540 King Street East Development

Urban Transportation Considerations

Prepared For: Sunnyside Village Inc.

March 2022

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1.0 INTRODUCTION

BA Group has been retained by Sunnyside Village Inc. to provide transportation advisory services in relation to the proposed development at 540 King Street East in the Town of Cobourg (herein referred to as 'the site'). The site is generally located between Maplewood Boulevard to the west and Normar Road to the east along King Street East. The project is a residential development in Cobourg located approximately one kilometre north of the Lake Ontario waterfront.

The site location is illustrated in Figure 1.

1.1 PROPOSED DEVELOPMENT

The proposed development consists of 89 detached, semi-detached, townhouses and mixed-use units served by access to King Street East. The site will have a small mixed-use component integrated within the residential buildings fronting King Street. Primary site access to the proposed development is provided to/from King Street East via a private road network. Secondary access is also provided to/from King Street via the future road allowance. A detailed site plan is illustrated in Figure 2 and in **Appendix A**.

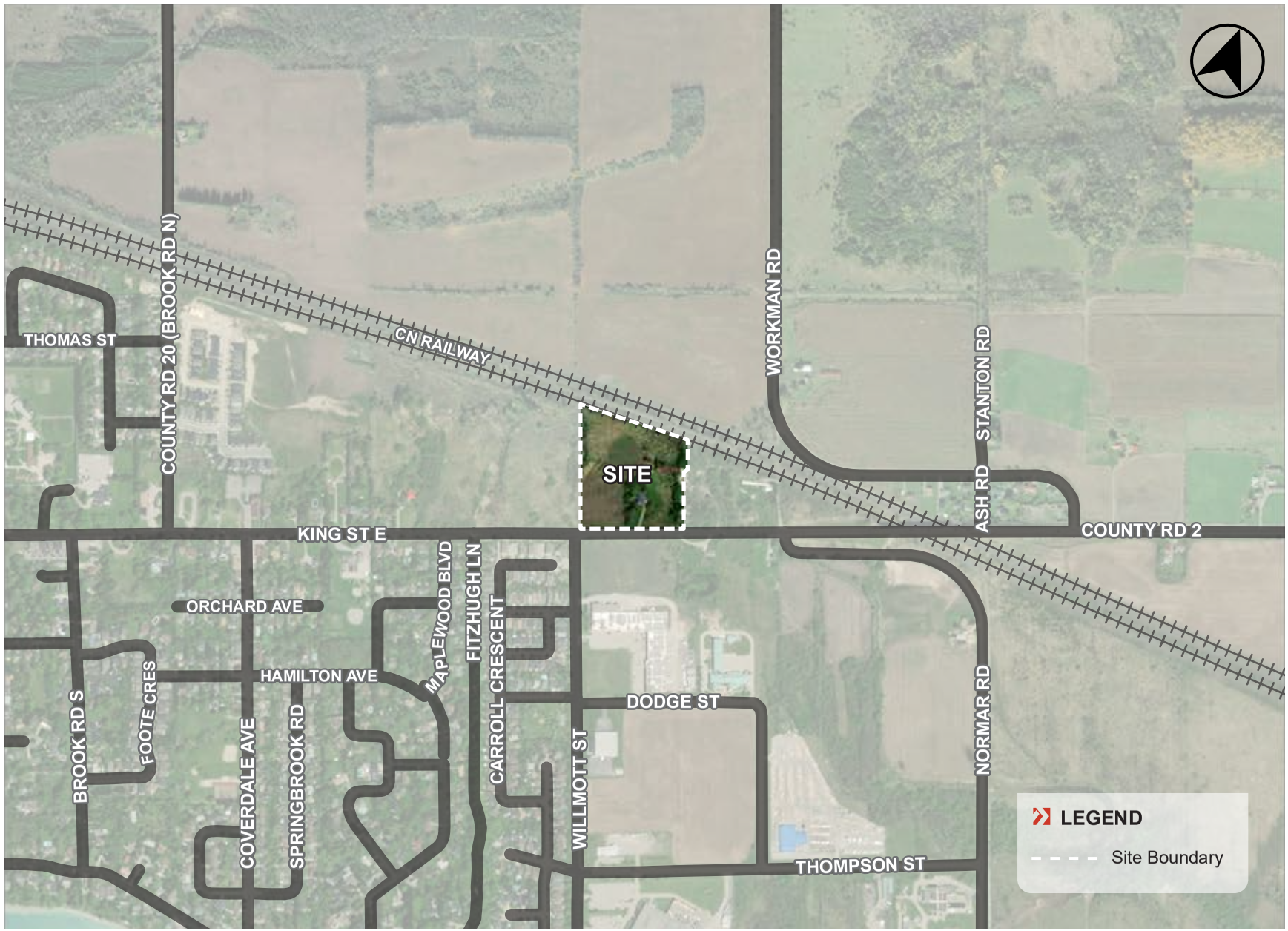

FIGURE 1 SITE LOCATION

FIGURE 2 SITE PLAN

2.0 TRANSPORTATION CONTEXT

2.1 ROAD NETWORK

Existing lane configurations and traffic control are illustrated in Figure 3. The existing road network and future road network and classifications are illustrated in Figure 4 and briefly described below.

King Street East (County Road 2) is an existing arterial road (in the Town's jurisdiction adjacent to the site) that runs west-east along the southern boundary of the site. King Street East transitions to County jurisdiction east of the site and is otherwise named County Road 2 outside of the Town boundary. It has a two-lane cross-section with auxiliary turn lanes at major intersections. Next to the site, there are on-road bike lanes in both directions along King Street East. The posted speed limit on the road is 60 km / hour.

The Town of Cobourg's Transportation Master Plan (TMP) identifies King Street East for a planned widening to a 4-lane cross-section by 2021-2031 with a planned "pedestrian\bike path in the long term".

The County TMP identifies King Street East as a potential candidate for uploading into the jurisdiction of the County of Northumberland.

The active transportation and road network improvements identified in the TMP are provided in **Appendix B**.

Willmott Street is a local collector road that runs north-south extending south from King Street East, where it terminates at an intersection with Normar Road after approximately 1.8 kilometres. It has a two-lane cross-section, with "share-the-lane" signage for vehicles and bicycles. The posted speed limit on the road is 50 km / hour.

The Town of Cobourg's TMP identifies protection of land for a future road allowance to the north of King Street that would extend Willmott Street as an arterial in the 2031+ horizon. The land is to be protected for the future extension and grade separated crossing for vehicles and active transportation facilities at the CN railway.

Maplewood Boulevard is a local road with a two-lane cross-section running north-south, extending south from King Street East into a residential zone.

Fitzhugh Lane is a private lane running north-south, extending south from King Street East terminating with a number of detached homes.

Normar Road is a local road with a two-lane cross-section running from north-south, extending south from King Street East. The posted speed limit is 50 km / hour.

