



September 11th, 2025

Reference Number: 24030

Sarah Millar
Director, Development
Daniels Corporation

Dear Mrs. Millar,

**RE: TIS Comment-Response Letter
Proposed Mixed-Use Development
21 Dundas Street West & 3000 Sixth Line, Town of Oakville**

LEA Consulting Ltd. (LEA) has been retained by Daniels Corporation to provide transportation consulting services for the proposed mixed-use development located at 21 Dundas Street West and 3000 Sixth Line (herein referred to as the “subject site”) in the Town of Oakville.

By way of background, LEA previously prepared a Transportation Impact Study (dated December 2024) in support of the development applications for the subject development.

The following TIS Comment Response Letter has been prepared to respond to comments received from the Town of Oakville and other review agencies in support of the Zoning By-law Amendment (ZBA) application for the subject site. Specifically, this letter responds to comments received from Planning Services in a consolidated comment report dated March 21, 2025. This letter also provides an updated TIS in support of the ZBA application.

1 RESPONSE TO REVIEW AGENCY COMMENTS

The following sections provide a response to the Town’s comments relating to transportation as provided in a consolidated comment report from Planning Services dated March 21, 2025.

1.1 TRANSPORTATION AND ENGINEERING COMMENTS

The following sections provide a response to the Town’s March 2025 comments relating to transportation, with the comments received from Sustainable Transportation, Oakville Transit, and Transportation Services provided in italics, followed by LEA’s responses.

SUSTAINABLE TRANSPORTATION (M. DIMAS)

1. Site Plan

- a. Bike parking locations, type, and dimensions will be assessed at the Site Plan stage. Bike parking should be identified as resident, visitors and non-residential (for retail). Please note that P1 bike parking will require a ramp on the stairwell to the ground floor. Underground pedestrian/cycling circulation will be assessed for safety and ease of access.*

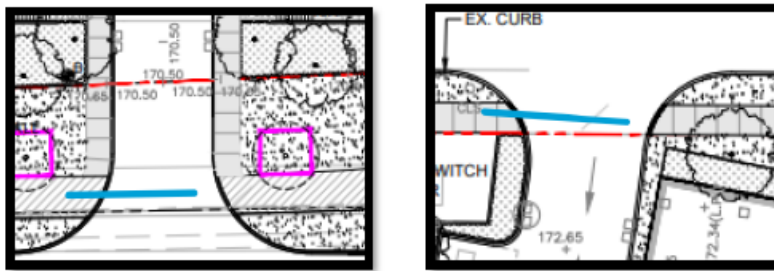


LEA Response: Noted, this will be addressed at SPA.

2. [Circ1] Any stacked townhomes will need to adhere to bike parking zoning standards.

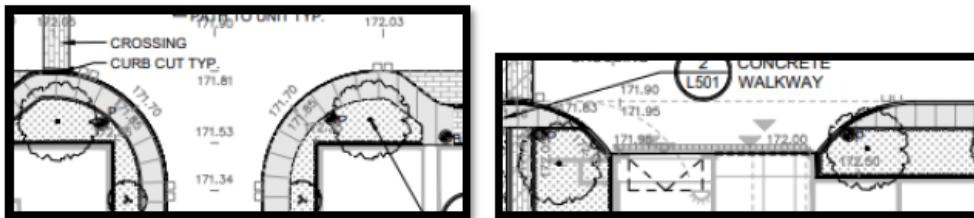
LEA Response: Noted, townhouse units have been included in the bike parking calculations.

3. Please extend the construction of the multi-use trail across the egress on Dundas Street, and similarly the sidewalk across the egress on Kaitting Trail.



LEA Response: Noted on revised architectural and landscape drawings.

4. Please install pedestrian markings/pavers (as shown elsewhere on the plan) for crossings at these internal locations, below, in a Pedestrian Circulation Plan.



LEA Response: Noted on revised architectural and landscape drawings.

5. Transportation Demand Management
6. Please outline a timeline, roles and responsibilities for the delivery of the TDM plan. Please consult with the Sustainable Transportation Program coordinator (mary.dimas@oakville.ca) to discuss.

LEA Response: Acknowledged and addressed. Please refer to the updated Transportation Impact Study prepared for the latest submission.



OAKVILLE TRANSIT (J. PHOENIX)

1. *[Circ. 1] – As noted in the TIS, the site is within close proximity to existing fixed route transit services. Please note: the TIS transit route information is dated: fixed route services are provided on Dundas via Route 5, on Sixteen Mile via Route 37, and in addition there is Ride On-Demand service in this neighborhood.*

LEA Response: Acknowledged and addressed. Please refer to the updated Transportation Impact Study prepared for the latest submission.

2. *[Circ. 1] – Oakville Transit operates specialized transit service, branded as care-A-van, which provide door to door, escorted service to people with disabilities. The driver will leave the vehicle, as they escort the customer to the first accessible door. The vehicle must remain in the line of sight of the driver, and reversing and three points turns are to be avoided. It is noted that there are drop off areas identified for each of the residential buildings, in close proximity to the main entries. However, it should be noted that if these lay by drop off areas are occupied by private vehicles at the time of pick up and drop off, the care-A-van vehicle will stop in the drive aisle for pick up and drop off. Staff would ask that a auto-turn be provided to demonstrate the path of travel for the 26 foot care-A-van vehicle to access each residential building entry point.*

LEA Response: Noted, see updated swept path diagrams.

TRANSPORTATION SERVICES (S. RIZVI)

1. Site Plan

- a. *[Circ. 1] – The site plan does not indicate the distance for the proposed right in/out access between Dundas Street West and Kaitting Trail. Approval of the proposed access will be contingent upon the results of the upstream queuing assessment at the intersection of Dundas Street and Sixth Line. The site plan should be updated and submitted for review and comments by Transportation staff.*

LEA Response: Dimensions are shown on the revised architectural drawings.

- b. *[Circ. 1] - Staff appreciates waste management vehicle maneuvering plan. It is noted that the final approval of the location of garbage receptacles shown on site plan and vehicle maneuvering plan is subject to review and approval by Halton Region*

LEA Response: Noted.

- c. *[Circ. 1] – At the underground parking, as a safety measure, staff appreciates visitor parking separation from the residential parking.*

LEA Response: Noted, to be addressed at SPA.

2. Traffic Impact Assessment



- a. *[Circ. 1] – In reference to Table 4-2, the conversion factor for ITE personal trips to external auto trips is not provided. The traffic consultant should include this information for all land uses and project phases to ensure a comprehensive review and accurate record-keeping.*

LEA Response: The existing non-auto mode share of 14% (obtained from the TTS modal split) was utilized to convert to vehicle trips. Additionally, in the interim condition, interaction trips are assumed as per the ITE methodology. The modal split table is included in the updated TIS report.

- b. *[Circ. 1] – The applied growth factor (GF) for future horizon years is not documented. The traffic consultant should explicitly specify the growth factor for future horizon years used in calculating future traffic volumes for all horizon years to ensure transparency and accuracy in projections.*

LEA Response: Historical counts at the intersection of Dundas St W & Sixth Line from 2015 and 2018 were used to identify the AM and PM growth rates. During the AM peak, 0% growth was assumed. During the PM peak, a growth rate of 2% was applied to the SB movement (Sixth Line), and 1% to the EB movement (Dundas St W). There appears to be traffic pattern shifts in 2018 and 2023, so little relevance is given to 2015, as no linear growth rate was assumed.

3. *Preliminary Construction Management Plan*

- a. *[Circ. 1] – Please submit a Preliminary Construction Traffic Control Management Plan Memo detailing mitigative measures before construction, during construction and post construction phases as per Ontario Traffic Manual (OTM) Book 7.*

LEA Response: A Construction Management Plan will be provided as part of a future SPA submission.

1.2 EXTERNAL AGENCIES COMMENTS

The following sections provide a response to the Town's March 2025 comments relating to transportation, with the comments received from external agencies including Metrolinx and Region of Halton – Planning and Public Works provided in italics, followed by LEA's responses.

METROLINX

Jenna Auger, jenna.auger@metrolinx.com

1. *General*

- a. *(Info) The Region's road widening program from 4 to 6 lanes already anticipates a future conversion to curbside BRT in the future, and at most, curbside transit-only lanes would be painted in a fashion similar to RapidTO in Toronto.*

LEA Response: Noted.



HALTON REGION – PLANNING AND PUBLIC WORKS

Tyler Peers, Tyler.Peers@halton.ca

1. Waste Management

a. Please note the height clearance requirements are as follows:

- Drive through clearance – 4.5 m.
- Clearance within Waste Loading Area – 7.5 m.

LEA Response: Noted.

b. Indicate all turning radii along waste collection vehicle path. Turning radius must be a minimum of 13 m. This must be shown on plans

LEA Response: Noted, see revised architectural drawings and functional design review for the loading vehicle swept paths.

c. Head-on approach of waste collection vehicle to waste bins must be 18 m straight. If entering an internal Waste Loading Area, the waste collection vehicle should be entering it straight and not on a turn

LEA Response: Noted, see revised architectural drawings and functional design review for the loading vehicle swept paths.

d. The back-up distance must be a maximum of 18 m. Requiring waste collection vehicles to back up in front of doors is not safe and to be avoided

LEA Response: Noted, see revised architectural drawings and functional design review for the loading vehicle swept paths.

e. The Waste Loading Area must be minimum 7.5 m high x 6 m wide x 18 m long to ensure the waste collection vehicle can fully enter the indoor loading area and ensure the minimum approach requirement is met

2. **LEA Response:** Noted, see revised architectural drawings and functional design review for the loading vehicle swept paths.

3. Transportation Development Review

a. Access:

The development proposes three access points to the site – via Dundas Street, Sixth Line, and Kaitting Trail. The access onto Dundas Street is proposed as a right-in/right-out approximately 150m west of the intersection of Dundas Street at Sixth Line.



LEA Response: Noted.

b. TIS

The Ultimate (Phase 1-4) Development is expected to generate 290 two-way trips (67 inbound, 223 outbound) in the AM peak hour, and 300 two-way trips (174 inbound, 126 outbound) in the PM peak hour. It is to be noted that the at-grade retail proposed is not included in the trip generation calculation as it is intended to primarily serve the residential uses on-site and walk-in trips from the surrounding neighborhood and is not expected to generate a significant volume of vehicle trips.

Under existing and future background conditions, the study area intersections operate at acceptable levels. Under future total conditions, the intersections continue to operate with no capacity constraints. The proposed site accesses are expected to operate well. Signal timing plan optimization is recommended at the intersection of Dundas Street and Sixth Line. The analysis results confirm that the proposed development will have an acceptable impact on the surrounding road network.

The study is found to be acceptable; no further revisions required.

LEA Response: Noted.

We trust that these responses are sufficient to address the outstanding transportation comments. Should you have any questions, please do not hesitate to contact the undersigned at rkeel@lea.ca.

Yours truly,

LEA CONSULTING LTD.

Robert Keel, MCIP, RPP
Manager, Transportation Planning

Enclosed: Updated Transportation Impact Study (TIS)



Daniels Corporation

TRANSPORTATION IMPACT STUDY

PROPOSED MIXED-USE
DEVELOPMENT

DUNDAS & SIXTH LINE
TOWN OF OAKVILLE

September 2025

Version 2.0

24030

DISCLAIMER

This Report represents the work of LEA Consulting Ltd (“LEA”). This Report may not be relied upon for detailed implementation or any other purpose not specifically identified within this Report. This Document is prepared solely for the use of Daniels Corporation. Neither LEA, its sub-consultants nor their respective employees assume any liability for any reason, including, but not limited to, negligence, to any party other than Daniels Corporation for any information or representation herein.

EXECUTIVE SUMMARY

LEA Consulting Ltd. (LEA) has been retained by Daniels Corporation to undertake a Transportation Impact Study (TIS) in support of the rezoning application for the proposed mixed-use development located at 3000 Sixth Line & 21 Dundas Street West in the Town of Oakville. An initial TIS, dated December 2024, was submitted in support of the development application. The following TIS report has been updated to reflect the revised development concept and address review agency comments.

The development will be built out in four phases. Phase 1 will consist of a retail block with a gross floor area (GFA) of 1,393m². Phase 2 will include two residential apartment buildings with a total of 328 units, and two townhouse blocks with 17 units. Phase 3 will include a residential apartment building with 197 units. Phase 4 will replace the retail block constructed as part of Phase 1 with a residential apartment building with 138 units, and two townhouse blocks with 11 units. At full buildout, the proposed development will contain 663 apartment units, 28 townhouse units and 402.22m² of retail GFA.

An intersection capacity and queueing analysis was undertaken for the surrounding road network under three horizons: 2028 (Phase 1-3 completion), 2033 (Phase 4 completion), and 2038 (5 years post build-out). All intersections and movements are expected to operate within capacity under existing and future conditions for all horizons. It can therefore be concluded that the proposed development will have an acceptable impact on the surrounding road network.

The proposed vehicle parking supply meets the requirements of North Oakville Zoning By-law 2009-189. At full buildout, a total of 792 parking spaces will be provided. 356 bicycle parking will also be provided in accordance with the by-law requirements.

Transportation Demand Management (TDM) strategies have also been recommended for the proposed development to support the existing multi-modal transportation options available in the study area. TDM recommendations include bike parking, bicycle repair stations, information packages, pre-loaded PRESTO cards, pick-up/drop-off facilities and unbundled parking.

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1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by Daniels Corporation to undertake a Transportation Impact Study (TIS) in support of the rezoning application for the proposed mixed-use development located at 3000 Sixth Line & 21 Dundas Street West in the Town of Oakville (herein referred to as the “subject site”).

An initial TIS, dated December 2024, was submitted in support of the development application. The following TIS report has been updated to reflect the revised development concept and address review agency comments.

The site location is shown in **Figure 1-1**.

Figure 1-1: Subject Site



Source: Google Earth, accessed December 2024

The subject site is currently vacant and is zoned as Dundas Urban Core (i.e. mixed-use) and Future Development. The Oakville Official Plan designates the site as within the Dundas Street Urban Core Area. The surrounding area is primarily low-rise residential.

1.1 DEVELOPMENT PROPOSAL

The proposed development will be constructed in four phases:

- ▶ Phase 1: retail block with surface parking;

- ▶ Phase 2: two 8-storey residential buildings with shared underground parking, two 3-storey townhouse blocks;
- ▶ Phase 3: 9-storey residential building with underground parking; and
- ▶ Phase 4: removal of the Phase 1 retail block, 8-storey residential building with at-grade retail and underground parking, and two 3-storey townhouse blocks.

For the purpose of the analysis, it is assumed that Phase 1-3 will be constructed by 2028, and that Phase 4 will be completed by 2033.

The residential site statistics are presented in **Table 1-1**.

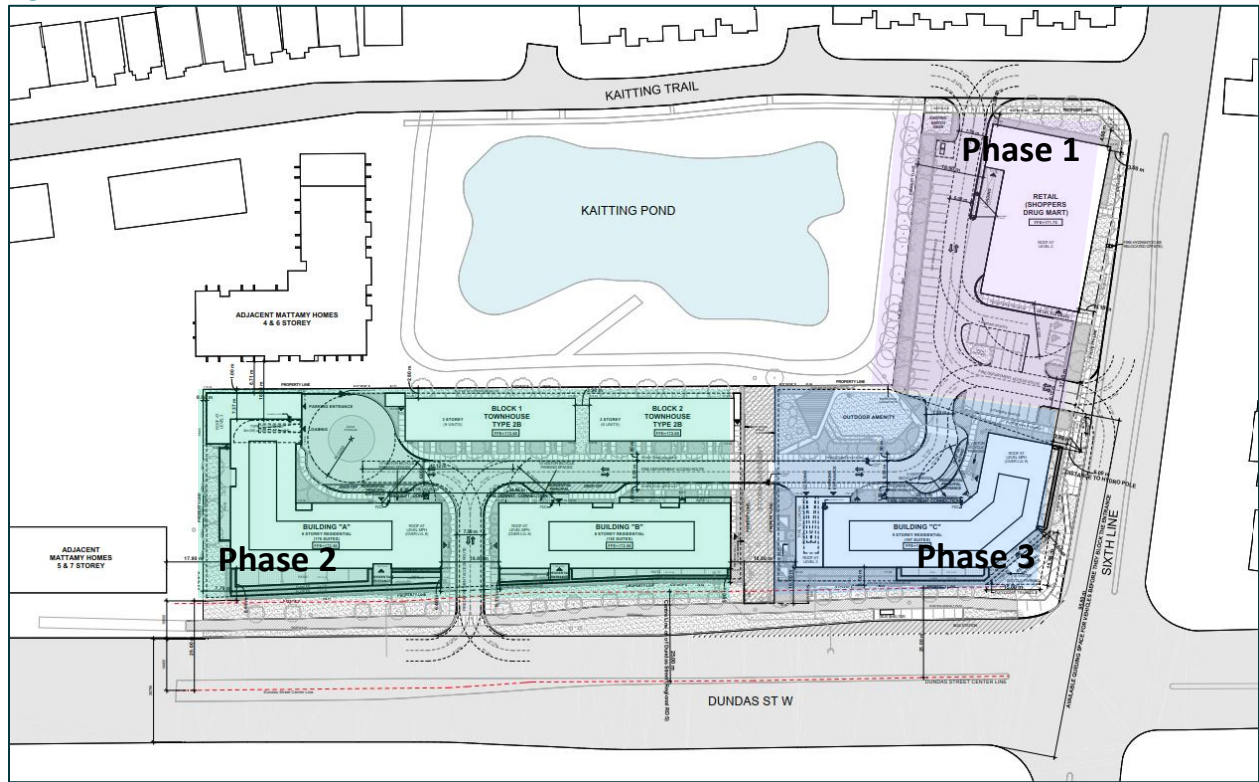
Table 1-1: Proposed Development – Residential Statistics

Phase	Building	Unit Breakdown				
		Studio	1-Bed	2-Bed	Townhouse	Total
Phase 2	Apartment	37	212	79	-	328
	Townhouse	-	-	-	17	17
	Total	37	212	79	17	345
Phase 3	Apartment	24	130	43	-	197
Interim Condition	Phases 1 + 2	61	342	122	17	542
Phase 4	Apartment	21	83	34	-	138
	Townhouse	-	-	-	11	11
	Total	21	83	34	11	149
Ultimate Condition	All Phases	82	425	156	28	691

Phase 1 will consist of a retail block with a gross floor area (GFA) of 1,393m². This block will be removed when the ultimate Phase 4 condition is built out. The ultimate Phase 4 condition is Building D which will also have at-grade retail fronting Sixth Avenue, with a proposed GFA of 402.22m².

