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16 November 2022
Project: 220533

To

Kate (Jekaterina) Vassilyev
Traffic Planning Technologist
City of Mississauga | Transportation and Works Department

From

Josh de Boer, M.Eng., P.Eng., PTOE
Project Manager, Associate
Paradigm Transportation Solutions Limited

Dear Ms. Vassilyev:

RE: DARC MEETING 20/272 (PLAN 500 LOTS 1 AND 2) TRAFFIC OPERATIONS AND SAFETY MEMO – RESIDENTIAL DEVELOPMENT, 2463 AND 2469 MIMOSA ROW, CITY OF MISSISSAUGA

Paradigm Transportation Solutions Limited (Paradigm) has been retained by Foxmar Development Ltd. to prepare this Traffic Operations and Safety Memo for the proposed residential development at 2463 and 2469 Mimosa Row, also known as Plan 500 (Lots 1 and 2), in the City of Mississauga. **Figure 1** illustrates the subject site location.

Purpose and Scope

This memo identifies and assesses the potential transportation impacts resulting from the planned development. The scope was reviewed with City of Mississauga staff via email on 26 September 2022 and includes the following aspects:

- description of existing roads, traffic control, transit service and active transportation;
- description of the planned development including description of active transportation details for the subject development;
- detailed vehicular trip generation of the proposed development based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) land use code (LUC) 215 (Single-Family Attached Housing); and
- qualitative discussion and commentary on the anticipated traffic impact (or lack thereof) by the planned development;
- review of site access operations, including sightline distance, corner clearance and access spacing requirements in accordance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR).

A pre-study consultation was undertaken with City of Mississauga staff during the months of August and September 2022. The consultation established the work plan, general assumptions and requirements for the study. **Appendix A** contains the pre-study consultation correspondence.

Development Concept

The subject site is located at 2463 and 2469 Mimosa Row in the City of Mississauga. Currently, the site contains two residential lots. The property owner is planning to develop six townhouses across these two existing lots with a total Gross Floor Area (GFA) of 10,792.08 m^2. Vehicle access is proposed via direct and individual driveway connections to Mimosa Row. Separate vehicle parking is to be provided for each individual lot. **Figure 2** illustrates the site plan.

Hurontario Street is a major arterial road that runs east of the subject site and provides a vital link to nearby municipalities. The surrounding area is predominantly low-density residential land use, along with some commercial establishments along Hurontario Street. There is a large retail centre adjacent to the subject site that is accessible via Hurontario Street. Newin Centre Mall is another retail centre located 700 metres walking distance from the site. Royal Montessori School is an independent private school operating on Mimosa Row opposite the subject site.

Existing Conditions

Road Characteristics

All roads within the study area are under the jurisdiction of the City of Mississauga. The roads near the subject site assessed include:

- **Hurontario Street** is a north-south arterial road with six travel lanes (three lanes in each direction).[1] The posted maximum speed limit is 50 km/h.[2] There are sidewalks on both sides of Hurontario Street;
- **Floradale Drive** is an east-west collector road with two travel lanes (one lane in each direction). The posted maximum speed limit is 40 km/h. There is a sidewalk on the north side of Floradale Drive; and
- **Mimosa Row** is a north-south local road with two travel lanes (one lane in each direction). It is a cul-de-sac with access and egress via Floradale Drive. The posted maximum speed limit is 40 km/h. There is currently a sidewalk on the west side of Mimosa Row. The property owner plans to build a sidewalk on the east side of Mimosa Row in front of the proposed development only, as per the City's request.

The study area consists of the following unsignalized intersections:

[1] City of Mississauga, *Modification Schedule 5 - Long Term Road Network,* 2011
[2] City of Mississauga, *Neighbourhood Area Speed Limit Project,* 2022

- Mimosa Row and Floradale Drive; and
- Floradale Drive and Hurontario Street.

None of the study area roads have dedicated cycling infrastructure. **Figure 3** illustrates the existing traffic control and lane configurations of the study intersections.

Traffic Operations

Through pre-study consultation, City staff confirmed that detailed intersection capacity analysis using Synchro software is not required. The exclusion of detailed intersection capacity analyses is due to the low vehicular trip generation of the subject site (less than 5 vehicular trips per peak hour) and subsequent lack of traffic impacts.

Transportation Tomorrow Survey (TTS) data can be used to estimate trip distribution. TTS data is information collected by the University of Toronto Transportation Research Institute that details trip characteristics in the south-central Ontario. The TTS zone for the study area is Zone 3657. Trip origin/destination information for all vehicle trips in and out of Zone 3657 was extracted from the 2016 TTS database.[3] Trips were separated by those within the City of Mississauga and trips to/from areas outside of Mississauga (e.g., Brampton, Toronto, Milton, etc.). Lake Ontario is on the south end of Mississauga and therefore 0% of the trips were assigned to the south direction.

Appendix B contains the detailed reports obtained from the TTS database. **Table 1** summarizes the estimated trip distribution.

TABLE 1: ESTIMATED TRIP DISTRIBUTION

Trip Distribution	AM		PM	
	In	Out	In	Out
North via Hurontario Street	2%	5%	5%	0%
East via Hurontario Street	8%	23%	19%	6%
South via Hurontario Street	0%	0%	0%	0%
West via Hurontario Street	3%	7%	8%	3%
Internal Trips within Mississauga	87%	65%	68%	91%
Total	**100%**	**100%**	**100%**	**100%**

[3] Data Management Group, *Transportation Tomorrow Survey 2016*, University of Toronto, 2016, http://www.transportationtomorrow.on.ca/

Transit Service

The public transit system is operated by MiWay Transit, and it connects with neighbouring transit systems including GO Transit, Brampton Transit to the north, Oakville Transit to the southwest, Milton Transit to the northwest and the Toronto Transit Commission (TTC) to the east.

MiWay operates three bus routes close to the subject site:

- **Route 2** provides service between Port Credit GO Station and Mississauga City Centre Transit Terminal. The nearest stop is at the intersection of Hurontario Street and Floradale Drive, located approximately 160 metres walking distance from the front entrance of the closest unit at the subject site to the nearest bus stop.
- **Route 4** provides service between Cooksville Go Station and Sherway Gardens Bus Terminal. The nearest stop is at the intersection of Hurontario Street and Floradale Drive, located approximately 160 metres walking distance from the front entrance of the closest unit at the subject site to the nearest bus stop.
- **Route 103** provides service between Queensway at Trillium Hospital and Brampton Gateway Terminal. The nearest stop is at the intersection of Hurontario Street and Paisley Boulevard, located approximately 400 metres walking distance from the front entrance of the closest unit at the subject site to the nearest bus stop.

Table 2 outlines the route, operating hours and headways for the transit routes servicing the study area. **Figure 4** illustrates the existing transit service in the study area.