FIGURE 3 EXISTING LANE CONFIGURATION & TRAFFIC CONTROL

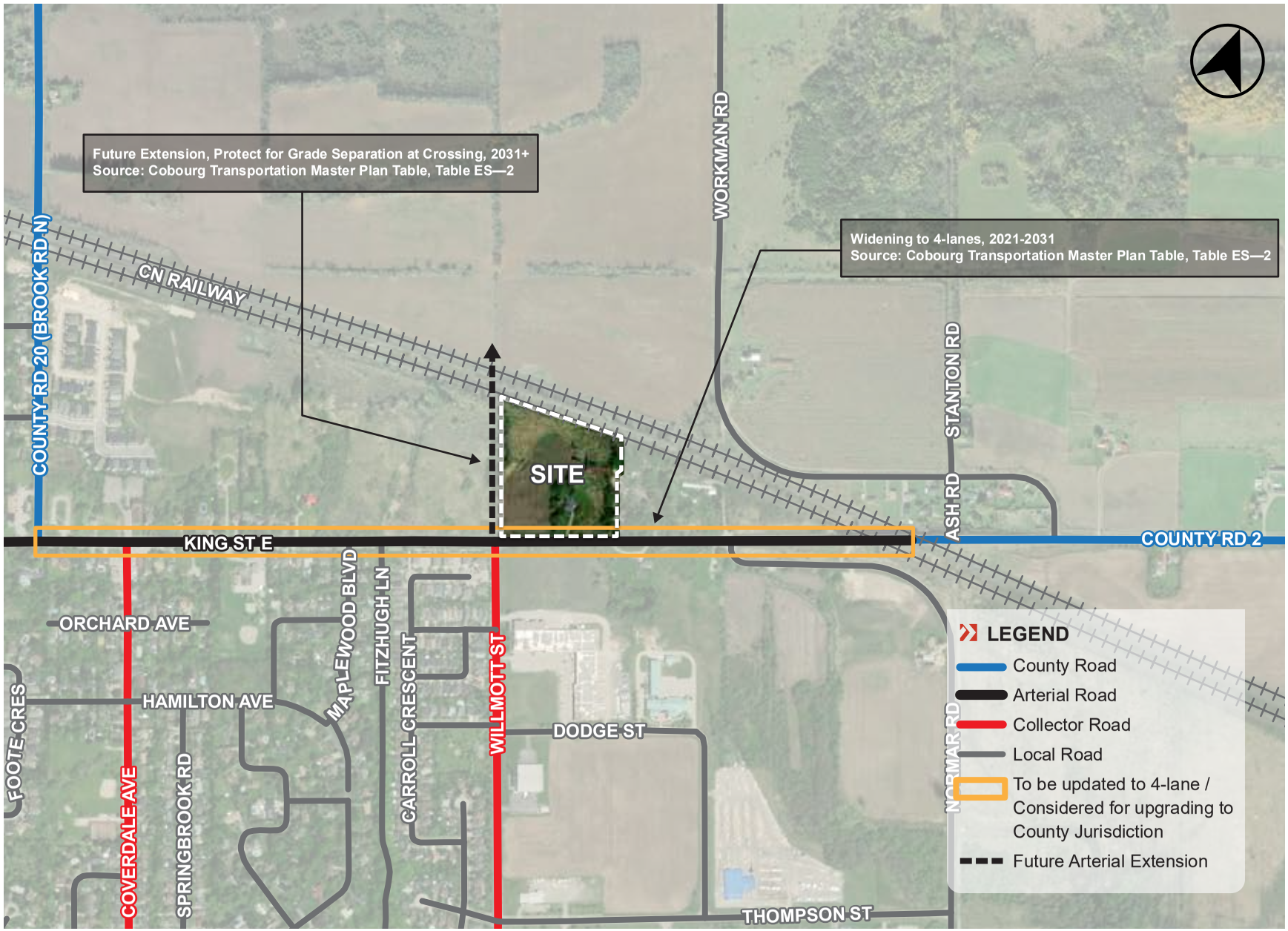

FIGURE 4 EXISTING AND FUTURE ROAD CLASSIFICATIONS

2.2 ACTIVE TRANSPORTATION NETWORK

The existing active transportation network is illustrated in Figure 5. Future improvements outlined by the Town of Cobourg TMP and the County of Northumberland TMP are illustrated in Figure 6.

2.2.1 Existing Active Transportation Network

The Town of Cobourg has a variety of active transportation facilities, varying from boulevard pathways, signed-only routes, paved shoulders, and on-road bicycle lanes. The site is located 1 km from the waterfront.

The Waterfront Trail runs along King Street East from Maplewood Boulevard to Willmott Street, before turning south along Willmott Street; and continues along King Street East from Normar Road to the town's eastern boundary. Two cycling routes outlined in the Northumberland Cycling Master Plan also run along King Street East through the study area: the Rice Lake Ramble and the Shelter Valley Road cycling routes.

King Street East has on-road bike lanes running in both directions within the entire study area as well as a sidewalk on its southern side. Willmott Street is signed as "share-the-road" for vehicles and cyclists and has a sidewalk on the west side of the street.

2.2.2 Future Active Transportation Network

The TMP outlines long term planned pedestrian\bicycle paths along King Street East and Willmott Street, and establishes potential for active transportation facilities along the extension of Willmott to the north.

2.3 TRANSIT NETWORK

The existing site transit context is illustrated in Figure 7.

Within the boundary of the site, Cobourg Transit operates a single one-hour route that runs from 6:15 AM to 7:45 PM on weekdays, 8:15 AM to 6:45 PM on Saturdays, and 8:45 AM to 3:45 PM on Sundays. There are existing local bus stops at the Maplewood Boulevard and King Street East intersection and approximately 150 metres south of the Willmott Street and King Street East intersection.

