrest Road/Queensview Drive                        | August 11, 2016  |
| • Pinecrest Road/Highway 417 WB Off-Ramp/West Transitway | January 22, 2019 |

From the counts conducted at Pinecrest Road/Queensview Drive, the average annual daily traffic (AADT) of Queensview Drive is approximately 6,400 vehicles per day.

All traffic count data previously discussed are included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 5**.

### 2.1.8 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections and road segments between intersections. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, defined in the *2017 TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 1**.

Figure 5: Existing Traffic Volumes

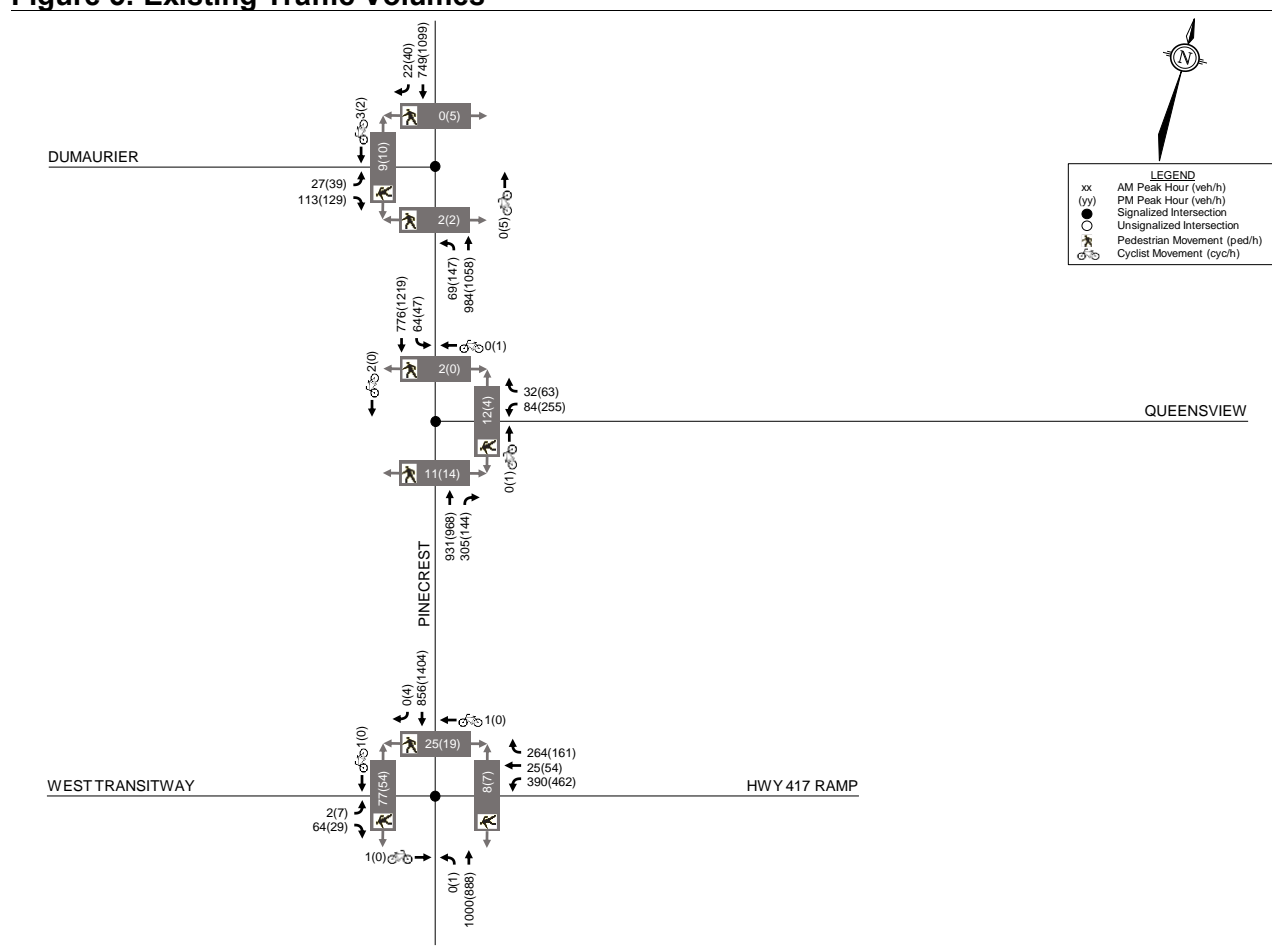


Table 1: Reported Collisions

Location	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Mvmt	SMV <sup>(1)</sup> / Other	
Pinecrest Road/Dumaurier Avenue	1	3	16	3	1	2	26
Pinecrest Road/Queensview Drive	1	5	8	1	2	1	18
Pinecrest Road/Highway 417 WB Off-Ramp/West Transitway	-	8	10	4	-	1	23
Pinecrest Road btwn Queensview Drive & West Transitway	-	-	4	1	-	-	5
Queensview Drive btwn Pinecrest Road & End	1	-	-	-	3	4	8

1. SMV = Single Motor Vehicle

#### Pinecrest Road/Dumaurier Avenue

A total of 26 collisions were reported at this intersection over the last five years, of which there was one approaching impact, three angle impacts, 16 rear-end impacts, three sideswipe impacts, one turning movement impact, and two single vehicle/other impacts. Three collisions resulted in injuries, but none caused fatalities. Ten of the collisions occurred in poor driving conditions.



Of the 16 rear-end impacts, five occurred at the northbound approach, ten occurred at the southbound approach, and one occurred at the eastbound approach. It is likely that high northbound/southbound volumes on Pinecrest Road are a factor in these collisions.

#### Pinecrest Road/Queensview Drive

A total of 18 collisions were reported at this intersection over the last five years, of which there was one approaching impact, five angle impacts, eight rear-end impacts, one sideswipe impact, two turning movement impact, and one single vehicle/other impact. Five collisions resulted in injuries (including one involving a pedestrian), but none caused fatalities. Six of the collisions occurred in poor driving conditions.

Of the eight rear-end impacts, five occurred at the northbound approach and three occurred at the southbound approach.

#### Pinecrest Road/Highway 417 WB Off-Ramp/West Transitway

A total of 23 collisions were reported at this intersection over the last five years, of which there were eight angle impacts, ten rear-end impacts, four sideswipe impacts, and one single vehicle/other impact. Four collisions resulted in injuries (including one involving a pedestrian), but none caused fatalities. Eleven of the collisions occurred in poor driving conditions.

Of the eight angle impacts, four involved a northbound vehicle and a westbound vehicle, and four involved a southbound vehicle and a westbound vehicle.

Of the ten rear-end impacts, five occurred at the northbound approach and five occurred at the southbound approach.

#### Pinecrest Road between Queensview Drive & West Transitway

A total of five collisions were reported along this segment over the last five years, of which there were four rear-end impacts and one sideswipe impact. One collision resulted in injuries, and one collision occurred in poor driving conditions.

#### Queensview Drive between Pinecrest Road & End of Roadway

A total of eight collisions were reported along this segment over the last five years, of which there was one approaching impact, three turning movement impacts, and four single vehicle/other impacts. One collision resulted in injuries (and involved a pedestrian), and two collisions occurred in poor driving conditions.

## **2.2 Planned Conditions**

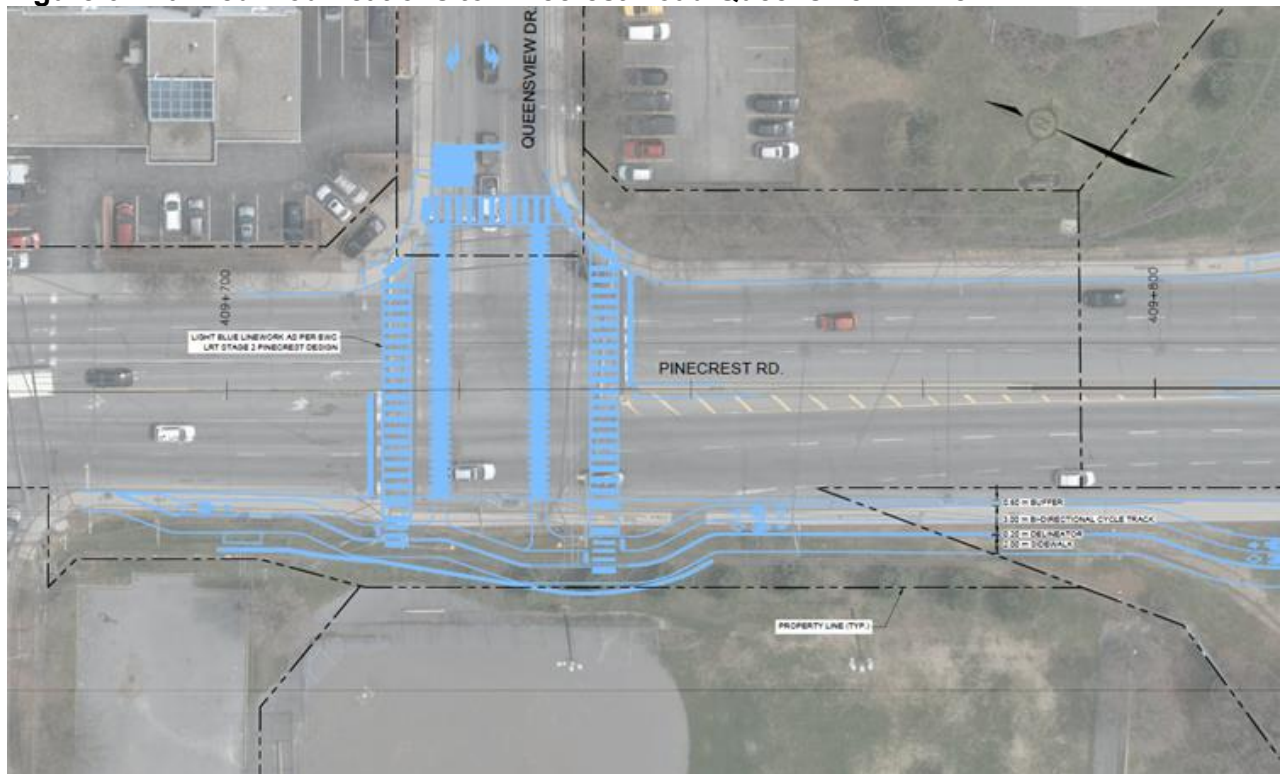
### **2.2.1 Planned Roadway and Transit Projects**

Within proximity of the study area, the 2013 Ottawa Cycling Plan identifies the implementation of bike lanes or paved shoulders on Richmond Road, between Highway 417 and Carling Avenue. The 2013 Ottawa Pedestrian Plan does not identify any improvements within the study area.

The City's 2013 Transportation Master Plan (TMP) does not identify any roadway projects within the study area in its Affordable Road Network. The Rapid Transit and Transit Priority (RTTP) Network in the 2031 TMP includes a western extension of the Confederation Line LRT from Tunney's Pasture Station to Baseline Station or Moodie Station. Revenue service is planned for 2025.

As part of the Pinecrest LRT Station, modifications to Pinecrest Road and the Highway 417 westbound ramps will be constructed, and the West Transitway adjacent to Pinecrest Road will be repurposed to become a bus drop-off loop. Additionally, the Pinecrest Road/Queensview Drive intersection will be modified to include zebra-striped crosswalks and crossrides, a right-turn bike box at the east approach, and a bidirectional cycle track and sidewalk on the west side of Pinecrest Road. The functional design of the planned Pinecrest Road/Queensview Drive modifications are shown in **Figure 6**.

**Figure 6: Planned Modifications to Pinecrest Road/Queensview Drive**



### 2.2.2 Other Area Developments

In proximity of the proposed development, the City's Development Application Search Tool does not identify any other developments are under construction, approved, or in the approval process.

### 2.3 Study Area and Time Periods

The study area for this report includes the boundary roadway Queensview Drive, as well as the following intersections:

- Pinecrest Road/Dumaurier Avenue
- Pinecrest Road/Queensview Drive
- Pinecrest Road/Highway 417 WB Off-Ramp

It is anticipated that the peak hours for site-generated traffic will be the weekday PM and Saturday peak hours. However, Saturday counts at the study area intersections are not available and cannot be conducted during the COVID-19 pandemic. Since the proposed development is estimated to generate fewer than 60 net new peak hour person trips during the peak hours, and therefore does

not meet the trip generation trigger, City staff have confirmed that Saturday analysis can be omitted. The selected time periods for the analysis are the weekday AM and PM peak hours, as data is available for these peak hours. Analysis will be completed for the 2022 build-out year and 2027 horizon year.

## 2.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the *2017 TIA Guidelines*. The applicable exemptions for this site are shown in **Table 2**.

**Table 2: TIA Exemptions**

Module	Element	Exemption Criteria	Status
<b>Design Review Component</b>			
<b>4.1</b> Development Design	4.1.2 Circulation and Access	• Only required for site plans	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt
<b>4.2</b> Parking	4.2.1 Parking Supply	• Only required for site plans	Not Exempt
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	Exempt

Since the trip generation trigger is not met, all Network Impact modules (Modules 4.5 through 4.9) are exempt from further analysis. Therefore, the following modules will be included in the TIA report:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design

## 3.0 FORECASTING

### 3.1 Development-Generated Traffic

A review of the subject site and the existing Granite Curling Club on Scott Street has been conducted to outline the estimated trip generation of the existing and proposed developments at 2740 Queensview Drive. A summary of the estimated site-generated trip generation is included below.

The existing development includes a 15,000 ft<sup>2</sup> building with two suites, which historically have included a video production company and a furniture store/showroom. Trips generated by these land uses have been approximated using the General Office Building (land use 710) and Furniture Store (land use 890) rates from the *ITE Trip Generation Manual, 10<sup>th</sup> Edition*, and an equal gross floor area of 7,500 ft<sup>2</sup> has been assumed for both uses. An ITE Trip to Person Trip Factor of 1.28 has been applied, consistent with the City's *2017 TIA Guidelines*.

The proposed development includes four ice sheets, which can have a maximum of eight players on each (consisting of two teams of four). Games are scheduled to be two hours each, starting at 9:00am and running until 11:00pm. Outside of a two-hour game, people are assumed to arrive five to 15 minutes before the scheduled start, and depart up to 30 minutes after finishing to socialize. Therefore, overlap between earlier players departing and later players arriving is assumed roughly every two hours (i.e. at 11:00am, 1:00pm, 3:00pm, 5:00pm, 7:00pm, and 9:00pm). Based on the above points, it has been assumed that AM peak hour trips will consist of 32 players arriving for the first game of the day, and PM peak hour trips will consist of 32 players arriving for an afternoon game and 32 players departing after playing the previous game. Peak trip generation on Saturdays are assumed to involve the lunch hour overlap between the under-21 curling and youth curling sessions. Per discussions with the Granite Curling Club, a maximum of 24 under-21 curlers who take transit or drive personal vehicles will depart the site after a maximum 24 youth curlers, 24 parents, and three instructors arrive for the next session. Based on this, Saturday peak hour trips will consist of 51 person trips in and 24 person trips out.

The proposed development also includes a bar/lounge area intended to serve players socializing after their game, and is not intended to serve the general public. Additionally, the development includes a dining room for special events only, such as playoffs or catered banquets, which are not anticipated to be scheduled on a regular basis.

