URBANTRANS
Engineering Solutions Inc.

Traffic Impact Study (TIS)

Proposed Mixed-Use Apartment Building

517 Plains Road East
Burlington, ON

UT-25-111

March 3, 2026

URBANTRANS
Engineering Solutions Inc.

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March 13, 2026

BryDec Developments Inc.
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Attention: Bryan Decunha

RE: Traffic Impact Study (TIS)
Proposed Mixed Use Apartment Building
517 Plains Road East, Burlington, ON, L7T 2E2
Reference No.: UT-25-111

UrbanTrans Engineering has been retained by BryDec Developments Inc. (the "Client") to prepare a Traffic Impact Study (TIS) in support of Official Plan and Zoning By-Law Amendment. The proposed development is located approximately 350 meters west of King Road on the north side of Plains Road East

The proposal consists of an 11-storey mixed-use apartment building with 179 total residential units and 8 commercial units on the ground floor with a commercial area of 422.45 square meters. Access is proposed through a full-move driveway from Mary Street, which connects to the ground floor loading area and ramp providing access to two levels of underground parking. The proposal includes total 105 parking spaces.

This report concludes the proposed mixed-use development will have minimal traffic impacts to the immediate roadways and nearby intersections. It is understood that the City of Burlington is the Municipal authority to review and approve the Traffic Impact Study (TIS) for the proposed development. The Study is in accordance with the municipalities TIS Guidelines as well as the Terms of Reference comments received in a timely manner from the City Staff (see **Appendix A**).

We thank you for the opportunity to undertake this study. We trust the enclosed comply with your requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Kind Regards,

UrbanTrans Engineering Solutions Inc.





Signature Engineer's Seal

Annosan Srikantha, P.Eng.
President

DISCLAIMER

This document entitled '517 Plains Road East – Traffic Impact Study' or named part thereof (the "project") was prepared by UrbanTrans Engineering Solutions Inc. ("UrbanTrans") for the account of BryDec Developments Inc. (the "Client"). This document is confidential and prepared solely for approval and commenting municipalities and their agencies in their review and approval of this project. The materials in this report reflect best judgement based on the information available at the time the document was issued. Any reliance on this document by any third party is strictly prohibited and UrbanTrans accepts no responsibility for damages, if any, suffered by any third party by reason of decisions made or actions based on this document.

RECORD OF REVISIONS

Revision	Date	Identification	Description
0	March 3, 2026	Final Report	Final Submission

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1.0 INTRODUCTION

1.1 Background

UrbanTrans Engineering Solutions Inc. has been retained by BryDec Developments Inc. (the "Client") to prepare a Traffic Impact Study (TIS) in support of Official Plan and Zoning By-Law Amendment for the proposed mixed-use development at 517 Plains Road East, City of Burlington, Ontario.

1.2 Objective

The study will assess the following components:

- Evaluate potential impacts of traffic changes prompted by the proposed development on municipal roadways and identify any infrastructure enhancements or mitigation measures warranted to ensure the road network will operate acceptably and safely upon completion of the proposed development.
- Determine whether the proposed vehicle supply conforms to the City's Zoning By-law requirements. UrbanTrans will recommend reduced parking rates and identify alternative strategies that can sufficiently accommodate the peak parking demand/requirement of the proposed development (if applicable).
- Simulate vehicle swept path analysis to determine adequate space requirements are provided for passenger car and waste collection.

1.3 Development Proposal

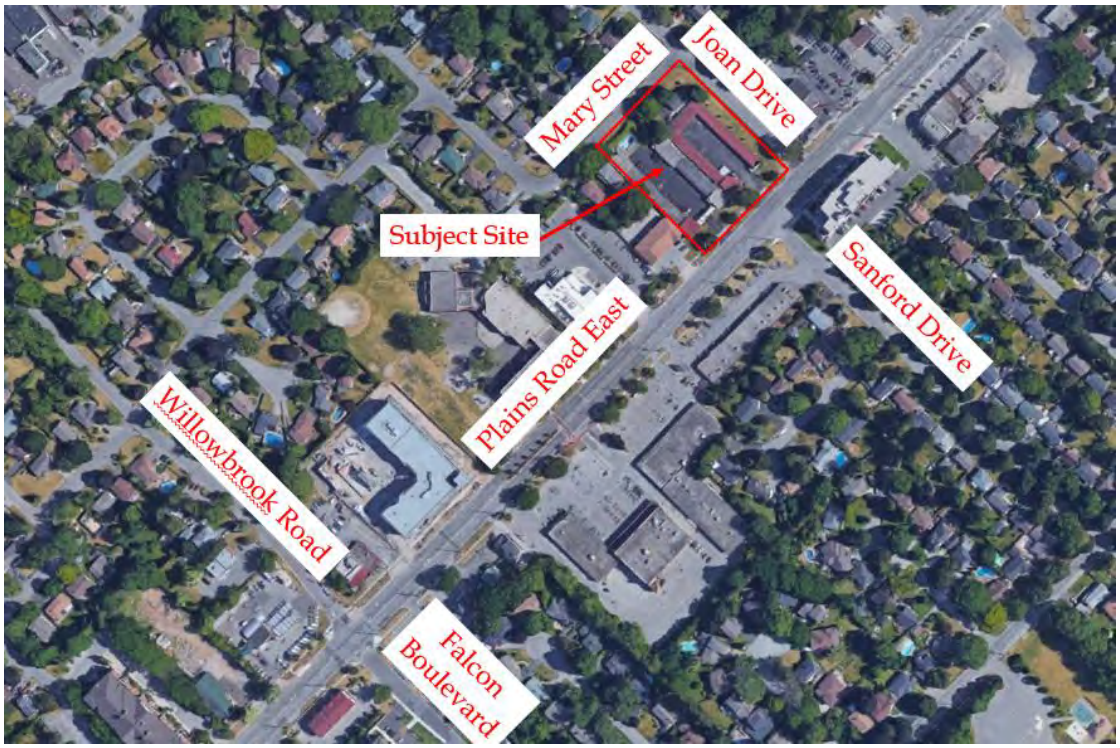
The proposal consists of an 11-storey mixed-use apartment building with 179 total residential units and 8 commercial units on the ground floor with a commercial area of 422.45 square meters. Access is proposed through a full-move driveway from Mary Street, which connects to the ground floor loading area and ramp providing access to two levels of underground parking. The proposal includes total 105 parking spaces.

The location of the proposed development is illustrated in **Figure 1**. The proposed site plan is **illustrated in Figure 2; Appendix B also provides a larger-scale version of the proposed site plan.** The proposed types of unit schedules for residential and commercial units are shown in **Table 1**.

Table 1: Residential Units Schedule

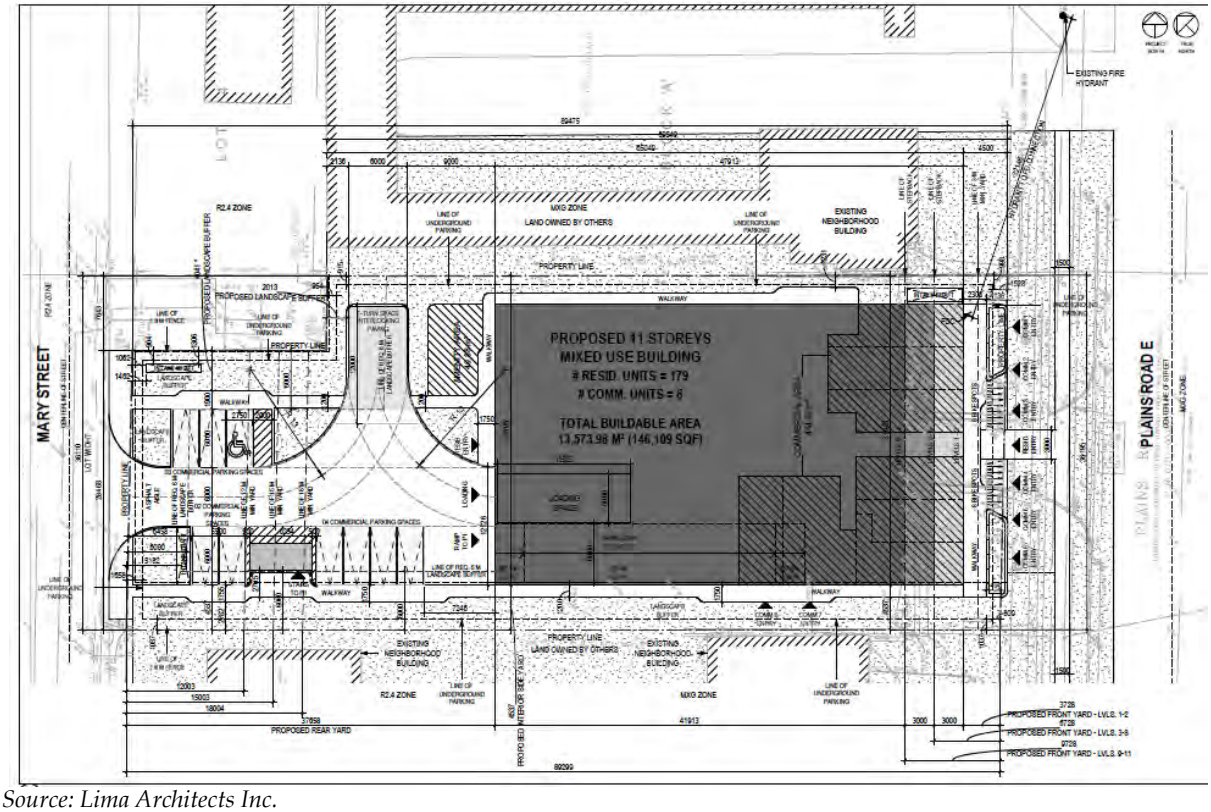
Type of Unit	Area (sq. ft)	Amount
Residential		
A1	669	4
A2	669	9
A3	719	48
A4	724	18
C2	494	3
C3	509	24
C4	574	12
D2	509	2
D3	543	12
D4	559	6
B1	675	1
B2	675	3
B3	714	24
B4	815	12
E	1148	1
	TOTAL	179
Commercial		
COMM 1	543	1
COMM 2	652	1
COMM 3	586	1
COMM 4	543	1
COMM 5	543	1
COMM 6	565	1
COMM 7	588	1
COMM 8	527	1
	TOTAL	**8**

Figure 1: Site Location



Source: Google Maps

Figure 2: Proposed Site Plan



Source: Lima Architects Inc.

2.0 EXISTING CONDITIONS

This section documents the transportation network in the study area in 2026, including existing roadways, transit services, active transportation network, traffic control measures, and intersection performances.

2.1 Road Network

To provide clarity throughout this report, Plains Road East has been given an east-west orientation, while Joan Drive, Sanford Drive, and King Road are given a north-south orientation. On this basis, the characteristics of the roads and intersections within the vicinity of the subject site are described below:

- **Plains Road East** operates as an east–west arterial roadway under the jurisdiction of the City of Burlington. It extends from the Queen Elizabeth Way (QEW) ramp terminals to Waterdown Road. The road has a five-lane cross-section, including a centre two-way left-turn lane, and features dedicated bike lanes in both directions. The posted speed limit is 60 km/hr.
- **King Road** operates as a north–south arterial roadway under the jurisdiction of the City of Burlington. It extends from North Shore Boulevard in the south to Mountain Brow Road in Hamilton. Within the study area, King Road has a three-lane cross-section, with the centre lane functioning as a two-way left-turn lane. Dedicated bicycle lanes are provided on both sides of the roadway. The posted speed limit is 50 km/hr, and on-street parking or stopping is prohibited on both sides.
- **Sanford Drive** operates as a north-south local road under jurisdiction of the City of Burlington and forms an unsignalized intersection with Plains Road East. It operates as a 2-lane cross-section and maintains a posted speed limit of 40km/hr.
- **Joan Drive** operates as a north-south local road under jurisdiction of the City of Burlington and forms an unsignalized intersection with Plains Road East. It operates as a 2-lane cross-section and maintains a posted speed limit of 40km/hr.
- **Mary Street** operates as an east–west local roadway under the jurisdiction of the City of Burlington. It operates as a 2-lane cross-section and maintains a posted speed limit of 40km/hr.

2.2 Transit Network

The proposed subject site is located within an area currently served by Burlington Transit and GO Transit. Bus stops are located within a walkable distance of 131m from the subject site. These services provide connections between the Aldershot area, downtown Burlington, Appleby GO Station and the broader regional transit network. The existing transit services in the vicinity of the subject site are illustrated in **Table 2** and **Figure 3**. The full version of Burlington Transit system map is provided in **Appendix C.**

Table 2: Area Transit Context

Bus Route	Route Description	Frequency	Distance from Subject Site
Burlington Transit Route 1 – Plains–Fairview	Two-way bus service along Plains Road East and Fairview Street, connecting Aldershot GO Station, downtown Burlington and Appleby GO Station, with stops on Plains Road East near the site.	14-30 minutes	123m
Burlington Transit Route 4 – Central	Two-way bus service along Plains Road East between Aldershot GO Station and Appleby GO Station via downtown Burlington, with stops on Plains Road East and supplementary neighborhood connections.	60 minutes	123m
GO Transit Route 18	Regional bus services provide connections to Burlington GO Station and the Lakeshore West rail corridor.	13-16 minutes	123m

Figure 3: Burlington Transit System Map in Vicinity of The Subject Site



Source: BT System Map

2.3 Active Transportation Network

Active transportation network involves human-powered forms of travel with walking and cycling being the most dominant and can be combined with other modes such as public transit.

2.3.1 Sidewalk Network

Concrete sidewalks approximately 1.5 m in width are provided along both sides of Plains Road East within the study area, offering continuous pedestrian connectivity to adjacent land uses and nearby transit stops. These facilities form an integral part of the local active transportation network and support safe east–west pedestrian movements.

2.3.2 Bicycle Network

Dedicated on-street painted bicycle lanes are provided along both sides of Plains Road East within the study area, forming part of the City of Burlington's cycling network. These facilities support east–west cycling movements and provides access to additional cycling facilities along King Road and the Francis Road Bikeway. Francis Road Bikeway is a fully separated multi-use path located along the east side of the site, extending from North Shore Boulevard in the south to Warwick Drive in the north. It offers an off-road cycling alternative to the on-street King Road bicycle lanes.

2.4 Traffic Data

Based on discussion and acceptance from City Staff (see **Appendix A**), the study will review and evaluate the following intersections in the vicinity of the subject site:

- Plains Road East & King Road (Signalized)
- Plains Road East & 484 Plains Road East (Signalized)
- Plains Road East & Sanford Drive (Unsignalized)
- Plains Road East & Joan Drive (Unsignalized)
- Mary Street and Proposed Site Access (Unsignalized)

The existing traffic volumes at the abovementioned study area intersections were undertaken by Spectrum Traffic Data Inc. on Wednesday, February 11, 2026, during the morning (7:00 AM to 10:00 AM) and afternoon (4:00 PM to 7:00 PM) peak hour periods.

Existing traffic volumes in the year 2026 are shown in **Figure 4**. The detailed traffic data and signal timing plans are provided for reference in **Appendix D**.

2.5 Base Year (2026) Traffic Operations

To assess the existing traffic conditions, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections.

The detailed results of the analysis for base year (2026) existing traffic conditions are provided in **Appendix E** and summarized in **Table 3**.