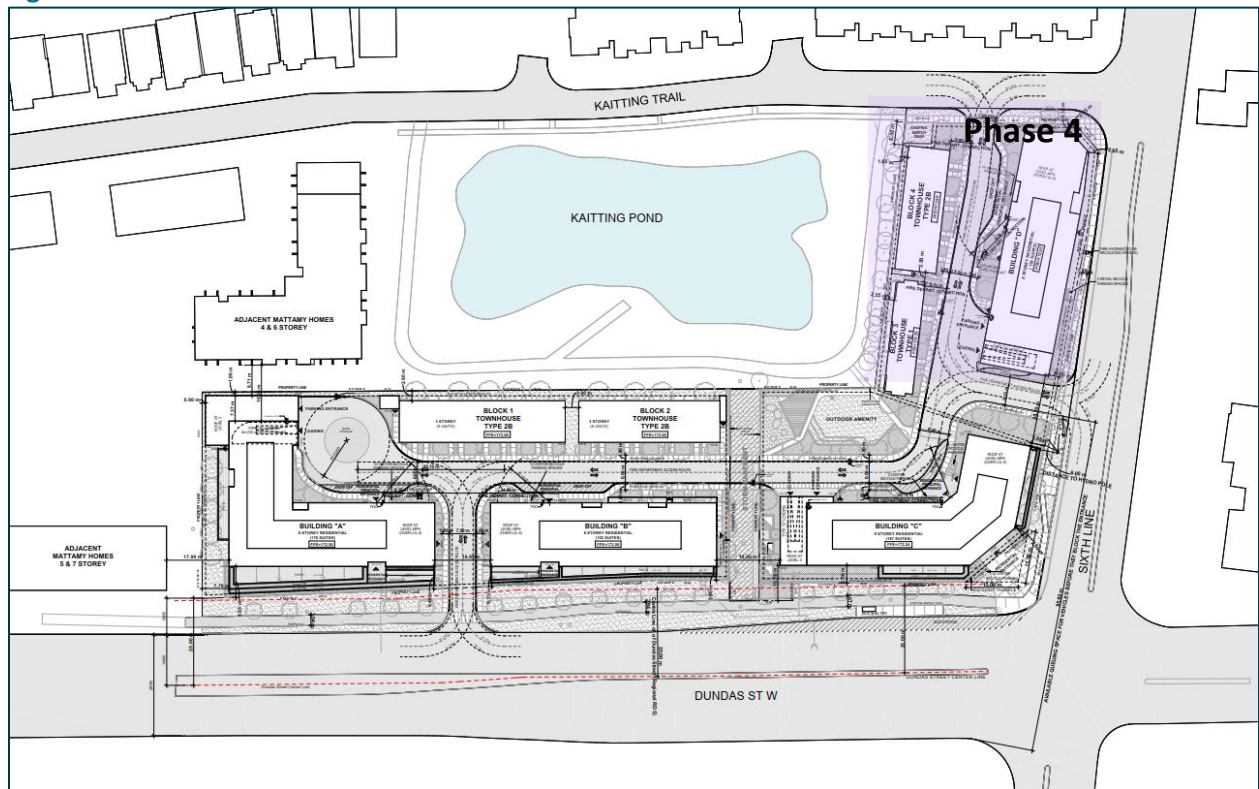
The interim and ultimate site plan are illustrated in **Figure 1-2** and **Figure 1-3** respectively.

Figure 1-2: Interim Site Plan



Source: Kirkor Architects, September 2025

Figure 1-3: Ultimate Site Plan



Source: Kirkor Architects, September 2025

The proposed development will have three vehicular access points to the local road network. An unsignalized full-moves driveway will provide access from Kaitting Trail. Additional unsignalized right-in-right-out (RIRO) driveways will provide access from Sixth Line and Dundas Street West.

In the ultimate conditions, a total of 792 parking spaces will be provided underground. The Phase 1 retail block will have 47 surface parking spaces which will ultimately be removed as part of the construction of Phase 4. The Phase 2 buildings will share a connected parking garage containing 321 residential parking spaces and 108 visitor parking spaces (shared with Phase 3). Phase 3 will also have a parking garage with 157 residential parking spaces. The ultimate condition of Phase 4 will have an underground parking garage with 161 residential parking spaces and 45 parking spaces to be shared between visitors and retail. A full review of the applicable vehicle parking requirements and proposed supply is provided in **Section 6**.

Bike storage rooms will be provided to ensure secure, convenient access to active travel modes for residents. One loading space will be provided per phase, to be shared among the buildings in each phase of the development.

Pick-up/drop-off areas will also be provided in front of each apartment building.

1.2 SCOPE OF WORK

This TIS has been prepared in accordance with the following guidelines:

- ▶ Halton Region's Transportation Impact Study Guidelines (2015);
- ▶ Halton Region's Access Management Guidelines (2015); and
- ▶ Halton Region Access By-law 32-17.

The scope of work has been determined through consultation with Town of Oakville and Region of Halton staff. The TIS terms of reference and response from City and Region staff are provided in **Appendix A**. Post-submission correspondence related to the updated analysis parameters are also provided in the same appendix.

2 EXISTING TRAFFIC CONDITIONS

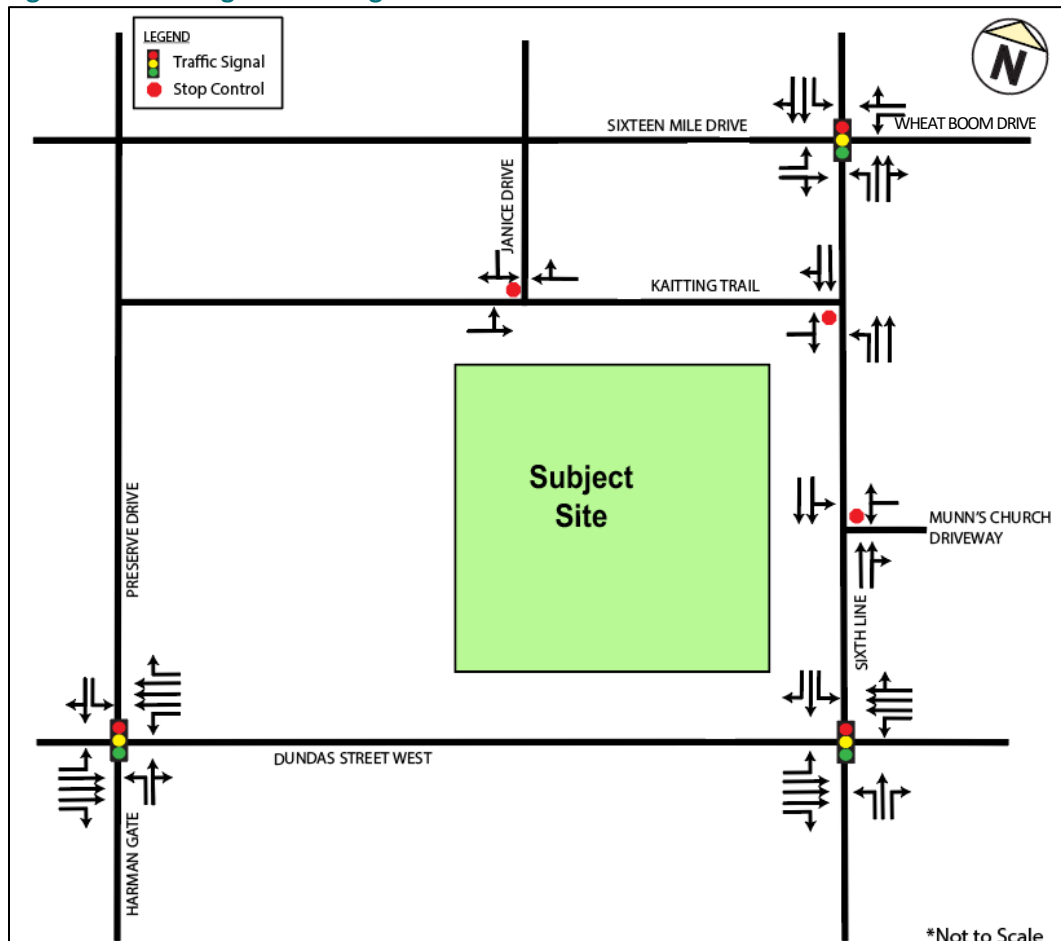
This section summarizes the existing transportation conditions in the study area, including the road, transit, cycling, and pedestrian networks. The study area was determined by assessing the size of the proposed development and its anticipated transportation impact, and through discussions with Town of Oakville and Region of Halton staff. A supporting terms of reference is provided in **Appendix A**. The study area includes the following existing intersections:

- ▶ Dundas Street West and Preserve Drive / Harman Gate (Signalized);
- ▶ Dundas Street West and Sixth Line (Signalized);
- ▶ Sixth Line and Munn’s United Church Site Access (Unsignalized);
- ▶ Sixth Line and Kaitting Trail (Unsignalized);
- ▶ Sixth Line and Sixteen Mile Drive / Wheat Boom Drive (Signalized); and
- ▶ Kaitting Trail and Janice Drive (Unsignalized).

2.1 ROAD NETWORK

The following section provides a description and classification of roadways within the study area. **Figure 2-1** illustrates the existing lane configuration and traffic control at intersections.

Figure 2-1: Existing Lane Configuration and Traffic Control



Dundas Street West is an east-west major arterial road within the study area. Dundas Street West operates with a six-lane cross section (i.e. three lanes per direction). The street has a posted speed limit of 70 km/h. There are multi-use trails on both sides of Dundas Street West for pedestrians and cyclists.

Sixth Line is a north-south minor arterial road within the study area. Sixth Line operates with a four-lane cross section (i.e. two lanes per direction) with sidewalks and bike lanes on both sides. The street has a posted speed limit of 60 km/h. Parking is not permitted on Sixth Line within the vicinity of the subject site.

Kaitting Trail is an east-west minor collector road within the study area. Kaitting Trail operates with a two-lane cross section (i.e. one lane per direction) with sidewalks on both sides. The street has a posted speed limit of 40 km/h. Parking is permitted on the south side of Kaitting Trail to the west of Isaac Avenue.

Sixteen Mile Drive is an east-west minor collector road within the study area. Sixteen Mile Drive operates with a four-lane cross section (i.e. two lanes per direction). The posted speed limit is 40 km/h. Parking is permitted on the north side only to the west of Colton Way and on the south side only to the east of Colton Way. Sidewalks are provided on both sides of the street. The street is also a marked bicycle route.

Wheat Boom Drive is an east-west minor collector road within the study area. Wheat Boom Drive operates with a two-lane cross section (i.e. one lane per direction) with sidewalks on both sides. The street is also a marked bicycle route. The street has a posted speed limit of 40 km/h.

Harman Gate is a north-south major collector road within the study area. Harman Gate operates with a two-lane cross section (i.e. one lane per direction). The street has a posted speed limit of 40 km/h. Harman Gate has sidewalks and bike lanes on both sides of the street. Limited on-street parking is permitted in marked locations.

Preserve Drive is a north-south minor collector road within the study area. Preserve Drive operates with a two-lane cross section (i.e. one lane per direction) with sidewalks on both sides. The street has a posted speed limit of 40 km/h. Parking is permitted on both sides of Preserve Drive.

Janice Drive is a north-south local road within the study area. Janice Drive operates with a two-lane cross section (i.e. one lane per direction) with sidewalks on both sides. The street has a posted speed limit of 40 km/h. Parking is permitted on the east side of the street.

The Town of Oakville permits on-street parking on all Town streets for a maximum of 3 hours unless otherwise specified. For streets south of Dundas Street, parking is not permitted between 2am and 6am from November 15 to April 15, whereas for streets north of Dundas Street, parking is not permitted between 2am and 6am throughout the year.

2.2 TRANSIT NETWORK

The Oakville Official Plan designates Dundas Street as a Regional Transit Priority Corridor. Currently, Oakville Transit operates local bus service along Dundas Street, however in the long-term Metrolinx has proposed the Dundas Bus Rapid Transit (BRT) line which will operate along Dundas Street between Hamilton and Toronto (see **Section 3.1.2**).

The Official Plan has also identified a regional transit node around Dundas Street West and Trafalgar Road, approximately 750m east of the subject site.

The subject site is served by Oakville Transit which provides local bus service throughout the Town. There are a number of bus options available in the study area which connect the subject site to a variety of destinations including the Uptown Core, hospitals and colleges.

The transit routes currently servicing the immediate and surrounding area are illustrated in **Figure 2-2**. The site receives a TransitScore of 48/100, or “Some Transit”, when entered into the WalkScore™ application, indicating that there are a few nearby public transit options that can accommodate travel to and from the subject site.

Figure 2-2: Existing Transit Network



Source: Oakville Transit, accessed July 2025

Oakville Transit Route 5 Dundas is a bus route operating along Dundas Street and Trafalgar Road between Dundas & Highway 407 Park & Ride in the west and Oakville GO in the east. The route has stops at key destinations throughout the Town, including Oakville Trafalgar Memorial Hospital, the Uptown Core, Sheridan College (Trafalgar Road Campus) and Oakville Place. Route 5 operates with a headway of 10-20 minutes during weekday peak periods, and every 30 minutes off-peak and on weekends.

Access Locations: Oakville Transit Route 5 is accessible in the study area at the Dundas Street West and Sixth Line intersection, adjacent to the subject site.

Oakville Transit Route 37 Glenorchy is a bus route operating between Eighth Line in the north and Neyagawa Boulevard in the south. The 37 route travels primarily through neighbourhoods on local roads. During weekday peak periods, this route operates with 25-minute headways and every 40 minutes off-peak and on weekends, with no service between 11:20am and 2:00pm. Ride On-Demand is available.

Access Locations: Oakville Transit Route 37 is accessible in the study area at the Sixth Line and Wheat Boom Drive/Sixteen Mile Drive intersection, which is 400m or an 5-minute walk from the subject site.

Oakville Transit Route 19 River Oaks is a bus route operating between the Uptown Core (Trafalgar Rd / Dundas St W) in the north and Oakville GO (Trafalgar Rd / Spears Rd) in the south. The 19 route travels primarily through neighbourhoods on local roads. On weekdays, this route operates with 30-minute headways, and with 60-minute headways on weekdays after 8pm and on weekends.

Access Locations: Oakville Transit Route 19 is accessible in the study area at the Sixth Line and River Glen Boulevard intersection, which is 600m or an 8-minute walk from the subject site.

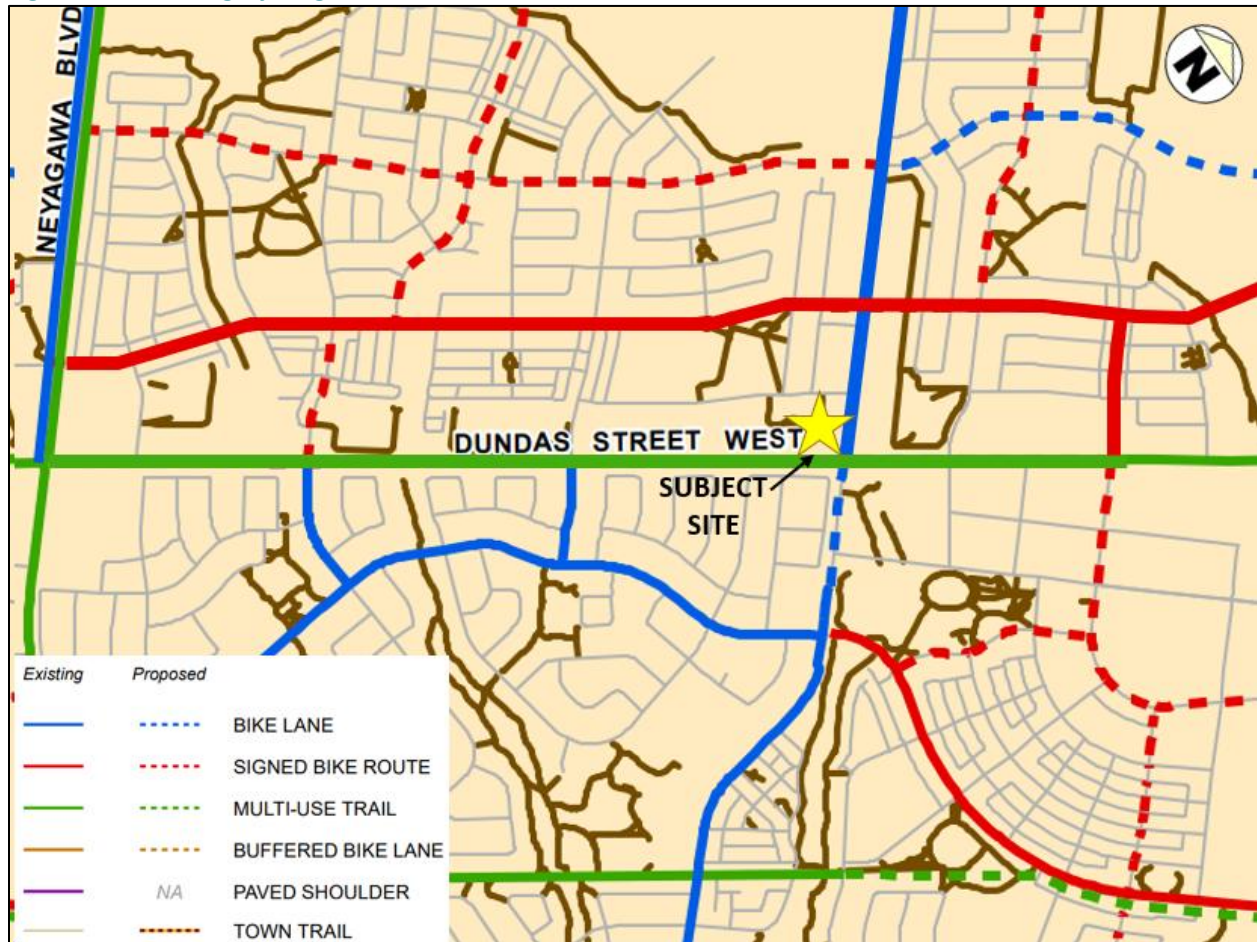
Oakville Transit Route 190 River Oaks Express is a limited-service bus route operating between the Uptown Core (Trafalgar Rd / Glenashton Dr) in the north and Oakville GO (Trafalgar Rd / Spears Rd) in the south. The service operates on weekdays only, with three trips in the morning peak period and three trips in the evening peak period, all with a headway of 30 minutes.

Access Locations: Oakville Transit Route 190 is accessible in the study area at the Sixth Line and River Glen Boulevard intersection, which is 600m or an 8-minute walk from the subject site.

2.3 CYCLING NETWORK

The subject site is located near several cycling facilities including bike lanes on Sixth Line and Harman Gate, multi-use trails on Dundas Street West, and signed bike routes on Sixteen Mile Drive and Wheat Boom Drive. In addition, there are several trails and parks within biking distance. The site receives a BikeScore of 65/100 - “Bikeable”, when entered into the WalkScore™ application. The existing cycling network surrounding the subject site is illustrated in **Figure 2-3**.

Figure 2-3: Existing Cycling Network



Source: Town of Oakville Official Plan, accessed August 2021

2.4 PEDESTRIAN NETWORK

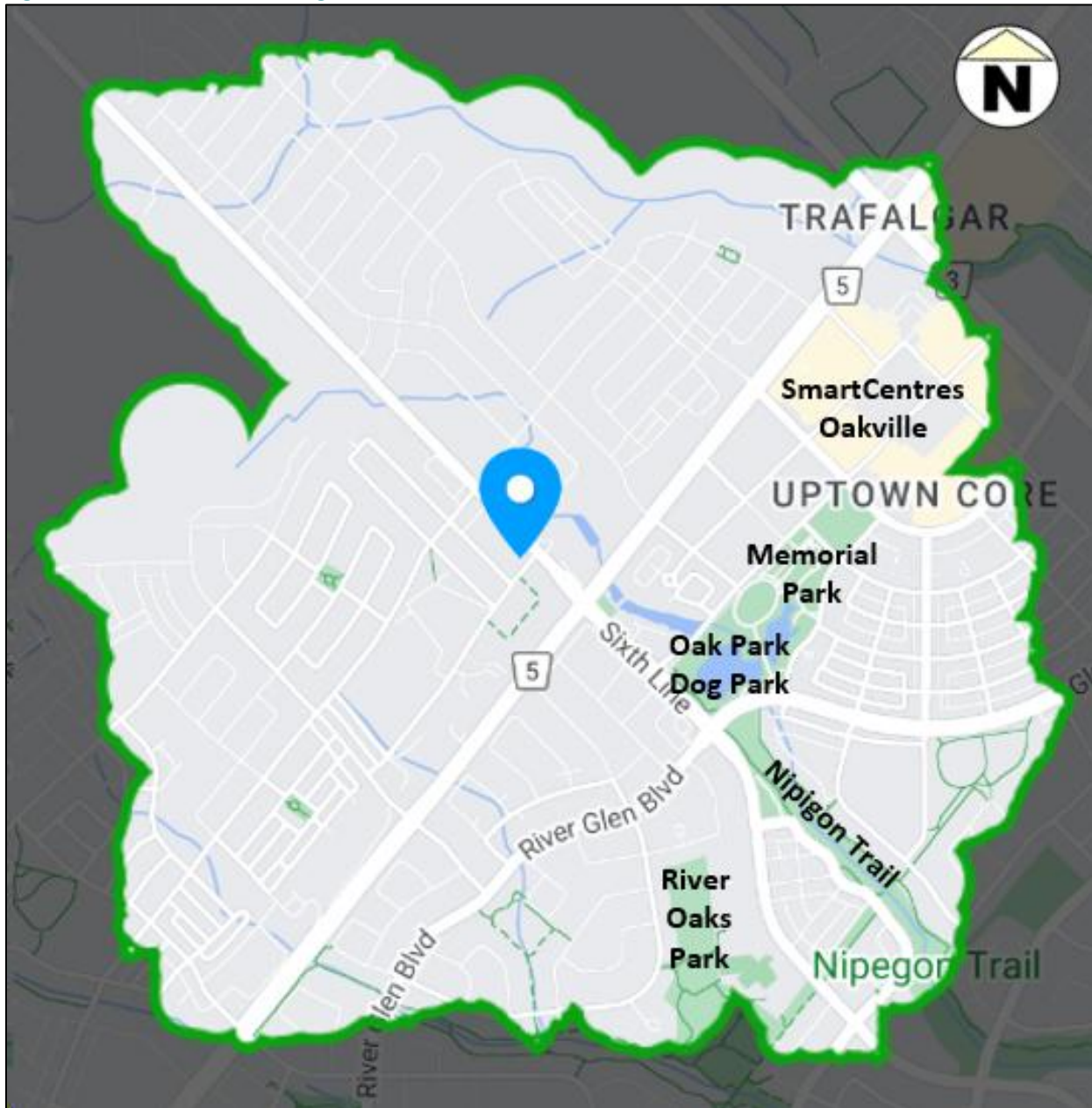
When entering the site address into the WalkScore™ website, the subject site receives a WalkScore of 12/100, or “Car-Dependent”. However, the study area is very walkable when it comes to recreational

walking, with continuous sidewalks available on both sides of each street in the study area, and several walking trails available nearby.

