



**3614 and 3630 Colonel
Talbot Road, London**

**Transportation Impact
Assessment Update**

Paradigm Transportation Solutions Limited

2026-08
240217

Project Summary



Project Number:

240217

Date and Version:

2026-08

2.0

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3614 & 3630 Colonel Talbot Road, London Transportation Impact Assessment Update



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Executive Summary

Content

In January 2025, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Assessment (TIA) report for Phase 2 of a Residential Subdivision proposed at 3614 and 3630 Colonel Talbot Road in the City of London.

This present report is an update of the January 2025 TIA¹. The Update addresses changes to Phase 2 of the Draft Plan of Subdivision.

The January 2025 TIA was based on the maximum allowable density, which included 43 single family homes and 191 multi-family units, for a total of 234 units. Access was proposed through the Phase 1 lands to the west, which connects to Colonel Talbot Road, and to Royal Magnolia Avenue through a new subdivision to the south.

The updated Draft Plan of Subdivision includes 118 single family homes, 66 street townhomes and 189 multi-family units for Phase 2, for a total of 373 units. The updated plan provides for 139 dwelling units more than the previous plan.

The access arrangement remains the same as in the earlier plan and the January 2025 TIA, including additional access connections to the north and east to the subdivision at 6309 Pack Road.

Similar to the 2025 TIA, this TIA Update 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.

Proposed Subdivisions

The subject lands are a rectangular parcel located along Colonel Talbot Road approximately 200 metres south of Pack Road. The lands have 205 metres of frontage on Colonel Talbot Road and extend 650 metres to the east.

The lands are surrounded by ongoing and future residential development properties to the north, east, and south, and are being developed as a residential subdivision in two phases. Phase 1 of the subdivision is located along Colonel Talbot Road, extending 265

¹ Paradigm Transportation Solutions Limited, *3614 and 3630 Colonel Talbot Road, London Transportation Impact Assessment*, January 2025.



meters east from Colonel Talbot Road, and has a single driveway access to it. Phase 1 has received draft plan approval and includes a total of 467 dwelling units comprising 12 single-family units and 455 low-rise multi-family units.

This TIA update corresponds to Phase 2 of the subdivision, which is located to the east of Phase 1 and extending 385 metres east of the limit of Phase 1.

The TIA Update includes development traffic from both Phase 1 and Phase 2 of the subdivision. The development is assumed to be completed by 2028 for analysis purposes.

Subdivision Access

As noted, Phase 1 has direct access to Colonel Talbot Road. An additional access to Colonel Talbot Road is available at the existing intersection at Clayton Walk through future development lands to the south.

Vehicular access for Phase 2 will be provided through Phase 1 lands and its street connection to Colonel Talbot Road; through a new subdivision to the south to Royal Magnolia Avenue; and through a new subdivision to the north and east to Pack Road.

It is noted that the City's capital projects for road improvements in the area include the upgrading of Bostwick Road between Pack Road and Wharncliffe Road (anticipated in 2027/2028); as well as a new roundabout connection at Pack Road and Bostwick Road to include the westerly extension of Bradley Avenue in 2028.

TIA Scope

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

- ▶ **Study Area Intersections:**
 - Colonel Talbot Road and Pack Road (signalized);
 - Colonel Talbot Road and Clayton Walk (unsignalized);
 - Colonel Talbot Road and Diane Crescent (unsignalized);
 - Pack Road and Pioneer Parkway (unsignalized); and
 - Colonel Talbot Road and Street 'A' (new).
- ▶ **Analysis Periods:** Weekday AM and PM peak hours.
- ▶ **Background Developments:**



- 3510-3524 Colonel Talbot Road;
 - 3496 Colonel Talbot Road;
 - 3680 Colonel Talbot Road;
 - 3700 Colonel Talbot Road; and
 - 3924 Colonel Talbot Road.
- **Traffic Conditions:** Base Year (2024) and five years after development completion (2033).

Conclusions

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

- **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service.
- **Subdivision Trip Generation:** Phase 1 of the subdivision is forecast to generate 186/240 trips during the AM and PM peak hours, and Phase 2 is forecast to generate 188/240 trips during the AM and PM peak hours.

As outlined in **Section 3.4**, Phase 2 development traffic volumes are noted to be moderate additions to roadway traffic in one direction during either peak hour.

- **2033 Background Traffic Conditions:** The north-south roadway traffic volumes on Colonel Talbot Road are projected to exceed the two-lane roadway capacity (900 vph per lane) both north and south of Pack Road.

The study area intersections are noted to include the following critical movements:

Colonel Talbot Road and Pack Road

- The westbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.93 during the AM peak hour and at LOS E with a v/c ratio greater than 1.00 during the PM peak hour;
- The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM and PM peak hours;
- 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 100 metres during the AM and PM peak hours;



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

Colonel Talbot Road and Clayton Walk/Street 'N'

- The eastbound 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 25 metres during the AM and PM peak hours;
- The westbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour;

Colonel Talbot Road and Diane Crescent/Royal Magnolia Avenue

- The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour; and
- 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 75 metres during the PM peak hour.

► **2033 Total Traffic Conditions:**

• **Phase 1**

The study area intersections are forecast to operate at deteriorating levels of service for the critical movements as noted under 2033 background traffic conditions, and with the following additional critical movements:

Colonel Talbot Road and Pack Road

- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 40 metres during the PM peak hour;
- The southbound shared through/right-turn movement is forecast to operate at LOS C with a v/c ratio of 0.91 during the AM peak hour;

Colonel Talbot Road and Clayton Walk/Street 'N'

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

Colonel Talbot Road and Street A

- The westbound (outbound) left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00



during the PM peak hour. The same movement is also noted to operate at LOS F during the AM peak hour; and

Pack Road and Pioneer Parkway

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.91 and a 95th percentile queue length that exceed the existing storage of 30 metres during the AM peak hour.

- **Full Development (Phase 1 & Phase 2)**

Under full development (Phase 1 and Phase 2), the study area intersections are forecast to operate at similar levels of service as under Phase 1 2033 total traffic conditions, with the following additional critical movements:

Colonel Talbot Road and Pack Road

- The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.98 during the PM peak hour.

Pioneer Parkway and Pack Road

- 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 exceeding a storage of 30 metres during the PM peak hour; and
- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.97 during the PM peak hour.

- ▶ **Site Access:** The Colonel Talbot Road and Street A intersection is noted to operate with high delays and v/c ratios for outbound traffic during the AM and PM peak hours. A southbound left-turn lane with 40-metre storage is identified as warranted under 2033 total traffic conditions.
- ▶ **Summary of Impact Assessment:** Capacity constraints are noted at the three Colonel Talbot intersections under 2033 background and total traffic conditions analysed in this study. The issues are primarily due to the increases in study area development traffic volumes and the existing two-lane cross-section on Colonel Talbot Road. The projected traffic volumes could be accommodated within a four-lane cross-section on Colonel Talbot Road.



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1 Introduction

1.1 Overview

In January 2025, Paradigm Transportation Solutions Limited (Paradigm) prepared a Transportation Impact Assessment (TIA) report for Phase 2 of a Residential Subdivision proposed at 3614 and 3630 Colonel Talbot Road in the City of London. **Figure 1.1** details the subject development location.

This present report is an update of the January 2025 TIA². The Update addresses changes to Phase 2 of the Draft Plan of Subdivision.

The January 2025 TIA was based on the maximum allowable density, which included 43 single family homes and 191 multi-family units, for a total of 234 units. Access was proposed through the Phase 1 lands to the west, which connects to Colonel Talbot Road, and to Royal Magnolia Avenue through a new subdivision to the south.

The updated Draft Plan of Subdivision includes 118 single family homes, 66 street townhomes and 189 multi-family units for Phase 2, for a total of 373 units. The updated plan provides for 139 dwelling units more than the previous plan.

The access arrangement remains the same as in the earlier plan and the January 2025 TIA, including additional access connections to the north and east to the subdivision at 6309 Pack Road.

Similar to the 2025 TIA, this TIA Update 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.

1.1.1 Proposed Subdivisions

The subject lands are a rectangular parcel located along Colonel Talbot Road approximately 200 metres south of Pack Road. The lands have 205 metres of frontage on Colonel Talbot Road and extends 650 metres to the east.

The lands are surrounded by ongoing and future residential development properties to the north, east, and south, and are being developed as a residential subdivision in two phases. Phase 1 of the

² Paradigm Transportation Solutions Limited, *3614 and 3630 Colonel Talbot Road, London Transportation Impact Assessment*, January 2025.



subdivision is located along Colonel Talbot Road, extending 265 meters east from Colonel Talbot Road, and has a single driveway access to it. Phase 1 has received draft plan approval and includes a total of 467 dwelling units comprising 12 single-family units and 455 low-rise multi-family units.

This TIA update corresponds to Phase 2 of the subdivision, which is located to the east of Phase 1 and extending 385 metres east of the limit of Phase 1.

The TIA Update includes development traffic from both Phase 1 and Phase 2 of the subdivision. The development is assumed to be completed by 2028 for analysis purposes.

1.1.2 Subdivision Access

As noted, Phase 1 has direct access to Colonel Talbot Road. An additional access to Colonel Talbot Road is available at the existing intersection at Clayton Walk through future development lands to the south.

Vehicular access for Phase 2 will be provided through Phase 1 lands and its street connection to Colonel Talbot Road; through a new subdivision to the south to Royal Magnolia Avenue; and through a new subdivision to the north and east to Pack Road.

It is noted that the City's capital projects for road improvements in the area include the upgrading of Bostwick Road between Pack Road and Wharncliffe Road (anticipated in 2027/2028); as well as a new roundabout connection at Pack Road and Bostwick Road to include the westerly extension of Bradley Avenue in 2028.

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 2024, includes:

- ▶ assessment of the current traffic and site conditions within the study area;
- ▶ estimates of background traffic growth for five years after development completion (2033);
- ▶ the following developments are included in background traffic forecasts:
 - 3510-3524 Colonel Talbot Road;



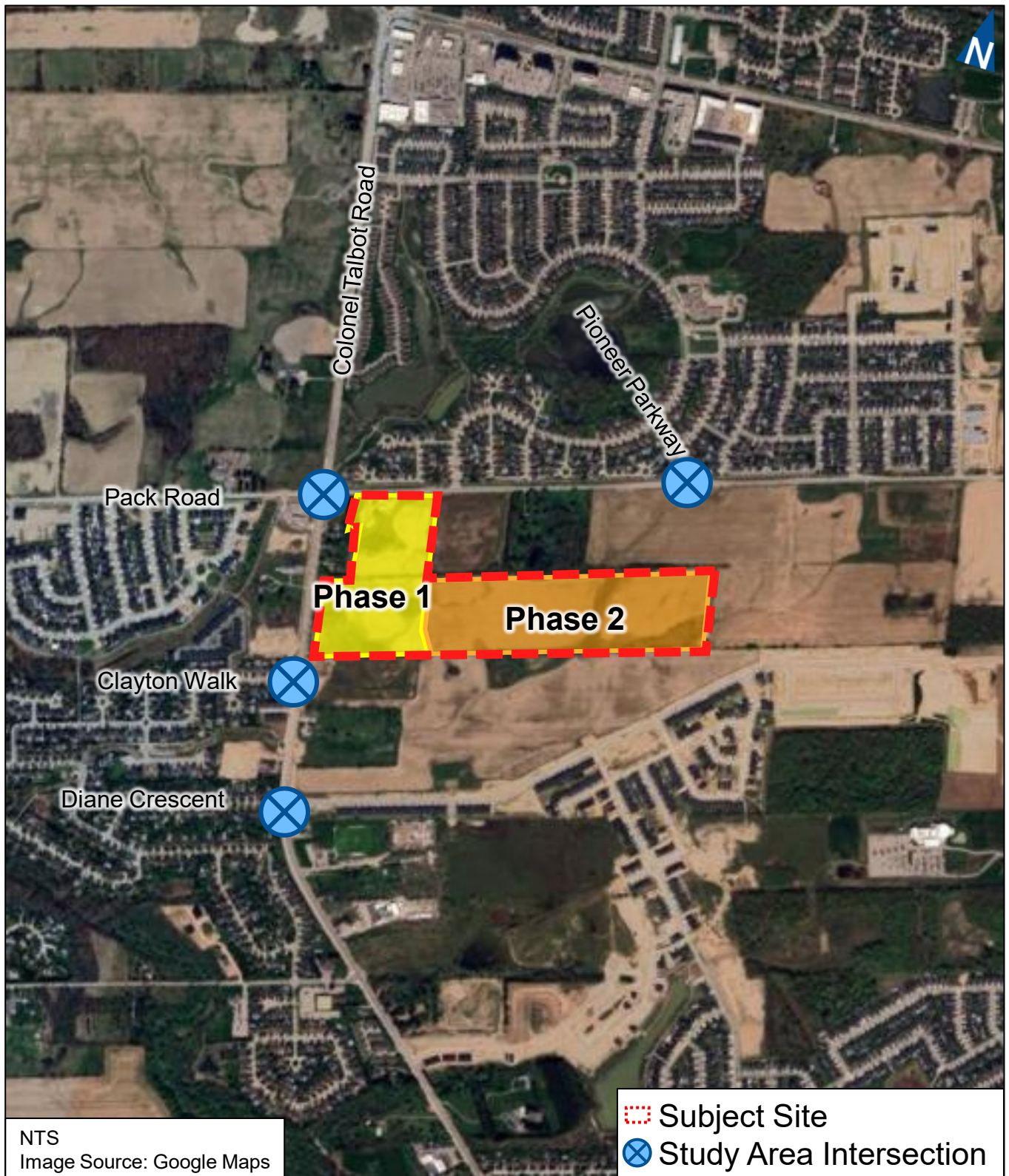
- 3496 Colonel Talbot Road;
 - 3680 Colonel Talbot Road;
 - 3700 Colonel Talbot Road; and
 - 3924 Colonel Talbot Road.
- ▶ estimates of additional traffic generated by the subject site;
 - ▶ analyses of the impact of the future traffic on the surrounding road network, including the following study area intersections:
 - Colonel Talbot Road and Pack Road (signalized);
 - Colonel Talbot Road and Clayton Walk (unsignalized);
 - Colonel Talbot Road and Diane Crescent (unsignalized);
 - Pack Road and Pioneer Parkway (unsignalized); and
 - Colonel Talbot Road and Street 'A' (new).
 - ▶ 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 Guidelines³.