TABLE 2: PEEL REGION TRANSIT INFORMATION

Route	Days of Week	Service Hours	Approximate Headway
Route 2	Weekdays	12:12 AM to 11:57 PM	8 minutes
	Weekends	12:00 AM to 11:37 PM	13 minutes
Route 4	Weekdays	04:50 AM to 10:31 PM	32 minutes
	Weekends	06:10 AM to 09:40 PM on Saturday 07:55 AM to 07:29 PM on Sunday	33 minutes
Route 103	Weekdays	04:12 AM to 11:22 PM	14 minutes
	Weekends	05:10 AM to 11:14 PM on Saturday 06:40 AM to 09:37 PM on Sunday	20 minutes

Hurontario Light Rail Transit (LRT) is a provincially owned project currently under construction in the vicinity of subject site.[4] The LRT will provide a link between Port Credit GO Station and Brampton Gateway Terminal through an 18-kilometre rapid transit corridor along Hurontario Street. The subject site is located midway between the two proposed stations at Dundas Street and Queensway, located approximately 650 metres each walking distance from the site. The

[4] City of Mississauga, *Hurontario Light Rail Transit Project*, 2022

construction of LRT is already underway and is expected to be complete by the fall of 2024. The availability of effective and desirable public transit options can reduce the number of automobile trips in and around the subject site.

Walking

Pedestrian accessibility to the site is essential to helping ensure that those who can walk have safe and effective access to and from the site. Sidewalks are provided in the study area as follows:

- **Hurontario Street:** Sidewalks are present on both sides of the road;
- **Floradale Drive:** Sidewalk is present on the north side of the road; and
- **Mimosa Row:** Sidewalk is currently present only on the west side of the road. The property owner plans to build a sidewalk on the east side of Mimosa Row in front of the proposed development only, as per the City's request.

The City of Mississauga Pedestrian Master Plan 2021 (PMP) recommends a vibrant, sustainable, mixed-use community that is pedestrian friendly and well-connected to transit.[5] The PMP suggests a comprehensive program to improve pedestrian infrastructure, primarily focusing on providing connected pedestrian facilities and improving the overall quality of the pedestrian experience. Various strategies and policies are outlined to facilitate active transportation use. Currently, the City of Mississauga has over 2876 kilometres of walking facilities including sidewalks, trails and walkway which facilitate active transportation.

The sidewalks in the study area have curb cuts, which allow for wheel mobility. Dedicated crosswalks are not present at all study area intersections at this point in time. The development of the site would not affect the existing concrete sidewalk along the north side of Floradale Drive. The existing pedestrian-centric infrastructure helps access the site safely and promote active transportation in the area.

Cycling

The City of Mississauga Cycling Master Plan 2018 envisages vibrant, safe and connected communities in the area supported by a robust cycling infrastructure.[6] City of Mississauga has over 454 kilometres of existing cycle infrastructure, among which 54 kilometres are dedicated bicycle lanes.**Error! Bookmark not defined.**

The nearest dedicated bike lanes are at Confederation Parkway, located approximately 300 metres from the subject site. There is also a signed route at Paisley Boulevard located 450 metres from the site. Bicycle parking is available at the Huron Park Recreation Centre, 2.8 kilometres from the subject site. These cycling facilities help facilitate safe and effective trips to and from the site.

[5] City of Mississauga, *Pedestrian Master Plan*, 2021
[6] City of Mississauga, *Cycling Master Plan*, 2018

Figure 5 illustrates the existing active transportation infrastructure.

Future Traffic Conditions

Development Trip Generation

The planned development consists of six townhouses across the two existing residential lots with a combined total Gross Floor Area (GFA) of 10,792.08 m^2 for all units This information was used to assess the trips generated by the site. The estimates are based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11th Edition) Land Use Code (LUC) 215, Single-Family Attached Housing.[7]

Trip generation was found to be three trips in both AM peak hour (7:00 AM-9:00 AM) and the PM peak hour (4:00 PM-6:00 PM). It is expected that 31% of the trips generated will be inbound during the AM peak hour and 69% will be outbound. During the PM peak hour, it was found that 57% of the trips will be inbound, and 43% will be outbound trips. The estimation is in line with what was expected as majority of residents would be returning home from work during the PM peak hour. Some of these trips are expected to replace the existing trips of the residential lots. Currently, the subject site has 2 residential houses which generates an estimated 1 trip during both AM peak hour and PM peak hour.

Table 3 summarizes the number of trips forecast to be generated by the planned development. The site is expected to generate approximately three trips during both the AM peak hour and the PM peak hour.

TABLE 1: TRIP GENERATION

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Six Townhouses (LUC 215)	1	2	**3**	2	1	**3**

Appendix C contains the ITE trip generation reports.

Trip Distribution and Assignment

The TTS data was applied to the trip generation values to determine the trip distribution for the site. The site-generated trips were then assigned to the study area network logically, with the shortest and most common routes considered.

The subject site is located along the Mimosa Row. The Floradale Drive and Hurontario Street intersection dominates the traffic movement to and from the subject site. For study purposes, it is expected that all the site generated traffic would get distributed via Hurontario Street.

[7] Institute of Transportation Engineers, *Trip Generation Manual,* 11th ed., (Washington, DC: ITE, 2021)

Figure 6 illustrates the traffic distribution of site generated traffic volume, estimated based on the 2016 Transportation Tomorrow Survey data.

Traffic Operations

Through pre-study consultation, the City confirmed that a detailed intersection capacity analysis using Synchro software is not required for the site. The subject development is forecast to generate two and three vehicle trips during the AM peak hour and PM peak hour, respectively. In terms of magnitude, this is equivalent to approximately one vehicle every thirty minutes during the AM peak hour and one vehicle every twenty minutes during the PM peak hour. The study area network will realize a very minor impact due to the forecasted site trips.

The addition of site traffic to the nearby intersections would result in a nominal increase in volume to existing conditions. The additional traffic would be less than the daily traffic variations typically experienced in the study area. Given the relatively low trip generation, the subject development would result in imperceptible impacts to the adjacent transportation network.

No intersection geometric improvements are recommended to manage the impacts from the planned site.

Walking

The City of Mississauga Pedestrian Master Plan 2021 (PMP) identifies plans to expand and improve walking conditions throughout the city. The Plan identifies Hurontario Street (located east of subject site) as a target site for future growth. The PMP acknowledges gaps in pedestrian pathways along both Floradale Drive and Mimosa Row. It is anticipated that these gaps will be filled by connecting pedestrian pathways. The property owner plans to build a 1.5-metre-wide sidewalk on the east side of Mimosa Row along the frontage of the proposed development, as per the City's request. It is anticipated that pedestrian trips to and from the site will be increasingly better served as the City moves forward with their plans. The people residing in the subject site are expected to benefit from the City’s plans to enhance pedestrian access in the community.

Cycling

The City of Mississauga Cycling Master Plan 2018 (CMP) recommends cycle track or separated bike lanes along Hurontario Street, east of the subject site.[6] The cycle track would be physically separated by a curb and reserved for bicycle use only. The CMP proposes to add an additional 551 kilometres of cycling infrastructure, including 150 kilometres of separated bike lanes and 131 kilometres of shared routes. The expansion of cycling network in the City would be conducted in partnership with stakeholders and through the review of new development applications. Provision of the above cycling infrastructure would encourage safe and effective cycling trips for residents of the subject site.

Figure 7 illustrates the proposed active transportation infrastructure.