Within a 5-minute walk from the site, there is an elementary school to the northwest, several parks nearby, and a church and daycare immediately east of the site. Within a 10-minute walk, a pedestrian can reach a small commercial plaza, Memorial Park and the Oak Park Dog Park.

As shown in **Figure 2-4**, a 20-minute walk from the subject site could permit an individual to reach the Oakville SmartCentres plaza which offers a variety of shops and services.

Figure 2-4: 20-Minute Walking Distance from Site



Source: WalkScore™, accessed December 2024

2.5 TRAFFIC DATA COLLECTION

Turning movement counts (TMCs) were used as the source of traffic data in the intersection capacity analysis. A summary of the TMC data collected is outlined in **Table 2-1**. Counts were conducted by LEA for all study area intersections in November 2023 after completion of the Sixth Line widening project. Signal timing plans were provided by the Town of Oakville and confirmed through on-site observation. Supporting details are provided in **Appendix B**.

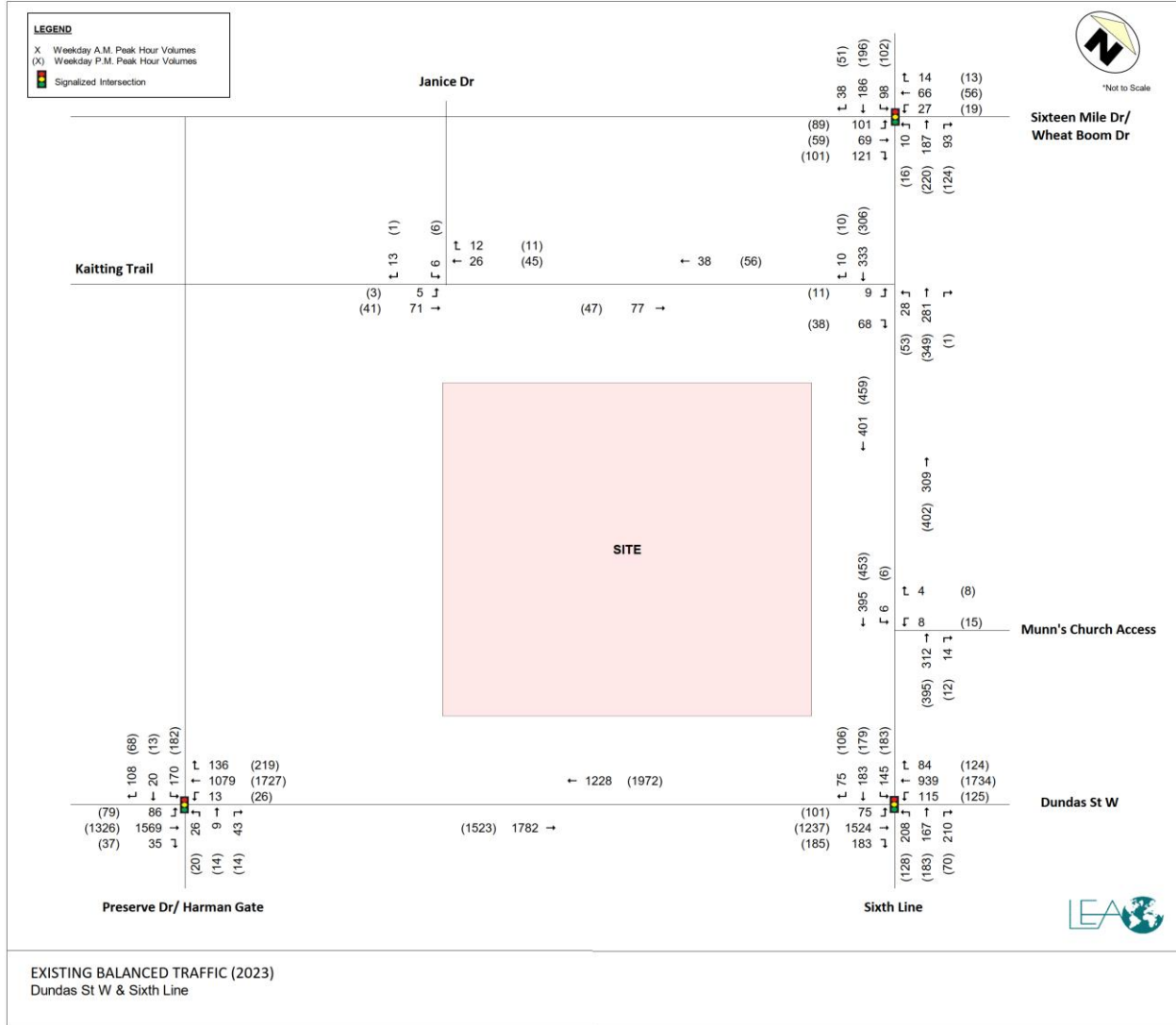
Table 2-1: Data Collection Summary

Intersection	TMC Date	Source
Preserve Dr & Dundas St W	Wednesday, November 22, 2023	LEA Consulting
Dundas St W & Sixth Line		
Munn’s Church Access & Sixth Line		
Kaitting Trail & Sixth Line		
Sixteen Mile Dr & Sixth Line		
Janice Dr & Kaitting Trail		

2.6 EXISTING TRAFFIC VOLUMES

The existing traffic volumes in the study area during the weekday AM and PM peak hours are illustrated in **Figure 2-5**. No volume balancing was undertaken as all traffic data was collected on the same survey day.

Figure 2-5: Existing (2023) Weekday Peak Hour Traffic Volumes



3 FUTURE BACKGROUND TRAFFIC CONDITIONS

For the analysis of future background traffic conditions, this study considers a five-year horizon to the year 2028, representing the interim site condition; a 10-year horizon to the year 2033, representing the ultimate site condition; and a 15-year horizon to the year 2038, representing 5-years post build-out.

The following sections discuss planned changes to the transportation network, background developments and corridor growth assumptions.

3.1 TRANSPORTATION NETWORK IMPROVEMENTS

3.1.1 Road Network

No future road network improvements have been identified in the study area. This assumption reflects the inclusion of the Sixth Line widening to four-lanes under existing conditions, as road works had been completed at the time of traffic data collection.

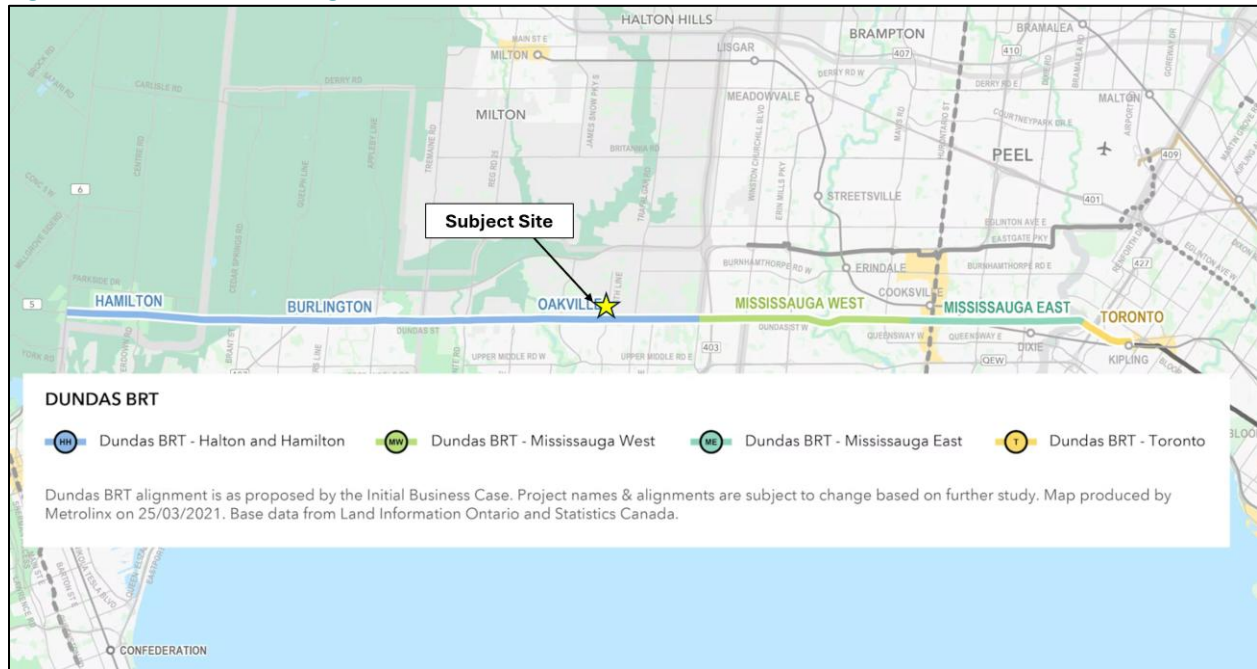
The Town has advised that the existing median gap on Sixth Line near the Munn's Church driveway will be closed in the future as part of the planned signalization of Sixth Line & Kaitting Trail as part of the development application at 3043 Sixth Line. It was therefore assumed that all left turn movements will be prohibited and observed existing left turn volumes at the Munn's Church driveway access were removed under future background conditions.

3.1.2 Transit Network

Dundas Street is identified as a Transit Priority Corridor in the Halton Region Mobility Management Strategy (2017) which indicates the planned provision of transit-supportive facilities such as HOV/BRT lanes, transit signal priority, queue jump facilities, and transit stop improvements. The corridor has been identified for future implementation of Bus Rapid Transit (BRT), as discussed below.

The Dundas BRT project is a planned 48km rapid transit corridor that will run from Highway 6 in the City of Hamilton to the Kipling Transit Hub in the City of Toronto, largely via Dundas Street. The route will initially operate with segments of dedicated bus lanes and mixed traffic. The Dundas Street BRT will operate adjacent to the subject site along Dundas Street, as indicated in **Figure 3-1**. The location of future BRT stations has not been identified within the Oakville section of this project.

Figure 3-1: Dundas BRT Alignment



Source: Metrolinx, accessed July 2025

Metrolinx has completed an Initial Business Case and is currently advancing the planning of this project; no firm construction timeline has been established and the analysis assumes that the Dundas BRT will not be implemented within the planning horizons of this study.

3.1.3 Active Network

As per the Town of Oakville 2017 Active Transportation Master Plan (ATMP), a future southern extension of the cycling facilities on Sixth Line (north of Dundas Street) is planned to connect with the existing bike lanes that commence at River Glen Boulevard / Glenashton Drive. **Figure 3-2** illustrates the recommended cycling network.

Note: recommended facilities on Dundas Street and Sixth Line (north of Dundas Street) have subsequently been constructed.

Figure 3-2: Town ATMP Proposed Cycling Facilities



Source: Town of Oakville, 2017

3.2 CORRIDOR GROWTH

Historical TMC data was used to calculate growth rates along Dundas Street West and Sixth Line. No growth was identified during the AM peak period. During the PM peak period, the following growth rates were identified:

- ▶ Sixth Line – northbound: No growth
- ▶ Sixth Line – southbound: 2% annual growth
- ▶ Dundas Street West – eastbound: 1% annual growth
- ▶ Dundas Street West – westbound: No growth

Future traffic growth on Sixth Line is expected to stabilize over time as the surrounding North Oakville neighbourhood is constructed and occupied. As a result, a reduced growth rate of 1% per year was applied between the years 2033 to 2038.

Supporting calculations are provided in **Appendix C**.

3.3 BACKGROUND DEVELOPMENTS

Three (3) developments located within or near the study area were considered under future background conditions. The site statistics of the background developments are summarized in **Table 3-1**. Study extracts are provided in **Appendix C**.

Table 3-1: Background Developments

#	Location	Proposed Development	Source of Traffic Volumes
1	3270 Sixth Line	317 residential units; 140m ² commercial	Technical Memorandum dated November 18, 2021 (Table 3) CGH Transportation
2	Fernbrook Homes (Seven Oaks)	Nine single family detached housing, and 19 townhomes	Traffic Brief dated February 25, 2022 (Table 1) AECOM
3	3000 Sixth Line	150 residential units	(Trip generated)

The intersection of Sixth Line and Kaitting Trail will include signalization and the addition of a 4th leg for the background development at 3000 Sixth Line.

3.4 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background traffic volumes were derived by combining anticipated corridor growth and background development traffic and assigning these volumes onto the future road network. Future background traffic volumes in the study area during the weekday AM and PM peak hours are illustrated in **Figure 3-3**, **Figure 3-4** and **Figure 3-5**.

