845-875 Commissioners Road East, London Residential Development

Transportation Impact Assessment

Paradigm Transportation Solutions Limited

2025-07
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Project Summary

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845-875 Commissioners Road East, London Residential Development Transportation Impact Assessment

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Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Assessment (TIA) for a proposed Residential development located at 845-875 Commissioners Road East in the City of London.

This TIA includes an analysis of existing traffic conditions, a description of the proposed development, analysis of future traffic conditions, and assessment of development traffic impacts with recommendations as appropriate to accommodate the proposed development.

Development Concept

The proposed development includes four 14-storey towers accommodating a total of 867 units. The development is proposed to be completed in three phases, Tower D in Phase 1, Tower A and B in Phase 2, and Tower C in Phase 3.

Phases 1 and 2 are anticipated to be completed by 2030, and the full site is anticipated to be built out by 2032.

Access is proposed via two existing access intersections on Commissioners Road, both of which are four-legged intersections providing access to properties north and south of Commissioners Road. One of them provides access to the Victoria Hospital Heating Plant, and the other to Roseland Place.

TIA Scope

The scope of the Transportation Impact Assessment for the proposed development includes:

- **Study Area Intersections:**
  - Commissioners Road East and Adelaide Road South (signalized);
  - Commissioners Road East and Western Counties Road (signalized);
  - Commissioners Road East and Wellington Road (signalized);
  - Commissioners Road East and existing Victoria Hospital Heating Plant driveway/Future access (unsignalized); and

- Commissioners Road East and existing driveway to 865 Commissioners Road East/Roseland Park (unsignalized).

- **Analysis Periods:** Weekday AM and PM peak hours.
- **Traffic Conditions:** Existing (2025), Phases 1 and 2 completion (2030), full build-out (2032), and five years from full build-out (2037).

Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The operational analyses of the study area intersections indicate the following critical movements:

  Wellington Road and Commissioners Road

  - The eastbound through movement is operating at LOS E with a v/c ratio of 0.91 during the AM peak hour;
  - The 95th percentile queue length of the eastbound right-turn exceeds the existing storage of 20 metres during the AM and PM peak hours;
  - The westbound through movement is operating at LOS E with a v/c ratio of 0.97 during the PM peak hour;
  - The southbound right-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 80 metres during the PM peak hour;

  Commissioners Road and Western Counties Road/Hospital Driveway

  - The southbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 25 metres during the PM peak hour; and

  Commissioners Road and Adelaide Street/Commercial Access

  - The eastbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 100 metres during the PM peak hour.

  Access Intersections: The two existing access intersections on Commissioners Road that will accommodate access connection to the new development, indicate delays and poor levels of service (LOS F) for the northbound and southbound movements

of the outbound traffic from the existing developments. This is primarily due to the significant east/west traffic on Commissioners Road, and the two-way stop control for the north-south traffic on the two minor roads. The east/west traffic on Commissioners Road registers high levels of service (LOS A/B).

- **Development Trip Generation:** Phase 1 and Phase 2 of the development are forecast to generate 157 trips during the AM peak hour and 187 trips during the PM peak hour. The full development (Phases 1, 2, and 3) is forecast to generate 210 trips during the AM peak hour and 250 trips during the PM peak hour.
- **2030 Background Traffic Conditions:** The study area intersections are forecast to operate with the following additional critical movements to those noted under existing traffic conditions:

  Wellington Road and Commissioners Road

  - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 95 metres during the AM peak hour;
  - The eastbound through movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the PM peak hour;
  - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 90 metres during the PM peak hour;
  - The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 90 metres during the PM peak hour; and

  Commissioners Road and Adelaide Street/Commercial Access

  - The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.92 during the AM peak hour.

  Access Intersections: As under existing conditions, the two access intersections are forecast to operate with high delays and at LOS F for the outbound traffic from the existing developments. The east/west traffic on Commissioners Road is forecast to register high levels of service.
- **2030 Total Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under 2030 background traffic conditions. Specific to the two access

intersections, the new development traffic is now added to the south leg of the two intersections, and the projected operations indicate good levels of service for east/west traffic on Commissioners Road and the following capacity issues for the outbound street traffic movements:

Commissioners Road and Driveway A/ Victoria Heating Access

- The northbound movement (including development traffic) is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the AM and PM peak hours;
- The southbound movement is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the PM peak hour; and

Commissioners Road and Driveway B/ Roseland Park Driveway

- The northbound movement (including development traffic) is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour.

- **2032 Background Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with similar critical movements to those noted under existing and 2030 background traffic conditions.
- **2032 Total Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2030 total and 2032 background traffic conditions:

  Commissioners Road and Western Counties Road/ Hospital Driveway

  - The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.90 during the AM peak hour;

  Commissioners Road and Driveway B/ Roseland Park Driveway

  - The northbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour;
  - The southbound movement is forecast to operate at LOS F with a v/c ratio of 0.96 during the AM peak hour; and

  Commissioners Road and Adelaide Street/ Commercial Access

  - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

- **2037 Background Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical

movements to those noted under 2032 background traffic conditions:

Wellington Road and Commissioners Road

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.93 during the AM peak hour;
- The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.92 during the PM peak hour;

Commissioners Road and Western Counties Road/ Hospital Driveway

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the AM peak hour;

Commissioners Road and Driveway A/Victoria Heating Access

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour;

Commissioners Road and Driveway B/Roseland Park Driveway/ 865 Commissioners Road Driveway

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour; and

Commissioners Road and Adelaide Street/ Commercial Access

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

- **2037 Total Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2032 total and 2037 background traffic conditions:

  Wellington Road and Commissioners Road

  - The southbound left-turn movement at Wellington Road and Commissioners Road, which is forecast to operate at LOS F with a v/c ratio of 0.93 during the AM peak hour.

- **Impact Assessment Summary:** The results of the operational analyses of the study area intersections indicate that the proposed development can be accommodated by the study area road system and intersections. However, the existing access intersections operate with significant delays and poor levels of service for outbound site traffic under existing and future background traffic conditions without the subject development, as well as under future total traffic conditions with the subject development in place. This is largely attributed to the

high traffic volumes on Commissioners Road delaying the left-turn movements out of the subject development. The main east-west traffic flows on Commissioners Road operate at good levels of service.

A potential remedial measure could be the implementation of traffic signal control at one of the two existing access intersections. At the same time, a preliminary assessment of traffic signal warrants indicates that traffic signals are not warranted at either intersection under future total traffic conditions.

Although traffic signals are not warranted, signalization of at least one of the two access intersections likely would improve the operations of the outbound traffic movement for the existing developments to the north of Commissioners Road as well as the existing development and the proposed development to the south.

- **Transportation Demand Management:** The following TDM measures are appropriate for implementation at the subject development:
  - Internal sidewalks with connections to the adjacent roadway network.
  - Bicycle parking in accordance with the City's Zoning By-Law requirements for residential developments.
  - Access to existing and future transit routes on adjacent roadways.
  - Parking unbundled from the sale/rent of apartment units.
  - Transit, carshare, and active transportation information provided in a welcome package to new residents and/or posted in central locations on-site.

Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed.

Contents

Appendices

Figures

Tables

1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited (Paradigm) has been retained to conduct this Transportation Impact Assessment (TIA) for a proposed Residential development located at 845-875 Commissioners Road East in the City of London. **Figure 1.1** details the subject development location.

The proposed development includes four 14-storey towers accommodating a total of 867 units. The development is proposed to be completed in three phases, Tower D in Phase 1, Tower A and B in Phase 2, and Tower C in Phase 3.

Phases 1 and 2 are anticipated to be completed by 2030, and the full site is anticipated to be built out by 2032.

Access is proposed via two existing access intersections on Commissioners Road, both of which are four-legged intersections providing access to properties north and south of Commissioners Road.

1.2 Purpose and Scope

The purpose of this report is to identify and assess the potential traffic impact resulting from the proposed development. The scope of the study, developed in consultation with City of London staff via e-mail in April 2025, includes:

- assessment of the current traffic and site conditions within the study area;
- estimates of background traffic growth for Phases 1 and 2 completion (2030), full build-out (2032), and five years from full build-out (2037);
- estimates of additional traffic generated by the subject site;
- analyses of the impact of the future traffic on the surrounding road network, including the following study area intersections:
  - Commissioners Road East and Adelaide Road South (signalized);
  - Commissioners Road East and Western Counties Road (signalized);
  - Commissioners Road East and Wellington Road (signalized);

  - Commissioners Road East and existing Victoria Hospital Heating Plant driveway/Future access (unsignalized); and
  - Commissioners Road East and existing driveway to 865 Commissioners Road East/Roseland Park (unsignalized).
- recommendations, if necessary, to mitigate the site generated traffic in a satisfactory manner.

Appendix A contains the pre-study consultation material and responses from the City of London.

This study has been prepared in accordance with the requirements detailed by the City of London Transportation Impact Assessment Guidelines[1].

[1] Transportation Impact Assessment Guidelines, City of London, April 2012.

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Location of Subject Site

845-875 Commissioners Road, London TIA
250221

Figure 1.1

2 Existing Conditions

2.1 Existing Roadways

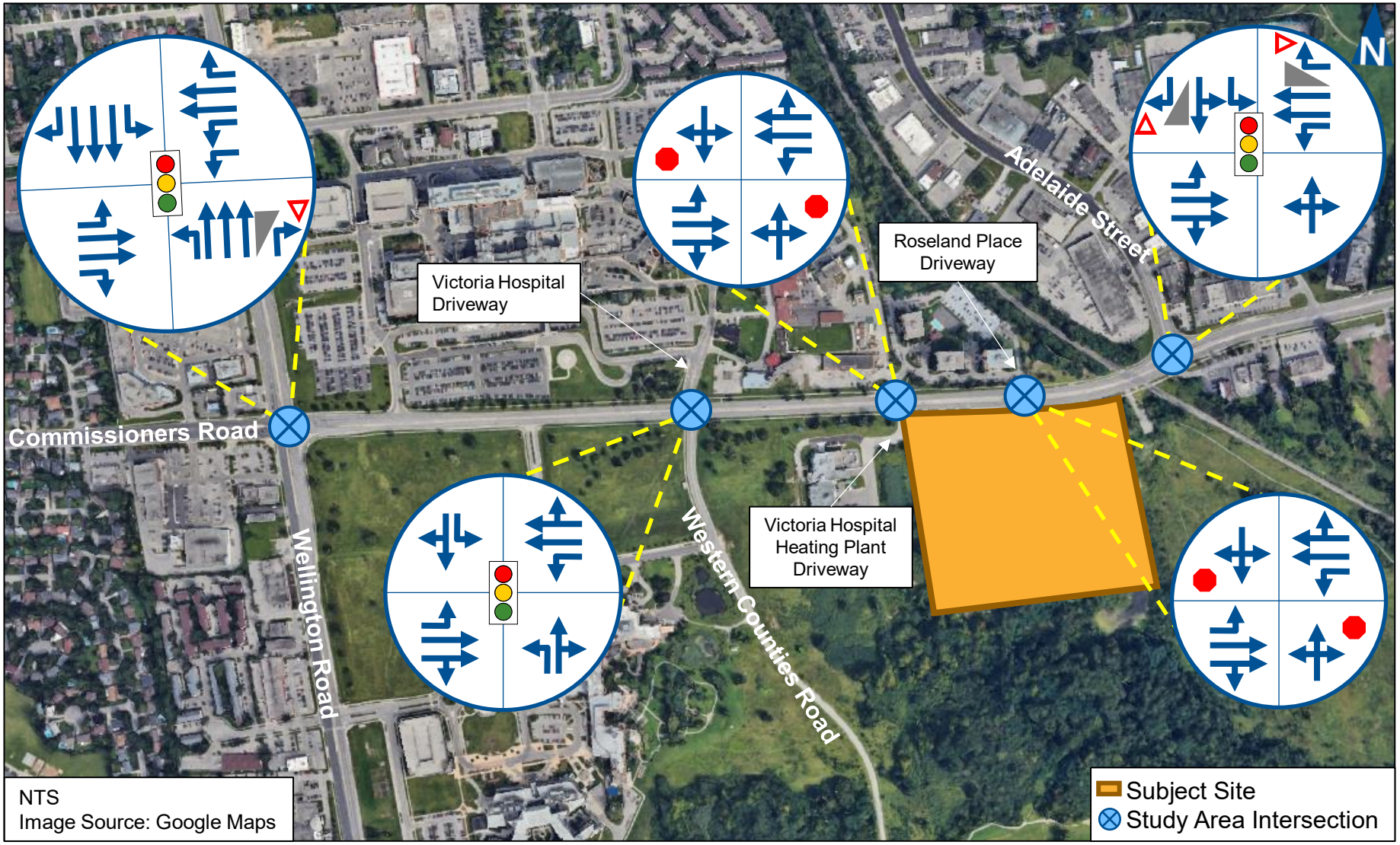
The main roadways near the subject development considered in assessing the traffic impacts of the development include:

- **Wellington Road** is a north-south rapid transit boulevard[2] with a six-lane cross-section. Sidewalks are provided on both sides of the roadway. No visible cycling facilities are present along this roadway. The posted speed limit is 50 km/h.
- **Commissioners Road** is an east-west civic boulevard with a four-lane cross section. Sidewalks are provided on both sides of the roadway. No visible cycling facilities are present along this roadway. The posted speed limit is 60 km/h.
- **Adelaide Street** is a north-south civic boulevard with a four-lane cross-section. Sidewalks are provided on both sides of the roadway, and no cycling facilities are provided. The posted speed limit is 50 km/h.
- **Western Counties Road** is a north-south local road with a two-lane cross-section. Sidewalks are provided on the west side of the roadway. The assumed speed limit south of Commissioners Road is 50 km/h, and the posted speed limit to the north is 20 km/h. It is noted that the north leg of Western Counties Road at Commissioners Road is a driveway to Victoria Hospital.
- **Existing Access Intersections:** There are two existing full access intersections on Commissioners Road between Adelaide Street and Western Counties Road. One of them provides access to the Victoria Hospital Heating Plant and the other to Roseland Place. The two intersections operate under two-way stop control. The subject development is proposed to provide access connections via the two access intersections.