Site Access Assessment

The planned site accesses are located on the east side of Mimosa Row. One driveway access is currently at this location. For the development, six driveways are planned, each paired with a neighbouring driveway, which results in three accesses to Mimosa Row. The accesses will be used as both an entry and exit point for the respective townhouses. The site accesses have been assessed to determine whether there are any design issues, safety-related concerns, and/or anticipated operational issues that may be affected by the increased number of trips to and from the site. The key design issues to consider with respect to the site accesses are discussed in the sections below.

Corner Clearance

According to the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR) 2017, corner clearance is the measured distance between the near curb of an intersection and the near edge of a driveway throat.[8] For the subject site, the distances are measured based on the corner clearance components shown in Figure 8.9.2 in the GDGCR. The distance from south end of the south driveway to the Floradale Drive curb line is estimated for corner clearance calculations. The curb radii at the site driveways are minimal (assumed 0 m) based on the site plans. The corner clearance for residential sites requires a minimum tangent section (c) of two metres (measured from the end of the driveway/road curb radius) as shown in Figure 8.9.2 in the GDGCR. The component measurements were compared against the recommended values for a residential development.

Table 4 highlights the recommended values for the corner clearance in comparison to measurements of the existing road conditions.

TABLE 2: CORNER CLEARANCE

Measurement	TAC Guide Distance (m)	Road Measurement (m)	Requirement Satisfied
Tangent section	2	~3	Yes
Curb radius	6	~9	Yes

Access Spacing

The minimum spacing between driveways must be considered when considering the location of any given driveway.[8] For adjacent low volume driveways in residential areas, a minimum spacing of one metre is defined by the TAC GDGCR. The subject site has three accesses with a spacing of approximately six metres each, which exceeds the minimum requirement.

[8] Transportation Association of Canada, *Geometric Design Guide for Canadian Roads*, (Ottawa: TAC, 2017),16-71.

Table 5 highlights the recommended values for the minimum spacing in comparison to measurements of the planned road conditions.

TABLE 3: ACCESS SPACING

Measurement	TAC Guide Distance (m)	Road Measurement (m)	Requirement Satisfied
Distance between the Site Driveways	1	~6	Yes

Throat Length

To increase operational efficiency for vehicle entering and exiting the driveway, a no conflict and storage zone is recommended within the driveway. The clear throat length or setback distance is used to prevent frequent blocking of on-site circulation roads and the queueing of entering vehicles. Table 8.9.3 in the GDGCR provides a guideline for suggested minimum clear throat lengths for various developments.[8] **Table 6** highlights the recommended values for the minimum clear throat length for apartments with less than 100 units (similar land use as a townhouse development) connecting to a local road in comparison to measurements of the existing road conditions. A minimum clear throat length of eight metres is recommended for apartments with less than 100 units. The site driveway throat length was measured to be 12 metres, which satisfies this requirement.

TABLE 4: THROAT LENGTH

Measurement	TAC Guide Distance (m)	Driveway Measurement (m)	Requirement Satisfied
Driveway Throat Length for Apartment with <100 units connecting to a Local Road	8	12	Yes

Sight Distance Assessment

The necessary sight distances at the site driveways were reviewed in accordance with the TAC GDGCR.[8] The components for the sight distance are measured as per Figure 9.9.2 in the GDGCR. The recommended sight distance values were determined using Table 9.9.4 and Table 9.9.6. This case is assumed to be an intersection with stop control on the minor road.

It was observed that there was an obstruction in the form of vegetation at the northwest corner of the north driveway (northern-most driveway of the three driveways). It is expected that the vegetation would be cleared at the time of construction, thereby providing a sufficient line of sight for departure from the site.

Table 7 summarizes the recommended sight distances for the existing driveway location based on a 50 km/h design speed (10 km/h above the posted speed limit) for the major road and 20 km/h design speed for the driveway. All calculations are based on the most conservative case where the driveway closest to conflict is considered for the analysis.

TABLE 5: DRIVEWAY SIGHT DISTANCE ASSESSMENT

Measurement	TAC Guide Distance (m)	Road Measurement (m)	Requirement Satisfied
Minimum Stopping Sight Distance (Southbound) – Driver Approaching the Site Driveway from the North	65	~110	Yes
Minimum Stopping Sight Distance (Northbound) – Driver Approaching the Site Driveway from the South	65	~21	N/A
Departure Sight Distance (Left Turn from Stop) – Driver Facing West and Looking South	105	~21	N/A
Departure Sight Distance (Left Turn from Stop) – Driver Facing West and Looking North	105	~108	Yes
Departure Sight Distance (Right Turn from Stop) – Driver Facing West and Looking South	95	~21	N/A

The assessment used the following parameters:

- Object Height (vehicle tail or brake light): 0.60 metres;
- Driver Eye Height: 1.08 metres; and
- Top of Car: 1.30 metres.

Paradigm staff completed a desktop review of the driveway connections and confirmed the measurements using satellite imagery from Google StreetView and Google Earth.

The measurements for outbound traffic exiting the site were recorded at 4.4 metres from the existing edge of pavement, representing the typical position of a driver performing a turning movement. The measurements for inbound traffic were taken from the centre of the travel lane

on Mimosa Row from which the turning movement would occur (e.g. curb lane from northbound right turn, etc.).

Mimosa Row intersects with Floradale Drive approximately 21 metres south of the southern-most driveway. As such, some sight distance measurements are not achieved because the road terminates. This is common for low density residential land uses and local roads. Where the road is present, sight distances are achieved. In total, results of the sight distance assessment indicate that the site distance requirements are achieved under the current road geometry and driveway configuration, as prescribed through TAC guidelines.

Results of the site access assessment indicate that the planned site access does not have any conflicts based on TAC GDGCR guidance aspects that were reviewed. Aspects such as corner clearance, access spacing, throat length and sightline distance exceed minimum requirements.

Conclusions

Based on the above analysis, it is concluded that:

- the subject site is forecast to generate two and three trips in the AM peak hour and PM peak hour, respectively;
- traffic generated by the planned development is less than the daily variations and is expected to have minimal impact on the future traffic network due to its low trip generation rates and the new trips replacing some of the trips from the existing site; and
- the site access conditions adhere to TAC guidance, including appropriate sightline distances and site access conditions. At the north end of the north driveway access, vegetation needs to be removed to provide proper motorist sightlines. It is assumed that this will occur when the site is developed.

Recommendations

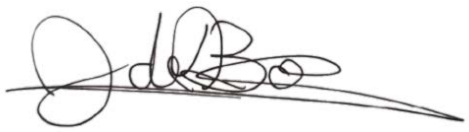
The following recommendations are provided:

- City staff consider the contents of this report;
- The project team ensure that the vegetation at the north end of the north driveway will be removed and/or trimmed to provide proper motorist sightlines; and
- From a transportation standpoint, the development moves forward as planned, without the need for additional changes to the external road network.