Figure 3-3: Future Background (2028) Traffic Volumes

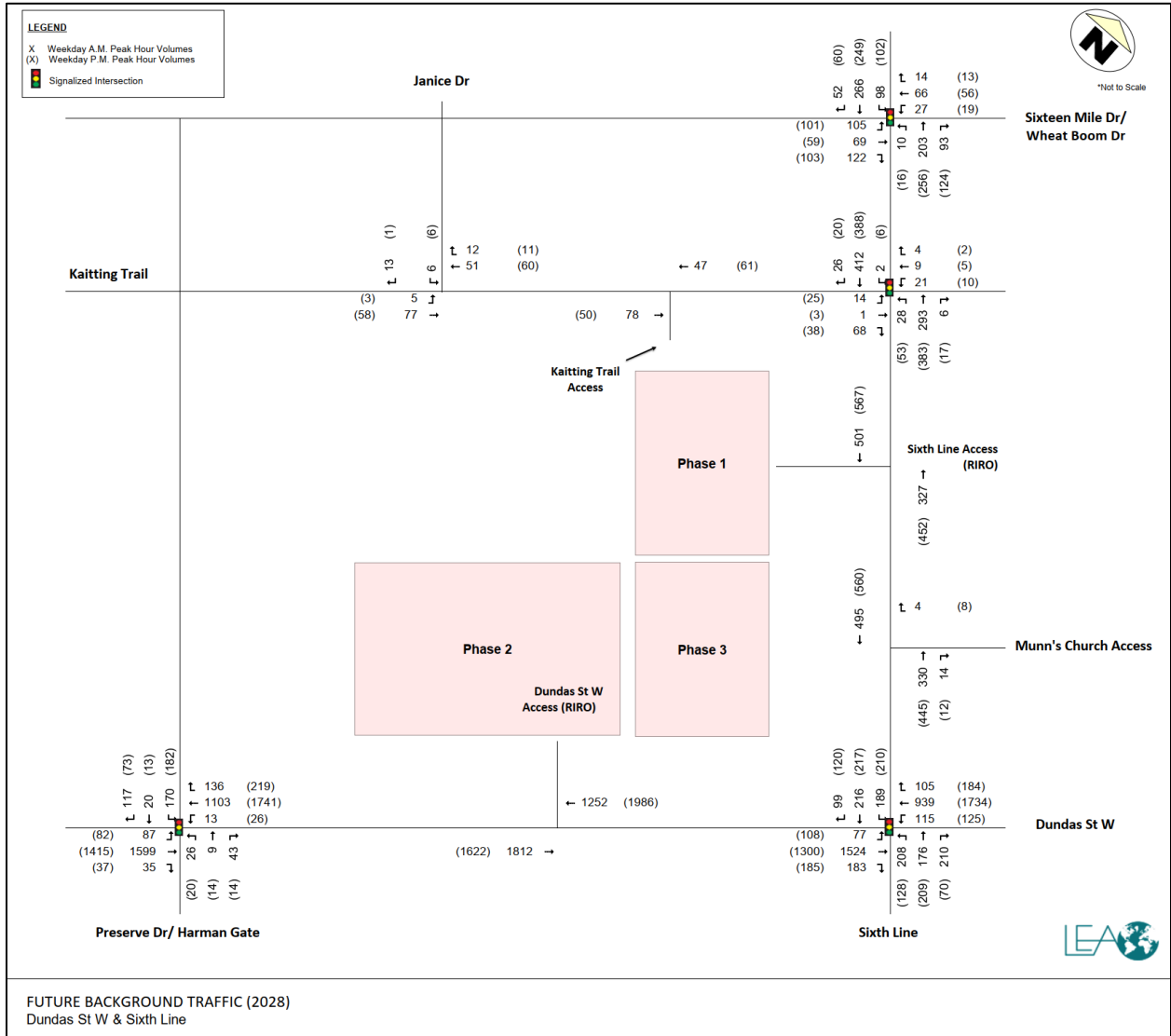


Figure 3-4: Future Background (2033) Traffic Volumes

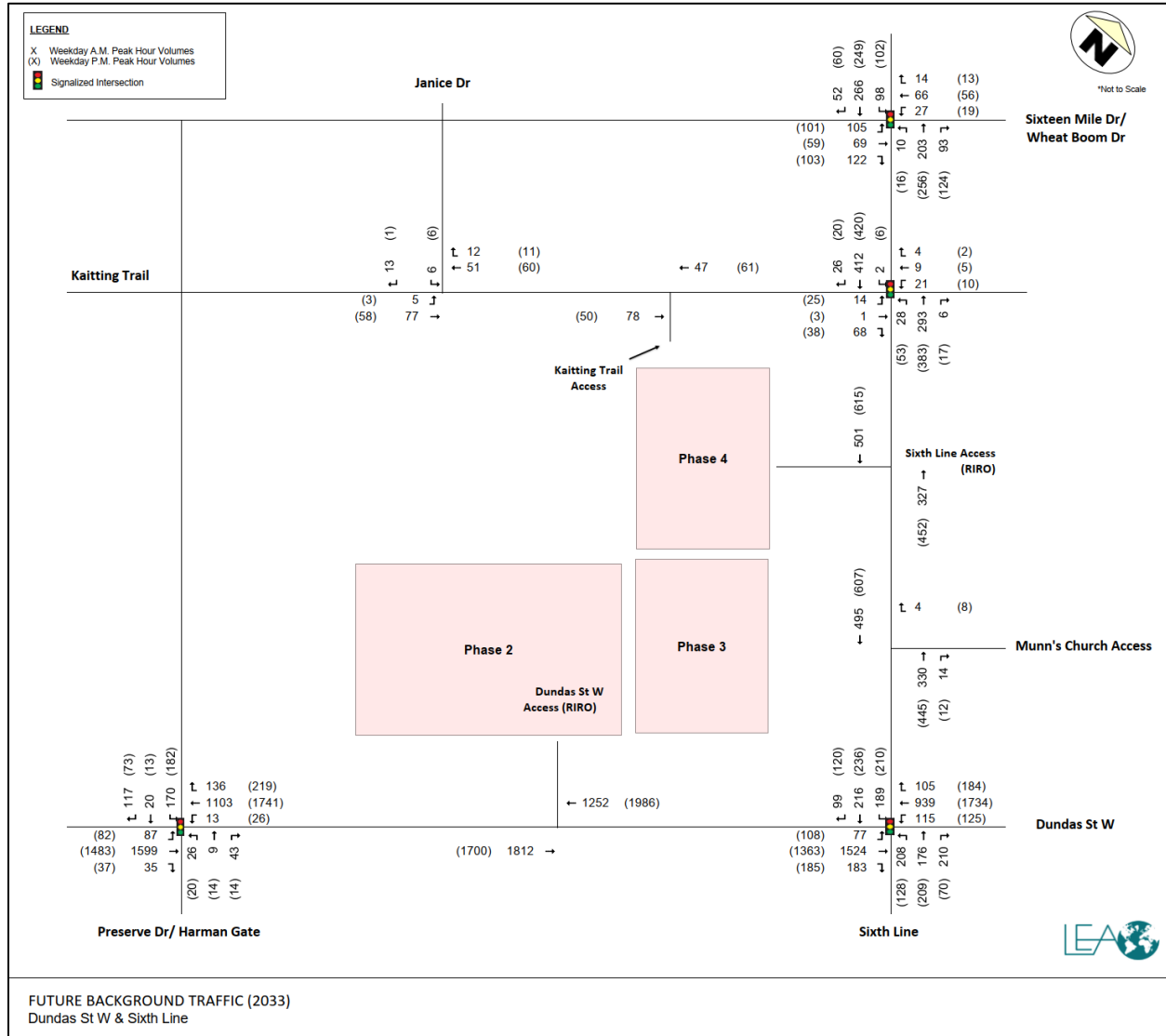
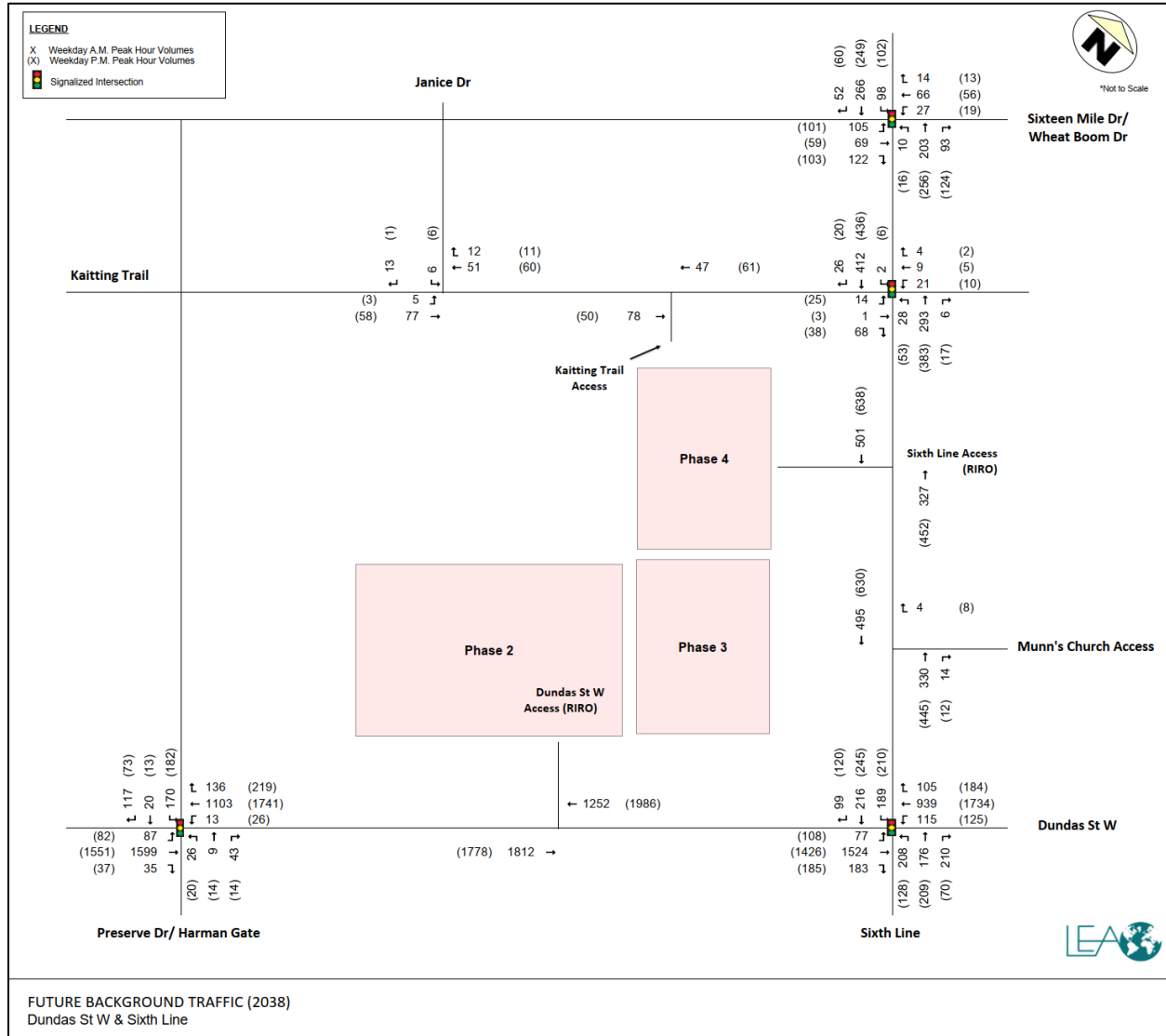


Figure 3-5: Future Background (2038) Traffic Volumes



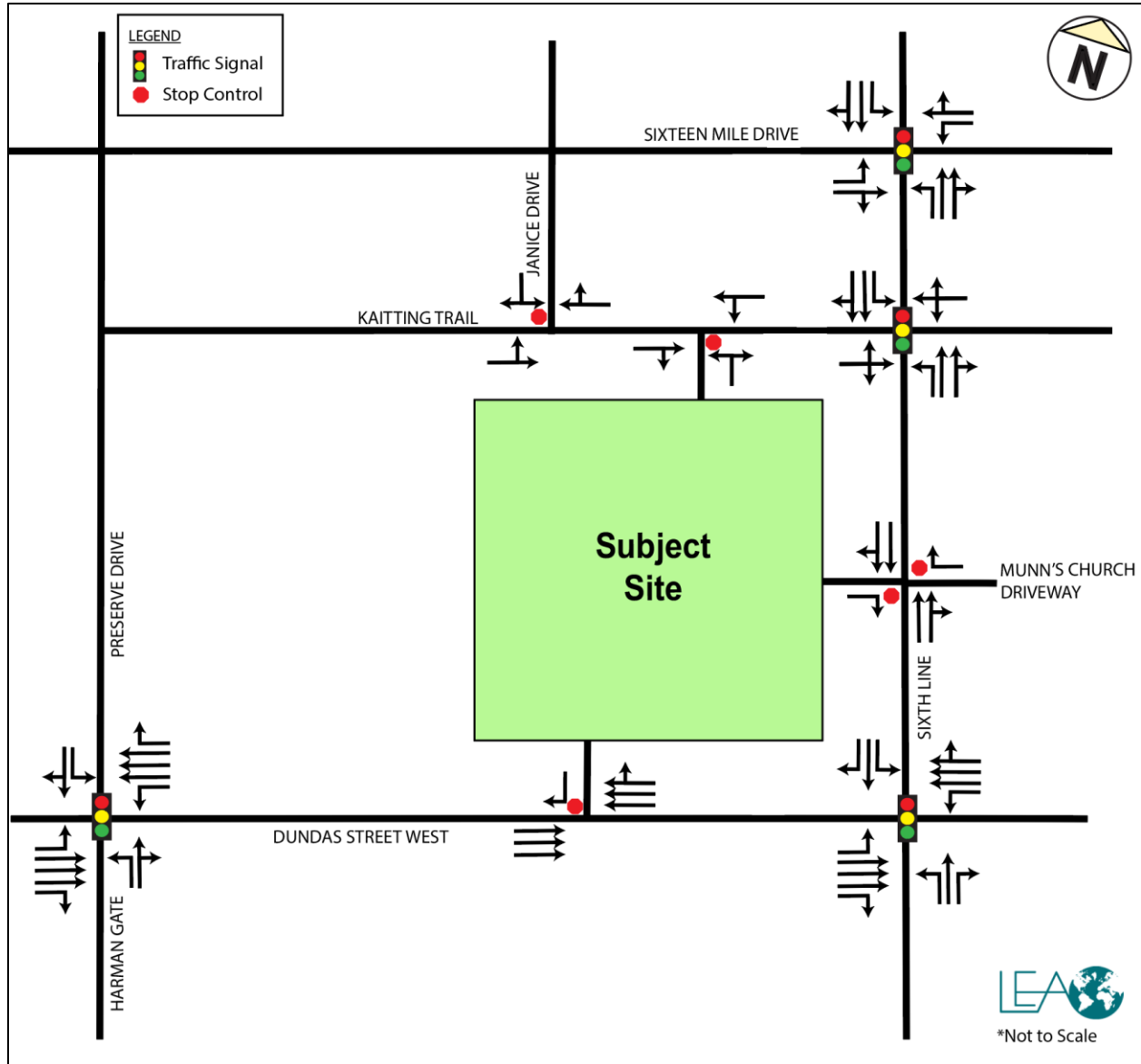
4 SITE GENERATED TRAFFIC & FUTURE TOTAL TRAFFIC

The sections below discuss in detail the calculation, distribution and assignment of site-generated trips.

4.1 FUTURE ROAD NETWORK

The lane configuration of the future road network, with the addition of the site accesses, is shown in **Figure 4-1**.

Figure 4-1: Future Lane Configuration and Traffic Control



4.2 MODAL SPLIT

The existing study area mode split was determined based on the Transportation Tomorrow Survey (TTS) 2016, as summarized in **Table 4-1**. Supporting calculations are provided in **Appendix D**.

Table 4-1: Study Area Modal Split

Modes	Modal Split	
	Residential	Retail
Auto Driver	86%	76%
Auto Passenger	7%	19%
Transit	6%	2%
Walking	1%	2%
Cycling	0%	1%
TOTAL	100%	100%

4.3 TRIP GENERATION

Site trip generation was estimated based on the trip rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition. Site interaction between the retail and residential uses was calculated based on the ITE Trip Generation Handbook, 3rd Edition. A pass-by reduction was applied to the retail component based on the rates provided in the ITE Handbook. The predicted vehicle trip generation of each development phase is provided in the tables below.

Table 4-2: Site Vehicle Trip Generation (Phase 1+2)

PHASE	Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
PHASE 2 Building A+B	Residential (LUC 221 Multifamily Housing Mid-rise)	ITE Person Trip Rate (/Unit)	0.11	0.37	0.48	0.31	0.22	0.53
		ITE Person Trips	36	121	157	103	71	174
		Site Interaction	-1	-1	-2	-13	-5	-18
		Total External Trips	35	120	155	90	66	156
		External Auto Trips	30	103	133	78	57	135
PHASE 2 TH Block 1+2	Residential (LUC 220 Multifamily Housing Low-rise)	ITE Person Trip Rate (/Unit)	0.08	0.30	0.38	0.34	0.20	0.54
		ITE Person Trips	1	5	6	6	3	9
		Site Interaction	0	0	0	-1	0	-1
		Total External Trips	1	5	6	5	3	8
		External Auto Trips	1	4	5	4	3	7
PHASE 1 Retail/ Shoppers	Retail (LUC 880 Pharmacy/ Drugstore no DT)	ITE Auto Trip Rate (/1000 ft ²)	1.91	1.03	2.94	4.17	4.34	8.51
		ITE Auto Trips	29	15	44	63	65	128
		Adjusted Person Trips	36	18	54	80	81	161
		Site Interaction	-2	-1	-3	-8	-21	-29
		Total External Trips	34	17	51	72	60	132
		External Auto Trips	26	13	39	55	46	101
		Pass-By (Commercial 25% AM 53% PM)	7	3	10	29	24	53
		Primary External Auto Trips	19	10	29	26	22	48
Total Phase 1+2 Auto Trips			50	117	167	108	82	190

The Phase 1 and Phase 2 development is expected to generate 167 two-way vehicle trips (50 inbound, 117 outbound) during the weekday AM peak hour and 190 two-way vehicle trips (108 inbound, 82 outbound) during the weekday PM peak hour.

Table 4-3: Site Vehicle Trip Generation (Phase 3)

PHASE	Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
PHASE 3 Building C	Residential (LUC 221 Multifamily Housing Mid-rise)	ITE Person Trip Rate (/Unit)	0.11	0.37	0.48	0.31	0.22	0.53
		Adjusted Person Trips	22	73	95	61	43	104
		Site Interaction	-1	-1	-2	-5	-2	-7
		Total External Trips	21	72	93	56	41	97
		External Auto Trips	18	62	80	48	35	83
Interim Phase Total Auto Trips (Phase 1-3)			69	179	248	154	116	270

The Phase 3 development is expected to generate 80 two-way vehicle trips (18 inbound, 62 outbound) during the weekday AM peak hour and 83 two-way vehicle trips (48 inbound, 35 outbound) during the weekday PM peak hour.

The interim condition (combining Phase 1-3) is expected to generate 248 two-way vehicle trips (69 inbound, 179 outbound) during the weekday AM peak hour and 270 two-way vehicle trips (154 inbound, 116 outbound) during the weekday PM peak hour.

Table 4-4: Site Vehicle Trip Generation (Phase 4)

PHASE	Land Use	Description	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
PHASE 4 Building D	Residential (LUC 221 Multifamily Housing Mid-rise)	ITE Person Trip Rate (/Unit)	0.11	0.37	0.48	0.31	0.22	0.53
		Adjusted Person Trips	18	59	77	50	35	85
		Site Interaction	0	0	0	0	0	0
		Total External Trips	18	59	77	50	35	85
		External Auto Trips	16	51	67	43	30	73
PHASE 4 TH Block 3+4	Residential (LUC 220 Multifamily Housing Low-rise)	ITE Person Trip Rate (/Unit)	0.08	0.30	0.38	0.34	0.20	0.54
		Adjusted Person Trips	1	3	4	4	2	6
		Site Interaction	0	0	0	0	0	0
		Total External Trips	1	3	4	4	2	6
		External Auto Trips	1	3	4	3	2	5
Phase 4 Total Auto Trips			17	54	71	46	32	78
Ultimate Phase Total Auto Trips (Phase 4)			67	223	290	174	126	300

The Phase 4 development is expected to generate 71 two-way vehicle trips (17 inbound, 54 outbound) during the weekday AM peak hour and 78 two-way vehicle trips (46 inbound, 32 outbound) during the weekday PM peak hour. It is noted that the at-grade retail proposed in Building D was not included in the trip generation calculation, as the retail is intended to primarily serve the residential uses on-site and walk-in trips from the surrounding neighbourhood, and is not expected to generate a significant volume of vehicle trips.

Note: the Phase 4 development will contain a small retail space that is considered ancillary and is expected to generate a minimal number of vehicle trips during the weekday peak periods.

At full buildout of the ultimate, the proposed development is expected to generate 290 two-way vehicle trips (67 inbound, 223 outbound) during the weekday AM peak hour and 300 two-way vehicle trips (174 inbound, 126 outbound) during the weekday PM peak hour.

4.3.1 Multi-Modal Trip Generation

Site person trips were converted into trips by mode using the local mode split. The following tables illustrate trip generation by travel mode per development phase.

Table 4-5: Site Multi-Modal Trip Generation – Interim Condition (Phase 1-3)

Land Use	Description	Modal Split (Residential)	Modal Split (Retail)	Weekday AM Peak Hour			Weekday PM Peak Hour		
				In	Out	Total	In	Out	Total
All (Residential + Retail)	External Person Trips	100%	100%	92	214	306	220	169	389
	Auto Driver Trips	86%	76%	76	182	258	183	140	323
	Passenger Trip	6%	19%	10	17	27	23	19	42
	Transit Trips	6%	2%	4	12	16	9	7	16
	Pedestrian trips	1%	2%	2	3	5	4	3	7
	Cycling Trips	0%	1%	0	0	0	1	0	1

Table 4-6: Site Multi-Modal Trip Generation – Ultimate Condition (Phase 4)

Land Use	Description	Modal Split	Weekday AM Peak Hour			Weekday PM Peak Hour		
			In	Out	Total	In	Out	Total
(Residential)	External Person Trips	100%	77	259	336	202	146	348
	Auto Driver Trips	86%	67	223	290	174	126	300
	Passenger Trip	6%	5	17	22	13	9	23
	Transit Trips	6%	4	15	19	12	8	20
	Pedestrian trips	1%	1	4	5	3	2	5
	Cycling Trips	0%	0	0	0	0	0	0

The proposed development is expected to generate 336 total person trips (77 inbound, 259 outbound) during the weekday AM peak hour and 348 total person trips (202 inbound, 146 outbound) during the weekday PM peak hour.

4.4 TRIP DISTRIBUTION AND ASSIGNMENT

The trip distribution of site traffic was estimated using TTS 2016 data. Detailed TTS calculations are provided in **Appendix D**.

Table 4-7: Trip Distribution (Residential)

Direction	IN	OUT
Dundas St W (East)	5%	27%
Dundas St W (West)	42%	15%
Sixth Line (North)	14%	20%
Sixth Line (South)	18%	12%
Kaitting Trail	11%	12%
Sixteen Mile Dr	10%	14%

Table 4-8: Trip Distribution (Retail)

Direction	IN	OUT
Dundas St W (East)	11%	23%
Dundas St W (West)	36%	4%
Sixth Line (North)	12%	22%
Sixth Line (South)	16%	14%
Kaitting Trail	6%	15%
Sixteen Mile Dr	19%	21%

Trip assignment was determined based on the trip origin and destination, site accesses, and logical routing. Total external site-generated traffic volumes for the interim and ultimate condition during the weekday AM and PM peak hours are illustrated in **Figure 4-2** and **Figure 4-3** respectively.