Traffic signals are provided at the intersections of (1) Commissioners Road and Wellington Road, (2) Commissioners Road and Western Counties Road, and (3) Commissioners Road and Adelaide Street. Side-street stop-control is provided at the intersections of Commissioners Road and the existing Victoria Hospital Heating Plant driveway and at Commissioners Road and the existing driveway to 865 Commissioners Road/Roseland Park.

[2] City of London, The London Plan, Map 3: Street Classifications, 2016.

Figure 2.1 illustrates the traffic control and lane configuration at the study area intersections.



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Existing Lane Configuration and Traffic Controls

2.2 Transit Service

London Transit operates five routes within the study area. **Figure 2.2** illustrates the existing transit service. The five routes include:

- **Route 6 (University Hospital – Parkway Institute)** provides service primarily between University Hospital and Victoria Hospital. The route operates seven days a week with approximately 30-minute headways. The nearest stops for the route are on the west side of the Victoria Hospital driveway north of Commissioners Road (Stop ID 1857) and on the east side of the Victoria Hospital driveway north of Commissioners Road (Stop ID 1854).
- **Route 13 (Masonville Place – White Oaks Mall)** provides service primarily along Richmond Street and Wellington Road between Masonville Place and White Oaks Mall. The route operates seven days a week with 15-minute headways on weekdays and Saturdays and approximately 30-minute headways on Sundays. The nearest stops for the route are on the south side of Commissioners Road west of the subject site (Stop ID 2217) and on the north side of Commissioners Road west of the Roseland Place access road (Stop ID 447).
- **Route 16 (Masonville Place – Pond Mills)** provides service primarily along Adelaide Street between Masonville Place and Commissioners Road. The route operates seven days a week with 15- to 20-minute headways on weekdays and Saturdays and 30-minute headways on Sundays. The nearest stops for the route are on the north side of Commissioners Road east of Adelaide Street (Stop ID 446) and on the south side of Commissioners Road east of Adelaide Street (Stop ID 445).
- **Route 24 (Masonville Place – Alumni Hall/Natural Science)** provides service along Fanshawe Park Road, Richmond Street, and Adelaide Street with stops at Masonville Place and University Hospital. The route operates seven days a week with 40-minute headways. The nearest stops for the route are on the north side of Commissioners Road west of Wellington Road (Stop ID 2812) and on the south side of Commissioners Road west of Wellington Road (Stop ID 2811).
- **Route 90 (Express Masonville Place – White Oaks Mall)** provides express service of Route 13 between Masonville Place and White Oaks Mall. Route 90 has 15-minute headways on weekdays, 25-minute headways on Saturdays, and 20-minute headways on Sundays. The nearest stops for the route are on the west side of Wellington Road south of Commissioners Road

(Stop ID 1933) and on the east side of Wellington Road north of Commissioners Road (Stop ID 1931).

It is noted that the City's Bus Rapid Transit (BRT) system on Wellington Road is currently being implemented and will include a new BRT Station near Commissioners Road.

2.3 Traffic Volumes

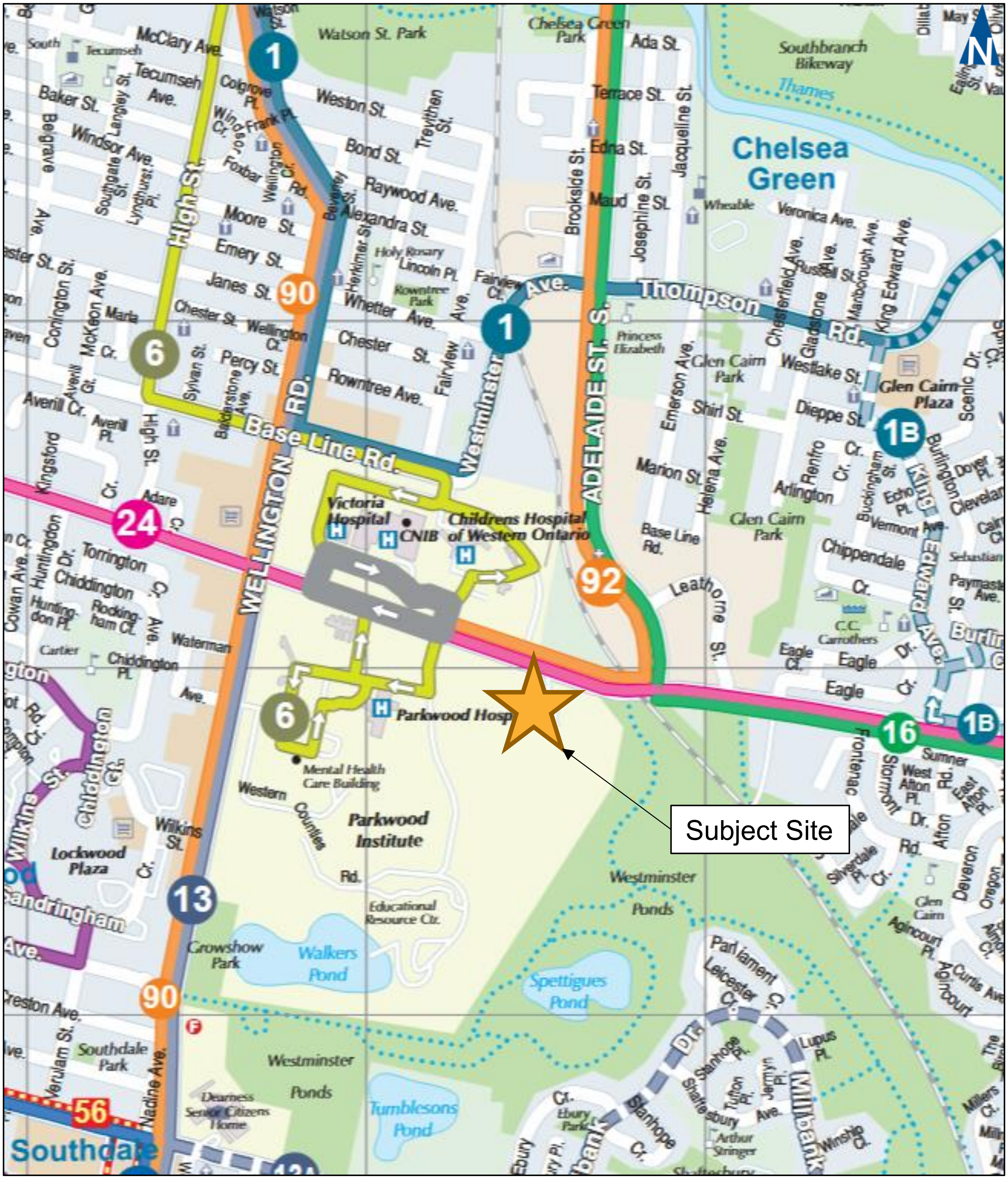
Paradigm conducted turning movement counts at the intersections of (1) Commissioners Road and Wellington Road, (2) Commissioners Road and Victoria Hospital Heating Plant, and (3) Commissioners Road and 865 Commissioners Road Driveway on 27 May 2025. The City provided turning movement counts at the intersections of Commissioners Road and Western Counties Road and at Commissioners Road and Adelaide Street recorded on 19 March 2024 and 27 March 2024, respectively.

Figure 2.3 illustrates the base year AM and PM weekday peak hour turning movement traffic volumes. **Table 2.1** summarizes the peak hours at each intersection.

TABLE 2.1: INTERSECTION PEAK HOURS

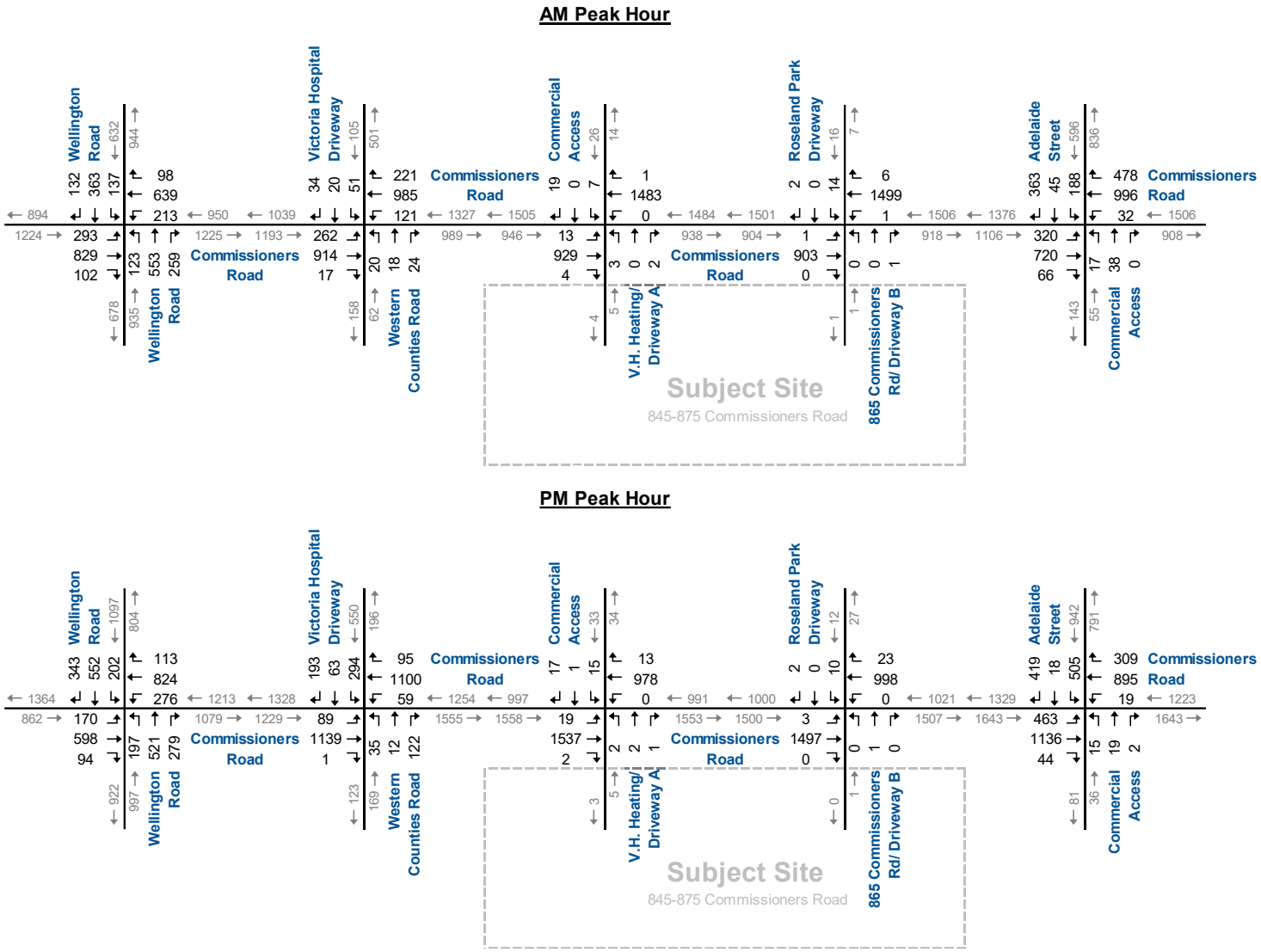
Intersection	Date	AM Peak Hour	PM Peak Hour
Commissioners Road and Wellington Road	27 May 2025	7:45 – 8:45	3:00 – 4:00
Commissioners Road and Western Counties Road	19 March 2024	7:45 – 8:45	3:45 – 4:45
Commissioners Road and Victoria Hospital Heating Plant Driveway	27 May 2025	7:45 – 8:45	3:45 – 4:45
Commissioners Road and 865 Commissioners Road Driveway	27 May 2025	7:45 – 8:45	3:45 – 4:45
Commissioners Road and Adelaide Street	27 March 2024	7:45 – 8:45	3:45 – 4:45

Appendix B contains the detailed traffic counts and signal timings for the study area intersections.



Existing Transit Network

Figure 2.2



Base Year Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 2.3

2.4 Traffic Operations

The level of service conditions at the study area intersections have been assessed through intersection operational analysis using Synchro 12.

Intersection level of service (LOS) is a recognized method of quantifying the average delay experienced by drivers at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles intending to make a particular movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows and intersection geometry.

The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds for signalized intersections, 50 seconds for unsignalized intersections or when the volume to capacity (v/c) ratio is greater than 1.00, the movement is classed as LOS F and remedial measures are usually implemented if they are feasible. LOS E is usually used as a guideline for the determination of road improvement needs on through lanes, while LOS F may be acceptable for left-turn movements at peak times, depending on delays.

