DILLON CONSULTING

Forever Homes Meadowlily Limited Partnership

168 Meadowlily Development

Transportation Impact Assessment

June 2024 – 22-5208

June 17, 2024

Forever Homes Meadowlily Limited Partnership
1956 Mallard Road
London, ON
N6H 5M1

Attention: Jeff Fung
Vice President of Operations, Forever Homes

168 Meadowlily Road Residential Development, London, ON
Transportation Impact Assessment

Dear Jeff Fung,

Please find enclosed a copy of the transportation impact study prepared for the site plan application for the proposed residential development at the above-noted address.

Should you have any questions or wish to discuss our findings, please contact me at (416) 229-4647, extension 2376, or at **mwalters@dillon.ca**.

Sincerely,

Dillon Consulting Limited

Mike Walters, P.Eng.
Transportation Engineer

Our File: 22-5208

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Appendices (seperate documents)

Acronyms

AM	Morning
AODA	Accessibility for Ontarians with Disabilities Act
EB	Eastbound
HCM	Highway Capacity Manual
ITE	Institute of Transportation Engineers
LOS	Level of service
MUP	Multi-use path
NB	Northbound
PM	Afternoon
s/veh	Seconds per vehicle
SB	Southbound
TAC	Technology Accreditation Canada
TIA	Transportation Impact Assessment
v/c	Volume-to-capacity
WB	Westbound
ZBL	Zoning By-law
%ile	Percentile

1.0 Introduction

1.1 Purpose

Dillon Consulting Limited (Dillon) has been retained by Forever Homes Meadowlily Limited Partnership to undertake a transportation impact assessment (TIA) for the proposed development at 168 Meadowlily Road South in London, Ontario. As part of the development application, a TIA is required to determine the impact of the traffic generated by the development. The site under consideration is situated on the northeast corner of Commissioners Road East and Meadowlily Boulevard. The land is presently undeveloped.

The development application seeks to permit the following land uses:

- Block 1 – Townhomes (3 Storeys)
  - 72 residential units
- Block 2 – Stacked Back-to-Back Townhomes (3 Storeys)
  - 95 residential units
- Block 3 – Mid-rise Apartments (6 Storeys)
  - 120 residential units
- Block 4 – Mid-rise and High-rise Apartments (8-12 Storeys)
  - 662 residential units

Within the development plans, a new street (Street A) is proposed to connect with Commissioners Road East and Meadowlily Road South to provide access to the various blocks.

A parking supply of 1,091 parking spaces is proposed. Ground level parking is proposed for all blocks, in addition to an underground parking garage and podium parking on Block 4.

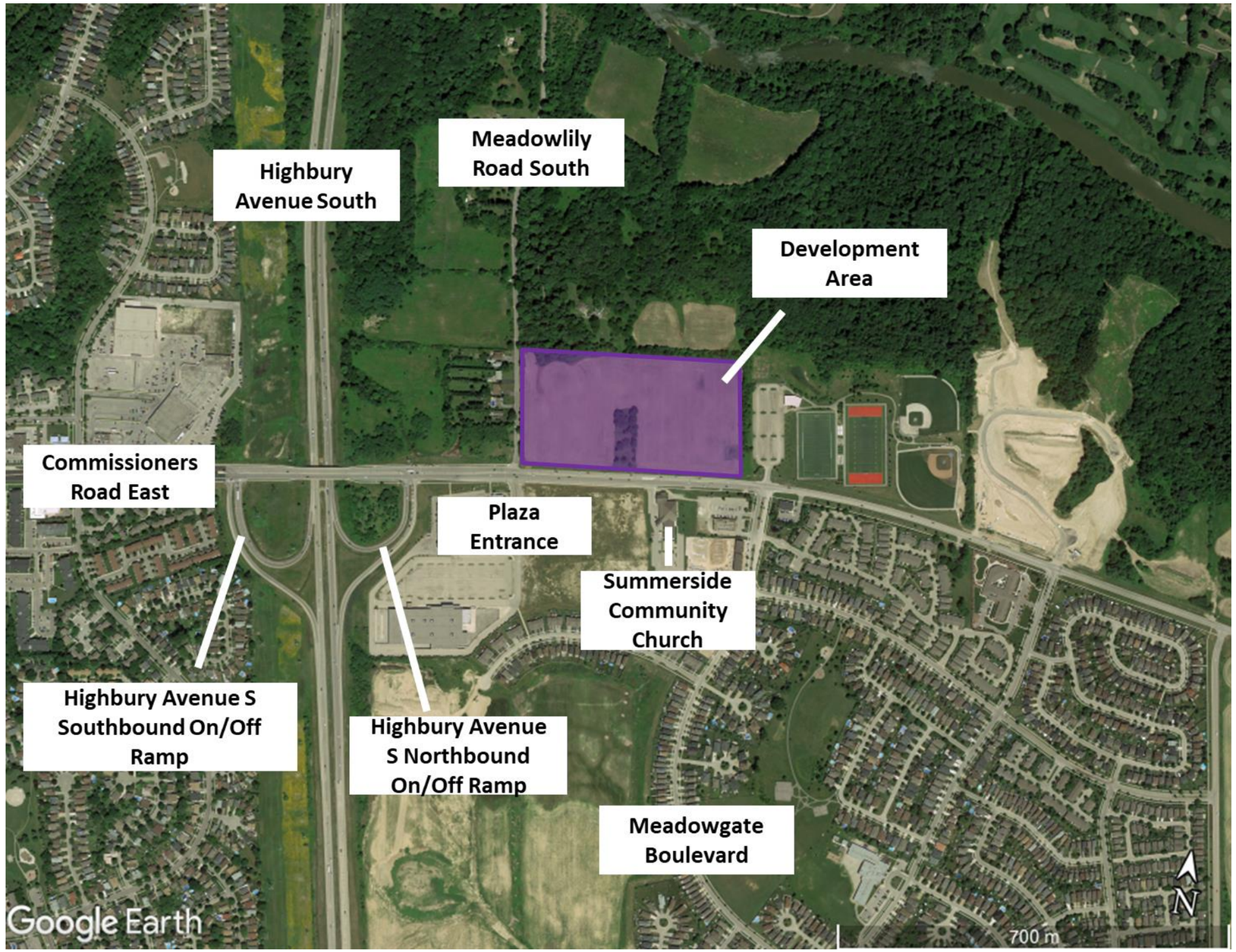
The proposed site plan is provided in **Appendix A**.

Figure 1 illustrates the location of the site.

This assessment documents the anticipated change to traffic volumes and intersection operations with and without the development. This report also identifies any

modifications to transportation infrastructure, including road network and transit system improvements to mitigate traffic impacts.

Figure 1: Site Location



1.2 Proposed Development

The proposed site development plan is provided in **Appendix A**. The subject site is currently vacant. Within the site plan, a new street, Street A, is proposed to connect with Meadowlily Road South and Commissioners Road East (aligned with the Summerside Community Church driveway to the south).

The development of Forever Homes is separated into four blocks.

- **Block 1** – On this block the construction of seventy-two (72) three-storey townhomes is envisioned. Access to this block will be via two driveways on Street A. Parking will be provided at a rate of 2.0 spaces per unit as well as 17 visitor parking spaces for a total of 161 spaces;
- **Block 2** – The proposed development of Block 2 envisions the construction of ninety-five (95) stacked townhome units. Access to this block will be via two driveways on Street A. Parking will be provided at a rate of 0.9 spaces per unit for a total of 87 spaces;
- **Block 3** – On this block the construction of a six-storey apartment building with one hundred and twenty (120) units is envisioned. The site access will be via two driveways on Street A. 120 parking spaces (1 space per unit) are proposed; and
- **Block 4** – The proposed development of Block 4 envisions the development of six hundred and sixty-two (662) units, divided between four buildings. Two 12-storey apartment buildings are proposed with a total of three hundred and forty-eight (348) units and two eight-storey apartments for a total of three hundred and fourteen (314) units are proposed. The site access will be via two driveways on Street A. A total of 723 parking spaces (1.09 spaces per unit) are proposed. An underground parking garage and podium parking is proposed for this block.

1.3 Scope of Analysis

Based on discussions with staff at the City of London, the scope for this TIA has been determined to include the following locations:

- Highbury Avenue South and Commissioners Road East (West Ramp Terminal (signalized);
- Highbury Avenue South and Commissioners Road East (East Ramp Terminal (signalized);

- Meadowlily Road South and Commissioners Road East (signalized);
- Meadowgate Boulevard and Commissioners Road East (signalized);
- Future Street 'A' and Meadowlily Road South (unsignalized); and
- Future Street 'A' and Commissioners Road East (unsignalized).

Traffic analyses have been completed for the weekday AM and PM peak hours for three horizon years:

- 2027, which corresponds to the anticipated build-out of the first half of the subdivision (Block 1, Block 2 and Block 3);
- 2030, which corresponds to the build-out of the entire subdivision; and
- 2035, which corresponds to five years after the anticipated build-out year.

The scope of analysis also considers the following:

- Estimate the trips generated by the proposed blocks of redevelopment and distribute and assign these trips to the surrounding road network;
- Identify the anticipated operations at the study area intersections with the added development traffic for three horizon years (2027, 2030 and 2035);
- Evaluate the site-generated transit demand;
- Review the preliminary site plan and profiles to evaluate proposed access points, evaluate sight lines, demonstrate compliance with City parking requirements, evaluate emergency vehicle access and circulation, evaluate access provisions for pedestrian and cyclists and identify measures taken to accommodate persons with personal mobility issues; and
- Determine if any mitigation is required to support the planned redevelopment.

2.0 Existing Conditions

2.1 Existing Road Network

The following describes the existing road network in the immediate study area. All roads are under the jurisdiction of the City of London unless stated otherwise.

Highbury Avenue South extends north-south through the city of London. Within the study area, Highbury Avenue is classified as an expressway and has a two-lane cross-section. It has a posted speed limit of 100 km/h.

Commissioners Road East is classified as a civic boulevard according to the City of London, but is an arterial roadway based on functional classification. Commissioners Road West begins in the west of London at Oxford Street West and becomes Commissioners Road East at Wharncliffe Road South. The street extends easterly from Wharncliffe Road South for approximately 10 kilometres before terminating at Old Victoria Road. It has a four-lane urban cross-section. Within the study area, a sidewalk is present on both sides of the roadway from the Highbury Avenue South Ramp terminal until Meadowlily Road South. To the east of Meadowlily Road, a sidewalk is only present on the south side of the roadway. To the west of Meadowlily Road South, Commissioners Road East has a posted speed limit of 60 km/h. To the east, the posted speed limit is 70 km/h.

Meadowlily Road South is a two-lane local road that extends north of Commissioners Road East. It extends to the north for approximately 900 metres, before becoming the Meadowlily Woods Trail, which contains the Meadowlily Bridge. This bridge traverses Pottersburg Creek. When the bridge terminates, Meadowlily Road North begins and extends from Norlan Avenue to Hamilton Road (approximately 315 metres). The use of cars is restricted within the trail and on the bridge. No sidewalks are present on either side of the roadway. There is a posted speed limit of 40 km/h within the study area.

At the Meadowlily Road South and Commissioners Road intersection, the south leg provides access to the Summerside Shopping Centre. There is no posted speed limit sign and therefore the statutory speed limit of 50 km/h applies.

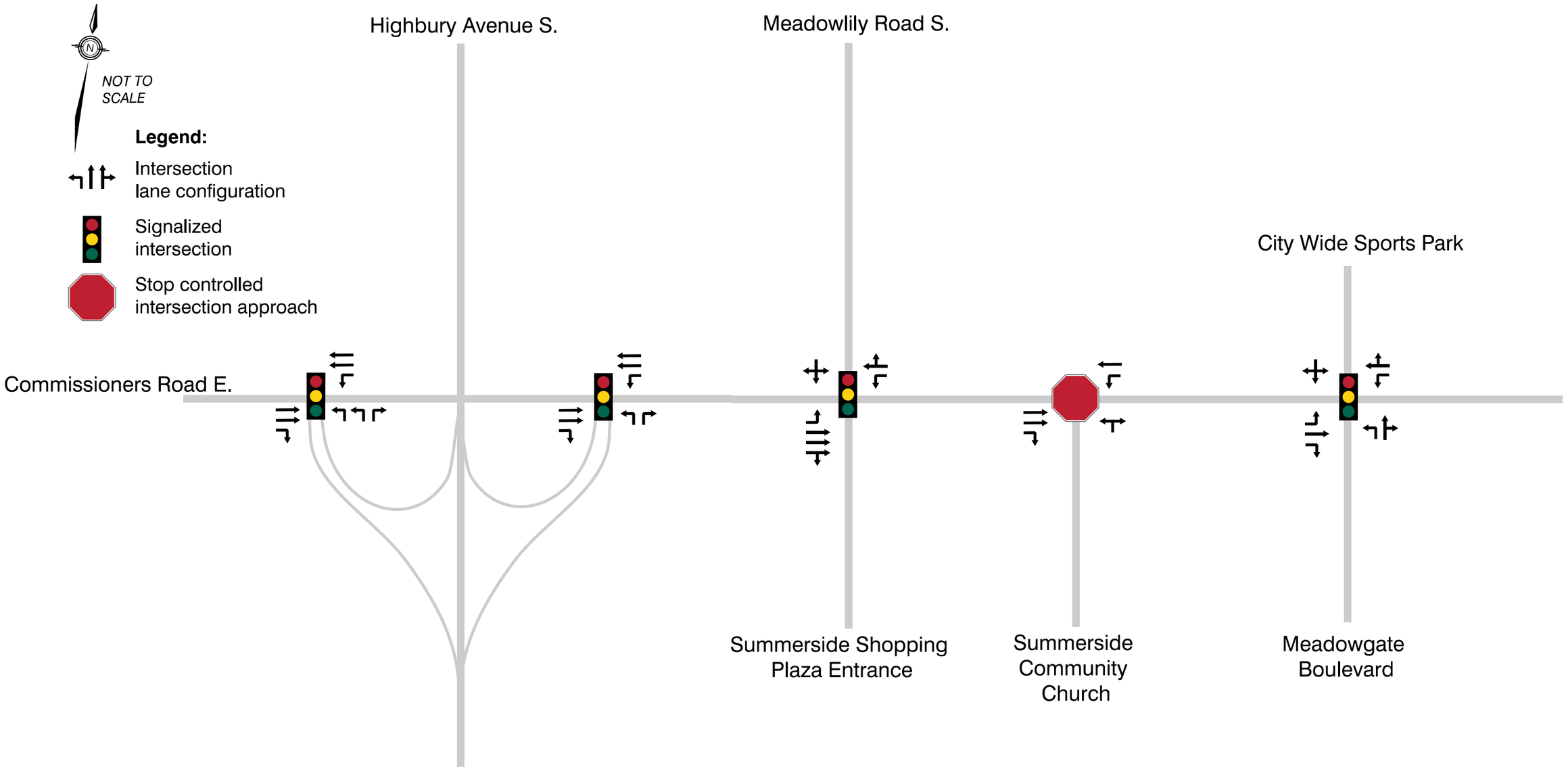
Meadowgate Boulevard is a local road that extends to the south of Commissioners Road East. A sidewalk is present on the east and west side of the roadway within the study area. There is a posted speed limit of 40 km/h within the study area.

At the Meadowgate Boulevard and Commissioners Road intersection, the north leg provides access to the City Wide Sports Park.

All intersections within the study area are signalized

Figure 2 illustrates the existing lane configurations and traffic control at the study area intersections.

Figure 2: Existing Lane Configurations and Traffic Controls



Currently, the Summerside Community Church driveway on Commissioners Road East operates as a full movement driveway. In previous years, a median existed that restricted northbound left-turn movements from the church. This median was modified in 2015 to permit northbound left-turn movements from the church driveway.

Street A is proposed to connect with Meadowlily Road South and Commissioners Road East (aligned with the Summerside Community Church driveway to the south). With the new road connection, a new median will be built along Commissioners Road East that will restrict the southbound left-turn from the proposed development and will once again restrict the northbound left turn from the church driveway.

2.2 Existing Transit Service

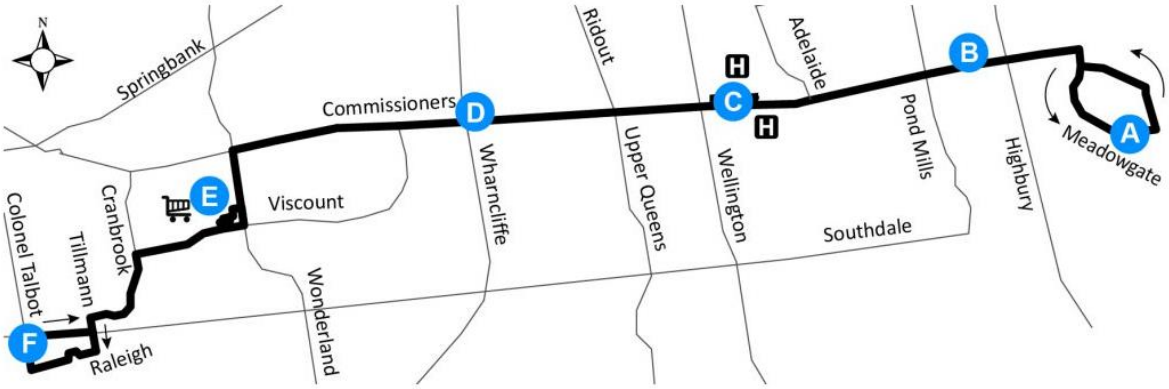
Transit service in the study area is operated by the London Transit Commission. London Transit currently operates one route along Commissioners Road East within the study area:

Route 24 Talbot Village Summerside, in the westbound direction begins at Darnley Boulevard and Meadowgate Boulevard and heads westbound along Commissioners Road East before heading south along Wonderland Road, terminating at the Westmount Mall. To head eastbound, the route begins at the Westmount Mall, travels south towards Colonel Talbot Road and Southdale Road where it loops back towards the mall, eventually heading east along Commissioners Road East to terminate at Meadowgate Boulevard and Darnley Boulevard.

Service is provided at 44 to 46-minute headways on Monday to Friday throughout the day and 40 to 46-minute headways on Saturday. Sunday and holiday service is provided at 39 to 41-minute headways.

London Transit's routing along Commissioners Road East, fronting the Meadowlily Forever Homes site is shown in **Figure 3**.

Figure 3: Existing Transit Network



2.3 Existing Traffic Volumes

Weekday AM and PM peak hour intersection turning movement counts at the study area intersections were provided by The City of London and Accu Traffic Inc.

As the future north-south portion of Street 'A' would be aligned with the existing church driveway to the south, turning movement counts were collected at the existing church driveway.

Table 1 documents the source and date of the traffic volumes at each intersection.