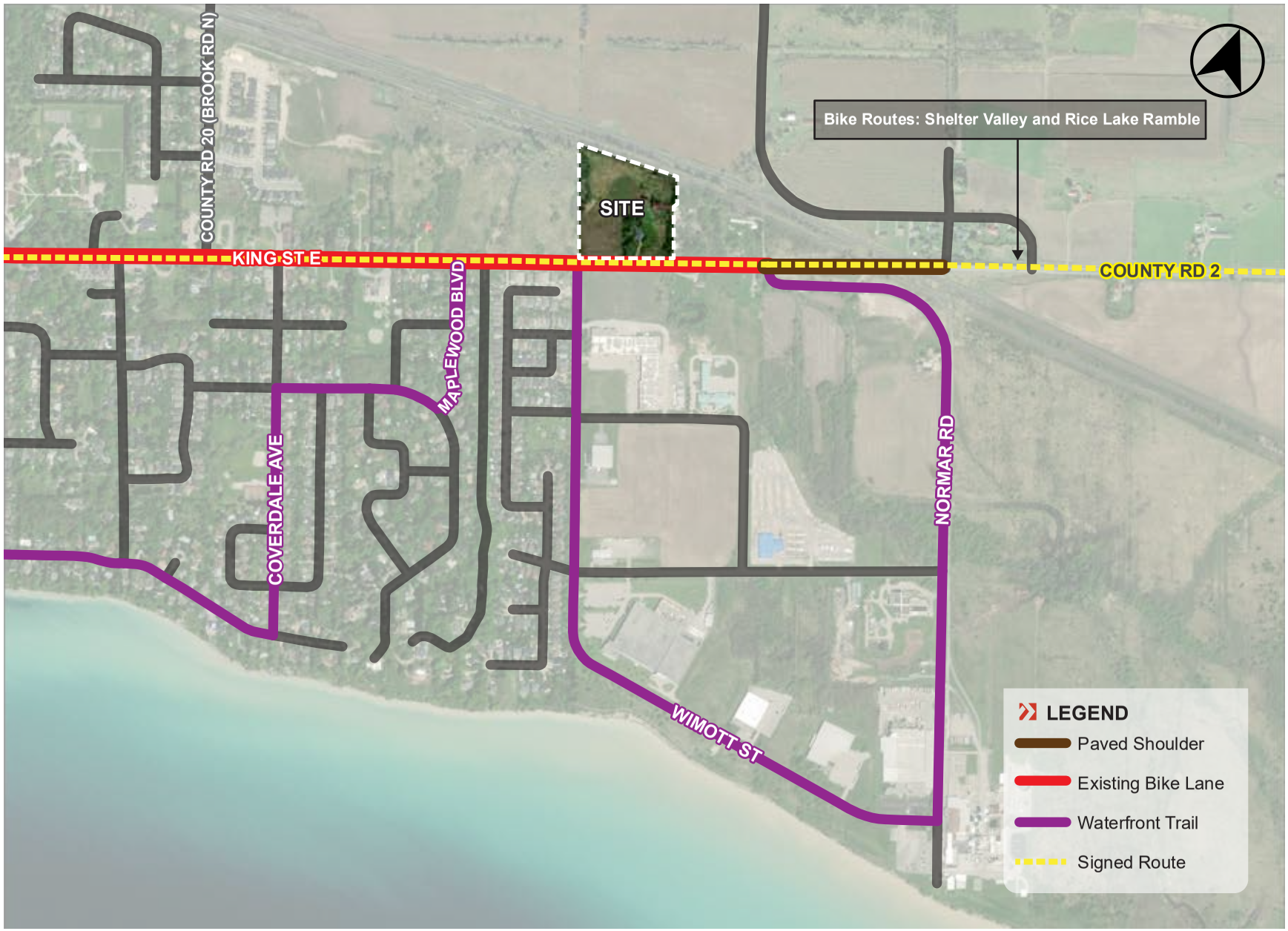

FIGURE 5 EXISTING ACTIVE TRANSPORTATION

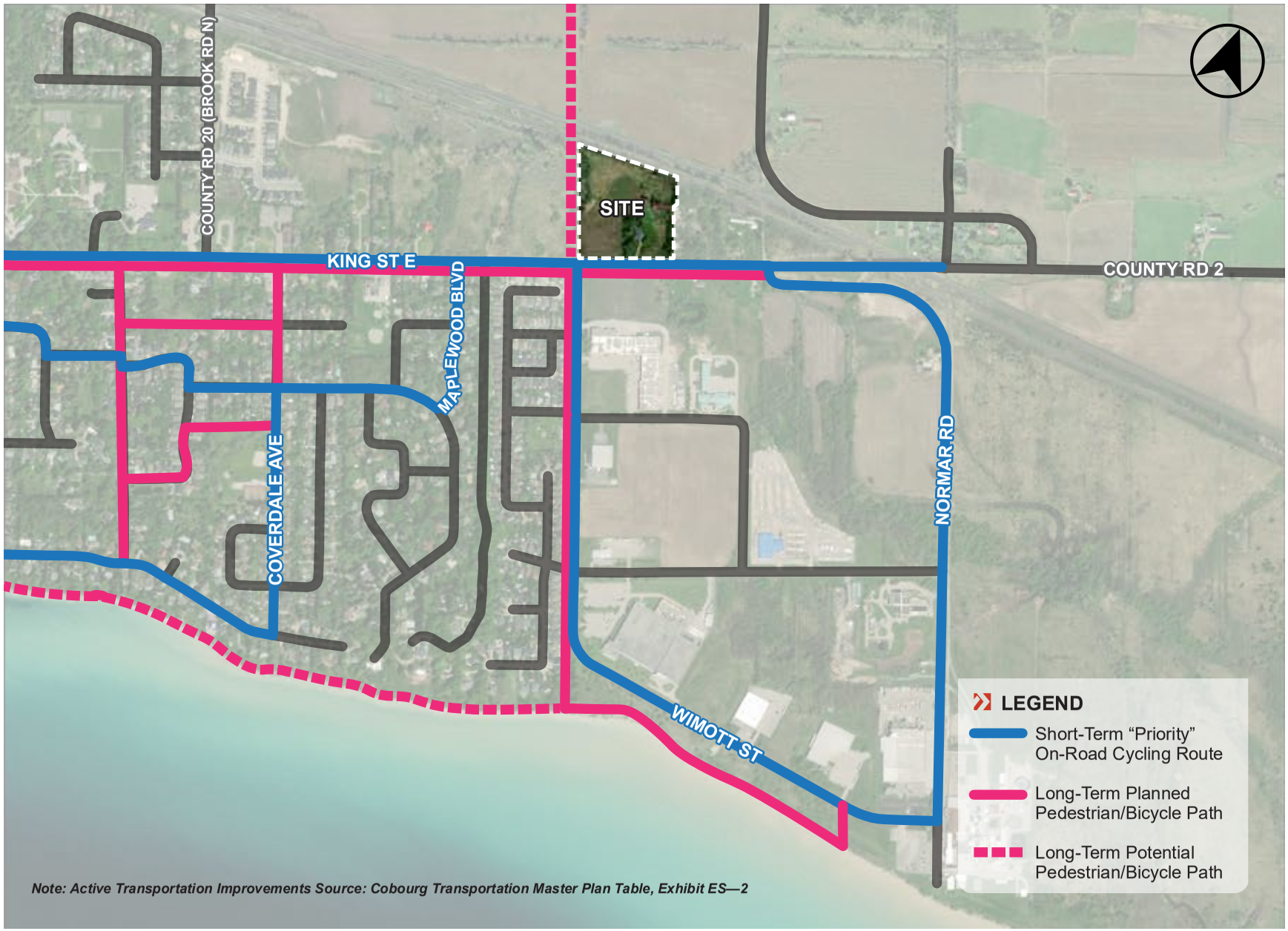

FIGURE 6 PLANNED ACTIVE TRANSPORTATION

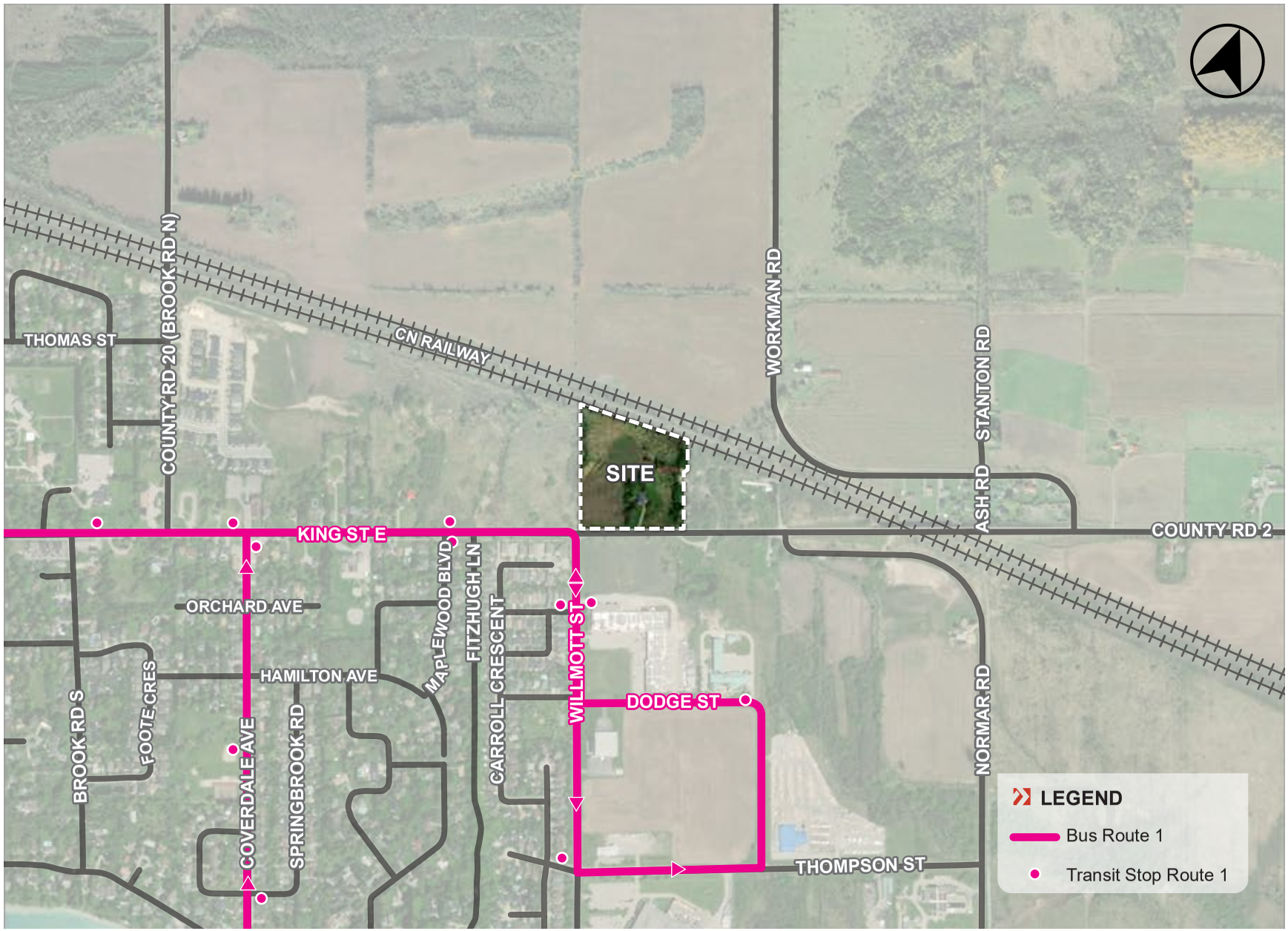

FIGURE 7 EXISTING TRANSIT NETWORK

3.0 TRAFFIC VOLUME PROJECTIONS

3.1 SCOPE

For the purpose of this study a 5-year horizon (2027), assuming construction and occupancy of the development. As such, analysis has been completed for the following scenarios during the AM and PM peak hour:

- Existing Traffic Conditions
- 5-year Future Background Traffic Conditions (2027)
- 5-year Future Total Traffic Conditions (2027)

Intersections included within the analysis study area are listed below:

- Maplewood Boulevard / King Street East
- Apartment Driveway / King Street East
- Willmott Street / King Street East
- Site Entrance / King Street East

3.2 EXISTING TRAFFIC CONDITIONS

BA Group obtained existing turning movement counts from LEA Consulting that were conducted on Tuesday, November 5, 2019 (pre-COVID-19 shutdowns) for the adjacent 545 King Street East Commercial site traffic study submitted by LEA Consulting to the Town in December 2019.

In order to compare and validate LEA's data, BA Group retained Spectrum Data Services to conduct peak hour turning movement counts at the same locations on Thursday, February 24, 2022. Counts conducted in February of 2022 have comparable turning movement volumes to 2017, while through volumes along King Street are generally 10% and 30% lower than 2017, in the morning and afternoon peak direction through movements, respectively. This difference from 2017 may be in relation to the ongoing changes to typical peak hour travel during the COVID-19 pandemic.

The higher 2017 volumes have subsequently been adopted as the existing counts for this study. Existing traffic volumes are illustrated in Figure 8.

TABLE 1 EXISTING TRAFFIC DATA SOURCES

Intersection	Count Date	Source
King Street East / Maplewood Boulevard (Unsignalized)	Tuesday, November 5, 2019 & Thursday, February 24, 2022	LEA Consulting[1] & Spectrum Data Services
King Street East / Fitzhugh Lane (Unsignalized)		
King Street East / Willmott Street (Unsignalized)		

Notes:
1. Source: 545 King Street East Transportation Impact Study, December 2019