Table 3: Base Year (2026) Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Plains Road East & King Road (Signalized)	OVERALL	28.2	-	0.86	C	28.3	-	0.78	C
	EBL	13.4	23.1	0.30	B	16.4	16.4	0.43	B
	EBT	20.7	85.5	0.48	C	17.2	67.0	0.34	B
	EBR	3.5	8.8	0.13	A	3.3	9.4	0.13	A
	WBL	12.3	9.1	0.13	B	10.5	14.8	0.16	B
	WBTR	20.7	55.4	0.40	C	25.7	173.6	0.74	C
	NBL	30.4	51.0	0.49	C	38.0	44.5	0.48	D
	NBTR	63.1	106.7	0.86	E	60.8	61.8	0.71	E
	SBL	51.6	63.9	0.83	D	52.4	76.7	0.78	D
	SBT	36.4	32.2	0.25	D	56.0	65.5	0.61	E
	SBR	4.0	6.6	0.19	A	9.8	17.4	0.40	A
Plains Road East & 484 Plains Road East (Signalized)	OVERALL	0.9	-	0.32	A	1.1	-	0.37	A
	EBTR	1.0	29.6	0.32	A	0.9	21.0	0.24	A
	WBL	1.0	0.4	0.00	A	1.0	0.7	0.01	A
	WBT	0.8	16.4	0.20	A	1.1	36.4	0.37	A
	NBLR	0.3	0.0	0.04	A	27.8	4.7	0.05	C
Plains Road East & Sanford Drive (Unsignalized)	EBT	0.0	0.0	0.42	A	0.0	0.0	0.32	A
	EBTR	0.0	0.0	0.21	A	0.0	0.0	0.18	A
	WBL	10.4	0.1	0.01	B	9.7	1.0	0.04	A
	WBT	0.0	0.0	0.20	A	0.0	0.0	0.41	A
	NBLR	16.7	1.8	0.07	C	16.2	3.0	0.12	C
Plains Road East & Joan Drive (Unsignalized)	EBL	8.9	0.2	0.01	A	11.0	0.3	0.01	B
	EBT	0.0	0.0	0.32	A	0.0	0.0	0.25	A
	WBT	0.0	0.0	0.27	A	0.0	0.0	0.56	A
	WBTR	0.0	0.0	0.15	A	0.0	0.0	0.30	A

Table 3: Base Year (2026) Traffic Peak Hour Level of Service Analysis (Cont'd)

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Plains Road East & Joan Drive (Unsignalized)	SBLR	19.2	2.0	0.08	C	29.5	3.5	0.14	D
Mary Street & Joan Drive (Unsignalized)	EBLR	8.4	0.2	0.01	A	8.4	0.2	0.01	A
	NBTL	3.7	0.3	0.01	A	3.7	0.3	0.01	A
	SBTR	0.0	0.0	0.01	A	0.0	0.0	0.01	A

Plains Road East & King Road (Signalized)

The intersection capacity analysis indicates that under existing conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & 484 Plains Road East (Signalized)

The intersection capacity analysis indicates that under existing conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & Sanford Drive (Unsignalized)

The intersection capacity analysis indicates that under existing conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Plains Road East & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under existing conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Mary Street & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under existing conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

3.0 FUTURE (2031) BACKGROUND CONDITIONS

3.1 Horizon Years

In accordance with discussions held with City staff and the submitted Terms of Reference, a five-year (2031) planning horizon for the proposed development was adopted for assessment purposes.

3.2 Growth Rate

Based on the discussion with City staff, annual growth rate of 1.0% was applied along Plains Road E and Gallagher Road to estimate the future background traffic volume**.**

3.3 Future (2031) Background Developments

In addition to general corridor traffic growth, specific allowances have also been made to account for traffic generated by other area developments in the vicinity of the site that are either undergoing the approval process or under construction at the time of this study.

Following discussions with City Staff, UrbanTrans incorporated traffic from the following background developments into the Traffic Operations Analysis. **Table 4** shows summary of the future background developments taken into consideration:

- 1010 Downsview Drive & 355 Plains Road East,
- 484-490 Plains Road East.

Table 4: Summary of Future Background Developments

Site Address	Proposed Development Information
1010 Downsview Drive & 355 Plains Road East	Eight-storey and eleven-storey mixed-use buildings comprising 584 dwelling units, along with stacked townhouses.
484-490 Plains Road East	Two eight-storey mixed-use buildings containing 280 dwelling units, along with seven townhouse blocks comprising 117 back-to-back townhouse units.

3.4 Future (2031) Background Traffic Operations

The total future (2031) background traffic volumes are the sum of the future background traffic volumes and traffic volumes generated by abovementioned background developments.

To assess the future (2031) background traffic conditions, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections. Future (2031) background traffic volumes are illustrated in **Figure 5.** The detailed results of the analysis for future (2031) background traffic conditions are provided in **Appendix F** and summarized in **Table 5**.

Table 5: Future (2031) Background Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Plains Road East & King Road (Signalized)	OVERALL	29.2	-	0.88	C	31.1	-	0.85	C
	EBL	14.4	26.4	0.38	B	33.2	31.2	0.60	C
	EBT	22.8	109.6	0.59	C	18.3	80.6	0.39	B
	EBR	4.8	11.6	0.15	A	3.3	10.0	0.14	A
	WBL	12.9	9.1	0.16	B	10.9	14.9	0.18	B
	WBTR	22.0	62.4	0.44	C	31.2	222.7	0.85	C
	NBL	31.5	55.2	0.53	C	40.0	49.4	0.55	D
	NBTR	65.4	113.8	0.88	E	61.4	64.6	0.72	E
	SBL	54.9	67.6	0.85	D	52.7	76.5	0.79	D
	SBT	36.5	33.6	0.26	D	56.7	68.8	0.63	E
	SBR	4.9	8.0	0.20	A	11.4	20.7	0.43	B
Plains Road East & 484 Plains Road East (Signalized)	OVERALL	6.5	-	0.60	A	3.2	-	0.45	A
	EBTR	5.1	55.9	0.46	A	2.4	27.0	0.31	A
	WBL	4.5	4.2	0.10	A	3.7	9.5	0.23	A
	WBT	3.9	28.6	0.28	A	3.1	46.6	0.45	A
	NBLR	30.3	32.2	0.60	C	23.8	12.4	0.24	C
Plains Road East & Sanford Drive (Unsignalized)	EBT	0.0	0.0	0.51	A	0.0	0.0	0.38	A
	EBTR	0.0	0.0	0.26	A	0.0	0.0	0.21	A
	WBL	11.3	0.2	0.01	B	10.1	1.1	0.04	B
	WBT	0.0	0.0	0.23	A	0.0	0.0	0.49	A
	NBLR	16.9	1.9	0.08	C	16.8	3.4	0.13	C
Plains Road East & Joan Drive (Unsignalized)	EBL	9.1	0.3	0.01	A	12.8	0.5	0.02	B
	EBT	0.0	0.0	0.38	A	0.0	0.0	0.29	A
	WBT	0.0	0.0	0.30	A	0.0	0.0	0.66	A
	WBTR	0.0	0.0	0.17	A	0.0	0.0	0.35	A

Table 5: Future (2031) Background Traffic Peak Hour Level of Service Analysis (Cont'd)

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Plains Road East & Joan Drive (Unsignalized)	SBLR	17.7	1.8	0.07	C	34.5	4.3	0.16	D
Mary Street & Joan Drive (Unsignalized)	EBLR	0.0	0.0	<0.01	A	0.0	0.0	<0.01	A
	NBTL	3.4	0.3	0.01	A	3.3	0.3	0.01	A
	SBTR	0.0	0.0	<0.01	A	0.0	0.0	<0.01	A
Mary Street and Proposed Site Access (Unsignalized)	EBTR	0.0	0.0	0.01	A	0.0	0.0	<0.01	A
	WBTL	0.0	0.0	<0.01	A	0.0	0.0	<0.01	A
	NBLR	0.0	0.0	<0.01	A	0.0	0.0	<0.01	A

Plains Road East & King Road (Signalized)

The intersection capacity analysis indicates that under future (2031) background conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & 484 Plains Road East (Signalized)

The intersection capacity analysis indicates that under future (2031) background conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & Sanford Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) background conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Plains Road East & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) background conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Mary Street & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) background conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Mary Street and Proposed Site Access

The intersection capacity analysis indicates that under future (2031) background conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

4.0 SITE GENERATED TRAFFIC VOLUMES

4.1 Proposed Development

The subject land is currently occupied by Knights Inn. The proposed development is located approximately 350 meters west of King Road on the north side of Plains Road East. The proposal consists of an 11-storey mixed-use apartment building with 179 total residential units and 8 commercial units on the ground floor with a gross floor area of 434.02 square meters.

4.2 Trip Generation

The number of vehicular trips generated by the proposed development is estimated using the information contained in the ITE Trip Generation Manual (11th Edition) published by the Institute of Transportation Engineers (ITE). For the purpose of this assessment, the ITE Land Use Codes (LUC) "222 - Multifamily Housing" and "822 – Strip Retail Plaza" were used. Since $R^2 < 0.75$, average rates have been utilized for the proposed development provided in **Appendix G**.

Table 6 summarizes the trip generation volumes for the proposed institutional development during the weekday AM and PM.

Table 6: Site Traffic Trip Generation

Land Use (Magnitude)		Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily (High Rise) (179 Dwelling Units)	New Trip	13	35	48	36	21	57
Strip Retail Plaza (GFA < 40,000 sq. ft)	New Trip	7	4	11	15	16	31
TOTAL NEW TRIPS		**20**	**39**	**59**	**51**	**37**	**88**

Based on the trip generation calculations, the proposed mixed-use development is estimated to generate a total 59 two-way trips (20 inbound and 39 outbound) during the weekday morning peak hour and 88 two-way trips (51 inbound and 37 outbound) during the afternoon peak hour.

4.3 Trip Distribution and Trip Assignment for Auto Mode

The auto mode trips generated by the proposed development were distributed to and from the boundary road network based on the 2016 Transportation Tomorrow Survey (TTS) data. Trip distribution was conducted for traffic zone 4053 located in the City of Burlington provided in **Appendix H**. The site generated trips were distributed to the study intersections based on the TTS data and engineering judgement. The distribution of site traffic trips to the study area intersections are summarized in **Table 7** and illustrated in **Figure 6.**

Table 7: Trip Distribution (Auto Mode)

Direction	via	AM & PM Peak Hour
East	Plains Road East	75%
West	Plains Road East	25%
Total		**100%**

The traffic volumes for the proposed development site were allocated in accordance with the current travel patterns.

4.4 Future (2031) Total Traffic Operations

The future (2031) total volumes are the sum of the future background traffic volumes and site generated traffic volumes.

To assess the future (2031) total traffic conditions, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections. Future (2031) total traffic volumes are illustrated in **Figure 7.** The detailed results of the analysis for future (2031) total traffic conditions are provided in **Appendix I** and summarized in **Table 8**.

Table 8: Future (2031) Total Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Plains Road East & King Road (Signalized)	OVERALL	29.3	-	0.88	C	31.6	-	0.87	C
	EBL	14.7	27.0	0.39	B	34.2	32.3	0.61	C
	EBT	23.1	113.0	0.60	C	18.4	82.4	0.40	B
	EBR	4.9	12.2	0.16	A	3.2	10.0	0.15	A
	WBL	13.0	9.1	0.17	B	11.0	14.9	0.19	B
	WBTR	22.1	63.6	0.45	C	32.3	235.5	0.87	C
	NBL	31.9	56.2	0.54	C	40.5	50.3	0.56	D
	NBTR	65.5	113.8	0.88	E	61.4	64.6	0.72	E
	SBL	54.9	67.6	0.85	D	52.9	76.8	0.79	D
	SBT	36.5	33.6	0.26	D	56.7	68.8	0.63	E
	SBR	5.0	8.4	0.20	A	12.6	22.5	0.44	B
Plains Road East & 484 Plains Road East (Signalized)	OVERALL	6.5	-	0.60	A	4.4	-	0.49	A
	EBTR	5.1	56.2	0.46	A	3.2	31.3	0.34	A
	WBL	4.5	4.2	0.10	A	4.6	11.0	0.25	A
	WBT	4.0	29.2	0.28	A	4.1	54.1	0.49	A
	NBLR	30.5	32.4	0.60	C	22.7	18.6	0.41	C
Plains Road East & Sanford Drive (Unsignalized)	EBT	0.0	0.0	0.51	A	0.0	0.0	0.38	A
	EBTR	0.0	0.0	0.26	A	0.0	0.0	0.21	A
	WBL	11.3	0.2	0.01	B	10.1	1.1	0.04	B
	WBT	0.0	0.0	0.23	A	0.0	0.0	0.49	A
	NBLR	17.1	1.9	0.08	C	15.6	3.1	0.12	C
Plains Road East & Joan Drive (Unsignalized)	EBL	9.2	0.4	0.02	A	13.4	1.2	0.05	B
	EBT	0.0	0.0	0.38	A	0.0	0.0	0.29	A
	WBT	0.0	0.0	0.30	A	0.0	0.0	0.66	A
	WBTR	0.0	0.0	0.18	A	0.0	0.0	0.37	A
	SBLR	20.2	6.1	0.22	C	44.4	13.8	0.41	E

Table 8: Future (2031) Total Traffic Peak Hour Level of Service Analysis (Cont'd)

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Mary Street & Joan Drive (Unsignalized)	EBLR	8.5	1.2	0.05	A	8.5	1.1	0.05	A
	NBTL	4.8	0.6	0.03	A	5.8	1.1	0.05	A
	SBTR	0.0	0.0	0.01	A	0.0	0.0	0.01	A
Mary Street and Proposed Site Access (Unsignalized)	EBTR	0.0	0.0	0.01	A	0.0	0.0	0.01	A
	WBTL	3.5	0.3	0.01	A	5.6	0.8	0.03	A
	NBLR	8.5	0.9	0.04	A	8.5	0.9	0.04	A

Plains Road East & King Road (Signalized)

The intersection capacity analysis indicates that under future (2031) total conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & 484 Plains Road East (Signalized)

The intersection capacity analysis indicates that under future (2031) total conditions, the signalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

Plains Road East & Sanford Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) total conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Plains Road East & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) total conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Mary Street & Joan Drive (Unsignalized)

The intersection capacity analysis indicates that under future (2031) total conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

Mary Street and Proposed Site Access

The intersection capacity analysis indicates that under future (2031) total conditions, the unsignalized intersection is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified. Please note the east drive is active with no modifications proposed.

5.0 MULTIMODAL TRANSPORTATION ACCESSMENT

In accordance with current Transportation Mobility Plan guidelines, the level of service for transit, pedestrian and bicycle modes in the study area has been reviewed using the future total (background plus site) traffic conditions at the study intersections.

5.1 Transit Mode Assessment

The subject site is located within a transit-supportive corridor with multiple Burlington Transit and GO Transit bus stops within comfortable walking distance. Transit LOS is summarized in **Table 9.**

Table 9: Transit Level of Service

Transit Stop Location	Direction	Access to Transit Stops	Transit Headways	Intersection Approach
Plains Road East	EB	A	C	C
	WB	A	C	C

The transit stops in the study area provide acceptable levels of service.

5.2 Pedestrian Mode Assessment

Concrete sidewalks approximately 1.5 m in width are provided along both sides of Plains Road East within the study area, offering continuous east–west pedestrian connectivity to adjacent land uses and nearby transit stops. Sidewalks are also provided on both sides of King Road offering north-south pedestrian connectivity to transit stops. While Joan Drive, and Mary Street generally operate without sidewalks and function as low-volume local streets where pedestrians walk along the roadway edge or shoulders.

Pedestrian level of service is summarized in **Table 10.**

Table 10: Pedestrian Level of Service

Intersection	Direction	Segment	Intersection
		LOS	
Plains Road East	EB	B	-
	WB	B	-
Mary Street and Joan Drive	EB	-	F
	WB	-	F
	NB	-	F
	SB	-	F

The pedestrian facilities in the study area along Plains Road East provide acceptable levels of service. Conditions on Mary Street and Joan Drive are constrained due to the absence of sidewalks. However, as shown on the site plan, the primary resident entrance to the development is located along Plains Road East. The site access from Mary Street is intended primarily for vehicular use. In addition, pedestrian desired path to the development is anticipated along existing sidewalk on the north side of Plains Road East, which provides a direct connection to the proposed site entrance. As such, sidewalks are not required on Joan Drive and Mary Street to provide pedestrian access to the proposed development.

5.3 Bicycle Mode Assessment

Dedicated on-street painted bicycle lanes, are provided along both sides of Plains Road East within the study area, forming part of the City of Burlington's cycling network. These facilities support east–west cycling movements and provides access to additional cycling facilities along King Road and the Francis Road Bikeway

Joan Drive and Mary Street operate as low-volume local streets without cycling facilities. Bicycle level of service is summarized in **Table 11.**

Table 11: Bicycle Level of Service

Intersection/Segment	Direction	Segment	Intersection
		LOS	
Plains Road East	EB	D	-
	WB	D	-
Joan Drive and Mary Street	EB/WB	-	F
	NB/SB	-	F

The corridor along Plains Road East generally provides an acceptable level of service for bicyclists; however, the intersection of Joan Drive and Mary Street lacks adequate bicycle infrastructure, resulting in a critically low level of service for cyclists.

6.0 TRANSPORTATION IMPACT ASSESSMENT

6.1 Site Access

Vehicular access to the subject site is provided by a full-movement driveway connecting to Mary Street.