The estimated trip generation of the existing and proposed uses are summarized in **Table 3**.

**Table 3: Person Trip Generation**

Land Use	ITE Code	Units/ GFA	AM Peak (pph) <sup>(1)</sup>			PM Peak (pph) <sup>(1)</sup>			SAT Peak (pph) <sup>(1)</sup>		
			IN	OUT	TOT	IN	OUT	TOT	IN	OUT	TOT
Existing Development											
General Office Building	710	7,500 ft²	10	2	12	2	10	12	3	2	5
Furniture Store	890	7,500 ft²	3	1	4	3	3	6	12	11	23
Proposed Development											
Curling Club	-	4 sheets	32	0	32	32	32	64	51	24	75
Difference			19	-3	16	27	19	46	36	11	47

1. pph: person trips per hour

From the previous table, the proposed development is projected to generate an additional 16 person trips during the AM peak hour, an additional 46 person trips during the PM peak hour, and an additional 47 person trips during the Saturday peak hour. Therefore, the trip generation trigger of 60 additional peak hour person trips is not met, as described in Section 1.3.

### 3.2 Background Traffic

A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix F**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* generally suggests little to no growth, except for Dumaurier Avenue. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify the following growth rates between 2000 and 2016:

- Pinecrest Road/Dumaurier Avenue
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.

- Pinecrest Road/Queensview Drive
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Pinecrest Road/Highway 417 WB Off-Ramp/West Transitway
  - AM Peak Hour: positive growth between +0.2% and +2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.

Based on the above, no background growth has been assumed on the study area roadways.

### 3.3 Demand Rationalization

Based on the City's *TIA Guidelines*, the Demand Rationalization module includes identifying any locations and approaches where total auto demand is projected to exceed capacity, and what reductions in peak hour volumes are required for demand to meet capacity. However, determining whether any approach has volumes that exceed capacity requires intersection analysis. Since the proposed development does not meet the trip generation trigger, all Network Impact modules including intersection analysis are outside the scope of this study.

## 4.0 ANALYSIS

### 4.1 Development Design

#### 4.1.1 Design for Sustainable Modes

Pedestrian walkways will be provided along each access between Queensview Drive and the entrances to the proposed development. At the proposed accesses, the sidewalk on Queensview Drive will be depressed and continuous, and any depressed curb at the existing accesses will be reinstated in accordance with City standards.

Bicycle parking will be provided on the western side of the proposed building, approximately 50m south of Queensview Drive. The number of bicycle parking spaces versus the parking requirements per the City's *Zoning By-Law* (ZBL) is reviewed in Section 4.2.

All bus stops discussed in Section 2.1.6 (and shown in **Figure 4**) are within 400m walking distance of the entrances to the proposed development. These stops are served by routes 61, 62, 63, 64, 66, 82, 155, 173, 258, and 283. Once the Confederation Line LRT extension is completed, the proposed development will also be within 400m walking distance of the Pinecrest LRT Station. A 400m walking distance is equivalent to a five-minute walk, per OC Transpo's service design guidelines.

A review of the City's *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has been conducted. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. A copy of this checklist is included in **Appendix G**.

#### 4.1.2 Circulation and Access

The on-site fire route will be approximately 35m in length, and includes the drive aisle of the westerly access between Queensview Drive and the main entrance. A turning movement figure for a Heavy Single Unit (HSU) design vehicle, which has been used to represent a fire truck, is included in **Figure 7**.

Garbage collection will take place near the northeastern corner of the proposed building. Garbage trucks will be able to enter the site via the westerly access, travel around the perimeter of the proposed building, and exit the site via the easterly access. In the event that MTO expropriates the 14m setback at the southern end of the site, garbage trucks will still be able to reverse into and drive forward out of the easterly access. A turning movement figure for a Medium Single Unit (MSU) design vehicle, which has been used to represent a garbage truck, is included in **Figure 8**.

#### 4.2 Parking

The subject site is located in Area B of Schedule 1 and Schedule 1A of the City's ZBL, and is located within 600m of a rapid transit station as shown in Schedule 2A of the City's ZBL.

Per Section 101(5)(a) and (b) of the ZBL, the minimum vehicle parking requirements have been calculated using the rates for Area X rather than Area B, as an active entrance to the development will be located within 300m 'as the crow flies' and within 400m walking distance of a rapid transit station identified on Schedule 2A (i.e. Pinecrest Station). Section 103 of the ZBL does not identify any maximum vehicle parking requirements for recreation and athletic training facilities.

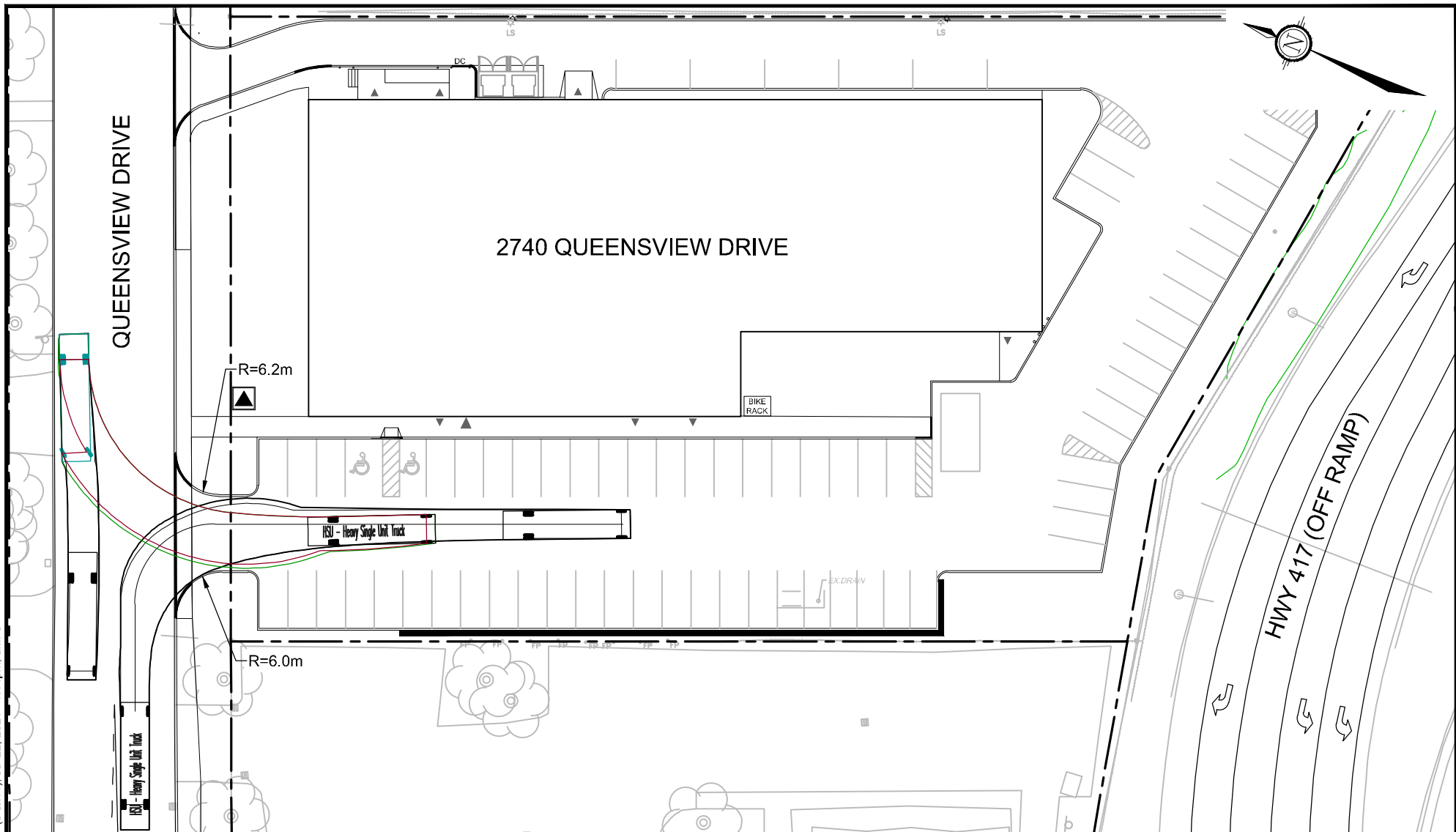
Per Section 3.1 of the City's *Accessibility Design Standards*, a minimum of two accessible parking spaces must be provided, consisting of one 'Type A' space and one 'Type B' space. Type A spaces have a minimum width of 3.4m, and can accommodate wider vehicles such as vans that may be equipped with transfer ramps or other mobility aids. Type B spaces have a standard parking space width of 2.4m. All accessible parking spaces will be adjacent to a 1.5m-wide access aisle.

Per Section 111(2) of the ZBL, the minimum bicycle parking requirements have been calculated using the rate associated with the 'All other non-residential uses' land use.

Per Section 113(2) of the ZBL, the minimum loading space requirements have been calculated using the rate associated with the 'Sports Arena' land use.

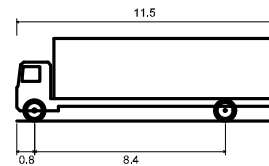
An evaluation of the proposed parking versus the requirements are summarized in **Table 4**.

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HSU - Heavy Single Unit Truck

Overall Length	11.500m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	14.100m

2740 QUEENSVIEW DRIVE

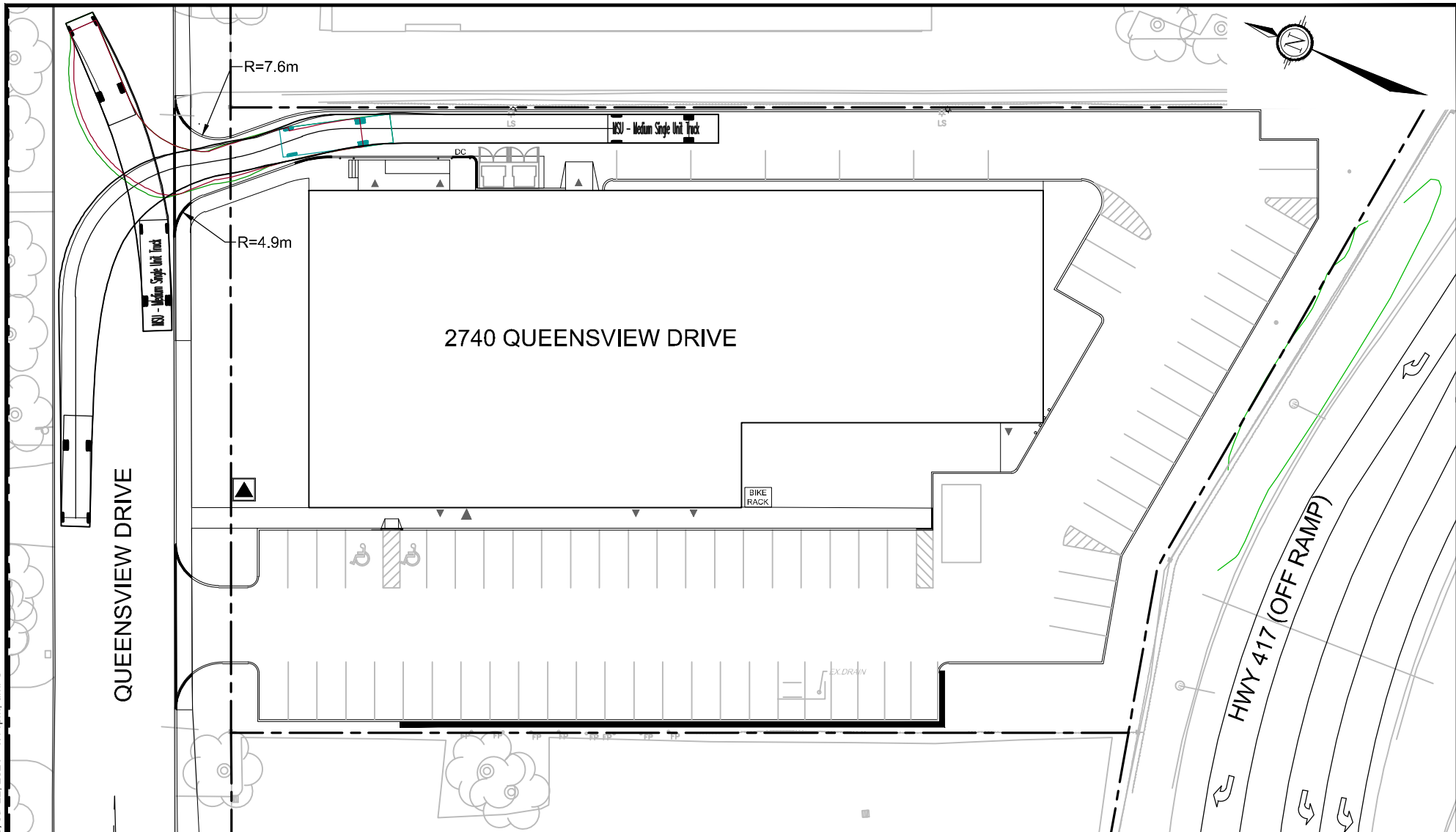
TURNING MOVEMENT  
(HSU/FIRE TRUCK)

SCALE 1 : 500

DATE JULY 2021 JOB 121127 FIGURE FIGURE 7

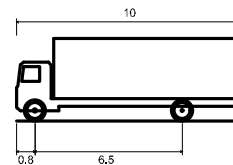


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MSU - Medium Single Unit Truck

Overall Length	10.000m
Overall Width	2.600m
Overall Body Height	3.650m
Min Body Ground Clearance	0.445m
Track Width	2.600m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	11.100m

2740 QUEENSVIEW DRIVE

TURNING MOVEMENT  
(MSU/GARBAGE TRUCK)

SCALE 1 : 500

DATE JULY 2021 JOB 121127 FIGURE 8



**Table 4: Parking Requirements**

Land Use	Rate	Units	Required	Proposed
Minimum Vehicle Parking Requirements				
Recreation & Athletic Training	2.0 spaces per ice sheet	4 sheets	8	74
	5.0 spaces per 100 m <sup>2</sup> GFA used for dining, assembly, or common area	335 m <sup>2</sup> (dining/viewing)	25	
		168 m <sup>2</sup> (game room)		
Total			33	74
Minimum Accessible Parking Requirements				
-	2 accessible spaces required, when total number of spaces is between 26 and 50	74 spaces	2	2
Minimum Bicycle Parking Requirements				
Recreation & Athletic Training	1.0 space per 1,500 m <sup>2</sup> GFA	1,687 m <sup>2</sup>	1	2
Minimum Loading Space Requirements				
Recreation & Athletic Training	1 loading space required, when total GFA is between 1,000 and 1,999 m <sup>2</sup>	1,687 m <sup>2</sup>	1	1

Based on the previous table, the proposed number of vehicle parking spaces, accessible parking spaces, bicycle parking spaces, and loading spaces, meet the minimum requirements.

A total of 51 parking spaces are provided outside of the 14m MTO setback at the southern end of the subject site. In the event that MTO expropriates this setback, the 51 remaining spaces still meet the minimum parking requirement.

The accessible parking requirement has been calculated based on the minimum parking requirements as outlined in the ZBL (i.e. 33 spaces).