³ Transportation Impact Assessment Guidelines, City of London, April 2012.





2 Existing Conditions

2.1 Existing Roadways

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

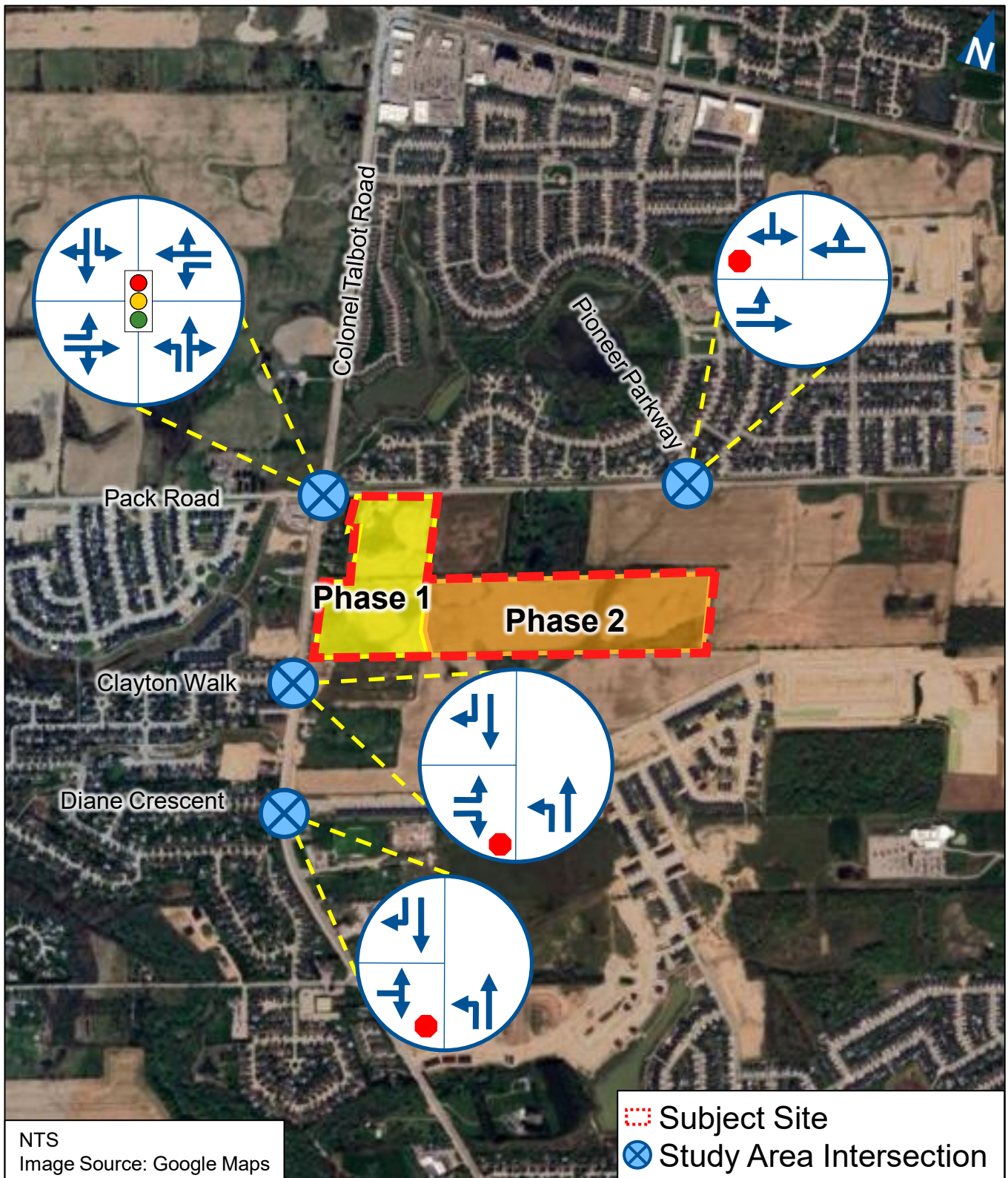
- ▶ **Colonel Talbot Road** is a north-south civic boulevard⁴ with a two-lane cross section. Sidewalks are provided on the west side of the roadway, and a multi-use trail is provided on the east side. The posted speed limit is 60 km/h.
- ▶ **Pack Road** is an east-west civic boulevard with a two-lane cross-section. Sidewalks are provided on the north side of the roadway east of Colonel Talbot Road and on the south side of the roadway to the west of Colonel Talbot Road. Cycling facilities are not provided along Pack Road within the study area. The posted speed limit is 50 km/h.
- ▶ **Clayton Walk** is an east-west local with a two-lane cross-section. Sidewalks are provided on both sides of the roadway. The assumed speed limit is 50 km/h.
- ▶ **Diane Crescent** is an east-west local with a two-lane cross-section. Sidewalks are provided on the south side of the roadway. The posted speed limit is 50 km/h.
- ▶ **Pioneer Parkway** is a north-south neighbourhood connector with a two-lane cross section. Sidewalks are provided on both sides of the roadway. Cycling facilities are not provided along Pioneer Parkway. The assumed speed limit is 50 km/h.

Traffic signals are provided at the intersection of Colonel Talbot Road and Pack Road, and side-street stop control is provided at the intersections of Colonel Talbot Road and Clayton Walk; Colonel Talbot Road and Diane Crescent; and at Pack Road and Pioneer Parkway.

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

⁴ The London Plan, May 2019.





2.2 Transit Service

London Transit does not currently provide transit service within a walking distance to the subject site.

2.3 Traffic Volumes

Paradigm conducted a turning movement count at the intersection of Pack Road and Pioneer Parkway on 25 June 2024. The City of London provided turning movement counts at the study area intersections collected on the following dates:

- ▶ Colonel Talbot Road and Pack Road: 20 September 2022;
- ▶ Colonel Talbot Road and Clayton Walk: 08 November 2022; and
- ▶ Colonel Talbot Road and Diane Crescent: 08 November 2022.

Figure 2.2 illustrates the base year (2022) 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

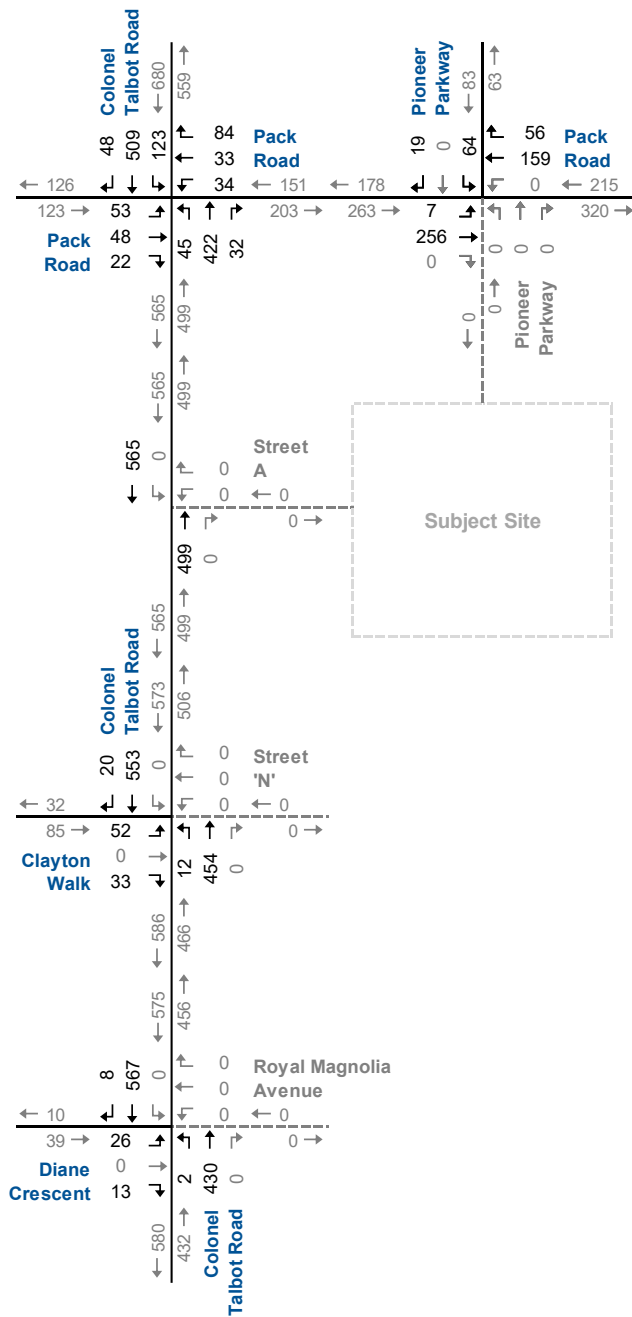
Intersection	Source	Date	AM Peak Hour	PM Peak Hour
Colonel Talbot Road and Pack Road	City	20 September 2022	7:45 – 8:45	4:30 – 5:30
Colonel Talbot Road and Clayton Walk	City	08 November 2022	7:45 – 8:45	4:45 – 5:45
Colonel Talbot Road and Diane Crescent	City	08 November 2022	7:45 – 8:45	4:30 – 5:30
Pack Road and Pioneer Parkway	Paradigm	25 June 2024	8:30 – 9:30	4:45 – 5:45

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

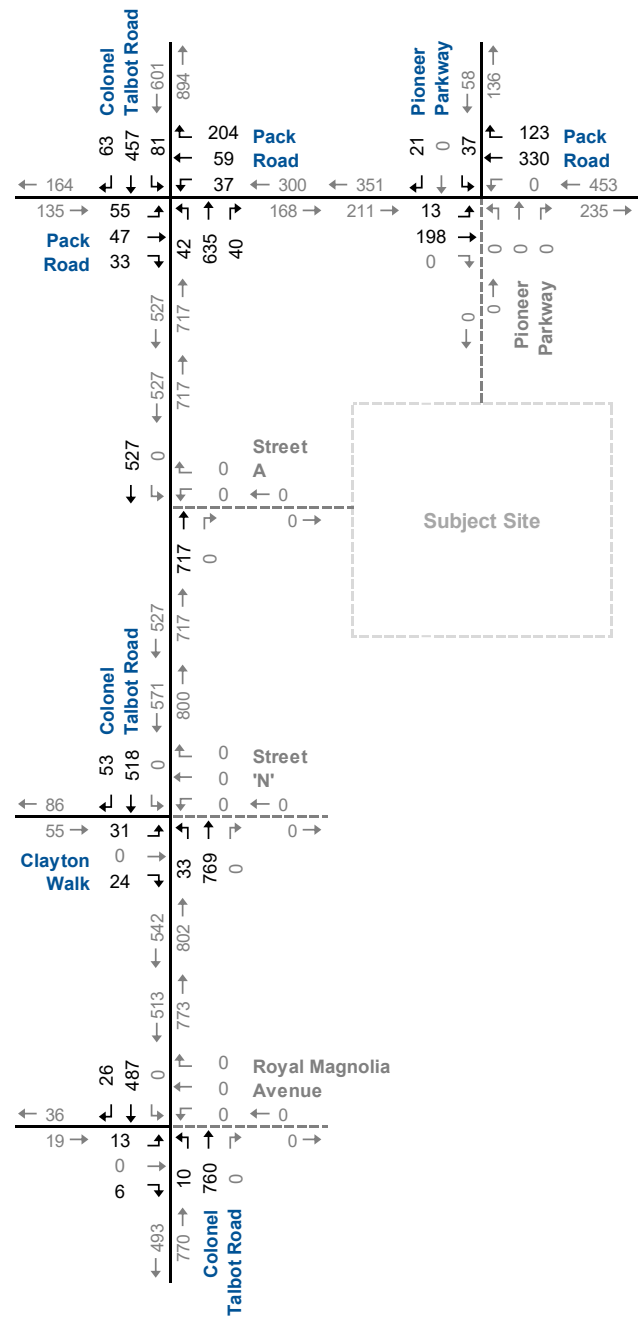




AM Peak Hour



PM Peak Hour



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 base year (2022) 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, and with no problem movements.