6.2 On-site Circulation

AutoTURN software was used to generate vehicular turning templates to confirm and demonstrate the accessibility for typical 5.6m long passenger vehicle (P TAC-2017) and PCU vehicles.

Figure 8 to **Figure 10** illustrate the turning movement templates for passenger vehicles and Waste Collection vehicles. The analysis demonstrates that a passenger vehicle and loading trucks can maneuver within the designated route with no conflicts.

6.3 Signage and Pavement Marking Plan

In accordance with the Ontario Traffic Manual (OTM) Book 5, UrbanTrans recommends appropriate internal signage and pavement markings illustrated in **Figure 11** to **Figure 13**. A truck warning system will be provided when there is a truck that is reversing at the loading docks, the warning system will flash to notify motorists that garbage/loading trucks are in operation.

Based on the recommended signages and pedestrian sidewalk within the subject site, it is our opinion the site will operate safely and efficiently for both motorists and pedestrian connectivity.

7.0 PARKING REQUIREMENT

7.1 City of Burlington Zoning By-Law 2020

The proposed development at 517 Plains Road East in the City of Burlington is situated within the "Plains Road Corridor Residential Parking Exemption Area," as designated on Diagram 1-B of Zoning By-law 2020 (Part 1, pg. 46), a policy provision established to promote transit-oriented development and housing intensification along high-frequency transit corridors such as Plains Road between key GO Major Transit Station Areas. This designation has been confirmed through discussions with City staff (see Appendix A), exempting the residential component from minimum parking requirements to provide flexibility based on market demand and reduce development costs in these priority growth areas. Commercial parking standards under By-law 2020 nevertheless apply, with required and proposed spaces detailed in **Table 12**.

Table 12: City of Burlington Zoning By-Law 2020 Vehicle Parking Requirement

Land Use	Units or GFA	Required Parking Rates	Required Parking	Proposed Parking	Difference
Residential	179	N/A	N/A	90	+90
Commercial (Retail)	422.45 sq m	3.5 spaces/100 sq m GFA	15	15	0
Total			**15**	**105**	**+90**

Note: Where the calculation of the required parking spaces results in a number containing a fraction, fractions of less than 0.5 shall be rounded down to the nearest whole number and fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

As outlined in **Table 12**, the proposed development is required to provide 15 parking spaces for commercial units. The current site plan statistics indicate 15 parking spots for commercial use, meeting the by-law requirements.

7.2 Accessible Parking Requirement

The City of Burlington Zoning By-Law 2020 *Table 1.2.7* outlines the requirement for accessible parking for the proposed development. The accessible parking requirements and provisions are for the proposed development are outlined in **Table 13.**

Table 13: City of Burlington Zoning By-Law 2020 Accessible Parking Requirement

Total Parking spaces	Required Accessible Parking Spaces	Proposed Accessible Parking
105	3% of proposed parking spaces	3
Total Required		**3**
Total Provided		**3**
Difference		**-**

Note: Where the calculation of the required parking spaces results in a number containing a fraction, fractions of less than 0.5 shall be rounded down to the nearest whole number and fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number.

In accordance with Table 1.2.7 of the City of Burlington Zoning By-law 2020, as summarized in **Table 13**, the proposed development is required to provide 3 accessible parking spaces. The site layout provides 3 accessible parking spaces, thereby meeting the by-law requirement.

7.3 Bicycle Parking Requirement

The City of Burlington Zoning By-law 2020, *Table 1.2.8,* outlines the requirements for bicycle parking for commercial, institutional, and industrial developments only. Bicycle parking requirements for residential developments are not provided in the by-law. However, the proposed development provides total 42 bicycle parking spaces on ground floor and underground parking levels.

8.0 TRANSPORTATION DEMAND MANGEMENT (TDM)

Transportation Demand Management (TDM) Plan discusses measures to reduce congestion, minimize the number of single-occupant vehicle and encourage non-auto modes of travel such as walking, cycling and transit as well as ridesharing. TDM plans consist of specialized policies, targeted plans, innovative mobility services and products that encourage people to use sustainable modes of transportation, rather than driving alone, or make fewer trips by car.

TDM strategies have multiple benefits including reduce auto-related emissions to improve air quality, decreased traffic congestion to reduce travel time, increased travel options, reduce personal transportation costs and energy consumption and support Provincial smart growth objectives.

8.1.1 Transit

There are four transit stops situated in the vicinity of the proposed development. Consultation may be undertaken with Burlington Transit and/or GO Transit to identify opportunities to upgrade the existing stops, including the provision of shelters, seating, or other passenger amenities.

8.1.2 Cyclist Facilities

The proposed development provides a total of 42 bicycle parking spaces located on the ground floor and within the underground parking levels. The Site Plan includes 16 bicycle parking spaces positioned at the front of the site, adjacent to Plains Road East, to facilitate convenient access and direct travel along Plains Road East.

Currently, dedicated on-street painted bicycle lanes are provided along both sides of Plains Road East within the study area, forming part of the City of Burlington's cycling network. These facilities support east–west cycling movements and provides access to additional cycling facilities along King Road and the Francis Road Bikeway. Francis Road Bikeway is a fully separated multi-use path located along the east side of the site, extending from North Shore Boulevard in the south to Warwick Drive in the north. It offers an off-road cycling alternative to the on-street King Road bicycle lanes.

The proposed development has total 42 bicycle parking spots with 16 at grade parking spots and 26 weather protected parking spots in underground parking levels.

8.1.3 Pedestrian Facilities

The existing concrete sidewalk along the north side of Plains Road East provides direct, continuous pedestrian access to the primary entrance of the proposed building. This established pedestrian connection supports safe and convenient access for residents, visitors, and patrons by linking the site to the broader public sidewalk network. The presence of this infrastructure enhances walkability, promotes active transportation, and ensures seamless integration between the development and the surrounding streetscape.

8.1.4 Parking

The proposal includes total 105 parking spaces, including 15 commercial parking spaces and 90 parking spaces for tenants and visitor usages of 179 residential units.

This approach helps to moderate vehicle ownership per household and promotes the use of alternative transportation modes for certain trips, particularly during peak congestion periods. Given the site's strategic proximity to public transit, including convenient access to the GO train network and local transit services, the reduced parking provision is appropriate and supported, as it facilitates sustainable travel options for both residents and visitors.

Additionally, parking may be offered on an unbundled basis from the purchase of a residential unit, providing prospective residents with greater transparency regarding the costs associated with vehicle ownership and further encouraging lower rates of automobile ownership.

8.1.5 Education and Incentives

Provision of a Traveling Information Brochure: The owner shall coordinate with City of Burlington to deliver and promote the Transit Incentive information packages and programs. The information packages include Burlington Transit schedules, community and cycling maps, where appropriate. The Information Package can be distributed at the sale office.

Provision of Transit Incentives: The Owner shall provide one-time pre-loaded PRESTO Cards with the starting value of $25 (inclusive of the registration fee) for each residential unit on demand basis. This will help the future residents to consider taking Burlington Transit service as an alternative mode of transportation. The pre-loaded PRESTO Cards can be distributed in conjunction with the Information Package at the time of occupancy.

9.0 CONCLUSIONS

The following section provides brief overview of the study findings and our assessment of the transportation related aspects of the proposed development.

DEVELOPMENT PROPOSAL

- The proposal consists of an 11-storey mixed-use apartment building with 179 total residential units and 8 commercial units on the ground floor with a commercial area of 422.45 square meters. Access is proposed through a full-move driveway from Mary Street, which connects to the ground floor loading area and ramp providing access to two levels of underground parking. The proposal includes total 105 parking spaces.

Base Year (2026) Traffic Operations

- The intersection capacity analysis for the 2026 base year conditions indicates that all study area intersections are expected to operate at generally acceptable levels of service during the weekday AM and PM peak hours. Both signalized intersections—Plains Road East at King Road and Plains Road East at 484 Plains Road East—operate at overall Level of Service

(LOS) C and A, respectively, with volume-to-capacity (v/c) ratios below critical thresholds, confirming sufficient intersection capacity.

- Unsignalized intersections along Plains Road East (at Sanford Drive and Joan Drive) and Mary Street at Joan Drive also operate efficiently under existing traffic volumes, with minimal delay and short queue lengths. Although some individual movements at the Plains Road East and King Road intersection experience higher delays (e.g., northbound through and southbound through movements operating at LOS D–E), overall intersection performance remains acceptable and consistent with municipal standards.
- Accordingly, no critical capacity or operational deficiencies were identified within the study area under existing (2026) traffic conditions.

Future Background Horizon Year, Growth Rate & Developments

- In accordance with discussions held with City staff and the submitted Terms of Reference, a five-year (2031) planning horizon for the proposed development was adopted for assessment purposes.
- Based on the discussion with City staff, annual growth rate of 1.0% was applied along Plains Road E and Gallagher Road to estimate the future background traffic volume.
- For the 2031 horizon year, background traffic conditions account for both general corridor growth and the additional traffic generated by approved or proposed developments within the vicinity of the study area. Two major mixed-use developments were identified in consultation with City staff: 1010 Downsview Drive & 355 Plains Road East, and 484–490 Plains Road East, each comprising multi-storey mixed-use buildings with significant residential components and townhouse blocks. These background developments were incorporated into the Traffic Operations Analysis to ensure that future intersection performance reflects cumulative area growth rather than site-related traffic in isolation.

Future (2031) Background Traffic Conditions

- Under 2031 background conditions, which combine general growth and traffic from approved background developments, all study intersections are anticipated to operate at acceptable levels of service during the weekday AM and PM peak hours. The signalized intersection of Plains Road East & King Road is projected to operate at overall LOS C in both peak periods with v/c ratios below 1.0, and no critical capacity deficiencies are identified despite some individual movements operating at LOS D–E. The signalized intersection at Plains Road East & 484 Plains Road East similarly operates at overall LOS A, with delays and queues remaining within acceptable planning thresholds.
- The unsignalized intersections at Plains Road East & Sanford Drive, Plains Road East & Joan Drive, Mary Street & Joan Drive, and the Mary Street & proposed Site Access are all expected to function at LOS A–D for minor movements with short queues and manageable delays, indicating adequate reserve capacity under future background traffic volumes. Overall, the future (2031) background traffic operations analysis confirms that the study area network can accommodate forecast background traffic demands without requiring geometric or control modifications at the study intersections.

Trip Generation

- Based on the trip generation calculations, the proposed mixed-use development is estimated to generate a total 59 two-way trips (20 inbound and 39 outbound) during the weekday morning peak hour and 88 two-way trips (51 inbound and 37 outbound) during the afternoon peak hour.

Future (2031) Total Traffic Conditions

- Under 2031 total traffic conditions, combining future background and site-generated traffic, all study intersections are projected to operate at generally acceptable levels of service during the weekday AM and PM peak hours. The signalized intersections at Plains Road East & King Road and Plains Road East & 484 Plains Road East are expected to operate at overall LOS C and LOS A, respectively, with volume-to-capacity ratios remaining below 1.0 and no critical capacity deficiencies identified, although certain individual movements are anticipated to operate at LOS D–E. The unsignalized intersections at Plains Road East & Sanford Drive, Plains Road East & Joan Drive, Mary Street & Joan Drive, and the Mary Street & proposed Site Access are forecast to operate at LOS A–E for minor movements with manageable delays and short queues, indicating adequate operational performance under total traffic volumes. Overall, the analysis confirms that the study area road network can accommodate the combined effects of background growth and site traffic without requiring intersection control or geometric improvements under future (2031) total traffic conditions.

Parking Requirement

- As outlined in **Table 12**, the proposed development is required to provide 15 parking spaces for commercial units. The current site plan statistics indicate 15 parking spots for commercial use, meeting the by-law requirements.
- In accordance with Table 1.2.7 of the City of Burlington Zoning By-law 2020, as summarized in **Table 13**, the proposed development is required to provide 3 accessible parking spaces. The site layout provides 3 accessible parking spaces, thereby meeting the by-law requirement.
- The City of Burlington Zoning By-law 2020, *Table 1.2.8,* outlines the requirements for bicycle parking for commercial, institutional, and industrial developments only. Bicycle parking requirements for residential developments are not provided in the by-law. However, the proposed development provides total 42 bicycle parking spaces on ground floor and underground parking levels.

Site Access

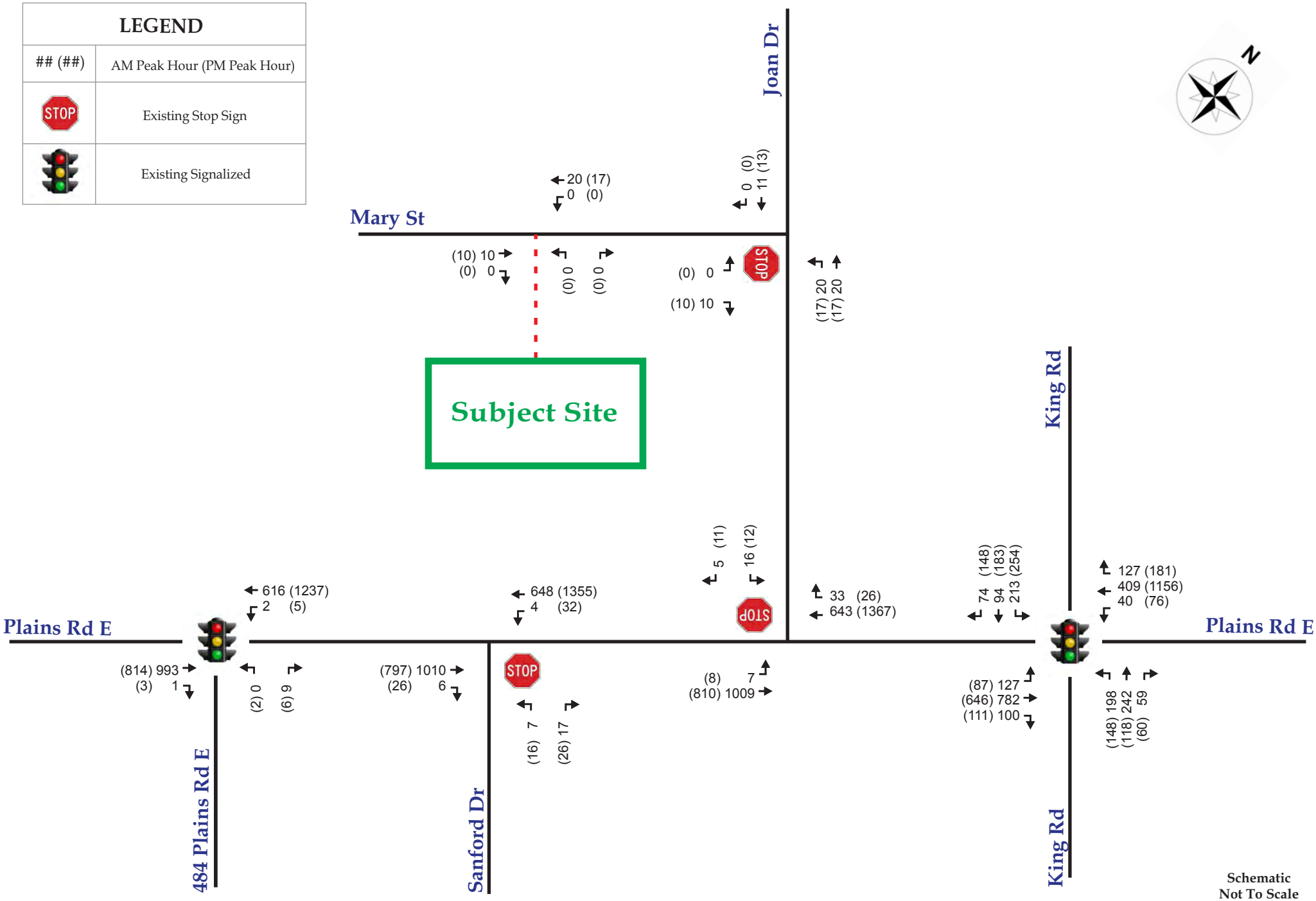
- Vehicular access to the proposed development will be provided via a single full-movement driveway on Mary Street, connecting directly to the ground floor loading area and the ramp serving two levels of underground parking, and is expected to operate safely given the low volumes on this local road and the acceptable operations at the Mary Street intersections

under 2031 total traffic conditions. AutoTURN analysis confirms that a standard 5.6 m passenger vehicle and design loading and waste collection vehicles can maneuver to and from the site, as well as within the internal circulation system, without encroachment or operational conflicts.

10.0 RECOMMENDATIONS

The following section provides our recommendations for the proposed development.