### 4.3 Boundary Street Design

This section provides a review of the boundary street Queensview Drive, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in 2015, were used to evaluate the levels of service for each mode of transportation on Queensview Drive. Schedule B of the City's Official Plan indicates that the subject site is located within the Urban Employment Area. However, Exhibit 22 of the *MMLOS Guidelines* identifies stricter MMLOS targets for any sites located within 600m of a rapid transit station. Therefore, Queensview Drive has been evaluated based on existing conditions and the targets for any roadway within 600m of a rapid transit station (i.e. the existing Pinecrest transitway station and the planned Pinecrest LRT station).

#### 4.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment PLOS of Queensview Drive. Exhibit 22 of the *MMLOS Guidelines* identify a target PLOS A for all road classes within 600m of a rapid transit station. The results of the segment PLOS analysis are summarized in **Table 5**.

**Table 5: PLOS Segment Analysis**

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed <sup>(1)</sup>	PLOS
<b>Queensview Drive (north side)</b>					
No sidewalk		> 3,000 vpd	No	60 km/h	F
<b>Queensview Drive (south side)</b>					
1.5m	0m	> 3,000 vpd	No	60 km/h	F

1. Operating speed taken as the unposted speed limit plus 10 km/h

#### 4.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment BLOS of Queensview Drive. Exhibit 22 of the *MMLOS Guidelines* identify a target BLOS B for local roadways with a Local Cycling Route designation. The results of the segment BLOS analysis are summarized in **Table 6**.

**Table 6: BLOS Segment Analysis**

Road Class	Type of Route	Type of Bikeway	Travel Lanes	Posted Speed	BLOS
<b>Queensview Drive (Pinecrest Road to end of roadway)</b>					
Local	Local Route	Mixed Traffic	2	50 km/h; unmarked centre line	B

#### 4.3.3 Transit Level of Service (TLOS)

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment TLOS of Queensview Drive. Exhibit 22 of the *MMLOS Guidelines* do not identify a target TLOS for roadways without a RTTP designation. However, the roadway has still been evaluated as transit service is currently provided on Queensview Drive. The results of the segment TLOS analysis are summarized in **Table 7**.

**Table 7: TLOS Segment Analysis**

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Queensview Drive (Pinecrest Road to end of roadway)				
Mixed Traffic – Moderate Parking/Driveway Friction	Yes	Medium	Medium	E

#### 4.3.4 Truck Level of Service (TkLOS)

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment TkLOS of Queensview Drive. Exhibit 22 of the *MMLOS Guidelines* do not identify a target TkLOS for local roadways without a Truck Route designation. However, the roadway has still been evaluated given that heavy vehicles still use this roadway (i.e. the Pinecrest OC Transpo Garage is located on Queensview Drive). The results of the segment TkLOS analysis are summarized in **Table 8**.

**Table 8: TkLOS Segment Analysis**

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
<b>Queensview Drive (Pinecrest Road to end of roadway)</b>		
> 3.7m	1	B

#### 4.3.5 Segment MMLOS Summary

The results of the segment analysis can be summarized as follows:

- Queensview Drive does not meet the target PLOS A;
- Queensview Drive meets the target BLOS B;
- Queensview Drive achieves a TLOS E, but no target is identified;
- Queensview Drive achieves a TkLOS B, but no target is identified.

The north side of Queensview Drive achieves a PLOS F, as no sidewalk is provided. The south side of Queensview Drive also achieves a PLOS F, as a 1.5m sidewalk with no boulevard is provided along the frontage of the subject site. Based on Exhibit 4 of the *MMLOS Guidelines*, the best possible PLOS that can be achieved for a roadway with a speed limit of 50 km/h, a curb lane AADT greater than 3,000 vehicles per day, and on-street parking is a PLOS B, which still does not meet the target PLOS A. A PLOS B would be achieved by providing a 2.0m-wide sidewalk with a 2.0m boulevard width. This is identified for the City's consideration. Utility poles along the back of the existing sidewalk will require relocation to implement a wider sidewalk.

#### 4.4 Access Design

The proposed accesses to the subject site have been evaluated based on the relevant requirements of the City's *Private Approach By-Law* (PABL).

Section 25(a) of the PABL identifies that a minimum roadway frontage of 35m is required to provide two private approaches on that roadway. This requirement is met, as the subject site has approximately 56m of frontage to Queensview Drive.

Section 25(c) of the PABL identifies a maximum width requirement of 9.0m for any two-way private approach, as measured at the street line. Since the proposed westerly access is approximately 6.7m in width, this requirement is met.

Section 25(d) of the PABL identifies a maximum width requirement of 7.5m for any one-way private approach, as measured at the street line. Since the proposed easterly access is approximately 4.3m in width, this requirement is met.

Section 25(g) of the PABL identifies a minimum separation requirement of 9.0m between a two-way private approach and any other private approach to the same site, as measured at the street line. Since the two proposed accesses are approximately 36m apart measuring nearest edge to nearest edge at the street line, this requirement is met.

Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. Since the nearest edge of the easterly access is proposed to be approximately 3m from the eastern property line, and the nearest edge of the westerly access is proposed to be approximately 6.3m from the western property line, this requirement is met.

Section 25(u) of the PABL identifies a requirement that any private approach serving a parking area with more than 50 parking spaces shall not have a grade exceeding 2% for the first 9m inside the property line.

The requirement outlined in Section 25(u) is met by the westerly accesses. The proposed maximum grade of the easterly access is 4.9% for grading purposes. As this is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

### Development Design

- Pedestrian walkways will be provided along each access between Queensview Drive and the entrances to the proposed development. At the proposed accesses, the sidewalk on Queensview Drive will be depressed and continuous, and any depressed curb at the existing accesses will be reinstated in accordance with City standards.
- Two bicycle parking spaces will be provided on the western side of the proposed building, approximately 50m south of Queensview Drive.
- The entrances to the proposed development will be within 400m walking distance of stops that are served by OC Routes 61, 62, 63, 64, 66, 82, 155, 173, 258, and 283, and will be within 400m walking distance of the future Pinecrest LRT Station.
- All required TDM-supportive design and infrastructure measures in the TDM checklist are met.
- The on-site fire route will be approximately 35m in length, including the westerly drive aisle between Queensview Drive and the main entrance. Garbage collection will take place near the northeastern corner of the proposed building. Garbage trucks will be able to enter the site via the westerly access, travel around the perimeter of the proposed building, and exit the site via the easterly access. In the event that MTO expropriates the 14m setback at the southern end of the site, garbage trucks will still be able to reverse into and drive forward out of the easterly access.

### Parking

- The proposed number of vehicle parking spaces (74), accessible parking spaces (2), bicycle parking spaces (2), and loading spaces (1), all meet the minimum requirements outlined in the City's *Zoning By-Law* and *Accessibility Design Standards*.
- A total of 51 parking spaces are provided outside of the 14m MTO setback at the southern end of the subject site. In the event that MTO expropriates this setback, the 51 remaining spaces still meet the minimum parking requirement.

### Boundary Streets

- Queensview Drive does not meet the target pedestrian level of service (PLOS) A, but does meet the target bicycle level of service (BLOS) B. Queensview Drive achieves a transit level of service (TLOS) E and a truck level of service (TkLOS) B, however no targets are identified for these modes.

- Both sides of Queensview Drive achieves a PLOS F. Based on Exhibit 4 of the *Multi-Model Level of Service (MMLOS) Guidelines*, the best possible PLOS that can be achieved for Queensview Drive is a PLOS B, by providing a 2.0m-wide sidewalk with a boulevard width of 2.0m. This is identified for the City's consideration. Utility poles along the back of the existing sidewalk will require relocation to implement a wider sidewalk.

#### Access Design

- The westerly access meets all relevant requirements of the City's *Private Approach By-Law*.
- The easterly access meets all relevant requirements of the City's *Private Approach By-Law*, except for Section 25(u), which identifies that the access shall not have a grade greater than 2% for the first 9m inside the property line. As the proposed maximum grade of 4.9% is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.

Based on the foregoing, the proposed development is recommended from a transportation perspective.

## NOVATECH

Prepared by:



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E.I.T. | Transportation/Traffic

Reviewed by:



Jennifer Luong, P.Eng.  
Senior Project Manager | Transportation/Traffic

## **APPENDIX A**

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### Preliminary Site Plan



ZONING INFORMATION

NOTE: ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW 2008-250

ZONING MECHANISM	REQUIRED	PROVIDED
DEFINITION	IL H(14) Light Industrial Zone	RECREATIONAL & ATHLETIC FACILITY
MIN. LOT WIDTH	NO MINIMUM	56.39 m
MIN. LOT AREA	2000 m <sup>2</sup>	5198 m <sup>2</sup>
MIN. FRONT YARD SETBACK	7.5 m	7.5 m
MIN. REAR YARD SETBACK	14 m HIGHWAY SETBACK	14.9 m
MIN. INTERIOR SIDE YARD SETBACK	7.5 m	7.5 m
MIN. CORNER SIDE YARD SETBACK	7.5 m	N/A
MAX. BUILDING HEIGHT	14.0 m	± 8 m, 2 storey
MAX. LOT COVERAGE (%)	65 %	32 %
MIN. WIDTH OF LANDSCAPED AREA	ABUTTING A STREET = 3m ABUTTING HIGHWAY = 3m	3 m 3 m
	ABUTTING INSTITUTIONAL ZONE = 3 m, MAY BE REDUCED TO 1 m IF A 1.4 m HIGH OPAQUE SCREEN IS PROVIDED	1 m
PARKING LANDSCAPE BUFFER	FOR A PARKING LOT CONTAINING 11-99 SPACES: ABUTTING A STREET = 3 m NOT ABUTTING A STREET = 0 m	ABUTTING A STREET 3 m
PRIVATE APPROACH PROVISIONS: DISTANCE BETWEEN A TWO WAY PRIVATE APPROACH AND ANY OTHER PRIVATE APPROACH	15.0 m, AS PER OTTAWA BY-LAW 2003-447, SECTION 25, ITEM (m)(ii), FOR A PARKING LOT CONTAINING 20-99 SPACES	± 36 m

PARKING SPACE	STANDARD	2.6m WIDTH x 5.2m LENGTH	2.6m WIDTH x 5.2m LENGTH
	REDUCED	2.4m WIDTH x 5.2m LENGTH	2.4m WIDTH x 5.2m LENGTH
ACCESSIBLE PARKING SPACE	TYPE 'A'	3.4m WIDTH x 5.2m LENGTH	3.4m WIDTH x 5.2m LENGTH
	TYPE 'B'	2.4m WIDTH x 5.2m LENGTH	2.4m WIDTH x 5.2m LENGTH
MIN. PARKING REQUIREMENTS AREA X: WITHIN 300 m OF A RAPID-TRANSIT STATION	REC & ATHLETIC TRAINING: - ICE SHEET: 2 spots per ice sheet = 8 spots - ASSEMBLY / COMMON AREA: DINING / VIEWING ROOM / GAME ROOM / BOARDROOM: 530 m <sup>2</sup> / 100 x 5 = 27 spots TOTAL REQ'D = 35 spots	74 PARKING SPACES	
HANDICAP ACCESSIBLE	AS PER OTTAWA ACCESSIBILITY DESIGN STANDARDS, 3.1.2 PROVISION TABLE 3, FOR A PARKING AREA WITH A CAPACITY OF 26-50 SPACES, 2 HANDICAP ACCESSIBLE SPACES ARE REQ'D, 1 TYPE 'A', 1 TYPE 'B'	2 ACCESSIBLE PARKING SPACES 1 TYPE 'A', 1 TYPE 'B'	
LOADING SPACES	1 per 1,000 m <sup>2</sup> - 1,999 m <sup>2</sup> of G.F.A.	1806 m <sup>2</sup> G.F.A. = 1 SPACE	
BICYCLE PARKING RATE	1 per 1500 m <sup>2</sup> of G.F.A. 1806 m <sup>2</sup> / 1500 m <sup>2</sup> = 1.2 SPACES	2 BICYCLE SPACES	
GROSS FLOOR AREA City of Ottawa Definition	MAX. GROSS FLOOR AREA: 2999 (32,270 s.f.)	1806 m <sup>2</sup>	

SURVEY INFORMATION TAKEN FROM:

SURVEYOR'S CERTIFICATE

TOPOGRAPHIC SURVEY OF

PART OF LOT 360

REGISTERED PLAN 872212

PART OF LOT 21

CONCESSION 2 (OTTAWA FRONT)

CITY OF OTTAWA

DATE

JOHN H. GUTRI

ONTARIO LAND SURVEYOR

100-400 TERRY FOX DRIVE, KANATA, ONTARIO K2L 4B6

TEL: (613) 591-2596 FAX: (613) 591-1485

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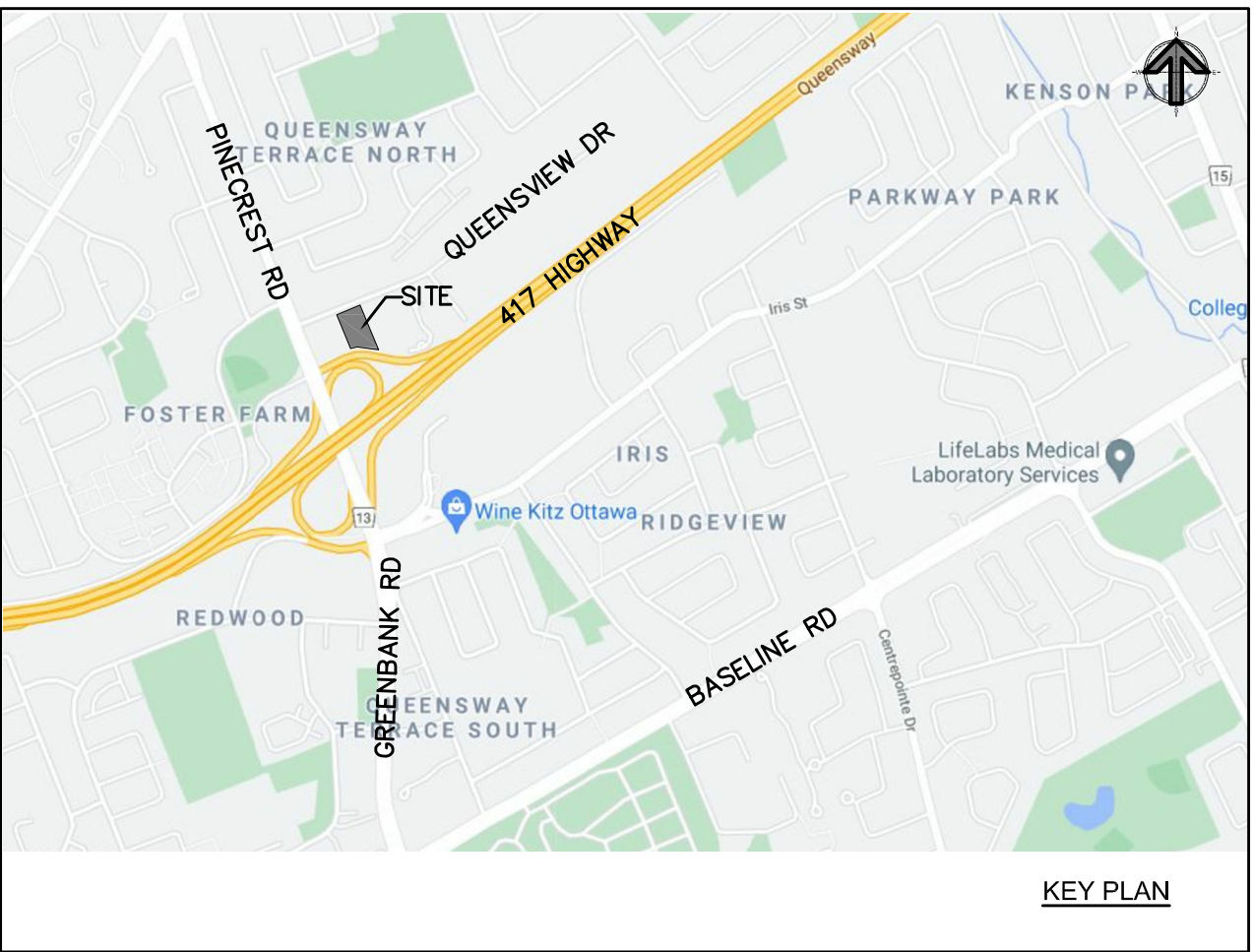
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TEL: (613) 591-2596 FAX: (613) 591-1485