Figure 4-2: Site Traffic – Interim Condition

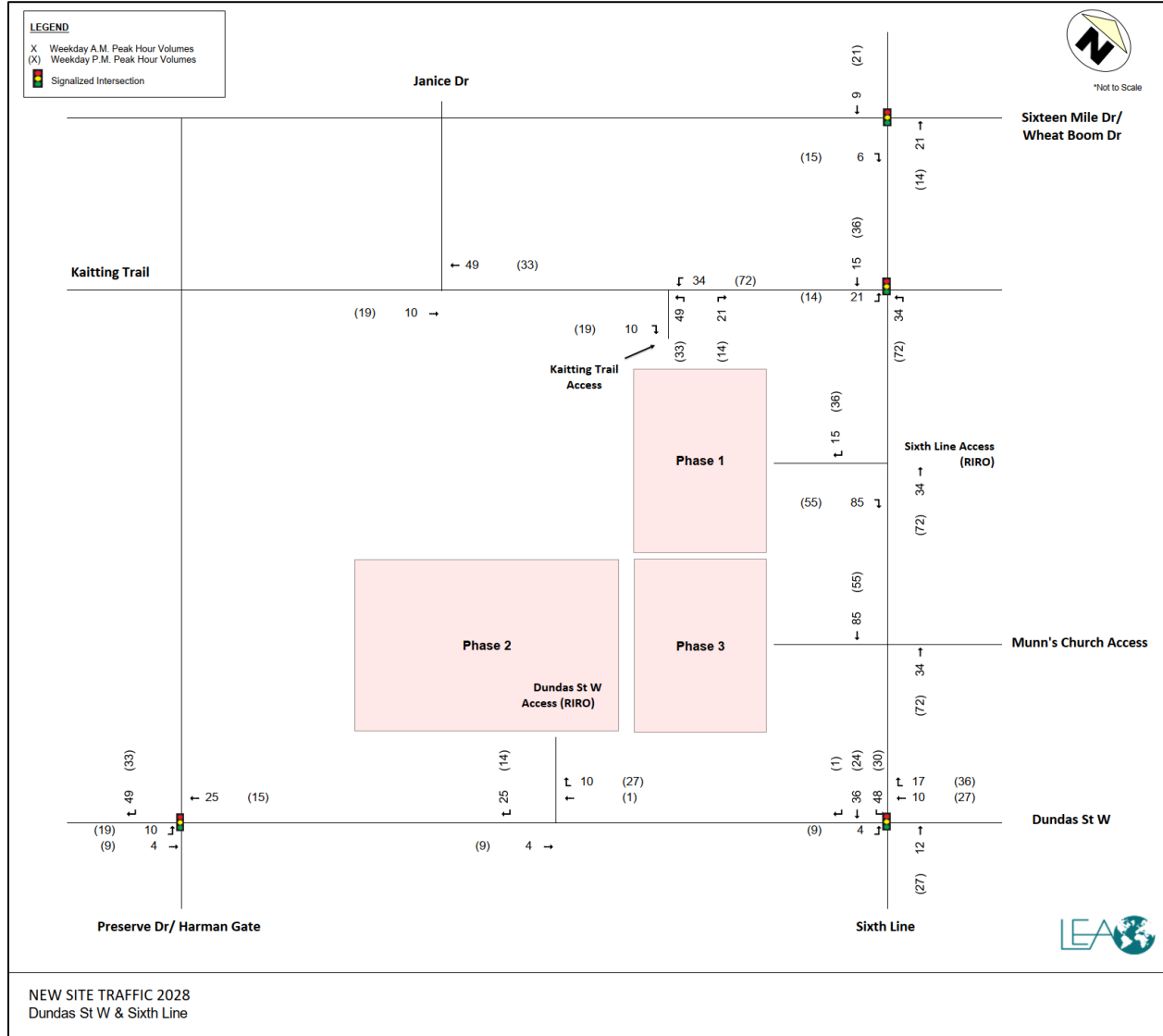
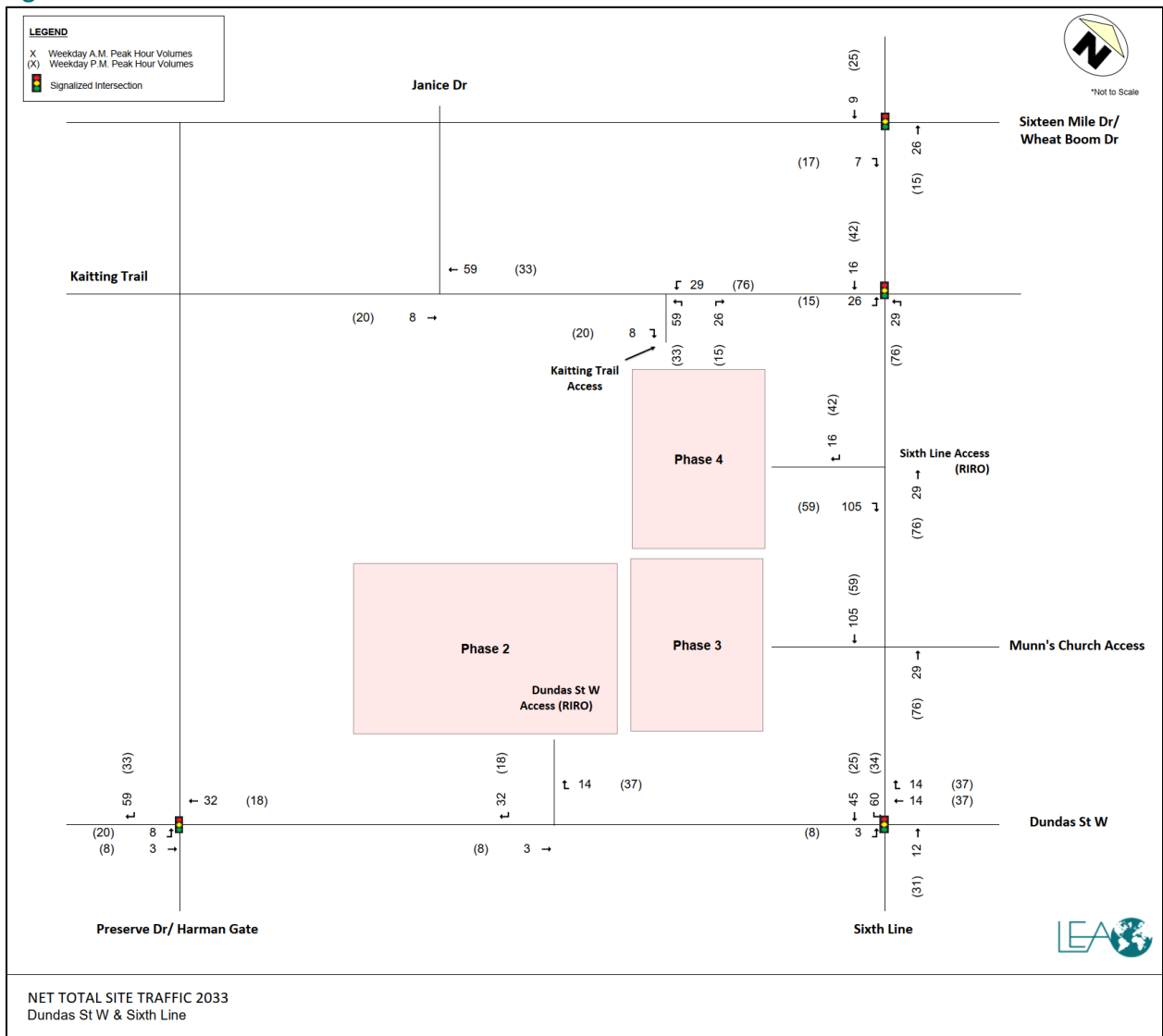


Figure 4-3: Site Traffic – Ultimate Condition



4.5 FUTURE TOTAL TRAFFIC VOLUMES

Future total transportation conditions include the addition of site trips to future background volumes. Future total traffic volumes during the weekday AM and PM peak hours for the three future horizons are illustrated in **Figure 4-4**, **Figure 4-5** and **Figure 4-6**.

Figure 4-4: Future Total (2028) Peak Hour Traffic Volumes

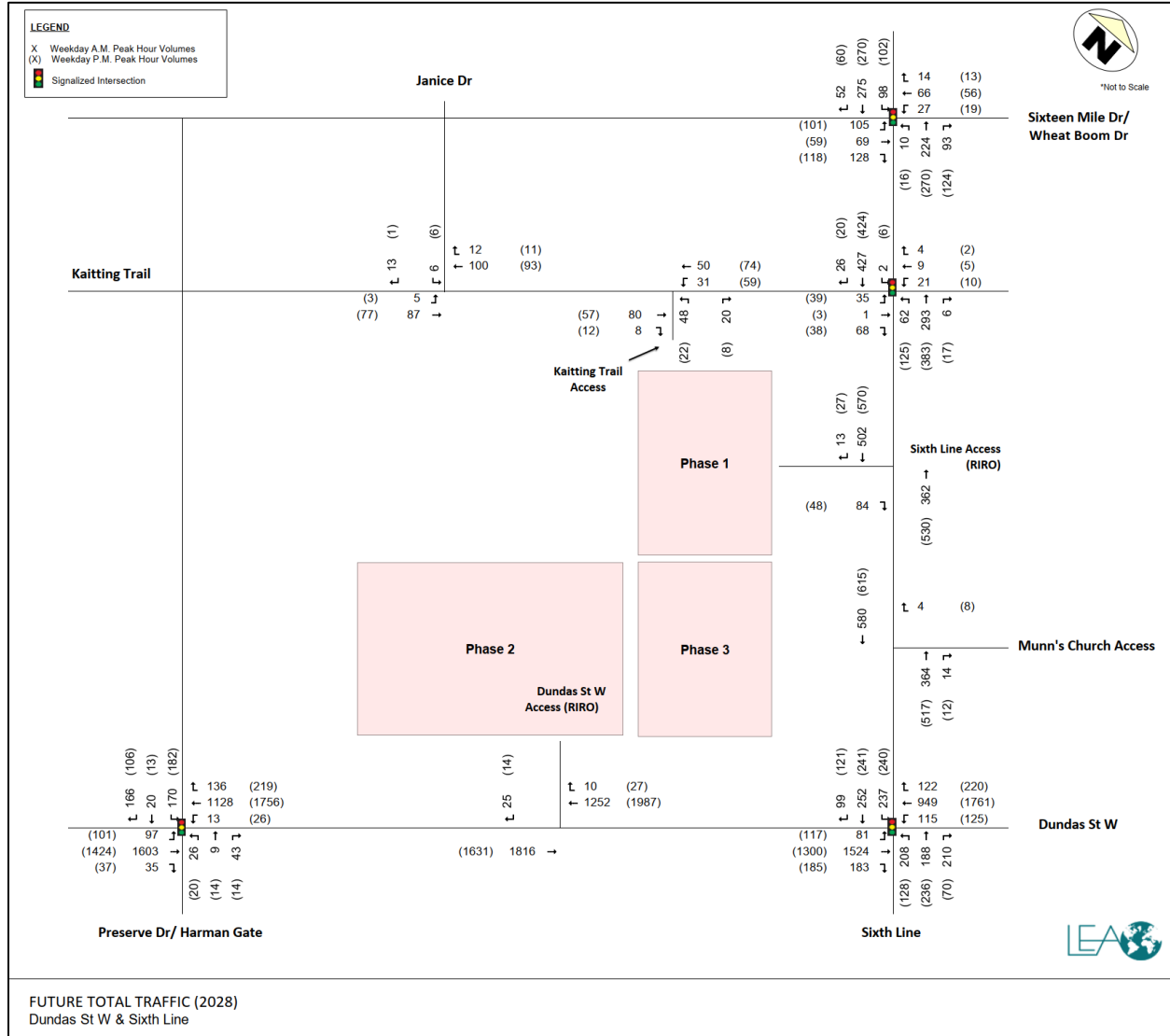


Figure 4-5: Future Total (2033) Peak Hour Traffic Volumes

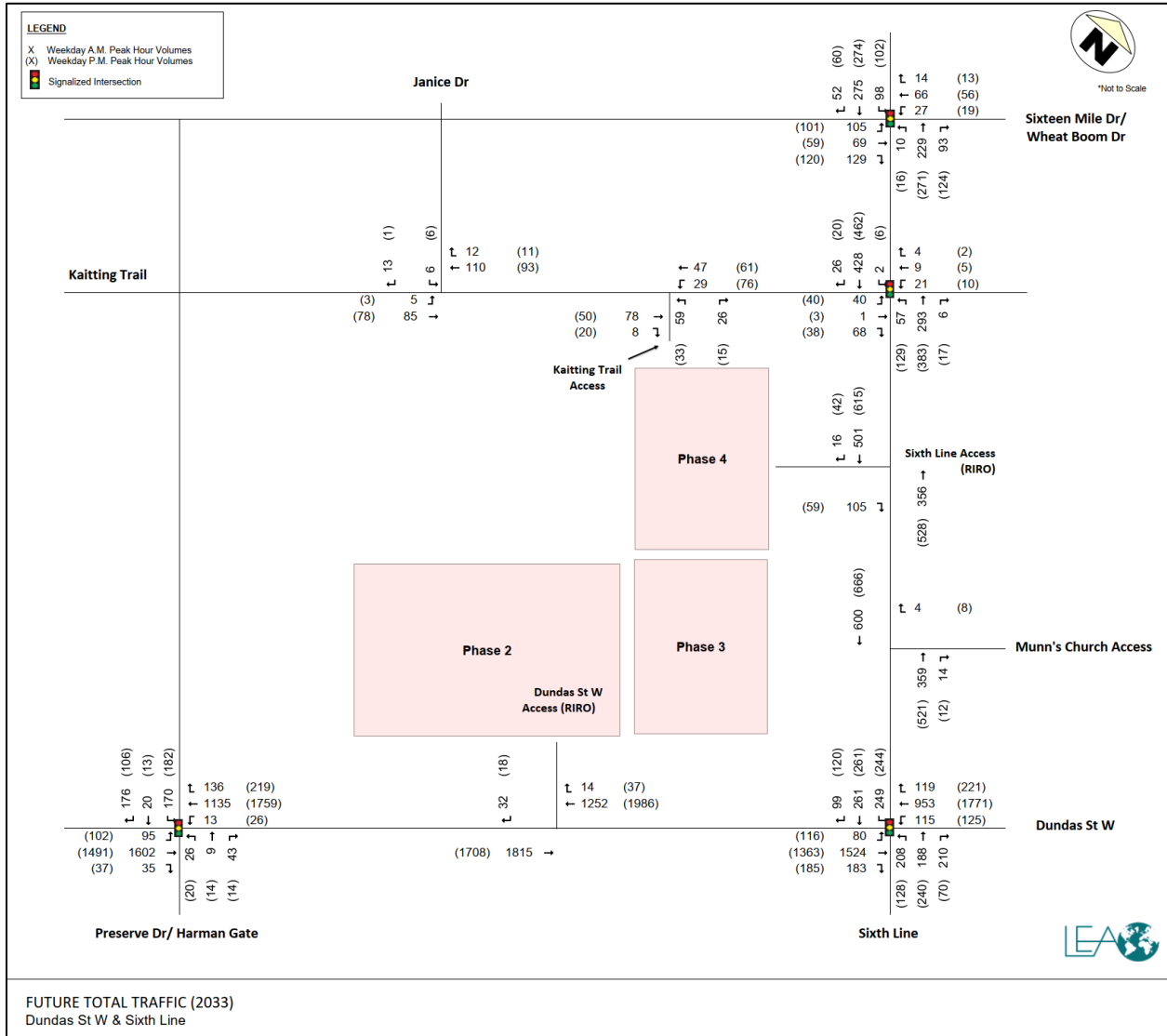
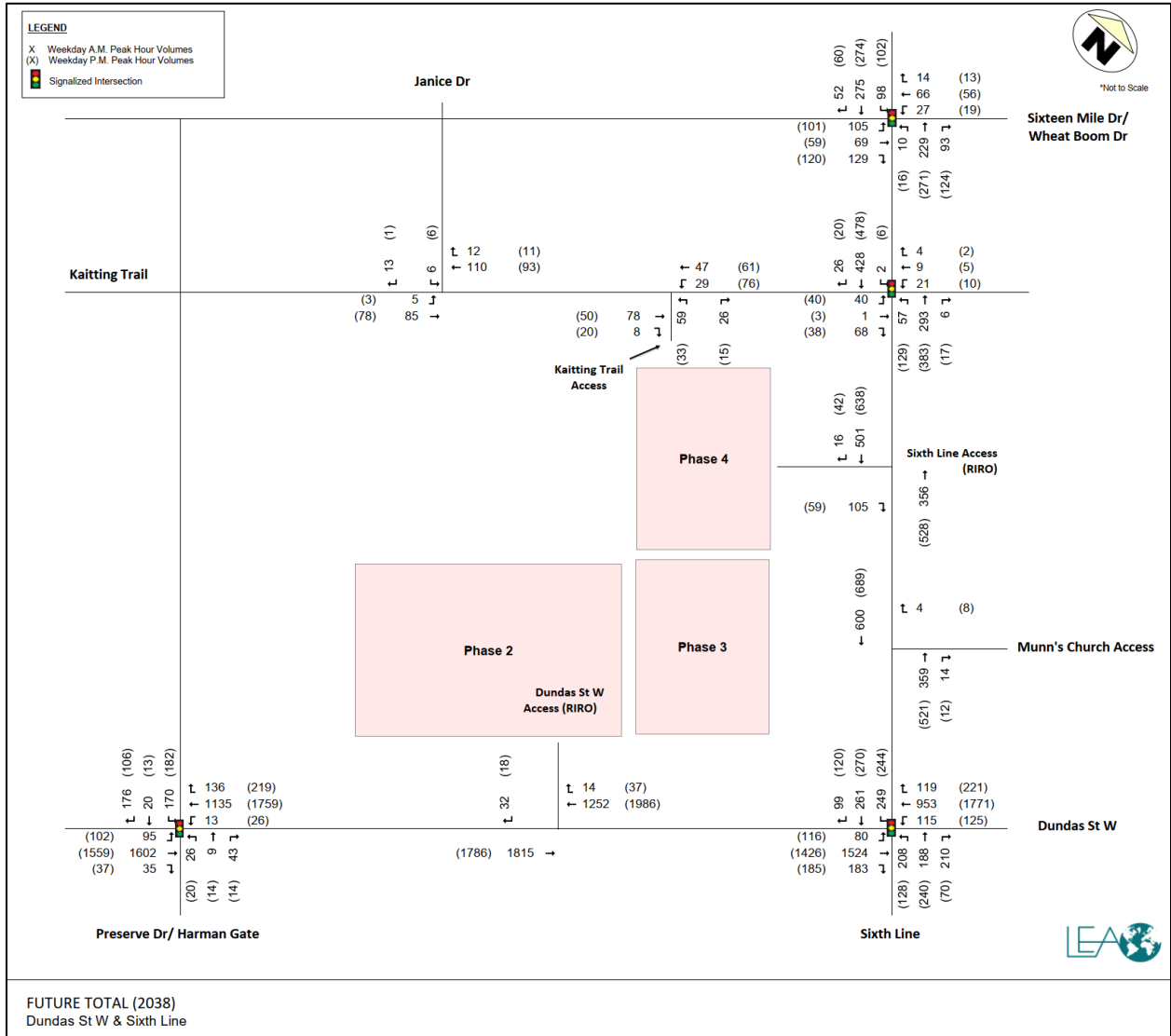


Figure 4-6: Future Total (2038) Peak Hour Traffic Volumes



5 INTERSECTION CAPACITY ANALYSIS RESULTS

The intersection capacity analysis for the study area was undertaken using Synchro version 11.0, which is based on the Highway Capacity Manual 2000 methodology and adhering to Halton Region’s *Transportation Impact Study Guidelines* (January 2015). Critical movements at signalized intersections are defined as through and shared movements with a volume-to-capacity (V/C) ratio of 0.85 or above, exclusive turning movements with a V/C ratio of 0.90 or above, or queues exceeding available storage lengths. Critical movements at unsignalized intersections are defined as having a level of service (LOS) E or F, or where queues exceed available storage lengths. Peak Hour Factors (PHF) have been calculated based on turning movement counts collected for each movement.

The following sections provide an analysis of the intersection operations under existing, future background, and future total scenarios for all three future horizons. Detailed capacity results are provided in **Appendix E**, **Appendix F**, and **Appendix G**.

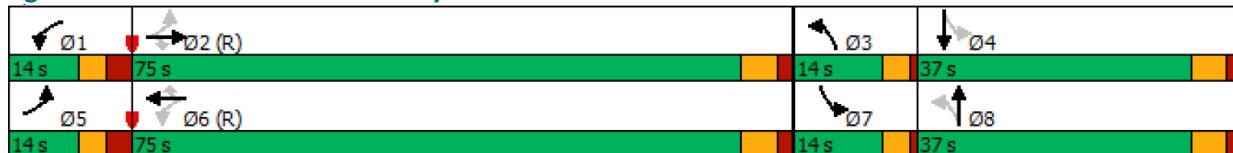
5.1 DUNDAS STREET & SIXTH LINE

For the analysis of the intersection of Dundas Street and Sixth Line, the signal timing plan (STP) was optimized during both weekday peak hours to improve intersection operations in the future 2028+ scenarios. The existing AM peak period signal timing plan is shown in **Figure 5-1** and the recommended optimized plan is shown in **Figure 5-2**.

Figure 5-1: Existing Weekday AM STP - Dundas Street and Sixth Line



Figure 5-2: Recommended Weekday AM STP - Dundas Street and Sixth Line

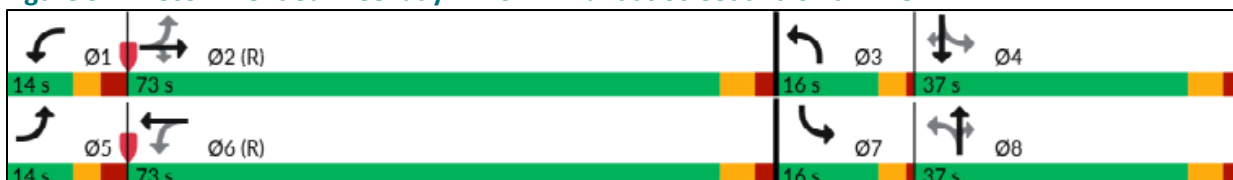


The existing PM peak period signal timing plan is shown in **Figure 5-3** and the recommended optimized plan is shown in **Figure 5-4**.