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	Colonel Talbot Road & Pack Road	TCS	LOS Delay	C 31	C 25	>	C 28	C 27	C 28	>	C 28	B 10	A 7	>	A 7	B 10	A 8	>	A 8	B 12
			V/C	0.28	0.26	>		0.14	0.52	>		0.11	0.43	>		0.24	0.52	>		
			Q	5	5	>		3	10	>		1	5	>		2	8	>		
			Stor. Avail.	40 35	- -	>		40 37	- -	>		65 64	- -	>		100 98	- -	>		
AM Peak Hour	Colonel Talbot Road & Clayton Walk	TWSC	LOS Delay	C 24		>	C 24					A 9	A 0		A 0		A 0	A 0	A 0	
			V/C	0.33		>					0.01	0.00			0.00	0.00				
			Q	10		>				0	0			0	0					
			Stor. Avail.	25 15		>				110 110	- -			- -		25 25				
AM Peak Hour	Colonel Talbot Road & Diane Crescent	TWSC	LOS Delay	C 20		>	C 20					A 9	A 0		A 0		A 0	A 0	A 0	
			V/C	0.15		>				0.00	0.00			0.00	0.00					
			Q	4		>			0	0			0	0						
			Stor. Avail.	- -		>			75 75	- -			- -		70 70					
AM Peak Hour	Pack Road & Pioneer Parkway	TWSC	LOS Delay	A 8	A 0		A 0									B 12		>	B 12	
			V/C	0.01	0.00				0.00						0.16		>			
			Q	0	0				0						4		>			
			Stor. Avail.	80 80	- -				- -						30 26		>			
PM Peak Hour	Colonel Talbot Road & Pack Road	TCS	LOS Delay	C 34	C 23	>	C 28	C 25	C 30	>	C 29	B 14	B 13	>	B 13	C 21	B 11	>	B 12	B 17
			V/C	0.32	0.21	>		0.11	0.71	>		0.10	0.66	>		0.26	0.53	>		
			Q	8	6	>		3	27	>		2	13	>		6	8	>		
			Stor. Avail.	40 32	- -	>		40 37	- -	>		65 63	- -	>		100 94	- -	>		
PM Peak Hour	Colonel Talbot Road & Clayton Walk	TWSC	LOS Delay	D 32		>	D 32					A 9	A 0		A 0		A 0	A 0	A 0	
			V/C	0.31		>					0.04	0.00			0.00	0.00				
			Q	10		>				1	0			0	0					
			Stor. Avail.	30 20		>				100 99	- -			- -		25 25				
PM Peak Hour	Colonel Talbot Road & Diane Crescent	TWSC	LOS Delay	D 27		>	D 27					A 9	A 0		A 0		A 0	A 0	A 0	
			V/C	0.11		>				0.01	0.00			0.00	0.00					
			Q	3		>				0	0			0	0					
			Stor. Avail.	- -		>				75 75	- -			- -		70 70				
PM Peak Hour	Pack Road & Pioneer Parkway	TWSC	LOS Delay	A 1			A 1					A 0				B 14		>	B 14	
			V/C	0.01	0.00				0.00						0.13		>			
			Q	0	0				0						4		>			
			Stor. Avail.	80 80	- -				- -						30 26		>			

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 Proposed Development

The subject lands are a rectangular parcel located along Colonel Talbot Road approximately 200 metres south of Pack Road. The lands have 205 metres of frontage on Colonel Talbot Road and extend 650 metres to the east.

The lands are surrounded by ongoing and future residential development properties to the north, east, and south, and are being developed as a residential subdivision in two phases. Phase 1 of the subdivision is located along Colonel Talbot Road and has a single driveway access to it.

The development of the lands is being undertaken in two Phases, Phase 1 extending 265 metres east of Colonel Talbot Road, Phase 2 extending a further 385 metres east of Phase 1 limits.

Phase 1, which has received draft plan approval, includes a total of 467 dwelling units comprising 12 single-family homes and 455 low-rise multi-family units.

Phase 2 is proposed to include 118 single family homes, 66 townhomes, and 189 multi-family units.

The development is assumed to be completed by 2028 for analysis purposes.

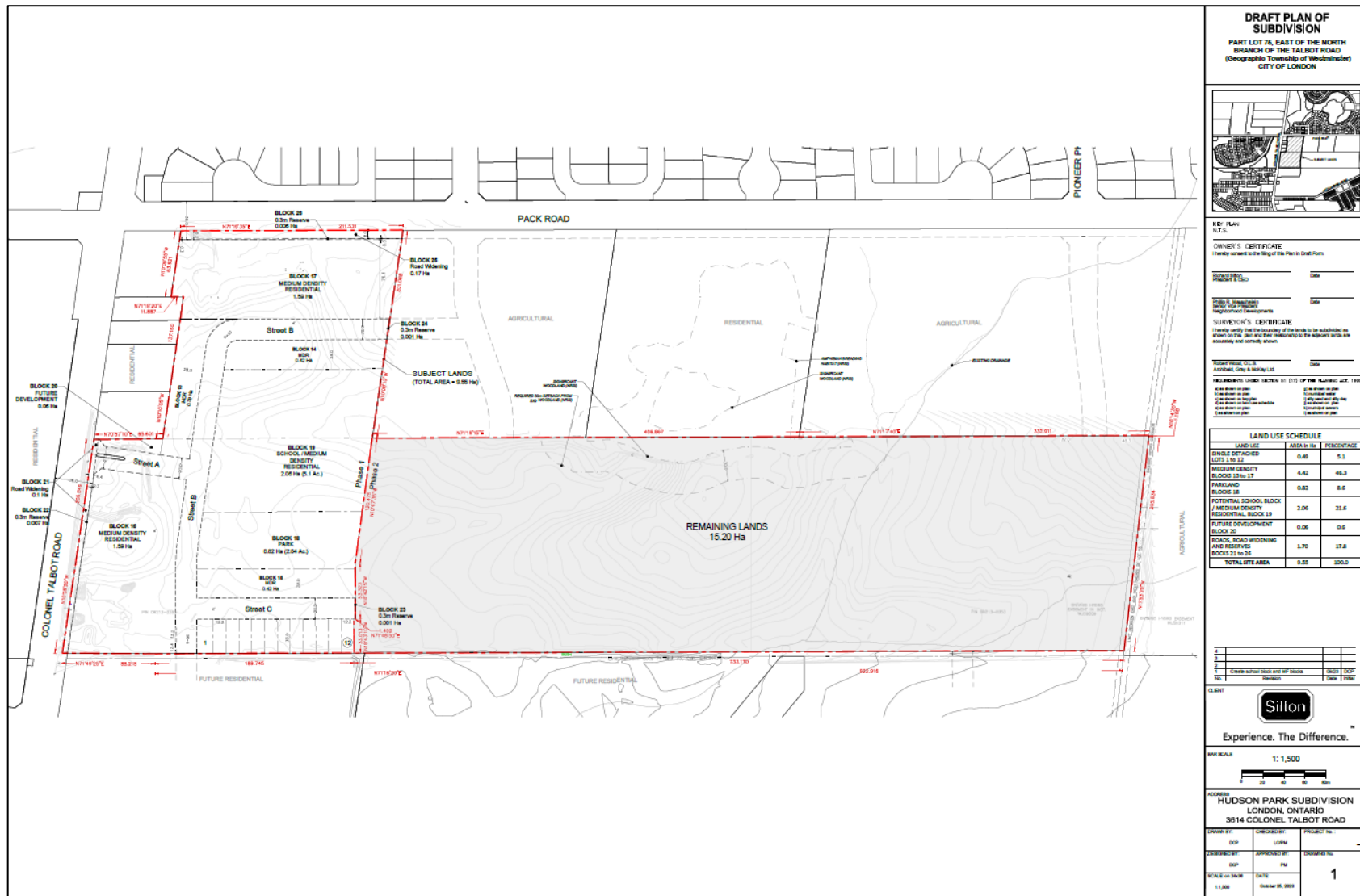
Figure 3.1a and **Figure 3.1b**, respectively show the Draft Plans for Phase 1 and Phase 2 of the proposed development of the subject lands.

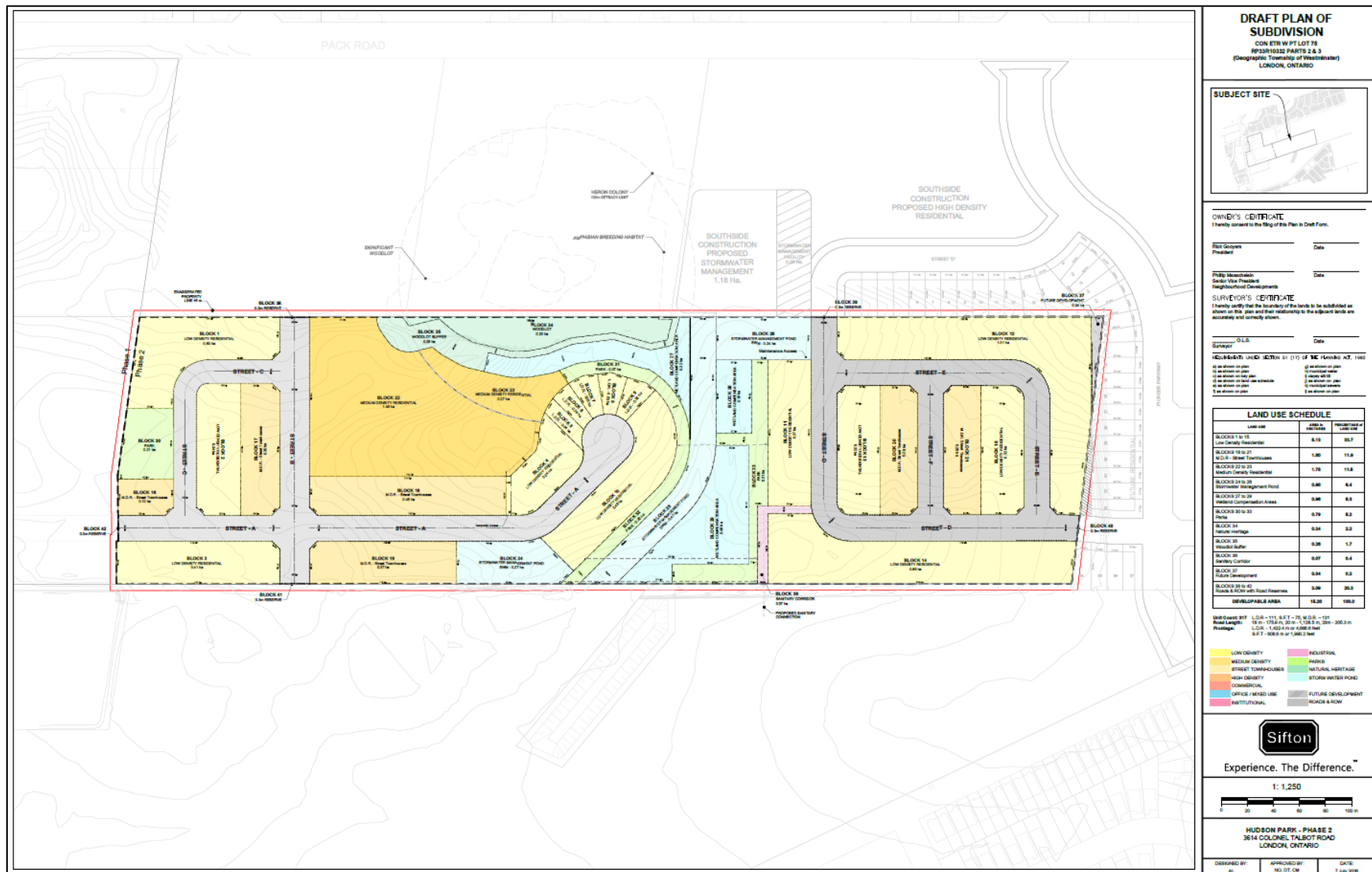
3.1 Development Access

As noted, Phase 1 has direct access to Colonel Talbot Road. An additional access to Colonel Talbot Road is available at the existing intersection at Clayton Walk through future development lands to the south.

Vehicular access for Phase 2 will be provided through Phase 1 lands and its street connection to Colonel Talbot Road; through a new subdivision to the south to Royal Magnolia Avenue; and through a new subdivision to the north and east to Pack Road.







3.2 Development Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation Manual⁵ equations were used to estimate the peak hour traffic volumes generated by the subject development based on the following ITE Land Use Codes:

- ▶ 210, Single-Family Detached Housing;
- ▶ 215, Single-Family Attached Housing; and
- ▶ 220, Multifamily Housing (Low Rise).

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									
210: Single-Family Detached Housing	12	Eq	4	10	14	Eq	9	5	14
220: Multifamily Housing (Low-Rise)	455	Eq	41	131	172	Eq	140	86	226
Phase 1 Trip Generation			45	141	186		149	91	240
Phase 2									
210: Single-Family Detached Housing	118	Eq	23	62	85	Eq	69	43	112
215: Single-Family Attached Housing	66	Eq	6	18	24	Eq	17	13	30
220: Multifamily Housing (Low-Rise)	189	Eq	19	60	79	Eq	61	37	98
Phase 2 Trip Generation			48	140	188		147	93	240
Total Site Trip Generation			93	281	374		296	184	480

LUC 210 | AM: $T = 0.67(X) + 5.59$ | PM: $\ln(T) = 0.92 \ln(X) + 0.33$

LUC 215 | AM: $T = 0.59(X) - 15.25$ | PM: $T = 0.57(X) - 7.84$

LUC 220 | AM: $T = 0.35(X) + 12.93$ | PM: $T = 0.48(X) + 7.35$

3.3 Development Trip Distribution

The trip distribution was determined based on existing traffic patterns on Colonel Talbot Road and Pack Road.