PROJECT INFORMATION: ONTARIO BUILDING CODE

BUILDING CLASSIFICATION:  
THE BUILDING IS CLASSIFIED AND DESIGN TO CONFORM  
TO THE ONTARIO BUILDING CODE 2012 (CURRENT EDITION)  
PART 3

OCCUPANCY:  
GROUP A, DIVISION 3 MAJOR OCCUPANCY, 3.2.2.31

PROJECT DESCRIPTION:  
RECREATIONAL & ATHLETIC FACILITY - NEW CONSTRUCTION

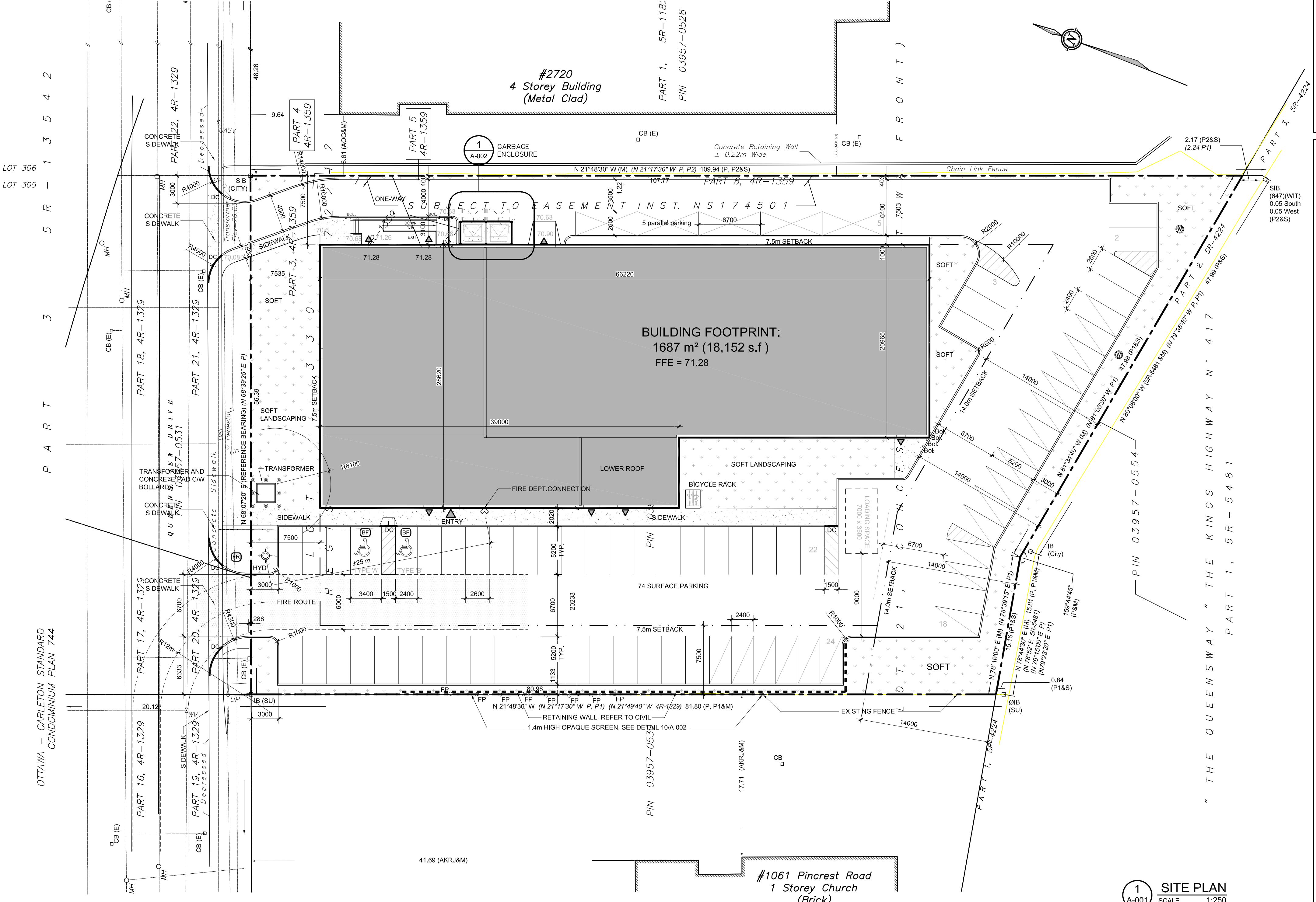
BUILDING AREA re OBC definition: 1687 m<sup>2</sup>  
GROSS AREA re OBC definition: 1806 m<sup>2</sup>  
NUMBER OF STOREYS: 2  
BUILDING SPRINKLERED: YES  
# OF STREET ACCESS ROUTES: 1  
CONSTRUCTION TYPE: NON-COMBUSTIBLE  
FLOOR ASSEMBLIES F.R.R.: 1 HOUR  
LOADBEARING STRUCT. F.R.R.: 1 HOUR  
ROOF F.R.R.: N/A  
LIMITING DISTANCE: 7.5 m

LEGEND

- PROPERTY LINE
- YARD SETBACK
- 1.4 m HIGH OPAQUE FENCE
- NEW DEPRESSED CURB
- NEW CURB
- PROPOSED RETAINING WALL  
REFER TO CIVIL
- PROPOSED BUILDING
- CONCRETE PAD AND SIDEWALK
- 6m WIDE FIRE ROUTE,  
REFER TO CIVIL
- LANDSCAPED AREA  
REFER TO LANDSCAPE PLAN
- PAINT LINE
- GARBAGE ENCLOSURE
- BUILDING ENTRANCE
- 2.6x5.2 m STANDARD PARKING SPACE  
BY ZONING REQUIREMENT
- 2.6x6.7 m PARALLEL PARKING SPACE
- 2.4x5.2 m REDUCED PARKING SPACE  
(MAX. 40 %)
- EXTERIOR LIGHT POLE  
- SEE ELEC
- FIRE HYDRANT
- FIRE DEPT. CONNECTION
- T.W.S.I.

SIGNAGE LEGEND:

- FIRE ROUTE
- HANDICAP PARKING



1 SITE PLAN  
A-001 SCALE 1:250



no.	revision	date
4	ISSUED FOR COORDINATION	23 JULY 2021
3	ISSUED FOR REVIEW	12 JULY 2021
2	ISSUED FOR REVIEW	29 JUNE 2021
1		

N45 ARCHITECTURE INC.  
71 Bank Street, 7th Floor - Ottawa, Ontario, K1P 5N2  
tel. 613.224.0095 fax 613.224.9811

project

**GRANITE CURLING CLUB**

2740 Queensview Drive, Ottawa, ON.

construction north seal

drawing title	
SITE PLAN	
scale	drawn by
AS INDICATED	J.J.
date	checked by
May 2021	K.D.
project number	drawing number
19-411	A-001
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.	
revision	



## **APPENDIX B**

---

### TIA Screening Form



## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	<b>2740 Queensview Drive</b>
Description of Location	<b>Located on the south side of Queensview Drive, approximately 100m east of Pinecrest Road; subject site also abuts the Highway 417 right-of-way</b>
Land Use Classification	<b>Recreation and Athletic Facility</b>
Development Size (units)	-
Development Size (m <sup>2</sup> )	<b>1,687 m<sup>2</sup> (18,152 ft<sup>2</sup>)</b>
Number of Accesses and Locations	<b>Two accesses to Queensview Drive</b>
Phase of Development	<b>1</b>
Buildout Year	<b>2022</b>

**If available, please attach a sketch of the development or site plan to this form.**

### 2. Trip Generation 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
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m <sup>2</sup>
Industrial	5,000 m <sup>2</sup>
Fast-food restaurant or coffee shop	100 m <sup>2</sup>
Destination retail	1,000 m <sup>2</sup>
Gas station or convenience market	75 m <sup>2</sup>

*\* 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.*

**If the proposed development size is greater than the sizes identified 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 Spine Bicycle Networks?		✓
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*	✓	

\*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).

**If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.**

### 4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street limiting 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 is 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?		✓

**If any of the above questions were answered with 'Yes,' 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?	✓	

**If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).**

## **APPENDIX C**

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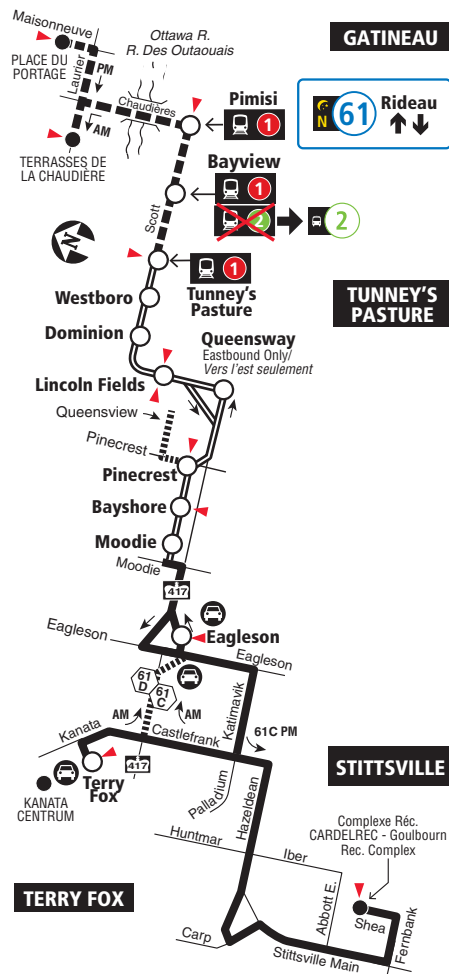
### OC Transpo Route Maps



# TERRY FOX STITTVILLE TUNNEY'S PASTURE GATINEAU

**7 days a week / 7 jours par semaine**

All day service and limited overnight  
Service toute la journée et limité la nuit



When O-Train Line 1 is not running overnight, Route 61 will be extended downtown to Rideau Station. / Lorsque la ligne 1 de l'O-Train ne circule pas la nuit, le circuit 61 sera prolongée au centre-ville jusqu'à la station Rideau.

2020.05



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service

Service à la clientèle ..... 613-741-4390

Lost and Found / Objets perdus..... 613-563-4011

Security / Sécurité ..... 613-741-2478

**Effective May 3, 2020**

**En vigueur 3 mai 2020**



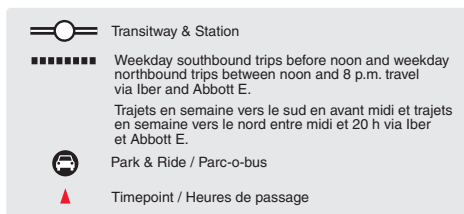
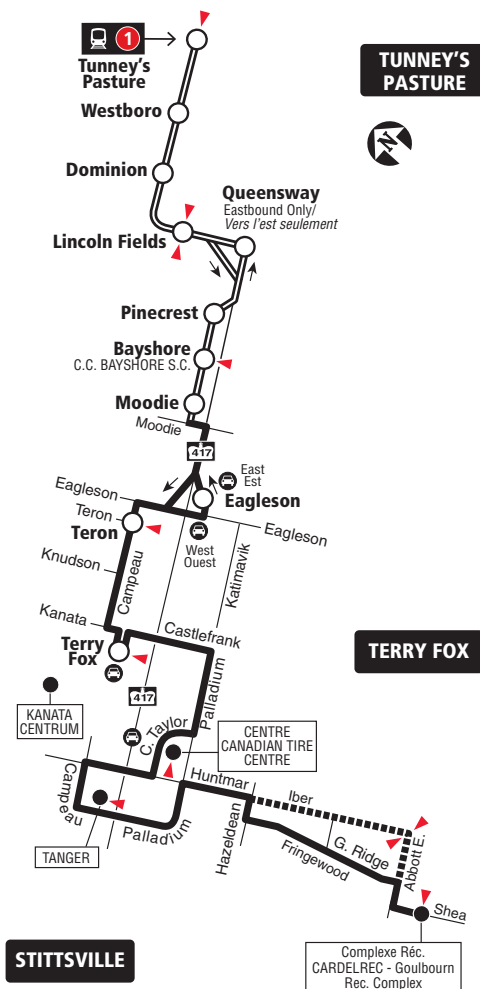
INFO 613-741-4390  
octranspo.com



## TERRY FOX STITTSVILLE TUNNEY'S PASTURE

7 days a week / 7 jours par semaine

All day service  
Service toute la journée



2021.06



**Schedule / Horaire ..... 613-560-1000**

**Text / Texto\* ..... 560560**

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

\*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service  
Service à la clientèle ..... **613-741-4390**  
Lost and Found / Objets perdus ..... **613-563-4011**  
Security / Sécurité ..... **613-741-2478**

**Effective June 20, 2021**

**En vigueur 20 juin 2021**



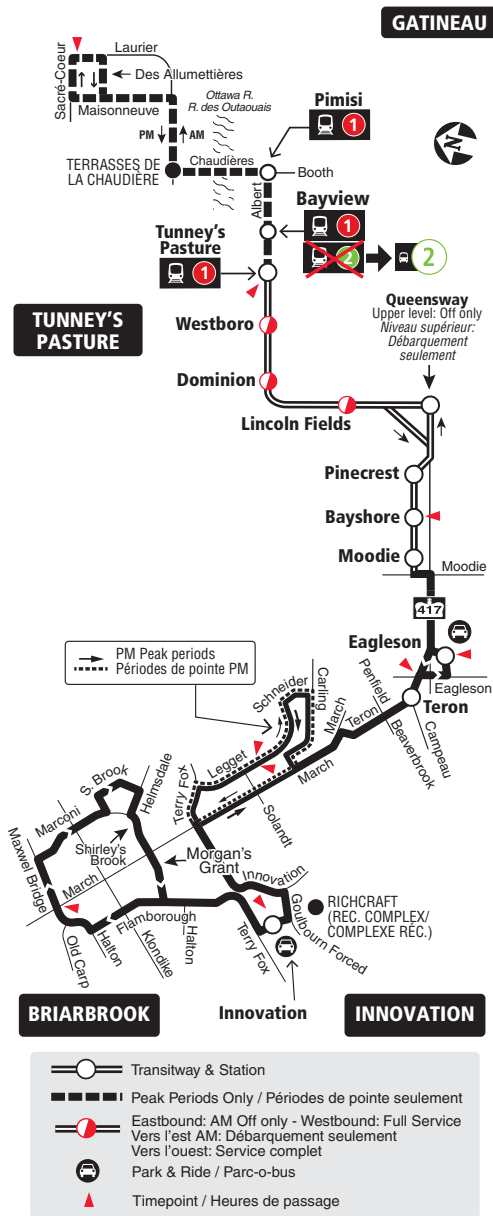
**INFO 613-741-4390**  
**octranspo.com**