Figure 5-3: Existing Weekday PM STP - Dundas Street and Sixth Line



Figure 5-4: Recommended Weekday PM STP - Dundas Street and Sixth Line



A summary of the proposed STP changes is presented in **Table 5-1**.

Table 5-1: Signal Timing Optimization Comparison – Dundas St W & Sixth Line

		WBL	EBT	NBL	SBT	EBL	WBT	SBL	NBT
AM PEAK	Optimized	14	75	14	37	14	75	14	37
	Non-Optimized	14	71	14	41	14	71	14	41
	Difference	-	-4s	-	+4s	-	-4s	-	+4s
PM PEAK	Optimized	14	73	16	37	14	73	16	37
	Non-Optimized	17	74	11	38	17	74	11	38
	Difference	-3s	-1s	+5s	-1s	-3s	-1s	+5s	-1s

The results for the intersection capacity analysis over three future horizons for the intersection of Dundas Street West and Sixth Line are summarized in the following tables.

Table 5-2: Intersection Capacity Analysis – Dundas St W & Sixth Line (2028)

AM	Existing				AM	Future Background 2028				AM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	C (32)	-/-	Overall	-	-	C (31)	-/-	Overall	-	-	C (33)	-/-
EBL	75	0.30	B (18)	10/18	EBL	77	0.29	B (16)	9/17	EBL	81	0.32	B (17)	10/18
EBT	1524	0.65	C (30)	124/141	EBT	1524	0.61	C (27)	117/133	EBT	1524	0.61	C (27)	117/133
EBR	183	0.13	C (22)	2/16	EBR	183	0.12	B (19)	0/13	EBR	183	0.12	B (19)	0/13
WBL	115	0.70	C (34)	15/39	WBL	115	0.66	C (28)	14/32	WBL	115	0.66	C (28)	14/32
WBTR	1023	0.46	C (26)	73/86	WBTR	1044	0.45	C (24)	70/83	WBTR	1071	0.46	C (24)	73/85
NBL	208	0.59	D (41)	44/67	NBL	208	0.72	D (52)	47/70	NBL	208	0.80	E (60)	47/79
NBT	167	0.37	D (46)	41/64	NBT	176	0.44	D (51)	45/69	NBT	188	0.47	D (51)	49/74
NBR	210	0.22	D (43)	9/32	NBR	210	0.29	D (48)	15/41	NBR	210	0.32	D (48)	18/44
SBL	145	0.39	D (36)	30/47	SBL	189	0.58	D (43)	42/63	SBL	237	0.75	D (53)	54/79
SBT	183	0.41	D (47)	45/69	SBT	216	0.55	D (54)	57/85	SBT	252	0.64	E (57)	68/99
SBR	75	0.05	D (40)	0/7	SBR	99	0.07	D (43)	0/15	SBR	99	0.07	D (43)	0/15
PM	Existing				PM	Future Background 2028				PM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	C (32)	-/-	Overall	-	-	D (35)	-/-	Overall	-	-	D (37)	-/-
EBL	101	0.64	C (33)	14/35	EBL	108	0.77	D (50)	17/50	EBL	117	0.83	E (62)	20/56
EBT	1237	0.52	C (25)	93/109	EBT	1300	0.57	C (27)	103/118	EBT	1300	0.57	C (27)	103/118
EBR	185	0.13	B (19)	0/13	EBR	185	0.13	C (21)	0/13	EBR	185	0.13	C (21)	0/13
WBL	125	0.53	B (19)	16/25	WBL	125	0.64	C (26)	17/27	WBL	125	0.64	C (26)	17/27
WBTR	1858	0.78	C (31)	168/191	WBTR	1918	0.84	D (36)	183/205	WBTR	1981	0.87	D (37)	194/216
NBL	128	0.46	D (42)	29/47	NBL	128	0.43	D (38)	28/45	NBL	128	0.46	D (39)	28/45
NBT	183	0.44	D (50)	49/74	NBT	209	0.52	D (53)	57/85	NBT	236	0.59	D (55)	65/95
NBR	70	0.05	D (42)	0/7	NBR	70	0.05	D (43)	0/7	NBR	70	0.05	D (43)	0/7
SBL	183	0.66	D (50)	43/66	SBL	210	0.68	D (46)	48/72	SBL	240	0.84	E (61)	56/96
SBT	179	0.44	D (50)	47/72	SBT	217	0.53	D (52)	59/88	SBT	241	0.59	D (54)	67/98
SBR	106	0.07	D (43)	0/16	SBR	120	0.08	D (43)	0/17	SBR	121	0.08	D (43)	0/17

Existing Conditions: Under existing conditions, the intersection of Sixth Line and Dundas St W operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, after signal optimization, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. During the PM peak, the WBTR is marginally deemed critical, this finding is attributable to the conservative background estimate, and it is recommended that the City continue monitoring this intersection and determine whether intersection modifications are required if traffic growth is realized.

Table 5-3: Intersection Capacity Analysis – Dundas St W & Sixth Line (2033)

AM		Future Background 2033					AM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	31	C	-	-	Overall	-	-	34	C	-	-
EBL	77	0.29	16	B	9	17	EBL	80	0.31	17	B	10	17
EBT	1524	0.61	27	C	117	133	EBT	1524	0.61	27	C	117	133
EBR	183	0.12	19	B	0	13	EBR	183	0.12	19	B	0	13
WBL	115	0.66	28	C	14	32	WBL	115	0.66	28	C	14	32
WBTR	1044	0.45	24	C	70	83	WBTR	1072	0.46	24	C	73	86
NBL	208	0.72	52	D	47	70	NBL	208	0.82	62	E	47	82
NBT	176	0.44	51	D	45	69	NBT	188	0.47	51	D	49	74
NBR	210	0.29	48	D	15	41	NBR	210	0.32	48	D	19	45
SBL	189	0.58	43	D	42	63	SBL	249	0.79	57	E	57	89
SBT	216	0.55	54	D	57	85	SBT	261	0.67	58	E	71	103
SBR	99	0.07	43	D	0	15	SBR	99	0.07	43	D	0	15
PM		Future Background 2033					PM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	35	D	-	-	Overall	-	-	38	D	-	-
EBL	108	0.77	50	D	17	50	EBL	116	0.82	61	E	20	56
EBT	1363	0.59	28	C	110	125	EBT	1363	0.59	28	C	110	125
EBR	185	0.13	21	C	0	13	EBR	185	0.13	21	C	0	13
WBL	125	0.68	29	C	17	34	WBL	125	0.68	29	C	17	34
WBTR	1918	0.84	36	D	183	205	WBTR	1992	0.87	38	D	195	218
NBL	128	0.45	39	D	28	45	NBL	128	0.49	39	D	28	45
NBT	209	0.52	53	D	57	85	NBT	240	0.60	55	E	67	97
NBR	70	0.05	43	D	0	7	NBR	70	0.05	43	D	0	7
SBL	210	0.68	46	D	48	72	SBL	244	0.87	65	E	57	101
SBT	236	0.58	54	D	65	95	SBT	261	0.64	56	E	74	106
SBR	120	0.08	43	D	0	17	SBR	120	0.08	43	D	0	17

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, after signal optimization, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. During the PM peak, the WBTR and SBL are marginally deemed critical, this finding is attributable to the conservative background estimate, and it is recommended that the City continue monitoring this intersection and determine whether intersection modifications are required if traffic growth is realized.

Table 5-4: Intersection Capacity Analysis – Dundas St W & Sixth Line (2038)

AM		Future Background 2038					AM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	31	C	-	-	Overall	-	-	34	C	-	-
EBL	77	0.29	16	B	9	17	EBL	80	0.31	17	B	10	17
EBT	1524	0.61	27	C	117	133	EBT	1524	0.61	27	C	117	133
EBR	183	0.12	19	B	0	13	EBR	183	0.12	19	B	0	13
WBL	115	0.66	28	C	14	32	WBL	115	0.66	28	C	14	32
WBTR	1044	0.45	24	C	70	83	WBTR	1072	0.46	24	C	73	86
NBL	208	0.72	52	D	47	70	NBL	208	0.82	62	E	47	82
NBT	176	0.44	51	D	45	69	NBT	188	0.47	51	D	49	74
NBR	210	0.29	48	D	15	41	NBR	210	0.32	48	D	19	45
SBL	189	0.58	43	D	42	63	SBL	249	0.79	57	E	57	89
SBT	216	0.55	54	D	57	85	SBT	261	0.67	58	E	71	103
SBR	99	0.07	43	D	0	15	SBR	99	0.07	43	D	0	15
PM		Future Background 2038					PM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	36	D	-	-	Overall	-	-	38	D	-	-
EBL	108	0.77	50	D	17	50	EBL	116	0.82	61	E	20	56
EBT	1426	0.62	28	C	117	133	EBT	1426	0.62	28	C	117	133
EBR	185	0.13	21	C	1	14	EBR	185	0.13	21	C	1	14
WBL	125	0.72	33	C	17	42	WBL	125	0.72	33	C	17	42
WBTR	1918	0.84	36	D	183	205	WBTR	1992	0.87	38	D	195	218
NBL	128	0.46	39	D	28	45	NBL	128	0.50	39	D	28	45
NBT	209	0.52	53	D	57	85	NBT	240	0.60	55	E	67	97
NBR	70	0.05	43	D	0	7	NBR	70	0.05	43	D	0	7
SBL	210	0.68	46	D	48	72	SBL	244	0.87	65	E	57	101
SBT	245	0.60	55	D	69	99	SBT	270	0.67	57	E	77	110
SBR	120	0.08	43	D	0	17	SBR	120	0.08	43	D	0	17

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, after signal optimization, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. During the PM peak, the WBTR and SBL are marginally deemed critical, this finding is attributable to the conservative background estimate, and it is recommended that

the City continue monitoring this intersection and determine whether intersection modifications are required if traffic growth is realized.

5.1.1 Queue Analysis – Dundas Street & Sixth Line

A queue assessment was also completed for the intersection of Dundas Street and Sixth Line under the existing and future (2038) horizons. The results are shown in **Table 5-5**.

Table 5-5: Queue Analysis – Dundas St W & Sixth Line (Existing and 2038)

	Queue Summary (all units in m)								
	Mvmt	Available Storage	Existing		Future Background (2038)		Future Total (2038)		Required Additional Storage Length
			50 th	95 th	50 th	95 th	50 th	95 th	
AM PEAK HOUR	EBL	107	10	18	9	17	10	17	-
	EBT	-	220	273	117	133	117	133	-
	EBR	80	10	25	0	13	0	13	-
	WBL	120	18	53	14	32	14	32	-
	WBT	-	107	130	70	83	73	86	-
	WBR	-	0	7	0	0	0	0	-
	NBL	90	44	67	47	70	47	82	-
	NBT	-	28	44	45	69	49	74	-
	NBR	-	0	0	15	41	19	45	-
	SBL	76	30	47	42	63	57	89	-
	SBT	-	27	40	57	85	71	103	-
SBR	-	0	0	0	15	0	15	-	
PM PEAK HOUR	EBL	107	14	35	17	38	19	41	-
	EBT	-	158	189	129	151	129	151	-
	EBR	80	6	20	4	20	4	20	-
	WBL	120	16	33	18	41	18	40	-
	WBT	-	272	339	200	246	216	263	-
	WBR	NA	4	16	0	0	0	0	-
	NBL	90	29	47	26	43	26	43	-
	NBT	-	29	43	57	85	67	97	-
	NBR	-	0	0	0	7	0	7	-
	SBL	76	43	66	46	68	54	82	-
	SBT	-	28	43	66	99	74	110	-
SBR	-	0	0	0	17	0	17	-	

All queues are expected to be accommodated by the existing storage capacity.

5.2 DUNDAS STREET WEST & HARMAN GATE / PRESERVE DRIVE

The results for the intersection capacity analysis over three future horizons for the intersection of Dundas Street West and Harman Gate / Preserve Drive are summarized in the following tables.

Table 5-6: Intersection Capacity Analysis – Dundas St W & Harman Gt / Preserve Dr (2028)

AM		Existing			AM		Future Background 2028			AM		Future Total 2028		
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	B (18)	-/-	Overall	-	-	B (18)	-/-	Overall	-	-	B (18)	-/-
EBL	86	0.29	A (9)	7/13	EBL	87	0.30	A (9)	7/13	EBL	97	0.34	A (10)	8/14
EBT	1569	0.54	B (15)	69/104	EBT	1599	0.55	B (16)	71/107	EBT	1603	0.55	B (16)	71/107
EBR	35	0.03	B (10)	0/2	EBR	35	0.03	B (10)	0/2	EBR	35	0.03	B (10)	0/2
WBL	13	0.08	B (12)	1/3	WBL	13	0.08	B (12)	1/3	WBL	13	0.08	B (12)	1/3
WBT	1079	0.41	B (16)	56/67	WBT	1103	0.42	B (16)	57/69	WBT	1128	0.43	B (16)	59/70
WBR	136	0.09	B (13)	0/9	WBR	136	0.09	B (13)	0/9	WBR	136	0.09	B (13)	0/9
NBL	26	0.09	D (35)	5/13	NBL	26	0.09	D (35)	5/13	NBL	26	0.11	D (36)	5/13
NBTR	52	0.05	C (35)	2/12	NBTR	52	0.05	C (35)	2/12	NBTR	52	0.05	C (35)	2/12
SBL	170	0.54	D (45)	37/62	SBL	170	0.54	D (45)	37/62	SBL	170	0.54	D (45)	37/62
SBTR	128	0.12	D (36)	4/20	SBTR	137	0.12	D (36)	4/20	SBTR	186	0.16	D (36)	4/23
PM		Existing			PM		Future Background 2028			PM		Future Total 2028		
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	B (19)	-/-	Overall	-	-	B (19)	-/-	Overall	-	-	B (20)	-/-
EBL	79	0.51	B (16)	7/16	EBL	82	0.53	B (17)	7/18	EBL	101	0.59	C (21)	9/27
EBT	1326	0.48	B (15)	74/87	EBT	1415	0.51	B (16)	81/94	EBT	1424	0.51	B (16)	82/95
EBR	37	0.03	B (11)	0/2	EBR	37	0.03	B (11)	0/2	EBR	37	0.03	B (11)	0/2
WBL	26	0.13	B (11)	2/5	WBL	26	0.14	B (11)	2/5	WBL	26	0.14	B (12)	2/5
WBT	1727	0.63	B (19)	109/127	WBT	1741	0.64	B (19)	111/129	WBT	1756	0.66	C (20)	114/130
WBR	219	0.15	B (13)	0/11	WBR	219	0.15	B (13)	0/11	WBR	219	0.15	B (14)	0/11
NBL	20	0.07	C (35)	4/11	NBL	20	0.07	C (35)	4/11	NBL	20	0.07	D (35)	4/11
NBTR	28	0.05	C (35)	3/11	NBTR	28	0.05	C (35)	3/11	NBTR	28	0.05	C (35)	3/11
SBL	182	0.58	D (47)	42/68	SBL	182	0.58	D (47)	42/68	SBL	182	0.58	D (47)	42/68
SBTR	81	0.08	C (35)	3/16	SBTR	86	0.08	C (35)	3/16	SBTR	119	0.10	D (35)	3/18

Existing Conditions: Under existing conditions, the intersection of Dundas St W and Harman Gate/Preserve Dr operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-7: Intersection Capacity Analysis – Dundas St W & Harman Gt / Preserve Dr (2033)

AM		Future Background 2033					AM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	18	B	-	-	Overall	-	-	19	B	-	-
EBL	87	0.30	9	A	7	13	EBL	95	0.33	10	A	8	14
EBT	1599	0.55	16	B	71	107	EBT	1602	0.55	16	B	71	107
EBR	35	0.03	10	B	0	2	EBR	35	0.03	10	B	0	2
WBL	13	0.08	12	B	1	3	WBL	13	0.08	12	B	1	3
WBT	1103	0.42	16	B	57	69	WBT	1135	0.43	16	B	60	71
WBR	136	0.09	13	B	0	9	WBR	136	0.09	13	B	0	9
NBL	26	0.09	35	D	5	13	NBL	26	0.11	36	D	5	14
NBTR	52	0.05	35	C	2	12	NBTR	52	0.05	35	C	2	12
SBL	170	0.54	45	D	37	62	SBL	170	0.54	45	D	37	62
SBTR	137	0.12	36	D	4	20	SBTR	196	0.17	36	D	5	25
PM		Future Background 2033					PM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	19	B	-	-	Overall	-	-	20	C	-	-
EBL	82	0.53	17	B	7	18	EBL	102	0.60	21	C	9	27
EBT	1483	0.53	16	B	87	101	EBT	1491	0.54	16	B	87	101
EBR	37	0.03	11	B	0	2	EBR	37	0.03	11	B	0	2
WBL	26	0.15	11	B	2	5	WBL	26	0.15	12	B	2	5
WBT	1741	0.64	19	B	111	129	WBT	1759	0.66	20	C	114	131
WBR	219	0.15	13	B	0	11	WBR	219	0.15	14	B	0	11
NBL	20	0.07	35	C	4	11	NBL	20	0.07	35	D	4	11
NBTR	28	0.05	35	C	3	11	NBTR	28	0.05	35	C	3	11
SBL	182	0.58	47	D	42	68	SBL	182	0.58	47	D	42	68
SBTR	86	0.08	35	C	3	16	SBTR	119	0.10	35	D	3	18

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-8: Intersection Capacity Analysis – Dundas St W & Harman Gt / Preserve Dr (2038)

AM		Future Background 2038					AM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	18	B	-	-	Overall	-	-	19	B	-	-
EBL	87	0.30	9	A	7	13	EBL	95	0.33	10	A	8	14
EBT	1599	0.55	16	B	71	107	EBT	1602	0.55	16	B	71	107
EBR	35	0.03	10	B	0	2	EBR	35	0.03	10	B	0	2
WBL	13	0.08	12	B	1	3	WBL	13	0.08	12	B	1	3
WBT	1103	0.42	16	B	57	69	WBT	1135	0.43	16	B	60	71
WBR	136	0.09	13	B	0	9	WBR	136	0.09	13	B	0	9
NBL	26	0.09	35	D	5	13	NBL	26	0.11	36	D	5	14
NBTR	52	0.05	35	C	2	12	NBTR	52	0.05	35	C	2	12
SBL	170	0.54	45	D	37	62	SBL	170	0.54	45	D	37	62
SBTR	137	0.12	36	D	4	20	SBTR	196	0.17	36	D	5	25
PM		Future Background 2038					PM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	19	B	-	-	Overall	-	-	20	C	-	-
EBL	82	0.53	17	B	7	18	EBL	102	0.60	21	C	9	27
EBT	1551	0.56	16	B	93	107	EBT	1559	0.56	16	B	93	108
EBR	37	0.03	11	B	0	2	EBR	37	0.03	11	B	0	2
WBL	26	0.16	12	B	2	5	WBL	26	0.16	12	B	2	5
WBT	1741	0.64	19	B	111	129	WBT	1759	0.66	20	C	114	131
WBR	219	0.15	13	B	0	11	WBR	219	0.15	14	B	0	11
NBL	20	0.07	35	C	4	11	NBL	20	0.07	35	D	4	11
NBTR	28	0.05	35	C	3	11	NBTR	28	0.05	35	C	3	11
SBL	182	0.58	47	D	42	68	SBL	182	0.58	47	D	42	68
SBTR	86	0.08	35	C	3	16	SBTR	119	0.10	35	D	3	18

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

No capacity constraints are observed under the existing and future scenarios at the intersection of Dundas Street West & Harman Gate / Preserve Drive, with no movements deemed critical and all experiencing LOS D or better. Site traffic is expected to have an acceptable impact on intersection operations.

5.3 SIXTH LINE & SIXTEEN MILE DRIVE / WHEAT BOOM DRIVE

The results for the intersection capacity analysis over three future horizons for the intersection of Sixth Line and Sixteen Mile Drive / Wheat Boom Drive are summarized in the following tables.