Table 3.2 displays the breakdown of trip distributions used in this study.

⁵ Institute of Transportation Engineers, *Trip Generation Manual*, 12th ed., (Washington, DC: ITE, 2025).



TABLE 3.2: ESTIMATED TRIP DISTRIBUTION

Origin/Destination	AM Peak Hour		PM Peak Hour	
	Inbound	Outbound	Inbound	Outbound
North via Colonel Talbot Road	40%	20%	20%	40%
South via Colonel Talbot Road	35%	35%	35%	35%
East via Pack Road	20%	40%	40%	20%
West via Pack Road	5%	5%	5%	5%
Total	100%	100%	100%	100%

3.4 Development Trip Assignment

3.4.1 Phase 1

The site trips for the Phase 1 lands are assigned primarily to the Street A access to Colonel Talbot Road, with a portion of the trips to/from the south assigned to the Street N access via the lands adjacent to the south.

Figure 3.2a illustrates the site-generated traffic volumes for Phase 1 of the development during the AM and PM peak hours.

3.4.2 Phase 2

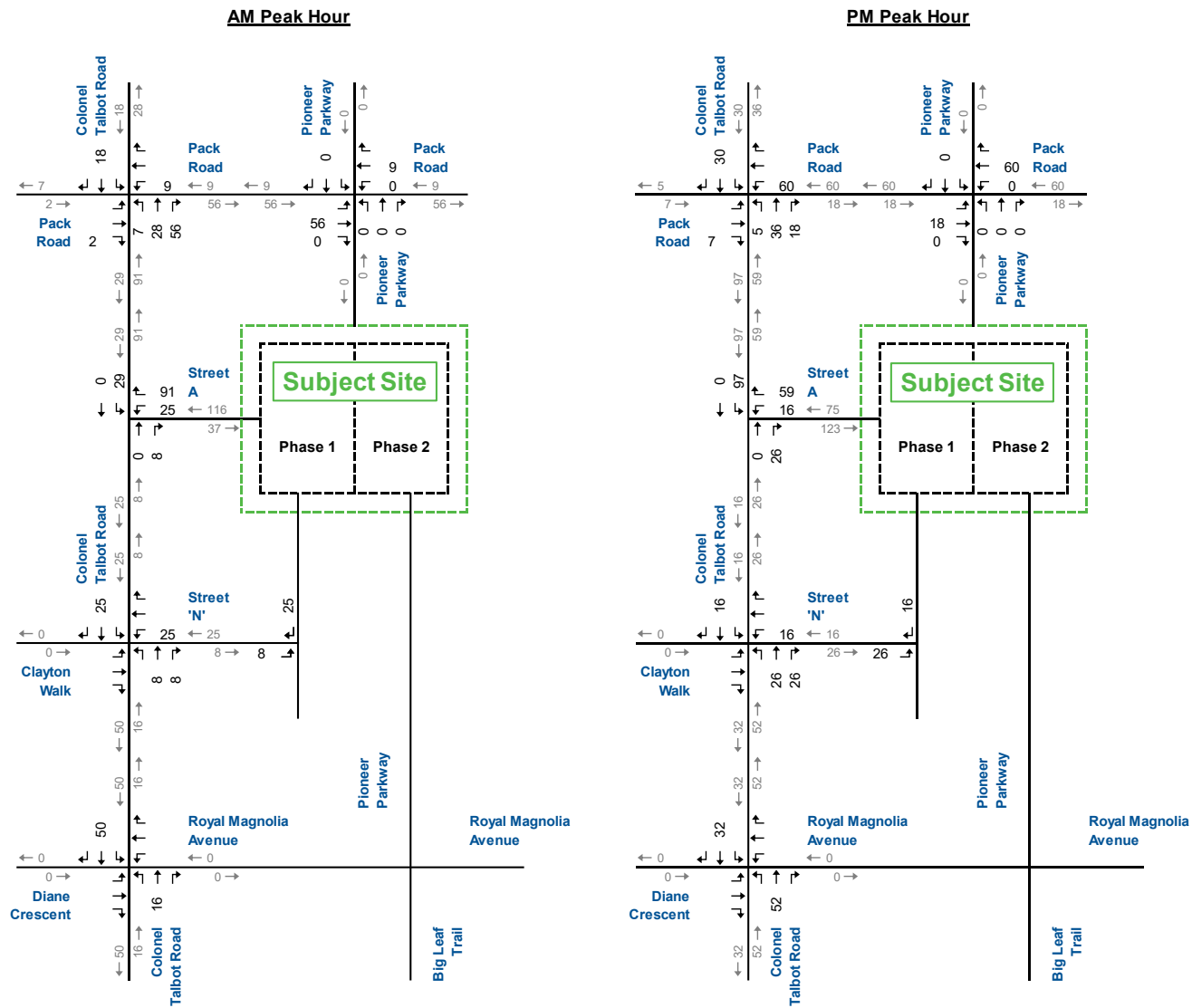
The site trips for the Phase 2 lands are assigned primarily to the Street A access to Colonel Talbot Road, with a portion of the trip to/from the south assigned to the Street N access via the lands adjacent to the south; and to Royal Magnolia Avenue and Pack Road via Pioneer Parkway.

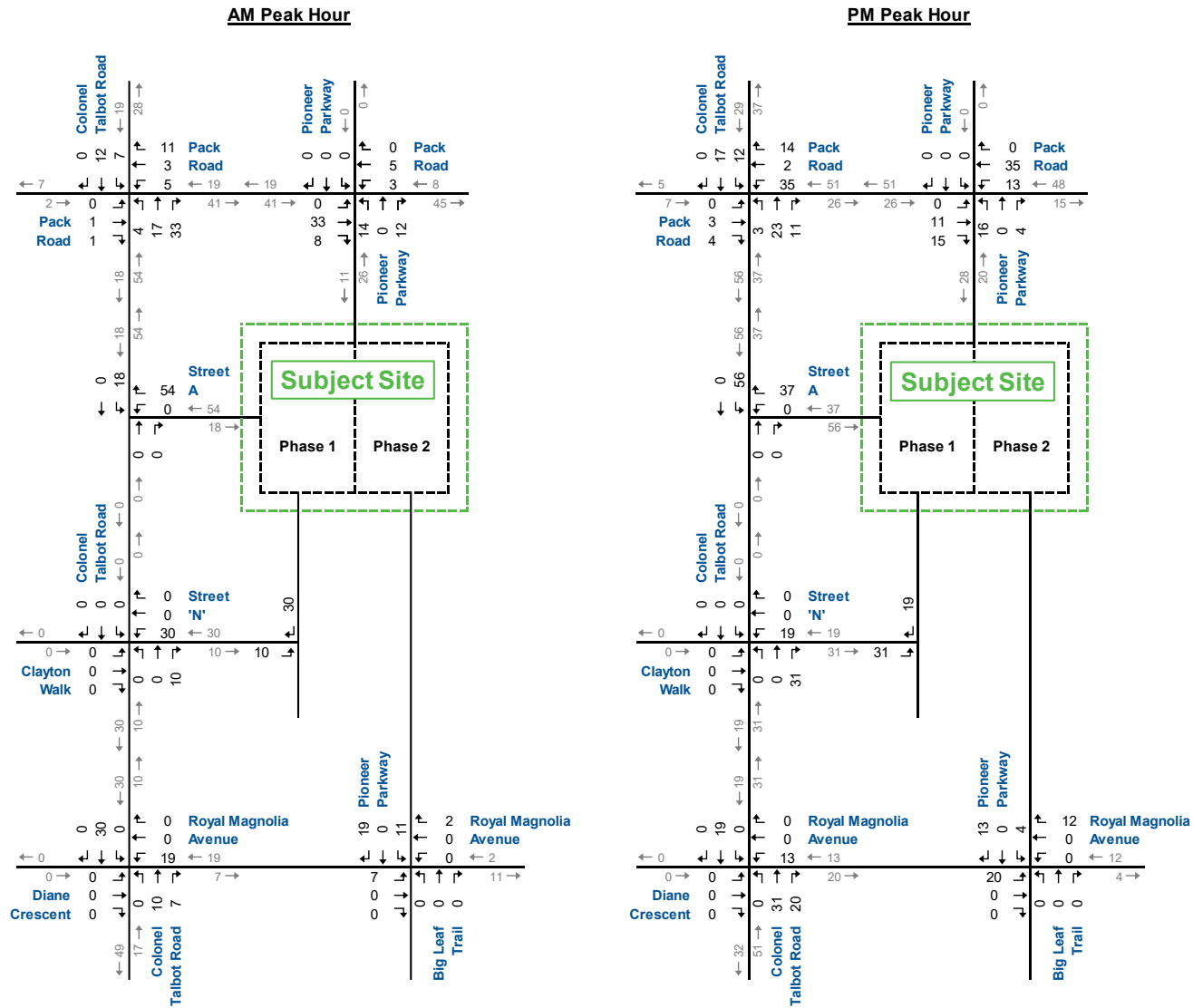
Figure 3.2b illustrates the site-generated traffic volumes for Phase 2 of the development during the AM and PM peak hours.

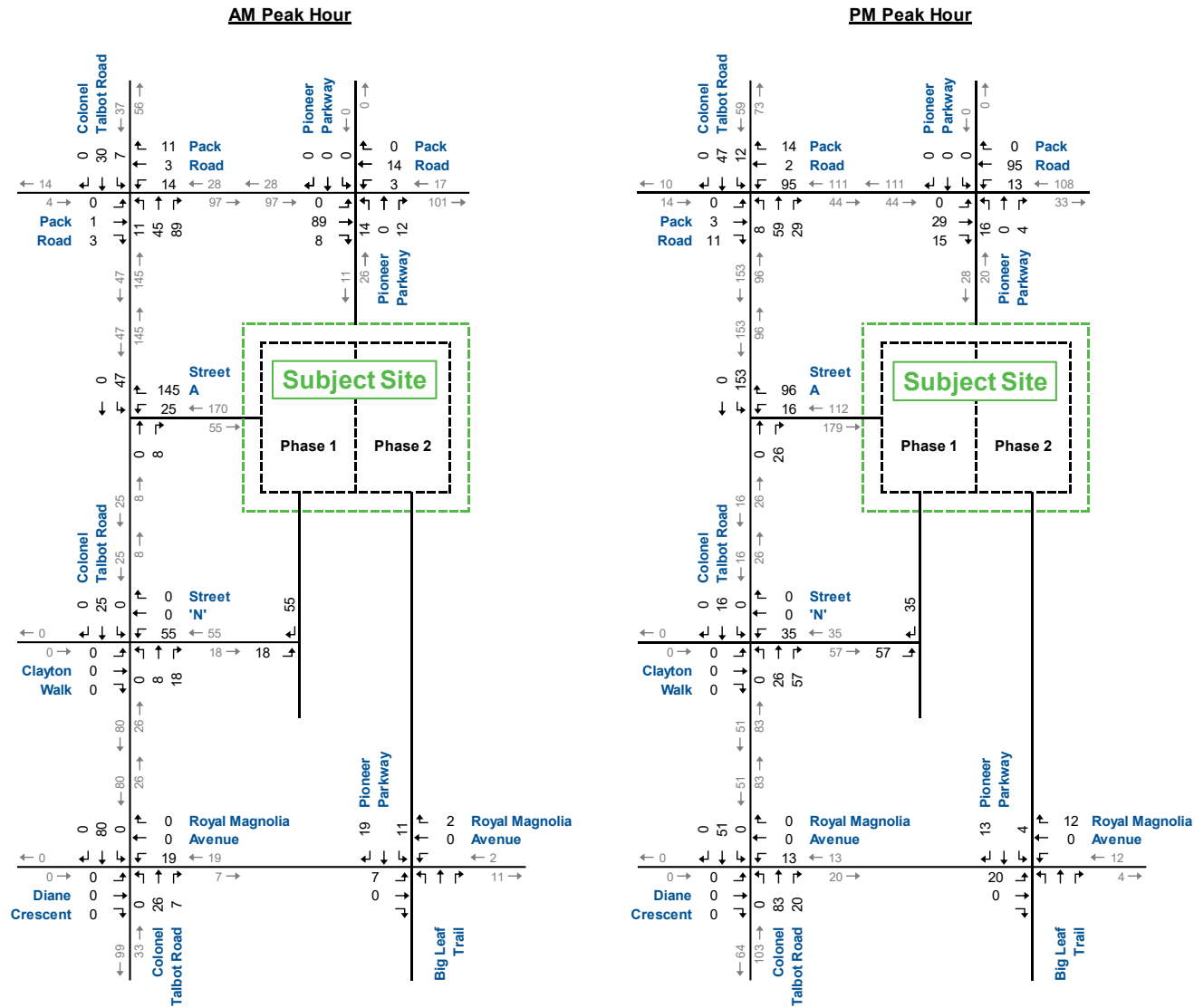
Figure 3.3 illustrates the total site-generated traffic volumes for the Phase 1 and Phase 2 lands during the AM and PM peak hours.