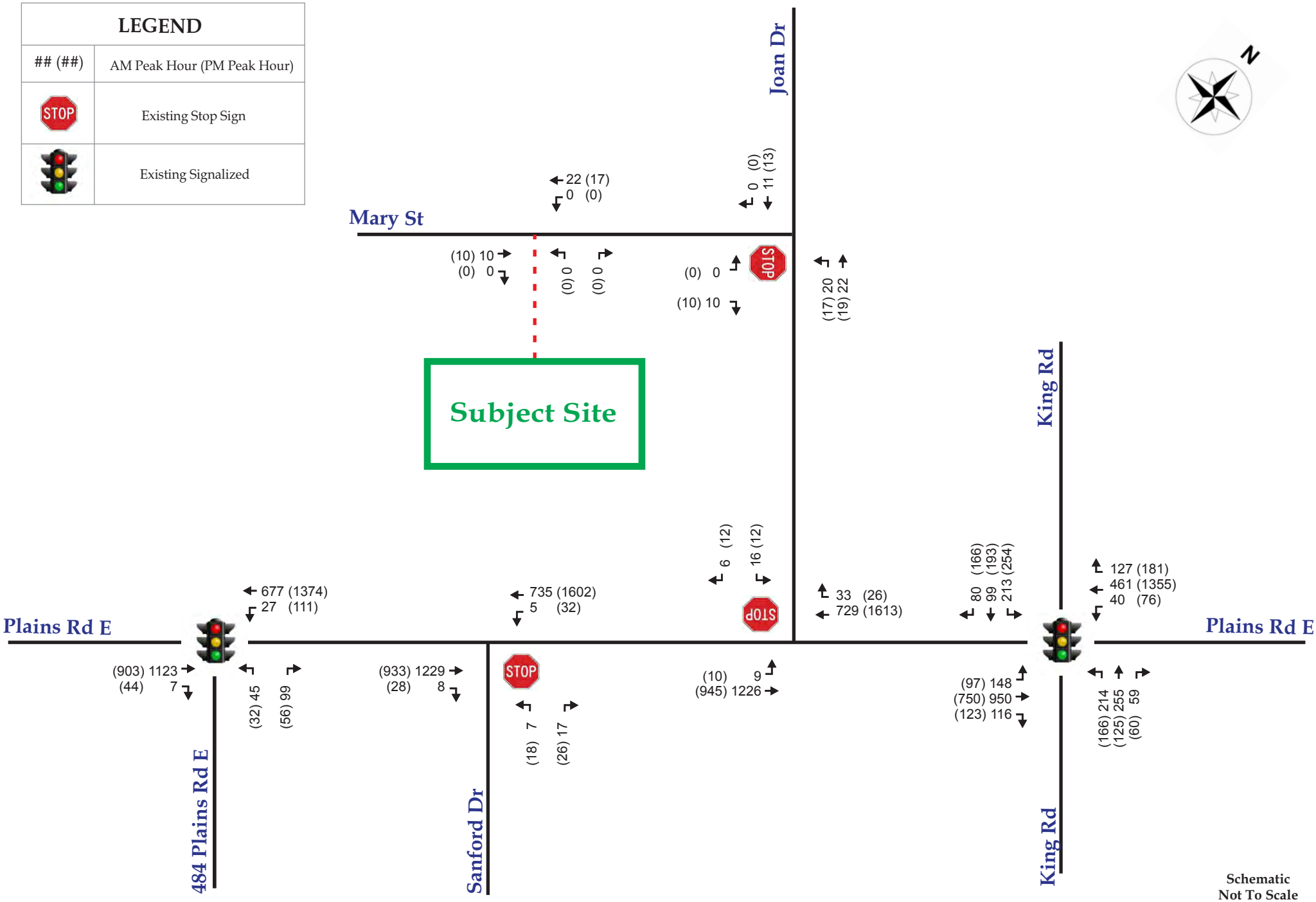
- In accordance with the Ontario Traffic Manual (OTM) Book 5, UrbanTrans' recommend appropriate internal signage and convex mirrors. A truck warning system will be provided when there is a truck reversing at the loading docks, the warning system will flash to notify motorists that garbage/loading trucks are in operation.
- The proposed development implements TDM measures and incentives identified in this report to support active transportation and transit in order to reduce congestion, minimize the number of single-occupant vehicles and encourage non-auto modes of travel such as walking, cycling and transit as well as ridesharing.



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517 Plains Road East, City of Burlington
Project No. UT-25-111
February 2026

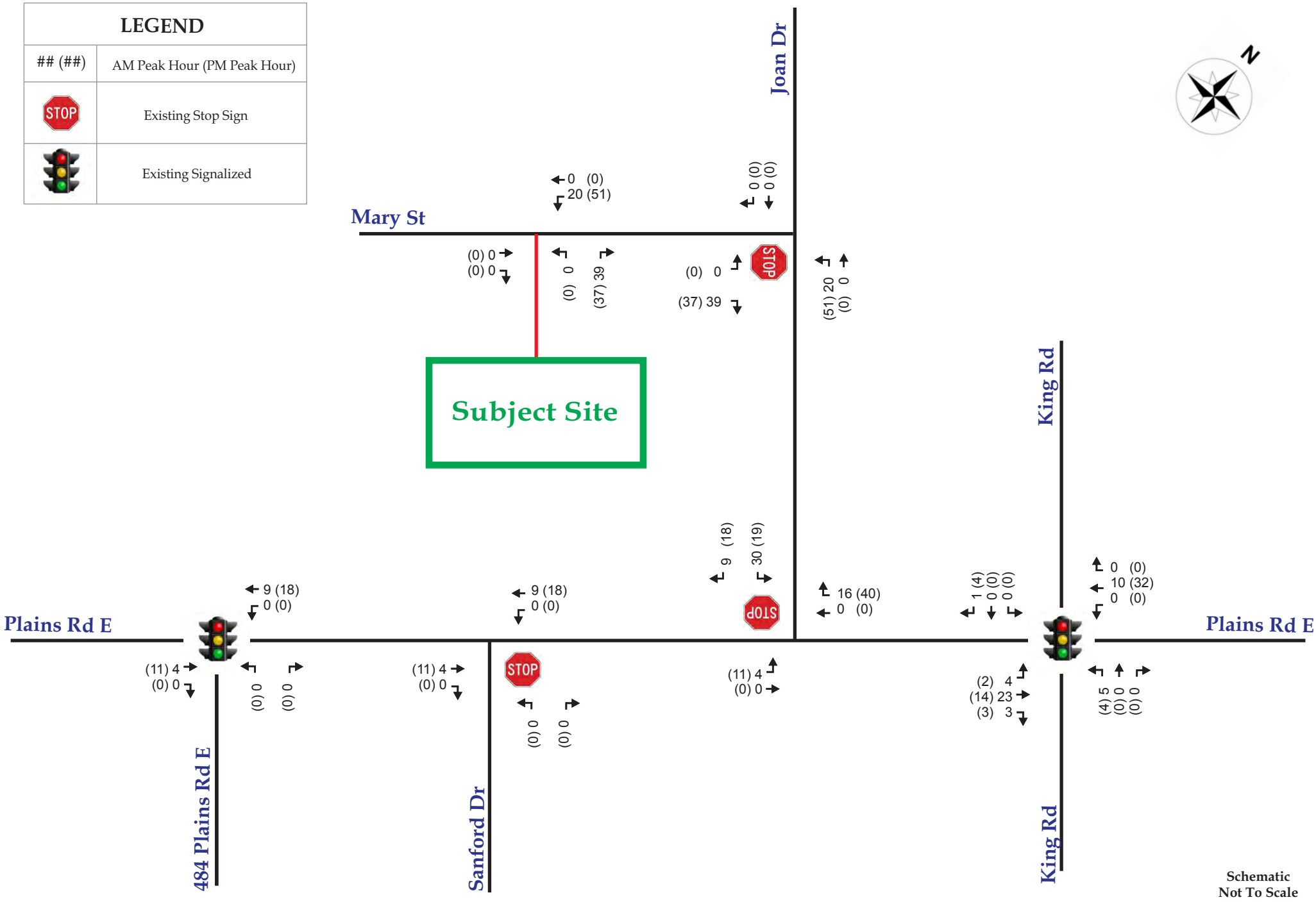
Figure 4 - Base Year (2026) Traffic Volumes



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February 2026

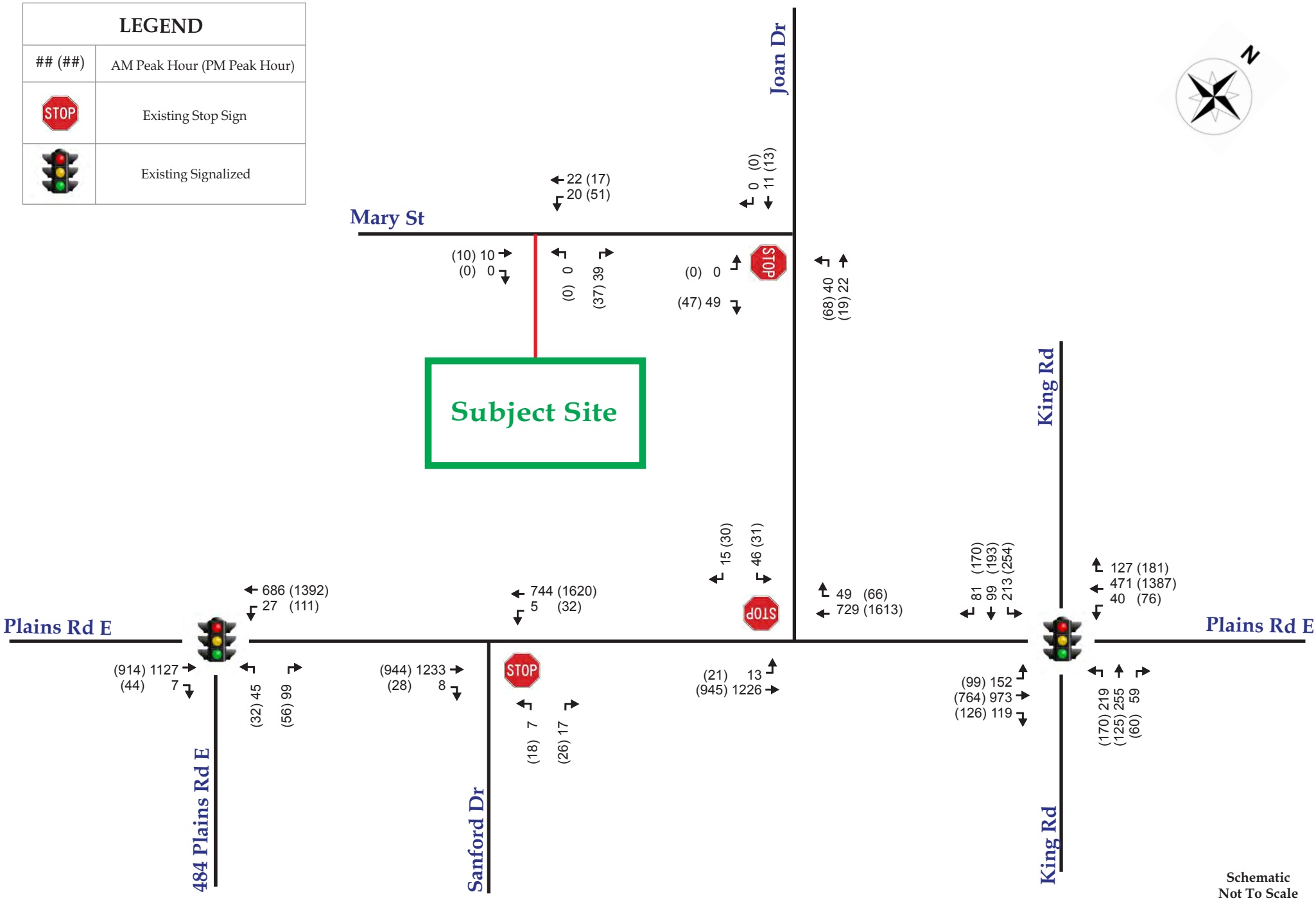
Figure 5 - Future (2031) Background Volumes



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February 2026

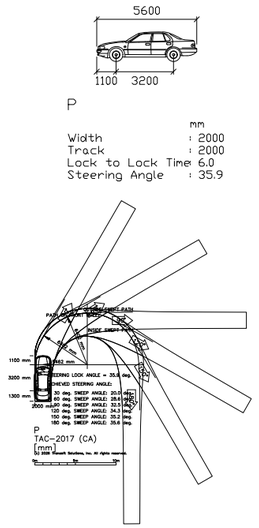
Figure 6 - Site Generated Traffic Volumes

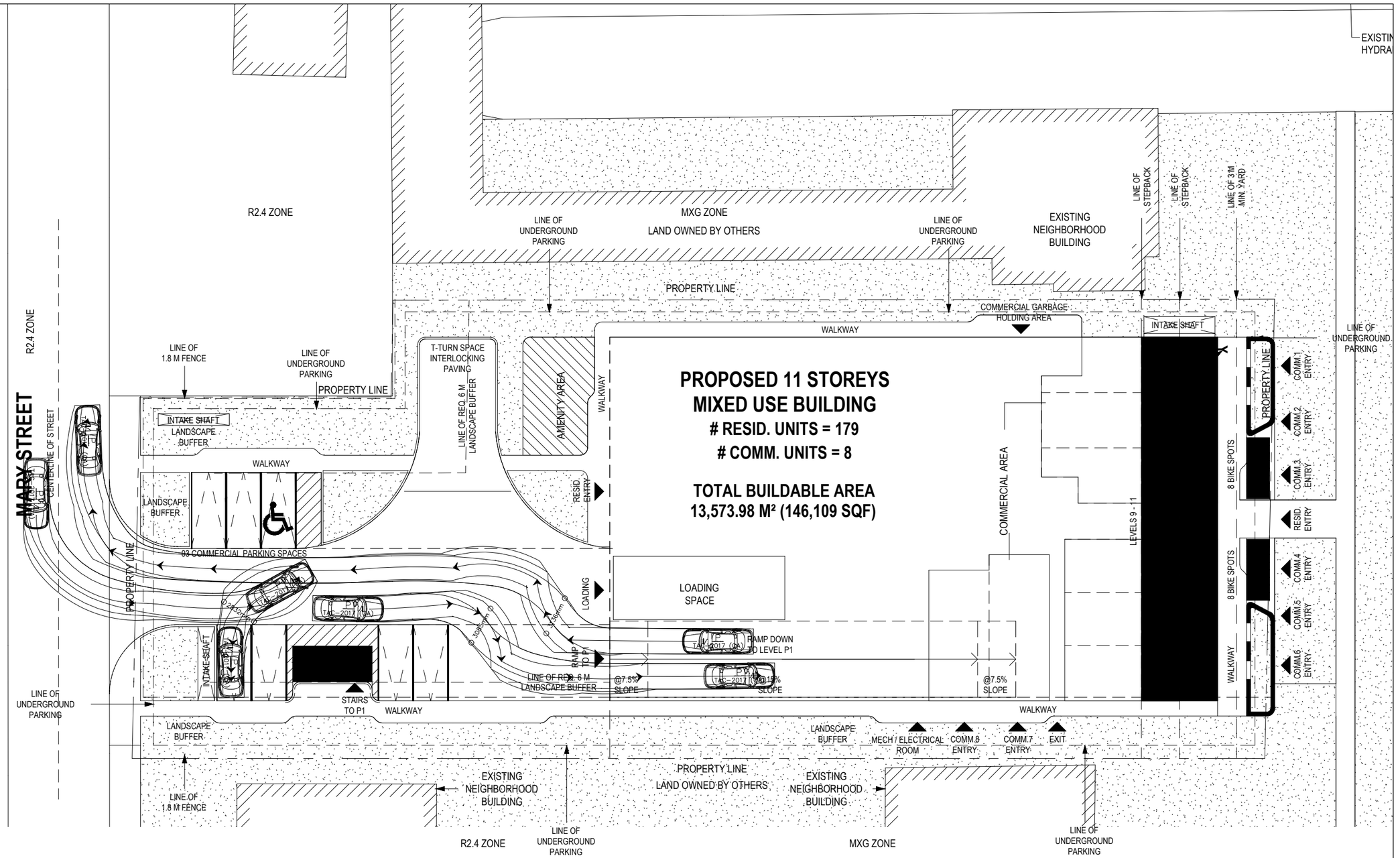


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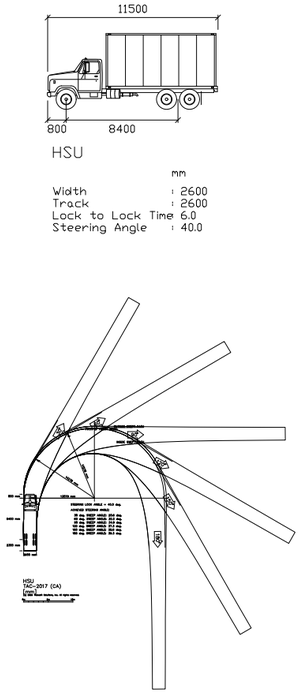
517 Plains Road East, City of Burlington
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February 2026