Movements are considered critical under the following conditions:

- v/c ratios for overall intersection operations, through movements or shared through/turning movements increased to 0.90 or above and LOS ‘E’ or worse;
- v/c ratios for dedicated turning movements increased to 0.90 or above and LOS ‘E’ or worse; or
- 95th percentile queue lengths for individual movements exceeds available lane storage.

Table 2.2 summarizes the results of the intersection operational analysis under existing conditions, including the AM and PM peak hour LOS, v/c ratios, and 95th percentile queues experienced.

The results indicate that the study area intersections are operating at acceptable levels of service, except for the following critical movements:

<u>Wellington Road and Commissioners Road</u>

- The eastbound through movement is operating at LOS E with a v/c ratio of 0.91 during the AM peak hour;

- The 95th percentile queue length of the eastbound right-turn exceeds the existing storage of 20 metres during the AM and PM peak hours;
- The westbound through movement is operating at LOS E with a v/c ratio of 0.97 during the PM peak hour;
- The southbound right-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 80 metres during the PM peak hour;

Commissioners Road and Western Counties Road/Hospital Driveway

- The southbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 25 metres during the PM peak hour; and

Commissioners Road and Adelaide Street/Commercial Access

- The eastbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 100 metres during the PM peak hour.

Access Intersections

- The two existing access intersections on Commissioners Road that will accommodate access connection to the new development, indicate delays and poor levels of service (LOS F) for the northbound and southbound movements of the outbound traffic from the existing developments. This is primarily due to the significant east/west traffic on Commissioners Road, and the two-way stop control for the north-south traffic on the two minor roads. The east/west traffic on Commissioners Road registers high levels of service LOS (A/B).

Appendix C contains the detailed Synchro 12 reports.

TABLE 2.2: BASE YEAR TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	D	D	D	D	D	A	D	D	D	D	D	D
			Delay	46	60	39	55	42	54	42	50	38	46	0	45	42	44	47	44	50
			V/C	0.64	0.91	0.26		0.27	0.81	0.29		0.46	0.50	0.00		0.57	0.33	0.39		
			Q	82	128	27		29	97	28		33	58	0		38	37	44		
			Stor.	95	-	20		100	-	50		90	-	65		27	-	24		
			Avail.	13	-	-7		71	-	22		57	-	65		-11	-	-20		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	A	>	B	B	C	>	C	D	D	>	D	D	D	>	D	B
			Delay	28	9	>	13	18	22	>	21	50	47	>	48	51	48	>	49	20
			V/C	0.83	0.40	>		0.35	0.63	>		0.08	0.14	>		0.19	0.19	>		
			Q	11	7	>		14	71	>		8	14	>		18	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	89	-	>		81	-	>		12	-	>		7	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	C	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	15	0	>	0	0	0	>	0	<	64	>	64	<	73	>	73	1
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.08	>		<	0.35	>		
			Q	1	0	>		0	0	>		<	2	>		<	10	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	B	A	>	A	B	A	>	A	<	B	>	B	<	F	>	F	A
			Delay	14	0	>	0	10	0	>	0	<	12	>	12	<	206	>	206	1
			V/C	0.00	0.00	>		0.00	0.00	>		<	0.00	>		<	0.54	>		
			Q	0	0	>		0	0	>		<	0	>		<	14	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	C	A	>	B	B	C	A	C	<	E	>	E	<	D	A	D	C
			Delay	27	10	>	15	15	21	0	21	<	63	>	63	<	53	0	53	22
			V/C	0.83	0.36	>		0.09	0.59	0.00		<	0.63	>		<	0.66	0.00		
			Q	16	4	>		3	53	0		<	20	>		<	46	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	84	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	E	D	E	D	D	A	D	D	D	F	E	E
			Delay	48	59	46	56	42	74	42	64	41	45	0	44	39	46	104	63	58
			V/C	0.47	0.84	0.31		0.33	0.97	0.32		0.68	0.44	0.00		0.63	0.49	1.02		
			Q	54	98	28		39	145	32		56	55	0		56	59	156		
			Stor.	95	-	20		100	-	50		90	-	65		27	-	24		
			Avail.	41	-	-8		61	-	18		34	-	65		-29	-	-132		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	B	B	>	B	C	C	>	C	E	D	>	D	F	D	>	F	C
			Delay	18	16	>	16	27	24	>	24	59	43	>	46	138	52	>	98	35
			V/C	0.40	0.53	>		0.25	0.64	>		0.21	0.35	>		1.09	0.63	>		
			Q	6	44	>		13	80	>		14	42	>		163	82	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	94	-	>		82	-	>		6	-	>		-138	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	206	>	206	<	131	>	131	2
			V/C	0.03	0.00	>		0.00	0.00	>		<	0.24	>		<	0.60	>		
			Q	1	0	>		0	0	>		<	5	>		<	19	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	196	>	196	<	111	>	111	1
			V/C	0.01	0.00	>		0.00	0.00	>		<	0.06	>		<	0.28	>		
			Q	0	0	>		0	0	>		<	2	>		<	8	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	F	B	>	D	C	C	A	C	<	D	>	D	<	A	A	D	D
			Delay	104	18	>	42	25	35	0	35	<	50	>	50	<	0	0	41	40
			V/C	1.12	0.63	>		0.10	0.79	0.00		<	0.46	>		<	0.00	0.00		
			Q	140	22	>		3	70	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-40	-	>		42	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

3 Development Concept

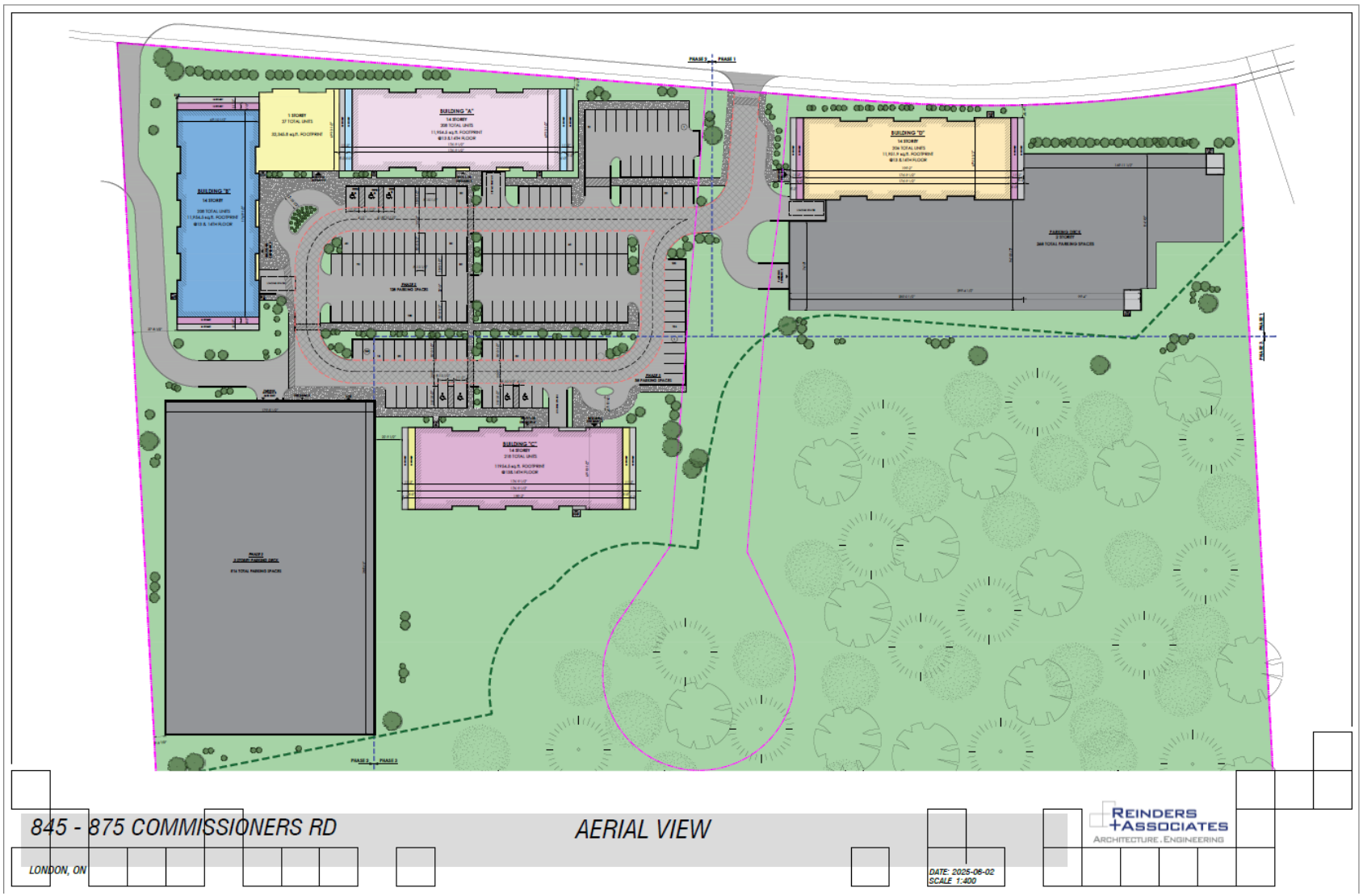
3.1 Development Description

The proposed development includes four 14-storey towers accommodating a total of 867 units. The development is proposed to be completed in three phases, Tower D in Phase 1, Tower A and B in Phase 2, and Tower C in Phase 3.

Phases 1 and 2 are anticipated to be completed by 2030, and the full site is anticipated to be built out by 2032.

Access is proposed via two existing access intersections on Commissioners Road, both of which are four-legged intersections providing access to properties north and south of Commissioners Road. One of them provides access to the Victoria Hospital Heating Plant, and the other to Roseland Place.

Figure 3.1 shows the concept site plan.



paradigm TRANSPORTATION SOLUTIONS LIMITED

Concept Site Plan

3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual[3] equations were used to estimate the peak hour traffic volumes generated by the subject development based on the ITE Land Use Code 222, Multifamily Housing (High Rise).

It is noted that the trip generation estimates are based on a previous unit count of 871 units. The number of trips generated by the same development with 867 units results in the same AM peak hour trips and one less PM peak hour trip.

Table 3.1 summarizes the forecast number of net new trips generated by the proposed development.

TABLE 3.1: TRIP GENERATION

Land Use Code	Units	AM Peak Hour				PM Peak Hour			
		Rate	In	Out	Total	Rate	In	Out	Total
Phase 1									
222: Muiltifamily Housing (High-Rise)	205	Eq	13	36	**49**	Eq	37	22	**59**
Phase 2									
222: Muiltifamily Housing (High-Rise)	446	Eq	28	80	**108**	Eq	79	49	**128**
Phase 1 & 2 Net Total	***651***		***41***	***116***	***157***		***116***	***71***	***187***
Phase 3									
222: Muiltifamily Housing (High-Rise)	220	Eq	14	39	**53**	Eq	39	24	**63**
Total Development	***871***		***55***	***155***	***210***		***155***	***95***	***250***

LUC 222 | **AM:** T = 0.22(X) + 18.85 | **PM:** T = 0.26(X) + 23.12

3.3 Development Trip Distribution and Assignment

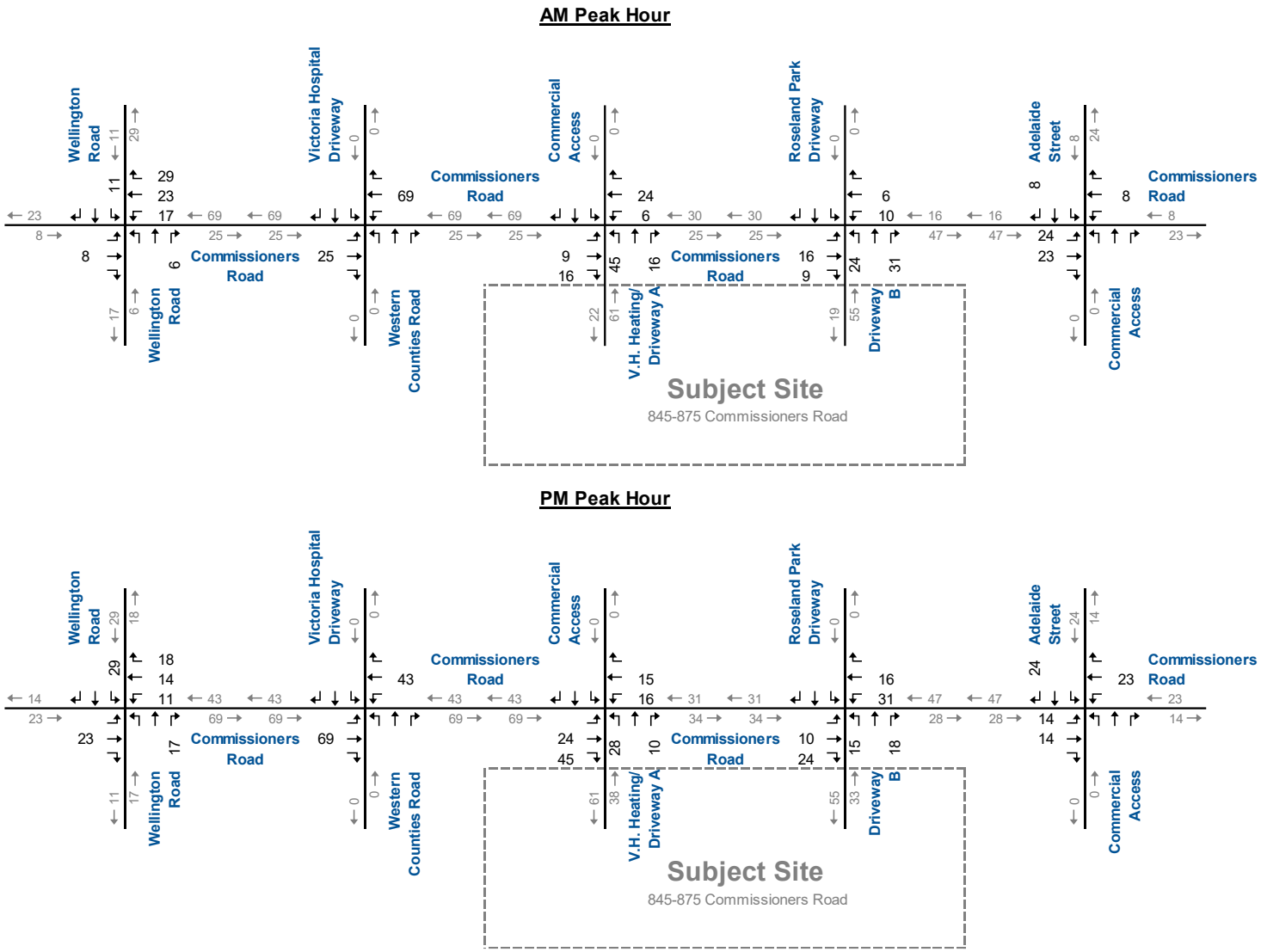
The trip distribution was determined based on existing traffic patterns at the intersections of Commissioners Road and Wellington Road and at Commissioners Road and Adelaide Street. **Table 3.2** displays the breakdown of trip distributions used in this study.