As shown in **Figure 3.2b**, the additional traffic generated by the Phase 2 development ranges between 10 to 54 vehicles per hour (vph) in one direction during the AM peak hour, and between 19 to 56 vph during the PM peak hour. AM/PM peak hour Phase 2 development traffic volumes are noted to be moderate additions to roadway traffic.









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 completion (2033).

4.1 Background Traffic Forecasts

In order to derive the 2033 generalized background traffic volumes, a growth rate of 2.0% per annum was applied to the existing roadway traffic volumes. This growth rate was confirmed with the City during the pre-study consultation.

4.1.1 Other Area Developments

In consultation with City staff, the following developments have been included in estimating background traffic volumes:

- ▶ 3493 Colonel Talbot Road: Residential and commercial development located on the south side of Pack Road west of Colonel Talbot Road. The development is proposed to consist of 177 single family homes, 314 condominium/townhouse units, and 10,765 sq. ft. GFA of commercial space. The development is forecast to generate 273 AM peak hour trips and 356 PM peak hour trips⁶ and is anticipated to be completed in 2025.
- ▶ 3510-3524 Colonel Talbot Road: Mixed-use development located in the southeast corner of Pack Road and Colonel Talbot Road. The development is proposed to consist of a four-storey building with 37 residential units and 434 m² GFA of ground floor commercial space. The development is forecast to generate 17 AM peak hour trips and 73 PM peak hour trips⁷ and is assumed to be completed in 2025.
- ▶ 3680 Colonel Talbot Road: Residential development located immediately south of Phase 1 of the subject site and is abutted by 3700 Colonel Talbot to the south and east and by Colonel Talbot Road to the west. The development consists of 163 single-family homes, 16 street townhouses, 522 cluster houses, and 614 apartment units. The development is forecast to

⁶ Prepared by Paradigm Transportation Solutions Limited, *3493 Colonel Talbot Road, London, Ontario Traffic Impact Study Update*, April 2015.

⁷ Prepared by Strik, Baldinelli, Moniz Ltd., *Transportation Impact Assessment 3510-3524 Colonel Talbot Road, London, Ontario*, January 2021.



generate 545 AM peak hour trips and 589 PM peak hour trips⁸ and is anticipated to be fully built-out in 2033.

It is noted that the development will have an access connection, Street 'N', which will connect to Phase 1 of the subject development and will provide access onto Colonel Talbot Road aligned with Clayton Walk.

- ▶ 3700 Colonel Talbot Road: Residential development located immediately south of Phase 2 of the subject site and is abutted by Bostwick Road to the east and Colonel Talbot Road to the west. The development consists of 376 single-family homes, 383 townhouses, and 476 apartment units. The development also includes an elementary school as well as commercial uses on the ground floor of the apartment buildings. The development is forecast to generate 562 AM peak hour trips and 327 PM peak hour trips⁹ and is anticipated to be fully built-out in 2024.

It is noted that access connections to the easterly portion of the subject development are to be provided via the road system in the 3700 Colonel Talbot Road subdivision.

- ▶ 3924 Colonel Talbot Road: Residential subdivision located south of the subject site on the east side of Colonel Talbot Road. The full build-out is proposed to consist of 538 single family lots and 776 townhouse lots. The development is forecast to generate 652 AM peak hour trips and 801 PM peak hour trips¹⁰ and is anticipated to be fully built-out in 2025.
- ▶ 6309 Pack Road: Residential subdivision located east of the subject site on the south side of Pack Road. The full build-out is proposed to consist of 210 single family lots, 47 street townhouses, 454 medium density units, and 3,489 high-density units. The development is forecast to generate 1,853 AM peak hour trips and 1,801 PM peak hour trips¹¹ and is anticipated to be fully built-out in 2033.

Figure 4.1 illustrates the location of the background developments.

Appendix D contains the background development traffic volumes.

⁸ Prepared by BT Engineering, *W3 Farms Residential Development Transportation Impact Assessment*, February 2017.

⁹ Prepared by Arcadis IBI Group, *W3 Sunset Creek Transportation Impact Assessment*, 30 November 2023.

¹⁰ Prepared by Stantec Consulting Ltd., *Colonel Talbot Subdivision Transportation Impact Assessment*, December 2016.

¹¹ Prepared by Paradigm Transportation Solutions Limited, *6309 Pack Road, London Transportation Impact Assessment*, December 2024.



4.1.2 Network Improvements

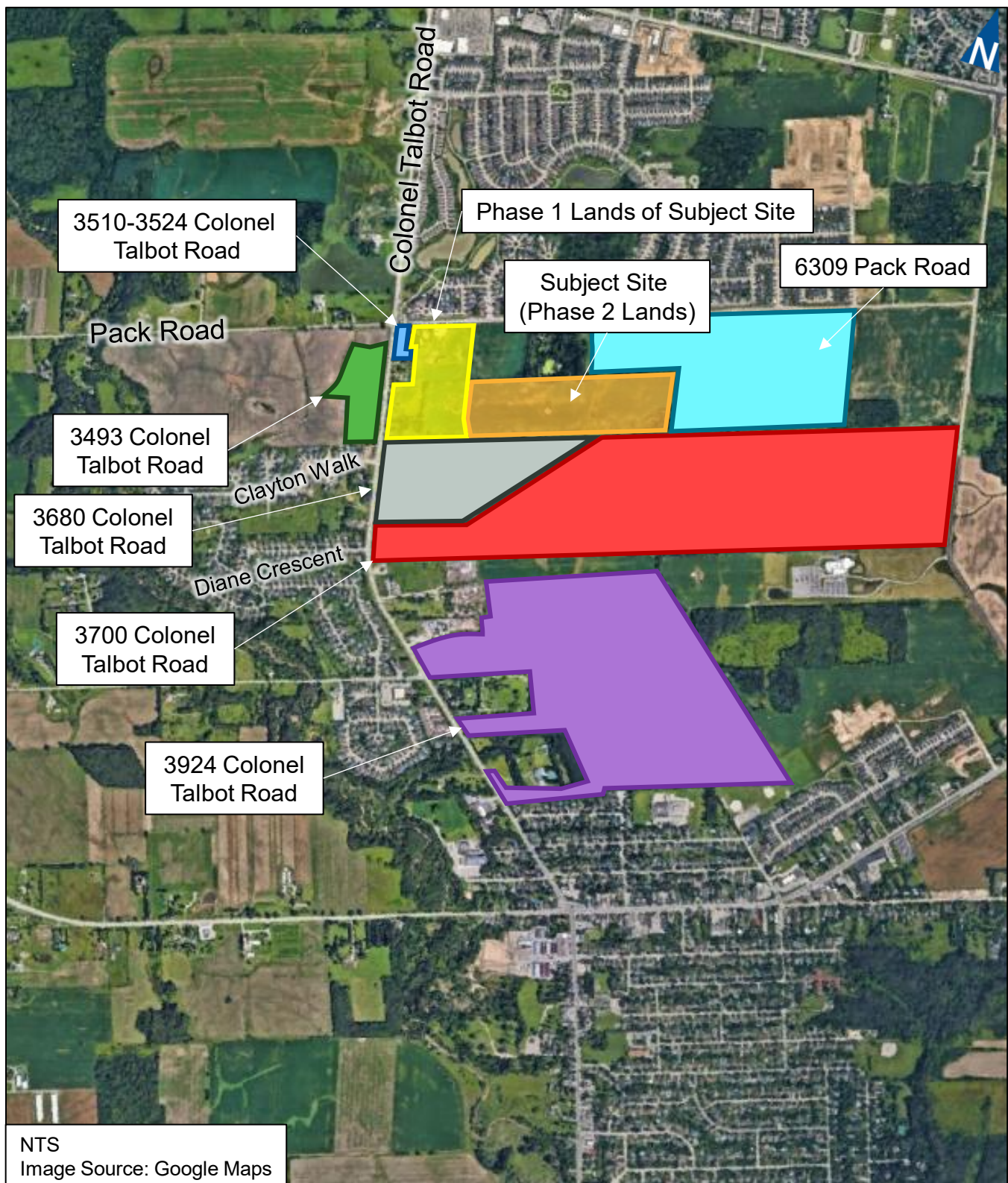
The City of London staff identified Colonel Talbot Road for a two-lane road upgrade between Southdale Road and James Street. The upgrades have since been completed and include roadway urbanization and a separated multi-use trail/cycling route.

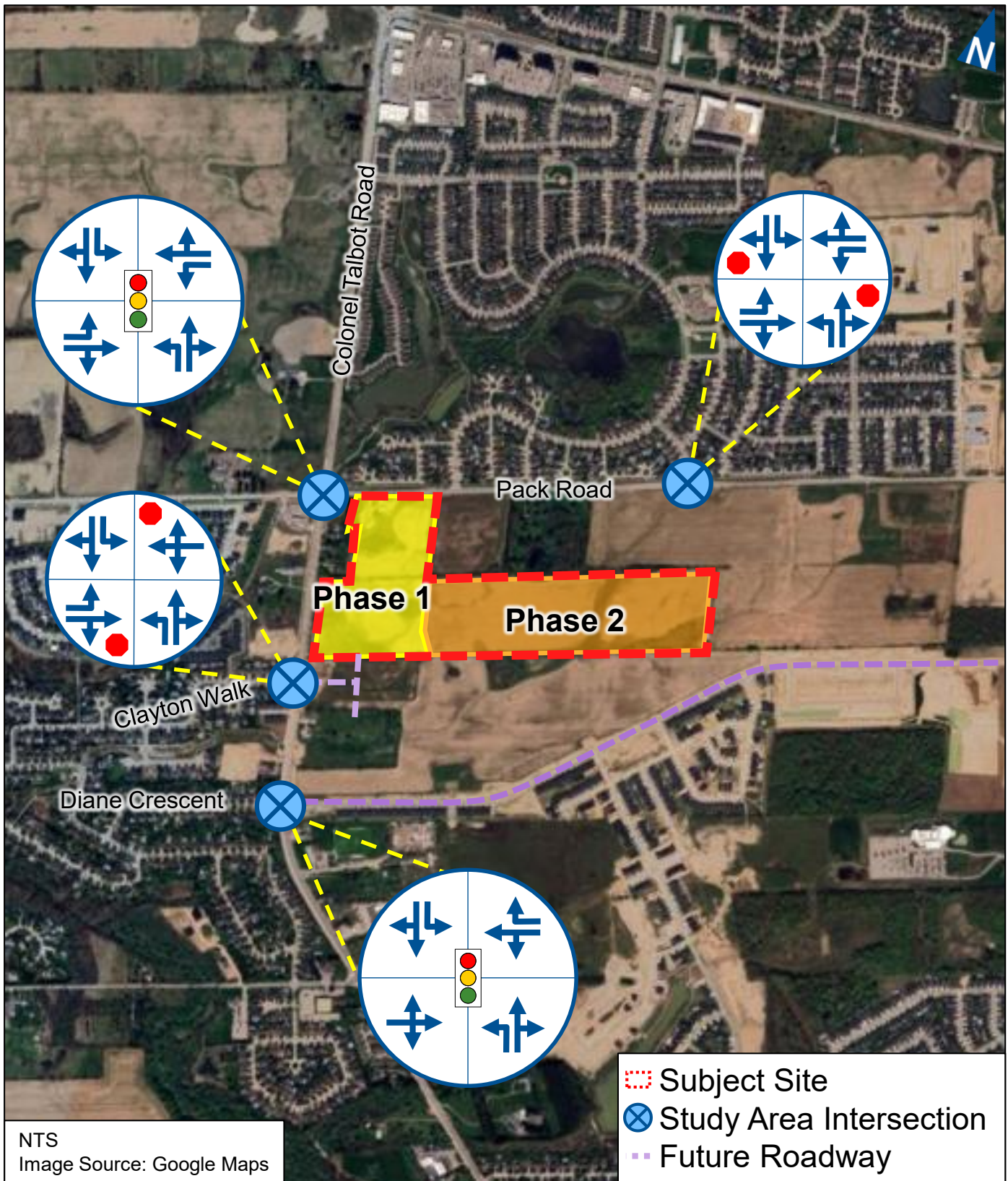
It is also noted that the intersection of Colonel Talbot Road and Diane Crescent/Royal Magnolia Avenue is assumed to be signalized under future traffic conditions, as identified in the TIA for 3680 Colonel Talbot Road. It is also assumed that the westbound approach to the intersection will have an exclusive right-turn lane and a shared through/left-turn lane.

The City's capital projects for road improvements in the area also includes the upgrading of Bostwick Road between Pack Road and Wharncliffe Road (anticipated in 2027/2028); as well as a new roundabout connection at Pack Road and Bostwick Road to include the westerly extension of Bradley Avenue in 2028.

Figure 4.2 illustrates the future lane configuration and traffic controls.







4.2 2033 Background Traffic Operations

Figure 4.3 illustrates the 2033 background traffic volumes, including road traffic growth and other area development traffic.