Table 1: Traffic Volume Data Sources

Location	Source	Survey Date
Commissioners Road East and Highbury Avenue South (West Ramp Terminal)	City of London	Wednesday, April 19, 2023
Commissioners Road East and Highbury Avenue South (East Ramp Terminal)	Accu Traffic Inc.	Thursday, September 21, 2023

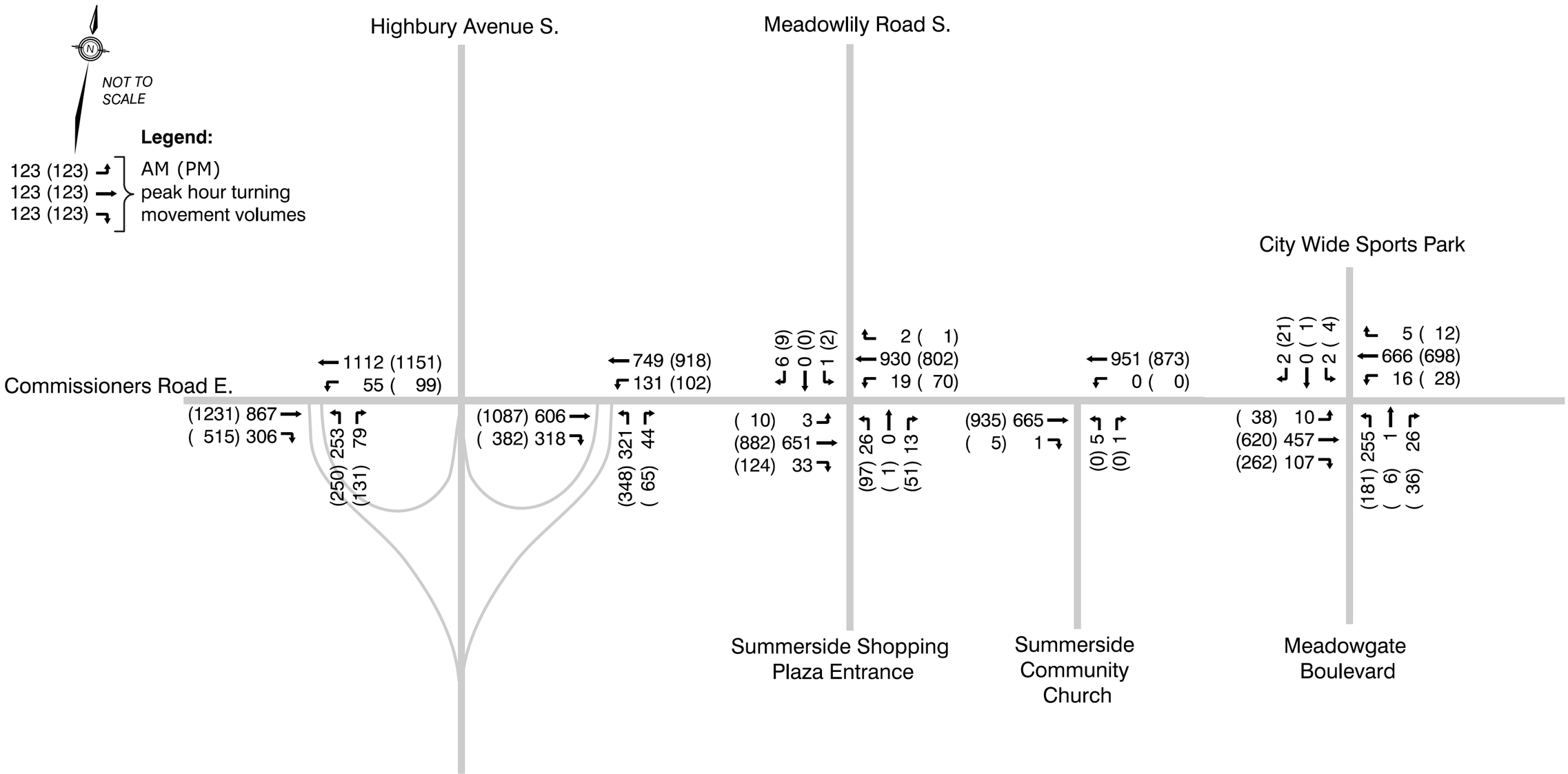
Location	Source	Survey Date
Commissioners Road East and Meadowlily Road South	City of London	Wednesday, September 21, 2022
Commissioners Road East and Summerside Community Church	Accu Traffic Inc.	Thursday, September 21, 2023
Commissioners Road East and Meadowgate Boulevard	City of London	Wednesday, May 4, 2022

A background growth rate of 1.5% was used to grow the surveyed traffic volumes between the count year and the existing year. This growth rate was identified by City of London staff. Growth was applied to the study area intersections in the following way:

- Commissioners Road East and Highbury Avenue West Ramp Terminal and Commissioners Road East and Highbury Avenue West Ramp Terminal: applied to all turning movements
- Commissioners Road East and Meadowlily Road South: applied to eastbound/westbound through movements only
- Commissioners Road East and Summerside Community Church: applied to eastbound/westbound through movements only
- Commissioners Road East and Meadowgate Boulevard: applied to all movements except those going to/from the City Wide Sports Park

Figure 4 shows the existing (2024) traffic volumes during the weekday AM and PM peak hours. There is a low volume of traffic performing the northbound left-turn from the Summerside Church driveway in the AM peak hour. Under total future conditions when Street A and the new median are built, the northbound left-turning vehicles have been reassigned to Meadowgate Boulevard.

Figure 4: Existing (2024) Traffic Volumes



3.0 Future Background Conditions

Future background traffic volumes reflect the volume of traffic that is anticipated to be on the road network during the horizon years without the subject development in place. Typically, this is comprised of two factors:

- The application of a growth rate to reflect general background traffic growth on the road network; and
- The application of the site-specific traffic volumes for any background developments in the immediate vicinity of the site.

During the scoping of this assessment with the City of London, four background developments were identified. All background developments identified are residential subdivisions. The first background development is located on the west side of Meadowlily Road South. The second background development is the Parker Jackson Lands, which are bounded by Commissioners Road East, Jackson Road and Bradley Avenue. The next background development is located at 129 Meadowlily Road South, directly south of the first background development identified. The last background development is located at 1944 Bradley Avenue.

Within the future background analyses, three horizon periods have been identified as:

- 2027 – the first half of the subdivision (Block 1, Block 2 and Block 3);
- 2030 – the build-out of the entire subdivision; and
- 2035 – five years beyond the anticipated build-out of the site.

3.1 Background Traffic Growth

Future background traffic volumes were calculated by applying a background growth rate of 1.5% per year to the existing traffic volumes. The growth rate was identified by City of London staff. The background growth rate was applied to the study area intersections. The way in which it was applied is outlined in **Section 2.3**.

3.2 Background Development Traffic

3.2.1 Residential Subdivision – Meadowlily Road South Subdivision

The proposed subdivision at Meadowlily Road South contains 37 single-family detached houses and 52 multi-family dwelling units. A TIA was not prepared for this site, so the number of vehicle trips generated by this development was calculated based on trip generation rates published by the Institute of Transportation Engineers (ITE) in the **Trip Generation Manual** (11th edition). Trips were generated based on ITE Land Use Code 210 ("Single Family Detached Housing") and Land Use Code 215 ("Single Family Attached Housing").

Table 2 and **Table 3** summarize the number of vehicle trips anticipated to be generated by the development.

Table 2: Meadowlily Road South– Single-Family Detached Housing - (ITE Land Use Code 210)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	25%	75%	0.70	63%	37%	0.95
Site trips (67 units)	7	19	26	22	13	35

Table 3: Meadowlily Road South– Single-Family Attached Housing - (ITE Land Use Code 215)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	25%	75%	0.48	59%	41%	0.58
Site trips (11 units)	6	19	25	18	12	30

The Meadowlily Road South development site is forecast to generate a total of 51 vehicle trips (13 inbound, 38 outbound) in the AM peak hour and 65 vehicle trips (40 inbound, 25 outbound) in the PM peak hour.

The directional distribution of the site vehicle trips for the proposed development at Meadowlily Road South was estimated based on existing travel patterns. As a result, the following trip distribution was utilized:

- 25% of the trips are expected to be to/from the north;
- 10% of the trips are anticipated to be to/from the east;
- 50% of the trips are expected to be to/form the west; and
- 15% of the trips are anticipated to be to/from the south.

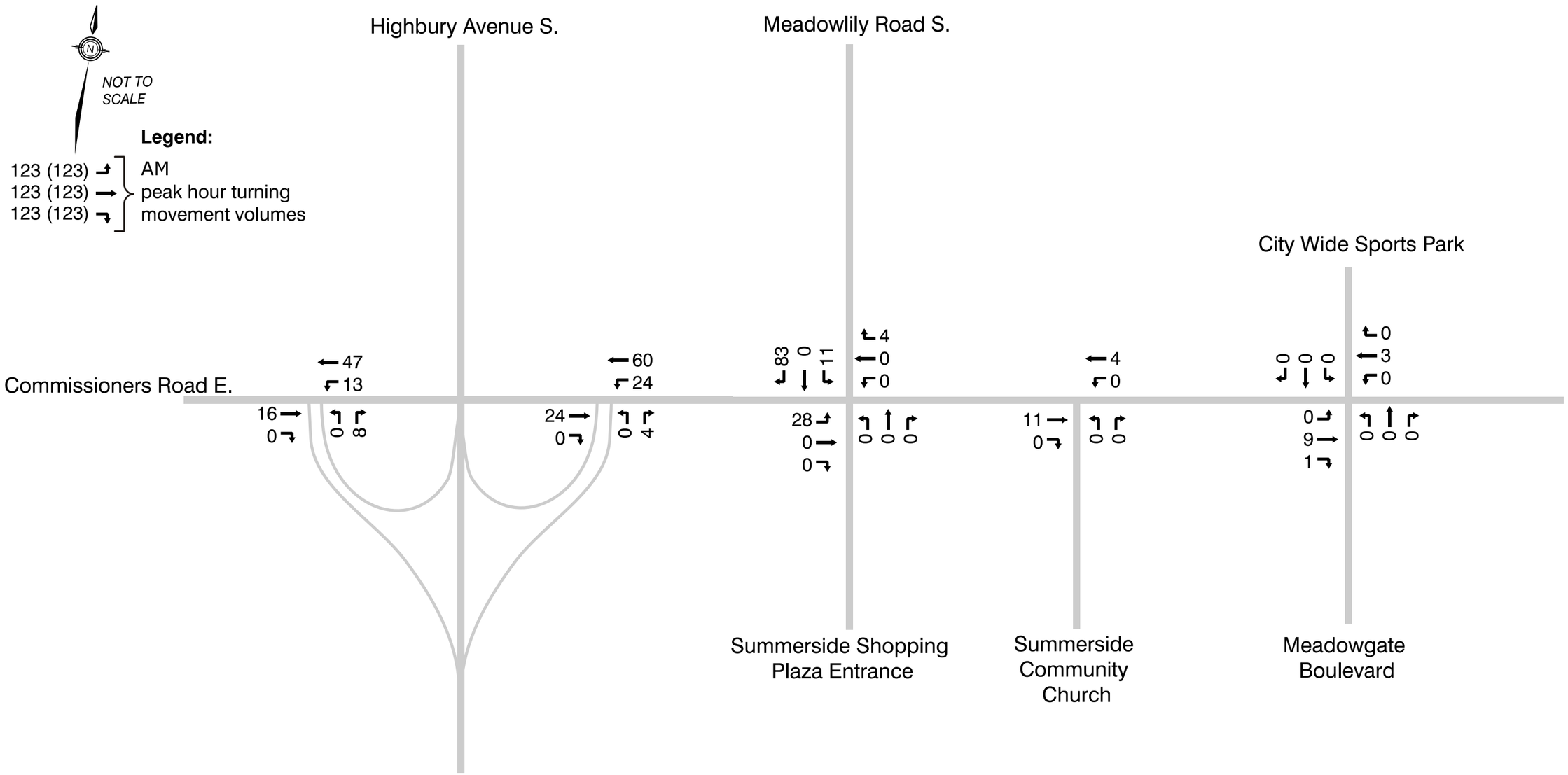
Trips generated by the background development were assigned logically based on the available street network. **Table 4** outlines how the trips were assigned to the road network.

Table 4: Trip Assignment

To/From	Trip Assignment In	Trip Assignment Out
North via Highbury Avenue	100%	100%
North via Meadowlily Road South	0%	0%
East via Commissioners Road East	100%	100%
West via Commissioners Road East	100%	100%
South via Highbury Avenue	90%	90%
South via Meadowgate Boulevard	10%	10%

Due to the proximity of this background development and the 129 Meadowlily Road South development (described in **Section 3.2.2)**, the background development traffic was distributed to study area intersections utilizing the same distributions and assignments. **Figure 5** shows the background development traffic anticipated by both the Meadowlily Road South and 129 Meadowlily Road South developments.

Figure 5: Meadowlily Road South Developments Site Traffic Volumes (Meadowlily Road South Subdivision and 129 Meadowlily Road South)



3.2.2 Residential Subdivision – 129 Meadowlily Road South

The proposed subdivision at 129 Meadowlily Road South contains 157 single-family detached houses. A TIA was not prepared for this site, so the number of vehicle trips generated by this development was calculated based on trip generation rates published by the Institute of Transportation Engineers (ITE) in the **Trip Generation Manual** (11th edition). Trips were generated based on ITE Land Use Code 210 ("Single Family Detached Housing").

Table 5 summarizes the number of vehicle trips anticipated to be generated by the development.

Table 5: 129 Meadowlily Road South – Single-Family Detached Housing (ITE Land Use Code 210)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	25%	75%	0.48	63%	37%	0.57
Site trips (67 units)	19	56	75	56	33	89

The 129 Meadowlily Road South development is forecast to generate a total of 75 vehicle trips (19 inbound, 56 outbound) in the AM peak hour and 89 vehicle trips (56 inbound, 33 outbound) in the PM peak hour.

Due to the proximity of this background development to the development on Meadowlily Road South, development traffic was distributed to study area intersections utilizing the same distributions and assignments outlined in **Section 3.2.1.**

Figure 5 in **Section 3.2.1**, shows the background development traffic anticipated by both the Meadowlily Road South and 129 Meadowlily Road South developments.

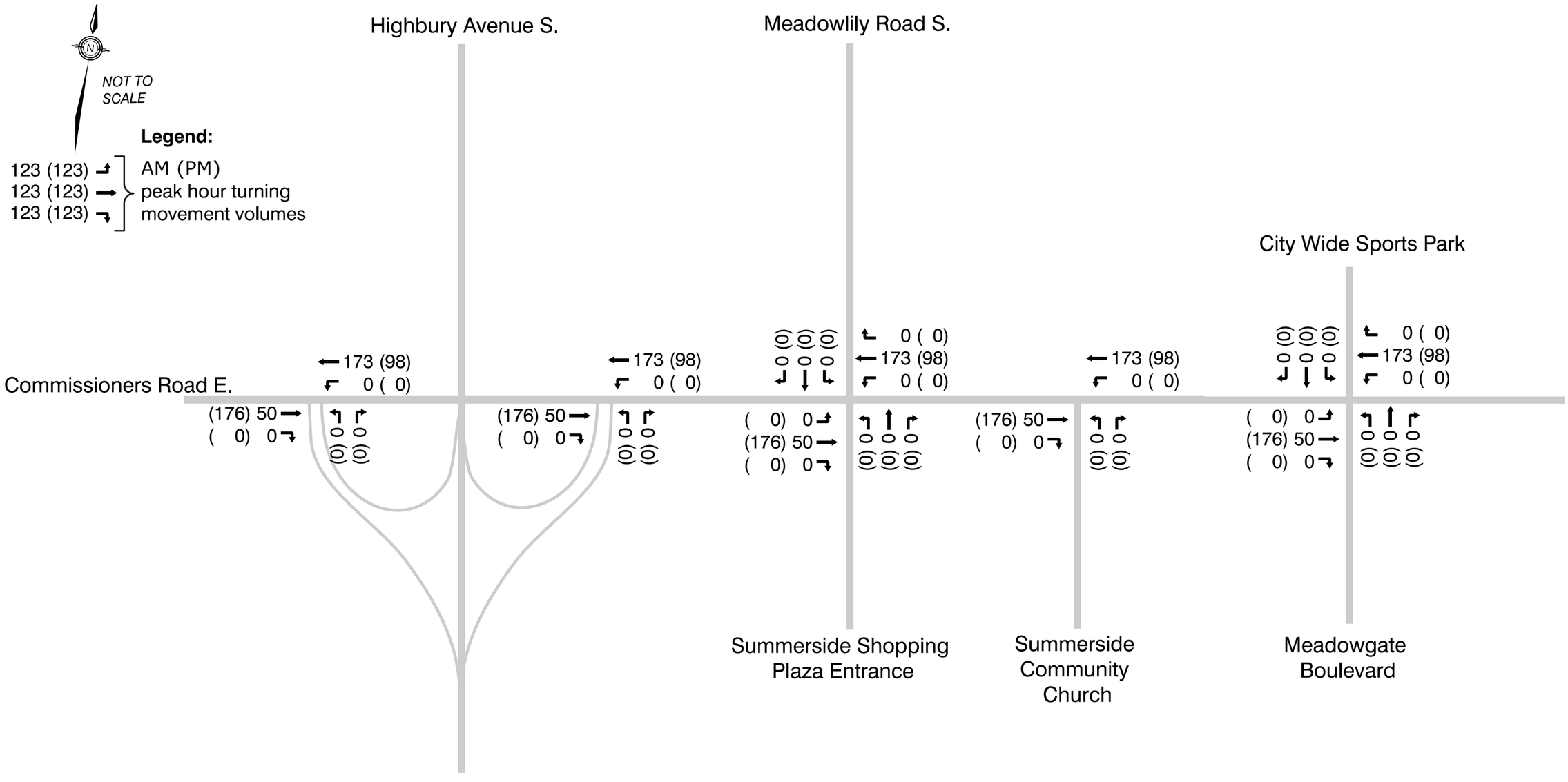
3.2.3 Residential Subdivision – Parker Jackson Lands

A residential subdivision, known as the "Parker Jackson Lands", is proposed for the east side of Jackson Road between Commissioners Road East and Bradley Avenue. The development proposed 519 single detached family homes and 489 multi-family townhouse units.

A TIA was prepared in August 2016 by Stantec. Trip generation, distribution and assignment of site trips was undertaken as part of the TIA. Stantec's study area included all the study area intersections being analyzed in the 168 Meadowlily Boulevard TIA. Therefore, the site trip generation and assignment completed by Stantec were relied upon to assign site trips to the study area intersections.

Figure 6 shows the background development traffic anticipated by Parker Jackson Lands development.