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

TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	Distribution
North via Wellington Road	25%
North via Adelaide Street	20%
South via Wellington Road	15%
East via Commissioners Road	20%
West via Commissioners Road	20%
Total	**100%**

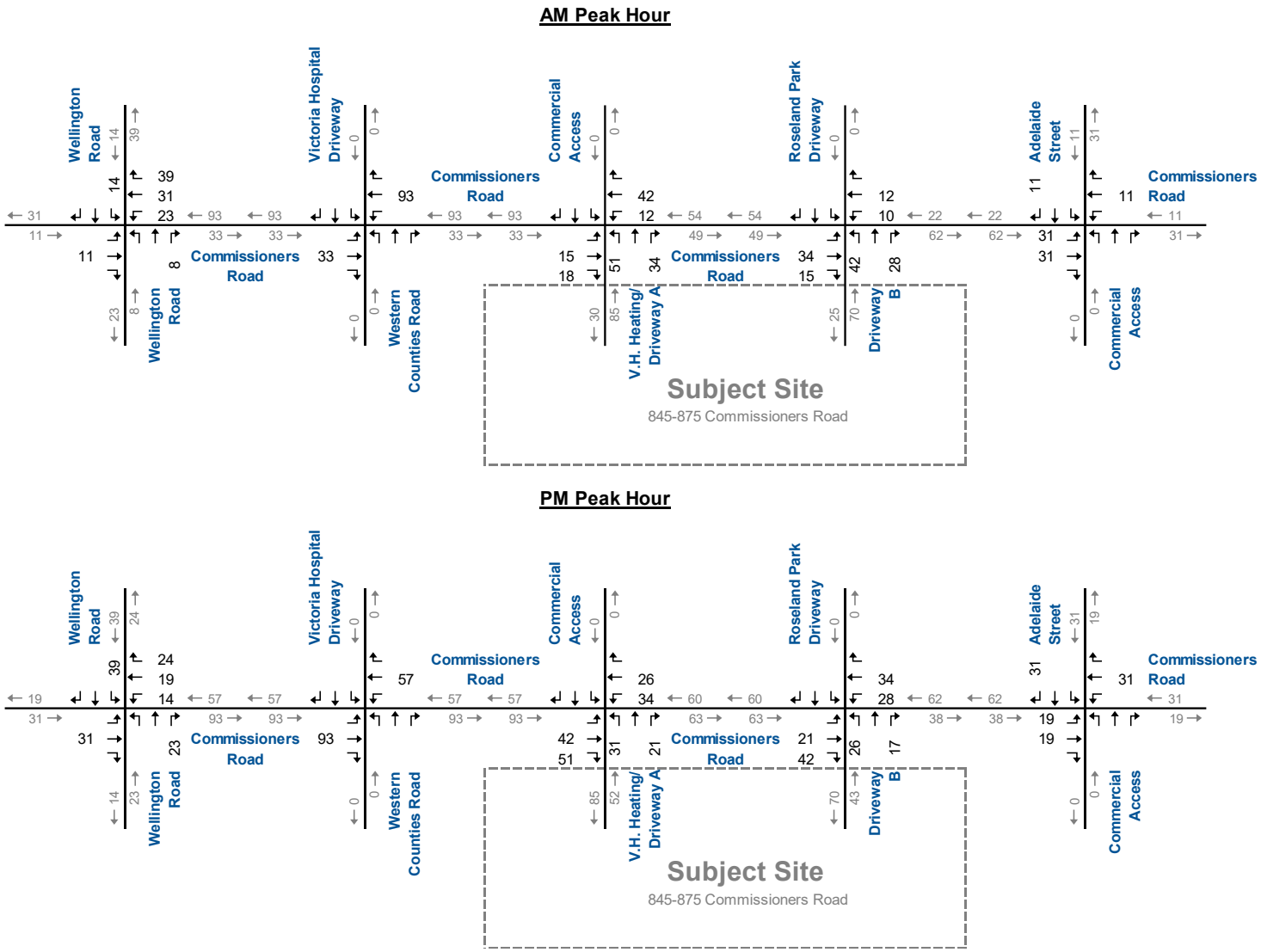
Figure 3.2 illustrates the site-generated traffic volumes for the AM and PM peak hours.



Site Generated Traffic Volumes Phases 1 & 2

845-875 Commissioners Road, London TIA
250221

Figure 3.2a



Site Generated Traffic Volumes
Full Development

845-875 Commissioners Road, London TIA
250221

Figure 3.2b

4 Evaluation of Future Traffic Conditions

The assessment of future traffic conditions contained in this section includes estimates of future background and total traffic volumes, and the analyses for the traffic conditions five years after development opening.

4.1 Background Traffic Forecasts

In order to derive the generalized background traffic volumes, a growth rate of 1.5% per annum was applied to the existing roadway traffic volumes on Adelaide Street, Commissioners Road, and Wellington Road. This growth rate was confirmed with City during the pre-study consultation.

No background developments were identified by the City during the pre-study consultation.

4.2 2030 Background Traffic Operations

Figure 4.1 illustrates the 2030 background traffic volumes, including road traffic growth.

The 2030 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timings have been optimized.

Table 4.1 summarizes the results of the 2030 background traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under existing traffic conditions with the following additional critical movements:

Wellington Road and Commissioners Road

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 95 metres during the AM peak hour;
- The eastbound through movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the PM peak hour;
- The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 90 metres during the PM peak hour;
- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile

queue length that exceeds the existing storage of 90 metres during the PM peak hour; and

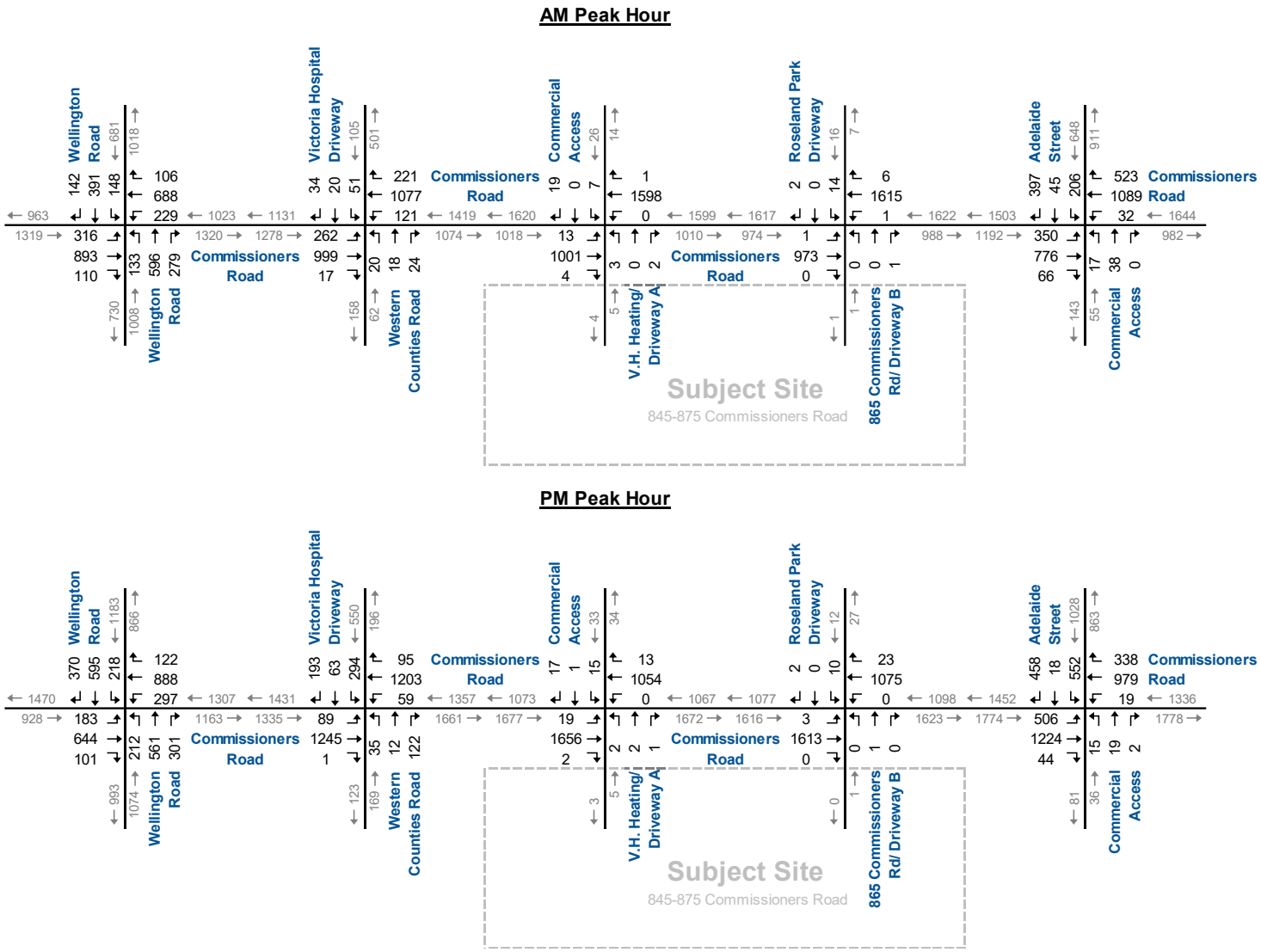
Commissioners Road and Adelaide Street/Commercial Access

- The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.92 during the AM peak hour.

Access Intersections

- As under existing conditions, the two access intersections are forecast to operate with high delays and at LOS F for the outbound traffic from the existing developments. The east/west traffic on Commissioners Road is forecast to register high levels of service.

Appendix E contains the supporting detailed Synchro 12 reports.



2030 Background Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 4.1

TABLE 4.1: 2030 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	E	F	D	F	D	D	D	D	D	D	A	D	E	D	D	D	E
			Delay	61	139	43	113	36	45	36	42	44	44	0	44	56	42	44	45	68
			V/C	0.82	1.17	0.34		0.24	0.73	0.26		0.56	0.52	0.00		0.71	0.34	0.40		
			Q	102	218	31		27	89	26		43	59	0		26	37	44		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-7	-	-11		73	-	24		47	-	65		64	-	36		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	D	A	>	B	B	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	37	9	>	15	19	22	>	22	51	48	>	49	52	49	>	50	20
			V/C	0.89	0.43	>		0.38	0.67	>		0.09	0.15	>		0.20	0.19	>		
			Q	18	5	>		16	73	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	82	-	>		79	-	>		12	-	>		6	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	C	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	16	0	>	0	0	0	>	0	<	83	>	83	<	106	>	106	1
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.10	>		<	0.46	>		
			Q	1	0	>		0	0	>		<	2	>		<	14	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	B	>	B	<	F	>	F	A
			Delay	15	0	>	0	10	0	>	0	<	12	>	12	<	316	>	316	2
			V/C	0.00	0.00	>		0.00	0.00	>		<	0.00	>		<	0.71	>		
			Q	0	0	>		0	0	>		<	0	>		<	17	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	D	A	>	B	B	C	A	C	<	E	>	E	<	A	A	D	C
			Delay	45	9	>	20	15	22	0	22	<	63	>	63	<	0	0	53	25
			V/C	0.92	0.38	>		0.09	0.64	0.00		<	0.63	>		<	0.00	0.00		
			Q	43	4	>		3	61	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	57	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	D	D	D	F	D	A	F	F	D	F	F	E
			Delay	49	67	47	61	36	50	36	45	188	46	0	85	120	47	123	84	67
			V/C	0.51	0.90	0.34		0.29	0.84	0.27		1.21	0.48	0.00		1.02	0.52	1.08		
			Q	58	112	32		37	122	30		119	59	0		97	63	182		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	37	-	-12		63	-	20		-29	-	65		-7	-	-102		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	B	>	B	D	C	>	C	D	D	>	D	F	D	>	E	C
			Delay	24	20	>	20	36	30	>	30	54	40	>	42	97	46	>	73	34
			V/C	0.48	0.61	>		0.31	0.73	>		0.18	0.32	>		0.96	0.57	>		
			Q	8	65	>		16	104	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	92	-	>		79	-	>		6	-	>		-109	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	306	>	306	<	221	>	221	3
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.33	>		<	0.81	>		
			Q	1	0	>		0	0	>		<	7	>		<	24	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	273	>	273	<	158	>	158	1
			V/C	0.01	0.00	>		0.00	0.00	>		<	0.07	>		<	0.37	>		
			Q	0	0	>		0	0	>		<	2	>		<	9	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	F	B	>	F	C	C	A	C	<	D	>	D	<	A	A	D	E
			Delay	259	20	>	88	28	31	0	31	<	50	>	50	<	0	0	43	63
			V/C	1.49	0.68	>		0.11	0.78	0.00		<	0.46	>		<	0.00	0.00		
			Q	293	30	>		4	68	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-193	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.3 2030 Total Traffic Operations

Figure 4.2 illustrates the 2030 total traffic volumes, including trips generated by the proposed development.