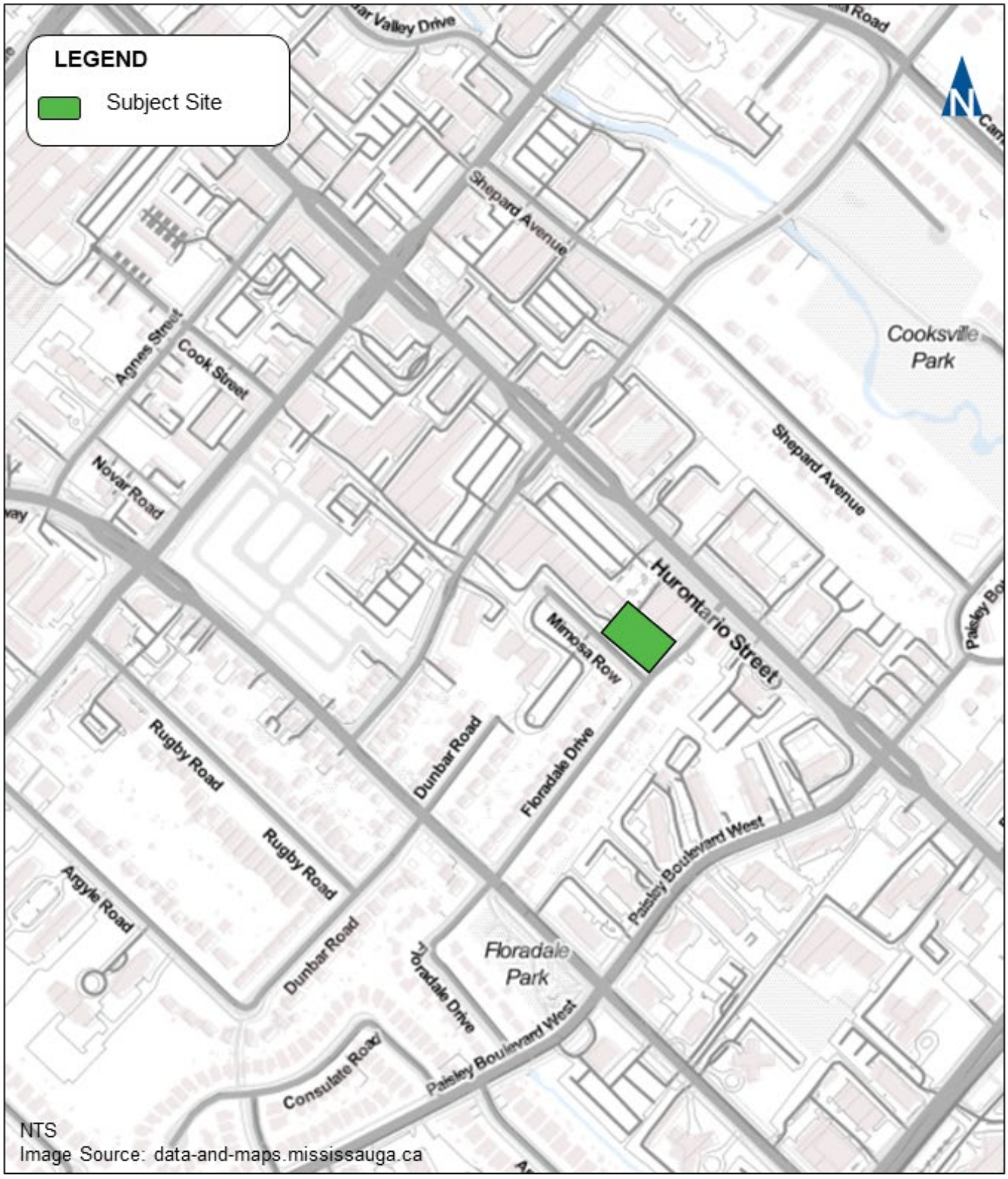
We trust that this memo sufficiently outlines the impacts of the planned development on the City's transportation network within the study area.

Yours very truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED



Josh de Boer
M.Eng., P.Eng., PTOE
Project Manager, Associate



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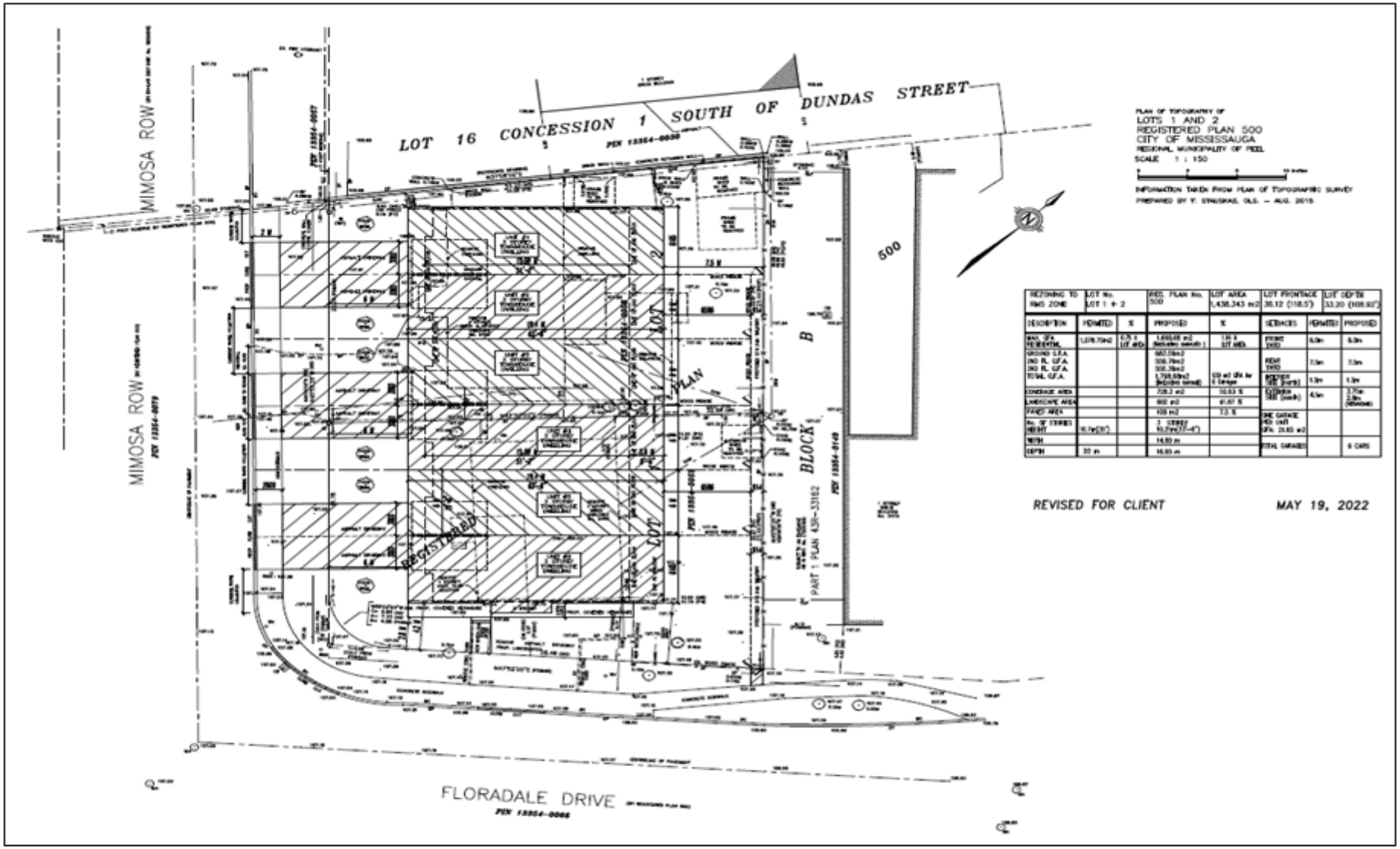
Subject Site Location