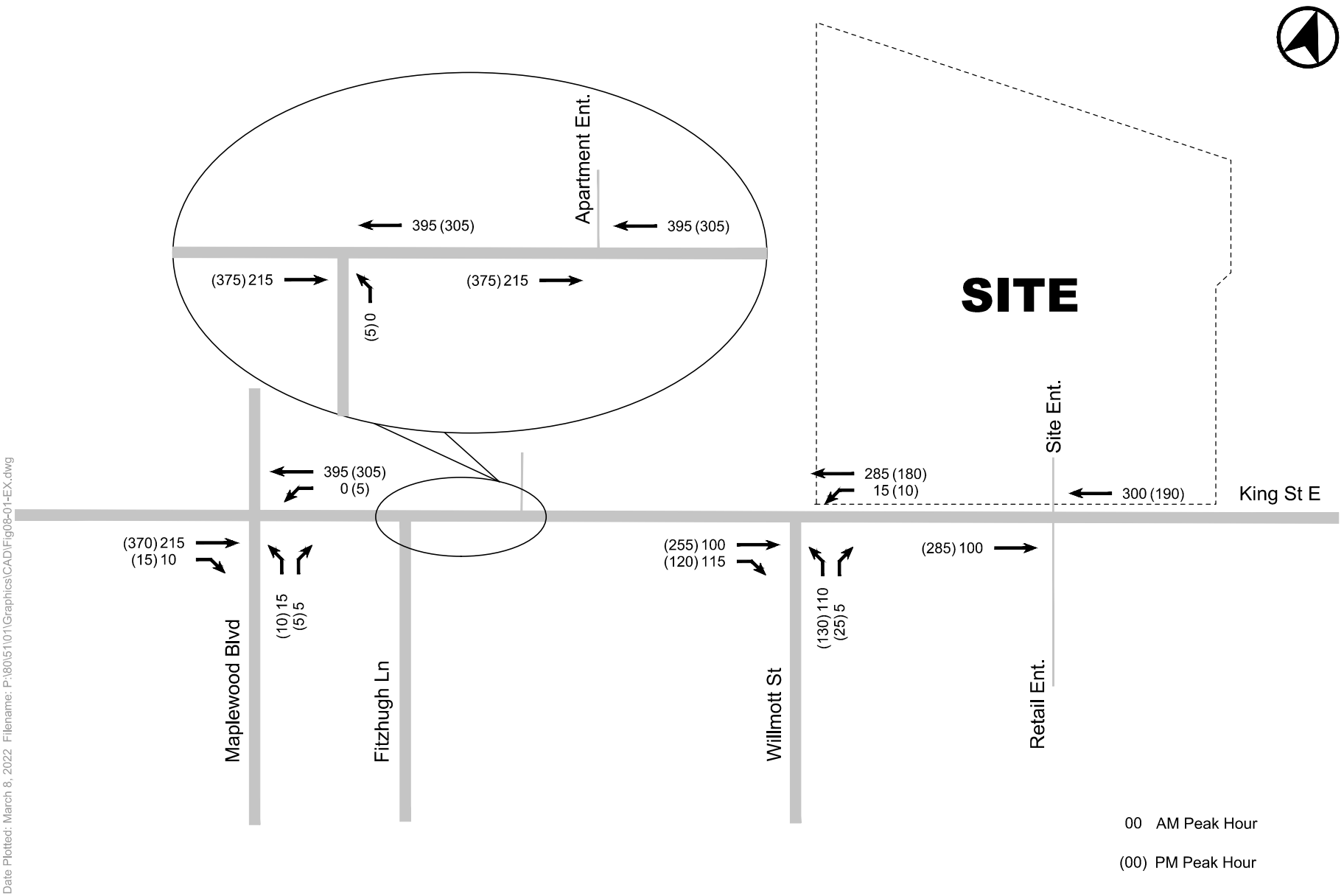

FIGURE 8 EXISTING TRAFFIC VOLUMES

3.3 FUTURE BACKGROUND TRAFFIC CONDITIONS

A comprehensive series of specific allowances have been made for net new traffic activity related to development proposals in the area that are approved but not yet built or are in process with the Town.

A total of 11 development projects were considered based upon active development applications and areas of development identified in the Town's Transportation Master Plan. These developments are identified as illustrated in Appendix C and specific traffic studies for developments that are not yet built or are under construction and not yet occupied are listed in Table 2, where the source of site traffic estimates are also listed.

Net site traffic volumes related to each of these development proposals have been incorporated into the future background traffic volumes established as part of this study based upon the forecasts provided within the submitted or approved traffic impact studies undertaken as part of the approvals.

Phase 3-4 of the background development called East Village does not have a published traffic impact study. BA group estimated site traffic for these phases according to ITE trip generation rates.

Future background traffic volumes are summarized in Figure 9.

TABLE 2 BACKGROUND DEVELOPMENT DETAILS

Location	Type	Development Description	Trip Generation / Assignment Source
425 King Street East[2]	Residential	27 residential units	Report prepared by Paradigm (dated February 2018)
East Village Residential Development Phase 5[2]	Residential	575 residential units	Report prepared by Transplan Associated (dated December 2018)
East Village Residential Development Phase 3-4[1]	Residential	149 residential units	Currently under construction, Phase 3-4 estimates for trip generation
428-432 King Street East	Retail	1,239 m^2	Report prepared by CGE Transportation Consulting (dated March 2020)
545 King Street East	Retail	5,163 m^2	Report prepared by LEA Consulting (dated December 2019)

Notes:
1. BA group estimated site traffic for these phases according to ITE trip generation rates.

3.3.1 Corridor Growth

Area specific development includes site specific development applications, including a review of those adopted in the growth projections in the Town's TMP. A corridor rate of 2% per annum was also applied to King Street East to the year 2027. Site-specific development accounts for approximately 8-10% average annual corridor growth. Given the level of area specific growth, already accounted for that's already anticipated in the TMP, the 2% corridor growth rate that has been applied is considered a conservative assumption in addition to site specific development. Future background traffic volumes are presented in Figure 9.

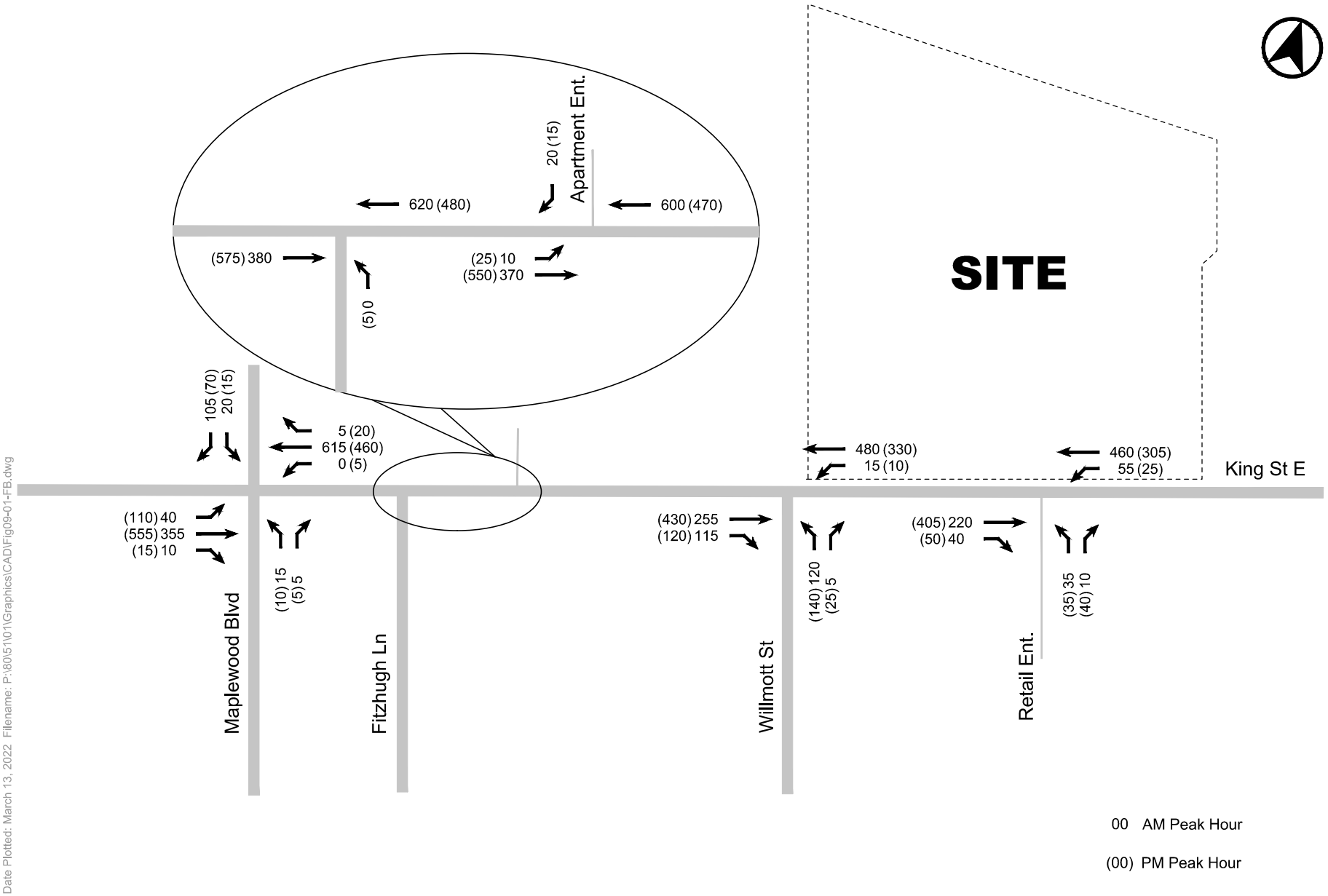

FIGURE 9 FUTURE BACKGROUND TRAFFIC VOLUMES

3.4 SITE TRAFFIC FORECASTS

3.4.1 Base Vehicle Trip Generation Rates

Trip generation potential for the residential uses within the site (540 King Street East) was estimated based on data provided by the ITE Trip Generation Manual (11th Edition). Table 3 provides a summary of the vehicle trip generation projected for the site.

At the full build-out of the site in 2026, the site is expected to generate a total two-way site trips of **50** in the AM peak hour and **55** in the PM peak hour.

TABLE 3 VEHICLE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
Single-Family Detached Housing (6 Units)						
Rate (vehicle trips per dwelling unit)	0.20	0.55	0.75	0.63	0.36	0.99
Trips (vehicle trips per hour)	1	3	4	4	2	6
Single Family Attached Housing (83 units)						
Rate (vehicle trips per dwelling unit)	0.14	0.41	0.55	0.38	0.23	0.61
Trips (vehicle trips per hour)	12	34	46	32	19	51
Adopted Total Trips (Rounded)	**15**	**35**	**50**	**35**	**20**	**55**

3.4.2 Vehicle Trip Distribution

Trip distribution is based on the observed existing distribution of residential traffic at King Street / Coverdale Avenue and summarized in Table 4.

TABLE 4 SITE TRAFFIC DISTRIBUTION

Street	Direction	Inbound		Outbound	
		AM	PM	AM	PM
King Street East	West	90%	90%	95%	85%
	East	10%	10%	5%	15%

Site Traffic on the road network is presented in Figure 10 and future total traffic volumes are presented in Figure 11.