# INNOVATION BRIARBROOK TUNNEY'S PASTURE GATINEAU

7 days a week / 7 jours par semaine

All day service  
Service toute la journée



2020.04



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service

Service à la clientèle ..... 613-741-4390

Lost and Found / Objets perdus..... 613-563-4011

Security / Sécurité ..... 613-741-2478

Effective May 3, 2020

En vigueur 3 mai 2020



INFO 613-741-4390  
octranspo.com

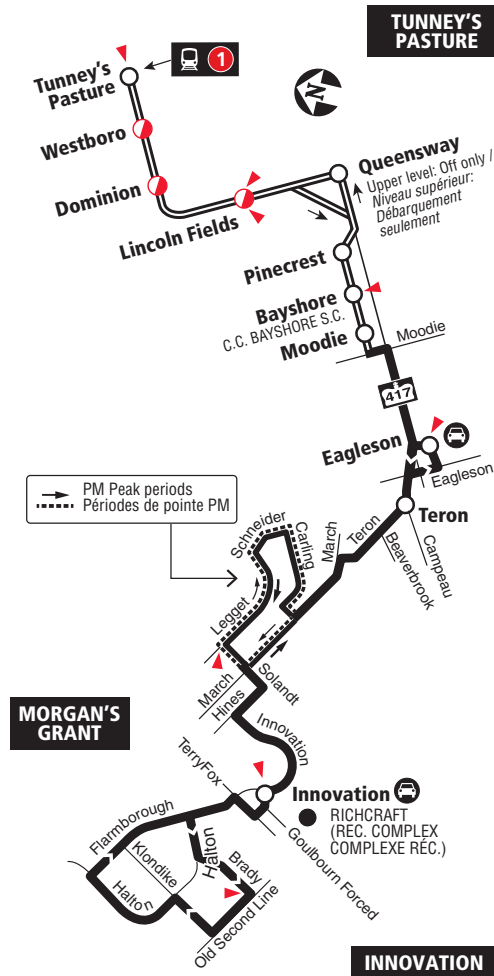
# 64

## MORGAN'S GRANT INNOVATION TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

All day service  
Service toute la journée



- Transitway & Station
- Eastbound: AM Off only - Westbound: Full Service  
Vers l'est AM: Débarquement seulement  
Vers l'ouest: Service complet
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2019.07



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service

Service à la clientèle ..... **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité ..... **613-741-2478**

**Effective December 2, 2018**

**En vigueur 2 décembre 2018**



INFO 613-741-4390  
octranspo.com

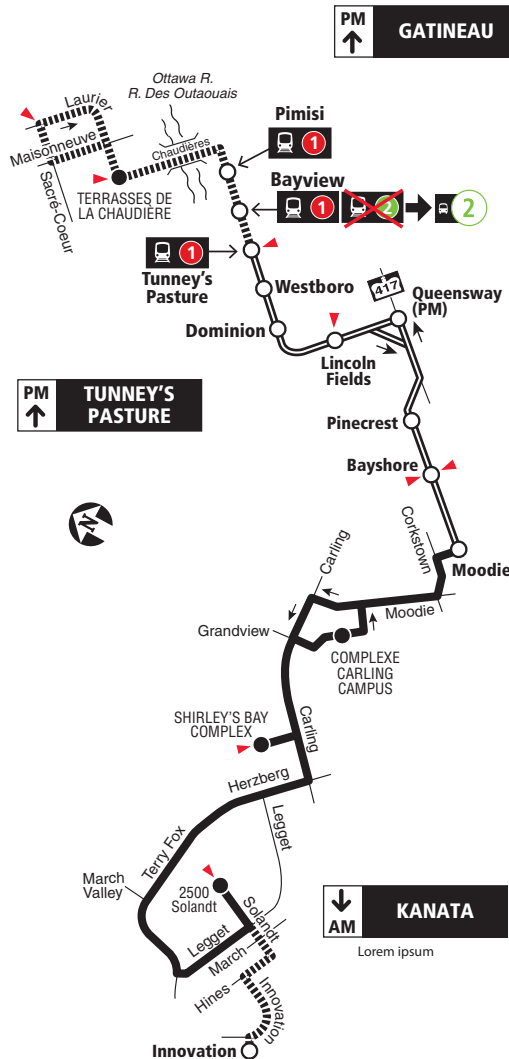
# 66

Local

## KANATA TUNNEY'S PASTURE GATINEAU

Monday to Friday / Lundi au vendredi

Peak periods only  
Périodes de pointe seulement



2020.04



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

Customer Service

Service à la clientèle ..... 613-741-4390

Lost and Found / Objets perdus..... 613-563-4011

Security / Sécurité ..... 613-741-2478

**Effective May 3, 2020**

**En vigueur 3 mai 2020**



INFO 613-741-4390  
octranspo.com



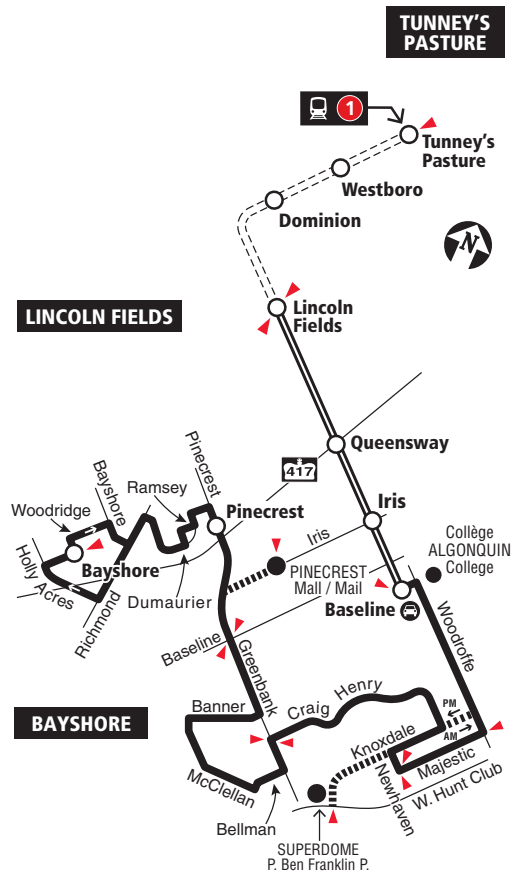
# 82

## BAYSHORE LINCOLN FIELDS TUNNEY'S PASTURE

*Local*

**7 days a week / 7 jours par semaine**

All day service  
Service toute la journée



2019.07

**Future route after O-Train Line 1 is open**  
**Trajet du circuit après l'ouverture**  
**de la Ligne 1 de l'O-Train**

Lost and Found / Objets perdus..... 613-563-4011  
Security / Sécurité..... 613-741-2478

**OC Transpo**

INFO 613-741-4390  
octranspo.com

# 155

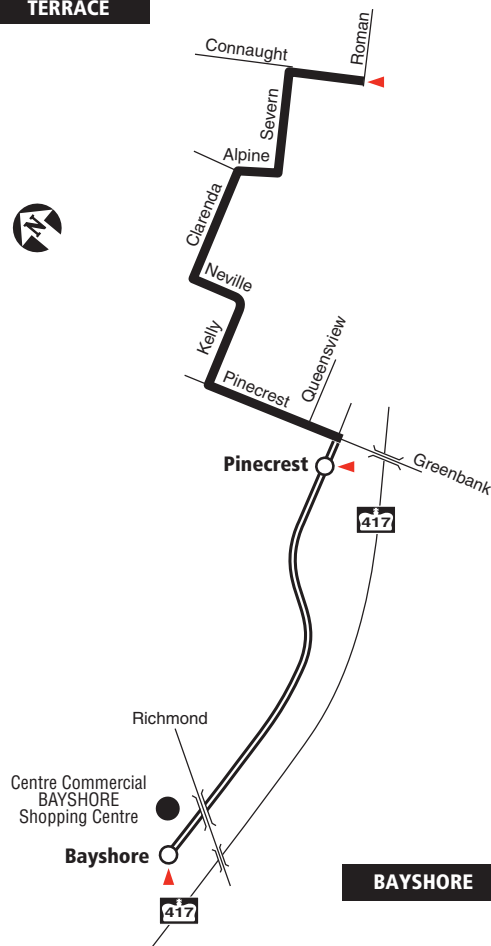
**QUEENSWAY  
TERRACE  
BAYSHORE**

*Local*

**Monday to Friday/ Lundi au vendredi**

Selected time periods only  
Périodes sélectionnées seulement

**QUEENSWAY  
TERRACE**



**BAYSHORE**



Transitway & Station



Timepoint / Heures de passage

2019.06



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

Customer Service

Service à la clientèle ..... **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité ..... **613-741-2478**

**Effective September 8, 2015**

**En vigueur 8 septembre 2015**



**INFO 613-741-4390**  
**octranspo.com**

# 173

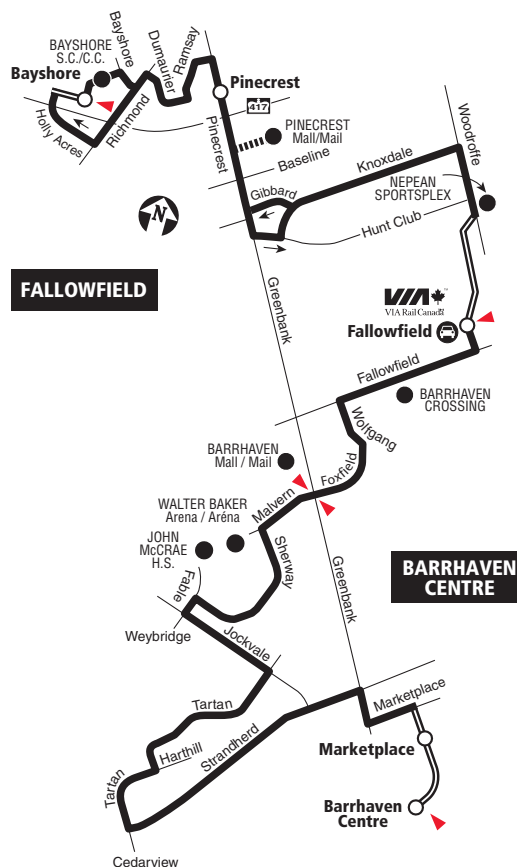
## FALLOWFIELD BAYSHORE BARRHAVEN CENTRE

*Local*

**Monday to Friday/ Lundi au vendredi**

No service evenings and on weekends  
Aucun service le soir et la fin de semaine

### BAYSHORE



- Transitway & Station
- Some trips / Quelques trajets
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2019.06



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

Customer Service  
Service à la clientèle ..... **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité ..... **613-741-2478**

**Effective September 4, 2011**

**En vigueur 4 septembre 2011**



**INFO 613-741-4390**  
**octranspo.com**

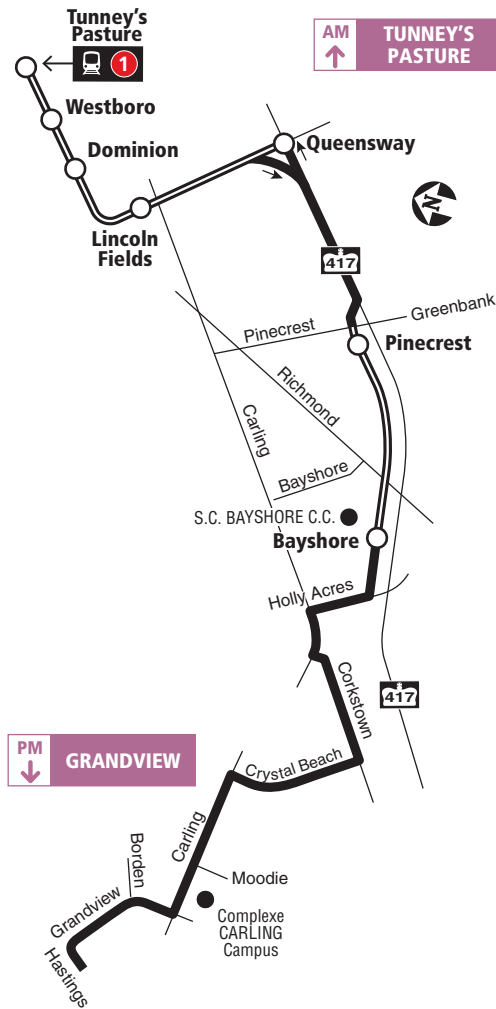
# 258

## GRANDVIEW TUNNEY'S PASTURE

### Connexion

**Monday to Friday / Lundi au vendredi**

Peak periods only  
Périodes de pointe seulement



 Transitway & Station

2020.01



**Schedule / Horaire.....613-560-1000**

**Text / Texto .....560560**

*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

Customer Service

Service à la clientèle ..... **613-741-4390**

Lost and Found / Objets perdus..... **613-563-4011**

Security / Sécurité ..... **613-741-2478**

**Effective January 5, 2020**

**En vigueur 5 janvier 2020**



**INFO 613-741-4390**  
**octranspo.com**

# 283

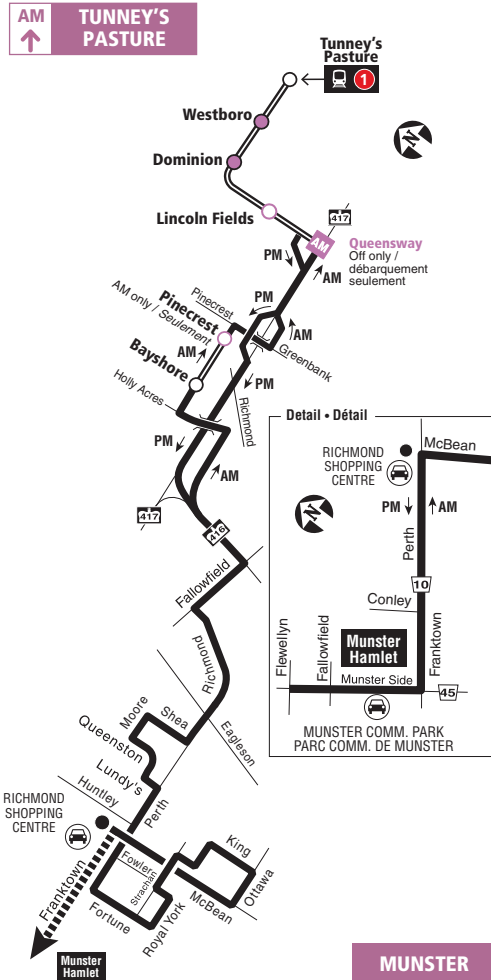
## MUNSTER TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