The 2030 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timings have been optimized.

Table 4.2 summarizes the results of the 2030 total traffic operations. The results indicate that the study area intersections are forecast to operate with similar levels of service as under 2030 background traffic conditions. Specific to the two access intersections, the new development traffic is now added to the south leg of the two intersections, and the projected operations indicate good levels of service for east/west traffic on Commissioners Road and the following capacity issues for the outbound street traffic movements:

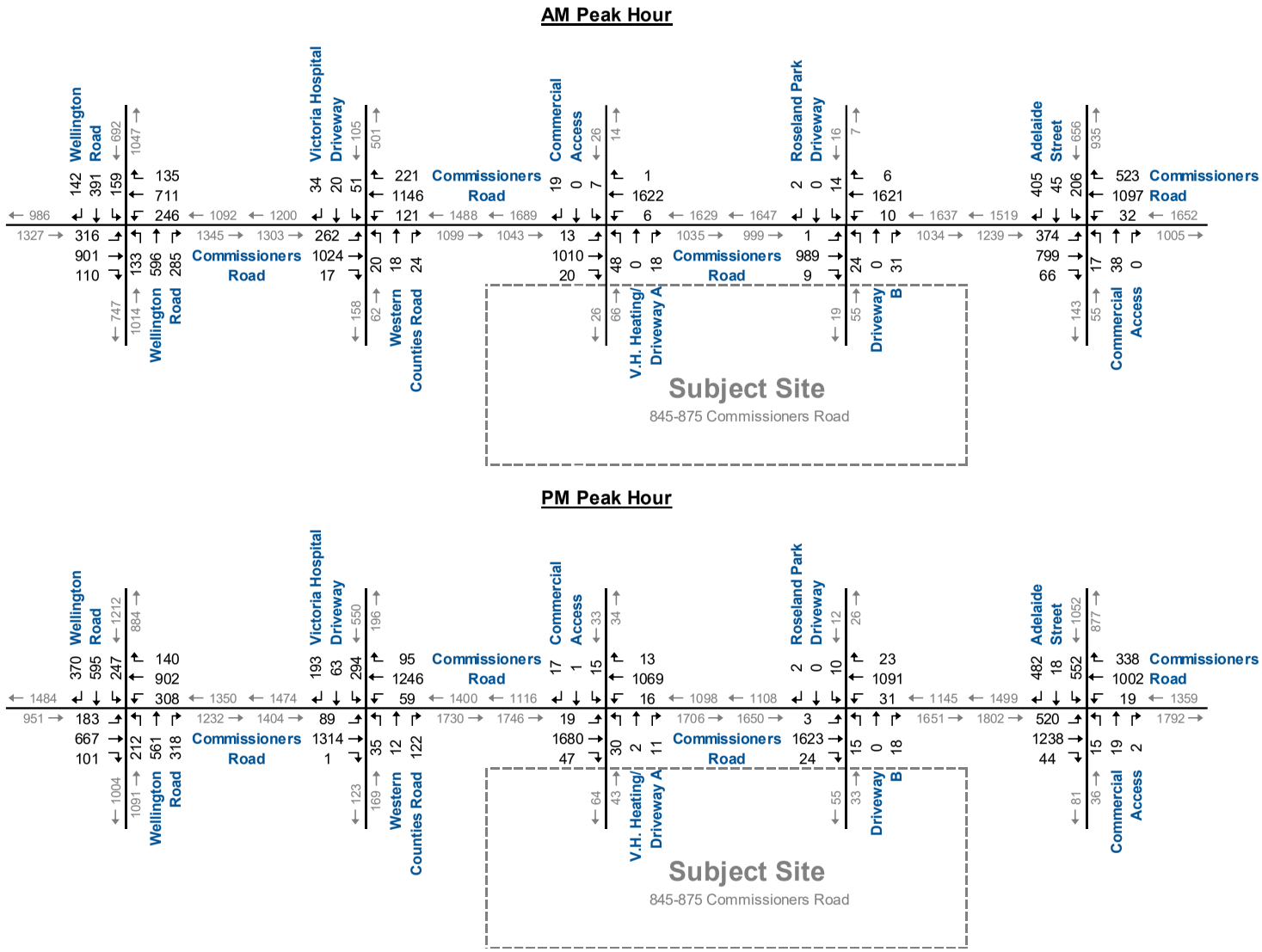
Commissioners Road and Driveway A/ Victoria Heating Access

- The northbound movement is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the AM and PM peak hours;
- The southbound movement is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the PM peak hour; and

Commissioners Road and Driveway B/ Roseland Park Driveway

- The northbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour.

Appendix E contains the supporting detailed Synchro 12 reports.



2030 Total Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 4.2

TABLE 4.2: 2030 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	E	F	D	F	D	D	D	D	D	D	A	D	E	D	D	D	E
			Delay	62	147	44	118	36	45	37	42	45	45	0	45	63	42	45	47	70
			V/C	0.83	1.19	0.34		0.26	0.74	0.33		0.56	0.52	0.00		0.77	0.34	0.40		
			Q	104	228	32		29	92	34		44	60	0		35	38	45		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-9	-	-12		71	-	16		46	-	65		55	-	35		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	D	A	>	B	B	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	46	10	>	17	20	24	>	24	51	48	>	49	52	49	>	50	22
			V/C	0.89	0.44	>		0.39	0.71	>		0.09	0.15	>		0.20	0.19	>		
			Q	44	5	>		16	86	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	56	-	>		79	-	>		12	-	>		6	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	16	0	>	0	11	0	>	0	<	606	>	606	<	126	>	126	16
			V/C	0.04	0.00	>		0.03	0.00	>		<	1.81	>		<	0.51	>		
			Q	1	0	>		1	0	>		<	57	>		<	15	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		44	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	15	0	>	0	11	0	>	0	<	147	>	147	<	392	>	392	2
			V/C	0.00	0.00	>		0.02	0.00	>		<	0.80	>		<	0.83	>		
			Q	0	0	>		1	0	>		<	29	>		<	17	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	E	A	>	C	B	C	A	C	<	E	>	E	<	A	A	D	C
			Delay	67	9	>	27	15	22	0	22	<	63	>	63	<	0	0	53	28
			V/C	0.99	0.39	>		0.09	0.65	0.00		<	0.63	>		<	0.00	0.00		
			Q	76	4	>		3	61	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	24	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	D	D	D	F	D	A	F	F	D	F	F	E
			Delay	49	71	46	64	36	50	36	46	192	46	0	86	167	47	127	96	71
			V/C	0.51	0.93	0.34		0.30	0.85	0.31		1.22	0.48	0.00		1.17	0.52	1.09		
			Q	58	119	32		38	125	35		121	59	0		129	63	185		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	37	-	-12		62	-	15		-31	-	65		-39	-	-105		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	C	>	C	D	C	>	C	D	D	>	D	F	D	>	E	C
			Delay	25	21	>	21	40	30	>	31	54	40	>	42	97	46	>	73	34
			V/C	0.51	0.64	>		0.34	0.75	>		0.18	0.32	>		0.96	0.57	>		
			Q	8	70	>		18	110	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	92	-	>		77	-	>		6	-	>		-109	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	D
			Delay	11	0	>	0	17	0	>	0	<	1501	>	1501	<	333	>	333	26
			V/C	0.04	0.00	>		0.06	0.00	>		<	3.17	>		<	1.03	>		
			Q	1	0	>		2	0	>		<	50	>		<	28	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		43	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	16	0	>	0	<	425	>	425	<	224	>	224	6
			V/C	0.01	0.00	>		0.10	0.00	>		<	1.19	>		<	0.48	>		
			Q	0	0	>		2	0	>		<	30	>		<	11	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		38	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	F	C	>	F	C	C	A	C	<	D	>	D	<	A	A	D	E
			Delay	289	20	>	98	29	32	0	32	<	50	>	50	<	0	0	43	68
			V/C	1.56	0.69	>		0.12	0.80	0.00		<	0.46	>		<	0.00	0.00		
			Q	324	31	>		4	70	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-224	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

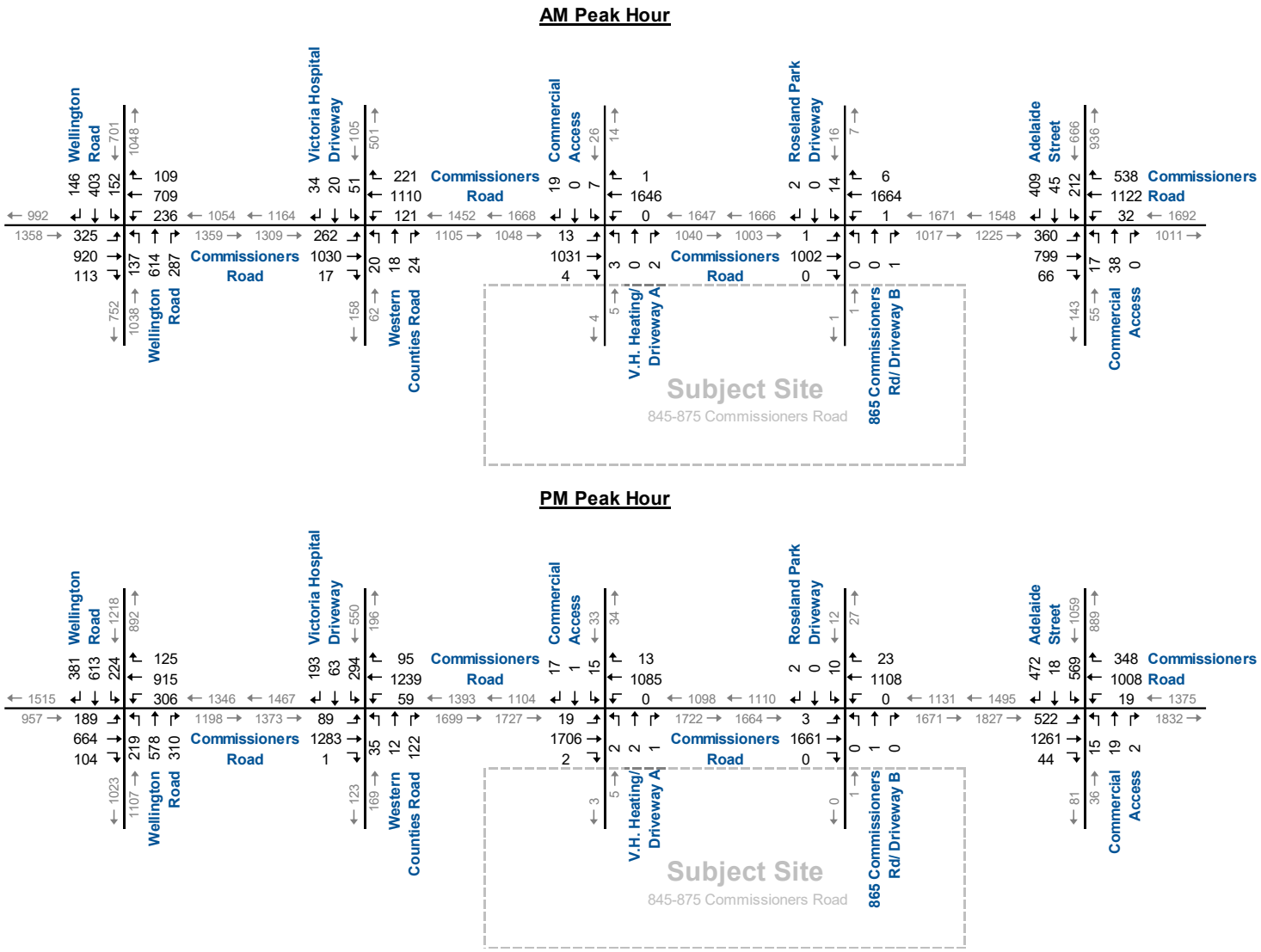
4.4 2032 Background Traffic Operations

Figure 4.3 illustrates the 2032 background traffic volumes, including road traffic growth.

The 2032 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timings have been optimized.

Table 4.3 summarizes the results of the 2032 background traffic operations. The results indicate that the study area intersections, including the two access intersections, are forecast to operate with similar critical movements to those noted under existing and 2030 background traffic conditions.

Appendix G contains the supporting detailed Synchro 12 reports.