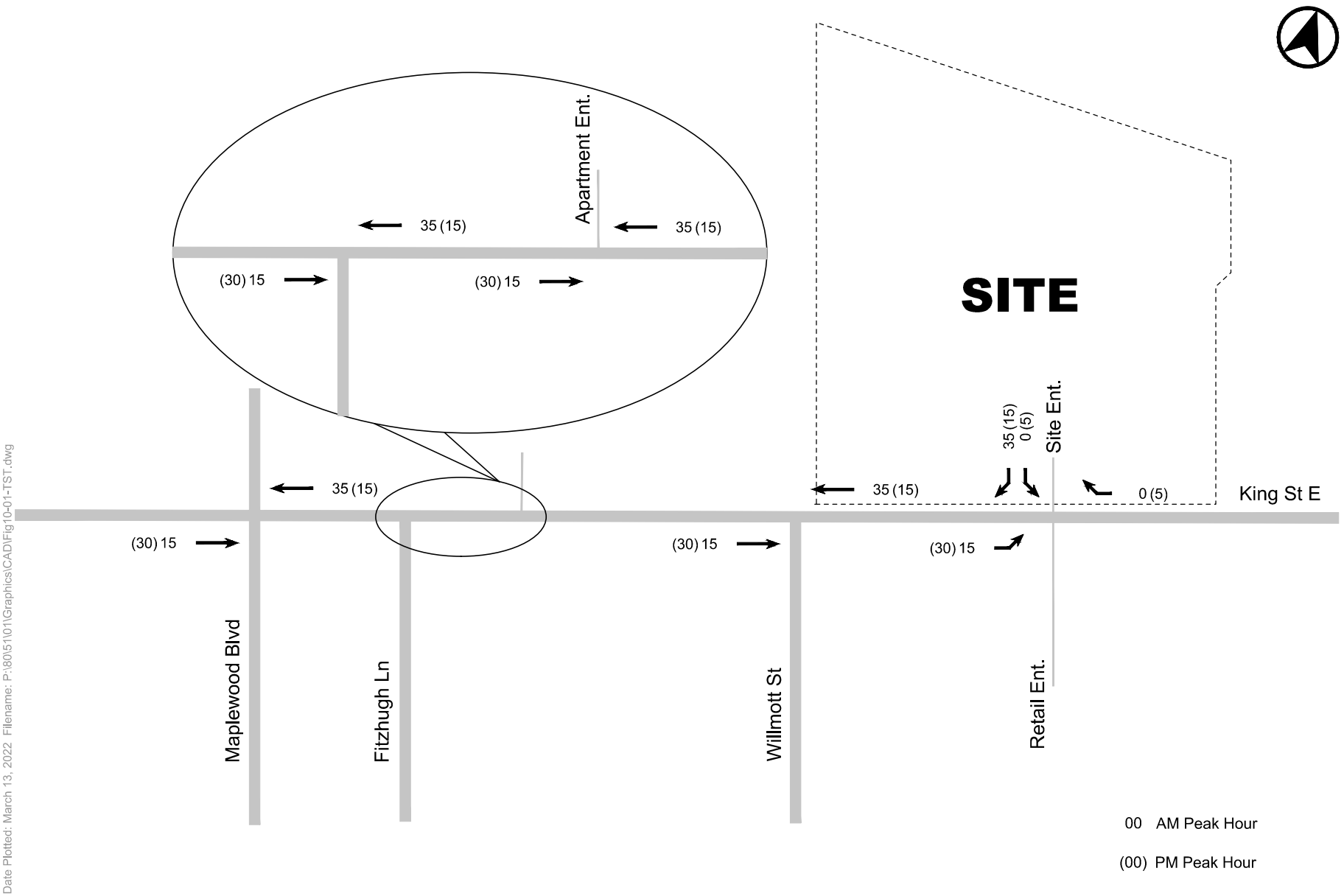

FIGURE 10 TOTAL SITE TRAFFIC VOLUMES

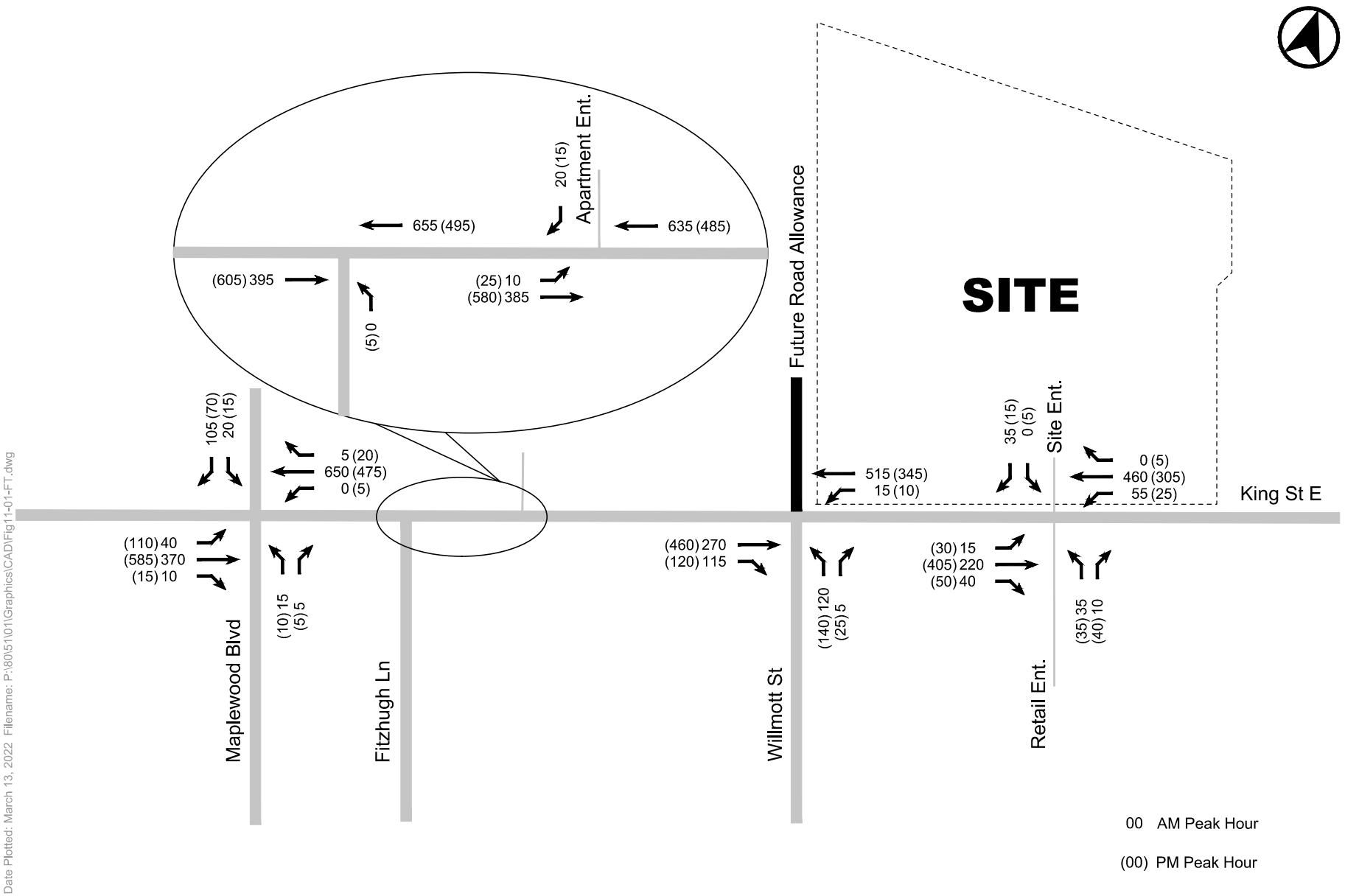

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FIGURE 11 FUTURE TOTAL TRAFFIC VOLUMES

4.0 OPERATIONS ANALYSIS

The following section provides a summary of traffic operations analysis undertaken in this engineering submission.

4.1 ANALYSIS METHODOLOGY

Synchro Version 11 and the Highway Capacity Manual (HCM) methodology were used to analyze the study area intersections and site access.

For the intersections, all unsignalized, level of service (LOS) characterizes operational conditions for key movements in terms of average delay experienced by vehicles attempting to complete a manoeuvre through the intersection. LOS ‘A’ represents a good level of service with short delays, while LOS ‘F’ represents a poor level of service with extended delays.

Detailed analysis worksheets are attached in **Appendix D**.

4.2 ANALYSIS ASSUMPTIONS AND PARAMETERS

A base saturation flow of 1,900 vehicles per hour per lane was assumed. Peak hour factors and heavy vehicle percentages were calculated based on existing traffic volume data extracted from the traffic counts utilized in this study.

4.3 UNSIGNALIZED INTERSECTIONS

Capacity analysis and queuing results for the study area are summarized below in Table 5 and Table 6.

TABLE 5 PEAK HOUR ANALYSIS RESULTS – STUDY AREA INTERSECTIONS

Lane Group	Existing		Future Background		Future Total	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
Maplewood Boulevard & King Street East						
EBLTR	-	-	1.4 (2.6)	A (A)	1.4 (2.6)	A (A)
WBLTR	- (0.2)	- (A)	- (0.1)	- (A)	- (0.1)	 (A)
NBLTR	13.2 (13.3)	B (B)	39.8 (36.2)	E (D)	44.4 (39.0)	E (E)
SBLTR[2]	-	-	21.5 (18.9)	C (C)	23.3 (19.9)	C (C)
Willmott Street & King Street East						
WBL	7.9 (8.2)	A (A)	8.3 (8.8)	A (A)	8.4 (8.9)	A (A)
NBLR	13.2 (13.9)	B (B)	22.6 (23.6)	C (C)	24.9 (26.0)	C (D)

Notes:
1. xx (xx) – AM Peak (PM Peak)
2. Southbound approach does not exist under existing conditions.

The unsignalized intersections within the immediate study area are projected to operate with an LOS E or better during both the morning and evening peak hours under all scenarios analyzed. The intersection of Maplewood Boulevard / King Street is estimated to see increased side street delays under future background conditions as a result of growth along the King Street corridor.