Table 5-9: Intersection Capacity Analysis – Sixth Line & Sixteen Mile Dr/Wheat Boom Dr (2028)

AM		Existing				AM		Future Background 2028				AM		Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)			
Overall	-	-	B (20)	-/-	Overall	-	-	B (18)	-/-	Overall	-	-	B (18)	-/-			
EBL	101	0.30	C (27)	18/31	EBL	105	0.31	C (27)	19/32	EBL	105	0.31	C (27)	19/32			
EBTR	190	0.32	C (27)	20/36	EBTR	191	0.32	C (27)	20/36	EBTR	197	0.33	C (27)	20/37			
WBL	27	0.11	C (24)	5/11	WBL	27	0.11	C (24)	5/11	WBL	27	0.11	C (24)	5/11			
WBTR	80	0.15	C (25)	12/23	WBTR	80	0.15	C (25)	12/23	WBTR	80	0.15	C (25)	12/23			
NBL	10	0.03	B (16)	1/3	NBL	10	0.03	B (14)	1/2	NBL	10	0.03	B (14)	1/2			
NBTR	280	0.20	B (19)	15/23	NBTR	296	0.22	B (13)	18/26	NBTR	317	0.24	B (13)	21/31			
SBL	98	0.21	B (11)	10/17	SBL	98	0.22	B (11)	10/17	SBL	98	0.22	B (11)	10/17			
SBTR	224	0.15	B (14)	12/21	SBTR	318	0.22	B (15)	18/31	SBTR	327	0.23	B (15)	19/32			
PM		Existing				PM		Future Background 2028				PM		Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)			
Overall	-	-	B (19)	-/-	Overall	-	-	B (17)	-/-	Overall	-	-	C (23)	-/-			
EBL	89	0.22	C (26)	14/27	EBL	101	0.25	C (26)	16/30	EBL	101	0.25	C (26)	16/30			
EBTR	160	0.19	C (25)	11/27	EBTR	162	0.19	C (25)	11/27	EBTR	177	0.21	C (25)	11/28			
WBL	19	0.05	C (23)	3/8	WBL	19	0.05	C (23)	3/8	WBL	19	0.05	C (23)	3/8			
WBTR	69	0.11	C (24)	9/19	WBTR	69	0.11	C (24)	9/19	WBTR	69	0.11	C (24)	9/19			
NBL	16	0.03	B (15)	1/4	NBL	16	0.04	B (13)	1/3	NBL	16	0.04	B (19)	1/5			
NBTR	344	0.20	B (18)	15/26	NBTR	380	0.24	B (13)	5/33	NBTR	394	0.25	C (29)	28/45			
SBL	102	0.19	B (11)	9/17	SBL	102	0.20	B (11)	9/17	SBL	102	0.21	B (11)	9/17			
SBTR	247	0.14	B (15)	11/22	SBTR	309	0.18	B (15)	15/28	SBTR	330	0.20	B (15)	16/30			

Existing Conditions: Under existing conditions, the intersection of Sixth Line and Sixteen Mile Dr/Wheat Boom Dr operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-10: Intersection Capacity Analysis – Sixth Line & Sixteen Mile Dr/Wheat Boom Dr (2033)

AM		Future Background 2033					AM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	18	B	-	-	Overall	-	-	18	B	-	-
EBL	105	0.31	27	C	19	32	EBL	105	0.31	27	C	19	32
EBTR	191	0.32	27	C	20	36	EBTR	198	0.33	27	C	20	37
WBL	27	0.11	24	C	5	11	WBL	27	0.11	24	C	5	11
WBTR	80	0.15	25	C	12	23	WBTR	80	0.15	25	C	12	23
NBL	10	0.03	14	B	1	2	NBL	10	0.03	14	B	1	2
NBTR	296	0.22	13	B	18	26	NBTR	322	0.25	14	B	22	32
SBL	98	0.22	11	B	10	17	SBL	98	0.22	11	B	10	17
SBTR	318	0.22	15	B	18	31	SBTR	327	0.23	15	B	19	32
PM		Future Background 2033					PM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	17	B	-	-	Overall	-	-	23	C	-	-
EBL	101	0.25	26	C	16	30	EBL	101	0.25	26	C	16	30
EBTR	162	0.19	25	C	11	27	EBTR	179	0.21	25	C	11	28
WBL	19	0.05	23	C	3	8	WBL	19	0.05	23	C	3	8
WBTR	69	0.11	24	C	9	19	WBTR	69	0.11	24	C	9	19
NBL	16	0.04	13	B	1	3	NBL	16	0.04	19	B	1	5
NBTR	380	0.24	13	B	5	33	NBTR	395	0.25	29	C	28	45
SBL	102	0.20	11	B	9	17	SBL	102	0.21	11	B	9	17
SBTR	309	0.18	15	B	15	28	SBTR	334	0.20	15	B	16	31

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-11: Intersection Capacity Analysis – Sixth Line & Sixteen Mile Dr/Wheat Boom Dr (2038)

AM		Future Background 2038					AM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	18	B	-	-	Overall	-	-	18	B	-	-
EBL	105	0.31	27	C	19	32	EBL	105	0.31	27	C	19	32
EBTR	191	0.32	27	C	20	36	EBTR	198	0.33	27	C	20	37
WBL	27	0.11	24	C	5	11	WBL	27	0.11	24	C	5	11
WBTR	80	0.15	25	C	12	23	WBTR	80	0.15	25	C	12	23
NBL	10	0.03	14	B	1	2	NBL	10	0.03	14	B	1	2
NBTR	296	0.22	13	B	18	26	NBTR	322	0.25	14	B	22	32
SBL	98	0.22	11	B	10	17	SBL	98	0.22	11	B	10	17
SBTR	318	0.22	15	B	18	31	SBTR	327	0.23	15	B	19	32
PM		Future Background 2038					PM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	17	B	-	-	Overall	-	-	23	C	-	-
EBL	101	0.25	26	C	16	30	EBL	101	0.25	26	C	16	30
EBTR	162	0.19	25	C	11	27	EBTR	179	0.21	25	C	11	28
WBL	19	0.05	23	C	3	8	WBL	19	0.05	23	C	3	8
WBTR	69	0.11	24	C	9	19	WBTR	69	0.11	24	C	9	19
NBL	16	0.04	13	B	1	3	NBL	16	0.04	19	B	1	5
NBTR	380	0.24	13	B	5	33	NBTR	395	0.25	29	C	28	45
SBL	102	0.20	11	B	9	17	SBL	102	0.21	11	B	9	17
SBTR	309	0.18	15	B	15	28	SBTR	334	0.20	15	B	16	31

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

No capacity constraints are observed under the existing and future scenarios at the intersection of Sixth Line & Sixteen Mile Drive/Wheat Boom Drive, with no movements deemed critical and all experiencing LOS C or better. Site traffic is expected to have an acceptable impact on intersection operations.

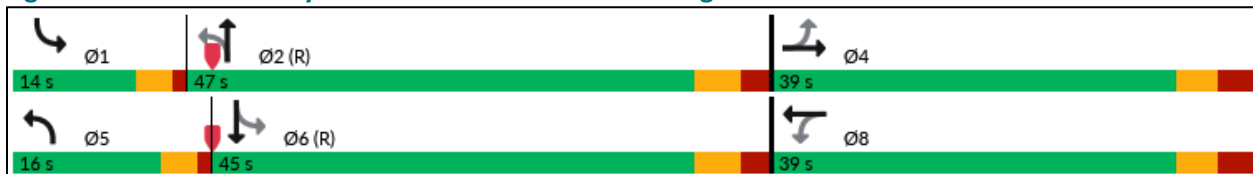
5.4 SIXTH LINE & KAITTING TRAIL

For the analysis of the intersection of Sixth Line and Kaitting Trail (currently unsignalized), a signal timing plan (STP) was prepared to assess signalized intersection operations. The signal timing plan will be prepared and determined as part of the development application for 3043 Sixth Line. The assumed AM and PM peak period signal timing plans are shown in **Figure 5-5** and **Figure 5-6**.

Figure 5-5: New Weekday AM STP – Sixth Line and Kaitting Trail



Figure 5-6: New Weekday PM STP – Sixth Line and Kaitting Trail



The results for the intersection capacity analysis over three future horizons for the intersection of Sixth Line and Kaitting Trail are summarized in the following tables.

Table 5-12: Intersection Capacity Analysis – Sixth Line & Kaitting Trail (Existing - Unsignalized)

AM	Existing			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (1)	-/0
NBL	28	0.03	A (0)	-/0
NBT	281	0.00	(0)	-/0
EBLR	77	0.13	B (0)	-/0
SBT	333	0.00	(0)	-/0
SBR	10	0.00	(0)	-/0
PM	Existing			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (1)	-/0
NBL	53	0.05	A (0)	-/0
NBT	349	0.00	(0)	-/0
EBLR	49	0.08	B (0)	-/0
SBT	306	0.00	(0)	-/0
SBR	10	0.00	(0)	-/0

Existing Conditions: Under existing conditions, the intersection of Sixth Line and Kaitting Trail operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Table 5-13: Intersection Capacity Analysis – Sixth Line & Kaitting Trail (2028)

AM		Future Background 2028			AM		Future Total 2028		
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	A (10)	-/-	Overall	-	-	B (12)	-/-
EBLTR	83	0.12	D (36)	3/15	EBLTR	104	0.20	C (34)	7/21
WBLTR	34	0.14	D (36)	6/14	WBLTR	34	0.12	C (33)	6/14
NBL	28	0.05	A (4)	2/4	NBL	62	0.13	A (6)	4/8
NBTR	299	0.14	A (5)	12/16	NBTR	299	0.15	A (6)	12/16
SBLTR	440	0.25	A (7)	22/29	SBLTR	455	0.28	A (9)	23/30
PM		Future Background 2028			PM		Future Total 2028		
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	A (9)	-/-	Overall	-	-	B (10)	-/-
EBLTR	66	0.15	D (36)	5/17	EBLTR	80	0.21	D (37)	8/21
WBLTR	17	0.06	D (36)	3/9	WBLTR	17	0.06	D (36)	3/9
NBL	53	0.08	A (4)	3/7	NBL	125	0.20	A (5)	8/14
NBTR	400	0.16	A (5)	14/20	NBTR	400	0.16	A (5)	14/20
SBLTR	414	0.21	A (7)	17/24	SBLTR	450	0.24	B (11)	31/43

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-14: Intersection Capacity Analysis – Sixth Line & Kaitting Trail (2033)

AM		Future Background 2033					AM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	10	B	-	-	Overall	-	-	12	B	-	-
EBLTR	83	0.12	36	D	3	15	EBLTR	109	0.22	34	C	8	23
WBLTR	34	0.14	36	D	6	14	WBLTR	34	0.12	33	C	6	14
NBL	28	0.05	4	A	2	4	NBL	57	0.12	6	A	4	8
NBTR	299	0.14	5	A	12	16	NBTR	299	0.15	6	A	12	16
SBLTR	440	0.25	7	A	22	29	SBLTR	456	0.28	9	A	23	30
PM		Future Background 2033					PM		Future Total 2033				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	9	A	-	-	Overall	-	-	10	B	-	-
EBLTR	66	0.15	36	D	5	17	EBLTR	81	0.22	37	D	8	21
WBLTR	17	0.06	36	D	3	9	WBLTR	17	0.06	36	D	3	9
NBL	53	0.08	4	A	3	7	NBL	129	0.21	5	A	8	14
NBTR	400	0.16	5	A	14	20	NBTR	400	0.16	5	A	14	20
SBLTR	446	0.22	7	A	19	27	SBLTR	488	0.26	11	B	34	46

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-15: Intersection Capacity Analysis – Sixth Line & Kaitting Trail (2038)

AM		Future Background 2038					AM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	10	B	-	-	Overall	-	-	12	B	-	-
EBLTR	83	0.12	36	D	3	15	EBLTR	109	0.22	34	C	8	23
WBLTR	34	0.14	36	D	6	14	WBLTR	34	0.12	33	C	6	14
NBL	28	0.05	4	A	2	4	NBL	57	0.12	6	A	4	8
NBTR	299	0.14	5	A	12	16	NBTR	299	0.15	6	A	12	16
SBLTR	440	0.25	7	A	22	29	SBLTR	456	0.28	9	A	23	30
PM		Future Background 2038					PM		Future Total 2038				
Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue	Mvmt	Vol	V/C	Delay (s)	LOS	50th Queue	95th Queue
Overall	-	-	9	A	-	-	Overall	-	-	11	B	-	-
EBLTR	66	0.15	36	D	5	17	EBLTR	81	0.22	37	D	8	21
WBLTR	17	0.06	36	D	3	9	WBLTR	17	0.06	36	D	3	9
NBL	53	0.09	4	A	3	7	NBL	129	0.21	5	A	8	14
NBTR	400	0.16	5	A	14	20	NBTR	400	0.16	5	A	14	20
SBLTR	462	0.23	7	A	20	28	SBLTR	504	0.26	11	B	35	47

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

No capacity constraints are observed under the existing and future scenarios at the intersection of Sixth Line & Kaitting Trail, with no movements deemed critical. Most movements are experiencing LOS C or better with some movements experiencing LOS D. Site traffic is expected to have an acceptable impact on intersection operations.

5.5 KAITTING TRAIL & JANICE DRIVE

The results for the intersection capacity analysis over three future horizons for the intersection of Kaitting Trail and Janice Drive are summarized in the following tables.

Table 5-16: Intersection Capacity Analysis – Kaitting Trail & Janice Drive (2028)

AM		Existing				Future Background 2028				Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	
Overall	-	-	- (2)	-/0	-	-	- (1)	-/0	-	-	- (1)	-/0	
EBL	5	0.01	A (0)	-/0	5	0.01	A (7)	-/0	5	0.01	A (8)	-/0	
EBT	71	0.00	A (0)	-/0	77	0.00	A (0)	-/0	87	0.00	A (0)	-/0	
WBT	26	0.00	(0)	-/0	51	0.00	(0)	-/0	100	0.00	(0)	-/0	
WBR	12	0.00	(0)	-/0	12	0.00	(0)	-/0	12	0.00	(0)	-/0	
SBLR	19	0.03	A (0)	-/0	19	0.03	A (9)	-/1	19	0.04	A (10)	-/1	
PM		Existing				Future Background 2028				Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	Vol	V/C	LOS (Delay)	Queues (50/95)	
Overall	-	-	- (1)	-/0	-	-	- (1)	-/0	-	-	- (1)	-/0	
EBL	3	0.00	A (0)	-/0	3	0.00	A (7)	-/0	3	0.00	A (8)	-/0	
EBT	41	0.00	A (0)	-/0	58	0.00	A (0)	-/0	77	0.00	A (0)	-/0	
WBT	45	0.00	(0)	-/0	60	0.00	(0)	-/0	93	0.00	(0)	-/0	
WBR	11	0.00	(0)	-/0	11	0.00	(0)	-/0	11	0.00	(0)	-/0	
SBLR	7	0.01	A (0)	-/0	7	0.01	A (10)	-/0	7	0.01	A (10)	-/0	

Existing Conditions: Under existing conditions, the intersection of Janice Dr and Kaitting Trail operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-17: Intersection Capacity Analysis – Kaitting Trail & Janice Drive (2033)

AM		Future Background 2033				Future Total 2033				
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	1	-		-	-	1	-	
EBL	5	0.01	7	A	0	5	0.01	8	A	0
EBT	77	0.00	0	A	0	85	0.00	0	A	0
WBT	51	0.00	0		0	110	0.00	0		0
WBR	12	0.00	0		0	12	0.00	0		0
SBLR	19	0.03	9	A	1	19	0.04	10	A	1
PM		Future Background 2033				Future Total 2033				
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	1	-		-	-	1	-	
EBL	3	0.00	7	A	0	3	0.00	8	A	0
EBT	58	0.00	0	A	0	78	0.00	0	A	0
WBT	60	0.00	0		0	93	0.00	0		0
WBR	11	0.00	0		0	11	0.00	0		0
SBLR	7	0.01	10	A	0	7	0.01	10	A	0

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-18: Intersection Capacity Analysis – Kaitting Trail & Janice Drive (2038)

AM		Future Background 2038				AM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue	Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	1	-		Overall	-	-	1	-	
EBL	5	0.01	7	A	0	EBL	5	0.01	8	A	0
EBT	77	0.00	0	A	0	EBT	85	0.00	0	A	0
WBT	51	0.00	0		0	WBT	110	0.00	0		0
WBR	12	0.00	0		0	WBR	12	0.00	0		0
SBLR	19	0.03	9	A	1	SBLR	19	0.04	10	A	1
PM		Future Background 2038				PM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue	Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	1	-		Overall	-	-	1	-	
EBL	3	0.00	7	A	0	EBL	3	0.00	8	A	0
EBT	58	0.00	0	A	0	EBT	78	0.00	0	A	0
WBT	60	0.00	0		0	WBT	93	0.00	0		0
WBR	11	0.00	0		0	WBR	11	0.00	0		0
SBLR	7	0.01	10	A	0	SBLR	7	0.01	10	A	0

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

No capacity constraints are observed under the existing and future scenarios at the intersection of Kaitting Trail & Janice Drive, with no movements deemed critical and all experiencing LOS A. Site traffic is expected to have an acceptable impact on intersection operations.

5.6 DUNDAS STREET WEST & SITE ACCESS (DUNDAS)

The results for the intersection capacity analysis over three future horizons for the future Site Access onto Dundas Street West are summarized in the following tables.

Table 5-19: Intersection Capacity Analysis – Dundas Street West & Site Access (2028)

AM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (0)	-/0
EBT	1816	0.00	(0)	-/0
WBT	1252	0.00	(0)	-/0
WBR	10	0.00	(0)	-/0
SBR	25	0.07	C (16)	-/1
PM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (0)	-/0
EBT	1631	0.00	(0)	-/0
WBT	1987	0.00	(0)	-/0
WBR	27	0.00	(0)	-/0
SBR	14	0.08	D (25)	-/1

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-20: Intersection Capacity Analysis – Dundas Street West & Site Access (2033)

AM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
EBT	1815	0.00	0		0
WBT	1252	0.00	0		0
WBR	14	0.00	0		0
SBR	32	0.09	16	C	2
PM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
EBT	1708	0.00	0		0
WBT	1986	0.00	0		0
WBR	37	0.00	0		0
SBR	18	0.10	26	D	2

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-21: Intersection Capacity Analysis – Dundas Street West & Site Access (2038)

AM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
EBT	1815	0.00	0		0
WBT	1252	0.00	0		0
WBR	14	0.00	0		0
SBR	32	0.09	16	C	2
PM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
EBT	1786	0.00	0		0
WBT	1986	0.00	0		0
WBR	37	0.00	0		0
SBR	18	0.10	26	D	2

Future Total Conditions (2038): Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Movements at the site access on Dundas Street West are expected to operate with LOS D or better under all horizons, maintaining available capacity to support site vehicle movements.

5.7 KAITTING TRAIL & SITE ACCESS (KAITTING)

The results for the intersection capacity analysis over three future horizons for the intersection of Kaitting Trail and the future Site Access on Kaitting Trail are summarized in the following tables.

Table 5-22: Intersection Capacity Analysis – Kaitting Trail & Site Access (2028)

AM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (4)	-/0
NBLR	68	0.10	B (10)	-/2
EBT	80	0.00	(0)	-/0
EBR	8	0.00	(0)	-/0
WBL	31	0.02	A (8)	-/1
WBT	50	0.00	A (0)	-/0
PM	Future Total 2028			
Mvmt	Vol	V/C	LOS (Delay)	Queues (50/95)
Overall	-	-	- (3)	-/0
NBLR	30	0.04	A (10)	-/1
EBT	57	0.00	(0)	-/0
EBR	12	0.00	(0)	-/0
WBL	59	0.04	A (7)	-/1
WBT	74	0.00	A (0)	-/0

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-23: Intersection Capacity Analysis – Kaitting Trail & Site Access (2033)

AM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	4	-	
NBLR	85	0.12	10	B	3
EBT	78	0.00	0		0
EBR	8	0.00	0		0
WBL	29	0.02	7	A	1
WBT	47	0.00	0	A	0
PM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	4	-	
NBLR	48	0.07	10	B	1
EBT	50	0.00	0		0
EBR	20	0.00	0		0
WBL	76	0.05	8	A	1
WBT	61	0.00	0	A	0

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-24: Intersection Capacity Analysis – Kaitting Trail & Site Access (2038)

AM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	4	-	
NBLR	85	0.12	10	B	3
EBT	78	0.00	0		0
EBR	8	0.00	0		0
WBL	29	0.02	7	A	1
WBT	47	0.00	0	A	0
PM		Future Total 2038			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	4	-	
NBLR	48	0.07	10	B	1
EBT	50	0.00	0		0
EBR	20	0.00	0		0
WBL	76	0.05	8	A	1
WBT	61	0.00	0	A	0

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Movements at the site access on Kaitting Trail are expected to operate with LOS B or better under all horizons, maintaining available capacity to support site vehicle movements.