Figure 6: Parker Jackson Lands Site Traffic Volume



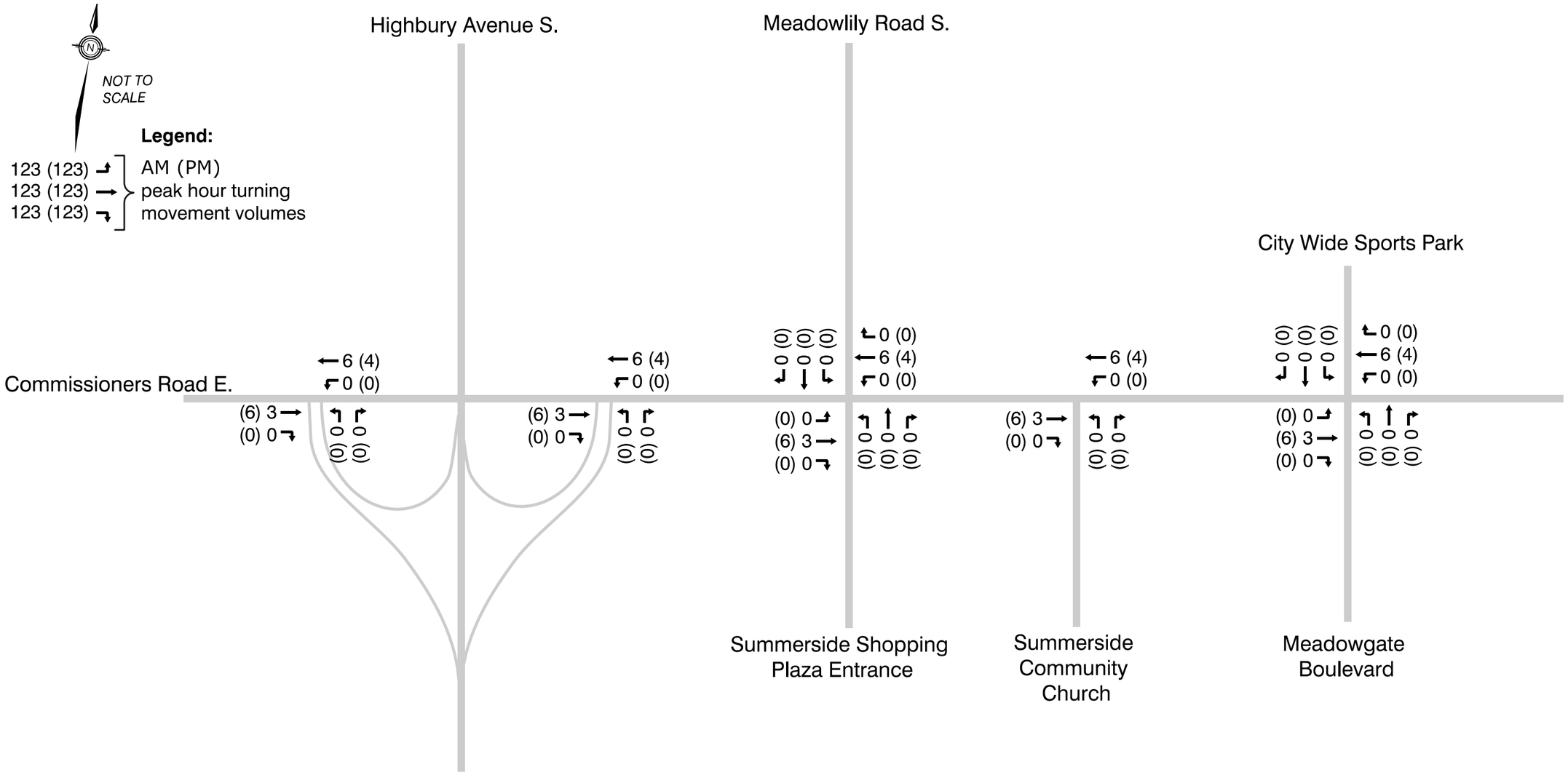
3.2.4 Residential Subdivision – 1944 Bradley Avenue

A residential subdivision is proposed on the north side of Bradley Avenue and east side of Jackson Road. Two accesses are proposed, one off of Bradley Avenue and one off of Jackson Road. The development proposes 281 dwelling units, including 49 single-detached homes, 144 street townhouses and 88 block townhouses. Trip generation and assignment was undertaken as part of a TIA prepared in July 2023 by Paradigm Transportation Solutions Limited.

The 2023 TIA did not include any of the study area intersections. Traffic volumes were extrapolated through the study area intersections based on a 50/50 split with trips to/from the north on Jackson Road. The northbound trips on Jackson Road were assigned 50% to the west and 50% to the east on Commissioners Road East. Trips assigned to the west were carried through all study area intersections, and trips assigned to the east were outside of the study area.

Figure 7 shows the background development traffic anticipated by the 1944 Bradley Avenue development.

Figure 7: 1944 Bradley Avenue Site Traffic Volumes



3.3 Future Background Traffic Volumes

Future background traffic volumes were calculated by applying a background growth rate of 1.5% per year to the existing traffic volumes. The growth rate was identified by City of London Staff. The background growth rate was applied to the study area intersections. The way in which it was applied is outlined in **Section 2.3**.
The resulting future background traffic volumes for the 2027, 2030 and 2035 horizon years are shown in **Figure 8**, **Figure 9** and **Figure 10**, respectively.

Figure 8: Future Background (2027) Traffic Volumes

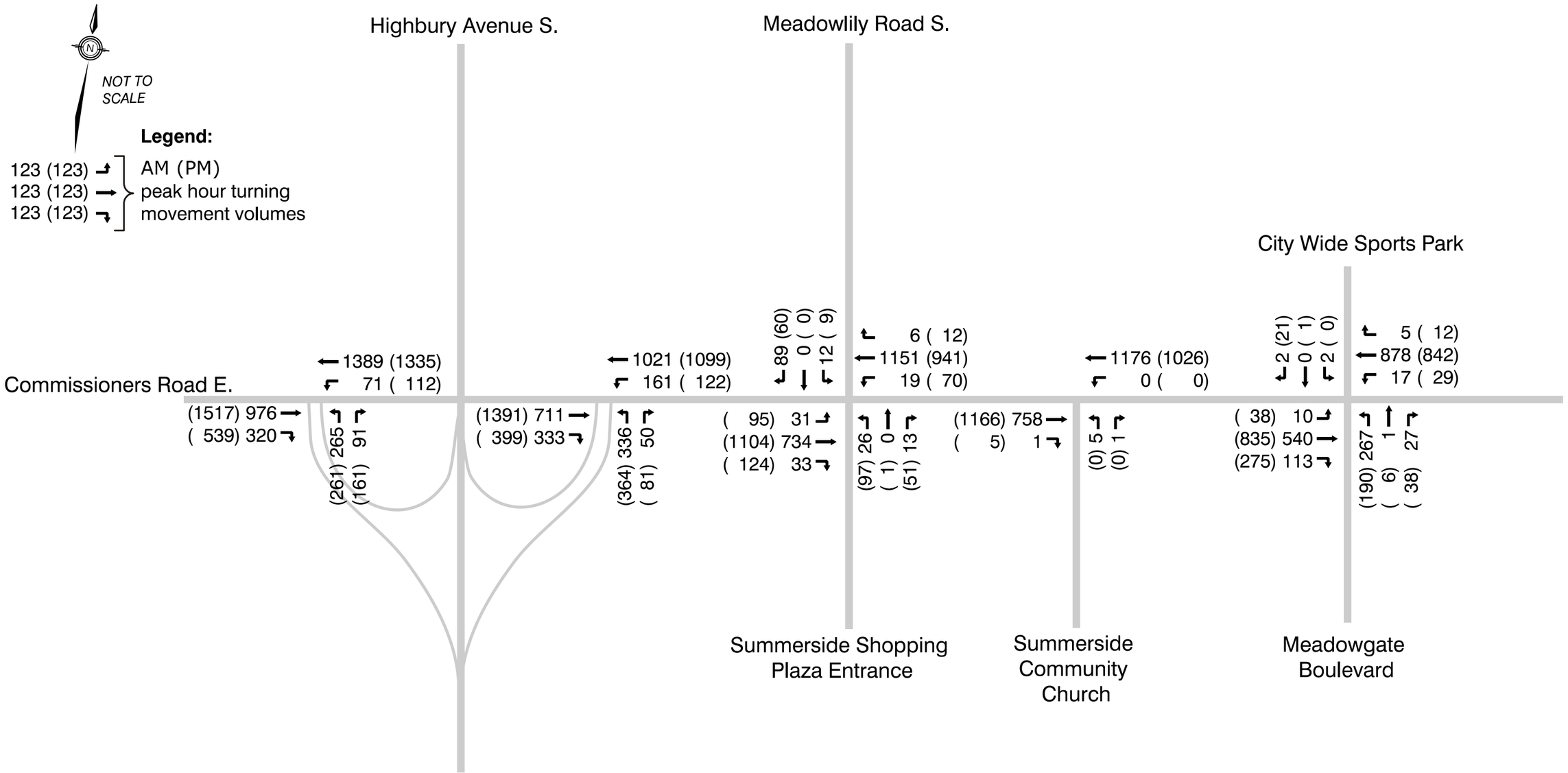


Figure 9: Future Background (2030) Traffic Volumes

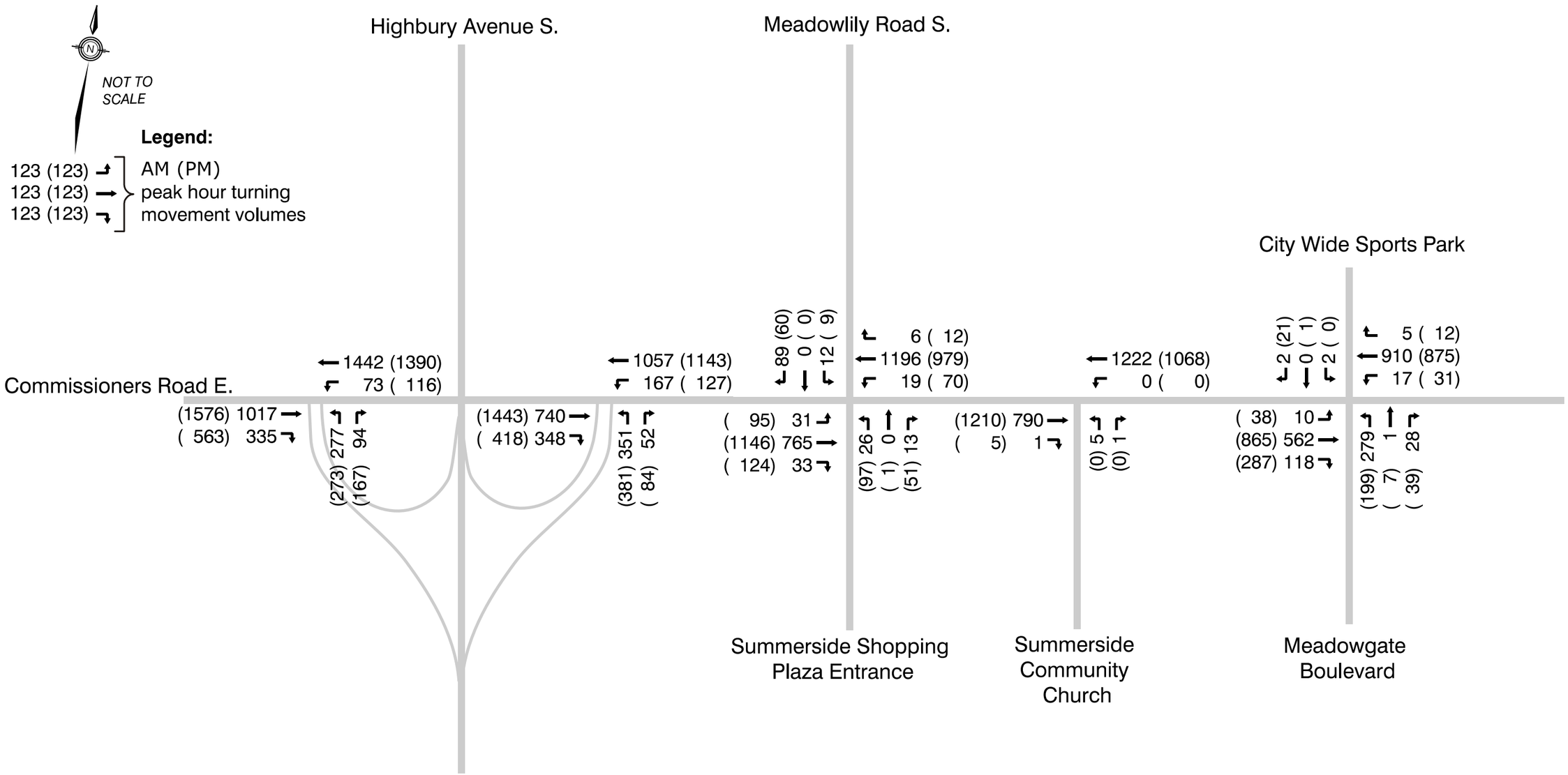
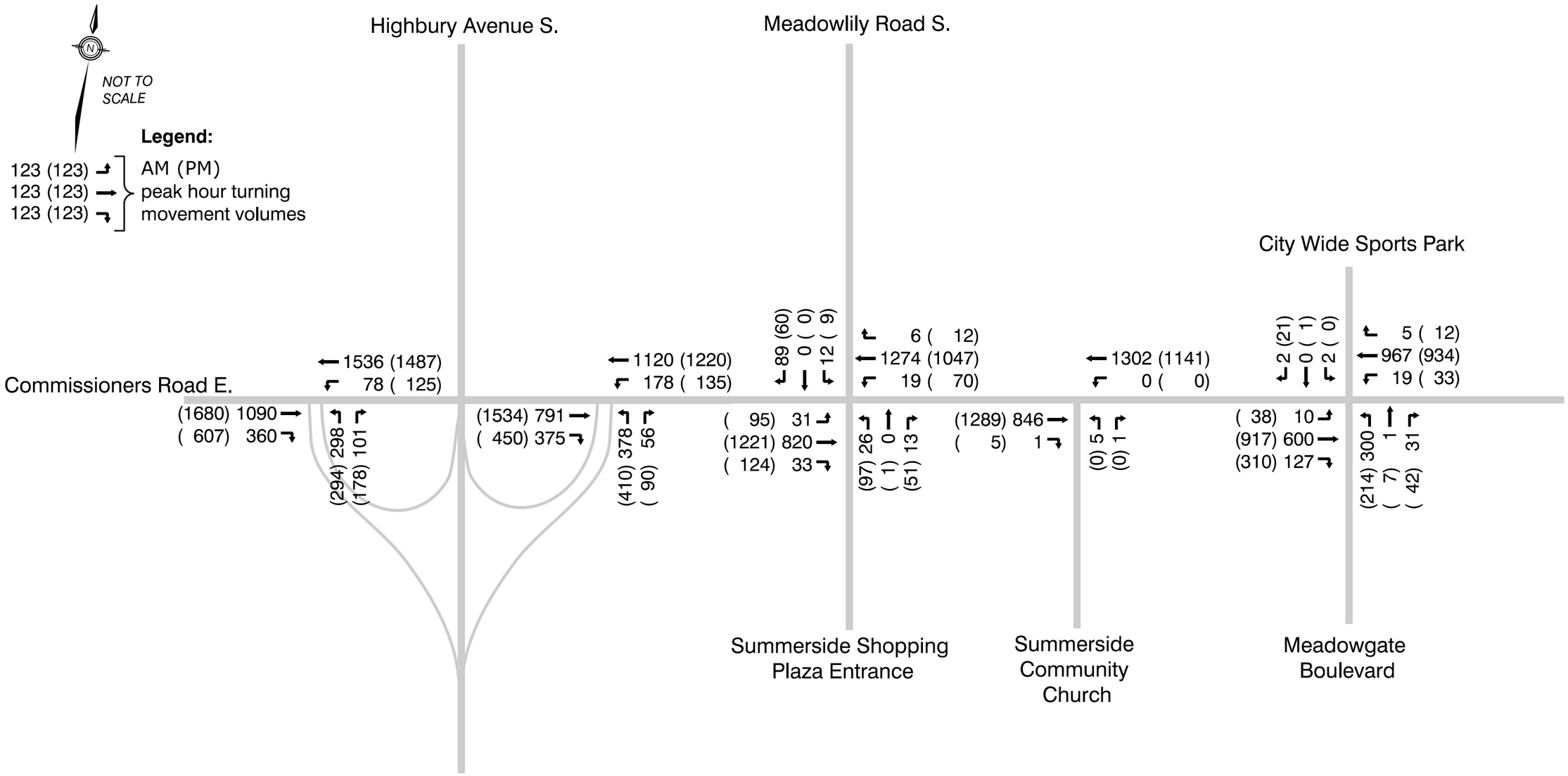


Figure 10: Future Background (2035) Traffic Volumes



4.0 Proposed Development

The proposed site development plan is provided in **Appendix A**. The subject site is currently vacant. Within the site plan, a new street, Street A, is proposed to connect with Meadowlily Road South and Commissioners Road East. The new street is proposed to connect to Commissioners Road East across from the Summerside Community Church driveway.

The development of Forever Homes is separated into four blocks.

- **Block 1** – On this block the construction of seventy-two (72) three-storey townhomes is envisioned. Access to this block will be via two driveways on Street A. Parking will be provided at a rate of 2.0 spaces per unit as well as 17 visitor parking spaces for a total of 161 spaces;
- **Block 2** – The proposed development of Block 2 envisions the construction of ninety-five (95) stacked townhome units. Access to this block will be via two driveways on Street A. Parking will be provided at a rate of 0.9 spaces per unit for a total of 87 spaces;
- **Block 3** – On this block the construction of a six-storey apartment building with one hundred and twenty (120) units is envisioned. The site access will be via two driveways on Street A. 120 parking spaces (1 space per unit) are proposed; and
- **Block 4** – The proposed development of Block 4 envisions the development of six hundred and sixty-two (662) units, divided between four buildings. Two 12-storey apartment buildings are proposed with a total of three hundred and forty-eight (348) units and two eight-storey apartments for a total of three hundred and fourteen (314) units are proposed. The site access will be via two driveways on Street A. A total of 723 parking spaces (1.09 spaces per unit) are proposed. An underground parking garage and podium parking is proposed for this block.

5.0 Site Traffic Volumes

5.1 Trip Generation

The number of vehicle trips generated by the proposed development at 168 Meadowlily Road was estimated based on trip generation rates published within the **Trip Generation Manual** (11th edition) published by the Institute of Transportation Engineers (ITE). **Table 6** through to **Table 11** shows the number of vehicle trips anticipated to be generated by each of the four development blocks.

Table 6: Block 1 Trip Generation – Townhomes (ITE Land Use Code 215)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	25%	75%	0.49	59%	41%	0.57
Site trips (72 units)	9	26	35	24	17	41

Table 7: Block 2 Trip Generation – Stacked Townhomes (ITE Land Use Code 215)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	25%	75%	0.48	59%	41%	0.57
Site trips (95 units)	12	34	46	32	22	54

Table 8: Block 3 Trip Generation – 6-storey Apartments (ITE Land Use Code 221)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	23%	77%	0.37	61%	39%	0.39
Site trips (120 units)	10	34	44	29	18	47

Table 9: Block 4 Trip Generation – 8-storey Apartments (Mid-Rise) (ITE Land Use Code 221)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	23%	77%	0.37	61%	39%	0.39
Site trips (314 units)	26	90	116	74	48	122

Table 10: Block 4 Trip Generation – 12-storey Apartments (High-Rise) (ITE Land Use Code 222)

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
% in/out, trip generation rate	26%	74%	0.27	62%	38%	0.32
Site trips (348 units)	24	70	94	70	42	112

Table 11: All Trip Generation Totals

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
Total auto trips	81	254	335	229	147	376

The proposed development is forecast to generate a total of 335 vehicle trips (81 inbound, 254 outbound) in the AM peak hour and 376 vehicle trips (229 inbound, 147 outbound) in the PM peak hour.