TABLE 6 95TH PERCENTILE QUEUE LENGTH - STUDY AREA INTERSECTIONS

Lane Group	Existing	Future Background	Future Total
	95%ile Queue (m)	95%ile Queue (m)	95%ile Queue (m)
Maplewood Boulevard & King Street East			
EBLTR	-	1.2 (2.9)	1.2 (2.9)
WBLTR	- (0.1)	- (0.1)	- (0.1)
NBLTR	1.1 (0.8)	4.7 (3.0)	5.2 (3.3)
SBLTR[2]	-	14.2 (8.0)	15.6 (8.6)
Willmott Street & King Street East			
WBL	0.3 (0.2)	0.4 (0.3)	0.4 (0.3)
NBLR	6.7 (9.5)	14.8 (19.8)	16.5 (21.9)

Notes:
1. xx (xx) – AM Peak (PM Peak)
2. Southbound approach does not exist under existing conditions.

Queues at all study area intersections are estimated to be 22 metres or less (or approximately 3 car lengths or less) under future conditions.

4.4 SITE DRIVEWAY

Capacity analysis and queuing results for the site driveway are summarized below in Table 7 and Table 8.

TABLE 7 PEAK HOUR ANALYSIS RESULTS: SITE ENTRANCE / KING STREET EAST

Lane Group	Existing		Future Background		Future Total	
	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS
EBLTR	-	-	-	-	0.6 (0.8)	A (A)
WBLTR	-	-	1.3 (0.9)	A (A)	1.3 (0.9)	A (A)
NBLTR[2]	-	-	16.9 (15.4)	C (C)	22.5 (18.8)	C (C)
SBLTR[3]	-	-	-	-	11.8 (13.4)	B (B)

Notes:
1. xx (xx) – AM Peak (PM Peak)
2. Northbound approach does not exist under existing conditions.
3. Southbound approach does not exist under existing and future background conditions.

TABLE 8 95TH PERCENTILE QUEUE LENGTH: SITE ENTRANCE / KING STREET EAST

Lane Group	Existing	Future Background	Future Total
	95%ile Queue (m)	95%ile Queue (m)	95%ile Queue (m)
EBLTR	-	-	0.4 (0.7)
WBLTR	-	1.2 (0.6)	1.2 (0.6)
NBLTR[2]	-	3.8 (5.6)	5.6 (7.3)
SBLTR[3]	-	-	1.7 (1.2)

Notes:
1. xx (xx) – AM Peak (PM Peak)
2. Northbound approach does not exist under existing conditions.
3. Southbound approach does not exist under existing and future background conditions.

The site driveway is anticipated to operate with an LOS of C or better and 95th percentile queues of less than 7 metres.

5.0 CONCLUSIONS

1. The existing site is located on King Street East between Maplewood Boulevard and Normar Road in the Town of Cobourg, Ontario.

2. King Street has 400 and 475 two-way vehicles per hour in front of the Site during AM and PM peak hours, respectively.

3. Several site specific developments and corridor growth estimates were considered along the King Street corridor.

4. There are 89 residential units contemplated on the site, with access to King Street East opposite the planned 545 King Street commercial development. A second entrance is also protected for to/from the future road allowance west of the Site.

5. Site Traffic is estimated to be 50 and 55 two-way vehicle trips during the morning and afternoon peak hours, respectively.

6. Driveway operations description here:

    a. Maplewood Boulevard / King Street East is expected to experience a Level of Service (LOS) of E or better during all peak hours.

    b. Willmott / King Street East is expected to experience a Level of Service (LOS) of C or better during all peak hours.

    c. Site Entrance / King Street East is expected to experience a Level of Service (LOS) of C or better during all peak hours.

7. The proposed development can be reasonably be accommodated on the existing and future road network.

APPENDIX A:
Site Plan (Reduced)

SITE INFORMATION

SITE AREA	
Total Site Area:	3.97he

PARKING RATES	REQUIRED
Residential (Detached, Semi-dettached):	2.0 p/unit
Residential (Townhouses):	1.0 p/unit
Mixed-Use	1.0 p/unit
Retail:	3 p/100m^2 GFA

SETBACKS	F.Y.	C.Y.	S.Y.	R.Y.
Dettached	4.5m	2.4m	1.2m	7.5m
Semi-Dettached	4.5m	2.4m	1.2m	7.5m
Townhouses	4.5m	2.4m	1.2m	-
Mixed-Use	1.8m	1.8	0m	-

DEVELOPMENT STATISTICS

RESIDENTIAL UNITS	
Dettached:	6
Semi-Dettached:	4
Townhouses:	55
Mixed-Use:	24
TOTAL:	89

PARKING	Required	Provided
Residential:	87	118
Visitor:	22	33
Commercial:	36	38
Subtotal:	145	190
Barn Cultural Hub:		49
Total:		239

OPEN SPACE	
Storm Water Management Pond Park	0.255he
Central Park	0.136he
Barn Cultural Hub Parkette	0.085he

540 King St, Cobourg
Concept Plan

LEGEND

- PROPERTY BOUNDARY
- ENVIRONMENTAL ZONE
- FUTURE ROAD ROW WIDENING

No.	REVISION	DATE	BY
7	REVISED CONCEPT PLAN	2022.02.22	UMG
6	REVISED CONCEPT PLAN	2022.02.18	UMG
5	REVISED CONCEPT PLAN	2021.09.08	TK
4	PREFERRED CONCEPT PLAN	2021.06.18	TK
3	CONCEPT PLAN	2021.05.11	TK
2	CONCEPT PLAN	2021.04.23	TK
1	BASE PLAN	2021.04.07	TK

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DESIGNED	TK
REVIEWED	UM
DATE	2022.02.22

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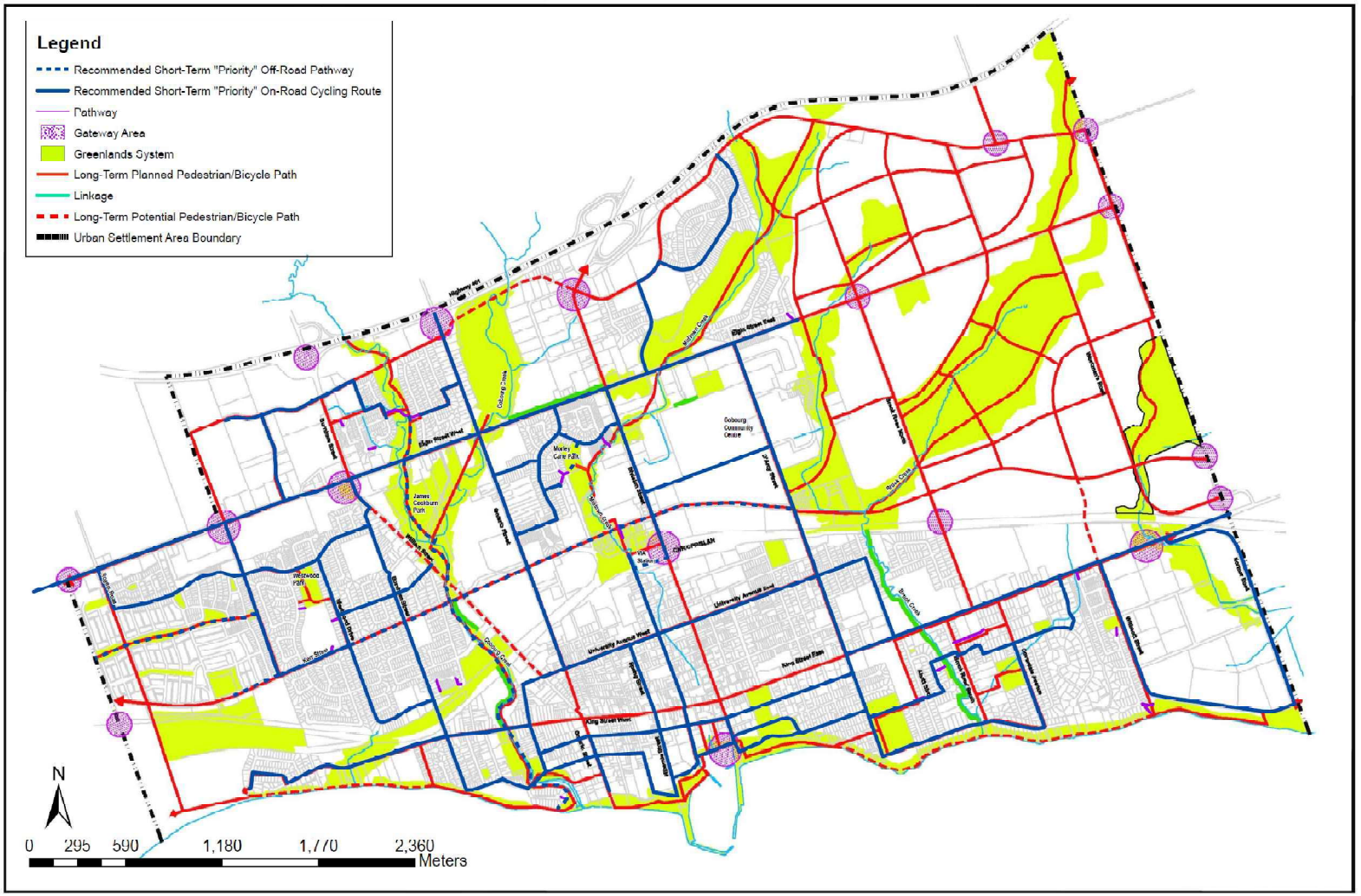
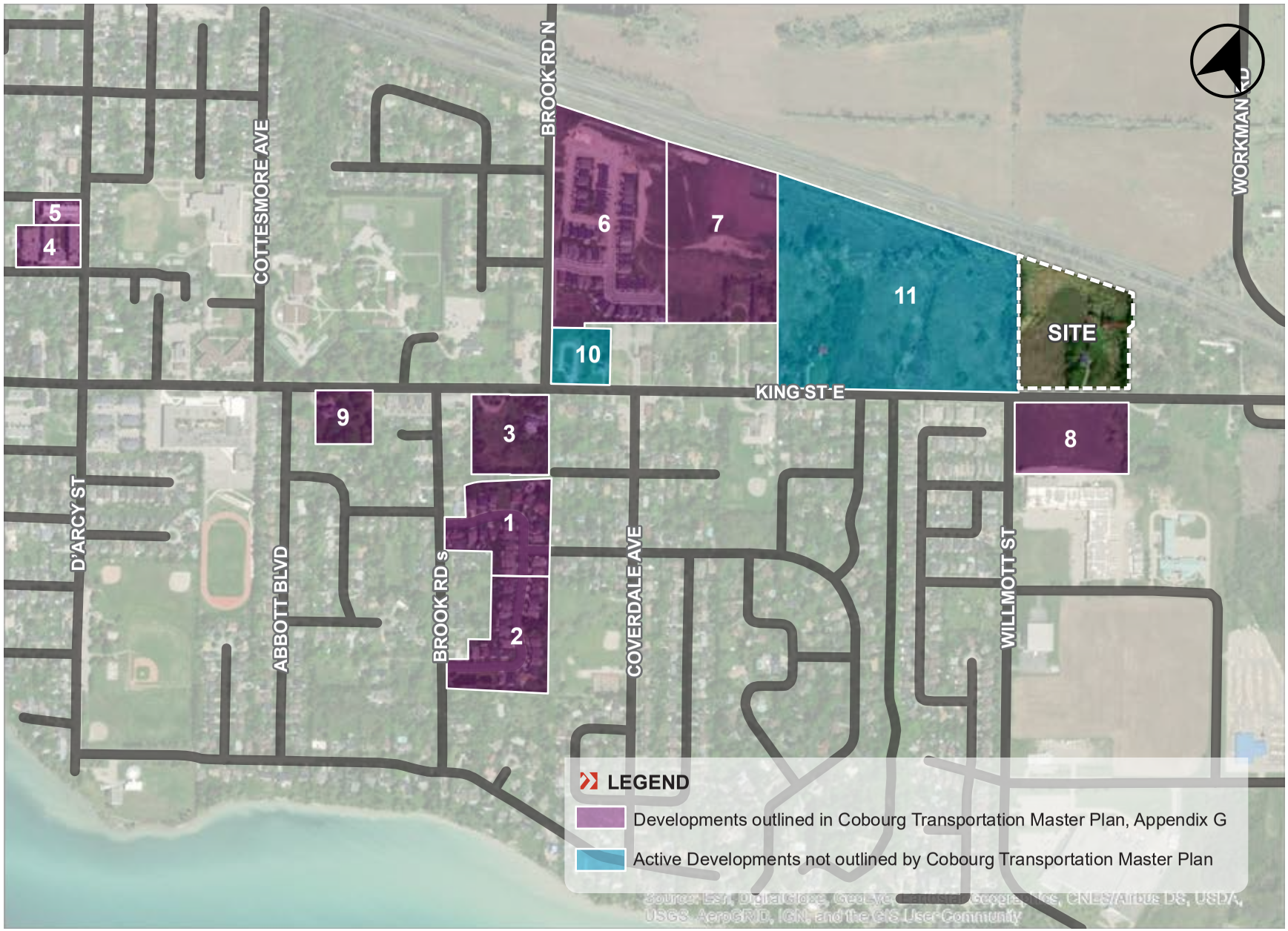
APPENDIX B:
Cobourg Transportation Master Plan Improvements