2463 and 2469 Mimosa Row Memo
220533

Figure 1



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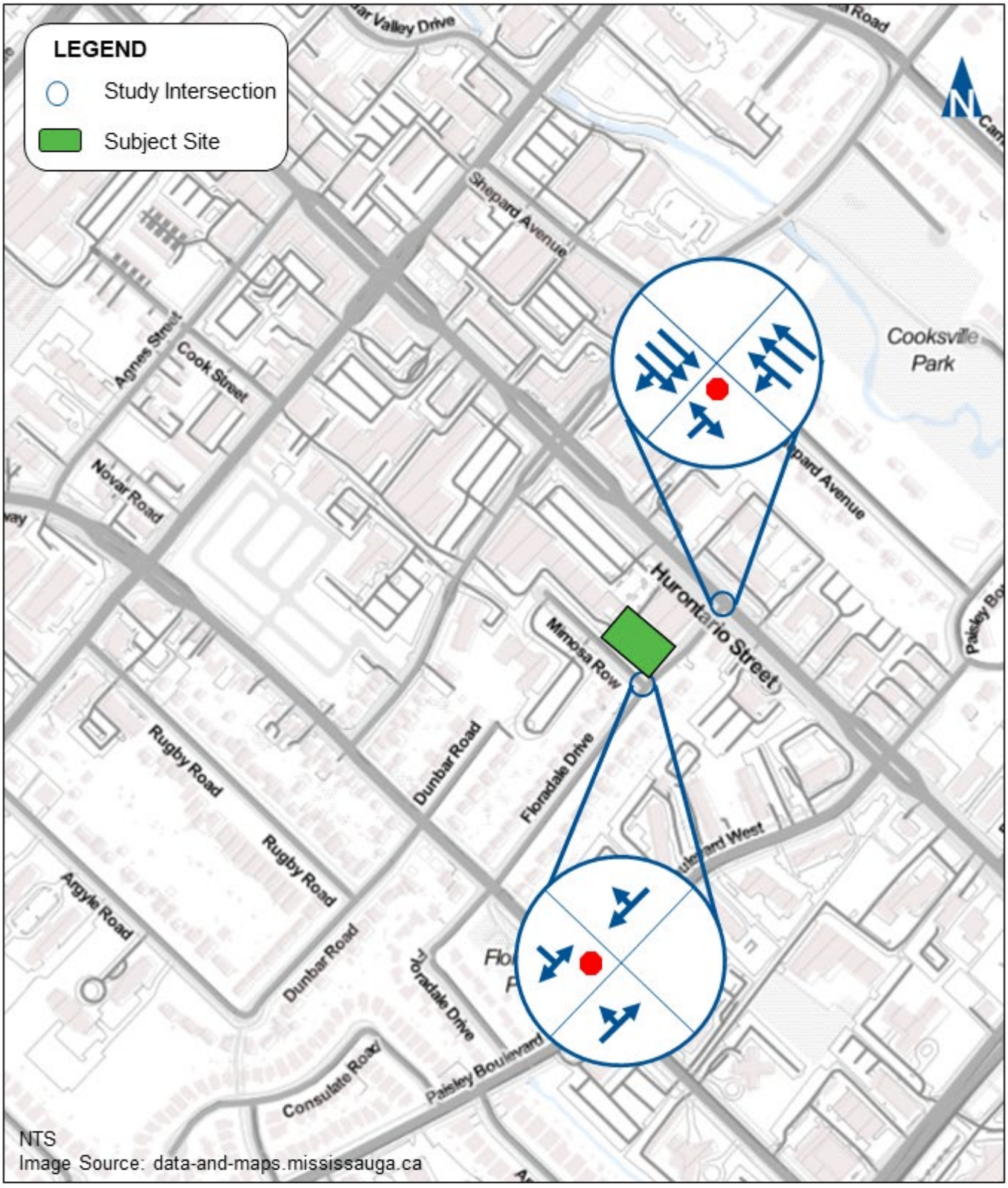
Proposed Site Plan