5.2 Site Generated Transit Demand

The total number of person trips was determined to reflect the fact that trips will also be generated by non-auto modes. The subject site is in proximity to few transit routes. Using the City's January 2013 Transportation Master Plan as a reference, a 20% modal split was used, which reflects the 2030 target mode share for transit. The 20% non-auto trips were added to the vehicle trips (which were estimated using ITE trip rates).

Table 12 summarizes the assumed modal split for the subject site development, noting that the modal split for vehicles is in line with the 2030 target mode shares as found in the City of London's 2013 Transportation Master Plan**.**

Table 12: Projected Site Development Modal Split

Development	AM peak hour In	AM peak hour Out	AM peak hour Total	PM peak hour In	PM peak hour Out	PM peak hour Total
Total auto trips	**81**	**254**	**335**	**229**	**147**	**376**
Modal Split	20%	20%	20%	20%	20%	20%
Non-auto trips	20	64	84	57	37	94
Total Person Trips	**101**	**318**	**419**	**286**	**184**	**470**

The proposed residential development is projected to generate 419 total trips during the weekday AM peak hour and 470 total trips in the PM peak hour.

5.3 Trip Distribution

The directional distribution of the site vehicle trips for the proposed development was estimated from the existing turning movement counts. As a result, the following trip distribution was utilized:

- 25% to/from the north;
- 10% to/from the east;
- 15% to/from the south; and
- 50% to/from the west.

5.4 Trip Assignment

Site trips were assigned logically based on the external and internal origin/destination points, the distribution of parking throughout the site and the location of site accesses in relation to the proposed buildings and parking areas. Site trip assignment was completed individually for Block 3 and Block 4. Site trips were assigned together for Block 1 and Block 2 as the site driveways on the proposed Street A provide access to both blocks.

Currently, the Summerside Community Church driveway on Commissioners Road East operates as a full movement driveway. In previous years, a median existed that restricted northbound left-turn movements from the church. This median was modified in 2015 to permit northbound left-turn movements from the church driveway.

Street A is proposed to connect with Meadowlily Road South and Commissioners Road East (aligned with the Summerside Community Church Driveway to the south). With the new road connection, a new median will be built along Commissioners Road East that will restrict the southbound left-turn from the proposed development and will once again restrict the northbound left turn from the church driveway. Any trips leaving the site to head east along Commissioners Road East, were assigned as a southbound left-turn at the Meadowlily Road South and Commissioners Road East intersection.

For the trip assignment purposes, the connection of Street A to Meadowlily Road South is referred to as “Site Access 1” and the connection of Street A to Commissioners Road East is referred to as “Site Access 2”. **Table 13** through **Table 15** summarizes the trips assignment applied to the proposed blocks.

Trip assignment only considered the trips made with a vehicle and did not include the non-auto trips defined in **Table 12.**

Table 13: Trip Assignment – Block 1 / Block 2

To/From	Trip Assignment In	Trip Assignment Out
West (Commissioners Road E) via Site Access 1, Meadowlily Road S.	30%	30%
West (Commissioners Road E) via Site Access 2	70%	70%
E (Commissioners Road E) via Site Access 1, Meadowlily Road S.	20%	100%
E (Commissioners Road E) via Site Access 2	80%	0%
North (Highbury Avenue S.) via Site Access 1, Meadowlily Road S	40%	40%
North (Highbury Avenue S.) via Site Access 2, Commissioners Road E.	60%	60%
North (Meadowlily Road S.) via Site Access 1	0%	0%
North (Meadowlily Road S) via Site Access 2, Commissioners Road E	0%	0%
South (Highbury Avenue S.)) via Site Access 1, Meadowlily	40%	40%
South (Highbury Avenue S.)) via Site Access 2	50%	50%
South (Meadowgate Boulevard) via Site Access 1, Meadowlily Road S.	10%	10%
South (Meadowgate Boulevard) via Site Access 2, Commissioners Road E.	0%	0%

Table 14: Trip Assignment – Block 3

To/From	Trip Assignment In	Trip Assignment Out
West (Commissioners Road E) via Site Access 1, Meadowlily Road S.	20%	20%
West (Commissioners Road E) via Site Access 2	80%	80%
E (Commissioners Road E) via Site Access 1, Meadowlily Road S.	10%	100%

To/From	Trip Assignment In	Trip Assignment Out
E (Commissioners Road E) via Site Access 2	90%	0%
North (Highbury Avenue S.) via Site Access 1, Meadowlily Road S	40%	40%
North (Highbury Avenue S.) via Site Access 2, Commissioners Road E.	60%	60%
North (Meadowlily Road S.) via Site Access 1	0%	0%
North (Meadowlily Road S) via Site Access 2, Commissioners Road E	0%	0%
South (Highbury Avenue S.)) via Site Access 1, Meadowlily	40%	40%
South (Highbury Avenue S.)) via Site Access 2	50%	50%
South (Meadowgate Boulevard) via Site Access 1, Meadowlily Road S.	10%	10%
South (Meadowgate Boulevard) via Site Access 2, Commissioners Road E.	0%	0%

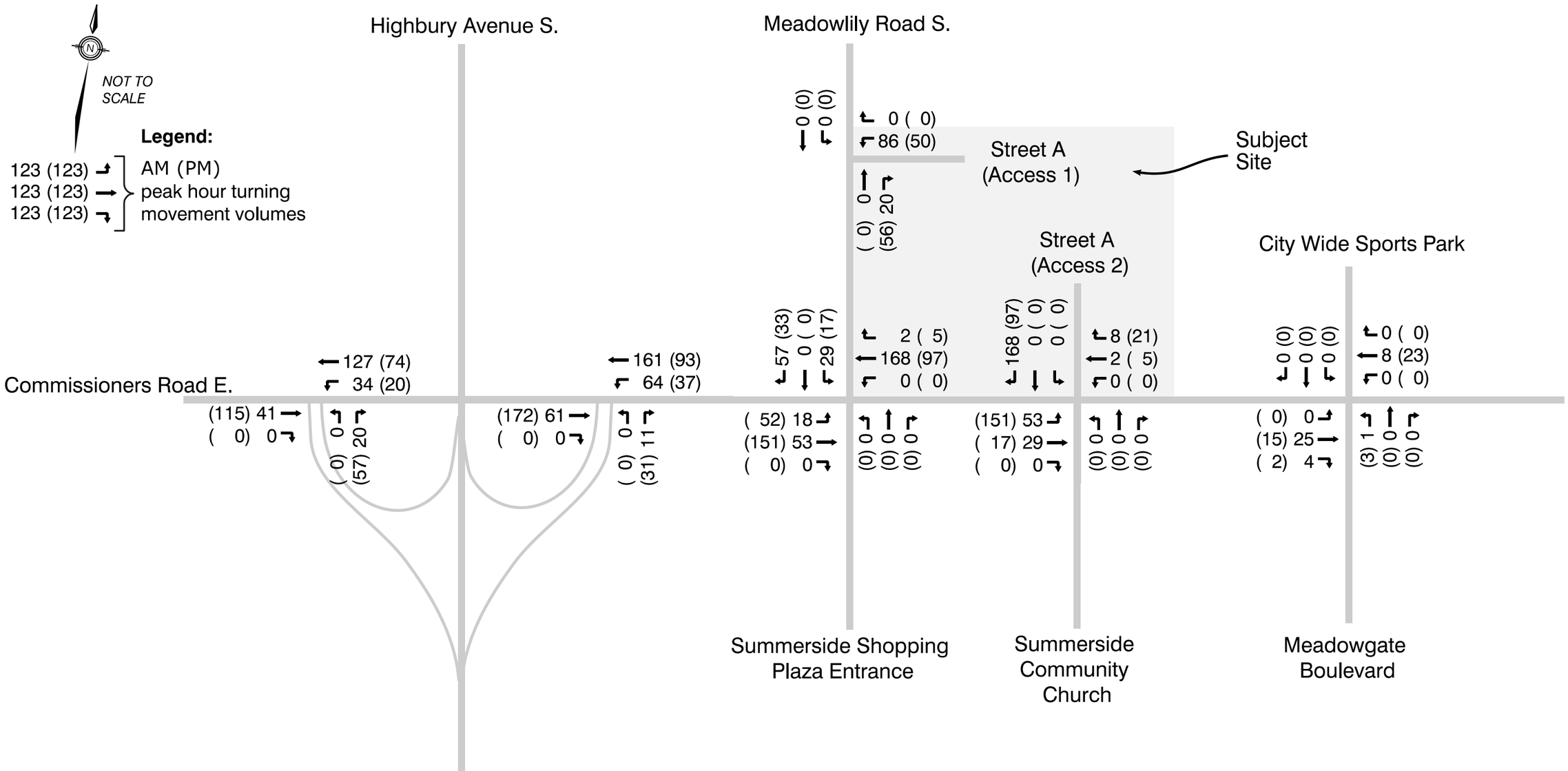
Table 15: Trip Assignment – Block 4

To/From	Trip Assignment In	Trip Assignment Out
West (Commissioners Road E) via Site Access 1, Meadowlily Road S.	10%	10%
West (Commissioners Road E) via Site Access 2	90%	90%
E (Commissioners Road E) via Site Access 1, Meadowlily Road S.	0%	100%
E (Commissioners Road E) via Site Access 2	100%	0%
North (Highbury Avenue S.) via Site Access 1, Meadowlily Road S	30%	30%
North (Highbury Avenue S.) via Site Access 2, Commissioners Road E.	70%	70%
North (Meadowlily Road S.) via Site Access 1	0%	0%

To/From	Trip Assignment In	Trip Assignment Out
North (Meadowlily Road S) via Site Access 2, Commissioners Road E	0%	0%
South (Highbury Avenue S.)) via Site Access 1, Meadowlily	40%	40%
South (Highbury Avenue S.)) via Site Access 2	50%	50%
South (Meadowgate Boulevard) via Site Access 1, Meadowlily Road S.	10%	10%
South (Meadowgate Boulevard) via Site Access 2, Commissioners Road E.	10%	0%

Figure 11 shows the resulting site trips for the full build-out of the site.

Figure 11: Site Generated Traffic Volumes



5.5 Total Future Traffic Volumes

Total future traffic volumes represent conditions anticipated with the proposed development in place and are calculated by adding the site traffic volumes to the projected future background traffic volumes. **Figure 12**, **Figure 13** and **Figure 14** illustrate the total future traffic volumes for the 2027, 2030 and 2035 horizon years, respectively.

Figure 12: Total Future Traffic Volumes (2027)

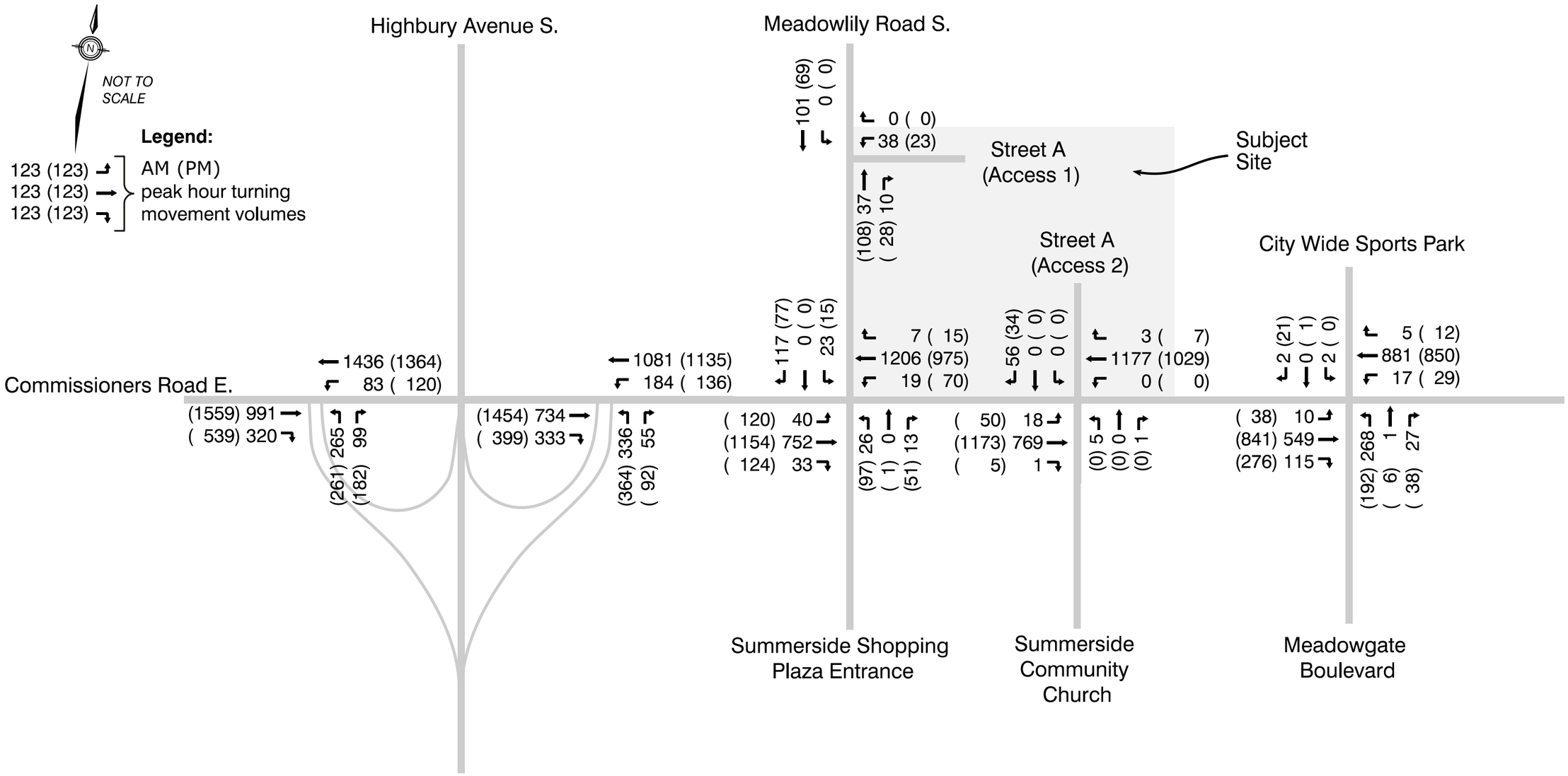


Figure 13: Total Future Traffic Volumes (2030)

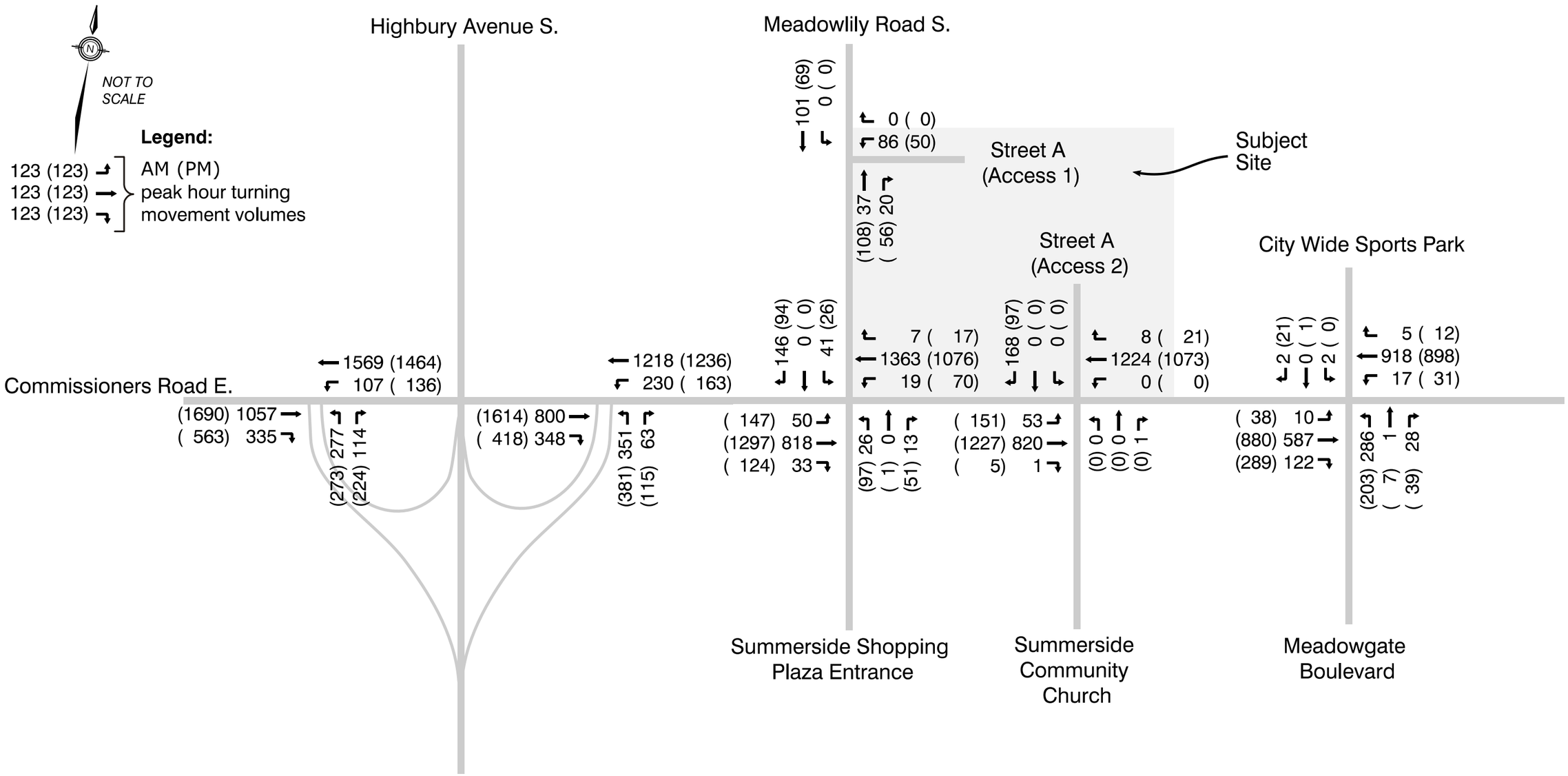
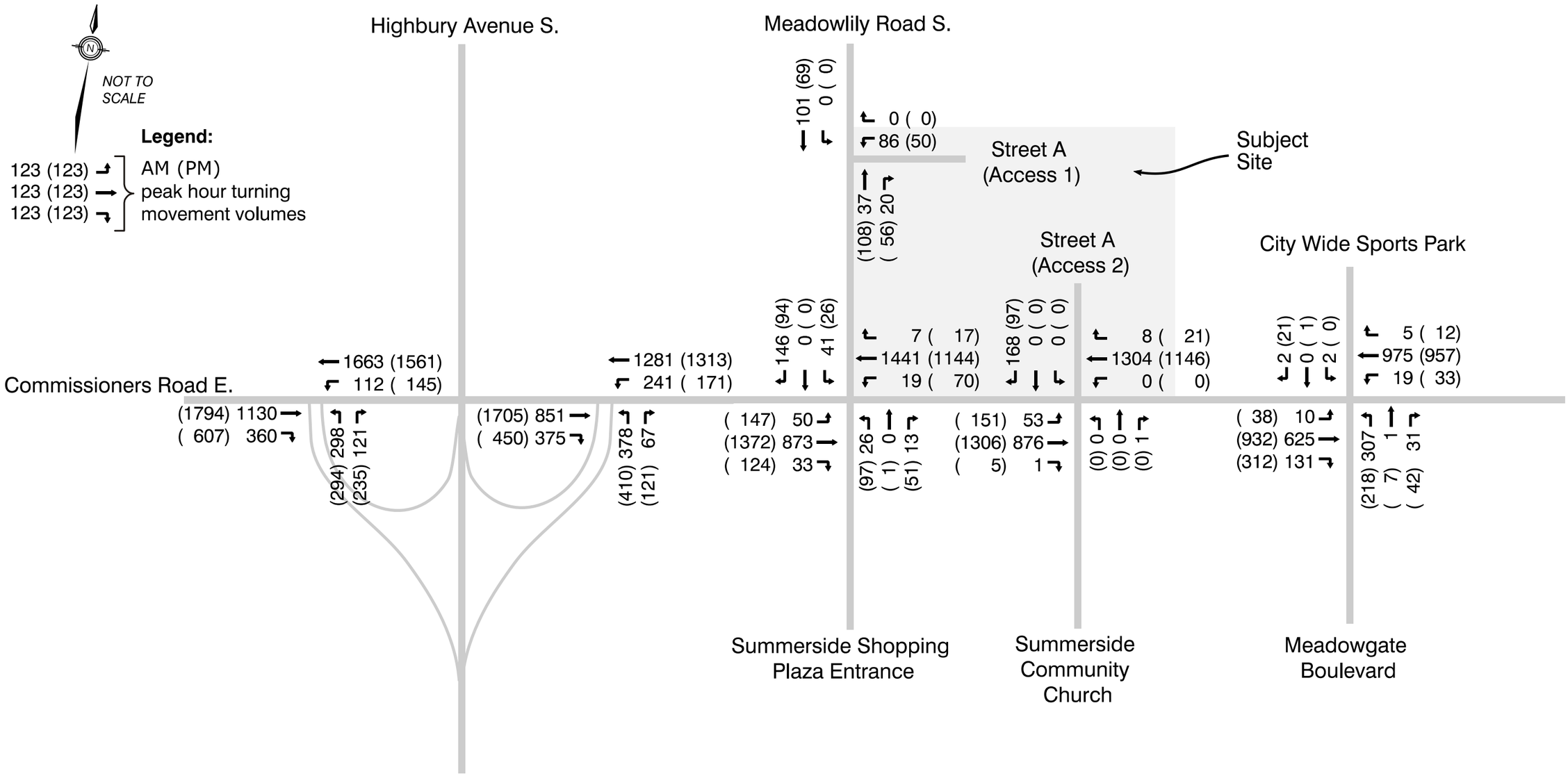