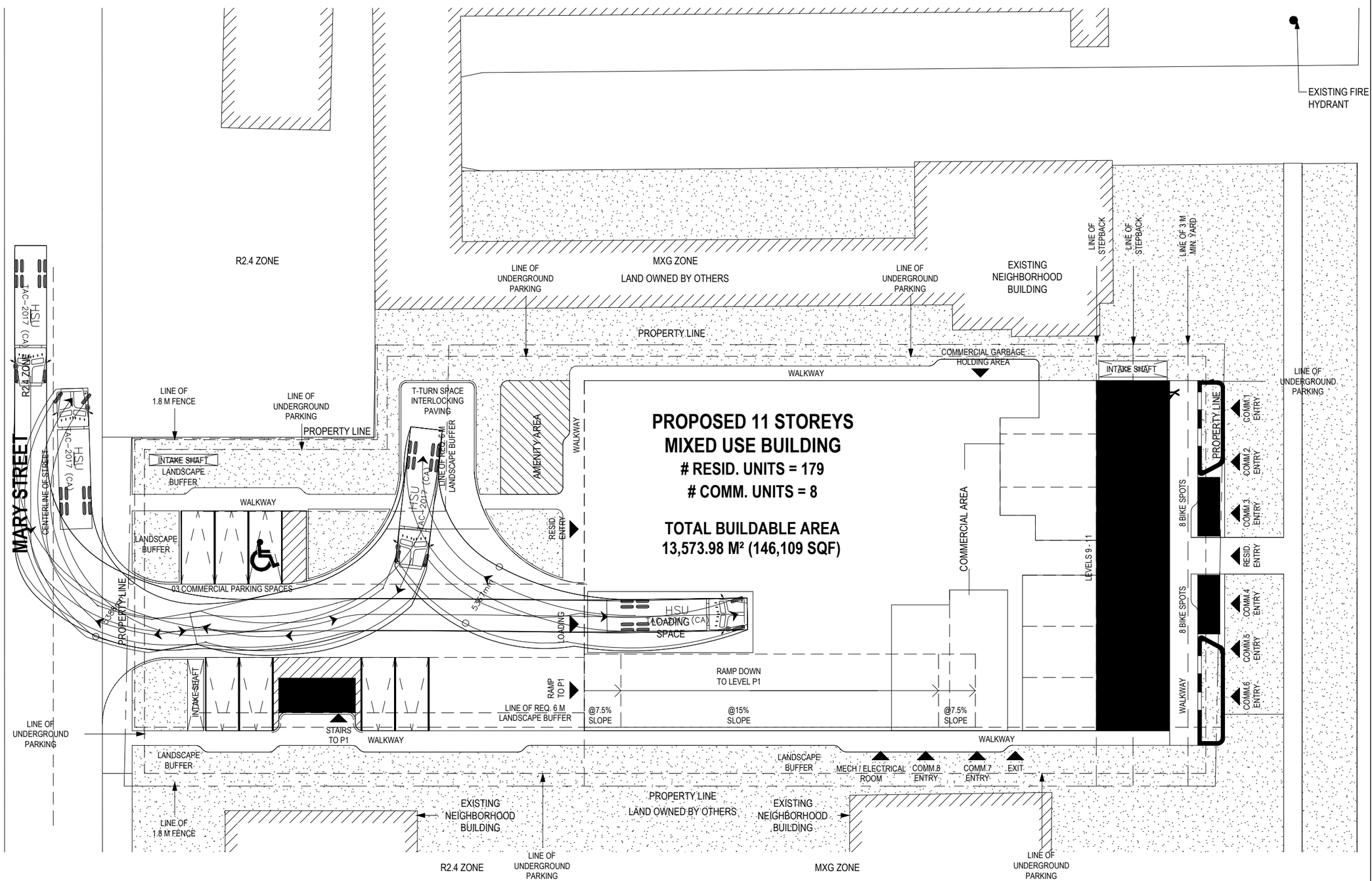
Figure 7 - Future (2031) Total Volumes





URBANTRANS Engineering Solutions Inc.	Project Name: Proposed Mixed Use Building 517 Plains Road East, City of Burlington	Drawing Title: AutoTURN Analysis Passenger Vehicle (P-TAC 2017)	
		Drawing No.: Figure 8	Date: March 3, 2026
		Project No.: UT-25-111	Drawn By: AS
		Scale: NTS	Notes:





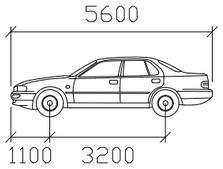
URBANTRANS Engineering Solutions Inc.

Project Name:

Proposed Mixed Use Building

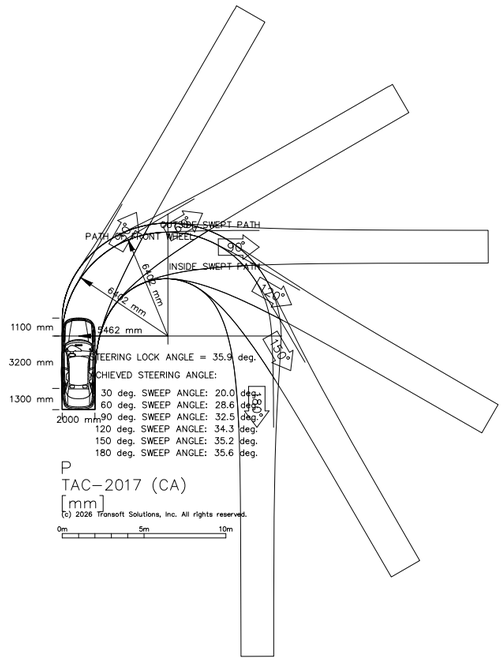
517 Plains Road East, City of Burlington

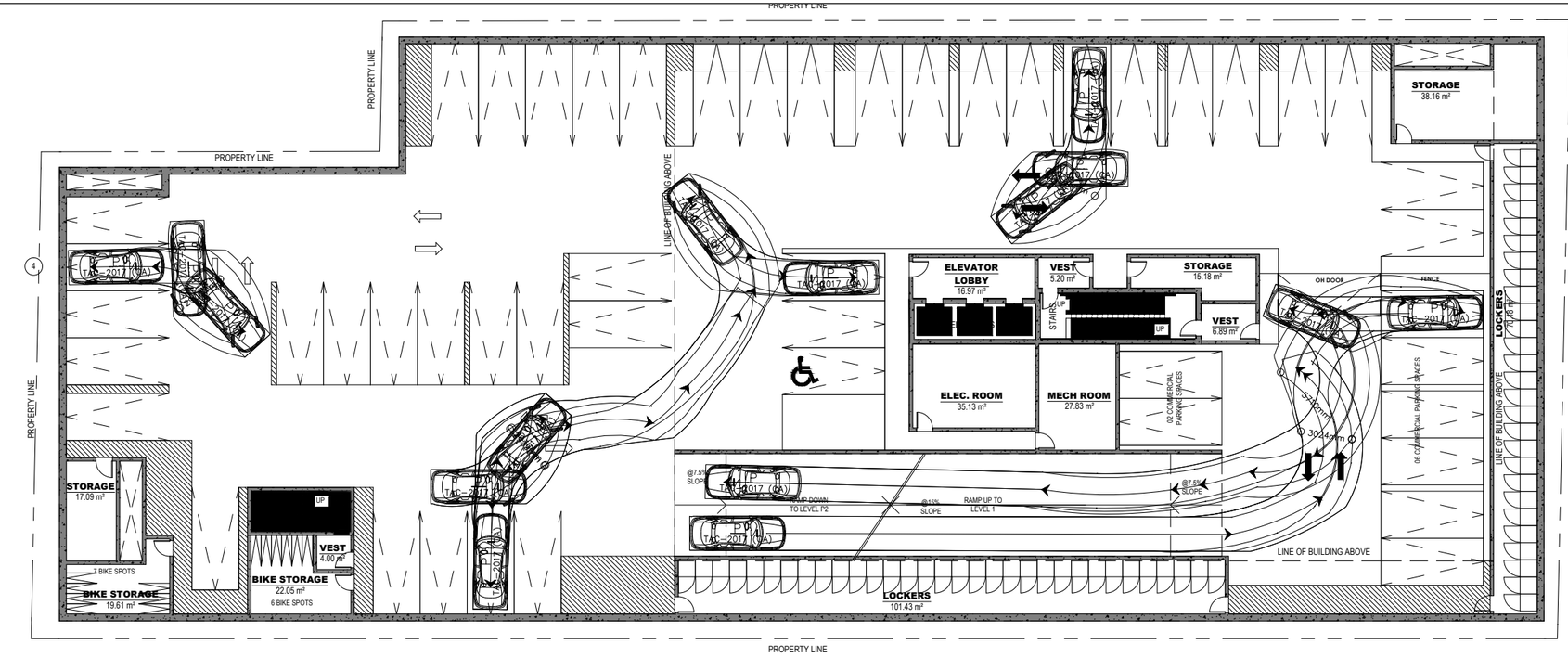
Drawing Title:	AutoTURN Analysis City Waste Collection Truck (HSU TAC-2017)		
Drawing No.:	Figure 9	Date:	March 3, 2026
Project No.:	UT-25-111	Drawn By:	AS
Scale:	NTS	Notes:	

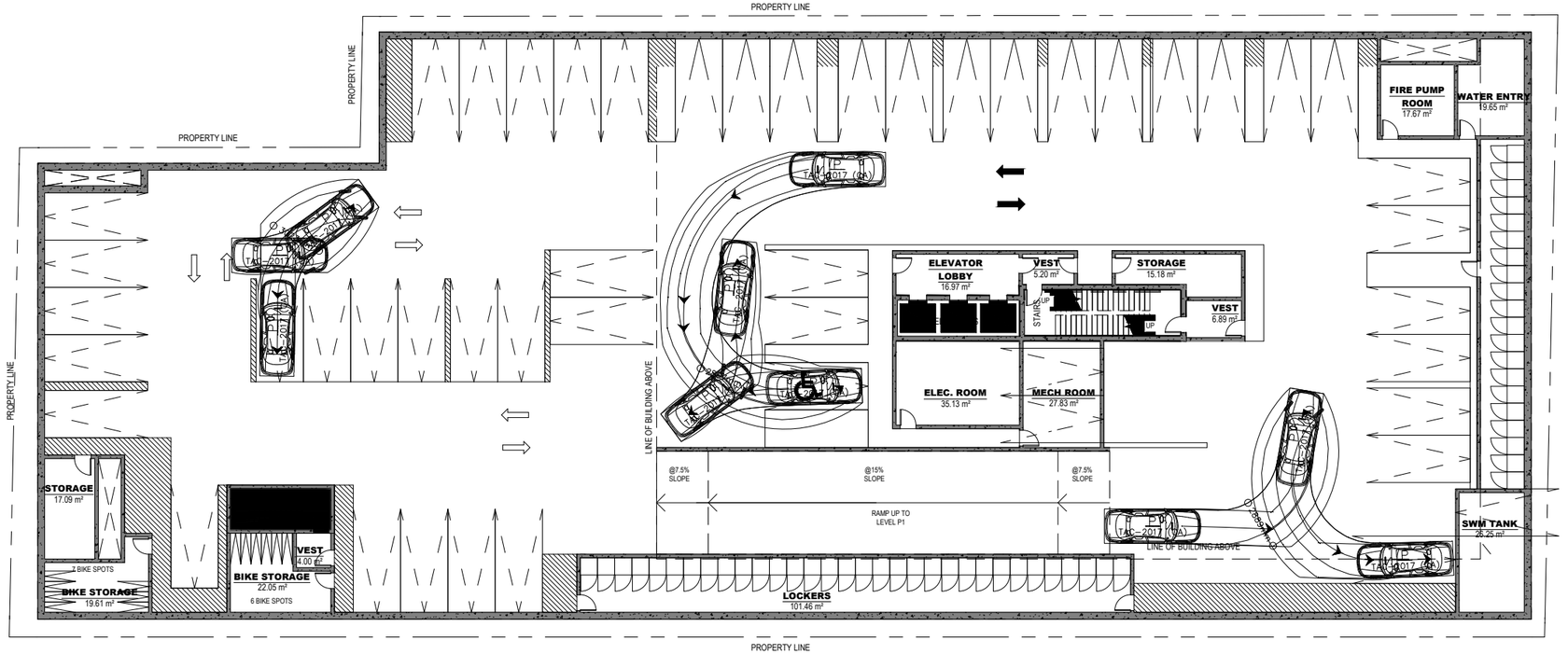


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Lock to Lock Time	: 6.0
Steering Angle	: 35.9







URBANTRANS
Engineering Solutions Inc.

Project Name:

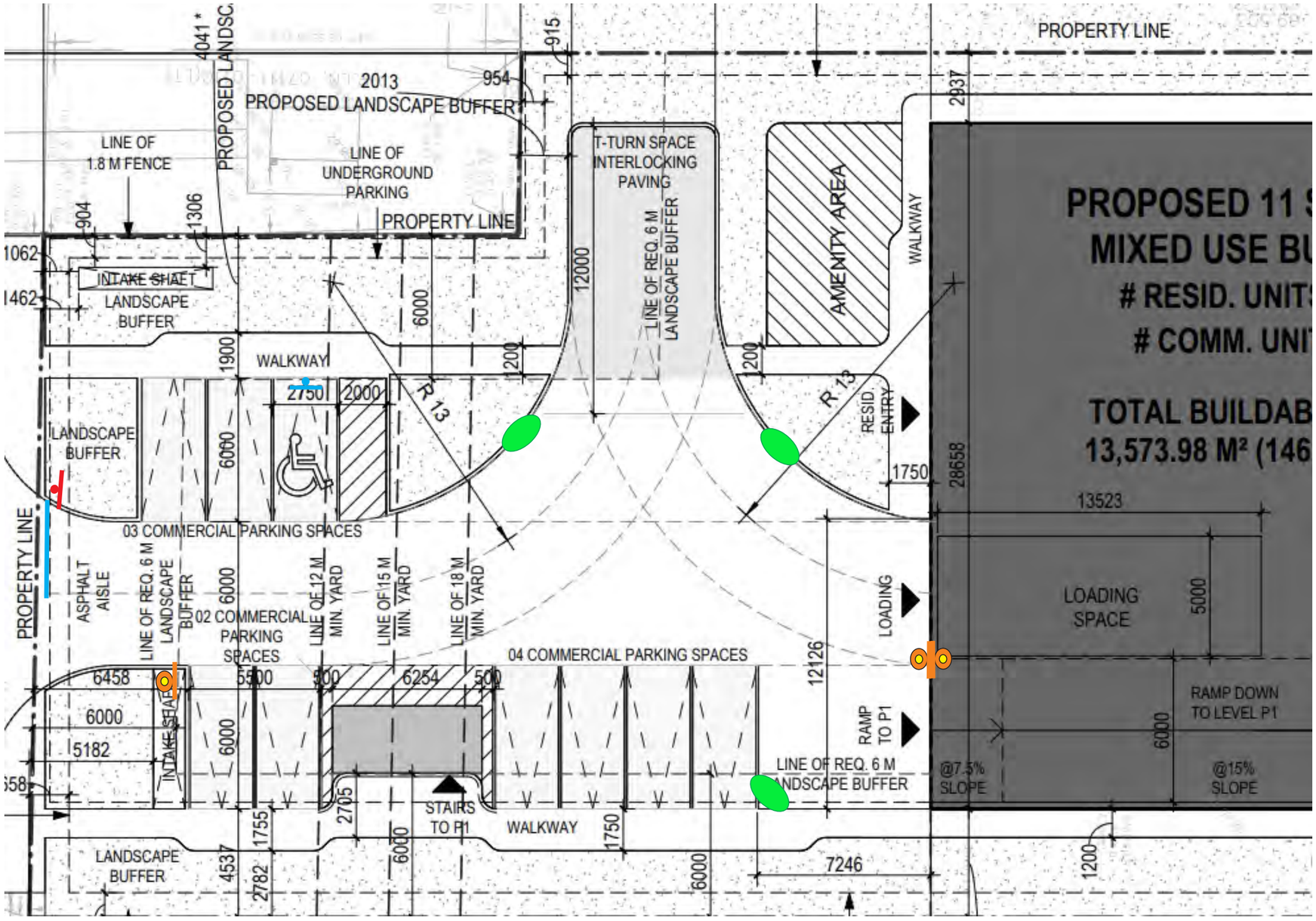
Proposed Mixed Use Building

517 Plains Road East, City of Burlington

Drawing Title:	AutoTURN Analys Passenger Car Underground Parking Level		
Drawing No.:	Figure 10	Date:	March 3, 2026
Project No.:	UT-25-111	Drawn By:	AS
Scale:	NTS	Notes:	

LEGEND

SYMBOL	DESCRIPTION
	STOP Sign (Ra-1)
	STOP BAR (Solid White Retro-Reflective Line between 30cm and 60 cm wide) Solid Yellow Line Pavement Marking
	Flashing Beacon
	TRUCK LOADING IN PROGRESS
	DISABLED PARKING Sign PERMIT (Rb-93)
	Convex Mirror



URBANTRANS
Engineering Solutions Inc.