5.8 SIXTH LINE & SITE ACCESS (SIXTH)

The results for the intersection capacity analysis over three future horizons for the intersection of Sixth Line and the future site access on Sixth Line are summarized in the following tables.

Table 5-25: Intersection Capacity Analysis – Sixth Line & Site Access (2028)

AM		Future Total 2028			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	364	0.00	0		0
NBR	14	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	8	0.00	0	A	0
WBL	0	0.01	10	A	0
SBL	0	0.00	0	A	0
SBT	580	0.00	0		0
SBR	13	0.00	0		0
PM		Future Total 2028			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	517	0.00	0		0
NBR	12	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	16	0.00	0	A	0
WBL	0	0.01	10	B	0
SBL	0	0.00	0	A	0
SBT	615	0.00	0		0
SBR	27	0.00	0		0

Existing Conditions: Under existing conditions, the intersection of Sixth Line and Sixth Line Site Access operates well during both weekday peak hours. All movements are operating with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-26: Intersection Capacity Analysis – Sixth Line & Site Access (2033)

AM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	359	0.00	0		0
NBR	14	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	8	0.00	0	A	0
WBL	0	0.01	10	A	0
SBL	0	0.00	0	A	0
SBT	600	0.00	0		0
SBR	16	0.00	0		0
PM		Future Total 2033			
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	521	0.00	0		0
NBR	12	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	16	0.00	0	A	0
WBL	0	0.01	10	B	0
SBL	0	0.00	0	A	0
SBT	666	0.00	0		0
SBR	42	0.00	0		0

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2028 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Table 5-27: Intersection Capacity Analysis – Sixth Line & Site Access (2038)

AM	Future Total 2038				
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	359	0.00	0		0
NBR	14	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	8	0.00	0	A	0
WBL	0	0.01	10	A	0
SBL	0	0.00	0	A	0
SBT	600	0.00	0		0
SBR	16	0.00	0		0
PM	Future Total 2038				
Mvmt	Vol	V/C	Delay(s)	LOS	95th Queue
Overall	-	-	0	-	
NBL	0	0.00	0	A	0
NBT	521	0.00	0		0
NBR	12	0.00	0		0
EBL	0	0.00	0	A	0
EBR	0	0.00	0	A	0
WBLRR	16	0.00	0	A	0
WBL	0	0.01	10	B	0
SBL	0	0.00	0	A	0
SBT	689	0.00	0		0
SBR	42	0.00	0		0

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to the 2033 conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

Movements at the site access on Sixth Line are expected to operate with LOS D or better under all horizons, maintaining available capacity to support site vehicle movements.

5.9 CONCLUSIONS

The analysis results indicate that the proposed development is expected to have an acceptable impact on the surrounding road network. Signal timing optimization is recommended at Dundas Street & Sixth Line to improve intersection operations; these recommended modifications are attributable to background traffic growth.

6 PARKING REVIEW

This section reviews the applicable vehicle and bicycle parking standards for the subject site.

6.1 VEHICLE PARKING REVIEW

Parking regulations for the site are governed by the North Oakville Zoning By-Law 2009-189. The requirements of Zoning By-Law 2009-189 have been reviewed and are outlined in **Table 6-1** for the interim condition.

Table 6-1: Zoning By-Law 2009-189 Vehicle Parking Standards – Interim Condition

Land Use	Units/ GLA (m ²)	Min. Parking Rate	Min. Spaces Required	Max. Parking Rate	Max. Spaces Allowable	Proposed Supply
Apartment (>4 storeys)	525	N/A	0	1.25 sp/unit	657	461
Townhome	17	1.0 sp/unit	17	3.0 sp/unit	51	17
Total Residential	542	-	17	-	708	478
Visitors – Apartment	525	N/A	0	0.2 sp/unit	105	108
Visitors – Townhome	17	N/A	0	N/A	-	
Retail	1,393	1.0 sp/30 m ² GLA	46	1.0 sp/20 m ² GLA	70	47
Total Non-Residential	-	-	46	-	-	155
TOTAL	-	-	63	-	-	633

Note: GLA = Gross Leasable Area, assumed to be 80% of the gross floor area for the specific retail/pharmacy uses proposed.

Under the requirements of Zoning By-law 2009-189, the interim development must provide between 17 and 708 residential parking spaces and between 46 and 70 retail parking spaces. There is no minimum or maximum for residential visitor parking due to the inclusion of townhomes on the site. The proposed development will provide 478 residential, 108 visitor parking spaces and 47 retail parking spaces, satisfying the by-law requirement.

Buildings A and B and townhome blocks 1 and 2 will share a connected underground parking garage which will contain 321 residential parking spaces and 108 visitor parking spaces.

Building C will have its own underground parking garage with 157 residential parking spaces. Visitor parking for Building C will be provided within the publicly accessible portion of the Building A/B garage.

Surrounding the interim retail block, 47 surface parking spaces will be provided for retail visitors.

The parking requirements at full buildout are shown in **Table 6-2**.

Table 6-2: Zoning By-Law 2009-189 Vehicle Parking Standards – Ultimate Condition

Land Use	Units/ GLA (m ²)	Min. Parking Rate	Min. Spaces Required	Max. Parking Rate	Max. Spaces Allowable	Proposed Supply
Apartment (>4 storeys)	663	N/A	0	1.25 sp/unit	829	611
Townhome	28	1.0 sp/unit	28	3.0 sp/unit	84	28
Total Residential	691	-	28	-	913	639
Visitors – Apartment	663	N/A	0	0.2 sp/unit	133	153
Visitor – Townhome	28	N/A	0	N/A	-	
Retail	402.22	1.0 sp/30 m ² GLA	13	1.0 sp/20 m ² GLA	20	
Total Non-Residential	-	-	13	-	-	153
TOTAL	-	-	41	-	-	792

Note: GLA = Gross Leasable Area, assumed to equal GFA to be conservative. Specific use to be determined.

Based on the minimum parking requirements under Zoning By-law 2009-189, the full buildout development is required to provide between 28 and 913 residential parking spaces, and between 13 and

20 retail parking spaces. The proposed development will provide 639 residential parking spaces and 153 non-residential parking spaces, satisfying the zoning by-law requirements.

6.2 BICYCLE PARKING REVIEW

The Town of Oakville Zoning By-Law 2009-189 bicycle parking requirements were reviewed and applied to the proposed development. The bicycle parking requirements for the proposed residential use are summarized in **Table 6-3**.

Table 6-3: Zoning By-Law 2009-189 Bicycle Parking Standards – Interim Condition

Land Use	Units/ GFA (m ²)	Min. Bike Parking Rate	Min. Bike Spaces Required	Proposed Supply
Residential – Long-Term	542	0.75 sp/unit	406	150
Residential – Short-Term	542	0.25 sp/unit	136	51
Retail	1,393	7% of automobile parking spaces, as required by the Zoning Bylaw, or 5, whichever is greater	5	
TOTAL		A maximum of 200 bicycle parking spaces shall be required.	200	201

Although the Zoning By-law specifies minimum bicycle parking rates by unit and by retail GFA, there is also a maximum requirement of 200 spaces for a site (Zoning By-law 2009-189, Article 5.7.iv).

The bicycle parking requirements of the ultimate development condition are summarized in **Table 6-4**. The maximum supply of 200 spaces still applies, and this requirement will be exceeded through the provision of 262 residential and 94 shared visitor/non-residential spaces.

Table 6-4: Zoning By-Law 2009-189 Bicycle Parking Standards – Ultimate Condition

Land Use	Units/ GFA (m ²)	Min. Bike Parking Rate	Min. Bike Spaces Required	Proposed Supply
Residential – Long-Term	691	0.75 sp/unit	518	262
Residential – Short-Term	691	0.25 sp/unit	172	94
Retail	402.22	7% of automobile parking spaces, as required by the Zoning Bylaw, or 5, whichever is greater	5	
TOTAL		A maximum of 200 bicycle parking spaces shall be required.	200	356

7 LOADING AND FUNCTIONAL DESIGN REVIEW

There is no minimum requirement for loading docks for residential and retail uses as per the North Oakville Zoning By-law 2009-189. However, any loading docks provided must have a minimum length of 9m.

Buildings A, C and D will each have one loading space. Building B will utilize the loading space in Building A, as the underground garages between the buildings are connected.

The retail building in the interim condition will also have a dedicated loading space. Tractor trailer trucks servicing the retail block will enter from Kaitting Trail making a westbound left turn movement, reverse into the loading space, and then exit in a forward motion via the Sixth Line driveway. Trucks will be restricted from entering/exiting via other directions through access design and signage. Truck traffic is not expected to significantly impact the neighbourhood along Katting Trail.

Swept path diagrams demonstrating vehicular and loading functionality are provided in **Appendix H**.

8 TRANSPORTATION DEMAND MANAGEMENT PLAN

Transportation Demand Management (TDM) is a set of strategies that strive towards a more efficient transportation network by influencing travel behaviour. Effective TDM measures can reduce vehicle usage and encourage residents to engage in more sustainable methods of travel. There are various opportunities to incorporate TDM measures on the subject site that will support alternative modes of transportation for future residents and visitors.

The study area generally has an auto driver mode share of 86% for residential trips and 76% for retail trips, as per the 2016 TTS. The TDM strategies discussed in the following sections are critical for reducing the auto driver mode share, achieving a balanced multi-modal transportation system in Oakville and supporting sustainable development goals. A summary of the measures proposed above is provided in **Table 8-1**, and are discussed in the following sections.

Table 8-1: Summary of Proposed Transportation Demand Management Measures

TDM Measure	Estimated Impact on SOV Reduction
1. Pedestrian and Public Realm Improvements	1%
2. Bicycle Parking Spaces	5%
3. Bicycle Repair Station	
4. Cycling Information Packages	
5. Connection to Transit Network	10%
6. Transit Information Packages	
7. Pre-Loaded PRESTO Cards	
8. On-Site PUDO Layby Area	5%
9. Unbundled Parking	
Total Estimated Reduction to Site Generated SOV Trips	21%

As the proposed development moves through the development application process, the TDM plan will undergo further refinement.

8.1 PEDESTRIAN-BASED STRATEGIES

Pedestrian and public realm improvements

The proposed development will have main entrances oriented towards the existing sidewalks on Dundas Street West and Kaitting Trail to provide convenient links for pedestrians and transit users to access the proposed buildings.

The proposed development will contribute to an enhanced public realm through improved landscaping within the site and along adjacent streets. These changes will create a more comfortable and safe walking experience to and from the site.

Estimated Impact: It is estimated that the pedestrian-based strategies will result in a SOV reduction of 1% based on the site's safe and convenient pedestrian network which encourages people to walk to and from the site in place of driving.

8.2 CYCLING-BASED STRATEGIES

Bicycle parking spaces & bicycle repair station

The subject site will provide bicycle parking spaces to support and encourage active transportation. Bicycle parking spaces will be provided in secure, weather protected bicycle storage rooms located below ground.

Additionally, the provision of a bicycle repair station near the long-term bicycle parking spaces is recommended to provide tools on-site for minor bike repairs and encourage bicycle ownership.

The provision of bicycle parking spaces and a repair station will promote cycling to and from the site while also reducing demand for single occupancy vehicles (SOV).

Promote and increase cycling awareness

It is recommended that information packages be distributed to residents of the proposed development to help encourage active transportation and increase awareness of different travel alternatives available, particularly for short-distance trips. The packages should include information on the environmental and health benefits of cycling, rules of the road, as well as maps of the cycling infrastructure available in the surrounding area and key destinations.

Estimated Impact: It is estimated that the cycling-based strategies will result in a SOV reduction of approximately 5% based on the site's safe and convenient cycling infrastructure which encourages people to cycle to and from the site in place of driving.

8.3 TRANSIT-BASED STRATEGIES

Connection to transit network

As discussed in **Section 2.2**, the proposed development is served by several key Oakville Transit routes that link the site to the Uptown Core and other neighbourhoods in Oakville. Bus stops are located on nearby streets, including one directly adjacent to the site on Dundas Street West at Sixth Line. The availability of nearby bus services will encourage future residents, employees, and visitors of the site to use public transit.

Transit information packages

For residents to take complete advantage of the transit services surrounding the subject site, it is recommended that information packages be distributed to residents to increase transit awareness and the uptake of multi-modal transport. The information packages should contain public transit information such as route maps and timetables. In addition, Oakville Transit is now free for youth under 19 and seniors over 65, so residents should be encouraged to take advantage of the affordable services nearby.

Pre-loaded PRESTO cards

To incentivize residents to make more transit-based trips, it is recommended that pre-loaded PRESTO cards be supplied to each unit upon occupation. Supplying residents with a pre-loaded PRESTO card will promote the use of nearby transit services. By adopting transit ridership behaviour early on, residents will rely less on personal automobiles.

PRESTO cards are required at boarding, even for youth and seniors that ride for free on Oakville Transit, so the provision of cards to all units simplifies the process of obtaining a card and allows new residents to start riding immediately after moving in. PRESTO cards can also be used in other jurisdictions, including for GO Transit, MiWay (Mississauga), Burlington Transit and the Toronto Transit Commission.

Estimated Impact: It is estimated that the transit-based strategies will result in a SOV reduction of approximately 10%. This assumption is based on the site's proximity to existing local transit routes.

8.4 PARKING- AND TRAVEL-BASED STRATEGIES

On-site PUDO layby area

Pick-up and drop-off trips for rideshare vehicles, taxis and personal vehicles will be supported by the proposed development, as each apartment building will have dedicated vehicle lay-by areas located near the main entrances. The addition of the on-site lay-by area can reduce parking demand, the need for vehicle ownership and the number of SOV trips to and from the site.

Unbundled parking

The proposed development will sell parking spaces separately from units. The upfront cost of a dedicated parking spot can help discourage auto-dependency for some residents, thereby encouraging the use of other sustainable modes of transport.

Estimated Impact: It is estimated that the parking management and travel-based strategies will result in a SOV reduction of approximately 5% since it discourages vehicle ownership and encourages alternative modes of transportation in place of SOV trips including walking, cycling, transit, and rideshare trips.

8.5 SUMMARY OF TDM STRATEGIES

A preliminary cost estimate for the proposed TDM measures is provided in **Table 8-2**.

Table 8-2: TDM Cost Estimate

Recommended TDM Measure	Quantity	Unit Cost	Total Costs
Pedestrian-Based Strategies			
Pedestrian and Public Realm Improvements	N/A	Included in Site Plan	Included in Site Plan
Cycling-Based Strategies			
Bicycle Parking Spaces	356	Included in Site Plan	Included in Site Plan
Bicycle Repair Station	2	\$1,000-\$2500	\$2,000-\$5000
Cycling Information Packages	691 Units	\$2.00 per unit	\$1,382
Transit-Based Strategies			
Connection to Transit Network	N/A	Included in Site Plan	Included in Site Plan
Pre-Loaded PRESTO Cards	691 Units	\$20 (Stored Value) \$4 (Activation Fee)	\$15,864
Transit Information Packages	691 Units	\$2.00 per unit	\$1,382
Parking Management & Travel-Based Strategies			
On-Site PUDO Layby Area	N/A	Included in Site Plan	Included in Site Plan
Unbundled Parking	N/A	Included in Site Plan	Included in Site Plan
Total			\$20,628-\$23,628

8.6 TDM MONITORING

It is recommended that ongoing monitoring and evaluation be undertaken to collect data and information regarding TDM performance measures. The key goal of performance measuring is to provide useful information on identifying successful program activities, improvements to existing programming, as well as the potential development of future programs. The employers should perform periodic evaluations to assess how well the TDM Programs are achieving the goal of reducing the number of single-occupant vehicle trips generated by the site. A baseline survey and annual monitoring five (5) years onward is recommended to ensure effective monitoring.

Table 5-1 summarizes the TDM checklist for non-residential developments as outlined in Halton Region’s Transportation Mobility Plan Guidelines. TDM measures will be implemented in each development phase, including on-site infrastructure and financial incentives / information.

Recommended TDM Measure	Responsibility	Details
Pedestrian and Public Realm Improvements	Applicant	The applicant will include pedestrian and public realm improvements such as improvements to sidewalks and pedestrian pathways.
Bicycle Parking Spaces	Applicant	The applicant will provide the maximum number of bicycle parking spaces allowed under the zoning by-law to ensure adequate spaces for residents.
Bicycle Repair Station	Applicant	The applicant will provide two (2) bicycle repair stations.
Cycling Information Packages	Applicant	The applicant will provide information via online/email and physical information packages to residents about cycling information (e.g. nearby cycling routes, bicycle parking guidelines, etc.).
Connection to Transit Network	Applicant	The applicant will identify connection opportunities to transit and active transportation.
Pre-Loaded PRESTO Cards	Applicant	Pre-loaded Presto cards to be provided to residents and retail employees.
Transit Information Packages	Applicant	The applicant will provide information via online/email and physical information packages to residents about transit information (e.g. nearby transit routes and stops, Presto card guidelines, etc.).
On-Site PUDO Layby Area	Applicant	The applicant will provide on-site PUDO facilities.
Unbundled Parking	Applicant	Vehicle parking spaces will be unbundled and sold separately from units.

9 CONCLUSIONS AND RECOMMENDATIONS

- ▶ The proposed four-phase development is a mixed-use condominium development with four residential towers providing 663 units, four townhouse blocks providing 28 units, and 402.22m² of retail GFA. As an interim condition, 1,393m² of retail GFA will be provided, but will ultimately be removed. The development will have three driveways from Dundas Street West, Sixth Line and Kaitting Trail.
- ▶ The analysis considered three future horizons. 2028 (interim condition), 2033 (ultimate condition), and 2038 (five-years post-buildout)
- ▶ The subject site is served by Oakville Transit, with a bus stop directly adjacent to the development along Dundas Street West. The subject site is also located near many dedicated cycling corridors and has several amenities and services located within a 20-minute walking distance.
- ▶ Vehicle trip generation was estimated for the proposed development. Under the interim condition, the site is expected to generate 248 two-way vehicle trips (69 inbound, 179 outbound) during the weekday AM peak hour and 270 two-way vehicle trips (154 inbound, 116 outbound) during the weekday PM peak hour. At full buildout, the site is expected to generate 290 two-way vehicle trips (67 inbound, 223 outbound) during the weekday AM peak hour and 300 two-way vehicle trips (174 inbound, 126 outbound) during the weekday PM peak hour.
- ▶ Under existing and future background conditions, the study area intersections operate at acceptable levels. Under future total conditions, the intersections continue to operate with no capacity constraints. The proposed site accesses are expected to operate well. Signal timing plan optimization is recommended at the intersection of Dundas Street and Sixth Line. The analysis results confirm that the proposed development will have an acceptable impact on the surrounding road network.
- ▶ The proposed parking supply has been reviewed based on the requirements of the North Oakville Zoning By-Law 2009-189. At full buildout, the proposed development will provide 639 residential parking spaces and 153 non-residential parking spaces, meeting the by-law requirements.
- ▶ The proposed bicycle parking provision, consisting of 262 residential and 94 shared visitor/non-residential weather-protected bicycle parking spaces, meets the North Oakville Zoning By-Law 2009-189 requirements.
- ▶ Given the site's existing and future transportation context, daily activities can be readily accomplished without the use of a private vehicle. The proposed TDM strategies will help to reduce single-occupant vehicle (SOV) trips, consistent with the Town's transportation and sustainability objectives. TDM recommendations include the provision of bicycle parking and amenities, a communication strategy, and transit incentives. Additional details and refinement to the TDM strategy will be undertaken as the development progresses through the development application process.
- ▶ Three (3) loading spaces are proposed for the residential uses to accommodate waste collection and loading, satisfying the requirements of North Oakville Zoning By-Law 2009-189. An additional loading space will be provided in the interim condition for the retail block.