It is noted that the northbound and southbound roadway volumes on Colonel Talbot Road are projected to exceed the two-lane roadway capacity (900 vph per lane) both north and south of Pack Road.

The 2033 background traffic volumes have been analyzed using the same methodology as under existing traffic conditions. Signal timings have not been optimized.

Table 4.1 summarizes the results of the 2033 background traffic operations. The results indicate that the study area intersections are forecast to operate at acceptable levels of service during the AM and PM peak hours, except for the following movements:

- ▶ Colonel Talbot Road and Pack Road
 - The westbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.93 during the AM peak hour and at LOS E with a v/c ratio greater than 1.00 during the PM peak hour;
 - The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM and PM peak hours;
 - 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 100 metres during the AM and PM peak hours;
 - The southbound shared through/right-turn movement is forecast to operate at LOS E with a v/c ratio greater than 1.00 during the PM peak hour;
- ▶ Colonel Talbot Road and Clayton Walk/Street 'N'
 - The eastbound 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 25 metres during the AM and PM peak hours;
 - The westbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour;
- ▶ Colonel Talbot Road and Diane Crescent/Royal Magnolia Avenue



- The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour; and
- 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 75 metres during the PM peak hour.

Appendix E contains the supporting detailed Synchro 12 reports.





AM Peak Hour

PM Peak Hour

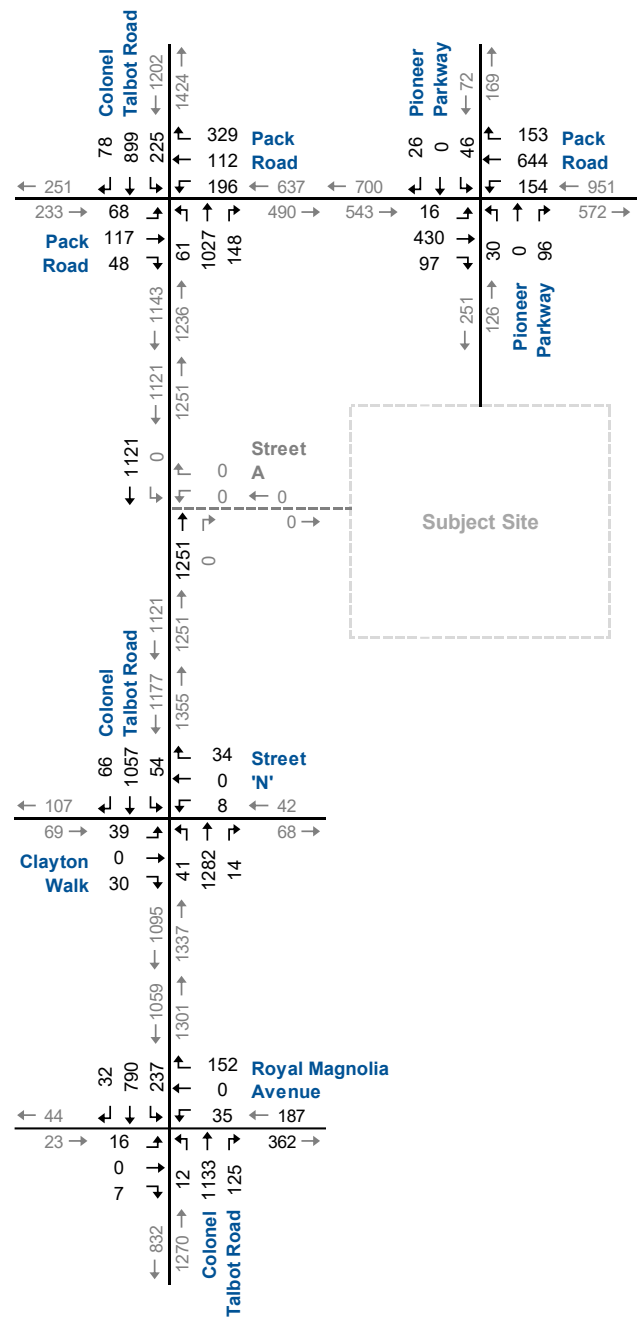
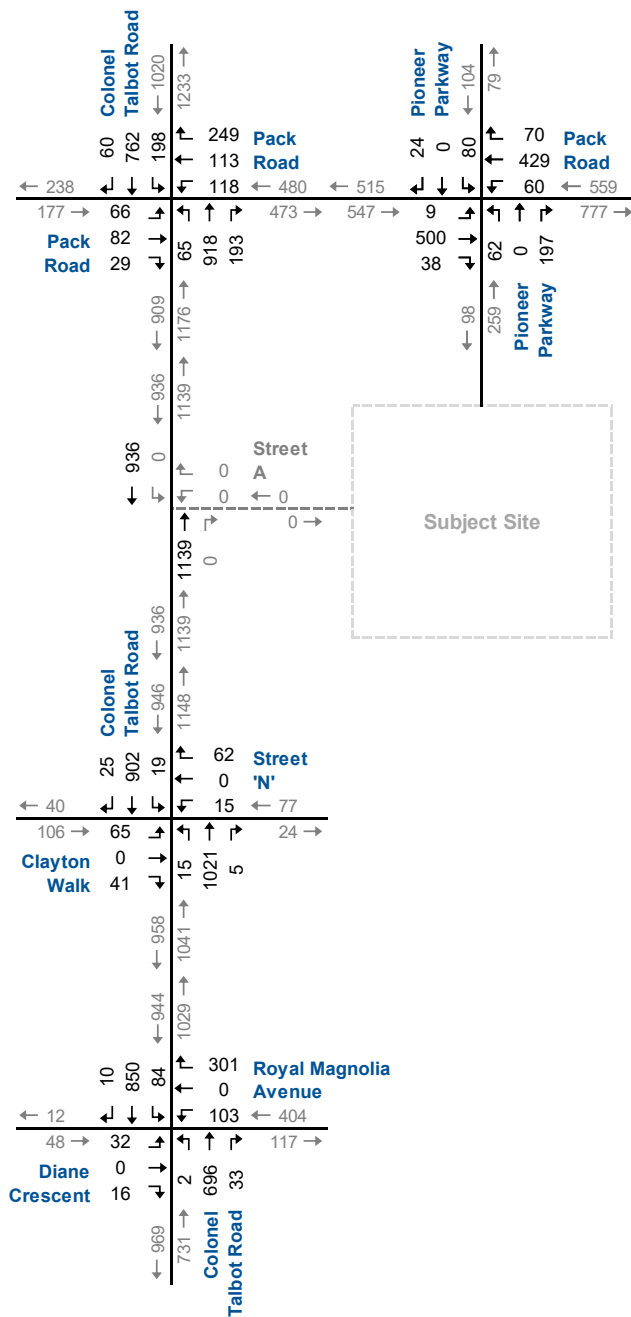


TABLE 4.1: 2033 BACKGROUND TRAFFIC OPERATIONS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	Overall
				Eastbound				Westbound				Northbound				Southbound					
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach		
AM Peak Hour	Colonel Talbot Road & Pack Road	TCS	LOS Delay V/C Q Stor. Avail.	D 49 0.62 15 40 25	C 22 0.24 8 - -	> > > > >	C 32	C 27 0.35 12 40 28	D 54 0.93 71 - -	> > > > >	D 48	D 43 0.44 14 65 51	F 139 1.25 370 - -	> > > > >	F 134	F 698 2.39 236 100 -136	C 27 0.89 43 - -	> > > > >	F 157	F 121	
	Colonel Talbot Road & Clayton Walk/Street 'N'	TWSC	LOS Delay V/C Q Stor. Avail.	F 1279 3.059 66.75 25.0 -	C 19 0.15 4 - -	> > > > >	F 792	< 136 0.86 36 - -	> > > > >	F 136	B 10 0.02 1 110 109	A > 0 &									

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 2033 Total Traffic Operations

The total traffic operations herein are analyzed to chronologically consider each Phase of the subject development (Phase 1 and Full Development). It is noted that Phase 1 of the subject lands have been previously approved by the City, and its inclusion here is to show the traffic impacts of each phase.

4.3.1 Phase 1

Figure 4.4a illustrates the 2033 total traffic volumes, including trips generated by Phase 1 of the subject lands.

The 2033 total traffic volumes, including Phase 1 of the subject lands, have been analyzed using the same methodology as under background traffic conditions. Signal timing splits have been optimized.

It is noted that the westbound (outbound) movement at Street A and Colonel Talbot Road is assumed to have exclusive left-turn and right-turn lanes.

Table 4.2a summarizes the results of the Phase 1 2033 total traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under 2033 background traffic conditions, with the following additional critical movements:

- ▶ Colonel Talbot Road and Pack Road
 - The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 40 metres during the PM peak hour;
 - The southbound shared through/right-turn movement is forecast to operate at LOS C with a v/c ratio of 0.91 during the AM peak hour;
- ▶ Colonel Talbot Road and Clayton Walk/Street 'N'
 - The westbound movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM peak hour;
- ▶ Colonel Talbot Road and Street A
 - The westbound (outbound) left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour. The same movement is also noted to operate at LOS F during the AM peak hour; and
- ▶ Pack Road and Pioneer Parkway



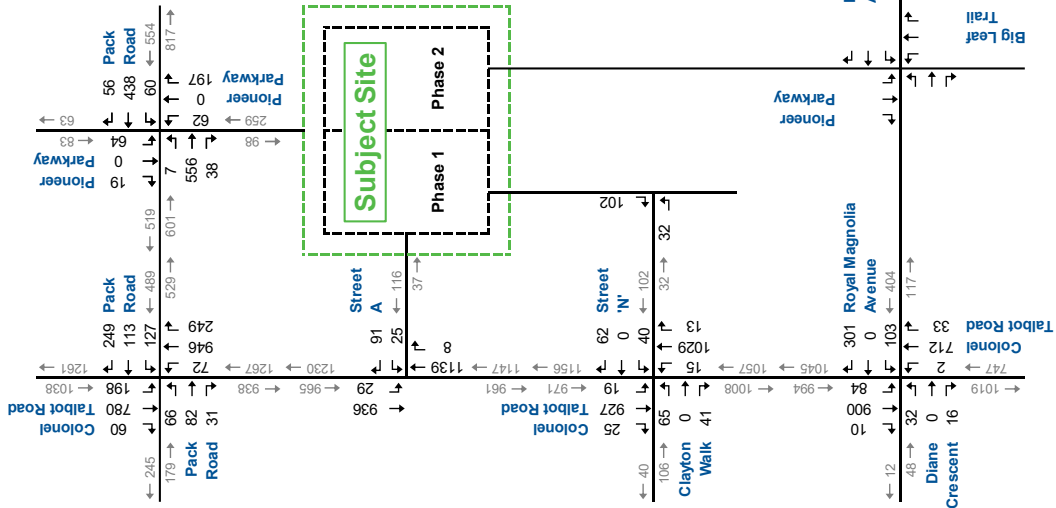
- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.91 and a 95th percentile queue length that exceed the existing storage of 30 metres during the AM peak hour.

Appendix F contains the supporting detailed Synchro 12 reports.





AM Peak Hour



PM Peak Hour

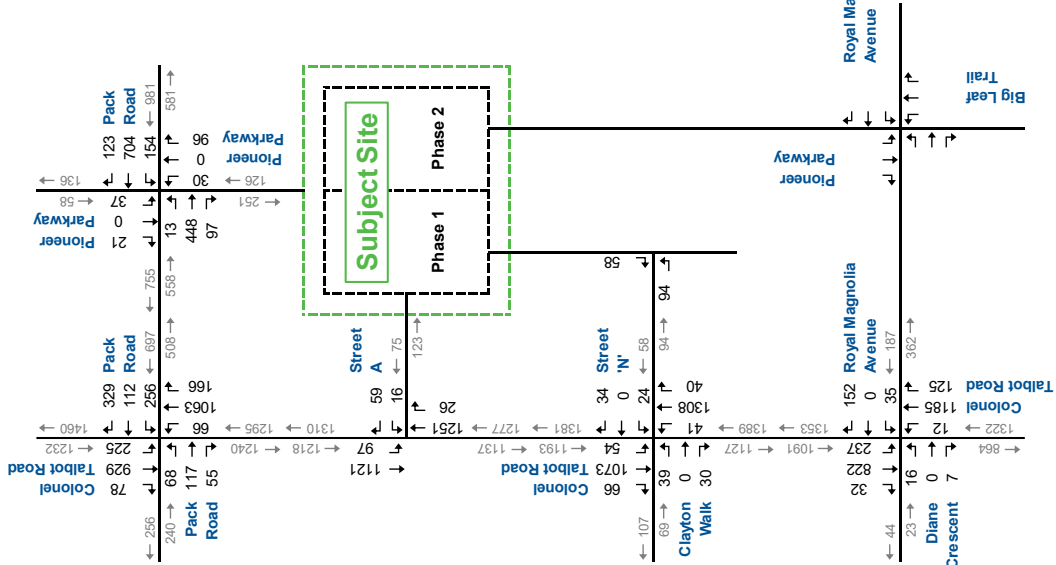


TABLE 4.2A: 2033 TOTAL TRAFFIC OPERATIONS (PHASE 1)