2463 and 2469 Mimosa Row Memo
220533

Figure 2



Existing Lane Configurations and Traffic Control

2463 and 2469 Mimosa Row Memo
220533

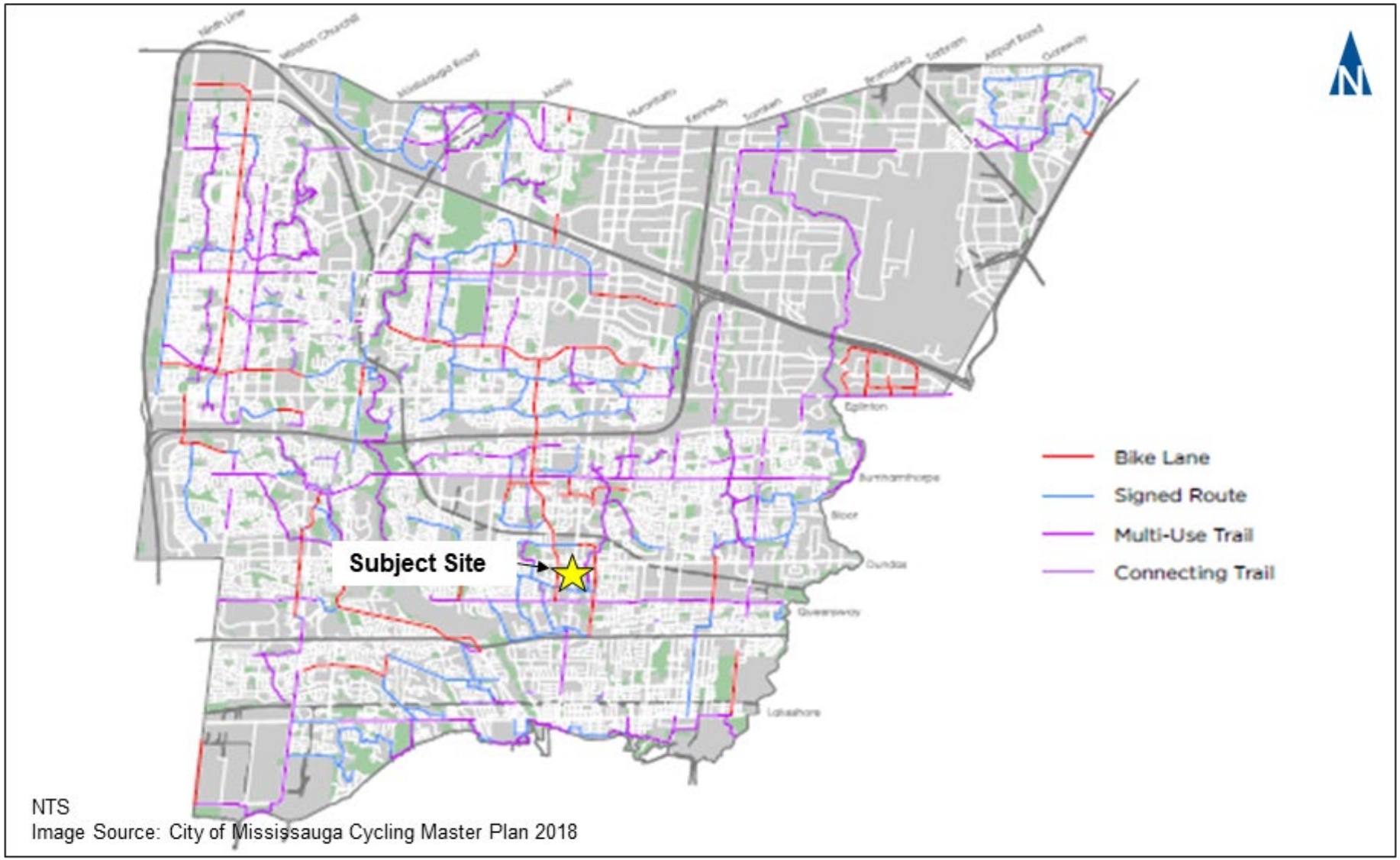
Figure 3

paradigm TRANSPORTATION SOLUTIONS LIMITED

Study Area Transit Routes

2463 and 2469 Mimosa Row Memo
220533

Figure 4



NTS
Image Source: City of Mississauga Cycling Master Plan 2018

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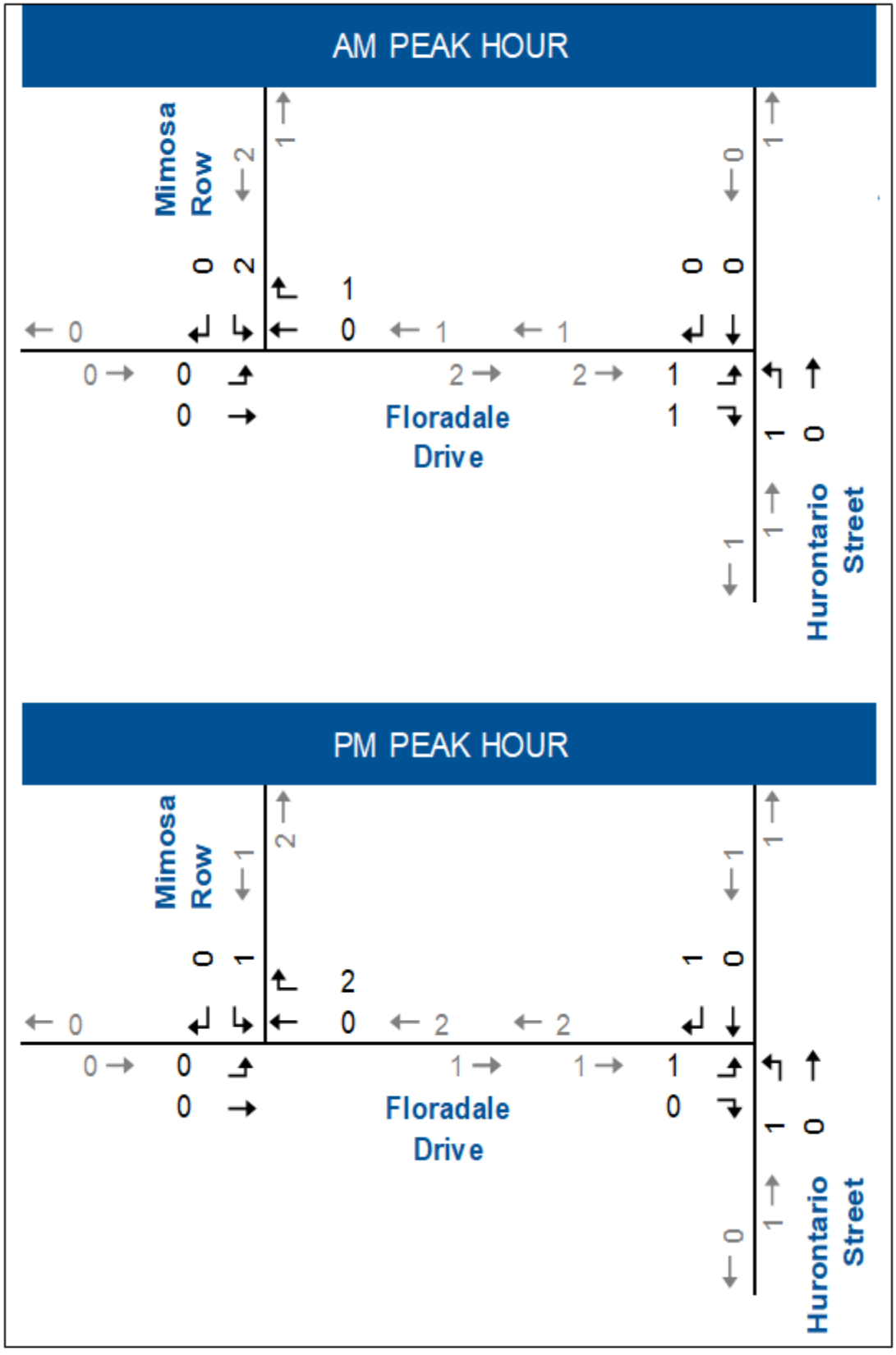
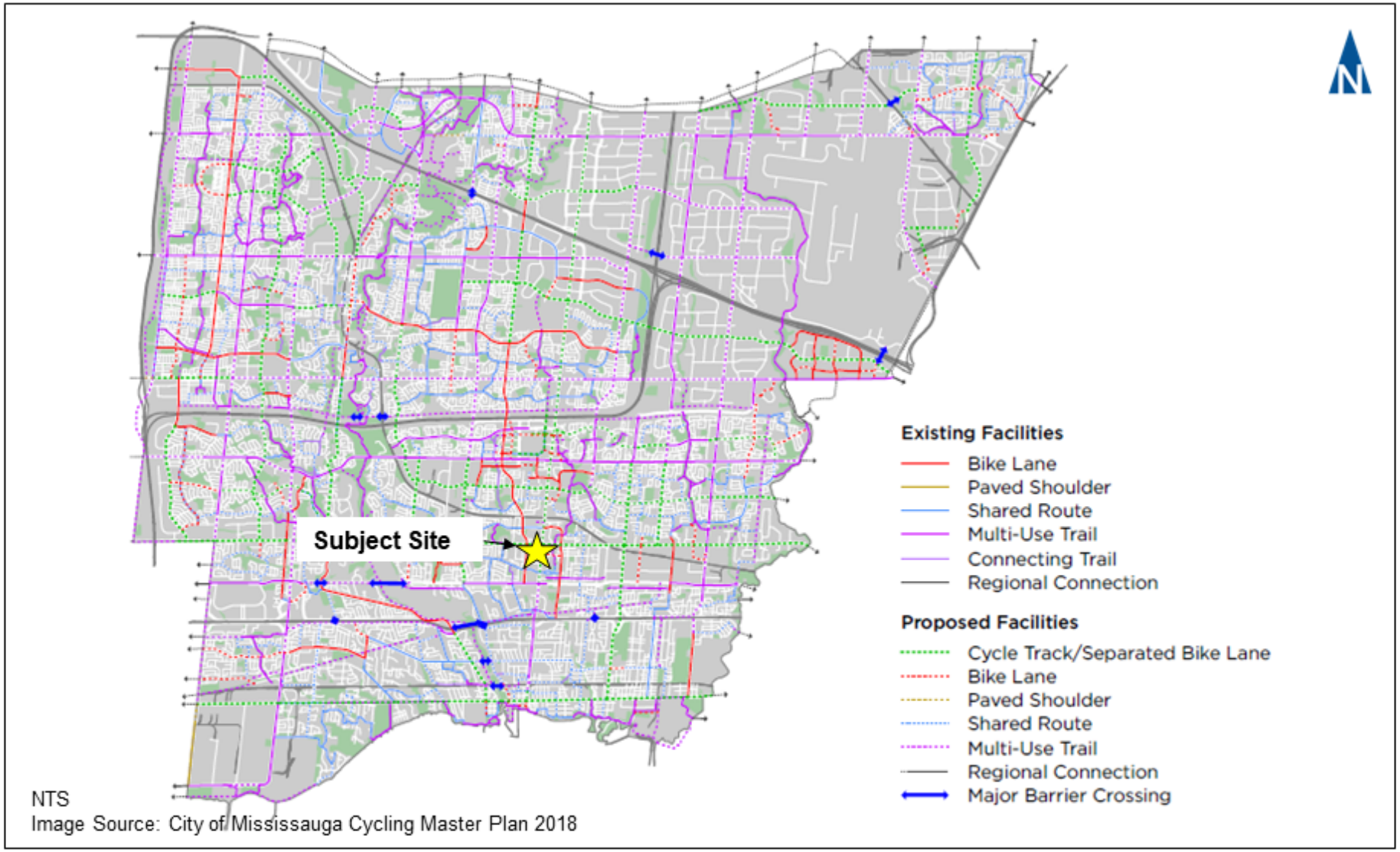
Existing Active Transportation Facilities