- Transitway & Station
- AM: Off only - PM: Full Service  
AM: Débarquement seulement - PM: Service complet
- Limited stops: Off only in AM - No stop in PM /  
Arrêts limités : Débarquement en AM seulement -  
Aucun arrêt en PM
- AM  
Station served in the AM only /  
Station desservie le matin seulement
- Some trips / Quelques trajets
- Park & Ride / Parc-o-bus

2019.07



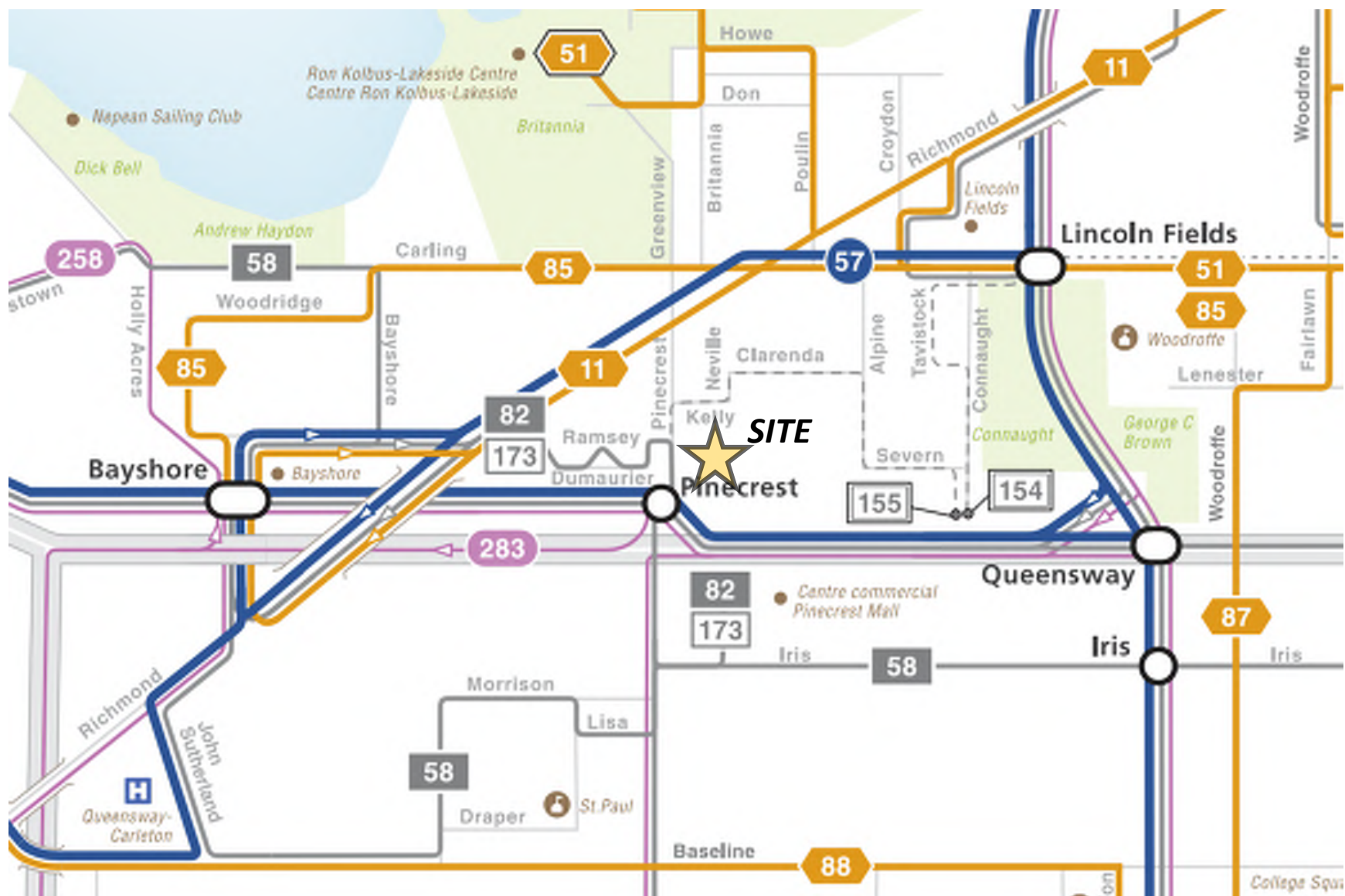
Future route after O-Train Line 1 is open  
Trajet du circuit après l'ouverture  
de la Ligne 1 de l'O-Train