Figure 14: Total Future Traffic Volumes (2035)



6.0 Intersection Operations

Intersection operational analyses were completed using Trafficware's Synchro software (version 11), which is based on the Highway Capacity Manual (HCM) methodology.

At signalized intersections, the volume-to-capacity (v/c) ratio, average vehicular delay, level of service[1] and 95th percentile queue were noted for each individual movement. In addition, the average delay and level of service have been noted for the intersection as a whole.

At unsignalized intersections, the v/c ratio, delay, level of service and 95th percentile queue were noted for any stop and/or yield-controlled movements. Level of service definitions are provided in **Appendix D**. Synchro analysis worksheets reports are provided in **Appendix F**.

As per the City of London's Transportation Impact Assessment Guidelines, intersections and proposed site accesses need to be identified where impacts from site-generated trips result in:

- v/c ratios for overall operations, through movements, shared through/turning movements increasing to 0.90 or above and LOS E or worse;
- v/c ratios for dedicated turning movements increasing to 0.90 or above and LOS E or worse; and/or
- 95th percentile queues for individual turning movements exceeding the available space.

6.1 Highbury Avenue South and Commissioners Road East (West Ramp Terminal)

Intersection operations at the Highbury Avenue South and Commissioners Road East (West Ramp Terminal) intersection are presented in **Table 16** and **Table 17.**

[1] Level of Service (LOS), applied to an intersection, is a measure qualifying the amount of delay experienced by motorists, expressed either for specific turning movements or for the intersection as a whole.

Table 16: Highbury Avenue and Commissioners Road East (West Ramp Terminal) – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB through	0.37	A	8.4	62
Existing Conditions(2024) - EB right	0.22	A	0.5	3
Existing Conditions(2024) - WB left	0.12	A	2.9	5
Existing Conditions(2024) - WB through	0.43	A	4.8	53
Existing Conditions(2024) - NB left	0.62	E	56.0	43
Existing Conditions(2024) - NB right	0.32	B	12.9	14
Future Conditions(2024) - Overall	—	**B**	**10.6**	—
Future Background(2027) - EB through	0.42	A	9.4	77
Future Background(2027) - EB right	0.23	A	0.5	3
Future Background(2027) - WB left	0.17	A	2.8	5
Future Background(2027) - WB through	0.54	A	4.6	55
Future Background(2027) - NB left	0.62	E	55.3	44
Future Background(2027) - NB right	0.34	B	12.1	14
Future Background(2027) - Overall	—	**B**	**10.2**	—
Total Future (2027) - EB through	0.43	A	9.7	79
Total Future (2027) - EB right	0.23	A	0.5	3
Total Future (2027) - WB left	0.20	A	3.0	6
Total Future (2027) - WB through	0.56	A	4.6	54
Total Future (2027) - NB left	0.62	D	54.9	44
Total Future (2027) - NB right	0.36	B	11.9	15
Total Future (2027) - Overall	—	**B**	**10.1**	—
Future Background(2030) - EB through	0.44	A	9.9	82
Future Background(2030) - EB right	0.24	A	0.5	3
Future Background(2030) - WB left	0.18	A	3.0	5
Future Background(2030) - WB through	0.56	A	4.8	57
Future Background(2030) - NB left	0.63	D	54.9	45
Future Background(2030) - NB right	0.34	B	11.8	14
Future Background(2030) - Overall	—	**B**	**10.4**	—
Total Future (2030) - EB through	0.47	B	11.0	89
Total Future (2030) - EB right	0.25	A	0.6	3
Total Future (2030) - WB left	0.28	A	3.4	6
Total Future (2030) - WB through	0.61	A	4.7	56
Total Future (2030) - NB left	0.63	D	54.9	45
Total Future (2030) - NB right	0.39	B	11.5	16
Total Future (2030) - Overall	—	**B**	**10.4**	—
Future Background(2035) - EB through	0.47	B	10.8	93

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) - EB right	0.26	A	0.6	3
Future Background(2035) - WB left	0.21	A	3.3	5
Future Background(2035) - WB through	0.60	A	5.1	61
Future Background(2035) - NB left	0.65	D	54.7	48
Future Background(2035) - NB right	0.35	B	11.3	15
Future Background(2035) - Overall	**—**	**B**	**10.8**	**—**
Total Future (2030) - EB through	0.51	B	12.0	101
Total Future (2030) - EB right	0.27	A	0.6	4
Total Future (2030) - WB left	0.32	A	3.8	6
Total Future (2030) - WB through	0.65	A	4.9	59
Total Future (2030) - NB left	0.65	D	54.7	48
Total Future (2030) - NB right	0.39	B	11.1	16
Total Future (2030) - Overall	**—**	**B**	**10.9**	**—**

In the AM peak hour, the Highbury Avenue and Commissioners Road East (West Ramp Terminal) intersection currently operates at a good overall level of service (LOS B). All individual movements operate at LOS B or better, except for the northbound left turn movement which operates at LOS E. No queues exceed the provided storage lengths.

With the addition of background growth and background development traffic, the overall intersection LOS is expected to remain at LOS B through to the 2035 horizon year. The operation of the northbound left-turn is anticipated to improve to LOS D in the 2035 future background conditions. This is due to the increase in traffic on the south leg of the intersection which will result in the actuated effective green time being increased for the northbound approach. No queues are anticipated to exceed the provided storage lengths in all horizon years through to 2035.

With the addition of site traffic, the overall level of service is anticipated to remain at LOS B through to the 2035 horizon year. No critical movements are anticipated as a result of site traffic.

Table 17: Highbury Avenue and Commissioners Road East (West Ramp Terminal) – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB through	0.54	B	11.6	108
Existing Conditions(2024) - EB right	0.37	A	1.0	7
Existing Conditions(2024) - WB left	0.31	A	5.0	9
Existing Conditions(2024) - WB through	0.43	A	3.9	47
Existing Conditions(2024) - NB left	0.58	D	53.7	41
Existing Conditions(2024) - NB right	0.41	B	11.9	17
Existing Conditions(2024) - Overall	—	**B**	**10.3**	—
Future Background(2027) - EB through	0.69	B	16.3	171
Future Background(2027) - EB right	0.40	A	2.1	21
Future Background(2027) - WB left	0.43	B	14.5	20
Future Background(2027) - WB through	0.50	A	4.4	61
Future Background(2027) - NB left	0.58	D	53.2	43
Future Background(2027) - NB right	0.53	C	23.6	32
Future Background(2027) - Overall	—	**B**	**13.0**	—
Total Future (2027) - EB through	0.71	B	17.5	185
Total Future (2027) - EB right	0.41	A	2.4	26
Total Future (2027) - WB left	0.47	B	18.3	24
Total Future (2027) - WB through	0.52	A	4.5	64
Total Future (2027) - NB left	0.58	D	52.9	43
Total Future (2027) - NB right	0.60	C	28.7	39
Total Future (2027) - Overall	—	**B**	**13.9**	—
Future Background(2030) - EB through	0.72	B	17.9	191
Future Background(2030) - EB right	0.43	A	2.5	28
Future Background(2030) - WB left	0.47	B	18.5	23
Future Background(2030) - WB through	0.53	A	4.7	67
Future Background(2030) - NB left	0.59	D	52.8	44
Future Background(2030) - NB right	0.54	C	25.0	34
Future Background(2030) - Overall	—	**B**	**13.9**	—
Total Future (2030) - EB through	0.80	C	22.7	238
Total Future (2030) - EB right	0.44	A	3.4	35
Total Future (2030) - WB left	0.59	C	32.5	36
Total Future (2030) - WB through	0.57	A	5.6	81
Total Future (2030) - NB left	0.54	D	49.7	42
Total Future (2030) - NB right	0.69	D	36.3	51
Total Future (2030) - Overall	—	**B**	**17.1**	—
Future Background(2035) - EB through	0.79	C	21.2	224

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) - EB right	0.47	A	3.4	42
Future Background(2035) - WB left	0.55	C	27.6	29
Future Background(2035) - WB through	0.57	A	5.1	76
Future Background(2035) - NB left	0.59	D	52.0	47
Future Background(2035) - NB right	0.56	C	27.0	38
Future Background(2035) - Overall	**—**	**B**	**15.8**	**—**
Total Future (2030) - EB through	0.88	C	27.8	279
Total Future (2030) - EB right	0.48	A	3.9	36
Total Future (2030) - WB left	0.61	C	34.4	43
Total Future (2030) - WB through	0.61	A	6.4	93
Total Future (2030) - NB left	0.53	D	48.4	44
Total Future (2030) - EB through	0.69	D	37.1	54
Total Future (2030) - Overall	**—**	**B**	**19.5**	**—**

In the PM peak hour, the Highbury Avenue and Commissioners Road East (West Ramp Terminal) intersection currently operates at a good overall level of service (LOS B) with all individual movements operating at LOS D or better, with no critical movements. No queues exceed the provided storage length.

With the addition of background growth and background development traffic, the overall intersection LOS is expected to remain at LOS B through to the 2035 horizon year. No queues are anticipated to exceed the provided storage lengths.

With the addition of site traffic, the overall level of service is anticipated to remain at LOS B through to the 2035 horizon year, with minimal changes to the overall intersection delay. No critical movements are anticipated as a result of site traffic.

6.2 Highbury Avenue South and Commissioners Road East (East Ramp Terminal)

Intersection operations at the Highbury Avenue South and Commissioners Road East (East Ramp Terminal) intersection are presented in **Table 18** and **Table 19.**

Table 18: Highbury Avenue and Commissioners Road East (East Ramp Terminal) – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB through	0.36	B	14.1	36
Existing Conditions(2024) - EB right	0.25	A	0.4	0
Existing Conditions(2024) - WB left	0.29	A	9.0	16
Existing Conditions(2024) - WB through	0.37	A	9.7	39
Existing Conditions(2024) - NB left	0.77	D	52.0	97
Existing Conditions(2024) - NB right	0.12	A	8.5	8
Existing Conditions(2024) - Overall	—	**B**	**15.8**	—
Future Background(2027) - EB through	0.44	B	15.6	42
Future Background(2027) - EB right	0.27	A	0.5	—
Future Background(2027) - WB left	0.40	A	9.7	16
Future Background(2027) - WB through	0.51	B	10.8	57
Future Background(2027) - NB left	0.78	D	51.3	100
Future Background(2027) - NB right	0.13	A	7.9	8
Future Background(2027) - Overall	—	**B**	**15.9**	—
Total Future (2027) - EB through	0.47	B	16.8	68
Total Future (2027) - EB right	0.28	A	0.5	—
Total Future (2027) - WB left	0.46	B	10.1	17
Total Future (2027) - WB through	0.54	B	11.2	59
Total Future (2027) - NB left	0.78	D	51.3	100
Total Future (2027) - NB right	0.14	A	7.5	9
Total Future (2027) - Overall	—	**B**	**16.2**	—
Future Background(2030) - EB through	0.48	B	16.8	65
Future Background(2030) - EB right	0.28	A	0.5	—
Future Background(2030) - WB left	0.43	A	9.9	16
Future Background(2030) - WB through	0.54	B	11.1	61
Future Background(2030) - NB left	0.78	D	50.7	104
Future Background(2030) - NB right	0.13	A	7.4	9
Future Background(2030) - Overall	—	**B**	**16.3**	—
Total Future (2030) - EB through	0.63	C	23.8	127
Total Future (2030) - EB right	0.32	A	0.8	—

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future (2030) - WB left	0.53	B	15.0	20
Total Future (2030) - WB through	0.62	B	12.9	65
Total Future (2030) - NB left	0.78	D	50.7	104
Total Future (2030) - NB right	0.16	A	7.0	9
Total Future (2030) - Overall	**—**	**B**	**18.9**	**—**
Future Background(2035) - EB through	0.56	C	20.2	116
Future Background(2035) - EB right	0.31	A	0.6	—
Future Background(2035) - WB left	0.49	B	12.1	16
Future Background(2035) - WB through	0.59	B	13.1	73
Future Background(2035) - NB left	0.78	D	48.5	109
Future Background(2035) - NB right	0.13	A	6.6	8
Future Background(2035) - Overall	**—**	**B**	**17.9**	**—**
Total Future (2030) - EB through	0.74	C	28.9	146
Total Future (2030) - EB right	0.36	A	1.0	0
Total Future (2030) - WB left	0.58	C	22.6	28
Total Future (2030) - WB through	0.68	B	15.1	76
Total Future (2030) - NB left	0.78	D	48.5	109
Total Future (2030) - EB through	0.16	A	6.3	9
Total Future (2030) - Overall	**—**	**C**	**21.4**	**—**

In the AM peak hour, the Highbury Avenue and Commissioners Road East (East Ramp Terminal) intersection currently operates at a good overall level of service (LOS B) with all individual movements operating at LOS D or better. The queues in the northbound left turn lane nearly exceed the 100-metre storage length.

With the addition of background growth and background development traffic, the overall intersection LOS is expected to remain at LOS B through to the 2035 horizon year. The northbound left turn queue is anticipated to begin exceeding the 100-metre storage length in the 2030 and 2035 horizon years, with 95th percentile queues of 104 metres and 109 metres, respectively.

With the addition of site traffic, the overall level of service is anticipated to remain at LOS B through to the 2030 horizon year, with minimal changes to the overall intersection delay. The overall LOS is anticipated to worsen from a LOS B to LOS C with the addition of site traffic. No critical movements are anticipated as a result of site traffic.

Table 19: Highbury Avenue and Commissioners Road East (East Ramp Terminal) – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB through	0.61	B	13.8	139
Existing Conditions(2024) - EB right	0.29	A	2.0	13
Existing Conditions(2024) - WB left	0.40	B	10.5	10
Existing Conditions(2024) - WB through	0.44	B	10.2	35
Existing Conditions(2024) - NB left	0.82	E	56.0	110
Existing Conditions(2024) - NB right	0.15	A	7.4	10
Existing Conditions(2024) - Overall	—	**B**	**15.9**	—
Future Background(2027) - EB through	0.81	B	17.9	169
Future Background(2027) - EB right	0.32	A	1.6	1
Future Background(2027) - WB left	0.69	D	39.4	37
Future Background(2027) - WB through	0.53	B	12.3	65
Future Background(2027) - NB left	0.84	E	56.6	116
Future Background(2027) - NB right	0.18	A	6.9	11
Future Background(2027) - Overall	—	**B**	**18.8**	—
Total Future (2027) - EB through	0.85	C	20.0	227
Total Future (2027) - EB right	0.32	A	1.5	—
Total Future (2027) - WB left	0.73	D	43.3	43
Total Future (2027) - WB through	0.55	B	12.2	70
Total Future (2027) - NB left	0.84	E	56.6	116
Total Future (2027) - NB right	0.20	A	6.6	12
Total Future (2027) - Overall	—	**B**	**19.7**	—
Future Background(2030) - EB through	0.85	B	19.4	185
Future Background(2030) - EB right	0.33	A	1.6	—
Future Background(2030) - WB left	0.72	D	42.3	38
Future Background(2030) - WB through	0.56	B	13.0	69
Future Background(2030) - NB left	0.85	E	57.5	123
Future Background(2030) - NB right	0.18	A	6.7	11
Future Background(2030) - Overall	—	**B**	**19.8**	—
Total Future (2030) - EB through	0.98	C	33.7	272
Total Future (2030) - EB right	0.34	A	1.3	—
Total Future (2030) - WB left	0.79	D	48.9	52
Total Future (2030) - WB through	0.60	B	13.2	83
Total Future (2030) - NB left	0.85	E	57.0	123
Total Future (2030) - NB right	0.24	A	6.1	13
Total Future (2030) - Overall	—	**C**	**25.9**	—
Future Background(2035) - EB through	0.92	C	24.9	249

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) - EB right	0.36	A	1.6	—
Future Background(2035) - WB left	0.76	D	46.5	39
Future Background(2035) - WB through	0.61	B	14.3	77
Future Background(2035) - NB left	0.87	E	58.8	135
Future Background(2035) - NB right	0.18	A	6.5	12
Future Background(2035) - Overall	**—**	**C**	**22.7**	**—**
Total Future (2035) - EB through	1.07	E	58.9	297
Total Future (2035) - EB right	0.37	A	1.2	—
Total Future (2035) - WB left	0.82	D	50.8	51
Total Future (2035) - WB through	0.66	B	14.6	93
Total Future (2035) - NB left	0.87	E	58.8	135
Total Future (2035) - EB through	0.24	A	6.0	13
Total Future (2035) - Overall	**—**	**D**	**36.9**	**—**

In the PM peak hour, the Highbury Avenue and Commissioners Road East (East Ramp Terminal) intersection currently operates at a good overall level of service (LOS B). Under existing conditions, the northbound left-turn movement exceeds the provided 100 metre storage, with a 95th percentile queue of 110 metres and operating at LOS E.