2032 Background Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 4.3

TABLE 4.3: 2032 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	E	F	D	F	D	D	D	D	D	D	A	D	E	D	D	D	E
			Delay	65	157	44	126	36	45	36	42	46	45	0	45	60	42	45	47	73
			V/C	0.85	1.21	0.35		0.25	0.74	0.26		0.59	0.53	0.00		0.75	0.35	0.41		
			Q	109	241	32		28	92	26		46	61	0		31	39	46		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-14	-	-12		72	-	24		44	-	65		59	-	34		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	D	A	>	B	C	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	41	10	>	16	20	23	>	23	51	48	>	49	52	49	>	50	21
			V/C	0.89	0.44	>		0.39	0.69	>		0.09	0.15	>		0.20	0.19	>		
			Q	26	5	>		16	79	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	74	-	>		79	-	>		12	-	>		6	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	C	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	17	0	>	0	0	0	>	0	<	93	>	93	<	125	>	125	1
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.12	>		<	0.51	>		
			Q	1	0	>		0	0	>		<	3	>		<	15	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	B	>	B	<	F	>	F	A
			Delay	16	0	>	0	11	0	>	0	<	12	>	12	<	378	>	378	2
			V/C	0.00	0.00	>		0.00	0.00	>		<	0.00	>		<	0.81	>		
			Q	0	0	>		0	0	>		<	0	>		<	17	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	D	A	>	C	B	C	A	C	<	E	>	E	<	A	A	D	C
			Delay	53	9	>	22	16	25	0	24	<	63	>	63	<	0	0	53	27
			V/C	0.94	0.39	>		0.10	0.69	0.00		<	0.63	>		<	0.00	0.00		
			Q	61	4	>		3	70	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	39	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	D	D	D	F	D	A	F	F	D	F	F	E
			Delay	49	70	47	64	36	51	35	46	221	47	0	95	140	48	141	94	72
			V/C	0.52	0.93	0.35		0.29	0.86	0.28		1.30	0.50	0.00		1.09	0.54	1.13		
			Q	60	118	32		38	127	31		134	61	0		106	65	201		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	35	-	-12		62	-	19		-44	-	65		-16	-	-121		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	C	>	C	D	C	>	C	D	D	>	D	F	D	>	E	C
			Delay	25	20	>	21	38	30	>	31	54	40	>	42	97	46	>	73	34
			V/C	0.50	0.63	>		0.33	0.75	>		0.18	0.32	>		0.96	0.57	>		
			Q	8	68	>		17	108	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	92	-	>		78	-	>		6	-	>		-109	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	363	>	363	<	278	>	278	4
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.38	>		<	0.92	>		
			Q	1	0	>		0	0	>		<	8	>		<	26	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	11	0	>	0	0	0	>	0	<	314	>	314	<	186	>	186	1
			V/C	0.01	0.00	>		0.00	0.00	>		<	0.08	>		<	0.42	>		
			Q	0	0	>		0	0	>		<	2	>		<	10	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	F	C	>	F	C	C	A	C	<	D	>	D	<	A	A	D	E
			Delay	320	21	>	106	30	31	0	31	<	50	>	50	<	0	0	43	73
			V/C	1.63	0.71	>		0.12	0.79	0.00		<	0.46	>		<	0.00	0.00		
			Q	344	34	>		4	68	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-244	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.5 2032 Total Traffic Operations

Figure 4.4 illustrates the 2032 total traffic volumes, including trips generated by the proposed development.

The 2032 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timings have been optimized.

Table 4.4 summarizes the results of the 2032 total traffic operations. The results indicate that the study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2030 total and 2032 background traffic conditions:

Commissioners Road and Western Counties Road/ Hospital Driveway

- The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.90 during the AM peak hour;

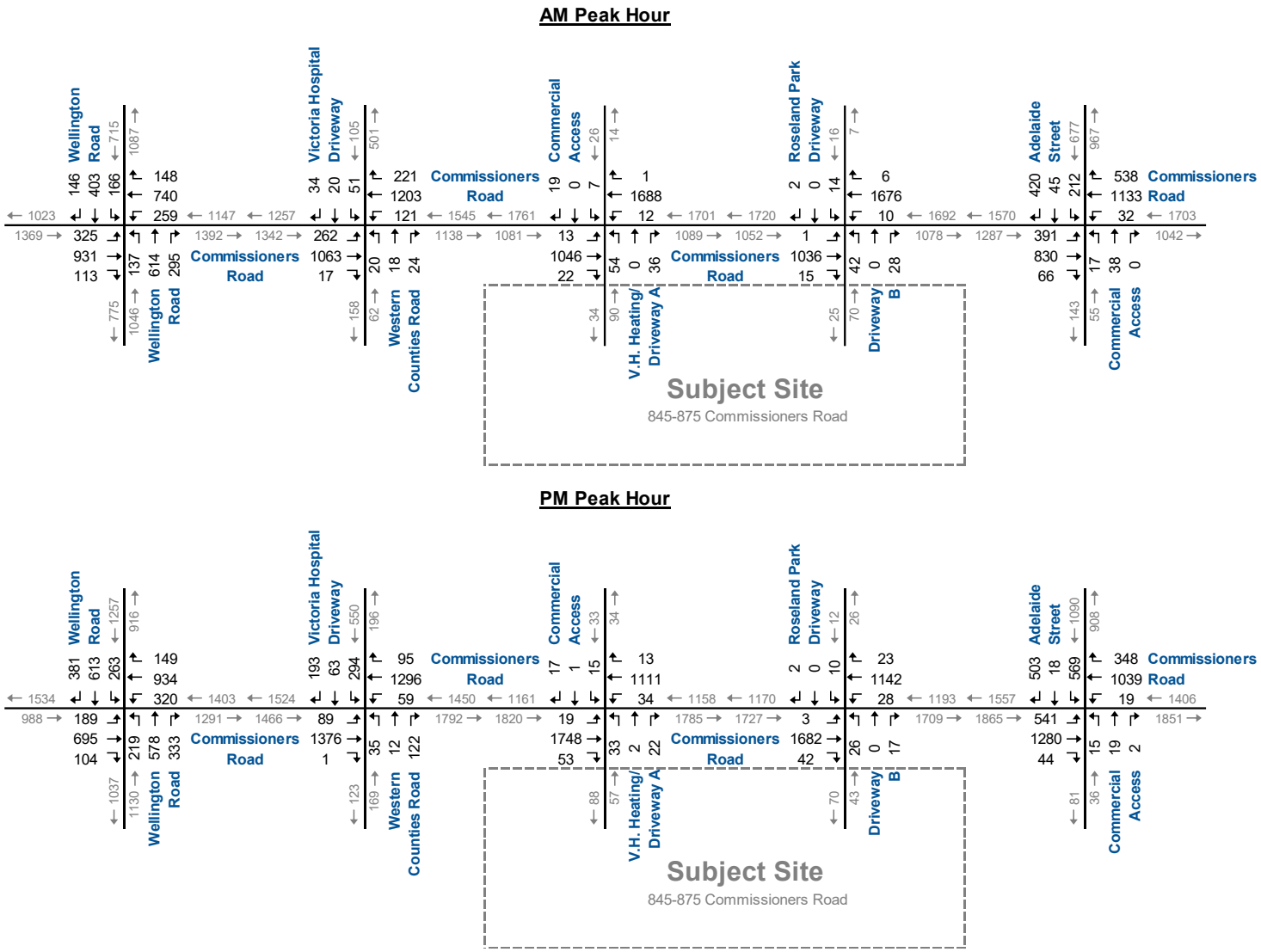
Commissioners Road and Driveway B/ Roseland Park Driveway

- The northbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour;
- The southbound movement is forecast to operate at LOS F with a v/c ratio of 0.96 during the AM peak hour; and

Commissioners Road and Adelaide Street/ Commercial Access

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

Appendix G contains the supporting detailed Synchro 12 reports.



2032 Total Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 4.4

TABLE 4.4: 2032 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	E	F	D	F	D	D	D	D	D	D	A	D	E	D	D	D	E
			Delay	67	168	44	134	36	46	37	42	47	46	0	46	72	43	46	50	76
			V/C	0.86	1.23	0.35		0.27	0.76	0.35		0.60	0.54	0.00		0.83	0.35	0.42		
			Q	111	255	33		32	98	38		47	62	0		46	40	47		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-16	-	-13		68	-	12		43	-	65		44	-	33		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	D	A	>	B	C	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	53	10	>	18	21	27	>	27	51	48	>	49	52	49	>	50	24
			V/C	0.90	0.46	>		0.41	0.76	>		0.09	0.15	>		0.20	0.19	>		
			Q	65	5	>		17	98	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	35	-	>		78	-	>		12	-	>		6	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	D
			Delay	18	0	>	0	11	0	>	0	<	879	>	879	<	179	>	179	29
			V/C	0.05	0.00	>		0.02	0.00	>		<	2.46	>		<	0.64	>		
			Q	1	0	>		1	0	>		<	80	>		<	18	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		44	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	B
			Delay	16	0	>	0	11	0	>	0	<	458	>	458	<	458	>	458	14
			V/C	0.00	0.00	>		0.02	0.00	>		<	1.55	>		<	0.96	>		
			Q	0	0	>		1	0	>		<	55	>		<	19	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		39	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	F	A	>	C	B	C	A	C	<	E	>	E	<	A	A	D	C
			Delay	90	10	>	34	15	23	0	23	<	63	>	63	<	0	0	53	32
			V/C	1.07	0.40	>		0.10	0.67	0.00		<	0.63	>		<	0.00	0.00		
			Q	104	4	>		3	64	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-4	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	E	D	E	D	D	D	D	F	D	A	F	F	D	F	F	E
			Delay	49	78	47	69	36	52	36	46	225	47	0	96	214	48	145	112	79
			V/C	0.52	0.97	0.34		0.31	0.88	0.33		1.31	0.50	0.00		1.29	0.55	1.14		
			Q	60	130	32		39	131	38		136	61	0		157	65	204		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	35	-	-12		61	-	12		-46	-	65		-67	-	-124		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	C	>	C	D	C	>	C	D	D	>	D	F	D	>	E	C
			Delay	27	22	>	22	44	32	>	33	54	40	>	42	97	46	>	73	35
			V/C	0.54	0.67	>		0.38	0.78	>		0.18	0.32	>		0.96	0.57	>		
			Q	8	76	>		20	116	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	92	-	>		75	-	>		6	-	>		-109	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	F
			Delay	12	0	>	0	19	0	>	1	<	2400	>	2400	<	633	>	633	52
			V/C	0.04	0.00	>		0.12	0.00	>		<	5.00	>		<	1.54	>		
			Q	1	0	>		3	0	>		<	66	>		<	34	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		42	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	12	0	>	0	17	0	>	0	<	1034	>	1034	<	272	>	272	16
			V/C	0.01	0.00	>		0.10	0.00	>		<	2.37	>		<	0.55	>		
			Q	0	0	>		2	0	>		<	47	>		<	12	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		38	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	F	C	>	F	C	C	A	C	<	D	>	D	<	A	A	D	F
			Delay	365	21	>	121	31	32	0	32	<	50	>	50	<	0	0	43	81
			V/C	1.73	0.72	>		0.13	0.81	0.00		<	0.46	>		<	0.00	0.00		
			Q	386	35	>		4	72	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-286	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.6 2037 Background Traffic Operations

Figure 4.5 illustrates the 2037 background traffic volumes, including road traffic growth.

The 2037 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timings have been optimized.