Lost and Found / Objets perdus..... 613-563-4011

Security / Sécurité..... 613-741-2478

**OC Transpo**

INFO 613-741-4390  
octranspo.com



## **APPENDIX D**

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### Traffic Count Data



## Turning Movement Count - Peak Hour Diagram

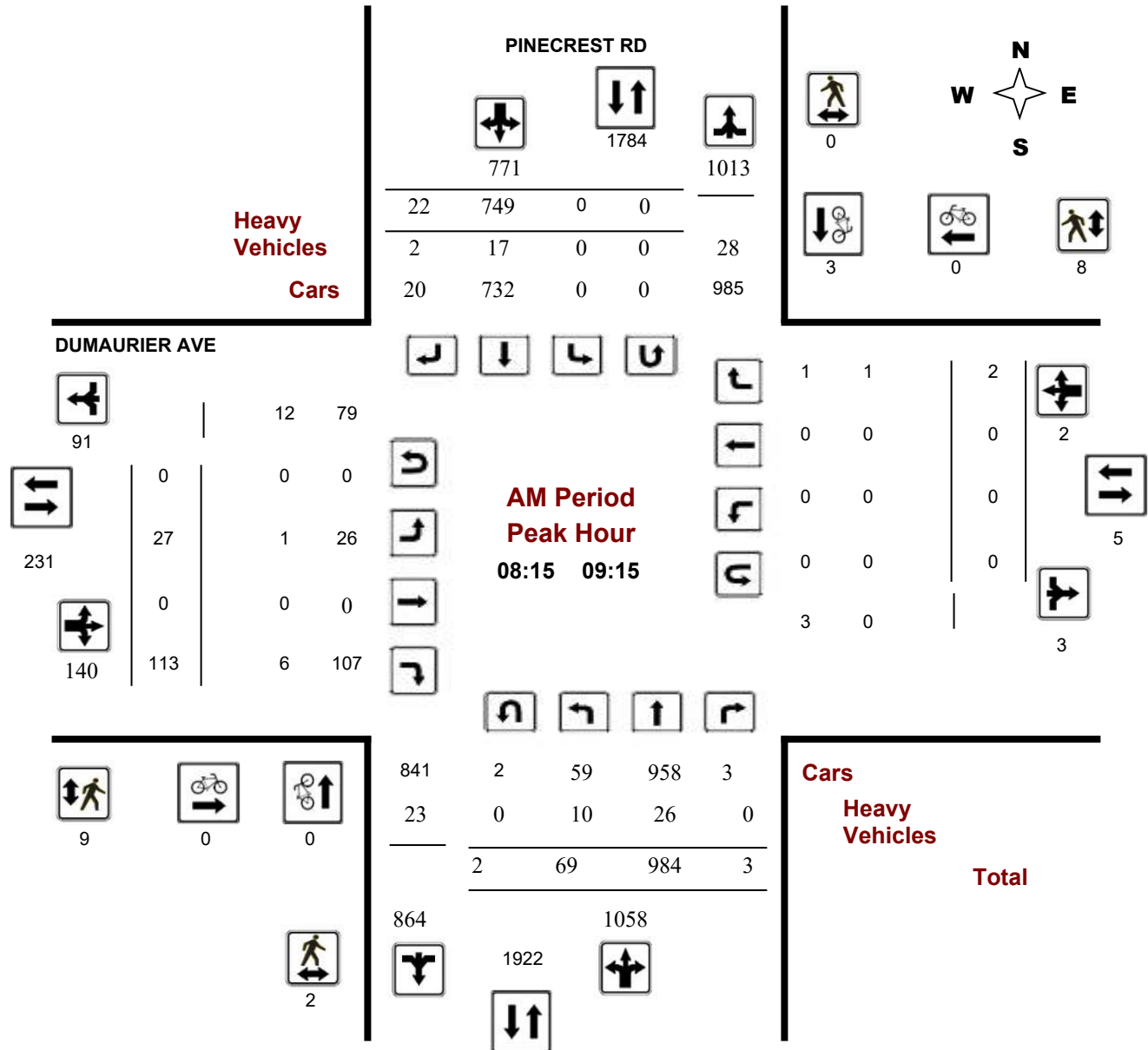
### DUMAURIER AVE @ PINECREST RD

**Survey Date:** Thursday, August 25, 2016

**Start Time:** 07:00

**WO No:** 36164

**Device:** Miovision





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

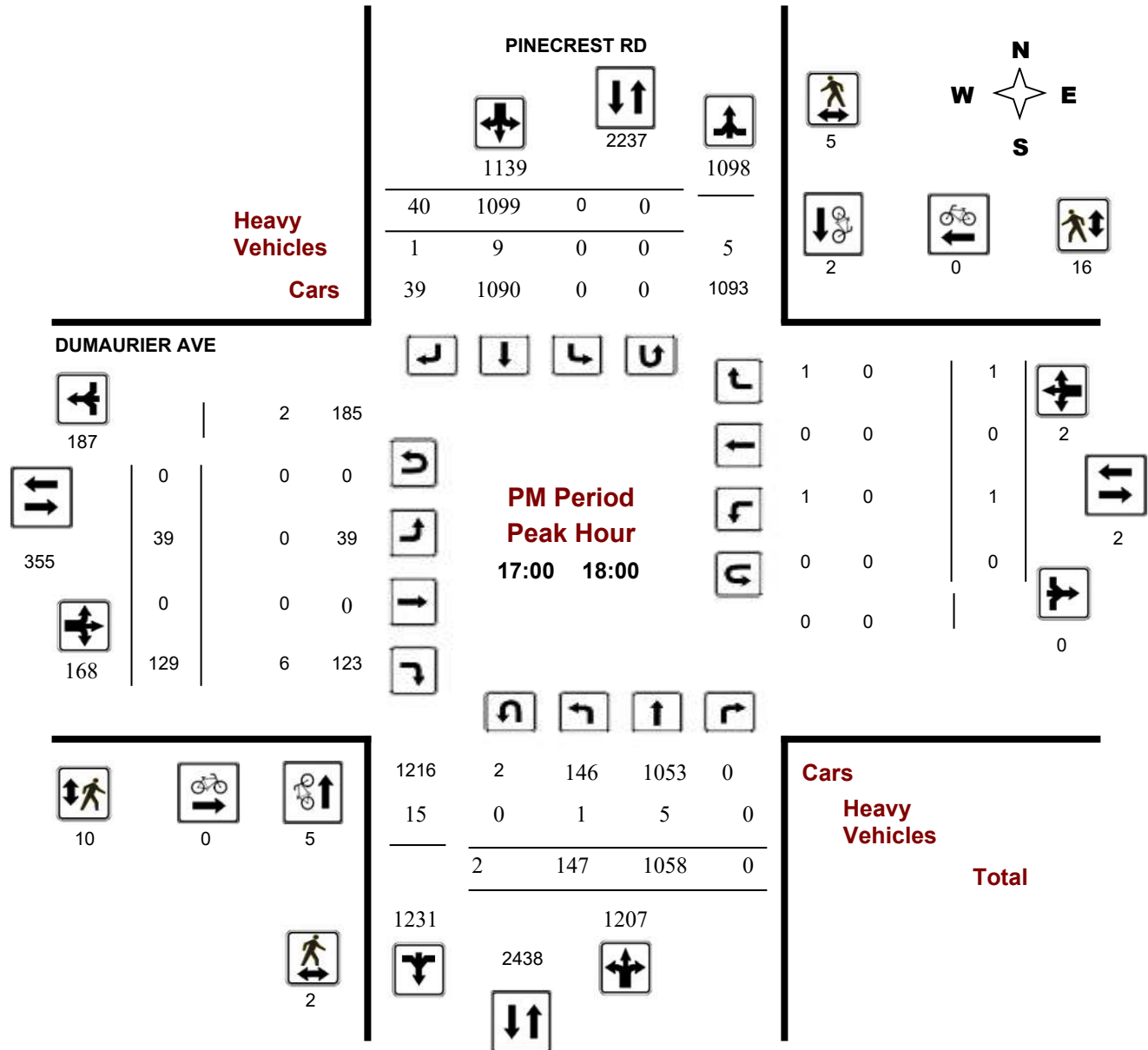
### DUMAURIER AVE @ PINECREST RD

**Survey Date:** Thursday, August 25, 2016

**Start Time:** 07:00

**WO No:** 36164

**Device:** Miovision



**Comments**



**PINECREST RD @ QUEENSVIEW DR**

**Device:** Miovision



## Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

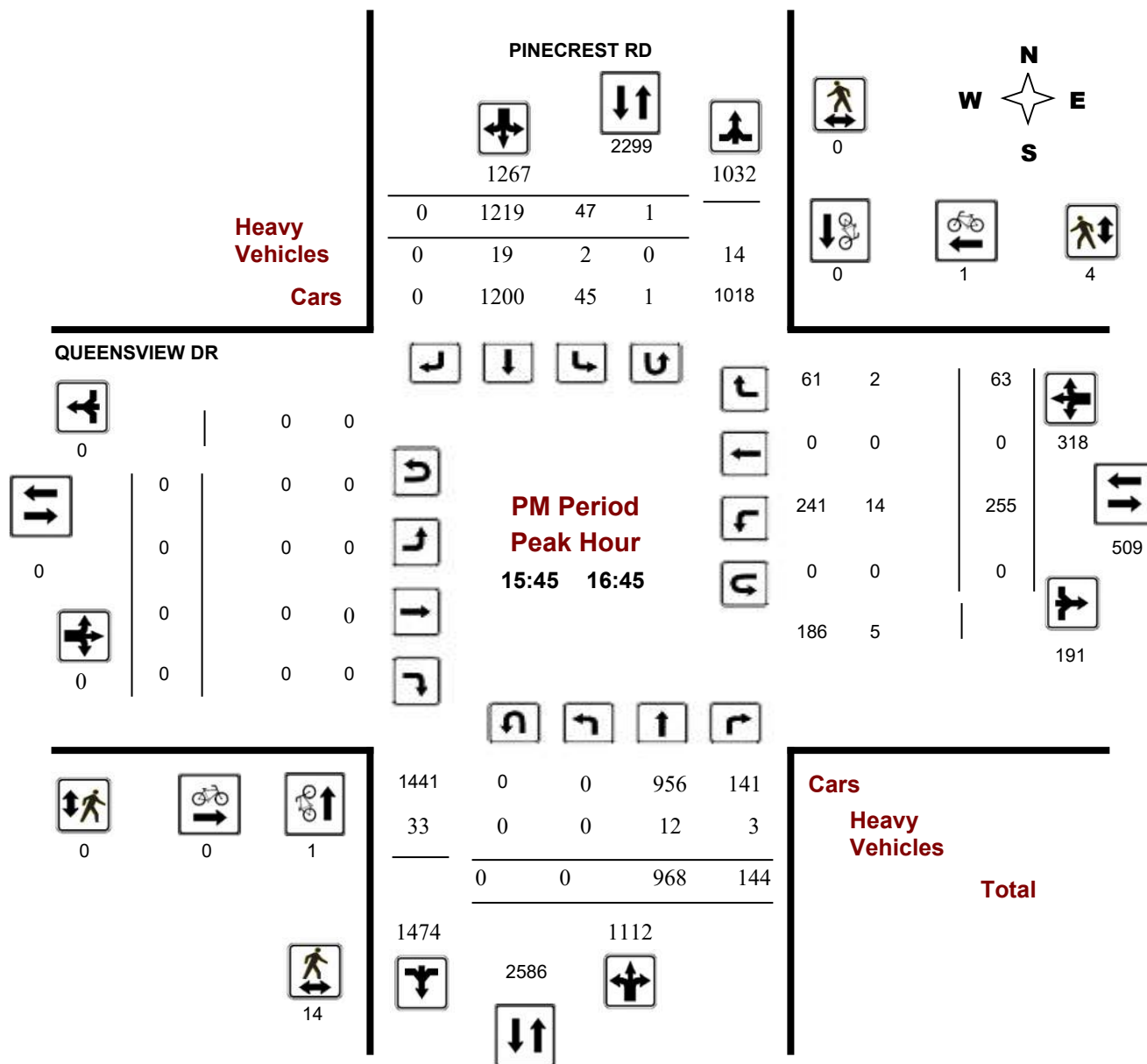
**PINECREST RD @ QUEENSVIEW DR**

**Survey Date:** Thursday, August 11, 2016

**Start Time:** 07:00

**WO No:** 36166

**Device:** Miovision



## Comments



# Transportation Services - Traffic Services

## Turning Movement Count - Study Results

### PINECREST RD @ QUEENSVIEW DR

**Survey Date:** Thursday, August 11, 2016

**WO No:** 36166

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Thursday, August 11, 2016

#### Total Observed U-Turns

Northbound: 8 Southbound: 1  
Eastbound: 0 Westbound: 0

#### AADT Factor

.90

#### PINECREST RD

#### QUEENSVIEW DR

		Northbound				Southbound				Eastbound				Westbound						Grand Total
Period		LT	ST	RT	NB TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	LT	ST	RT	WB TOT	STR TOT	
07:00	08:00	0	657	191	848	43	670	0	713	1561	0	0	0	0	71	0	22	93	93	1654
08:00	09:00	0	973	297	1270	59	752	0	811	2081	0	0	0	0	75	0	27	102	102	2183
09:00	10:00	0	765	291	1056	66	708	0	774	1830	0	0	0	0	126	0	37	163	163	1993
11:30	12:30	0	825	182	1007	46	848	0	894	1901	0	0	0	0	199	0	81	280	280	2181
12:30	13:30	0	908	190	1098	97	921	0	1018	2116	0	0	0	0	201	0	80	281	281	2397
15:00	16:00	0	921	154	1075	52	1067	0	1119	2194	0	0	0	0	223	0	50	273	273	2467
16:00	17:00	0	934	137	1071	45	1223	0	1268	2339	0	0	0	0	263	0	75	338	338	2677
17:00	18:00	0	965	101	1066	45	1109	0	1154	2220	0	0	0	0	288	0	95	383	383	2603
Sub Total		0	6948	1543	8491	453	7298	0	7751	16242	0	0	0	0	1446	0	467	1913	1913	18155
U Turns		8			8	1			1	9	0			0	0			0	0	9
Total		8	6948	1543	8499	454	7298	0	7752	16251	0	0	0	0	1446	0	467	1913	1913	18164
EQ 12Hr		11	9658	2145	11814	631	10144	0	10775	22589	0	0	0	0	2010	0	649	2659	2659	25248
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														1.39						
AVG 12Hr		10	8692	1930	10632	568	9130	0	9698	20330	0	0	0	0	1809	0	584	2393	2393	22723
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														.90						
AVG 24Hr		13	11387	2528	13928	744	11960	0	12704	26632	0	0	0	0	2370	0	765	3135	3135	29767

Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.

**1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

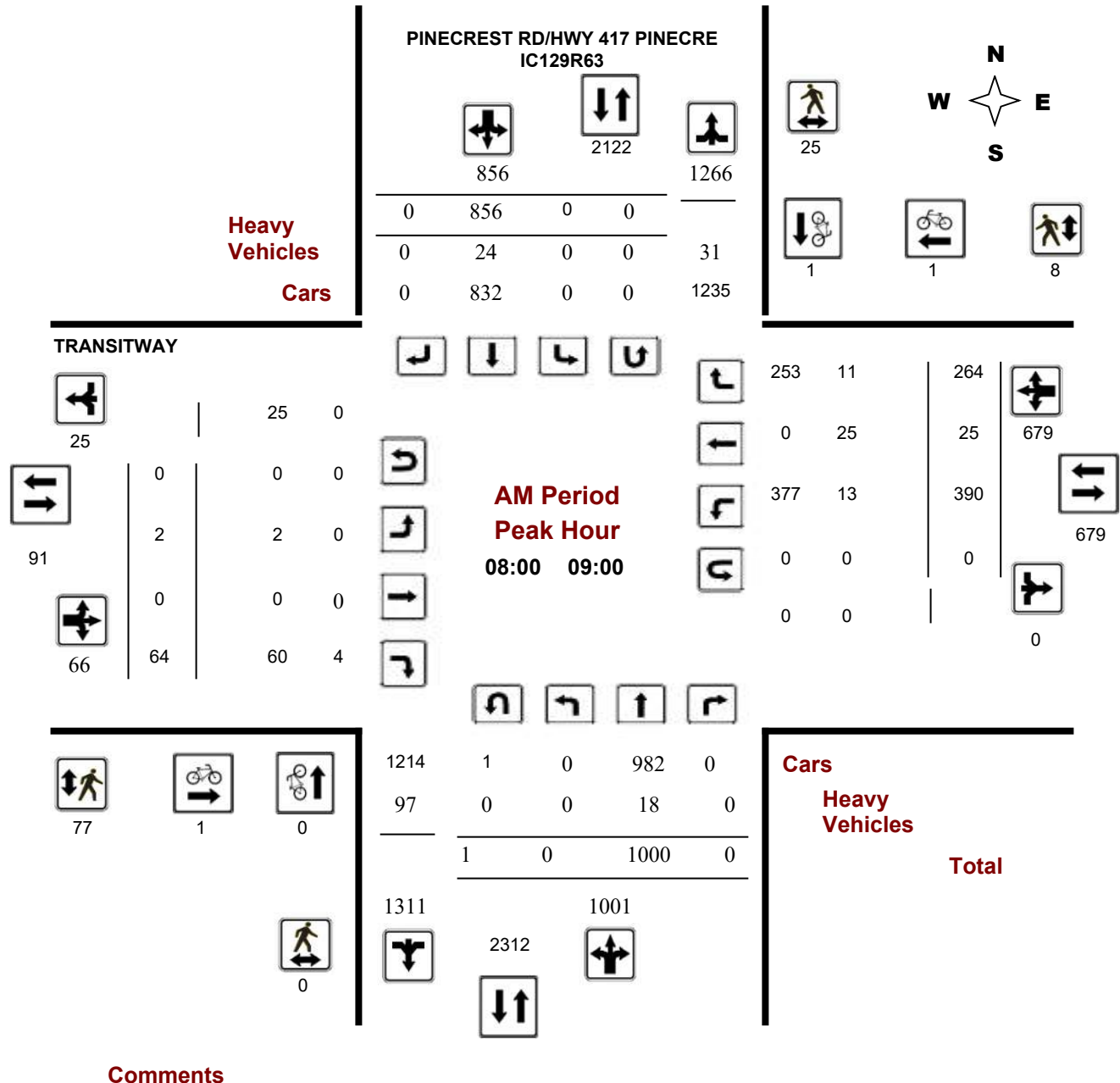
### PINECREST RD/HWY 417 PINECRE IC129R63 @ TRANSI

**Survey Date:** Tuesday, January 22, 2019

**Start Time:** 07:00

**WO No:** 38298

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

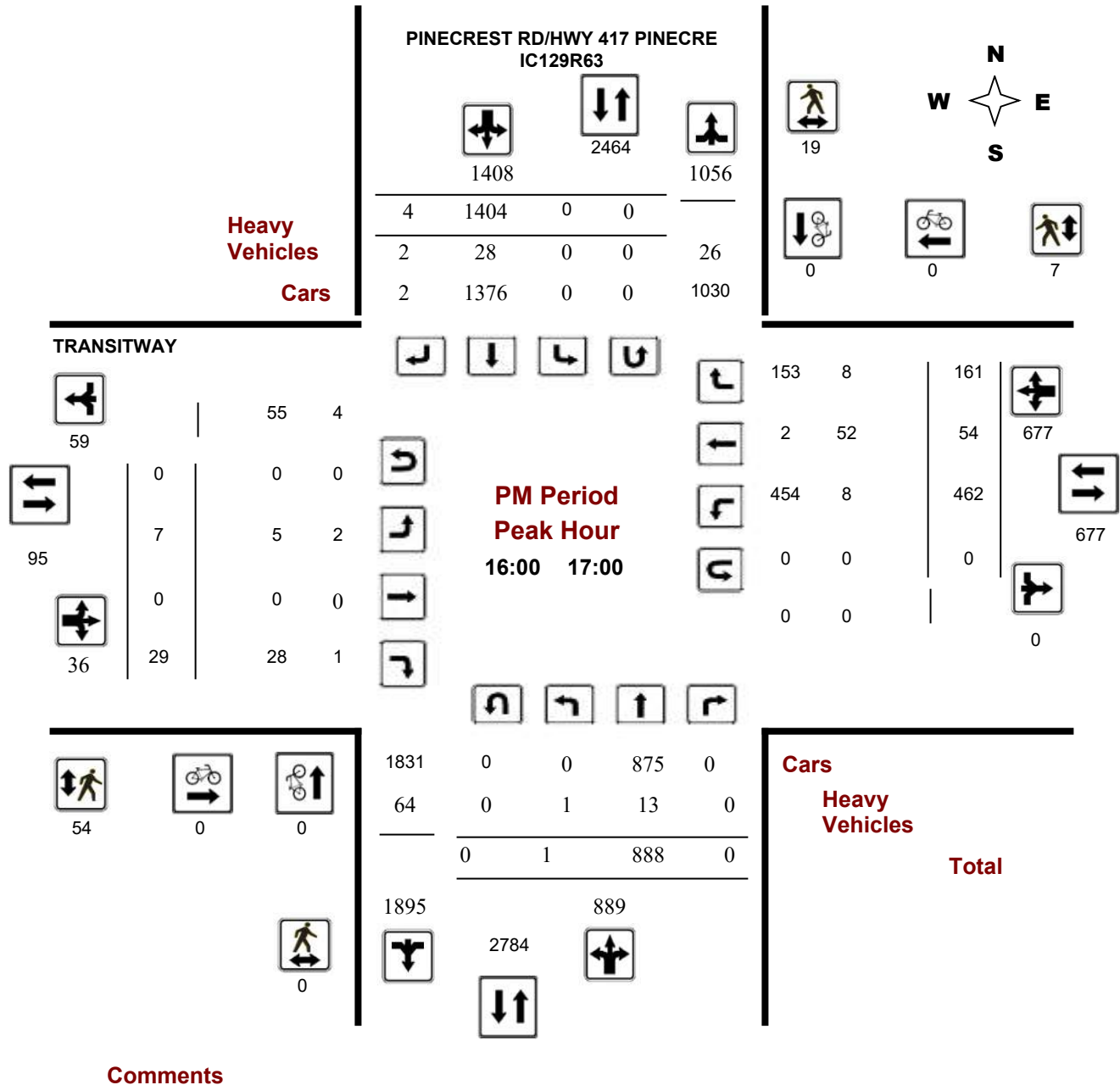
# PINECREST RD/HWY 417 PINECRE IC129R63 @ TRANSI

**Survey Date:** Tuesday, January 22, 2019

**Start Time:** 07:00

**WO No:** 38298

**Device:** Miovision



## **APPENDIX E**

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### Collision Records



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** DUMAURIER AVE @ PINECREST RD

**Traffic Control:** Traffic signal

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Feb-18, Wed,15:00	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Mar-05, Thu,11:37	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2015-Jul-10, Fri,14:34	Clear	Rear end	P.D. only	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jul-31, Fri,17:45	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-Aug-21, Fri,16:29	Clear	Sideswipe	P.D. only	Dry	North	Turning left	Municipal transit bus	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2016-Jan-12, Tue,13:00	Snow	Rear end	P.D. only	Ice	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-25, Thu,18:01	Freezing Rain	Rear end	P.D. only	Ice	North	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					North	Stopped	Police vehicle	Other motor vehicle	
2016-Feb-25, Thu,20:33	Clear	Rear end	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Slowing or stopping	Delivery van	Other motor vehicle	
2016-Mar-02, Wed,09:51	Snow	SMV other	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Snowbank/drift	0
2016-Jul-05, Tue,14:31	Clear	Rear end	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Aug-06, Sat,14:35	Clear	Approaching	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Nov-21, Mon,20:37	Snow	Turning movement	Non-fatal injury	Loose snow	North	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** DUMAURIER AVE @ PINECREST RD

**Traffic Control:** Traffic signal

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Nov-21, Mon,21:15	Rain	SMV unattended vehicle	P.D. only	Wet	South	Overtaking	Municipal transit bus	Unattended vehicle	0
2016-Dec-01, Thu,09:29	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Jan-05, Thu,17:11	Clear	Rear end	P.D. only	Ice	East	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-06, Thu,20:44	Rain	Angle	Non-fatal injury	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Nov-13, Mon,07:51	Clear	Angle	Non-fatal injury	Dry	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-29, Fri,10:50	Clear	Rear end	P.D. only	Ice	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2018-Jan-02, Tue,14:46	Snow	Rear end	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-17, Tue,13:07	Clear	Angle	P.D. only	Dry	East	Turning right	Automobile, station wagon	Other motor vehicle	0
					South	Changing lanes	Automobile, station wagon	Other motor vehicle	
2019-Feb-20, Wed,08:15	Clear	Rear end	P.D. only	Ice	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Mar-21, Thu,15:33	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-May-01, Wed,14:05	Rain	Sideswipe	P.D. only	Wet	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Other school vehicle/bus	Other motor vehicle	
2019-May-26, Sun,10:00	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Motorcycle	Other motor vehicle	0
					South	Stopped	Unknown	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** DUMAURIER AVE @ PINECREST RD

**Traffic Control:** Traffic signal

**Total Collisions:** 26

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jun-22, Sat,19:25	Clear	Rear end	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-30, Fri,16:45	Clear	Rear end	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** PINECREST RD @ QUEENSVIEW DR

**Traffic Control:** Traffic signal

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jul-23, Thu,14:36	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-25, Tue,13:11	Clear	Rear end	P.D. only	Dry	South	Going ahead	Delivery van	Other motor vehicle	0
					South	Stopped	Tow truck	Other motor vehicle	
2016-Oct-25, Tue,19:38	Clear	Rear end	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Oct-28, Fri,14:16	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Dec-14, Wed,12:37	Clear	Angle	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Apr-06, Thu,20:44	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Sep-08, Fri,17:15	Clear	Turning movement	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** PINECREST RD @ QUEENSVIEW DR