With the addition of background growth and background development traffic, the overall intersection LOS is expected to remain at LOS B in 2027 but worsen to LOS C by the 2035 horizon year. The northbound left turn queue is anticipated to reach a length of 135 metres by the 2035 horizon year.

With the addition of site traffic, the eastbound through movement is anticipated to begin operating with a critical v/c ratio of 0.98 in the 2030 horizon year. This movement will continue to worsen, eventually operating at a v/c ratio of 1.07 and LOS E in the 2035 horizon year. The northbound left-turn movement is not anticipated to be impacted by site trips, as no trips have been assigned to that movement.

6.3 Meadowlily Road South and Commissioners Road East

Intersection operations at the Meadowlily Road South and Commissioners Road East intersection are presented in **Table 20** and **Table 21**.

Table 20: Meadowlily Road South and Commissioners Road East – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB left	0.01	A	2.0	—
Existing Conditions(2024) - EB through	0.18	A	1.0	6
Existing Conditions(2024) - WB left	0.03	A	3.7	4
Existing Conditions(2024) - WB through	0.64	A	9.0	243
Existing Conditions(2024) - NB left	0.11	D	46.4	8
Existing Conditions(2024) - NB thru/left	0.11	D	46.4	8
Existing Conditions(2024) - NB right	0.07	A	0.6	—
Existing Conditions(2024) - SB approach	0.04	A	0.3	—
Existing Conditions(2024) - Overall	—	**A**	**6.2**	—
Future Background(2027) - EB left	0.48	D	35.1	28
Future Background(2027) - EB through	0.24	A	1.2	6
Future Background(2027) - WB left	0.04	A	4.4	4
Future Background(2027) - WB through	0.92	C	25.2	434
Future Background(2027) - NB left	0.15	D	45.8	9
Future Background(2027) - NB thru/left	0.15	D	45.8	9
Future Background(2027) - NB right	0.06	A	0.5	—
Future Background(2027) - SB approach	0.61	D	35.6	34
Future Background(2027) - Overall	—	**B**	**17.5**	—
Total Future(2027) - EB left	0.83	F	98.3	35
Total Future(2027) - EB through	0.25	A	1.4	7
Total Future(2027) - WB left	0.04	A	4.9	4
Total Future(2027) - WB through	1.04	D	53.0	493
Total Future(2027) - NB left	0.14	D	43.7	9
Total Future(2027) - NB thru/left	0.14	D	43.7	9
Total Future(2027) - NB right	0.05	A	0.4	—
Total Future(2027) - SB approach	0.72	D	45.3	50
Total Future(2027) - Overall	—	**D**	**35.2**	—
Future Background(2030) – EB left	0.27	B	12.3	5
Future Background(2030) - EB through	0.24	A	1.2	6
Future Background(2030) - WB left	0.04	A	4.1	4
Future Background(2030) - WB through	0.90	C	21.2	426

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2030) - NB left	0.13	D	46.6	9
Future Background(2030) - NB thru/left	0.13	D	46.6	9
Future Background(2030) - NB right	0.06	A	0.5	—
Future Background(2030) - SB approach	0.48	C	25.7	22
Future Background(2030) - Overall	—	**B**	**14.0**	—
Total Future(2030) - EB left	0.83	F	97.4	30
Total Future(2030) - EB through	0.26	A	1.6	9
Total Future(2030) - WB left	0.04	A	4.9	4
Total Future(2030) - WB through	1.08	E	65.3	517
Total Future(2030) - NB left	0.14	D	43.7	9
Total Future(2030) - NB thru/left	0.14	D	43.7	9
Total Future(2030) - NB right	0.05	A	0.4	—
Total Future(2030) - SB approach	0.72	D	45.3	50
Total Future(2030) - Overall	—	**D**	**41.9**	—
Future Background(2035) – EB left	0.53	D	51.9	13
Future Background(2035) - EB through	0.25	A	1.4	8
Future Background(2035) - WB left	0.04	A	4.1	4
Future Background(2035) - WB through	0.96	C	28.8	468
Future Background(2035) - NB left	0.13	D	46.6	9
Future Background(2035) - NB thru/left	0.13	D	46.6	9
Future Background(2035) - NB right	0.06	A	0.5	
Future Background(2035) - SB approach	0.48	C	26.1	22
Future Background(2035) - Overall	—	**B**	**18.8**	—
Total Future(2035) - EB left	0.83	F	93.7	24
Total Future(2035) - EB through	0.28	A	1.6	10
Total Future(2035) - WB left	0.05	A	5.0	4
Total Future(2035) - WB through	1.14	F	89.3	558
Total Future(2035) - NB left	0.14	D	43.7	9
Total Future(2035) - NB thru/left	0.14	D	43.7	9
Total Future(2035) - NB right	0.05	A	0.4	—
Total Future(2035) - SB approach	0.72	D	45.3	50
Total Future(2035) - Overall	—	**D**	**54.8**	—

In the AM peak hour, Meadowlily Road South and Commissioners Road East intersection currently operates at an excellent overall level of service (LOS A), with all individual movements operating at LOS D or better. No queues exceed provided storage lengths.

With the addition of background growth and background development traffic, the overall intersection LOS is expected worsen to LOS B through to the 2035 horizon year.

No movements are anticipated to exceed the provided storage length. The westbound through movement is anticipated to begin operating at a v/c ratio of 0.90 beginning in 2027. This movement is expected to worsen to a v/c ratio of 0.96 in 2035.

With the addition of site traffic, the eastbound through movement is anticipated to begin operating at LOS F in the 2027 horizon year, with a queue exceeding the provided storage length. No other critical movements are identified as a result of site traffic.

Table 21: Meadowlily Road South and Commissioners Road East – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB left	0.02	A	4.4	1
Existing Conditions(2024) - EB through	0.29	A	3.1	13
Existing Conditions(2024) - WB left	0.17	A	4.5	11
Existing Conditions(2024) - WB through	0.57	A	8.4	171
Existing Conditions(2024) - NB left	0.35	D	52.5	21
Existing Conditions(2024) - NB thru/left	0.38	D	53.8	22
Existing Conditions(2024) - NB right	0.23	A	8.0	7
Existing Conditions(2024) - SB approach	0.05	A	0.4	—
Existing Conditions(2024) - Overall	—	**A**	**7.7**	—
Future Background(2027) - EB left	0.31	A	7.8	7
Future Background(2027) - EB through	0.36	A	5.0	30
Future Background(2027) - WB left	0.22	A	5.1	11
Future Background(2027) - WB through	0.68	B	11.0	248
Future Background(2027) - NB left	0.36	D	52.8	22
Future Background(2027) - NB thru/left	0.38	D	54.1	22
Future Background(2027) - NB right	0.22	A	7.9	7
Future Background(2027) - SB approach	0.31	B	14.3	13
Future Background(2027) - Overall	—	**A**	**9.5**	—
Total Future(2027) - EB left	0.47	B	11.9	9
Total Future(2027) - EB through	0.39	A	5.5	32
Total Future(2027) - WB left	0.23	A	5.4	11
Total Future(2027) - WB through	0.73	B	12.8	283
Total Future(2027) - NB left	0.41	E	56.2	22
Total Future(2027) - NB thru/left	0.45	E	58.2	23
Total Future(2027) - NB right	0.22	A	7.9	7
Total Future(2027) - SB approach	0.39	B	16.9	17
Total Future(2027) - Overall	—	**B**	**10.8**	—
Future Background(2030) – EB left	0.34	A	8.3	7

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2030) - EB through	0.37	A	5.2	31
Future Background(2030) - WB left	0.23	A	5.2	11
Future Background(2030) - WB through	0.70	B	11.8	285
Future Background(2030) - NB left	0.36	D	52.8	22
Future Background(2030) - NB thru/left	0.38	D	54.1	22
Future Background(2030) - NB right	0.22	A	7.9	7
Future Background(2030) - SB approach	0.31	B	14.3	13
Future Background(2030) - Overall	**—**	**A**	**9.8**	**—**
Total Future(2030) - EB left	0.81	C	33.7	44
Total Future(2030) - EB through	0.43	A	6.3	33
Total Future(2030) - WB left	0.27	A	6.1	11
Total Future(2030) - WB through	0.81	B	16.0	363
Total Future(2030) - NB left	0.49	E	62.4	22
Total Future(2030) - NB thru/left	0.52	E	65.1	23
Total Future(2030) - NB right	0.22	A	7.9	7
Total Future(2030) - SB approach	0.51	C	23.7	24
Total Future(2030) - Overall	**—**	**B**	**13.8**	**—**
Future Background(2035) – EB left	0.41	B	10.6	7
Future Background(2035) - EB through	0.39	A	5.8	32
Future Background(2035) - WB left	0.24	A	5.5	11
Future Background(2035) - WB through	0.75	B	13.3	344
Future Background(2035) - NB left	0.36	D	53.1	22
Future Background(2035) - NB thru/left	0.39	D	54.5	22
Future Background(2035) - NB right	0.23	A	8.0	7
Future Background(2035) - SB approach	0.31	B	14.3	13
Future Background(2035) - Overall	**—**	**B**	**10.7**	**—**
Total Future(2035) - EB left	1.11	F	88.5	48
Total Future(2035) - EB through	0.45	A	6.8	32
Total Future(2035) - WB left	0.29	A	6.4	11
Total Future(2035) - WB through	0.86	B	18.8	399
Total Future(2035) - NB left	0.49	E	62.4	22
Total Future(2035) - NB thru/left	0.52	E	65.1	23
Total Future(2035) - NB right	0.22	A	7.9	7
Total Future(2035) - SB approach	0.53	C	29.1	27
Total Future(2035) - Overall	**—**	**B**	**17.7**	**—**

During the PM peak hour, the Meadowlily Road South and Commissioners Road East intersection currently operates at a very good level of service (LOS A) overall. All movements operate within capacity and at LOS D or better.

Under future background conditions, the level of service at the intersection is anticipated to change to LOS B overall by 2030.

With the addition of site traffic, the northbound left-turn and through/left-turn movements are expected to operate at LOS E by 2027. The eastbound left-turn movement is anticipated to become critical by 2035 operating at LOS F with a v/c ratio of 1.11. The eastbound left-turn queue is expected to reach 48 metres by 2035, exceeding the 30-metre storage length.

6.4 Meadowgate Boulevard and Commissioners Road East

Intersection operations at the Meadowgate Boulevard and Commissioners Road East intersection are presented in **Table 22** and **Table 23**.

Table 22: Meadowgate Boulevard and Commissioners Road East – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB left	0.03	B	10.1	4
Existing Conditions(2024) - EB through	0.45	B	12.5	88
Existing Conditions(2024) - EB right	0.12	A	2.4	8
Existing Conditions(2024) - WB left	0.04	A	9.8	5
Existing Conditions(2024) - WB through	0.64	B	16.3	152
Existing Conditions(2024) - NB left	0.79	D	49.1	74
Existing Conditions(2024) - NB through	0.07	A	9.7	6
Existing Conditions(2024) - SB approach	0.01	A	0.0	—
Existing Conditions(2024) - Overall	—	**B**	**19.3**	—
Future Background(2027) - EB left	0.08	B	12.3	4
Future Background(2027) - EB through	0.54	B	14.5	114
Future Background(2027) – EB right	0.13	A	2.4	8
Future Background(2027) - WB left	0.05	B	10.5	5
Future Background(2027) - WB through	0.85	C	26.2	276
Future Background(2027) - NB left	0.80	D	49.4	78
Future Background(2027) - NB through	0.07	A	9.5	6
Future Background(2027) - SB approach	0.01	A	0.0	—
Future Background(2027) - Overall	—	**C**	**24.2**	—
Total Future(2027) - EB left	0.08	B	12.5	4
Total Future(2027) - EB through	0.55	B	14.7	118
Total Future(2027) - EB right	0.13	A	2.4	8

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2027) - WB left	0.05	B	10.5	5
Total Future(2027) - WB through	0.86	C	26.6	277
Total Future(2027) - NB left	0.80	D	49.5	78
Total Future(2027) - NB through	0.07	A	9.4	6
Total Future(2027) - SB approach	0.01	A	0.0	—
Total Future(2027) - Overall	—	**C**	**24.4**	—
Future Background(2030) – EB left	0.10	B	14.3	5
Future Background(2030) - EB through	0.56	B	15.7	126
Future Background(2030) - EB right	0.14	A	2.5	9
Future Background(2030) - WB left	0.05	B	11.1	6
Future Background(2030) - WB through	0.89	C	30.5	299
Future Background(2030) - NB left	0.81	D	49.7	82
Future Background(2030) - NB through	0.07	A	9.1	6
Future Background(2030) - SB approach	0.01	A	0.0	—
Future Background(2030) - Overall	—	**C**	**26.6**	—
Total Future(2030) - EB left	0.12	B	15.5	5
Total Future(2030) - EB through	0.59	B	16.7	137
Total Future(2030) - EB right	0.14	A	2.5	9
Total Future(2030) - WB left	0.06	B	11.5	6
Total Future(2030) - WB through	0.91	C	32.4	307
Total Future(2030) - NB left	0.81	D	49.9	84
Total Future(2030) - NB through	0.07	A	9.0	6
Total Future(2030) - SB approach	0.01	A	0.0	
Total Future(2030) - Overall	—	**C**	**27.8**	—
Future Background(2035) – EB left	0.14	B	18.3	6
Future Background(2035) - EB through	0.61	B	17.9	147
Future Background(2035) - EB right	0.15	A	2.6	9
Future Background(2035) - WB left	0.07	B	12.3	7
Future Background(2035) - WB through	0.97	D	42.8	341
Future Background(2035) - NB left	0.83	D	50.2	89
Future Background(2035) - NB through	0.07	A	8.4	7
Future Background(2035) - SB approach	0.01	A	0.0	—
Future Background(2035) - Overall	—	**C**	**33.2**	—
Total Future(2035) - EB left	0.14	B	18.9	6
Total Future(2035) - EB through	0.65	B	19.3	161
Total Future(2035) - EB right	0.15	A	2.7	9
Total Future(2035) - WB left	0.08	B	13.0	7
Total Future(2035) - WB through	0.99	D	47.0	351
Total Future(2035) - NB left	0.83	D	50.0	91

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2035) - NB through	0.07	A	8.3	7
Total Future(2035) - SB approach	0.01	A	0.0	—
Total Future(2035) - Overall	**—**	**D**	**35.4**	**—**

During the AM peak hour, the Meadowgate Boulevard and Commissioners Road East intersection currently operates at a good level of service (LOS B) overall. The northbound left-turn queue currently exceeds the available storage by approximately 15 metres.

Under future background conditions, the westbound through movement is projected to become critical by 2035 with a v/c ratio of 0.97.

With the addition of site traffic, the westbound through movement is expected to be critical through all horizon years, with a v/c ratio of 0.99 by 2035. The northbound left-turn queue is projected to reach 91 metres, exceeding the available storage by approximately 30 metres.

Table 23: Meadowgate Boulevard and Commissioners Road East – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) – EB left	0.12	A	7.8	8
Existing Conditions(2024) - EB through	0.54	B	10.7	101
Existing Conditions(2024) - EB right	0.24	A	1.5	9
Existing Conditions(2024) - WB left	0.07	A	7.2	6
Existing Conditions(2024) - WB through	0.62	B	12.1	126
Existing Conditions(2024) - NB left	0.72	D	48.5	53
Existing Conditions(2024) - NB through	0.13	B	11.8	9
Existing Conditions(2024) - SB approach	0.08	B	13.6	7
Existing Conditions(2024) - Overall	**—**	**B**	**13.5**	**—**
Future Background(2027) - EB left	0.18	B	10.1	9
Future Background(2027) - EB through	0.74	B	16.1	180
Future Background(2027) – EB right	0.26	A	2.8	16
Future Background(2027) - WB left	0.13	A	9.1	7
Future Background(2027) - WB through	0.75	B	16.5	186
Future Background(2027) - NB left	0.73	D	47.7	56
Future Background(2027) - NB through	0.13	B	11.4	9
Future Background(2027) - SB approach	0.07	B	11.6	6

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2027) - Overall	—	**B**	**17.0**	—
Total Future(2027) - EB left	0.19	B	10.4	9
Total Future(2027) - EB through	0.74	B	16.4	183
Total Future(2027) - EB right	0.26	A	2.8	16
Total Future(2027) - WB left	0.14	A	9.3	7
Total Future(2027) - WB through	0.76	B	17.0	192
Total Future(2027) - NB left	0.73	D	47.8	56
Total Future(2027) - NB through	0.13	B	11.4	9
Total Future(2027) - SB approach	0.07	B	11.6	6
Total Future(2027) - Overall	—	**B**	**17.3**	—
Future Background(2030) – EB left	0.21	B	11.6	10
Future Background(2030) - EB through	0.77	B	17.8	201
Future Background(2030) - EB right	0.27	A	3.1	18
Future Background(2030) - WB left	0.16	B	10.2	8
Future Background(2030) - WB through	0.78	B	18.4	219
Future Background(2030) - NB left	0.74	D	48.0	58
Future Background(2030) - NB through	0.13	B	11.3	10
Future Background(2030) - SB approach	0.06	B	11.5	6
Future Background(2030) - Overall	—	**B**	**18.4**	—
Total Future(2030) - EB left	0.24	B	13.0	11
Total Future(2030) - EB through	0.78	B	18.8	233
Total Future(2030) - EB right	0.28	A	3.2	18
Total Future(2030) - WB left	0.18	B	10.8	8
Total Future(2030) - WB through	0.80	B	19.8	244
Total Future(2030) - NB left	0.74	D	48.2	59
Total Future(2030) - NB through	0.13	B	11.3	9
Total Future(2030) - SB approach	0.06	B	11.5	6
Total Future(2030) - Overall	—	**B**	**19.4**	—
Future Background(2035) – EB left	0.32	B	18.0	14
Future Background(2035) - EB through	0.83	C	21.9	260
Future Background(2035) - EB right	0.30	A	3.6	22
Future Background(2035) - WB left	0.24	B	14.0	11
Future Background(2035) - WB through	0.85	C	23.1	272
Future Background(2035) - NB left	0.75	D	47.9	62
Future Background(2035) - NB through	0.13	B	10.6	10
Future Background(2035) - SB approach	0.06	B	11.2	6
Future Background(2035) - Overall	—	**C**	**21.8**	—
Total Future(2035) - EB left	0.38	C	23.2	17
Total Future(2035) - EB through	0.84	C	23.0	269

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2035) - EB right	0.30	A	3.8	23
Total Future(2035) - WB left	0.26	B	15.5	11
Total Future(2035) - WB through	0.87	C	24.9	284
Total Future(2035) - NB left	0.75	D	48.2	63
Total Future(2035) - NB through	0.13	B	10.6	10
Total Future(2035) - SB approach	0.06	B	11.0	6
Total Future(2035) - Overall	**—**	**C**	**23.1**	**—**

During the PM peak hour, the Meadowgate Boulevard and Commissioners Road East intersection currently operates at a good level of service (LOS B) overall, with no critical movements.