paradigm TRANSPORTATION SOLUTIONS LIMITED

Site Generated Traffic Volume



NTS

Image Source: City of Mississauga Cycling Master Plan 2018

Proposed Active Transportation Facilities

Appendix A

Pre-Study Consultation Materials

From:	**Kate Vassilyev** <Kate.Vassilyev@mississauga.ca>
To:	**Josh de Boer** <jdeboer@ptsl.com>
CC:	**Prateek Jain** <pjain@ptsl.com>
Subject:	RE: 220533 2463-2469 Mimosa Row Traffic Operations and Safety Assessment - ToR
Date:	26.09.2022 11:09:59 (+02:00)

Good morning Josh,

Thank you for providing the TOR of references for the subject development. The Traffic Planning Section reviewed it and deemed satisfactory, please proceed with Traffic Operations and Safety Memo.

Regards,

Kate (Jekaterina) Vassilyev
Traffic Planning Technologist
T 905-615-3200 ext.8171
kate.vassilyev@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrustructure Planning Division

From: Josh de Boer < jdeboer@ptsl.com>
Sent: Thursday, September 22, 2022 1:34 PM
To: Kate Vassilyev < Kate.Vassilyev@mississauga.ca>
Cc: Prateek Jain < pjain@ptsl.com>
Subject: 220533 2463-2469 Mimosa Row Traffic Operations and Safety Assessment - ToR

Good afternoon Kate,

Paradigm Transportation Solutions Limited (Paradigm) has been retained by the applicant to prepare a Traffic Operations and Safety Memo for a residential development at 2464 and 2469 Mimosa Row in the City of Mississauga. The Memo is required to satisfy the City of Mississauga Traffic Impact Study Guidelines. The purpose of this email is to establish and confirm a Terms of Reference (ToR) for the required memo. We are seeking agreement and/or direction on our proposed scope of work which is discussed below.

The subject site is located at 2464 and 2469 Mimosa Row in the City of Mississauga. The property owner proposes to develop six townhouses across the two existing residential lots with a total of 1243.33 m^2 Gross Floor Area (GFA). Vehicle access is proposed via direct and individual driveway connections to Mimosa Row . Parking is to be provided for each individual lot.

A preliminary analysis indicates that the proposed development would generate approximately 2 and 3 vehicular trips during the weekday AM and PM peak hours, respectively. Based on pre-consultation discussions with your office, and given the low volume of anticipated site traffic, a Traffic Operations and Safety Memo has been proposed and a detailed intersection capacity analysis using Synchro software is not required. The City of Mississauga confirmed these requirements in previous correspondence. Please advise if any further information is required.

We propose that the Traffic Operations and Safety Memo include the following elements:

a) Traffic Operations Assessment:

- Description of existing roads, traffic control, transit service, and active transportation;
- Description of the proposed development including description of proposed active transportation details for the subject development; and
- Detailed vehicular trip generation of the proposed development based on the Institute of Transportation Engineers (ITE) Trip Generation Manual (11 th Edition), using land use code 220 (Multifamily Housing (Low-Rise)).
- Qualitative discussion and commentary on the anticipated traffic impact (or lack thereof).

b) Safety Assessment:

- Assessment of sight distance and sight line obstructions in accordance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR); and
- Review of site access including corner clearance, vehicle ingress and egress as well as spacing requirements in accordance with the TAC GDGCR.

Thank you for reviewing project details and providing comments/feedback on the scope of work. If there are any questions, please do not hesitate to contact me. We look forward to your response.

Regards,

Josh de Boer, M.Eng., P.Eng., PTOE
Project Manager, Associate
(he/him)

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e: jdeboer@ptsl.com
w: www.ptsl.com

**** Paradigm is now operating on a 4-day workweek. Our offices are closed Fridays. ****

Appendix B

Transportation Tomorrow Survey (TTS) Reports

AM Inbound

Tue Oct 04 2022 11:35:25 GMT-0400 (Eastern Daylight Time) - Run Time: 2535ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: Planning district of origin - pd_orig

Filters:
2006 GTA zone of destination - gta06_dest In 3657
and
Start time of trip - start_time In 599-900

Trip 2016
ROW : gta06_dest
COLUMN : pd_orig

gta06_dest	pd_orig	total
3657	4	30
3657	7	36
3657	35	19
3657	36	739
3657	38	24

AM Outbound

Tue Oct 04 2022 11:38:54 GMT-0400 (Eastern Daylight Time) - Run Time: 2439ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
2006 GTA zone of origin - gta06_orig In 3657
and
Start time of trip - start_time In 599-900

Trip 2016
ROW : gta06_orig
COLUMN : pd_dest

gta06_orig	pd_dest	total
3657	1	246
3657	4	65
3657	7	122
3657	8	162
3657	9	155
3657	31	28
3657	33	94
3657	35	93
3657	36	2217
3657	39	74
3657	40	164

PM Inbound

Tue Oct 04 2022 11:37:23 GMT-0400 (Eastern Daylight Time) - Run Time: 2663ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: Planning district of origin - pd_orig

Filters:
2006 GTA zone of destination - gta06_dest In 3657
and
Start time of trip - start_time In 1599-1900