Exhibit ES-1: Recommended Road Network

Exhibit ES-2: Recommended Active Transportation Network



APPENDIX C:
Cobourg Transportation Master Plan Background Developments



BACKGROUND DEVELOPMENT SUMMARY

APPENDIX D:
Synchro Software Output

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	215	10	0	395	15	5
Future Volume (Veh/h)	215	10	0	395	15	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	236	11	0	434	16	5
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			263		692	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			263		692	258
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		96	99
cM capacity (veh/h)			1295		408	776

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	247	434	21
Volume Left	0	0	16
Volume Right	11	0	5
cSH	1700	1295	460
Volume to Capacity	0.15	0.00	0.05
Queue Length 95th (m)	0.0	0.0	1.1
Control Delay (s)	0.0	0.0	13.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	13.2
Approach LOS			B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	30.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	215	0	0	395	0	0
Future Volume (Veh/h)	215	0	0	395	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	239	0	0	439	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			239		678	239
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			239		678	239
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1340		421	805

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	239	439	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1340	1700
Volume to Capacity	0.14	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		24.1%	ICU Level of Service
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	100	115	15	285	110	5
Future Volume (Veh/h)	100	115	15	285	110	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	108	124	16	306	118	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			232		446	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			232		446	108
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		79	99
cM capacity (veh/h)			1263		550	951

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	108	124	16	306	123
Volume Left	0	0	16	0	118
Volume Right	0	124	0	0	5
cSH	1700	1700	1263	1700	560
Volume to Capacity	0.06	0.07	0.01	0.18	0.22
Queue Length 95th (m)	0.0	0.0	0.3	0.0	6.7
Control Delay (s)	0.0	0.0	7.9	0.0	13.2
Lane LOS			A		B
Approach Delay (s)	0.0		0.4		13.2
Approach LOS					B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	370	15	5	305	10	5
Future Volume (Veh/h)	370	15	5	305	10	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	385	16	5	318	10	5
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			408		728	400
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			408		728	400
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1155		389	651

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	401	323	15
Volume Left	0	5	10
Volume Right	16	0	5
cSH	1700	1155	450
Volume to Capacity	0.24	0.00	0.03
Queue Length 95th (m)	0.0	0.1	0.8
Control Delay (s)	0.0	0.2	13.3
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	13.3
Approach LOS			B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	30.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	375	0	0	305	5	0
Future Volume (Veh/h)	375	0	0	305	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	399	0	0	324	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			399		723	399
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			399		723	399
tC, single (s)			4.6		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.7		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			942		396	655

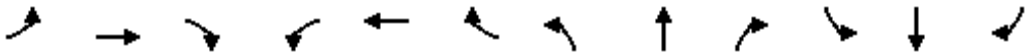
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	399	324	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	942	396
Volume to Capacity	0.23	0.00	0.01
Queue Length 95th (m)	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	14.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	14.2
Approach LOS			B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	255	120	10	180	130	25
Future Volume (Veh/h)	255	120	10	180	130	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	268	126	11	189	137	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			394		479	268
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			394		479	268
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		75	97
cM capacity (veh/h)			1133		538	776

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	268	126	11	189	163
Volume Left	0	0	11	0	137
Volume Right	0	126	0	0	26
cSH	1700	1700	1133	1700	566
Volume to Capacity	0.16	0.07	0.01	0.11	0.29
Queue Length 95th (m)	0.0	0.0	0.2	0.0	9.5
Control Delay (s)	0.0	0.0	8.2	0.0	13.9
Lane LOS			A		B
Approach Delay (s)	0.0		0.5		13.9
Approach LOS					B

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	28.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	355	10	0	615	5	15	0	5	20	0	105
Future Volume (Veh/h)	40	355	10	0	615	5	15	0	5	20	0	105
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	390	11	0	676	5	16	0	5	22	0	115
Pedestrians								16				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	681			417			1293	1180	412	1167	1184	678
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681			417			1293	1180	412	1167	1184	678
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			84	100	99	86	100	75
cM capacity (veh/h)	921			1138			99	180	636	163	179	455

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	445	681	21	137
Volume Left	44	0	16	22
Volume Right	11	5	5	115
cSH	921	1138	124	353
Volume to Capacity	0.05	0.00	0.17	0.39
Queue Length 95th (m)	1.2	0.0	4.7	14.2
Control Delay (s)	1.4	0.0	39.8	21.5
Lane LOS	A		E	C
Approach Delay (s)	1.4	0.0	39.8	21.5
Approach LOS			E	C

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	66.8%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	380	0	0	620	0	0
Future Volume (Veh/h)	380	0	0	620	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	422	0	0	689	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			422		1111	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			422		1111	422
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1148		233	636

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	422	689	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1148	1700
Volume to Capacity	0.25	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	255	115	15	480	120	5
Future Volume (Veh/h)	255	115	15	480	120	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	274	124	16	516	129	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			398		822	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			398		822	274
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		61	99
cM capacity (veh/h)			1093		329	770

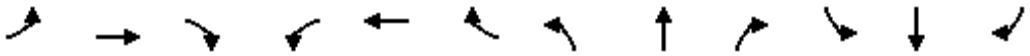
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	274	124	16	516	134
Volume Left	0	0	16	0	129
Volume Right	0	124	0	0	5
cSH	1700	1700	1093	1700	337
Volume to Capacity	0.16	0.07	0.01	0.30	0.40
Queue Length 95th (m)	0.0	0.0	0.4	0.0	14.8
Control Delay (s)	0.0	0.0	8.3	0.0	22.6
Lane LOS			A		C
Approach Delay (s)	0.0		0.3		22.6
Approach LOS					C

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	220	40	55	460	35	10
Future Volume (Veh/h)	220	40	55	460	35	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	239	43	60	500	38	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			282		880	260
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			282		880	260
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		87	99
cM capacity (veh/h)			1280		303	778