Under 2035 future background conditions, the intersection is expected to operate at a reasonable level of service (LOS C) overall. The northbound left-turn queue is projected to exceed the available storage by one metre.

The addition of site traffic is not expected to impact the intersection's level of service overall with no critical movements as a result of site trips.

6.5 Future Street 'A' and Meadowlily Road South

Intersection operations at the Future Street 'A' and Meadowlily Road South intersection are presented in **Table 24** and **Table 25**.

Table 24: Future Street 'A' and Meadowlily Road South – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2027) - WB approach	0.11	A	9.9	3
Total Future(2030) - WB approach	0.11	A	9.9	3
Total Future(2035) - WB approach	0.11	A	9.9	3

Table 25: Future Street 'A' and Meadowlily Road South – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2027) - WB approach	0.07	B	10.0	2
Total Future(2030) - WB approach	0.07	B	10.0	2
Total Future(2035) - WB approach	0.07	B	10.0	2

The westbound approach is anticipated to operate at LOS A and LOS B during the AM and PM peak hours, respectively, through all horizon years.

6.6 Future Street 'A' and Commissioners Road East

Intersection operations at the Future Street 'A' and Commissioners Road East intersection are presented in **Table 26** and **Table 27**.

Currently, the Summerside Community Church driveway on Commissioners Road East is a T-intersection and operates as a full movement driveway. In previous years, a median existed that restricted northbound left-turn movements from the church. This median was modified in 2015 to permit northbound left-turn movements from the church driveway.

Street A is proposed to connect with Meadowlily Road South and Commissioners Road East (aligned with the Summerside Community Church driveway to the south). With the new road connection, a new median will be built along Commissioners Road East that will restrict the southbound left-turn from the proposed development and will once again restrict the northbound left turn from the church driveway. Any church related traffic performing a northbound left-turn under existing conditions, has been assigned as a northbound left-turn a Commissioners Road East and Meadowgate Boulevard to reflect conditions once the new median is built.

Only stop controlled approaches and exclusive turn lanes have been reported on.

Table 26: Future Street 'A' and Meadowlily Road South – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) - EB right	0.00	A	0.0	0
Existing Conditions(2024) – WB left	0.00	A	0.0	0
Existing Conditions(2024) – NB approach	0.12	F	86.5	3
Future Background(2027) - EB right	0.00	A	0.0	0
Future Background(2027) – WB left	0.00	A	0.0	0
Future Background(2027) – NB approach	0.71	F	744.9	10
Total Future(2027) - EB left	0.07	A	1.8	2
Total Future(2027) – EB right	0.00	A	0.0	0
Total Future(2027) – WB left	0.00	A	0.0	0
Total Future(2027) – NB approach	0.00	A	9.9	0
Total Future(2027) - SB approach	0.59	F	81.8	22
Future Background(2030) - EB right	0.00	A	0.0	0
Future Background(2030) – WB left	0.00	A	0.0	0
Future Background(2030) – NB approach	2.16	F	2719	13
Total Future(2030) - EB left	0.26	B	10.3	9
Total Future(2030) – EB right	0.00	A	0.0	0
Total Future(2030) – WB left	0.00	A	0.0	0
Total Future(2030) – NB approach	0.00	A	9.9	0
Total Future(2030) - SB approach	2.36	F	735.1	131
Future Background(2035) - EB right	0.00	A	0.0	0
Future Background(2035) – WB left	0.00	A	0.0	0
Future Background(2035) – NB approach	4.65	F	Error	Error
Total Future(2035) - EB left	0.39	C	20.3	13
Total Future(2035) – EB right	0.00	A	0.0	0
Total Future(2035) – WB left	0.00	A	0.0	0
Total Future(2035) – NB approach	0.00	B	10.0	0
Total Future(2035) - SB approach	3.94	F	Error	Error

During the AM peak hour, the northbound approach is anticipated to operate with a critical LOS F and v/c ratio of 0.12. With background growth, this movement is anticipated to worsen to a v/c ration of 4.65 by 2035.

With the construction of Street A, the addition of site traffic and the reassignment of northbound left-turns to Meadowgate Boulevard, the eastbound left-turn movement into the site is anticipated to operate at reasonable levels of service (LOS A–C) through

to the 2035 horizon year. The southbound approach is projected to be critical through all horizon years, operating at LOS F with a v/c ratio of 3.94 by 2035.

Table 27: Future Street 'A' and Meadowlily Road South – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Existing Conditions(2024) - EB right	0.00	A	0.0	0
Existing Conditions(2024) – WB left	0.00	A	0.0	0
Existing Conditions(2024) – NB approach	0.00	A	0.0	0
Future Background(2027) - EB right	0.00	A	0.0	0
Future Background(2027) – WB left	0.00	A	0.0	0
Future Background(2027) – NB approach	0.00	A	0.0	0
Total Future(2027) - EB left	0.13	A	2.4	3
Total Future(2027) – EB right	0.00	A	0.0	0
Total Future(2027) – WB left	0.00	A	0.0	0
Total Future(2027) – NB approach	0.00	A	0.0	0
Total Future(2027) - SB approach	0.21	F	30.5	6
Future Background(2030) - EB right	0.00	A	0.0	0
Future Background(2030) – WB left	0.00	A	0.0	0
Future Background(2030) – NB approach	0.00	A	0.0	0
Total Future(2030) - EB left	0.45	B	14.0	17
Total Future(2030) – EB right	0.00	A	0.0	0
Total Future(2030) – WB left	0.00	A	0.0	0
Total Future(2030) – NB approach	0.00	A	0.0	0
Total Future(2030) - SB approach	0.69	F	69.9	30
Future Background(2035) - EB right	0.00	A	0.0	0
Future Background(2035) – WB left	0.00	A	0.0	0
Future Background(2035) – NB approach	0.00	A	0.0	0
Total Future(2035) - EB left	0.64	E	37	30
Total Future(2035) – EB right	0.00	A	0.0	0
Total Future(2035) – WB left	0.00	A	0.0	0
Total Future(2035) – NB approach	0.00	A	0.0	0
Total Future(2035) - SB approach	0.89	F	122.9	42

During the PM peak hour, with the construction of Street A and the addition of site traffic, the eastbound left-turn movement is expected to operate at a good level of service (LOS B) under 2027 and 2030 conditions. By 2035, the eastbound left-turn

movement is anticipated to operate at LOS E. The southbound approach is projected to operate at LOS F through all horizon years with a v/c ratio of 0.89 by 2035.

7.0 Mitigation

Currently the cross section along Commissioners Road East, from Meadowlily Road to Meadowgate Boulevard is unbalanced with one travel lane and two travel lanes in the westbound and eastbound directions, respectively. The imbalance in the number of lanes per direction as well as the current property lines along Commissioners Road East can be seen in **Figure 15**. The City will require the developer to convey land to widen the right of way.

Figure 15: Current Property Lines Along Commissioners Road East

It is recommended to balance the cross sections, with a road widening to accommodate an additional westbound through lane to provide a four-lane cross-section (two lanes per direction) along Commissioners Road East. The typical planning level of an arterial lane is approximately 850 vehicles per hour per lane. Under existing conditions, there are approximately 950 vehicles and 800 vehicles utilizing the one lane in the westbound direction in the AM and PM peak hours, respectively. This number is anticipated to increase to approximately 1300 vehicles and 1200 vehicles per lane per direction in the when considering 2035 background growth alone in the AM and PM peak hours, respectively. From a capacity standpoint, one lane in the westbound direction is not adequate enough to sustain the traffic levels anticipated on the roadway, without site traffic. The addition of site traffic, which is anticipated to head primarily to/from the

west, will further increase the number of westbound vehicles on Commissioners Road East.

The inability of the roadway to sustain traffic levels heading westbound is highlighted in the intersection analysis results in **Table 21** and **Table 22**. The high volume of westbound through vehicles also impacts site operations at Street A and Commissioners Road East (seen in **Table 26** and **Table 27)**, with high volumes of westbound traffic limiting the number of gaps in traffic for trips into/out of the site.

The road widening will impact the following intersections:

- Meadowlily Road South and Commissioners Road East (additional westbound through lane);
- Street A and Commissioners Road East (additional westbound through lane); and
- Meadowgate Boulevard and Commissioners Road (additional westbound receiving lane, upstream of the intersection).

The subsequent results for these intersections with the applied widening can be seen in **Section 7.2, Section 7.3** and **Section 7.4**.

7.1 Highbury Avenue and Commissioners Road East (East Ramp Terminal)

Potential mitigation was explored in order to improve the northbound left-turn movement that operates with queues exceeding the provided storage under existing conditions in the AM peak hour and the eastbound through movement which is a result of the site traffic in the PM peak hour.

The following parameters and modifications were applied to the AM and PM peak hour analysis:

- An additional northbound left-turn lane with 100 metres of storage was added to the south leg, to provide two northbound left-turn lanes and a northbound right-turn lane. This geometry matches the number of lanes and configuration provided at the Highbury Avenue North and Commissioners Road East (West Ramp Terminal); and
- Signal timing splits were optimized, which results in an increase in green time for the eastbound and westbound approaches.

Table 28 and **Table 29** present the mitigated scenario during AM and PM peak hours, respectively for the 2035 horizon year.

Table 28: Highbury Avenue and Commissioners Road East (East Ramp Terminal) – Intersection Operations for AM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) - EB through	0.41	A	6.8	24
Future Background(2035) - EB right	0.30	A	0.5	—
Future Background(2035) - WB left	0.41	A	4.9	5
Future Background(2035) - WB through	0.49	A	4.9	16
Future Background(2035) - NB left	0.69	D	52.3	60
Future Background(2035) - NB right	0.21	B	11.2	11
Future Background(2035) - Overall	—	**B**	**11.1**	—
Total Future (2035) - EB through	0.45	A	7.8	28
Total Future (2035) - EB right	0.30	A	0.5	
Total Future (2035) - WB left	0.58	A	9.7	17
Total Future (2035) - WB through	0.56	A	4.6	26
Total Future (2035) - NB left	0.70	D	52.5	60
Total Future (2035) - EB through	0.24	B	10.8	12
Total Future (2035) - Overall	—	**B**	**11.2**	—

Table 29: Highbury Avenue and Commissioners Road East (East Ramp Terminal) – Intersection Operations for AM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) - EB through	0.77	B	10.9	95
Future Background(2035) - EB right	0.36	A	1.0	
Future Background(2035) - WB left	0.66	C	33.3	35
Future Background(2035) - WB through	0.52	A	6.8	30
Future Background(2035) - NB left	0.72	D	52.5	65
Future Background(2035) - NB right	0.26	A	9.3	14
Future Background(2035) - Overall	—	**B**	**13.7**	—
Total Future (2035) - EB through	0.77	A	6.1	35
Total Future (2035) - EB right	0.38	A	0.6	—
Total Future (2035) - WB left	0.63	D	41.1	50
Total Future (2035) - WB through	0.48	A	2.1	28
Total Future (2035) - NB left	0.18	D	52.9	11
Total Future (2035) - EB through	0.56	B	18.0	18
Total Future (2035) - Overall	—	**A**	**6.5**	—

Under the mitigated scenario, the northbound left-turn movement is able to operate within the 100-metre storage length in both the AM and PM peak hours. The eastbound through movement in the PM peak hour is no longer anticipated to operate over capacity and with a critical LOS E.

7.2 Meadowlily Road South and Commissioners Road East

Potential mitigation was explored in order to improve the northbound, eastbound left-turn and westbound through critical movements identified in the analysis.

The following parameters and modifications were applied to the AM and PM peak hour analysis:

- The northbound geometry was modified to remove the double northbound left-turn lanes to provide a northbound left turn lane, northbound through lane and a northbound right-turn lane;
- Eastbound left-turn storage was increased to 55 metres; and
- An additional westbound through lane was provided (as a result of the proposed westbound road widening).

Currently, there is an exclusive northbound left-turn lane, a shared through/left-turn lane and an exclusive right turn lane on the northbound approach at this intersection. The signal timing plan under existing conditions is coded so that the northbound approach left-turning movements operate as permissive movements. Typically, double left-turn lanes are coded as protected movements in signal timing plans as it can be unsafe from an operational standpoint to allow these movements to be permissive.

The existing permissive signal timing is adequate for the northbound left-turn lanes and does not lead to any capacity issues as there is minimal traffic heading southbound on Meadowlily Road. In the future volume scenarios, considering the background development and proposed subject site that will increase the southbound volume on Meadowlily Road, it is no longer safe to allow for both left-turn movements to operate as permissive movements.

The eastbound left-turn storage lane was increased. The maximum eastbound left-turn 95th percentile queue is approximately 50 metres in the PM peak hour which exceeds the provided 30 metre storage. The eastbound left-turn lane is situated so that it is back-to-back with the westbound left turn at the Highbury Avenue South and

Commissioners Road East (East Ramp Terminal). The maximum anticipated westbound left-turn queue (without mitigation) is approximately 51 metres, which is well within the 105-metre storage. Therefore, the storage lanes at these intersections can be modified to increase the eastbound left-turn storage. It is recommended that an eastbound storage of 55 metres be provided, which subsequently reduces the westbound left-turn lane at Highbury Avenue South and Commissioners Road East to approximately 80 metres.

Table 30 and **Table 31** present the mitigated scenario during AM and PM peak hours, respectively for the 2035 horizon year.

Table 30: Meadowlily Road South and Commissioners Road East – Intersection Operations for AM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) – EB left	0.13	A	5.7	4
Future Background(2035) - EB through	0.25	A	3.9	18
Future Background(2035) - WB left	0.04	A	4.1	4
Future Background(2035) - WB through	0.50	A	6.3	112
Future Background(2035) - NB left	0.25	D	51.1	13
Future Background(2035) - NB thru/left	0.00	A	0.0	—
Future Background(2035) - NB right	0.04	A	0.2	—
Future Background(2035) - SB approach	0.48	C	26.1	22
Future Background(2035) - Overall	—	**A**	**6.7**	—
Total Future(2035) - EB left	0.29	A	9.4	5
Total Future(2035) - EB through	0.28	A	4.5	19
Total Future(2035) - WB left	0.05	A	4.9	4
Total Future(2035) - WB through	0.60	A	9.0	138
Total Future(2035) - NB left	0.27	D	48.7	13
Total Future(2035) - NB thru/left	0.00	A	0.0	—
Total Future(2035) - NB right	0.04	A	0.2	—
Total Future(2035) - SB approach	0.72	D	45.2	50
Total Future(2035) - Overall	—	**B**	**10.4**	—

Table 31: Meadowlily Road South and Commissioners Road East – Intersection Operations for PM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) – EB left	0.31	A	8.5	9
Future Background(2035) - EB through	0.42	A	5.9	38
Future Background(2035) - WB left	0.26	A	6.4	11
Future Background(2035) - WB through	0.42	A	6.6	83
Future Background(2035) - NB left	0.57	E	58.7	36
Future Background(2035) - NB thru/left	0.00	D	39.0	2
Future Background(2035) - NB right	0.20	A	7.3	7
Future Background(2035) - SB approach	0.27	B	13.0	13
Future Background(2035) - Overall	**—**	**A**	**8.3**	**—**
Total Future(2035) - EB left	0.57	B	13.8	15
Total Future(2035) - EB through	0.47	A	6.4	44
Total Future(2035) - WB left	0.31	A	7.6	11
Total Future(2035) - WB through	0.47	A	7.3	95
Total Future(2035) - NB left	0.70	E	70.5	38
Total Future(2035) - NB thru/left	0.00	D	38.0	2
Total Future(2035) - NB right	0.19	A	7.1	7
Total Future(2035) - SB approach	0.43	C	21.1	24
Total Future(2035) - Overall	**—**	**A**	**9.7**	**—**

With the proposed mitigation, the intersection is anticipated to operate at good levels of service (LOS A-B) overall. During the PM peak hour, the northbound left-turn movement is still expected to operate at LOS E; however, it would operate within capacity. No other critical movements are anticipated.

The eastbound left-turn queues are anticipated to reach a maximum of 5 metres and 15 metres in the AM and PM peak hours, respectively. The significant decrease in the queue length is due to the additional westbound through lane provided, which allows for more gaps in traffic for the eastbound left-turn movement.

7.3 Meadowgate Boulevard and Commissioners Road East

Potential mitigation was explored in order to improve the critical westbound through movement in the AM peak hour. Mitigation was applied in the PM peak hour, although the northbound left-turn queue identified as exceeding the provided storage was a result of background traffic growth and not site traffic. Further, the anticipated eastbound left-turn queues are anticipated to reach as far as 269 metres in the PM peak hour, which will interfere with the proposed Street A access on Commissioners Road East.

The following was applied to the AM and PM peak hour analysis:

- Signal timing splits were optimized, which resulted in an increase in the westbound and eastbound green times.

Table 32 and **Table 33** present the mitigated scenario during AM and PM peak hours, respectively for the 2035 horizon year.

Table 32: Meadowgate Boulevard and Commissioners Road East – Intersection Operations for AM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) – EB left	0.13	B	12.3	4
Future Background(2035) - EB through	0.58	B	14.2	105
Future Background(2035) - EB right	0.14	A	1.7	7
Future Background(2035) - WB left	0.06	A	8.4	5
Future Background(2035) - WB through	0.92	C	31.1	287
Future Background(2035) - NB left	0.91	E	69.2	120
Future Background(2035) - NB through	0.08	B	11.3	8
Future Background(2035) - SB approach	0.01	A	0.0	—
Future Background(2035) - Overall	—	**C**	**29.2**	—
Total Future(2035) - EB left	0.14	B	13.2	4
Total Future(2035) - EB through	0.61	B	14.8	113
Total Future(2035) - EB right	0.14	A	1.7	7
Total Future(2035) - WB left	0.07	A	8.5	5
Total Future(2035) - WB through	0.92	C	32.4	291
Total Future(2035) - NB left	0.93	E	72.0	124
Total Future(2035) - NB through	0.08	B	11.3	8
Total Future(2035) - SB approach	0.01	A	0.0	—
Total Future(2035) - Overall	—	**C**	**30.4**	—

Table 33: Meadowgate Boulevard and Commissioners Road East – Intersection Operations for PM Peak Hour, Mitigated Scenario

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Future Background(2035) – EB left	0.26	B	12.8	10
Future Background(2035) - EB through	0.80	B	18.7	202
Future Background(2035) - EB right	0.28	A	1.4	9
Future Background(2035) - WB left	0.20	B	10.5	8
Future Background(2035) - WB through	0.82	B	19.7	215
Future Background(2035) - NB left	0.80	E	58.1	81
Future Background(2035) - NB through	0.14	B	13.0	11
Future Background(2035) - SB approach	0.07	B	13.9	7
Future Background(2035) - Overall	**—**	**B**	**19.9**	**—**
Total Future(2035) - EB left	0.29	B	14.1	10
Total Future(2035) - EB through	0.81	B	19.0	204
Total Future(2035) - EB right	0.28	A	1.3	9
Total Future(2035) - WB left	0.21	B	10.7	8
Total Future(2035) - WB through	0.84	C	20.6	220
Total Future(2035) - NB left	0.82	E	60.4	86
Total Future(2035) - NB through	0.14	B	13.3	11
Total Future(2035) - SB approach	0.07	B	14.2	7
Total Future(2035) - Overall	**—**	**C**	**20.7**	**—**

The proposed mitigation would allow the intersection to operate at a reasonable level of service (LOS C) overall during both peak hours. The northbound left-turn movement is anticipated to operate at LOS E with projected queues exceeding the available storage by 25 metres. Despite this, the overall intersection LOS and delay were able to be reduced as a result of the signal timing optimization.