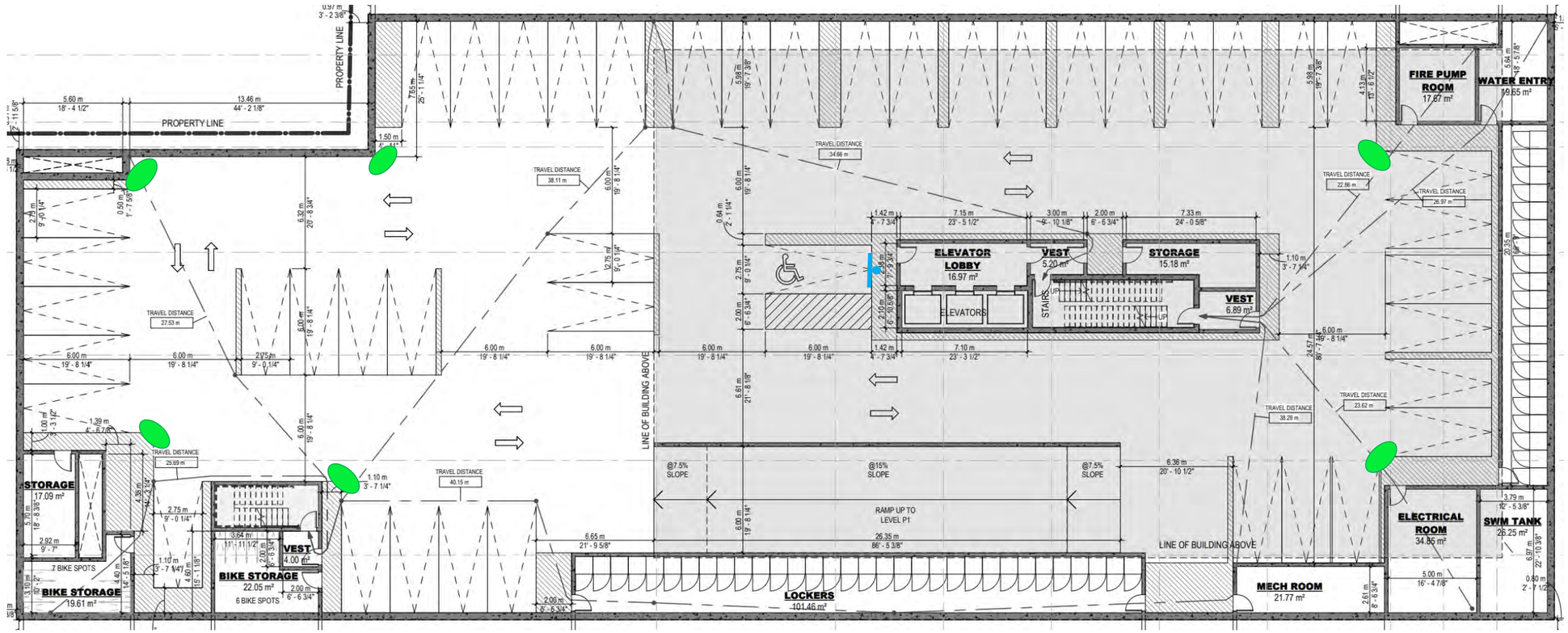
Project Name:

PROPOSED MIX-USE RESIDENTIAL DEVELOPMENT
517 Plains Rd E, City of Burlington

Drawing Title:	Signage and Pavement Marking Plan (Ground Floor)		
Drawing No.:	Figure 11	Date:	March 1, 2026
Project No.:	UT-25-111	Drawn By:	AS
Scale:	NTS	Notes:	

LEGEND

SYMBOL	DESCRIPTION
	DISABLED PARKING Sign PERMIT (Rb-93)
	Convex Mirror



URBANTRANS Engineering Solutions Inc.

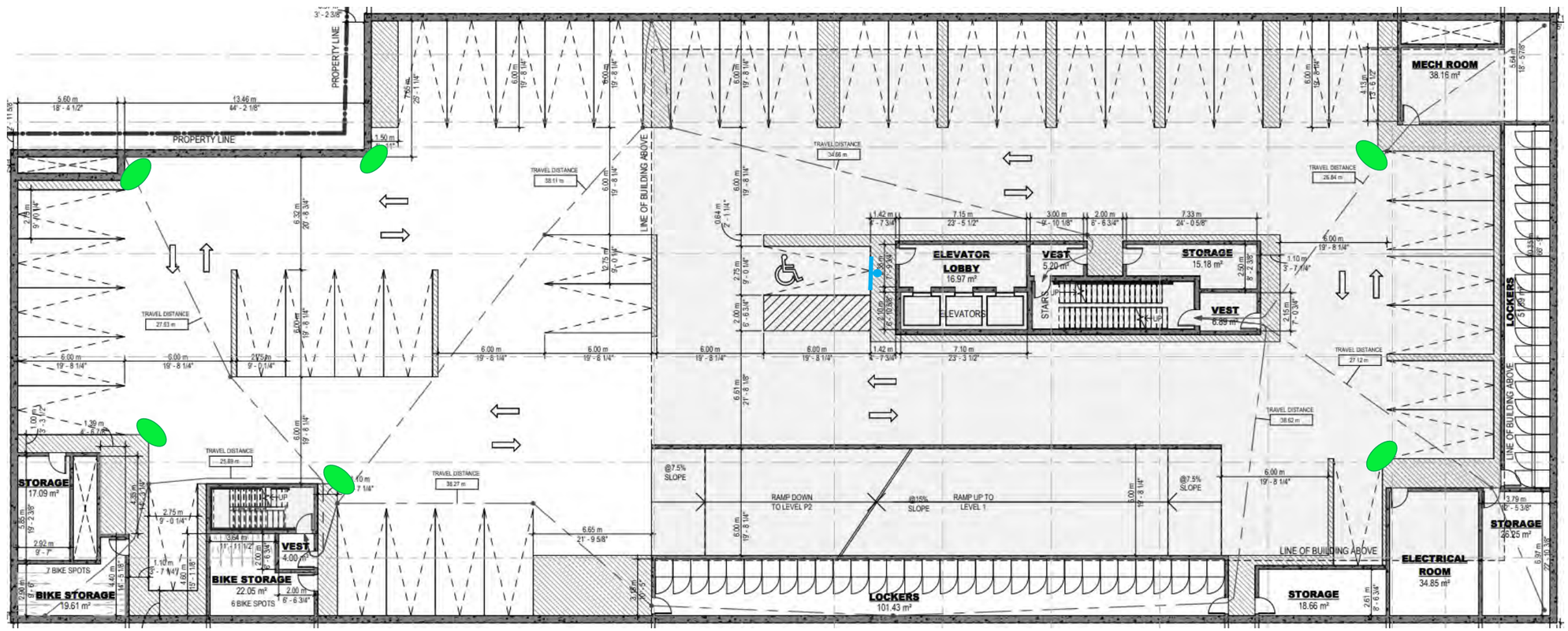
Project Name:

PROPOSED MIX-USE RESIDENTIAL DEVELOPMENT
517 Plains Rd E, City of Burlington

Drawing Title:	Signage and Pavement Marking Plan (Parking Level P2)		
Drawing No.:	Figure 12	Date:	March 1, 2026
Project No.:	UT-25-111	Drawn By:	AS
Scale:	NTS	Notes:	

LEGEND

SYMBOL	DESCRIPTION
	DISABLED PARKING Sign PERMIT (Rb-93)
	Convex Mirror



URBANTRANS
Engineering Solutions Inc.

Project Name:	PROPOSED MIX-USE RESIDENTIAL DEVELOPMENT 517 Plains Rd E, City of Burlington	Drawing Title:	Signage and Pavement Marking Plan (Parking Level P1)
		Drawing No.: Figure 13	Date: March 1, 2026
		Project No.: UT-25-111	Drawn By: AS
		Scale: NTS	Notes:

Appendix A
Terms of Reference

URBANTRANS
Engineering Solutions Inc.

Traffic Impact Study

Proposed Residential Development

517 Plains Road East
City of Burlington, Ontario

UT-25-111

January 5, 2026

URBANTRANS
Engineering Solutions Inc.

UrbanTrans Engineering Solutions Inc.
9275 Markham Road, Suite 146
Markham ON L6E 0H9
Tel: 437-236-7085
annosan@uteng.ca

TERMS OF REFERENCE

To: Thalia Thompson, City of Burlington

From: Annosan Srikantha, President, UrbanTrans Engineering Solutions Inc.

Date: January 5, 2026

Re: Terms of Reference for Traffic Impact Study – Proposed Mixed Use Apartment Building – 517 Plains Road East, City of Burlington

---

These Terms of Reference below are to serve as a general guideline to present the purpose, structure and scope of the work to be undertaken for the preparation of the Traffic Impact Study (TIS) in support of a Site Plan Application. The proposed development is located approximately 350 meters west of King Road on the north side of Plains Road East

The proposal consists of an 11-storey mixed use apartment building with 179 total residential units and 8 commercial units on the ground floor with a gross floor area of 13,573.98 square meters. Access is proposed through a full-move driveway from Mary Street, which connects to the ground floor loading area and ramp providing access to two levels of underground parking. The proposal includes 86 residential parking spaces throughout 2 levels of underground parking, and 9 commercial parking spaces on the ground floor. The proposed types of unit schedules for residential and commercial units are shown in the tables below:

Table 1: Residential Units Schedule

Type of Unit	Area (sq. ft)	Amount
A1	669	4
A2	669	9
A3	719	18
A4	724	18
C1	492	3
C2	509	24
C3	509	12
C4	574	12
D1	509	2
D2	543	12
D3	559	6
D4	559	6
B1	675	1
B2	675	3
B3	714	24
B4	815	12
E	1148	1
	TOTAL	179

Table 2: Commercial Units Schedule

Type of Unit	Area (sq. ft)	Amount
COMM 1	547	1
COMM 2	652	1
COMM 3	588	1
COMM 4	516	1
COMM 5	465	1
COMM 6	566	1
COMM 7	808	1
COMM 8	530	1
	TOTAL	8

Introduction

The report introduction will include full description of the proposed development, but not limited to:

- Municipal Address
- Existing and proposed land uses, access locations and operations
- Total building size and parking/loading supply
- Anticipated date of occupancy

Existing Traffic and Active Transportation Conditions

The existing traffic analysis for the development includes the following, but not limited to:

- Review the existing conditions of the surrounding area, including road network (i.e., traffic data, lane configuration and turning restrictions), active transportation and/or transit network and assessment.
- Turning movement counts will be collected during weekday AM (7am-10am) and weekday PM (4pm-7pm) peak periods at the following study area intersections:
    - Plains Road East & King Road (Signalized)
    - Plains Road East & 484 Plains Road East (Signalized)
    - Plains Road East & Sanford Drive (Unsignalized)
    - Plains Road East & Joan Drive (Unsignalized)
- The traffic data obtained will utilize window-based computer software (Synchro Version 11) to undertake capacity analysis (i.e. multi-modal level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday peak hour periods for signalized and unsignalized intersections.
- Document the results of multi-modal level-of-services analysis, including overall delay, control delay per vehicle, vehicle queues, and volume/capacity ratios for each intersection and critical lane group or critical movements in appendix to the TIS.

Future Background Traffic and Transit Assessment

The future background traffic analysis for the development will include, but not be limited to, the following:

- Review the future background traffic volumes surrounding the subject site, including application of a 1% annual background traffic growth rate to existing traffic volumes
- Review and incorporation of approved and planned developments within the study area to account for traffic generated by background developments. The following developments will be included in the future background traffic assessment:
    - 484-490 Plains Road East
    - 1010 Downsview Drive & 355 Plains Road East
- Review of planned transportation network improvements and future transit conditions in the vicinity of the subject site, where applicable.
- A five-year (2031) horizon after the entire building process of the proposed development will be carried out for assessment purposes.
- Document the results of multi-modal level-of-services analysis, including overall delay, control delay per vehicle, vehicle queues, and volume/capacity ratios for each intersection and critical lane group or critical movements in appendix to the TIS.
- Operational deficiencies due to future forecasted traffic volumes will be identified and alleviative measures will be proposed and documented in the final report.

Trip Generation and Distribution

The trip generation and distribution analysis will include:

- Apply trip generation rates from the ITE Trip Generation Manual (11th Edition) and similar development applications in the area to estimate site-generated traffic volumes.
- Select an appropriate Land Use Code (LUC) based on the proposed development and provide justification for the selected Land Use Code.
- The Transportation Tomorrow Survey (TTS) data will be reviewed to forecast the trips generated by the proposed development and trip distributions.

Future Total Traffic Assessment

The future total traffic volume analysis for the development includes the following, but not limited to:

- The Future total traffic assessment comprises of future background traffic volumes plus site generated traffic volumes.
- Document the results of multi-modal level-of-services analysis, including overall delay, control delay per vehicle, vehicle queues, and volume/capacity ratios for each intersection and critical lane group or critical movements in appendix to the TIS.
- Review the proposed site accesses from a safety and operational feasibility perspective.
- Potential operational shortcomings as a result of the proposed development site traffic will be identified and alleviative measures will be proposed and documented in the report
- Identify vehicle queuing that exceeds the available storage and requirement for turn lanes as necessary.
- Access consideration and recommendations necessary to fulfill the study requirements will be detailed.

Parking Assessment

- Describe parking and loading facilities proposed in conjunction with the proposed development.
- Determine whether the proposed vehicle, bicycle and loading supply can sufficiently accommodate the peak parking demand/requirement of the proposed development and meets the City's Zoning By-law requirements.
- A recommended minimum parking rate for proposed land uses, based on best practices and shared parking rationale will be provided (if applicable).
- Justification for any potential parking shortfalls will be provided, including estimation of potential spillover parking and identification of locations where spillover parking may be accommodated.

Transportation Demand Management (TDM)

- Transportation Demand Management measures may include bicycle parking and repair facilities, transit incentives, multimodal information packages, and other measures to encourage sustainable transportation.

Site Access & On-site Circulation Review

- Undertake AutoTURN Analysis as part of the functionality of the site plan by simulating vehicle swept path on the proposed site plan to confirm adequate space requirements are provided for passenger cars, waste collection, fire/emergency, and delivery trucks (where applicable).
- Appropriate signage and pavement marking plans will be recommended in accordance with the Ontario Traffic Manual (OTM).

A Traffic Impact Study (TIS) report will be compiled and produced in final report form for submission to the City summarizing the findings and recommendations with supporting documentation (i.e. summaries of data collection, assumptions related to traffic operations, computer outputs of level of service calculations, and other technical data).

We appreciate the opportunity to submit this Terms of Reference and look forward to working with you on this study application. Should you have any questions or would like to discuss any matter in greater detail, please do not hesitate to contact me at 437-236-7085. We courteously await your instructions to advance.

Kind Regards,
UrbanTrans Engineering Solutions Inc.



Annosan Srikantha, P.Eng.
President

Staff Comments

Good Morning Annosan,
Please find comments on the TIS ToR for 517 Plains Road East below. The comments shall be reviewed and undertaken in conjunction with the ToR submitted.