Table 4.5 summarizes the results of the 2037 background traffic operations. The results indicate that the study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2032 background traffic conditions:

Wellington Road and Commissioners Road

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.93 during the AM peak hour;
- The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.92 during the PM peak hour;

Commissioners Road and Western Counties Road/ Hospital Driveway

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the AM peak hour;

Commissioners Road and Victoria Heating Access/Commercial Access

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour;

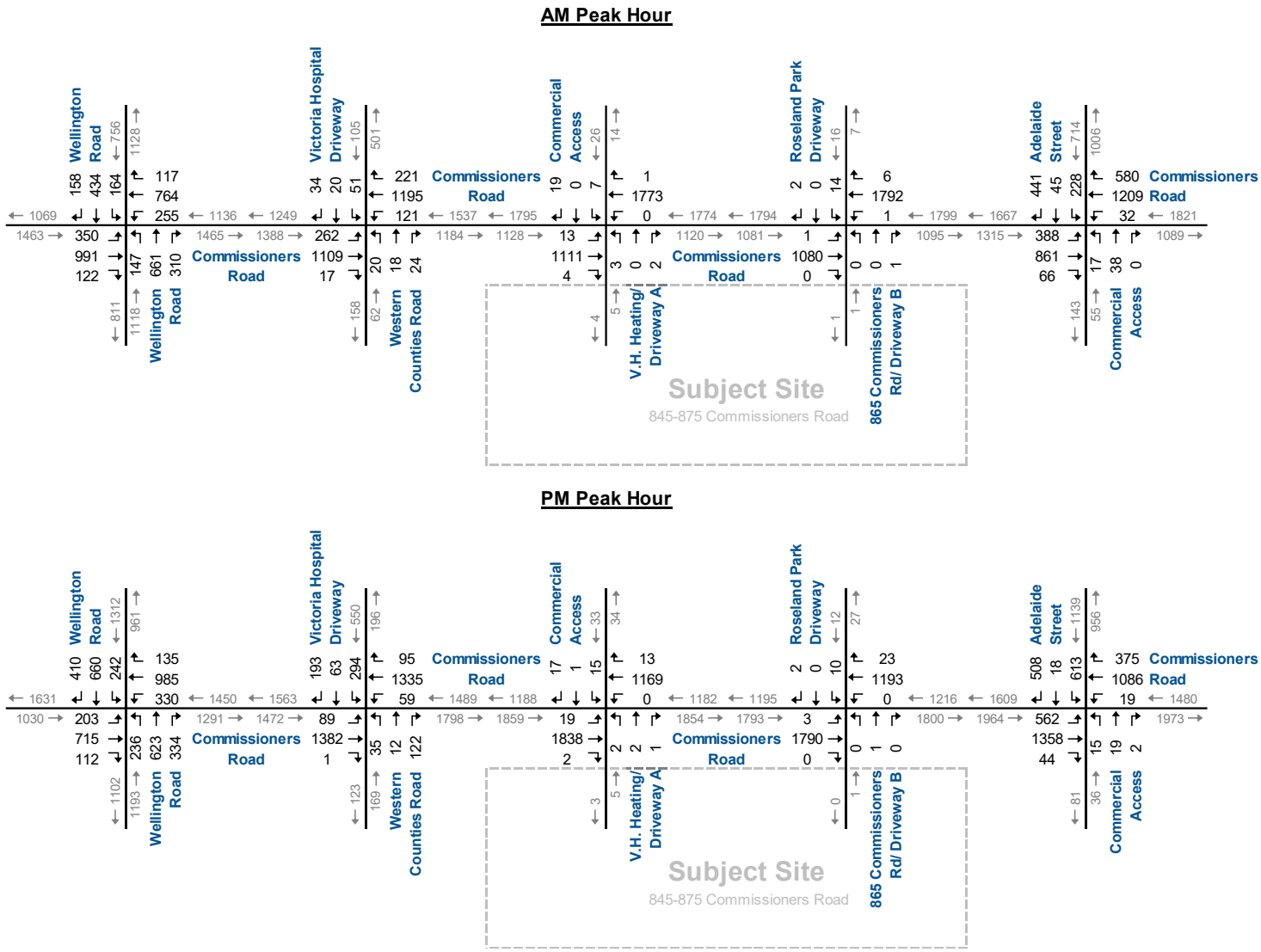
Commissioners Road and Roseland Park Driveway/ 865 Commissioners Road Driveway

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour; and

Commissioners Road and Adelaide Street/ Commercial Access

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

Appendix H contains the supporting detailed Synchro 12 reports.



2037 Background Traffic Volumes

TABLE 4.5: 2037 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	E	F	D	F	D	D	D	D	D	D	A	D	F	D	D	D	F
			Delay	79	204	45	161	36	46	36	43	53	47	0	48	82	43	47	52	87
			V/C	0.93	1.32	0.38		0.26	0.78	0.27		0.67	0.58	0.00		0.87	0.38	0.45		
			Q	130	303	36		31	101	28		56	68	0		52	44	52		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-35	-	-16		69	-	22		34	-	65		38	-	28		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	D	A	>	B	C	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	51	10	>	18	23	27	>	27	51	48	>	49	52	49	>	50	24
			V/C	0.90	0.47	>		0.43	0.75	>		0.09	0.15	>		0.20	0.19	>		
			Q	64	6	>		19	97	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	36	-	>		76	-	>		12	-	>		6	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	C	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	19	0	>	0	0	0	>	0	<	126	>	126	<	204	>	204	2
			V/C	0.05	0.00	>		0.00	0.00	>		<	0.15	>		<	0.69	>		
			Q	2	0	>		0	0	>		<	4	>		<	20	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	58	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	B	>	B	<	F	>	F	A
			Delay	17	0	>	0	11	0	>	0	<	13	>	13	<	600	>	600	3
			V/C	0.00	0.00	>		0.00	0.00	>		<	0.00	>		<	1.11	>		
			Q	0	0	>		0	0	>		<	0	>		<	20	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	F	A	>	C	B	C	A	C	<	E	>	E	<	A	A	D	C
			Delay	90	10	>	34	17	28	0	28	<	63	>	63	<	0	0	53	33
			V/C	1.05	0.42	>		0.10	0.76	0.00		<	0.63	>		<	0.00	0.00		
			Q	111	4	>		4	82	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-11	-	>		41	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	F	D	E	D	E	D	D	F	D	A	F	F	D	F	F	F
			Delay	50	85	47	74	35	56	35	49	310	48	0	120	207	49	186	121	88
			V/C	0.56	1.00	0.37		0.31	0.92	0.30		1.51	0.55	0.00		1.27	0.60	1.25		
			Q	64	140	35		40	143	33		171	66	0		142	70	251		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	31	-	-15		60	-	17		-81	-	65		-52	-	-171		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	C	>	C	D	C	>	C	D	D	>	D	F	D	>	E	D
			Delay	29	22	>	22	44	33	>	34	54	40	>	42	97	46	>	73	36
			V/C	0.56	0.68	>		0.38	0.80	>		0.18	0.32	>		0.96	0.57	>		
			Q	8	76	>		20	122	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	92	-	>		75	-	>		6	-	>		-109	-	>		
	Commissioners Road & Victoria Heating/ Commercial Access	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	12	0	>	0	0	0	>	0	<	581	>	581	<	520	>	520	7
			V/C	0.04	0.00	>		0.00	0.00	>		<	0.55	>		<	1.36	>		
			Q	1	0	>		0	0	>		<	9	>		<	32	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		45	-	>		<	-	>		<	-	>		
	Commissioners Road & 865 Commissioners Driveway/ Roseland Park Driveway	TWSC	LOS	B	A	>	A	A	A	>	A	<	F	>	F	<	F	>	F	A
			Delay	12	0	>	0	0	0	>	0	<	460	>	460	<	294	>	293	1
			V/C	0.01	0.00	>		0.00	0.00	>		<	0.12	>		<	0.58	>		
			Q	0	0	>		0	0	>		<	2	>		<	13	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		40	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/ Commercial Access	TCS	LOS	F	C	>	F	D	C	A	C	<	D	>	D	<	A	A	D	F
			Delay	472	24	>	152	36	34	0	34	<	50	>	50	<	0	0	44	98
			V/C	1.97	0.77	>		0.15	0.85	0.00		<	0.46	>		<	0.00	0.00		
			Q	460	47	>		4	77	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-360	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

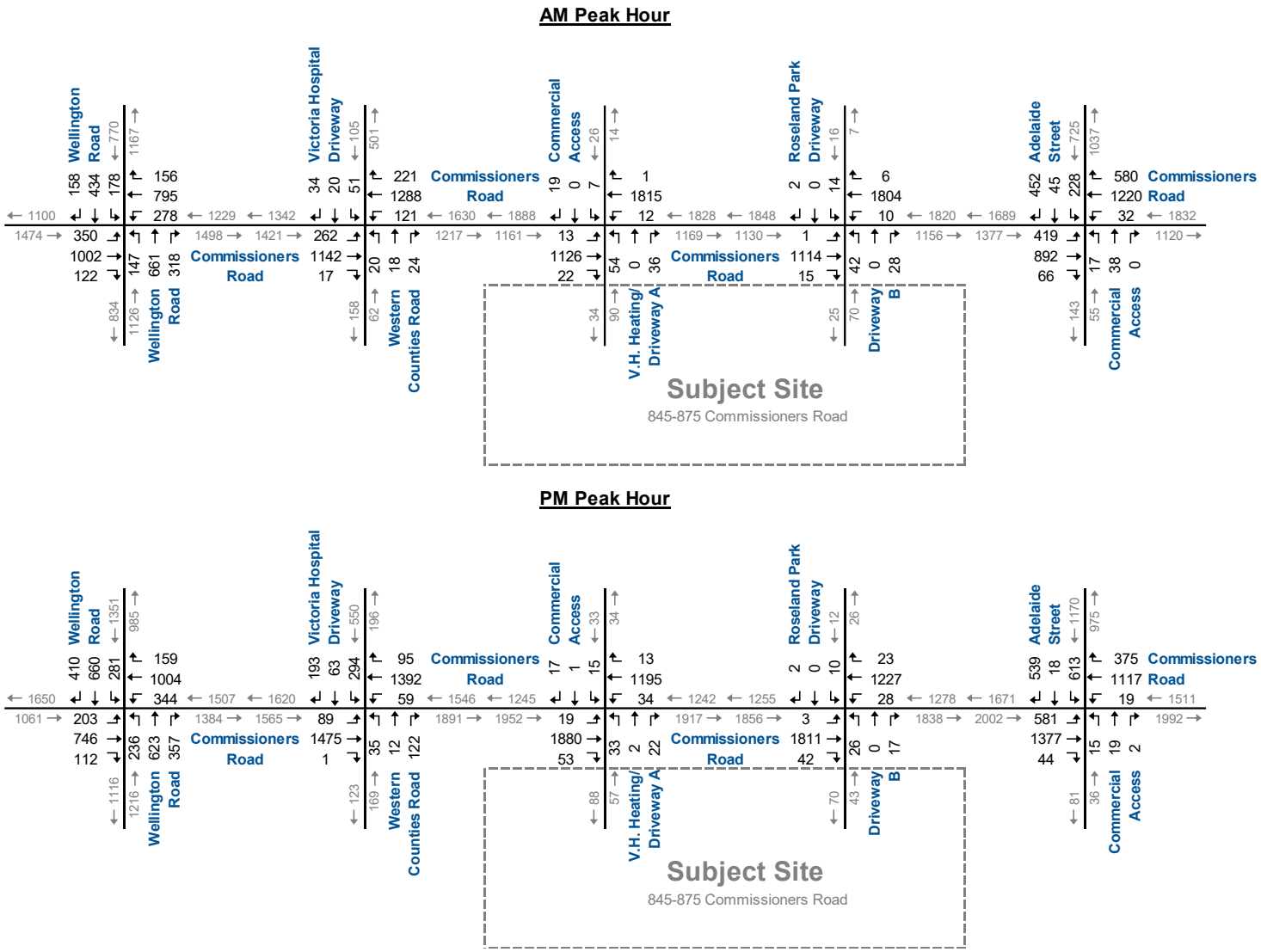
4.7 2037 Total Traffic Operations

Figure 4.6 illustrates the 2037 total traffic volumes, including trips generated by the proposed development.

The 2037 total traffic volumes have been analyzed using the same methodology as under existing and background traffic conditions. Signal timings have been optimized.

Table 4.6 summarizes the results of the 2037 total traffic operations. The results indicate that the study area intersections, including the two access intersections, are forecast to operate at similar levels of service as under 2032 total traffic conditions with the additional critical movement of the southbound left-turn movement at Wellington Road and Commissioners Road, which is forecast to operate at LOS F with a v/c ratio of 0.93 during the AM peak hour.

Appendix I contains the supporting detailed Synchro 12 reports.



2037 Total Traffic Volumes

845-875 Commissioners Road, London TIA
250221

Figure 4.6

TABLE 4.6: 2037 TOTAL TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	F	F	D	F	D	D	D	D	D	D	A	D	F	D	D	E	F
			Delay	82	217	46	171	36	49	38	44	52	47	0	48	96	43	47	56	91
			V/C	0.94	1.35	0.38		0.28	0.81	0.37		0.66	0.57	0.00		0.93	0.37	0.44		
			Q	134	319	37		34	109	40		56	68	0		67	44	52		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	-39	-	-17		66	-	10		34	-	65		23	-	28		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	E	B	>	B	C	C	>	C	D	D	>	D	D	D	>	D	C
			Delay	63	10	>	20	24	32	>	32	51	48	>	49	52	49	>	50	28
			V/C	0.91	0.49	>		0.45	0.82	>		0.09	0.15	>		0.20	0.19	>		
			Q	68	7	>		20	117	>		8	14	>		19	19	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	32	-	>		75	-	>		12	-	>		6	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	E
			Delay	19	0	>	0	12	0	>	0	<	1296	>	1296	<	301	>	301	40
			V/C	0.05	0.00	>		0.02	0.00	>		<	3.27	>		<	0.88	>		
			Q	2	0	>		1	0	>		<	87	>		<	23	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	58	-	>		44	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	C	A	>	A	B	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	17	0	>	0	11	0	>	0	<	702	>	702	<	765	>	765	20
			V/C	0.00	0.00	>		0.02	0.00	>		<	2.02	>		<	1.33	>		
			Q	0	0	>		1	0	>		<	62	>		<	21	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		39	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	F	B	>	D	B	C	A	C	<	E	>	E	<	A	A	D	D
			Delay	152	10	>	53	16	25	0	25	<	63	>	63	<	0	0	53	41
			V/C	1.22	0.43	>		0.10	0.73	0.00		<	0.63	>		<	0.00	0.00		
			Q	171	5	>		3	74	0		<	20	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-71	-	>		42	-	-		<	-	>		<	-	50		
PM Peak Hour	Wellington Road & Commissioners Road	TCS	LOS	D	F	D	F	D	E	D	D	F	D	A	F	F	D	F	F	F
			Delay	50	97	47	83	35	58	36	51	312	48	0	121	293	49	188	142	96
			V/C	0.56	1.04	0.37		0.33	0.93	0.35		1.51	0.55	0.00		1.47	0.60	1.25		
			Q	64	155	35		42	148	40		172	67	0		196	70	253		
			Stor.	95	-	20		100	-	50		90	-	65		90	-	80		
			Avail.	31	-	-15		58	-	10		-82	-	65		-106	-	-173		
	Commissioners Road & Western Counties Road/Hospital Driveway	TCS	LOS	C	C	>	C	D	D	>	D	D	D	>	D	F	D	>	E	D
			Delay	32	24	>	24	52	35	>	36	54	40	>	42	97	46	>	73	37
			V/C	0.60	0.72	>		0.43	0.83	>		0.18	0.32	>		0.96	0.57	>		
			Q	10	84	>		22	131	>		14	39	>		134	77	>		
			Stor.	100	-	>		95	-	>		20	-	>		25	-	>		
			Avail.	90	-	>		73	-	>		6	-	>		-109	-	>		
	Commissioners Road & Driveway A/Victoria Heating Access	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	F
			Delay	12	0	>	0	21	0	>	1	<	3894	>	3894	<	1234	>	1234	80
			V/C	0.04	0.00	>		0.14	0.00	>		<	7.66	>		<	2.52	>		
			Q	1	0	>		4	0	>		<	69	>		<	40	>		
			Stor.	60	-	>		45	-	>		<	-	>		<	-	>		
			Avail.	59	-	>		41	-	>		<	-	>		<	-	>		
	Commissioners Road & Driveway B/Roseland Park Driveway	TWSC	LOS	B	A	>	A	C	A	>	A	<	F	>	F	<	F	>	F	C
			Delay	12	0	>	0	19	0	>	0	<	1600	>	1600	<	422	>	422	23
			V/C	0.01	0.00	>		0.11	0.00	>		<	3.34	>		<	0.75	>		
			Q	0	0	>		3	0	>		<	50	>		<	14	>		
			Stor.	35	-	>		40	-	>		<	-	>		<	-	>		
			Avail.	35	-	>		37	-	>		<	-	>		<	-	>		
	Commissioners Road & Adelaide Street/Commercial Access	TCS	LOS	F	C	>	F	D	D	A	D	<	D	>	D	<	A	A	D	F
			Delay	495	25	>	161	36	39	0	38	<	50	>	50	<	0	0	44	104
			V/C	2.02	0.79	>		0.15	0.90	0.00		<	0.46	>		<	0.00	0.00		
			Q	491	49	>		4	87	0		<	10	>		<	0	0		
			Stor.	100	-	>		45	-	-		<	-	>		<	-	50		
			Avail.	-391	-	>		41	-	-		<	-	>		<	-	50		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement