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	Colonel Talbot Road & Pack Road	TCS	LOS Delay V/C Stor. Avail.	D 49 0.62 15 40 25	C 22 0.24 9 - -	> > > > >	C 32	C 27 0.38 13 40 27	D 54 0.93 71 - -	> > > > >	D 48	D 49 0.52 17 65 48	F 184 1.35 508 - -	> > > > >	F 176	F 698 2.39 236 100 -136	C 29 0.91 50 - -	> > > > >	F 156	F 139	
	Colonel Talbot Road & Street A	TWSC	LOS Delay V/C Q					F 1730 0.76 20		E 36 0.46 16	F 397		A 0 0.00 0	> > > >	A 0	< < < <	B 12 0.06 2		A 0		
	Colonel Talbot Road & Clayton Walk/Street 'N'	TWSC	LOS Delay V/C Q Stor. Avail.	F 3252 3.271 68 25 -43	C 20 0.15 4 - -	> > > > >	F 1848	< < < < <	F 621 1.99 81 - -	> > > > >	F 1553	B 10 0.02 1 110 109	A 0 0.00 0 - -	> > > > >	A 0	B 11 0.03 1 45 44	A 0 0.00 0 - -	> > > > >	A 0		
	Colonel Talbot Road & Diane Crescent/Royal Magnolia Avenue	TCS	LOS Delay V/C Q Stor. Avail.	< < < < <	B 20 0.11 2 - -	> > > > >	B 20	< < < < <	C 21 0.25 6 - -	D 39 0.86 39 60 21	C 34	C 27 0.01 0 75 75	B 13 0.76 11 - -	> > > > >	B 13	C 22 0.33 5 75 70	C 24 0.92 46 - -	> > > > >	C 24	C 22	
	Pioneer Parkway & Pack Road	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.01 0 80 80	A 0 0.00 0 - -	> > > > >	A 0	A 9 0.07 2 15 13	A 0 0.00 0 - -	> > > > >	A 1	F 56 0.50 18 30 12	C 18 0.44 16 - -	> > > > >	D 27	F 173 0.91 35 30 -5	B 12 0.04 1 - -	> > > > >	F 136		
PM Peak Hour	Colonel Talbot Road & Pack Road	TCS	LOS Delay V/C Q Stor. Avail.	F 83 0.82 26 40 14	C 24 0.38 14 - -	> > > > >	D 40	D 51 0.85 54 40 -14	E 73 1.01 104 - -	> > > > >	E 65	F 91 0.80 28 65 37	F 159 1.30 457 - -	> > > > >	F 155	F 845 2.72 285 100 -185	E 66 1.07 158 - -	> > > > >	F 209	F 148	
	Colonel Talbot Road & Street A	TWSC	LOS Delay V/C Q					F 1730 2.544 24.75		E 36 0.36 11	F 397		A 0 0.00 0	> > > >	A 0	< < < <	B 14 0.21 6		A 1		
	Colonel Talbot Road & Clayton Walk/Street 'N'	TWSC	LOS Delay V/C Q Stor. Avail.	F 3252 5.979 51 30 -	C 24 0.15 4 - -	> > > > >	F 1848	< < < < <	F 1553 3.485 63 - -	> > > > >	F 1553	B 12 0.08 2 100 98	A 0 0.00 0 - -	> > > > >	A 0	B 14 0.13 3 45 42	A 0 0.00 0 - -	> > > > >	A 1		
	Colonel Talbot Road & Diane Crescent/Royal Magnolia Avenue	TCS	LOS Delay V/C Q Stor. Avail.	< < < < <	E 61 0.15 10 - -	> > > > >	E 61	< < < < <	E 60 0.18 14 - -	D 54 0.51 57 60 3	D 55	B 11 0.03 1 75 74	F 89 1.12 320 - -	> > > > >	F 88	F 176 1.18 130 75 -55	A 6 0.62 4 - -	> > > > >	D 43	E 67	
	Pioneer Parkway & Pack Road	TWSC	LOS Delay V/C Q Stor. Avail.	A 10 0.02 1 80 79	A 0 0.00 0 - -	> > > > >	A 0	A 9 0.17 4 15 11	A 0 0.00 0 - -	> > > > >	A 1	F 126 0.56 16 30 14	B 13 0.19 5 - -	> > > > >	E 40	F 206 0.82 26 30 4	C 15 0.06 2 - -	> > > > >	F 137		

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



4.3.2 Full Development

Figure 4.4b illustrates the 2033 total traffic volumes, including trips generated by both phases of the subject lands.

The 2033 total traffic volumes, including Phase 1 and Phase 2 of the subject lands, have been analyzed using the same methodology as under Phase 1 2033 total traffic conditions. Signal timing splits have been optimized.

Table 4.2b summarizes the results of the full development 2033 total traffic operations. The results indicate that the study area intersections are forecast to operate at similar levels of service as under Phase 1 2033 total traffic conditions, with the following additional critical movements:

- ▶ Colonel Talbot Road and Pack Road
 - The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.98 during the PM peak hour.
- ▶ Pioneer Parkway and Pack Road
 - 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 exceeding a storage of 30 metres during the PM peak hour; and
 - The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.97 during the PM peak hour.

It is noted that fewer than 50 site trips to/from the subject development are expected to use the Pioneer Parkway access at Pack Road. The site trips at the access are forecast to have an insignificant impact on intersection operations.

Appendix G contains the supporting detailed Synchro 12 reports.



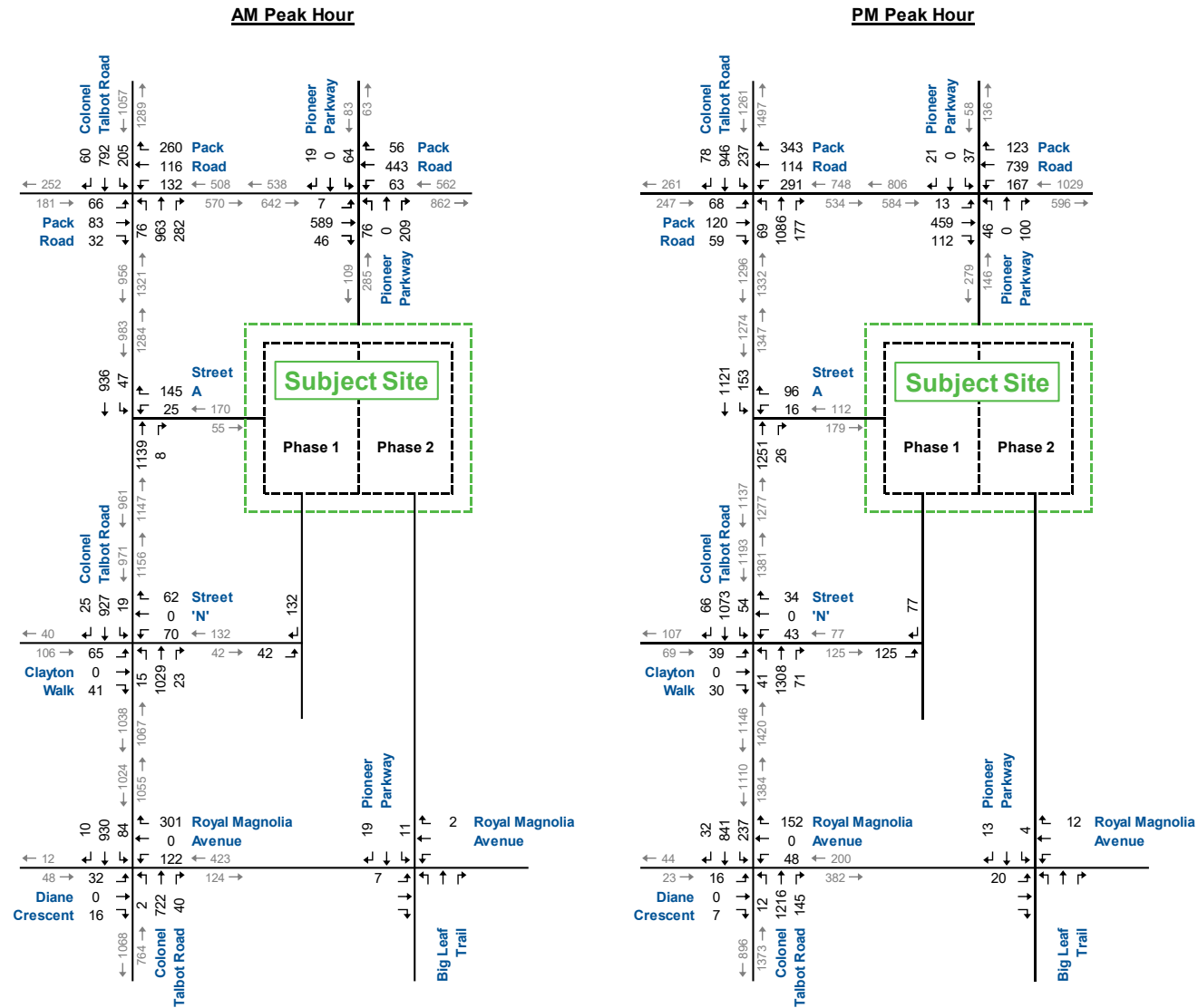


TABLE 4.2B: 2033 TOTAL TRAFFIC OPERATIONS (FULL DEVELOPMENT)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Colonel Talbot Road & Pack Road	TCS	LOS Delay V/C Stor. Avail.	E 59 0.70 18 40 22	C 22 0.25 9 - -	> > > > >	D 36	C 28 0.39 14 40 26	E 63 0.96 82 - -	> > > > >	D 54	D 54 0.58 20 65 45	F 211 1.42 595 - -	> > > > >	F 202	F 737 2.48 248 100 -148	C 30 0.92 55 - -	> > > > >	F 167	F 156
	Colonel Talbot Road & Street A	TWSC	LOS Delay V/C Q					F 314 0.89 23		F 58 0.74 38	F 96		A 0 0.00 0	> > >	A 0	< < <	B 12 0.09 2		A 1	
	Colonel Talbot Road & Clayton Walk/Street 'N'	TWSC	LOS Delay V/C Q Stor. Avail.	F 1400 3.28 68 25 -43	C 20 0.15 4 - -	> > > > >	F 866	< < < < <	F 1236 3.31 119 - -	> > > > >	F 1236	B 10 0.02 1 110 109	A 0 0.00 0 - -	> > > > >	A 0	B 11 0.03 1 45 44	A 0 0.00 0 - -	> > > > >	A 0	
	Colonel Talbot Road & Diane Crescent/Royal Magnolia Avenue	TCS	LOS Delay V/C Q Stor. Avail.	< < < < <	C 20 0.11 3 - -	> > > > >	C 20	< < < < <	C 22 0.30 8 - -	D 40 0.86 42 60 18	C 35	C 29 0.01 0 75 75	B 14 0.77 13 - -	> > > > >	B 14	C 23 0.34 6 75 69	C 28 0.94 59 - -	> > > > >	C 27	C 24
	Pioneer Parkway & Pack Road	TWSC	LOS Delay V/C Q Stor. Avail.	A 8 0.01 0 80 80	A 0 0.00 0 - -	> > > > >	A 0	A 9 0.08 2 15 13	A 0 0.00 0 - -	> > > > >	A 1	F 81 0.68 27 30 3	C 20 0.49 20 - -	> > > > >	E 36	F 250 1.09 41 30 -11	B 12 0.04 1 - -	> > > > >	F 196	
PM Peak Hour	Colonel Talbot Road & Pack Road	TCS	LOS Delay V/C Q Stor. Avail.	F 83 0.82 26 40 14	C 24 0.40 14 - -	> > > > >	D 40	E 79 0.98 83 40 -43	F 83 1.05 119 -> ->	> > > > >	F 81	F 97 0.83 30 65 35	F 175 1.33 512 -> ->	> > > > >	F 171	F 910 2.87 307 100 -207	E 72 1.09 177 -> ->	> > > > >	F 230	F 164
	Colonel Talbot Road & Street A	TWSC	LOS Delay V/C Q					F ⁽¹⁾ - 562.68 ⁽¹⁾ 0		F 50 0.59 24	F 1448 ⁽¹⁾		A 0 0.00 0	> > >	A 0	< < <	C 16 0.34 11		A 2	
	Colonel Talbot Road & Clayton Walk/Street 'N'	TWSC	LOS Delay V/C Q Stor. Avail.	F 3292 6.05 51 30 -21	C 24 0.15 4 - -	> > > > >	F 1871	< < < < <	F 2929 6.26 86 -> ->	> > > > >	F 2929	B 12 0.08 2 100 98	A 0 0.00 0 -> ->	> > > > >	A 0	B 14 0.13 3 45 42	A 0 0.00 0 -> ->	> > > > >	A 1	
	Colonel Talbot Road & Diane Crescent/Royal Magnolia Avenue	TCS	LOS Delay V/C Q Stor. Avail.	< < < < <	E 62 0.16 10 -> ->	> > > > >	E 62	< < < < <	E 61 0.25 20 -> ->	D 54 0.51 57 60 3	E 56	B 12 0.03 1 75 74	F 108 1.17 394 -> ->	> > > > >	F 107	F 176 1.18 130 75 -55	A 7 0.64 5 -> ->	> > > > >	D 43	E 76
	Pioneer Parkway & Pack Road	TWSC	LOS Delay V/C Q Stor. Avail.	A 10 0.02 1 80 79	A 0 0.00 0 - -	> > > > >	A 0	A 10 0.19 5 15 10	A 0 0.00 0 -> ->	> > > > >	A 2	F 262 1.01 33 30 -3	B 14 0.21 6 -> ->	> > > > >	F 92	F 278 0.97 28 30 2	C 16 0.07 2 -> ->	> > > > >	F 183	

¹ Based on HCM 2000 due to the limitations of HCM 7th Edition

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 OTM Signal Warrant

The requirement for traffic signal control at the future intersection of Colonel Talbot Road and Street A was assessed using the Ontario Traffic Manual (OTM) signal warrant guidelines¹². The assessment was undertaken under 2033 total traffic conditions.