Trip 2016
ROW : gta06_dest
COLUMN : pd_orig

gta06_dest	pd_orig	total
3657	1	132
3657	7	92
3657	8	129
3657	9	155
3657	33	79
3657	35	69
3657	36	1848
3657	39	40
3657	40	170

PM Outbound

Tue Oct 04 2022 11:40:10 GMT-0400 (Eastern Daylight Time) - Run Time: 2606ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
2006 GTA zone of origin - gta06_orig In 3657
and
Start time of trip - start_time In 1599-1900

Trip 2016
ROW : gta06_orig
COLUMN : pd_dest

gta06_orig	pd_dest	total
3657	4	10
3657	7	36
3657	36	711
3657	38	24

Appendix C

ITE Trip Generation Reports

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
215

LAND USE GROUP:
(200-299) Residential

LAND USE :
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
Dwelling Units

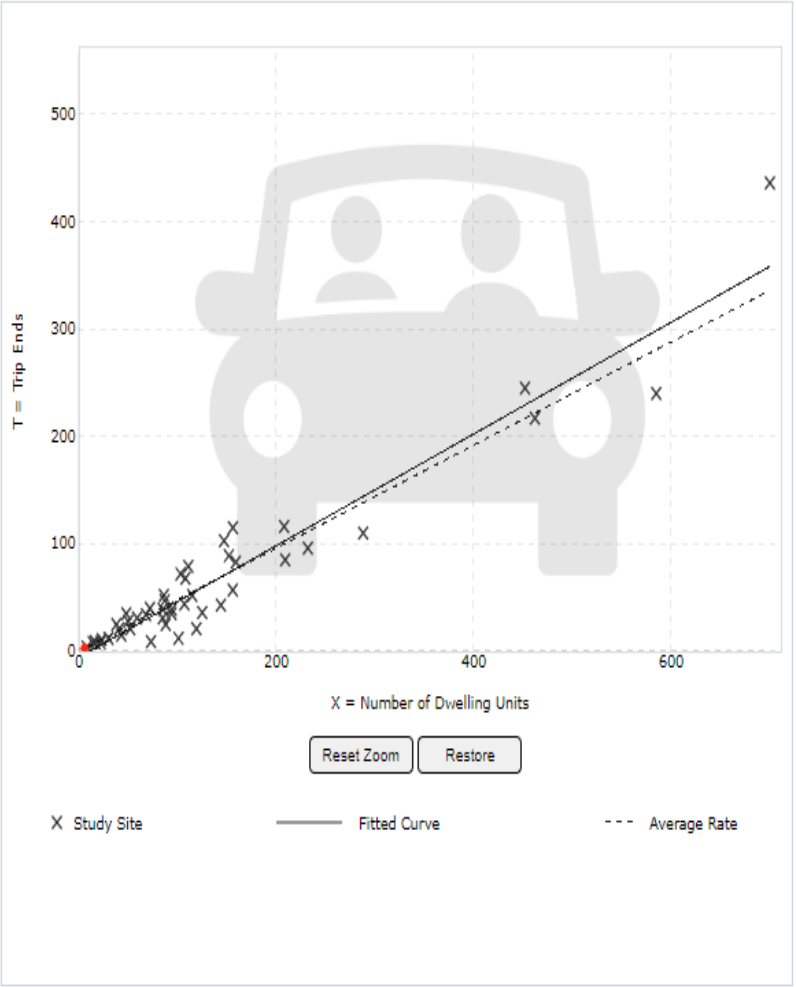
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffi

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
6 Calculate

Trip ends are not estimated for some methods as it yields negative values

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
46

Avg. Num. of Dwelling Units:
135

Average Rate:
0.48

Range of Rates:
0.12 - 0.74

Standard Deviation:
0.14

Fitted Curve Equation:
T = 0.52(X) - 5.70

R^2:
0.92

Directional Distribution:
31% entering, 69% exiting

Calculated Trip Ends:
Average Rate: 3 (Total), 1 (Entry), 2 (Exit)
Fitted Curve: Not Available

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
215

LAND USE GROUP:
(200-299) Residential

LAND USE :
215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
Dwelling Units

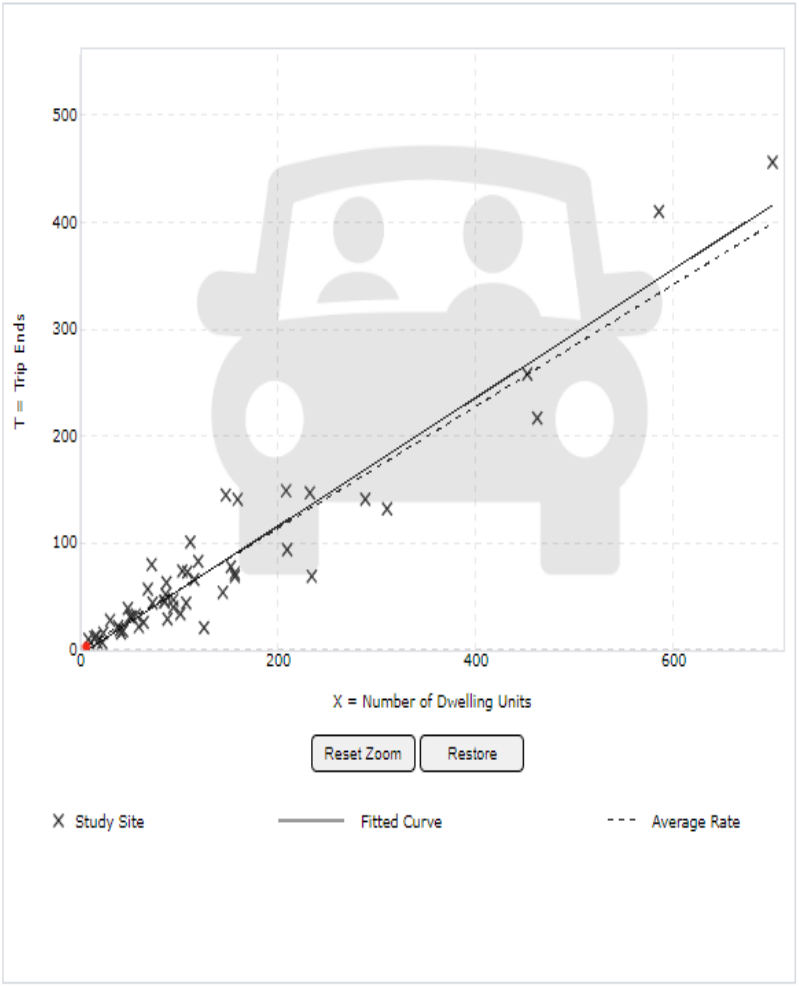
TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffi

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
6 Calculate

Trip ends are not estimated for some methods as it yields negative values

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Single-Family Attached Housing (215) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
51

Avg. Num. of Dwelling Units:
136

Average Rate:
0.57

Range of Rates:
0.17 - 1.25

Standard Deviation:
0.18

Fitted Curve Equation:
T = 0.60(X) - 3.93

R^2:
0.91

Directional Distribution:
57% entering, 43% exiting

Calculated Trip Ends:
Average Rate: 3 (Total), 2 (Entry), 1 (Exit)
Fitted Curve: Not Available