4.8 Access Intersections

As noted, the access connections to the proposed development are proposed to be provided via two existing access intersections on Commissioners Road. The intersection operation of the two access intersections under existing and future traffic conditions, and the assessment of auxiliary left-turn laned requirements at the two intersections are summarized below.

4.8.1 Access Intersection Operations

The results of the operational analyses of the study area intersections indicate that the proposed development can be accommodated by the study area road system and intersections. However, the existing access intersections operate with significant delays and poor levels of service for outbound site traffic under existing and future background traffic conditions without the subject development, as well as under future total traffic conditions with the subject development in place. This is largely attributed to the high traffic volumes on Commissioners Road delaying the left-turn movements out of the subject development. The main east-west traffic flows on Commissioners Road operate at good levels of service.

A potential remedial measure could be the implementation of traffic signal control at one of the two existing access intersections. At the same time, a preliminary assessment of traffic signal warrants indicates that traffic signals are not warranted at either intersection under future total traffic conditions.

Although traffic signals are not warranted, signalization of at least one of the two access intersections likely would improve the operations of the outbound traffic movement for the existing developments to the north of Commissioners Road as well as the existing and the proposed developments to the south.

4.8.2 Left-Turn Lanes

The need for an auxiliary westbound left-turn turning lane on Commissioners Road at the two proposed driveways was reviewed.

It is noted that left-turn lanes are currently in place at both driveway intersections. The left-turn lane at Driveway A (westerly driveway) has a storage of 45 metres, and the left-turn lane at Driveway B (easterly driveway) has a storage of 40 metres.

The inbound left-turn movements at both driveways are projected to operate at level of service B/C with 95th percentile queue lengths not exceeding five metres through 2037 traffic conditions.

The existing turn lanes on Commissioners Road are adequate for accommodating WBLT movements at the two access intersections.

5 Transportation Demand Management

Transportation Demand Management (TDM) refers to ways of making the capacity of roads more efficient by reducing vehicle demand. TDM approaches consider how people's choices of travel mode are affected by land use patterns, development design, parking availability, parking cost, and the relative cost, convenience, and availability of alternative modes of travel. Various TDM strategies are used to influence those factors so that the alternatives are more competitive with single-occupancy travel and potentially reduce reliance on motor vehicles.

The City of London requires TIA submissions to include a suitable travel demand management plan with reasonable measures to facilitate reduced automobile reliance and promote transit, cycling and walking for trips to and from the site. This requirement is consistent with the goal established by the 2030 Transportation Master Plan to achieve a mode share target of 35% by 2030[4].

Potential TDM measures appropriate for the proposed development include the following.

5.1 Walking

The pedestrian accessibility of a development is essential in helping to ensure that those that can walk, have access to accessible pedestrian connections.

Proper pedestrian connections from the surrounding community to the development should be available to ensure safety and to enhance the experience of those that choose to walk. The concept Site Plan indicates that sidewalks will be provided on all internal roadways with connections to each building and the adjacent roadways, including a connection to Commissioners Road.

5.2 Cycling

Exclusive cycling lanes are not currently provided on Commissioners Road in vicinity of the subject development.

To promote cycling to/from the development, the City's Zoning By-Law requires 0.9 long-term and 0.1 short-term bicycle parking spaces per residential unit.

[4] City of London 2030 Transportation Master Plan: Smart Moves, January 2013.

5.3 Transit

As discussed in **Section 2.2**, there are currently five transit routes within a reasonable walking distance of the subject site. Additionally, the Wellington Bus Rapid Transit (BRT) will be provided on Wellington Road with a station at Commissioners Road.

The site will provide good connectivity to the bus stops on Wellington Road and Commissioners Road.

5.4 Parking Management

To further encourage residents of the development to utilize sustainable travel modes, parking spaces could be sold separately from the cost to rent/purchase a unit. This practice of 'unbundling' parking from the unit is also more equitable and efficient since occupants are not forced to pay for parking they do not need.

5.5 Car Share

Car sharing refers to automobile rental services intended to substitute for private vehicle ownership. It makes occasional use of a vehicle affordable while providing an incentive to minimize driving and rely on alternative travel options as much as possible.

Communauto (VRTUCAR) is currently the only car share provider in the City of London and has seven locations. The closest is located at 60 Ridout Street South (3 kilometres).

5.6 Wayfinding and Travel Planning

Increasing awareness of sustainable transportation opportunities for residents and visitors of the development should be considered.

Providing a welcome package that outlines the available active transportation options can be helpful to encourage new residents to educate themselves on the support for alternative modes near the subject site. Posting real-time transit and active transportation information in common areas can further support this education.

6 Conclusions and Recommendations

6.1 Conclusions

Based on the investigations carried out, it is concluded that:

- **Existing Traffic Conditions:** The operational analyses of the study area intersections indicate the following critical movements:

  Wellington Road and Commissioners Road

  - The eastbound through movement is operating at LOS E with a v/c ratio of 0.91 during the AM peak hour;
  - The 95th percentile queue length of the eastbound right-turn exceeds the existing storage of 20 metres during the AM and PM peak hours;
  - The westbound through movement is operating at LOS E with a v/c ratio of 0.97 during the PM peak hour;
  - The southbound right-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 80 metres during the PM peak hour;

  Commissioners Road and Western Counties Road/Hospital Driveway

  - The southbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 25 metres during the PM peak hour; and

  Commissioners Road and Adelaide Street/Commercial Access

  - The eastbound left-turn movement is operating at LOS F with a v/c ratio theoretically greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 100 metres during the PM peak hour.

  Access Intersections: The two existing access intersections on Commissioners Road that will accommodate access connection to the new development, indicate delays and poor levels of service (LOS F) for the northbound and southbound movements of the outbound traffic from the existing developments. This is primarily due to the significant east/west traffic on Commissioners Road, and the two-way stop control for the north-south traffic on the two minor roads. The east/west traffic

on Commissioners Road registers high levels of service (LOS A/B).

- **Development Trip Generation:** Phase 1 and Phase 2 of the development are forecast to generate 157 trips during the AM peak hour and 187 trips during the PM peak hour. The full development (Phases 1, 2, and 3) is forecast to generate 210 trips during the AM peak hour and 250 trips during the PM peak hour.
- **2030 Background Traffic Conditions:** The study area intersections are forecast to operate with the following additional critical movements to those noted under existing traffic conditions:

  Wellington Road and Commissioners Road

  - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 95 metres during the AM peak hour;
  - The eastbound through movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the PM peak hour;
  - The northbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 90 metres during the PM peak hour;
  - The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 and a 95th percentile queue length that exceeds the existing storage of 90 metres during the PM peak hour; and

  Commissioners Road and Adelaide Street/Commercial Access

  - The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.92 during the AM peak hour.

  Access Intersections: As under existing conditions, the two access intersections are forecast to operate with high delays and at LOS F for the outbound traffic from the existing developments. The east/west traffic on Commissioners Road is forecast to register high levels of service.
- **2030 Total Traffic Conditions:** The study area intersections are forecast to operate with similar levels of service as under 2030 background traffic conditions. Specific to the two access intersections, the new development traffic is now added to the south leg of the two intersections, and the projected operations indicate good levels of service for east/west traffic on

Commissioners Road and the following capacity issues for the outbound street traffic movements:

Commissioners Road and Driveway A/ Victoria Heating Access

- The northbound movement (including development traffic) is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the AM and PM peak hours;
- The southbound movement is forecast to operate at LOS F with a v/c ratio that exceeds 1.00 during the PM peak hour; and

Commissioners Road and Driveway B/ Roseland Park Driveway

- The northbound movement (including development traffic) is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour.

- **2032 Background Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with similar critical movements to those noted under existing and 2030 background traffic conditions.
- **2032 Total Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2030 total and 2032 background traffic conditions:

  Commissioners Road and Western Counties Road/ Hospital Driveway

  - The eastbound left-turn movement is forecast to operate at LOS D with a v/c ratio of 0.90 during the AM peak hour;

  Commissioners Road and Driveway B/ Roseland Park Driveway

  - The northbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour;
  - The southbound movement is forecast to operate at LOS F with a v/c ratio of 0.96 during the AM peak hour; and

  Commissioners Road and Adelaide Street/ Commercial Access

  - The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

- **2037 Background Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2032 background traffic conditions:

Wellington Road and Commissioners Road

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.93 during the AM peak hour;
- The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.92 during the PM peak hour;

Commissioners Road and Western Counties Road/ Hospital Driveway

- The eastbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.90 during the AM peak hour;

Commissioners Road and Driveway A/Victoria Heating Access

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour;

Commissioners Road and Driveway B/Roseland Park Driveway/ 865 Commissioners Road Driveway

- The southbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour; and

Commissioners Road and Adelaide Street/ Commercial Access

- The 95th percentile queue length of the eastbound left-turn movement is projected to exceed the existing storage of 100 metres during the AM peak hour.

- **2037 Total Traffic Conditions:** The study area intersections, including the two access intersections, are forecast to operate with the following additional critical movements to those noted under 2032 total and 2037 background traffic conditions:

  Wellington Road and Commissioners Road

  - The southbound left-turn movement at Wellington Road and Commissioners Road, which is forecast to operate at LOS F with a v/c ratio of 0.93 during the AM peak hour.

- **Impact Assessment Summary:** The results of the operational analyses of the study area intersections indicate that the proposed development can be accommodated by the study area road system and intersections. However, the existing access intersections operate with significant delays and poor levels of service for outbound site traffic under existing and future background traffic conditions without the subject development, as well as under future total traffic conditions with the subject development in place. This is largely attributed to the high traffic volumes on Commissioners Road delaying the left-turn movements out of the subject development. The main east-

west traffic flows on Commissioners Road operate at good levels of service.

A potential remedial measure could be the implementation of traffic signal control at one of the two existing access intersections. At the same time, a preliminary assessment of traffic signal warrants indicates that traffic signals are not warranted at either intersection under future total traffic conditions.

Although traffic signals are not warranted, signalization of at least one of the two access intersections likely would improve the operations of the outbound traffic movement for the existing developments to the north of Commissioners Road as well as the existing development and the proposed development to the south.

- **Transportation Demand Management:** The following TDM measures are appropriate for implementation at the subject development:
  - Internal sidewalks with connections to the adjacent roadway network.
  - Bicycle parking in accordance with the City's Zoning By-Law requirements for residential developments.
  - Access to existing and future transit routes on adjacent roadways.
  - Parking unbundled from the sale/rent of apartment units.
  - Transit, carshare, and active transportation information provided in a welcome package to new residents and/or posted in central locations on-site.

6.2 Recommendations

Based on the findings and conclusions of this study, it is recommended that the development be considered for approval as proposed.

Appendix A

Pre-Study Consultation

Appendix B

Existing Traffic Data

Appendix C

Existing Traffic Operations Reports

Appendix D

2030 Background Traffic Operations Reports

Appendix E

2030 Total Traffic Operations Reports

Appendix F

2032 Background Traffic Operations Reports

Appendix G

2032 Total Traffic Operations Reports

Appendix H

2037 Background Traffic Operations Reports

Appendix I

2037 Total Traffic Operations Reports