Based on the warrant analysis, traffic signal control is not identified as warranted under 2033 total traffic conditions at the intersection of Colonel Talbot Road and Street A.

Appendix H contains the warrant analysis worksheet.

4.5 Left-Turn Lanes

The need for an auxiliary southbound left-turn lane on Colonel Talbot Road at the proposed Street 'A' access was assessed based on the requirements and procedures detailed in the Ministry of Transportation Design Supplement for the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads¹³. The assessment is based on the nomographs for left-turn lanes on a two-lane undivided highway at an unsignalized intersection with a design speed of 10 kilometres per hour over the posted speed limit (70 km/h).

Based on these criteria, a southbound left-turn lane on Colonel Talbot Road at the proposed Street 'A' access is identified as warranted with 40 metres of storage under 2033 total traffic conditions.

As noted earlier, the northbound and southbound roadway volumes on Colonel Talbot Road are projected to be higher than the two-lane roadway capacity (900 vph per lane) and, therefore, exceed the limit of the nomographs as well.

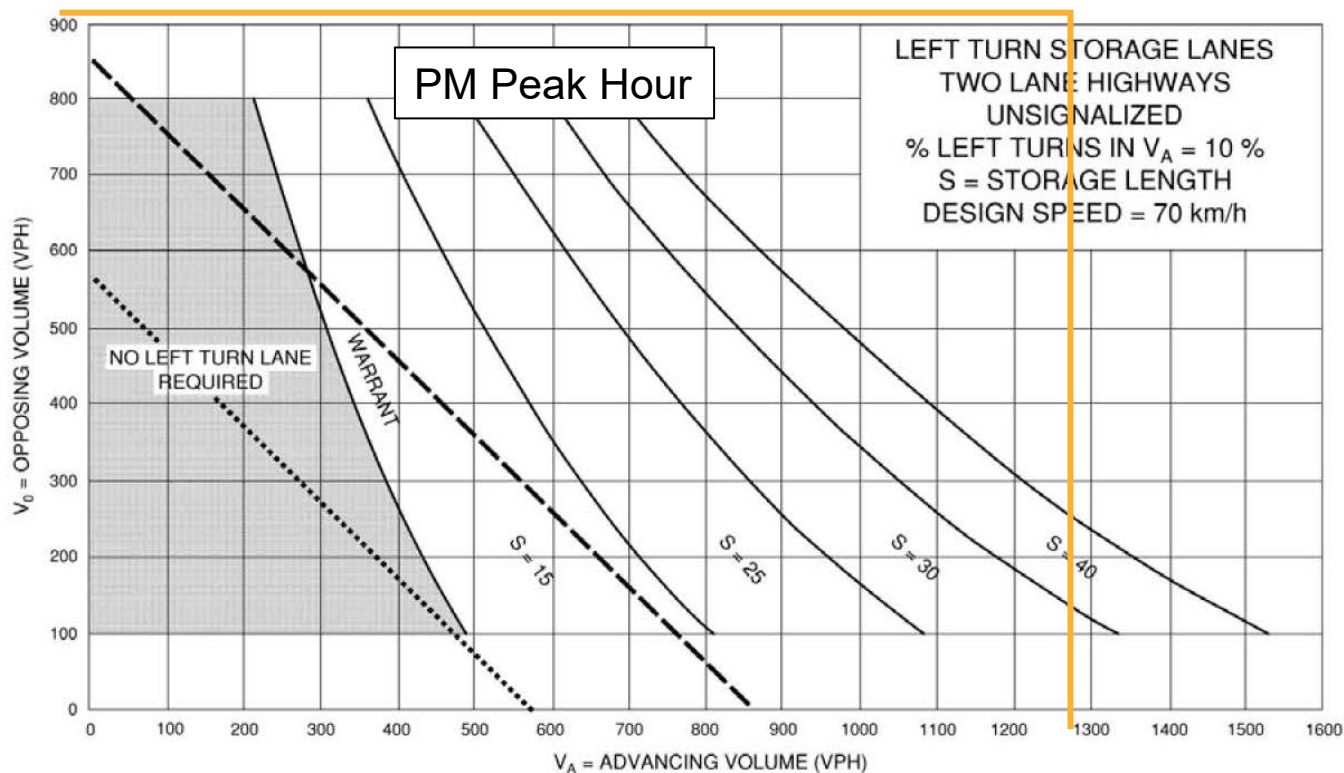
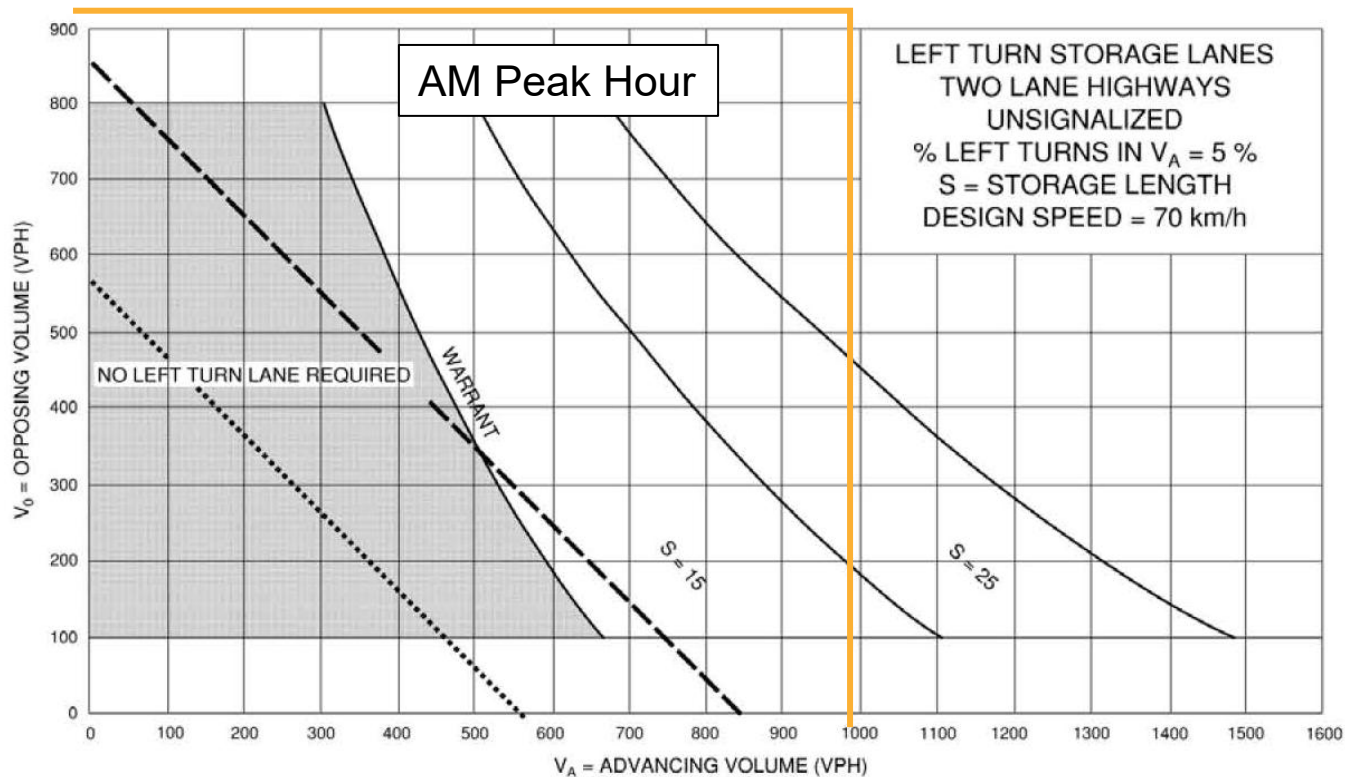
The southbound (inbound) shared through/left-turn movement at Colonel Talbot Road and Street A is noted to operate at LOS C and a v/c ratio of 0.34 during the PM peak hour under 2033 total traffic conditions.

Figure 4.5 contains the warrant nomographs.

¹² Ontario Traffic Manual, Book 12: Traffic Signals.

¹³ MTO Design Supplement for TAC Geometric Design Guide for Canadian Roads, October 2023.





5 Transportation Demand Management

The proposed development is located near the south-westerly limits of the City. There is no convenient transit service close to the site. Sidewalks are provided on the west side of Colonel Talbot Road and on Pack Road. Additionally, a multi-use trail is provided along the east side of Colonel Talbot Road.

The site design should provide for internal walkways and provisions for bicycle parking which can be connected to the existing and future active transportation infrastructure including both on-street facilities and off-street trails.



6 Conclusions

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

- ▶ **Existing Traffic Conditions:** The study area intersections are currently operating at acceptable levels of service.
- ▶ **Subdivision Trip Generation:** Phase 1 of the subdivision is forecast to generate 186/240 trips during the AM and PM peak hours, and Phase 2 is forecast to generate 188/240 trips during the AM and PM peak hours.

As outlined in **Section 3.4**, Phase 2 development traffic volumes are noted to be moderate additions to roadway traffic in one direction during either peak hour.

- ▶ **2033 Background Traffic Conditions:** The north-south roadway traffic volumes on Colonel Talbot Road are projected to exceed the two-lane roadway capacity (900 vph per lane) both north and south of Pack Road.

The study area intersections are noted to include the following critical movements:

Colonel Talbot Road and Pack Road

- The westbound shared through/right-turn movement is forecast to operate at LOS D with a v/c ratio of 0.93 during the AM peak hour and at LOS E with a v/c ratio greater than 1.00 during the PM peak hour;
- The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the AM and PM peak hours;
- 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 100 metres during the AM and PM peak hours;
- The southbound shared through/right-turn movement is forecast to operate at LOS E with a v/c ratio greater than 1.00 during the PM peak hour;

Colonel Talbot Road and Clayton Walk/Street 'N'

- The eastbound 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 25 metres during the AM and PM peak hours;



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

Colonel Talbot Road and Diane Crescent/Royal Magnolia Avenue

- The northbound shared through/right-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour; and
- 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 75 metres during the PM peak hour.

► **2033 Total Traffic Conditions:**

- **Phase 1**

The study area intersections are forecast to operate at deteriorating levels of service for the critical movements as noted under 2033 background traffic conditions, and with the following additional critical movements:

Colonel Talbot Road and Pack Road

- The 95th percentile queue length of the westbound left-turn movement is projected to exceed the existing storage of 40 metres during the PM peak hour;
- The southbound shared through/right-turn movement is forecast to operate at LOS C with a v/c ratio of 0.91 during the AM peak hour;

Colonel Talbot Road and Clayton Walk/Street 'N'

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

Colonel Talbot Road and Street A

- The westbound (outbound) left-turn movement is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the PM peak hour. The same movement is also noted to operate at LOS F during the AM peak hour; and

Pack Road and Pioneer Parkway

- The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.91 and a 95th percentile queue length that exceed the existing storage of 30 metres during the AM peak hour.

- **Full Development (Phase 1 & Phase 2)**



Under full development (Phase 1 and Phase 2), the study area intersections are forecast to operate at similar levels of service as under Phase 1 2033 total traffic conditions, with the following additional critical movements:

Colonel Talbot Road and Pack Road

- The westbound left-turn movement is forecast to operate at LOS E with a v/c ratio of 0.98 during the PM peak hour.

Pioneer Parkway and Pack Road

- 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 exceeding a storage of 30 metres during the PM peak hour; and
 - The southbound left-turn movement is forecast to operate at LOS F with a v/c ratio of 0.97 during the PM peak hour.
- **Site Access:** The Colonel Talbot Road and Street A intersection is noted to operate with high delays and v/c ratios for outbound traffic during the AM and PM peak hours. A southbound left-turn lane with 40-metre storage is identified as warranted under 2033 total traffic conditions.
- **Summary of Impact Assessment:** Capacity constraints are noted at the three Colonel Talbot intersections under 2033 background and total traffic conditions analysed in this study. The issues are primarily due to the increases in study area development traffic volumes and the existing two-lane cross-section on Colonel Talbot Road. The projected traffic volumes could be accommodated within a four-lane cross-section on Colonel Talbot Road.



Appendix A

Pre-Study Consultation



Appendix B

Existing Traffic Data



Appendix C

Base Year Traffic Operations Reports



Appendix D

Background Development Traffic Volumes



Appendix E

2033 Background Traffic Operations Reports



Appendix F

2033 Total Traffic Operations Reports (Phase 1)



Appendix G

2033 Total Traffic Operations Reports (Full Development)



Appendix H

OTM Signal Warrant