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	282	560	49
Volume Left	0	60	38
Volume Right	43	0	11
cSH	1700	1280	351
Volume to Capacity	0.17	0.05	0.14
Queue Length 95th (m)	0.0	1.2	3.8
Control Delay (s)	0.0	1.3	16.9
Lane LOS		A	C
Approach Delay (s)	0.0	1.3	16.9
Approach LOS			C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	555	15	5	460	20	10	0	5	15	0	70
Future Volume (Veh/h)	110	555	15	5	460	20	10	0	5	15	0	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	115	578	16	5	479	21	10	0	5	16	0	73
Pedestrians								7				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	500			601			1396	1333	593	1320	1330	490
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500			601			1396	1333	593	1320	1330	490
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			89	100	99	87	100	87
cM capacity (veh/h)	1075			980			95	137	506	122	138	583

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	709	505	15	89
Volume Left	115	5	10	16
Volume Right	16	21	5	73
cSH	1075	980	130	347
Volume to Capacity	0.11	0.01	0.12	0.26
Queue Length 95th (m)	2.9	0.1	3.0	8.0
Control Delay (s)	2.6	0.1	36.2	18.9
Lane LOS	A	A	E	C
Approach Delay (s)	2.6	0.1	36.2	18.9
Approach LOS			E	C

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	77.0%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	575	0	0	480	5	0
Future Volume (Veh/h)	575	0	0	480	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	612	0	0	511	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			612		1123	612
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			612		1123	612
tC, single (s)			4.6		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.7		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			772		230	497

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	612	511	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	772	230
Volume to Capacity	0.36	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.5
Control Delay (s)	0.0	0.0	21.0
Lane LOS			C
Approach Delay (s)	0.0	0.0	21.0
Approach LOS			C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	40.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	430	120	10	330	140	25
Future Volume (Veh/h)	430	120	10	330	140	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	453	126	11	347	147	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			579		822	453
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			579		822	453
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		57	96
cM capacity (veh/h)			966		338	611

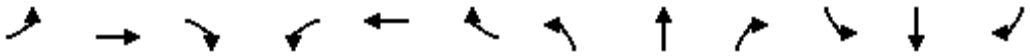
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	453	126	11	347	173
Volume Left	0	0	11	0	147
Volume Right	0	126	0	0	26
cSH	1700	1700	966	1700	363
Volume to Capacity	0.27	0.07	0.01	0.20	0.48
Queue Length 95th (m)	0.0	0.0	0.3	0.0	19.8
Control Delay (s)	0.0	0.0	8.8	0.0	23.6
Lane LOS			A		C
Approach Delay (s)	0.0		0.3		23.6
Approach LOS					C

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	405	50	25	305	35	40
Future Volume (Veh/h)	405	50	25	305	35	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	440	54	27	332	38	43
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			494		853	467
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			494		853	467
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		88	93
cM capacity (veh/h)			1070		321	596

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	494	359	81
Volume Left	0	27	38
Volume Right	54	0	43
cSH	1700	1070	425
Volume to Capacity	0.29	0.03	0.19
Queue Length 95th (m)	0.0	0.6	5.6
Control Delay (s)	0.0	0.9	15.4
Lane LOS		A	C
Approach Delay (s)	0.0	0.9	15.4
Approach LOS			C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	47.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	370	10	0	650	5	15	0	5	20	0	105
Future Volume (Veh/h)	40	370	10	0	650	5	15	0	5	20	0	105
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	44	407	11	0	714	5	16	0	5	22	0	115
Pedestrians								16				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	719			434			1348	1236	428	1222	1238	716
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	719			434			1348	1236	428	1222	1238	716
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			82	100	99	85	100	73
cM capacity (veh/h)	892			1121			89	167	622	149	166	433

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	462	719	21	137
Volume Left	44	0	16	22
Volume Right	11	5	5	115
cSH	892	1121	112	332
Volume to Capacity	0.05	0.00	0.19	0.41
Queue Length 95th (m)	1.2	0.0	5.2	15.6
Control Delay (s)	1.4	0.0	44.4	23.3
Lane LOS	A		E	C
Approach Delay (s)	1.4	0.0	44.4	23.3
Approach LOS			E	C

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	67.5%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	395	0	0	655	0	0
Future Volume (Veh/h)	395	0	0	655	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	439	0	0	728	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			439		1167	439
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			439		1167	439
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1132		216	622

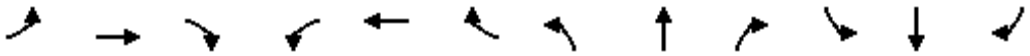
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	439	728	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1132	1700
Volume to Capacity	0.26	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	270	115	15	515	120	5
Future Volume (Veh/h)	270	115	15	515	120	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	290	124	16	554	129	5
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			414		876	290
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			414		876	290
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		58	99
cM capacity (veh/h)			1078		306	754

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	290	124	16	554	134
Volume Left	0	0	16	0	129
Volume Right	0	124	0	0	5
cSH	1700	1700	1078	1700	313
Volume to Capacity	0.17	0.07	0.01	0.33	0.43
Queue Length 95th (m)	0.0	0.0	0.4	0.0	16.5
Control Delay (s)	0.0	0.0	8.4	0.0	24.9
Lane LOS			A		C
Approach Delay (s)	0.0		0.2		24.9
Approach LOS					C

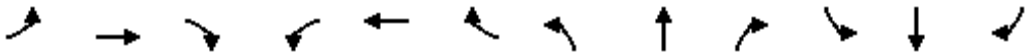
Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	220	40	55	460	0	35	0	10	0	0	35
Future Volume (Veh/h)	15	220	40	55	460	0	35	0	10	0	0	35
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	239	43	60	500	0	38	0	11	0	0	38
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	500			282			950	912	260	924	934	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500			282			950	912	260	924	934	500
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			95			82	100	99	100	100	93
cM capacity (veh/h)	1064			1280			213	257	778	235	250	571

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	298	560	49	38
Volume Left	16	60	38	0
Volume Right	43	0	11	38
cSH	1064	1280	255	571
Volume to Capacity	0.02	0.05	0.19	0.07
Queue Length 95th (m)	0.4	1.2	5.6	1.7
Control Delay (s)	0.6	1.3	22.5	11.8
Lane LOS	A	A	C	B
Approach Delay (s)	0.6	1.3	22.5	11.8
Approach LOS			C	B

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	585	15	5	475	20	10	0	5	15	0	70
Future Volume (Veh/h)	110	585	15	5	475	20	10	0	5	15	0	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	115	609	16	5	495	21	10	0	5	16	0	73
Pedestrians								7				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								1				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	516			632			1442	1380	624	1368	1378	506
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	516			632			1442	1380	624	1368	1378	506
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			89	100	99	86	100	87
cM capacity (veh/h)	1060			955			88	128	486	113	129	571

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	740	521	15	89
Volume Left	115	5	10	16
Volume Right	16	21	5	73
cSH	1060	955	121	330
Volume to Capacity	0.11	0.01	0.12	0.27
Queue Length 95th (m)	2.9	0.1	3.3	8.6
Control Delay (s)	2.6	0.1	39.0	19.9
Lane LOS	A	A	E	C
Approach Delay (s)	2.6	0.1	39.0	19.9
Approach LOS			E	C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	605	0	0	495	5	0
Future Volume (Veh/h)	605	0	0	495	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	644	0	0	527	5	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			644		1171	644
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			644		1171	644
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			951		215	476

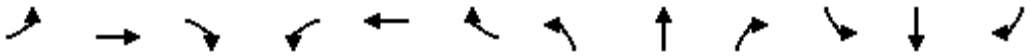
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	644	527	5
Volume Left	0	0	5
Volume Right	0	0	0
cSH	1700	951	215
Volume to Capacity	0.38	0.00	0.02
Queue Length 95th (m)	0.0	0.0	0.6
Control Delay (s)	0.0	0.0	22.2
Lane LOS			C
Approach Delay (s)	0.0	0.0	22.2
Approach LOS			C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	460	120	10	345	140	25
Future Volume (Veh/h)	460	120	10	345	140	25
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	484	126	11	363	147	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			610		869	484
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			610		869	484
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		54	96
cM capacity (veh/h)			940		317	587

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	484	126	11	363	173
Volume Left	0	0	11	0	147
Volume Right	0	126	0	0	26
cSH	1700	1700	940	1700	341
Volume to Capacity	0.28	0.07	0.01	0.21	0.51
Queue Length 95th (m)	0.0	0.0	0.3	0.0	21.9
Control Delay (s)	0.0	0.0	8.9	0.0	26.0
Lane LOS			A		D
Approach Delay (s)	0.0		0.3		26.0
Approach LOS					D

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	405	50	25	305	5	35	0	40	5	0	15
Future Volume (Veh/h)	30	405	50	25	305	5	35	0	40	5	0	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	440	54	27	332	5	38	0	43	5	0	16
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	337			494			938	924	467	964	948	334
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	337			494			938	924	467	964	948	334
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			97			83	100	93	98	100	98
cM capacity (veh/h)	1222			1070			230	255	596	209	247	707

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	527	364	81	21
Volume Left	33	27	38	5
Volume Right	54	5	43	16
cSH	1222	1070	341	451
Volume to Capacity	0.03	0.03	0.24	0.05
Queue Length 95th (m)	0.7	0.6	7.3	1.2
Control Delay (s)	0.8	0.9	18.8	13.4
Lane LOS	A	A	C	B
Approach Delay (s)	0.8	0.9	18.8	13.4
Approach LOS			C	B

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	47.0%	ICU Level of Service	A
Analysis Period (min)	15		