Introduction/Site Description

The site description included in the document will need to be updated as it does not correspond with the updated site plan submitted. There should also be a summary of the floor spaces and types/number of units.

Existing Traffic and Active Transportation Conditions

Transportation Planning understand that the study area will include the intersections of:

- Plains Road East & Joan Drive,
- Plains Road East & Sanford Drive, and
- Plains Road East & Site Access.

Transportation Planning require that modifications are made to:

- Include Plains Road East & King Road,
- Include Plains Road East & 484 Plains Road East signalized access,
- Include Mary Street & Site Access (in accordance with the site plan), and
- Remove Plains Road East & Site Access (in accordance with the site plan).

For all general inquiries regarding traffic data availability from the City's roads and intersections, please contact:
Josip.Kafadar@burlington.ca via direct email for TMC's
Steve.Vrakela@burlington.ca via direct email for Signal Timing Plans.

Future Traffic and Transit Assessment

Transportation Planning require that the transit section be included under the existing conditions section of the TIS.

Transportation Planning require that the following background developments are included to determine future background traffic:

- 484-490 Plains Road East, and
- 1010 Downsview Drive & 355 Plains Road East.

Any information regarding background development is to be confirmed by the Community Planning Department or found on the City's website:
https://burlington.maps.arcgis.com/home/webmap/viewer.html?webmap=64655c40535f478b8d3adbbbecdb683e

A growth rate of 1% should be applied to background traffic.

Transportation Planning confirm that there are no new roadway or active transportation improvements planned.

Trip Generation and Distribution

Trip generation rates from the most up to date manual and appropriate Land Use Code (LUC) for the development should be applied. Please include full rationale for the LUC selected.

MMLOS

The TIS shall include Multi-modal Level of Service (MMLOS) Analysis. MMLOS performance targets are included in the table below. Analysis shall include design options within the public right-of-way considering the impact of development which will allow the adjacent roads to reach the MMLOS targets below. The analysis should also include the trade-offs, constraints, and preferred options.

LOS Target						
Street Name	Street Type	LOS Per Mode Type				
		Pedestrian	Bikes	Transit	Trucks	Cars
Plains Road E	Urban Main Street	C	C	D	D	D
	Adjusted Targets	B	B	C	C	D
Mary Street / Joan Drive	Neighbourhood Boulevard	D	B	D	Na	E
	Adjusted Targets	C	B	D	Na	E

Future Total Traffic Assessment

Transportation Planning have no comments or concerns with the contents proposed for this section.

Parking Assessment

Transportation Planning understand that there are no applicable minimum parking rates which the proposed development would be subjected to. Given the ratio of proposed units to available visitor and residential parking stalls, however, justification in shortfalls of parking and the potential existence of overflow parking should be discussed within the TIS. An estimate of this spill-over parking and where they could be accommodated is required.

Transportation Planning understand that the proposed development includes a ramp to the underground parking level which exceeds the maximum 12% permitted. As a result,

the Consultant shall provide written confirmation submitted, signed and sealed by a Licensed P. Eng., verifying the proposed grade(s) and the associated transition areas at the top and bottom of the ramp(s) are functional and do not pose safety concerns for vehicles or pedestrians. The Licensed P. Eng. must confirm that adequate visibility is achieved where pedestrian crossings are most likely to occur.

Transportation Demand Management

TDM measures should be thoughtfully designed to ensure their effectiveness in changing travel behaviour and to meet or exceed desired outcomes. This section should be expanded beyond municipal connections to include programs and information packages arranged by the Applicant for future residents of the development. These proposed measures may include the following:

- Bike repair stations,
- Pre-loaded PRESTO cards for first time residents,
- Weather-protected short term bicycle parking,
- Electrical wall outlets in bike lockers for e-bike charging,
- Multimodal travel information and educational measures (e.g., Burlington Transit map, cycling map, GO services map, and cycling safety tips), and
- Ease of access to bike lockers.

Site Access & On-Site Circulation Review

The Consultant shall include AutoTURN analysis for the underground parking level if the configuration and column locations don't follow site plan guidelines.

Kind Regards,

Thalia Thompson
Transportation Planning Technologist
Transportation Services Department
Main: 905-335-7600 ext 7691
426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

Appendix B
Proposed Site Plan

ARCH D - 24" X 36"

05/03/2026 16:02:00



NEW APARTMENT BUILDING

517 Plains Road, Burlington ON

PROJECT NO. 24-677

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST ONTARIO BUILDING CODE.

USE ONLY LATEST REVISED DRAWINGS MARKED AS "ISSUED FOR CONSTRUCTION"

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OWNERS INFORMATION:

REVISIONS:

#	DATE	REMARK
2	2026 03 05	ISSUED FOR OPA AND ZBA
1	2025 06 17	ISSUED FOR OPA AND ZBA

ARCHITECT:

LIMA ARCHITECTS INC.

www.limaarchitectinc.com
E: info@limaarchitectinc.com
T: 289-337-8887

SEALS:

ONTARIO ASSOCIATION OF ARCHITECTS
FERNANDO F. S. LIMA
LICENCE
6901

PROJECT TITLE

NEW APARTMENT BUILDING

517 Plains Road, Burlington ON

DRAWING TITLE

COVERSHEET

DRAWN BY

Lima Architects Inc

SCALE

DATE

DEC 2024

CHECKED BY

FL

PROJECT NUMBER

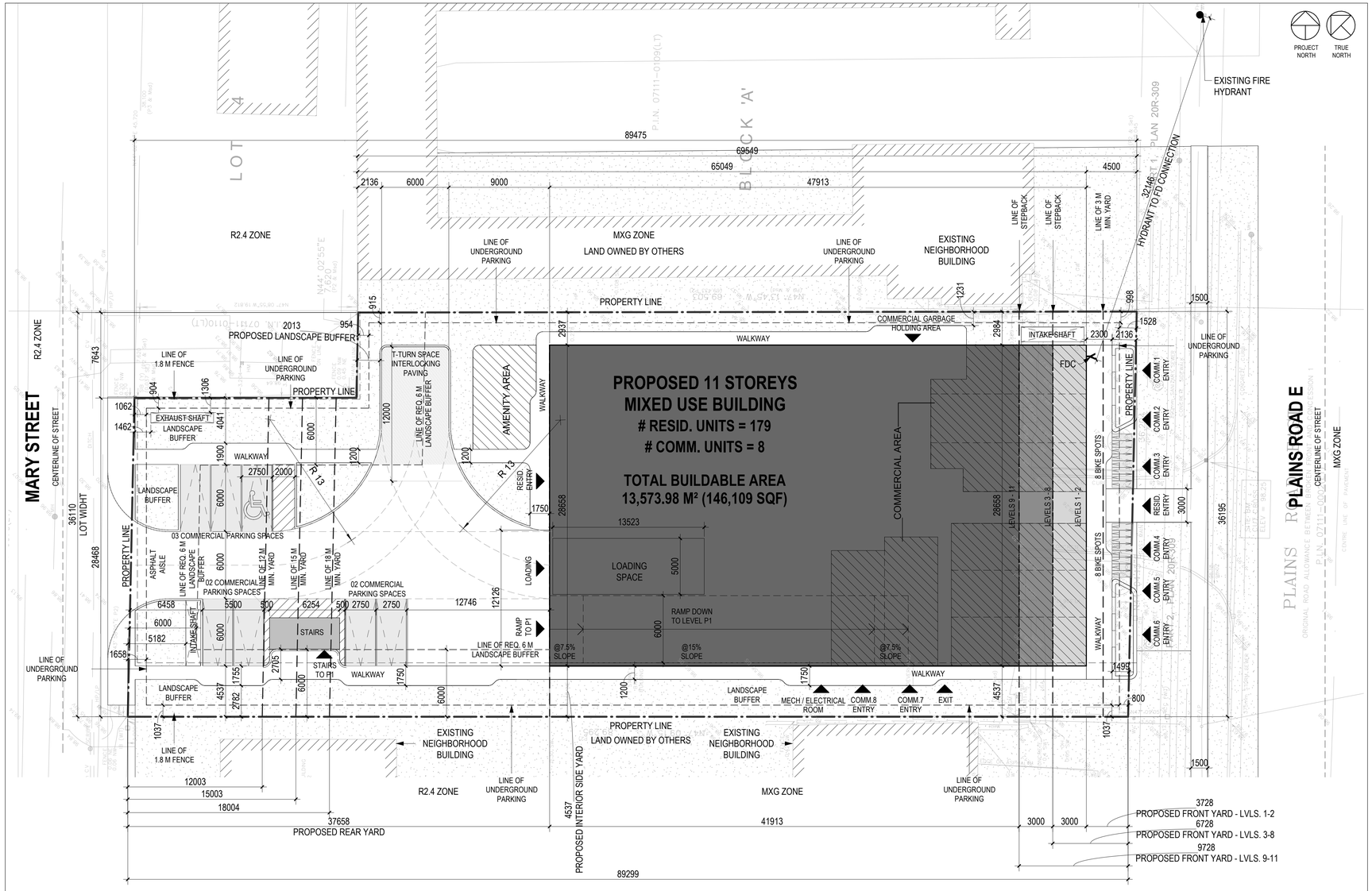
24-677

DRAWING NUMBER

A.0.1

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ARCH D - 24" X 36"



1 A-1.1 SITE PLAN
1 : 200

PROJECT NORTH TRUE NORTH

SITE ADDRESS:
517 PLAINS ROAD
BURLINGTON ON

KEY PLAN
N.T.S



GENERAL PROJECT STATISTICS

SITE ADDRESS: 517 PLAINS ROAD, BURLINGTON ON

STATISTIC	PROPOSED
USE	MIXED USE BUILD.
PROPOSED ZONE	MXG
# STOREYS	11
# UNDERGROUND PARKINGS LVLS.	2
# COMMERCIAL UNITS	8
# RESIDENTIAL UNITS	179
# TOTAL PARKING SPACES	105
# BICYCLE PARKING SPACES	42 SPACES
AREA OF AMENITY (AMENITY + BALCONY)	**1,575.47 M² ***
# LOCKERS	180
TOTAL BUILDABLE AREA (LEVELS 1-11)	**13,573.98** M²

SITE STATISTICS

STATISTIC	REQUIRED	PROPOSED
LOT AREA (MIN.)	1,000.00 M²	3,076.67 M²
MINIMUM LOT WIDTH	25 M	36.20 M
MINIMUM FRONT YARD (M) (PLAINS ROAD E) LEVELS 1-2	3 M	3.72 M
LEVELS 3-8	6.0 M	6.72 M
LEVELS 9-11	9.0 M	9.72 M
MINIMUM INTERIOR SIDE YARD	____	2.98 M & 4.54 M
LANDSCAPE BUFFER ABUTTING A RESIDENTIAL ZONE	6 M	**2 M***
MINIMUM REAR YARD (MARY STREET) - LEVELS 1-3	12 M	
- LEVELS 4-5	15 M	37.65 M
- LEVEL 6	18 M	
MAXIMUM HEIGHT	6 STOREYS	**11 STOREYS***
BUILDING FOOTPRINT	____	1373.11 M²
MAXIMUM FLOOR AREA FOR COMMERCIAL USE	1800 M²	422.45 M²*
MINIMUM FLOOR AREA RATIO	0.3:1 923.00 M²	4.41:1 13,573.98 M²
MINIMUM DENSITY IN A RESIDENTIAL BUILDING	30 UNITS/HA	**581 UNITS/HA**
GROSS FLOOR AREA	____	13,573.98 M²
AMENITY AREA (AMENITY + BALCONY) 15 M² PER EFFICIENCY DWELLING UNIT 20 M² PER ONE BEDROOM DWELLING UNIT 35 M² PER TWO OR MORE BEDROOM DWELLING UNIT	4,195 M²	**1,575.47 M² ***

PARKING STATISTICS

STATISTIC	REQUIRED	PROPOSED
# RESIDENTIAL PARKING	____	90 (0.50 PER UNIT)
# COMMERCIAL PARKING	____	15 7 OUTDOOR 8 LEVEL P1
AISLE WIDTH	6 M	6 M
ACCESSIBLE PARKING	3% (3 SPACES)	3% 3 SPACES 1 COMMERCIAL + 2 RESIDENTIAL
PARKING STALL	2.75 M X 6 M	2.75 M X 6 M
ACCESSIBLE PARKING STALL TYPE A	2.75M +2M X 6 M	2.75 M +2 M X 6 M
BICYCLE PARKING	____	42 SPACES 16 OUTDOOR 13 LEVEL P1 13 LEVEL P2
BICYCLE PARKING STALL	0.6 M X 1.8 M	0.6 M X 1.8 M
LANDSCAPING PERCENTAGE	____	**LANDSCAPE** 688.29 M² 22.37%

(*) SITE-SPECIFIC ZONING PROVISIONS

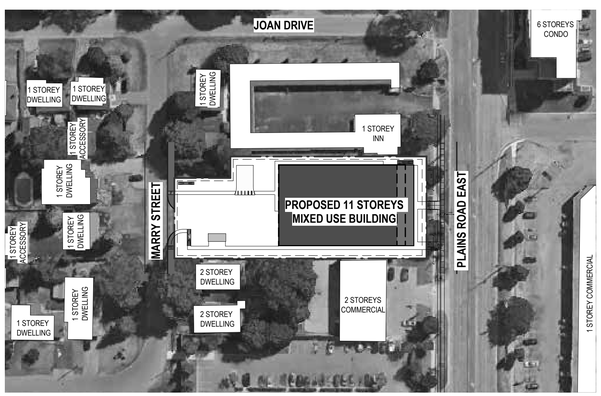
SITE LEGEND

	PROPERTY LINE BOUNDARY LINE
	BUILDING SETBACK
	LANDSCAPING BUFFER SETBACK
	ENTRANCE/EXIT
	LANDSCAPING

SITE LEGEND
1 : 300

11 STOREY – 179 UNITS
- **GARBAGE: 3 YD. COMPACTED – 54 UNITS PER BIN = 4 BINS**
- **RECYCLING 3 YD. LOOSE – 42 UNITS PER BIN = 5 BINS**
- **ORGANICS 360 L WHEELED CART – 25 UNITS PER CART = 8 CARTS**

3 A-1.1 WASTE CAPACITY CALCULATION
N/A



2 A-1.1 SITE CONTEXT PLAN
1 : 1000

PROPOSED COMMERCIAL UNITS

UNIT TYPE	AREA	SQF	AMOUNT
COMM 1	50.47 m²	543 ft²	1
COMM 2	60.53 m²	652 ft²	1
COMM 3	54.43 m²	586 ft²	1
COMM 4	50.45 m²	543 ft²	1
COMM 5	50.45 m²	543 ft²	1
COMM 6	52.54 m²	565 ft²	1
COMM 7	54.64 m²	588 ft²	1
COMM 8	48.94 m²	527 ft²	1
TOTAL UNITS	422.45 m²		8

PROPOSED AMENITY AREA

UNIT TYPE	AREA	SQF	AMOUNT
AMENITY	49.88 m²	537 ft²	1
BALCONY	1525.60 m²	16421 ft²	67
TOTAL UNITS	1575.47 m²	16958 ft²	68

PROPOSED PARKING SPACES

LEVEL	DESCRIPTION	AMOUNT
P2	PARKING SPACE	49
P1	PARKING SPACE	49
LEVEL 1 (98.55)	PARKING SPACE	7
TOTAL		105

PROPOSED RESIDENTIAL UNITS

UNIT TYPE	# BEDROOMS	M²	SQF	AMOUNT
TYPE A1	1 BED	62.18 m²	669 ft²	4
TYPE A2	1 BED	62.18 m²	669 ft²	9
TYPE A3	1 BED	66.83 m²	719 ft²	48
TYPE A4	1 BED	67.22 m²	724 ft²	18
TYPE C2	1 BED	45.91 m²	494 ft²	3
TYPE C3	1 BED	47.26 m²	509 ft²	24
TYPE C4	1 BED	53.30 m²	574 ft²	12
TYPE D2	1 BED	47.25 m²	509 ft²	2
TYPE D3	1 BED	50.47 m²	543 ft²	12
TYPE D4	1 BED	51.93 m²	559 ft²	6
TYPE B1	2 BED	62.68 m²	675 ft²	1
TYPE B2	2 BED	62.68 m²	675 ft²	3
TYPE B3	2 BED	66.32 m²	714 ft²	24
TYPE B4	2 BED	75.69 m²	815 ft²	12
TYPE E	2 BED	106.68 m²	1148 ft²	1
TOTAL UNITS				179