**Traffic Control:** Traffic signal

**Total Collisions:** 18

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Nov-17, Fri,09:20	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2017-Nov-29, Wed,13:59	Clear	Angle	P.D. only	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Cyclist	
2017-Dec-15, Fri,12:49	Clear	Angle	P.D. only	Wet	West	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Feb-11, Sun,18:40	Snow	Rear end	P.D. only	Slush	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jul-18, Wed,09:57	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-01, Wed,17:00	Clear	Approaching	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Dec-14, Fri,11:12	Freezing Rain	Sideswipe	P.D. only	Wet	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2019-Jan-28, Mon,09:39	Clear	Rear end	Non-fatal injury	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Apr-12, Fri,08:10	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,15:58	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1
2019-Dec-14, Sat,16:04	Rain	Turning movement	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** PINECREST RD btwn HWY417 IC129 RAMP62 & TRANSIT

**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
2016-Jan-22, Fri,21:15	Clear	Rear end	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Changing lanes	Automobile, station wagon	Other motor vehicle	
2019-Sep-20, Fri,14:05	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

**Location:** PINECREST RD btwn QUEENSVIEW DR & HWY417 IC129 RAMP36

**Traffic Control:** No control

**Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Oct-27, Thu,08:15	Clear	Rear end	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Sep-01, Sat,11:42	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-21, Sat,16:30	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** PINECREST RD/HWY 417 PINECRE IC129R62 @ HWY 41

**Traffic Control:** Yield sign

**Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Jan-31, Wed,18:12	Snow	Rear end	P.D. only	Loose snow	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-19, Mon,14:00	Clear	Rear end	P.D. only	Dry	North	Merging	Automobile, station wagon	Other motor vehicle	0
					North	Merging	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** PINECREST RD/HWY 417 PINECRE IC129R63 @ TRANSI

**Traffic Control:** Traffic signal

**Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2015-Jan-01, Thu,17:54	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2015-May-06, Wed,15:00	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Jul-02, Thu,14:49	Clear	Angle	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-10, Thu,11:02	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Delivery van	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
					North	Stopped	Delivery van	Other motor vehicle	
2015-Sep-28, Mon,15:25	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2015-Nov-16, Mon,21:33	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2016-Jan-06, Wed,11:28	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2016-Jan-12, Tue,12:58	Rain	Rear end	Non-fatal injury	Loose snow	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Feb-12, Fri,15:25	Clear	Rear end	P.D. only	Dry	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-May-30, Mon,21:59	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2016-Dec-10, Sat,13:03	Clear	Angle	Non-fatal injury	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-14, Tue,19:09	Snow	SMV other	Non-fatal injury	Wet	West	Turning right	Automobile, station wagon	Pedestrian	1



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** PINECREST RD/HWY 417 PINECRE IC129R63 @ TRANSI

**Traffic Control:** Traffic signal

**Total Collisions:** 21

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Mar-25, Sat,01:32	Rain	Rear end	P.D. only	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Passenger van	Other motor vehicle	
2017-Sep-16, Sat,18:38	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Aug-04, Sat,13:51	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Sep-15, Sat,12:43	Clear	Sideswipe	P.D. only	Dry	North	Unknown	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Sep-22, Sat,16:52	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	
2018-Nov-16, Fri,10:29	Snow	Angle	P.D. only	Loose snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Bus (other)	Other motor vehicle	
2019-Jun-15, Sat,12:38	Rain	Sideswipe	P.D. only	Wet	North	Overtaking	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jul-31, Wed,19:30	Clear	Sideswipe	P.D. only	Dry	West	Turning left	Unknown	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Nov-08, Fri,01:38	Clear	Angle	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** QUEENSVIEW DR btwn PINECREST RD & END

**Traffic Control:** No control

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-12, Thu,10:14	Clear	Approaching	P.D. only	Slush	East	Slowing or stopping	Municipal transit bus	Skidding/sliding	0
					West	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

**From:** January 1, 2015 **To:** December 31, 2019

**Location:** QUEENSVIEW DR btwn PINECREST RD & END

**Traffic Control:** No control

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Feb-28, Sat,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2015-Oct-27, Tue,11:57	Clear	Turning movement	P.D. only	Dry	West	Turning left	Pick-up truck	Other motor vehicle	0
					West	Overtaking	Municipal transit bus	Other motor vehicle	
2016-Nov-07, Mon,17:19	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jun-12, Mon,12:27	Rain	SMV other	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Pedestrian	1
2018-Feb-28, Wed,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	East	Unknown	Unknown	Unattended vehicle	0
2019-Feb-11, Mon,17:00	Clear	SMV unattended vehicle	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Unattended vehicle	0
2019-Apr-17, Wed,15:19	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

## **APPENDIX F**

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### Strategic Long-Range Model and Intersection Growth Rate Figures

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Network Mapping

2011 Model - Base case

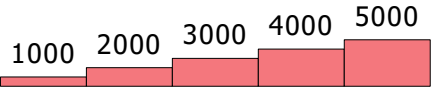
N/A

User Initials: TIMW  
Plot Prepared: May 31, 2021  
EMME Scenario: 21711



Legend

AM Peak Hour Total Traffic Volume



Distance (m)



The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Network Mapping

2031 Model - Base case

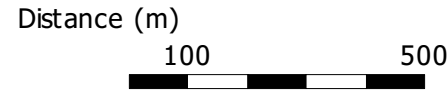
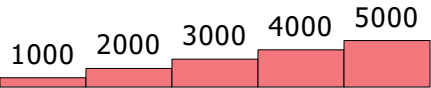
N/A

User Initials: TIMW  
Plot Prepared: May 31, 2021  
EMME Scenario: 21711



Legend

AM Peak Hour Total Traffic Volume



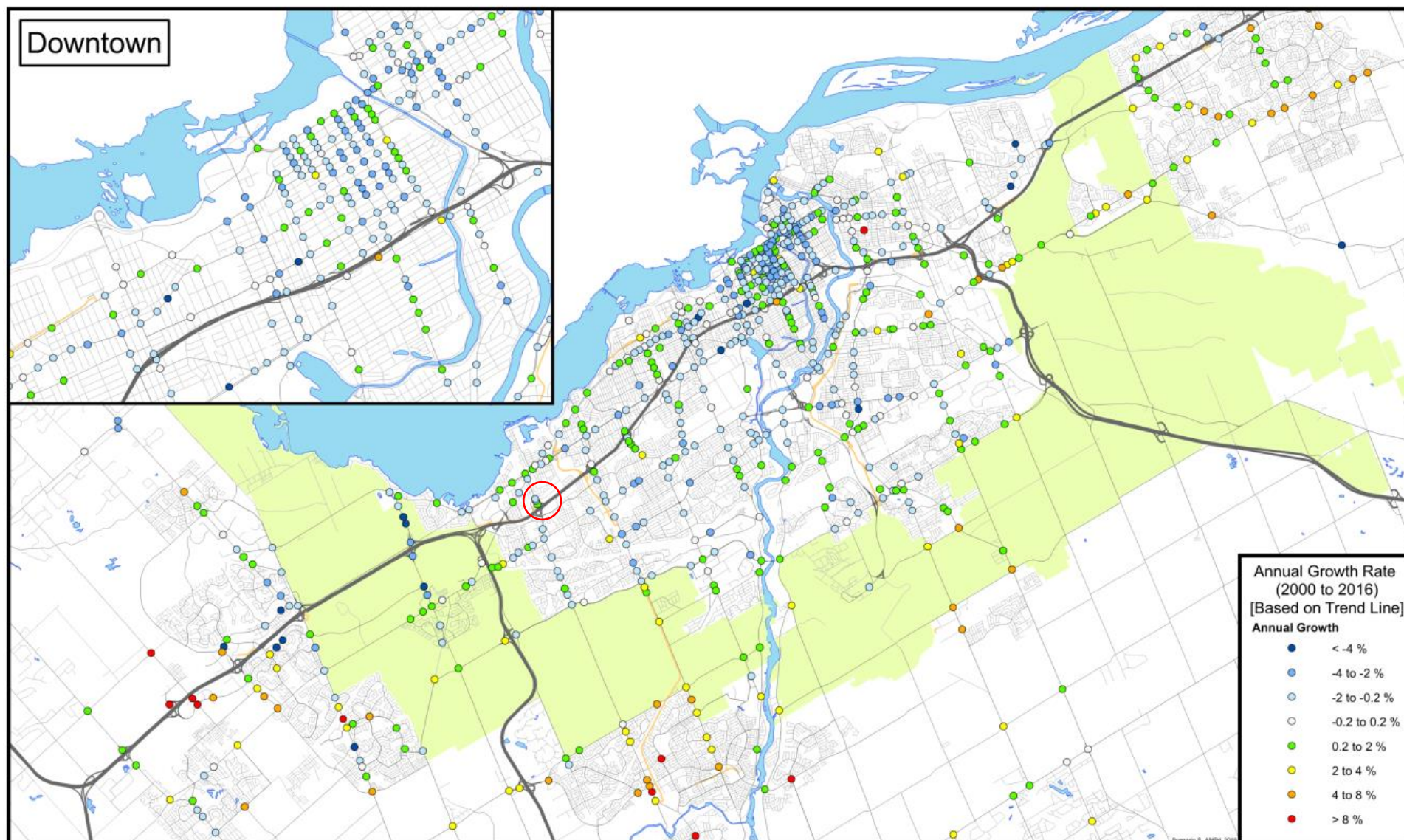
The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.

# INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

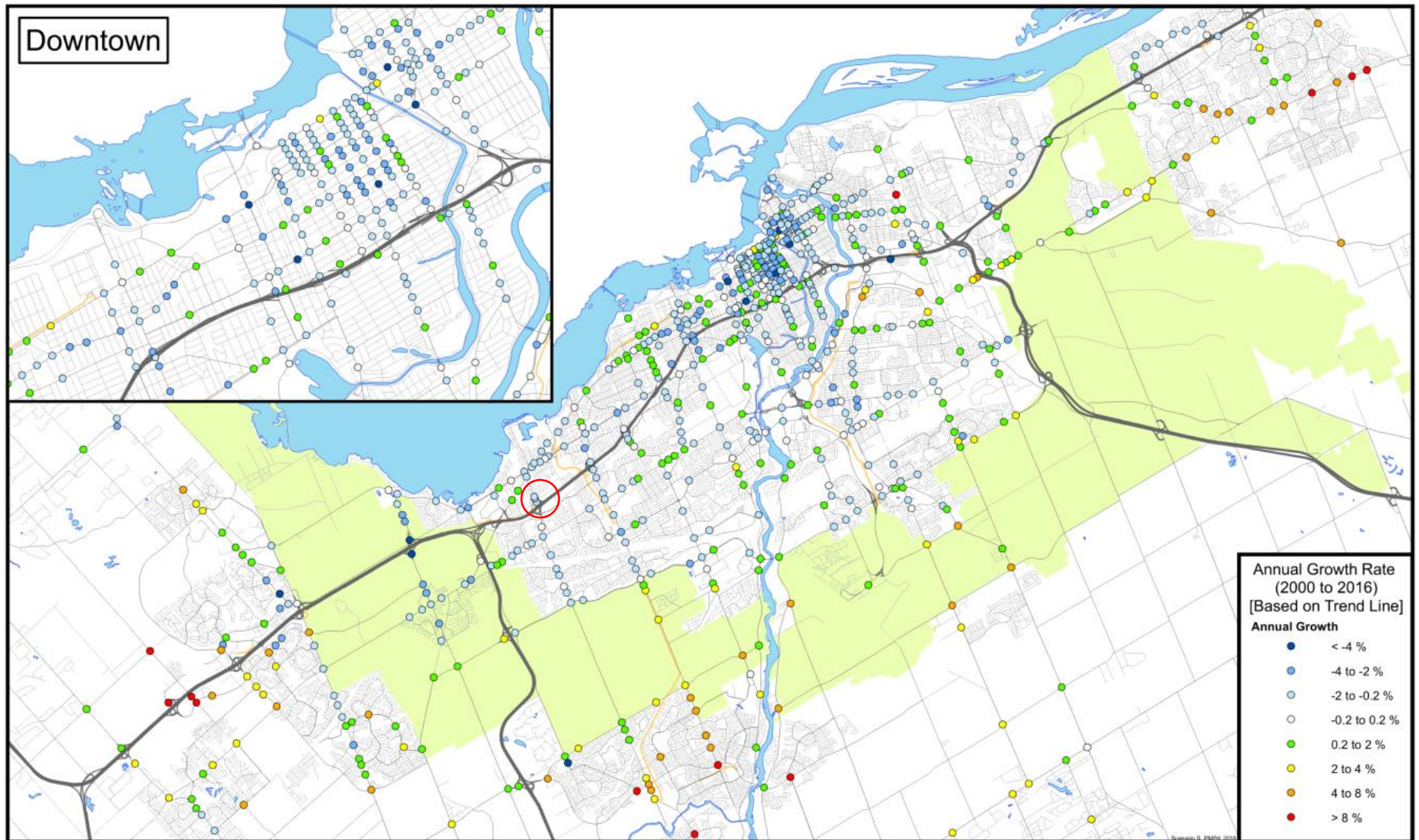
Total Vehicular Volume Entering the Intersection, 2000 to 2016





# INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



## **APPENDIX G**

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### Transportation Demand Management

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

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

<b>TDM-supportive design &amp; infrastructure measures:</b> <i>Non-residential developments</i>		<b>Check if completed &amp; add descriptions, explanations or plan/drawing references</b>
<b>1. WALKING &amp; CYCLING: ROUTES</b>		
<b>1.1 Building location &amp; access points</b>		
<b>BASIC</b>	1.1.1 Locate building close to the street, and do not locate parking areas between the street and building entrances	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/>
<b>BASIC</b>	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input type="checkbox"/>
<b>1.2 Facilities for walking &amp; cycling</b>		
<b>REQUIRED</b>	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 ( <i>see Official Plan policy 4.3.3</i> )	<input checked="" type="checkbox"/>
<b>REQUIRED</b>	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 ( <i>see Official Plan policy 4.3.12</i> )	<input checked="" type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		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 ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
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 ( <i>see Official Plan policy 4.3.10</i> )	<input checked="" type="checkbox"/>
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 ( <i>see Official Plan policy 4.3.11</i> )	<input checked="" type="checkbox"/>
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input type="checkbox"/>
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input type="checkbox"/>
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	<input type="checkbox"/>
<b>1.3 Amenities for walking &amp; cycling</b>		
BASIC	1.3.1 Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	<input type="checkbox"/>
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)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
BETTER	2.1.5 Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i> )	<input type="checkbox"/> - n/a
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	<input type="checkbox"/>
<b>2.3 Shower &amp; change facilities</b>		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
BETTER	2.3.2 In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	<input type="checkbox"/>
<b>2.4 Bicycle repair station</b>		
BETTER	2.4.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>



TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
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	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
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	<input type="checkbox"/>
<b>4.2 Carpool parking</b>		
BASIC	4.2.1 Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	<input type="checkbox"/>
BETTER	4.2.2 At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	<input type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
BETTER	5.1.1 Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces ( <i>see Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
BETTER	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	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	<input checked="" type="checkbox"/>
<b>BASIC</b>	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	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	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 ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	<input type="checkbox"/>
<b>7. OTHER</b>		
<b>7.1 On-site amenities to minimize off-site trips</b>		
<b>BETTER</b>	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>