7.4 Future Street ‘A’ and Commissioners Road East

The following parameters and modifications were applied to the AM and PM peak hour analysis:

- An additional westbound through lane was provided (as a result of the proposed westbound road widening).

Table 34 and **Table 35** summarize the results of the stop-controlled intersection with the proposed road widening in place.

Table 34: Future Street 'A' and Commissioners Road East – Intersection Operations for AM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2035) - SB approach	0.49	C	23.5	20
Total Future(2035) - EB left	0.12	A	2.1	3

Table 35: Future Street 'A' and Commissioners Road East – Intersection Operations for PM Peak Hour

Movement	v/c	LOS	Delay (s/veh)	95th %ile queue (m)
Total Future(2035) - SB approach	0.25	C	16.3	7
Total Future(2035) – EB left	0.30	A	6.1	10

With the proposed mitigation, the southbound approach and eastbound left-turn movement are expected to operate at LOS C and LOS A, respectively, during both peak hours.

7.5 Transit Improvements

London Transit currently operates one route, Route 24 Talbot Village Summerside, along Commissioners Road East within the study area. It was determined in **Section 5.2**, that 84 trips in the AM peak hour and 94 trips in the PM peak hour would be anticipated to be generated by the site. Opportunities to increase the frequency of the bus servicing the area should be explored.

8.0 Site Plan Review

8.1 Proposed Access Points

Within the site plan, a new street, Street A, is proposed to connect with Meadowlily Road South and Commissioners Road East.

The proposed site accesses are located approximately 250 metres to the east and approximately 115 metres north of the Meadowlily Road South and Commissioners Road East intersection, measured stop bar to stop bar. The maximum projected queue lengths at this intersection without mitigation, are as follows:

- Westbound left turn: 11 metres (AM peak hour, unmitigated results)
- Westbound through movement: 558 metres (PM peak hour, unmitigated results)
- Southbound Approach: 50 metres (AM peak hour, unmitigated results)

When considering unmitigated results, the anticipated 95th percentile queues for the southbound approach can be accommodated without extending to the site access. The westbound queues are anticipated to interfere with the site access on Commissioners Road East.

The maximum projected queue lengths at this intersection **with mitigation**, are as follows:

- Westbound left turn: 11 metres (PM peak hour, mitigated results)
- Westbound through movement: 138 metres (AM peak hour, mitigated results)
- Southbound Approach: 50 metres (AM peak hour, mitigated results)

When considering mitigated results, the anticipated 95th percentile queues can be accommodated without extending to the site access.

The proposed site access on Commissioners Road East is located approximately 200 metres west of the Commissioners Road East and Meadowgate Boulevard intersection, measured stop bar to stop bar. The maximum projected queue lengths at this intersection without mitigation, are as follows:

- Eastbound left turn: 17 metres (PM peak hour, unmitigated results)
- Eastbound through movement: 269 metres (PM peak hour, unmitigated results)
- Eastbound right turn: 23 metres (AM peak hour, unmitigated results

When considering unmitigated results, the anticipated 95th percentile queues for the eastbound through movement are anticipated to interfere with the site access on Commissioners Road East.

The maximum projected queue lengths at Meadowgate Boulevard and Commissioners Road East intersection **with mitigation**, are as follows:

- Eastbound left turn: 10 metres (PM peak hour, mitigated results)
- Eastbound through movement: 204 metres (PM peak hour, mitigated results)
- Eastbound right turn: 9 metres (AM peak hour, mitigated results)

With mitigation, the eastbound through movement is anticipated to still encroach on the site access, but is only expected to encroach 4 metres into the intersection with Street A.

The spacing of the site accesses in relation to adjacent intersections was also confirmed. According to section **9.4.2.1 of the TAC Geometric Design Guide for Canadian Roads**, published in June 2017, the typical minimum spacing between adjacent intersections along an arterial roadway is 200 metres, and 60 metres for collector roads and local roads. This is considered applicable in areas of intense existing development and to ensure adequate length for back-to-back storage for left-turning vehicles.

The proposed intersection at Street A and Commissioners Road East is approximately 250 metres east of the Commissioners Road East and Meadowlily Road South intersection and 200 metres west of the Commissioners Road East and Meadowgate Boulevard intersection. As Commissioners Road East is classified as a civic boulevard, which functions as an arterial roadway, adequate spacing is therefore provided along Commissioners Road East between Street A and the adjacent intersections.

The second site access point along Meadowlily Road South is located approximately 115 metres north of the Commissioners Road East and Meadowlily Road South intersection. As Meadowlily Road South is classified as a local road, the minimum spacing of 60 metres has been met.

8.2 Site Circulation

Vehicle turning paths were evaluated using the AutoTURN software package to ensure adequate maneuverability for emergency vehicles and waste collection trucks.

A fire truck was maneuvered along the designated fire route. The truck selected was similar to the trucks expected to be utilized in the city of London at nearby fire stations. The analysis demonstrated the fire route is sufficiently wide to allow the fire truck to maneuver through the site.

Garbage collection was also modeled to confirm the sufficiency of the garbage collection locations. A front-loading garbage truck was utilized to check the sufficiency of the garbage collection area in Block 4. A Molok waste collection vehicle was utilized to confirm the sufficiency of the garbage collection areas for Blocks 1, 2 and 3. The analysis

demonstrated the internal roadways within the site are sufficiently wide is to allow the garbage trucks to maneuver through the site.

The vehicle turning paths are detailed in **Appendix F.**

8.3 Parking

The City of London's Zoning By-law (ZBL) Z-1 ensures proper development by regulating factors such as the land uses allowed in areas and the location of buildings. ZBL Z-1 was recently amended to reduce the minimum parking requirements for most developments in the city of London. The by-law specifies the following parking requirements for residential developments:

- **Townhouse (Street)**: 1 parking space per unit;
- **Townhouse (Stacked):** 0.5 parking spaces per unit;
- **Apartment:** 0.5 parking spaces per unit.

Table 36 defines the required spaces as per the requirements set forth in ZBL Z-1 based on the proposed number of units, as well as the proposed rates and number of parking spaces proposed for the subject site.

Table 36: Parking Requirements

Parking Spaces	Required Spaces	Proposed Parking Rates	Spaces Provided
Building 1 (72 townhome units)	(1.0 spaces/unit X 72 units) = 72 spaces	2 spaces per unit + 17 visitor spaces	161
Building 2 (95 stacked townhome units)	(0.5 spaces/unit X 95 units) = 48 spaces	0.9 spaces per unit	87
Block 3 (120 apartment units)	(0.5 spaces/unit X 120 units) = 60 spaces	1 space per unit	120
Block 4 (662 apartment units)	(0.5 spaces/unit X 662 units) = 331 spaces	1.09 spaces per unit	723
Total	**511**	-	**1091**

The total number of parking spaces required for the site based on the City's zoning by-law is approximately 511 parking spaces. The development proposal is envisioning the provision of 1,091 parking spaces, which exceeds ZBL minimum parking requirements.

8.4 Sight Line Analysis – Street A and Meadowlily Road South

A sight line analysis was completed in the field on December 18, 2023, to determine if the vertical profile along Meadowlily Road South allows adequate sightlines for vehicles conducting a left-turn and right-turn movement from the proposed Street A.

Sight lines for the westbound left-turn from Street A was observed and checked against the requirements noted in TAC's **Geometric Design Guide for Canadian Roads** (June 2017).

When completing the field review, sightlines were measured from a point 4.4 metres back from the edge of the roadway and at the height of 1.08 metres (representing a driver's location and eye height within a typical passenger vehicle). The required sight lines were assessed based on the separation of the driveway to an object that is 1.30 metres high (which would represent the top of a passenger vehicle as per Section 9.11) within the centre of the approach lane.

As per the TAC guidelines, different sight line requirements vary based on the design speed. The posted speed limit along Meadowlily Road South is 40 km/h, therefore 50 km/h and 60 km/h design speeds were analyzed. **Table 37** outlines the required sight distance for vehicles turning left.

Table 37: TAC Intersection Sight Distances

Design Speed	Case	Left-Out Observed Distance (metres)	Intersection Sight Distance (metres)	Conforms?
50 km/h	Case B1 – Left Turn from Minor Road	110	105	Yes
60 km/h	Case B1 – Left Turn from Minor Road	110	130	**No**

If a 50 km/h design speed is used, the vertical profile meets the required TAC sightlines. However, if a 60 km/h design speed is used, the vertical profile is required to be modified.

To the immediate north of Commissioners Road East, there a minor slope is located along Meadowlily Road South. Based on the field observations, there is no concern for vehicles turning right out of the driveway. However, with an increase in the traffic on Meadowlily Road South due to the background developments identified in **Section 3.2** and the development of Forever Homes, if there is an ability for the road to be reprofile it is recommended.

It is assumed that the boulevard along the east side of Meadowlily Road South will be urbanized with the development of the subdivision. This may also improve the sight lines for vehicles turning left out of the site driveway.

9.0 Non-Auto Modes

9.1 Active Transportation

9.1.1 Pedestrian Access

As the location of the subject site is currently vacant, no sidewalks exist on Meadowlily Road South along the site's west frontage or on the north side of Commissioners Road East along the site's south frontage.

In the future, a city sidewalk and bike lane are proposed to be constructed along the south frontage of the proposed site plan. Further, a sidewalk is proposed on site's west frontage.

The main external pedestrian connections will be along the south side of Commissioners Road East (to/from the Summerside Shopping Plaza) and along Meadowlily Road South (leading to the Meadowlily Woods Trail) to the north of the site. The traffic signal at Meadowlily Road South and Commissioners Road East provides a controlled crossing opportunity for pedestrians heading south and west of the site towards the shopping centre or for individuals wanting to cross Meadowlily Road South.

The proposed pedestrian facilities along both the south and west frontage of the site are appropriate to allow pedestrian connections to the main external pedestrian origins / destinations.

Within the proposed site plan, there are various sidewalks proposed that all connect directly to Meadowlily Road South, Commissioners Road East and to Street A. A sidewalk is proposed on both sides of Street A, which allows for the safe travel of pedestrians along the roadway. Within each block, sidewalks exist along internal roadways roads, and in the areas surrounding parking lots which helps to increase safety for pedestrians traversing the site.

A multi-use path (MUP) is proposed to the immediate north of the site. The MUP extends from Meadowlily Road South to the City Wide Sports Park/the Meadow Community Garden and is accessed via a shared walkway on site. Various sidewalk connections through the proposed site provide access to the MUP. Similar to the sidewalk connections, which extend directly south from the townhomes in Block 1 to

the future city sidewalk/bike lanes on the south side of the site, considerations could be given to providing more direct sidewalk connections to the MUP or shared walkway for the buildings in the northern half of the site plan (apartments in Block 3 and eight-storey apartments in Block 4).

A crossing facility across Street A could be considered as it is anticipated that many pedestrians will need to cross this road to get to the MUP or travel internally from block to block.

9.1.2 Cycling Access

Cycling access is available via the proposed bike lanes south of the site and the proposed MUP on site. Currently, no cycling facilities are present within the study area. The future city bike path along the north side of Commissioners Road East will provide direct access to the site. The proposed multi-use path to the north of the site allows access to the Meadowlily Woods Trail located north of the site along Meadowlily Road South.

Considerations could be given to providing a crossing facility across Street A as it is anticipated that many cyclists will need to cross this road to get to the MUP, travel internally from block to block or head to the proposed bicycle lanes on Commissioners Road East.

Opportunities for bicycle parking for residents and visitors should be reviewed as the site plan is developed in more detail.

9.1.3 Measures for Persons with Personal Mobility Limitations

As the site plan is developed in more detail, considerations should be given to implementing standards, as outlined in the *Accessibility for Ontarians with Disabilities Act (AODA), 2005*. The AODA contains a section for exterior paths of travel, which generally applies to sidewalks, although for some requirements specifications for sidewalks are stated. The following regulations should be considered, as outlined in the AODA:

- The exterior path must have a minimum width of 1,500 mm. This width can be reduced to 1,200 mm when serving as a turning space that connects to a curb;
- Exterior paths must be slip resistant, firm and stable;

- A rail or other barrier with an edge that can be cane detectable must be provided with the head room clearance is less that 2,100 mm over a portion o the exterior path;
- The sidewalk slope can have a slope greater than 1:20 (maximum slope for most exterior paths), but the slope must not be greater than the slope of the adjacent roadway;
- The exterior path must have a 1:2 bevel (tactile plates) at changes in level between 6mm and 13mm;
- Openings in exterior paths should be oriented perpendicular to the direction of travel and must not allow the passage of objects with a diameter greater than 20mm;
- Curbs can have a maximum running slope of 1:8 at changes in level greater than 13 mm and less than 75 mm and 1:10 for changes in level of 75 mm or greater and 200 mm or less; and
- The entrance to an exterior path must provide a minimum clear opening of 850 mm.

10.0 Summary

Dillon Consulting Limited (Dillon) has been retained by Forever Homes Meadowlily Limited Partnership to undertake a transportation impact assessment (TIA) for the proposed development at the site located at 168 Meadowlily Road South in London, Ontario. As part of the development application, a TIA is required to determine the impact of the traffic generated by the development. The development application seeks to permit the following land uses:

- Block 1 – Townhomes (3 Storeys)
  - 72 residential units
- Block 2 – Stacked Back-to-Back Townhomes (3 Storeys)
  - 95 residential units
- Block 3 – Mid-rise Apartments (6 Storeys)
  - 120 residential units
- Block 4 – Mid-rise and High-rise Apartments (8-12 Storeys)
  - 662 residential units

Within the site plan, a new street, Street A, is proposed to connect with Meadowlily Road South and Commissioners Road East (aligned with the Summerside Community Church driveway to the south). With the new road connection, a new median will be built along Commissioner's Road East that will restrict the southbound left-turn from the proposed development and the northbound left-turn from the church driveway.

Traffic analyses have been completed for the weekday AM and PM peak hours for three horizon years:

- 2027, which corresponds to the anticipated build-out of the first half of the subdivision (Block 1, Block 2 and Block 3);
- 2030, which corresponds to the build-out of the entire subdivision; and
- 2035, which corresponds to five years after the anticipated build-out year.

At full build-out, the proposed development is forecast to generate a total of 335 vehicle trips (81 inbound, 254 outbound) in the AM peak hour and 376 vehicle trips (229 inbound, 147 outbound) in the PM peak hour.

City of London modal split targets were utilized to estimate the number of non-auto trips anticipated at the site. The site is projected to generate 419 total trips during the weekday AM peak hour and 470 total trips in the PM peak hour.

Traffic operations were assessed at several intersections along Commissioners Road East. Operations were also assessed at the future Street A and Meadowlily Road South, and Street A and Commissioners Road East intersections.

A road widening was recommended along Commissioners Road East from Meadowlily Road South to Meadowgate Boulevard in order to balance the cross-section provided in the eastbound direction. This was due to planning levels of roadways which identify the typical capacity of arterial lanes as approximately 850 vehicles per hour per lane. The inability of the roadway to sustain anticipated traffic levels, with and without site traffic, is highlighted in the operational analysis.

Additional measures were identified to mitigate capacity constraints at the following locations:

- At Highbury Avenue and Commissioners Road East (East Ramp terminal), an additional northbound left-turn lane was recommended as well as increasing the green time for the eastbound and westbound approaches.
- At Meadowlily Road South and Commissioners Road East, the removal of the double northbound left-turn lane was recommended, as well as increasing the eastbound left turn storage to 55 metres. An additional westbound through lane was recommended (as a result of the proposed westbound road widening).
- At Meadowgate Boulevard and Commissioners Road East, modifications to the signal timing plan to increase the eastbound and westbound green time were proposed.
- At Street A and Commissioners Road East, an additional westbound through lane was recommended (as a result of the proposed westbound road widening).

At the other study area intersections, traffic operations are generally anticipated to be reasonable under the existing traffic control and lane configuration, and no traffic mitigation is recommended.

Various components of the site plan were reviewed. The proposed access points for the development adhere to spacing requirements set forth in Section 9.4.2.1 of the TAC **Geometric Design Guide for Canadian Roads**, published in June 2017. When considering

mitigated results, the anticipated 95th percentile queues can be accommodated without extending to the site accesses or impacting access to and from the site, except for the eastbound through movement queues at Meadowgate Boulevard and Commissioners Road East which will encroach approximately 4 metres into the intersection.

Vehicle turning paths were evaluated using the AutoTURN software package to ensure adequate maneuverability for emergency vehicles and waste collection trucks. The analysis demonstrated the internal roadways of the proposed site are sufficiently wide to allow both a fire truck and waste collection vehicles to maneuver through the site.

The parking supply was reviewed. The total number of parking spaces required for the site is approximately 511 parking spaces. The subject site proposes 1,091 parking spaces, which exceeds the ZBL requirements.

A site visit was completed to determine if the vertical profile along Meadowlily Road South allows adequate sight lines for vehicles conducting a left-turn and right-turn movement from the proposed Street A location. Sight lines for the westbound left-turn from Street A were observed and checked against the requirements noted in TAC's **Geometric Design Guide for Canadian Roads** (June 2017). It was determined that if a 50 km/h design speed is used, the vertical profile meets the required TAC sight lines. However, if a 60 km/h design speed is used, the vertical profile would need to be modified. Based on the field observations, there is no concern for vehicles turning right out of the driveway.

Active transportation in the form of pedestrian and cyclist circulation was reviewed. Additional consideration should be given to increase the number of sidewalk connections from the buildings in the northern half of the site plan (apartments in Block 3 and eight-storey apartments in Block 4). A crossing facility across Street A could be considered as it is anticipated that many pedestrians and cyclists will need to cross this road to get to the MUP or travel internally from block to block. Opportunities for bicycle parking for residents and visitors should be reviewed as the site plan is developed in more detail.

As the site plan is developed in more detail, considerations should be given to implement standards, as outlined in the *Accessibility for Ontarians with Disabilities Act (AODA), 2005*.