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REVISIONS:

#	DATE	REMARK
2	2026 03 05	ISSUED FOR OPA AND ZBA
1	2025 06 17	ISSUED FOR OPA AND ZBA

ARCHITECT:
LIMA ARCHITECTS INC.
www.limaarchitectinc.com
E: info@limaarchitectinc.com
T: 289-337-8887

SEALS:
ONTARIO ASSOCIATION OF ARCHITECTS
FERNANDO F. S. LIMA
LICENCE 6901

PROJECT TITLE
NEW APARTMENT BUILDING
517 Plains Road, Burlington ON

DRAWING TITLE
SITE PLAN

DRAWN BY
Lima Architects Inc

SCALE
As indicated

DATE
DEC 2024

CHECKED BY
FL

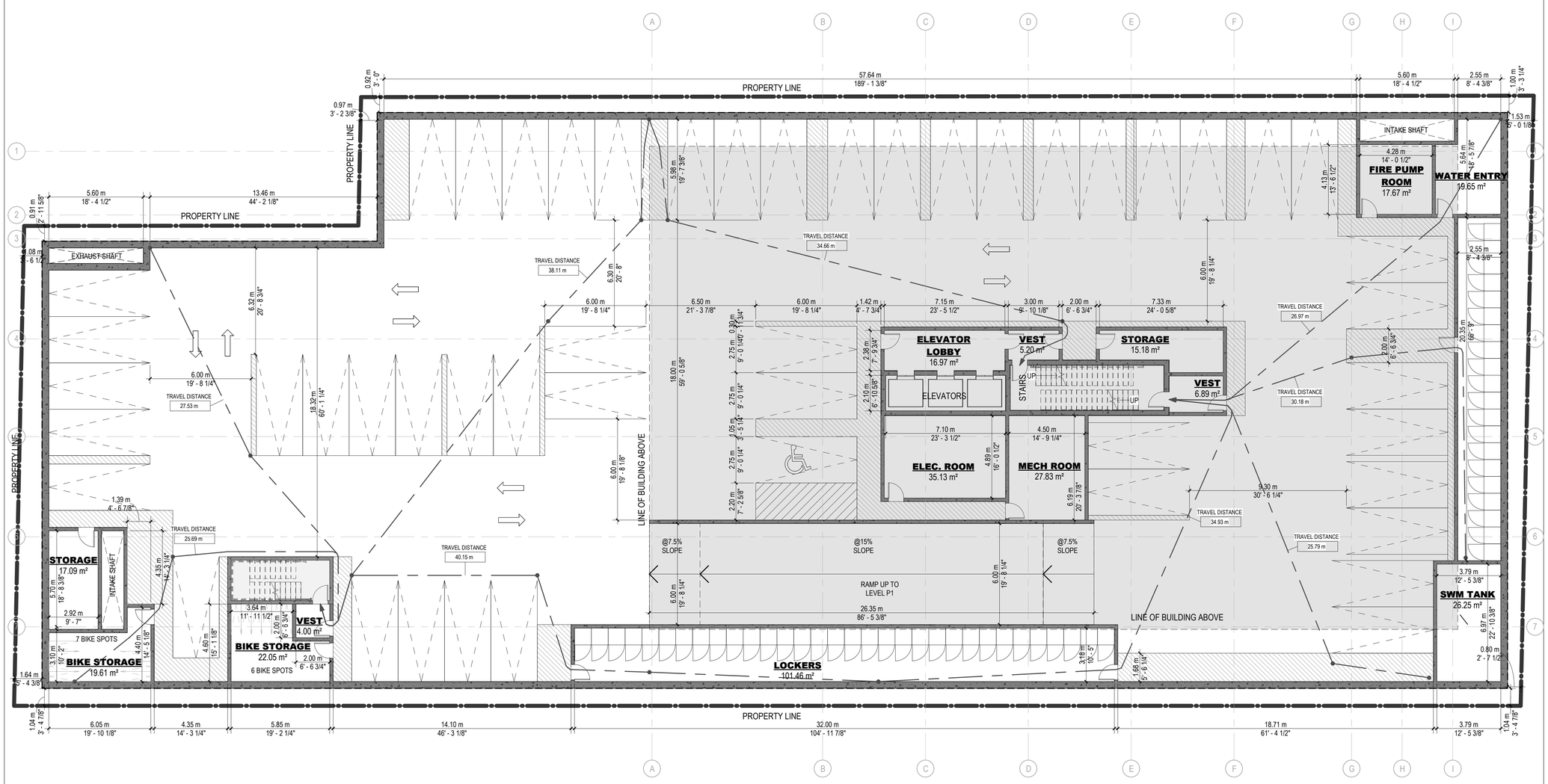
PROJECT NUMBER
24-677

DRAWING NUMBER
A.1.1

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05/03/2026 17:42:46

ARCH D - 24" X 36"



1 PARKING LEVEL P2
A.2.1 1 : 125

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OWNERS INFORMATION:

REVISIONS:

#	DATE	REMARK
2	2026 03 05	ISSUED FOR OPA AND ZBA
1	2025 06 17	ISSUED FOR OPA AND ZBA

ARCHITECT:
LIMA ARCHITECTS INC.
www.limaarchitectinc.com
E: info@limaarchitectinc.com
T: 289-337-8887

SEALS:
ONTARIO ASSOCIATION OF ARCHITECTS
FERNANDO F. S. LIMA
LICENCE 6901

PROJECT TITLE
NEW APARTMENT BUILDING
517 Plains Road, Burlington ON

DRAWING TITLE
FLOOR PLAN - P2

DRAWN BY
Lima Architects Inc

SCALE
1 : 125

DATE
DEC 2024

CHECKED BY
FL

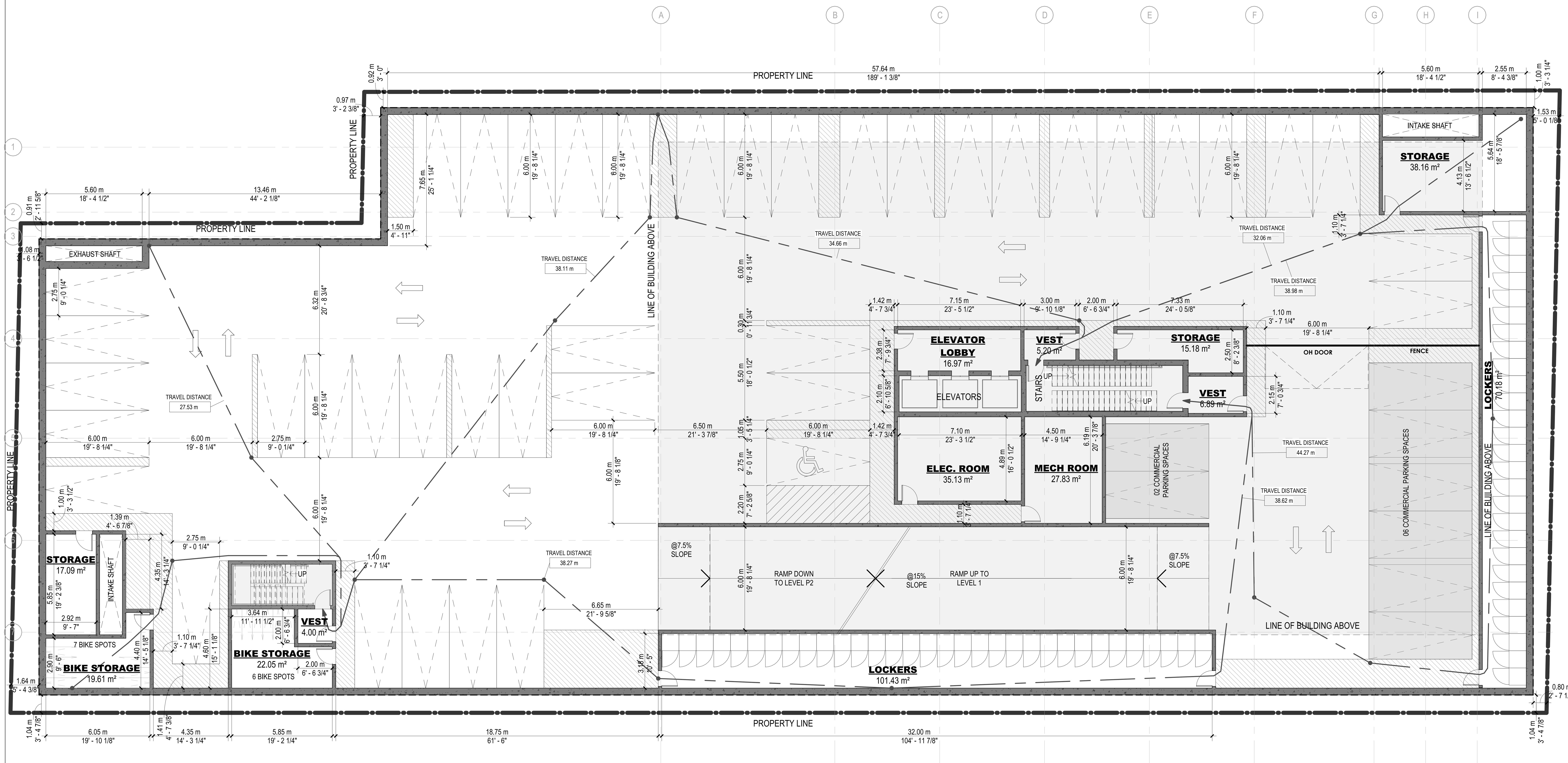
PROJECT NUMBER
24-677

DRAWING NUMBER
A.2.1

G:\Drive compartilhada\Current Projects\24-677 517 Plains Road\02 Construction Documents\01 - Architecture\24-677 517 Plains Road.rvt
05/03/2026 17:42:46

05/03/2026 17:42:51

ARCH D - 24" X 36"



1 A.2.2 PARKING LEVEL P1
1 : 125

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THE LATEST ONTARIO BUILDING CODE.

USE ONLY LATEST REVISED DRAWINGS MARKED AS "ISSUED FOR CONSTRUCTION"

CONTRACTOR IS TO CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE PROJECT AND REPORT ANY DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. DRAWINGS ARE NOT TO BE SCALED.

CONTRACT DOCUMENTS ARE THE COPYRIGHT OF THE CONSULTANTS AND SHALL NOT BE USED OR REPRODUCED WITHOUT AUTHORIZATION. DOCUMENTS ARE TO BE RETURNED UPON COMPLETION OF THE PROJECT.

OWNERS INFORMATION:

REVISIONS:

#	DATE	REMARK
2	2026 03 05	ISSUED FOR OPA AND ZBA
1	2025 06 17	ISSUED FOR OPA AND ZBA

ARCHITECT:

LIMA ARCHITECTS INC.
www.limaarchitectinc.com
E: info@limaarchitectinc.com
T: 289-337-8887

SEALS:

ONTARIO ASSOCIATION OF ARCHITECTS
FERNANDO F. S. LIMA
LICENCE
6901

PROJECT TITLE

NEW APARTMENT BUILDING

517 Plains Road, Burlington ON

DRAWING TITLE

FLOOR PLAN - P1

DRAWN BY

Lima Architects Inc

SCALE

1 : 125

DATE

DEC 2024

CHECKED BY

FL

PROJECT NUMBER

24-677

DRAWING NUMBER

A.2.2

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05/03/2026 17:42:51

Appendix C
Burlington Transit System Map

Burlington Transit Network Map

Current Network
Effective November 16, 2025

Routes

Regular Service

- # — Every 15 minutes or better daytime*
  Approximately 6am-6pm
- # — Every 15 minutes or better peak
  Every 30 minutes or better off-peak
- # — Every 30-60 minutes or better

Peak-only Service

- # — Every 45 minutes
- # — Select periods only

Regional Connections

- **Hamilton Street Railway** — *hamilton.ca/hsr*
- **Oakville Transit** — *oakvilletransit.ca*
- **GO Transit bus** — *Routings not depicted for clarity* — *gotransit.com*
- **GO Transit train** — *gotransit.com*

Legend

- Elementary School
- Secondary School
- Community Centre
- Burlington Public Library
- Shopping Centre
- Municipal Service
- Hospital

407 Carpool
2 3 6 11 25
5
12 40 41 47

Aldershot
4 87 18 VIA
11 15 17 18

Burlington
Customer Service Centre
1 2 6 10 12
80 81 87
12 18

Downtown
John Street
2 3 4 10 11

Appleby
1 4 10 11 25
80 81 14
18

towards Hamilton, Waterdown
towards Hamilton Centre, Confederation, or Niagara Falls
towards Hamilton, Downtown
towards Hamilton, Heritage Greene
towards Mississauga, Laird at Ridgeway
towards Toronto, Union Station
towards Oakville GO
towards Appleby GO
towards Burlington GO
Trips towards Burlington GO only
Trips towards Appleby GO only
Eastbound trips only
Westbound trips only
East-bound Ascension trips only
Peak-only service

Hamilton Waterdown
Oakville
Lake Ontario
Lakeshore West
Plains Rd W
Plains Rd E
Dundas St
Fairview St
North Service Rd
Harvester Rd
Upper Middle Rd
Mainway
New St
Lakeshore Rd
North Shore Blvd E
Cavendish Dr
Coventry Way
Tyandaga Park Dr
Mount Forest Dr
Thomas Alton Blvd
Millcroft Park Dr
Walkers Line
Headon Forest Dr
Heritage Rd
Appleby Line
Sutton Dr
Burloak Dr
Longmoor Dr
Pinedale Ave
Rexway Dr
Prospect St
Guelph Line
Brant St
Kerns Rd
Francis Rd
Maple Ave
Townsend Ave
Waterdown Rd
Fairwood Pl W
Shadela Rd Ave
Warwick Dr
Surrey Ln
Drury Ln
Cumberland Ave
Headon Rd
Dillon Rd
Lansdown Dr
Millcroft Park
Bronte Creek Provincial Park
Oakville
Hidden Valley Park
RBG - Hendrie Valley Sanctuary
Lasalle Park
Bayview Park
City View Park
Paletta Lakefront Park
Beachway Park
Spencer Smith Park
Central Park
Tansley Woods Park
Orchard Community Park
Norton Community Park
Ireland Park
Brant Hills Park
Mountainside Park
Senior's Centre
Burlington Central
Burlington City Hall
Joseph Brant Hospital
Burlington Centre
Mapleview Shopping Centre
SmartCentres Burlington North
Dr Frank J Hayden SS
Corpus Christi Catholic SS
Halton Court Services
Alton Village
Haber
Notre Dame
Brant Hills
Bruce T. Lindley
Paul A. Fisher
St. Mark
St. Timothy
Sacred Heart Of Jesus
Florence Meares
Charles R Beaudoin
C. H. Norton
MM Robinson
Rolling Meadows
St. Gabriel
Mountainside
Clarksdale
Dr. Charles Best
Canadian Martyrs
Sir Ernest Macmillan
Tansley Woods
John William Boich
St. Christopher
St. Elizabeth Seton
Orchard Park
Alexander's
Aldershot
Holy Rosary
Maplehurst
Glenview
Saint-Philippe
King's Road
St. John
Tom Thomson
Tecumseh
Assumption
St. Paul
Pauline Johnson
Nelson Park
Nelson
Frontenac
Makwendam
St. Raphael
Gary Allen
John T. Tuck
Lakeshore
Pineland
Mohawk Gardens
St. Patricks
Renaissance
Palladium Way
Fairview St
Dundas St
Pine St
James St
Alayne Bryk Wy
Hwy 403
Customer Service Centre
Burlington GO
Downtown John St.
Appleby GO
Aldershot GO
407 Carpool
Late Night Service
Monday to Saturday, 11pm-1:30am
1C 50C 51C 52C
Timed transfers between all late night routes at Burlington GO
Hamilton
Plains Rd W
York Blvd
Lakeshore West
West Harbour GO
Limited service towards Confederation or Niagara Falls
Dundurn St N
Locke St N
Queen St N
Bay St N
Cannon St E
King St E
Catherine St
Frank A. Cooke Terminal
Hamilton GO Centre
ROYAL BOTANICAL GARDENS
towards Burlington & Toronto
towards Burlington, Appleby GO
Kilometers
0 0.25 0.5 1

Plan Your Trip

Plan your trip, track your bus's location, and see live departure times using real-time technology.

MyRide
Visit **myride.burlingtontransit.ca** or
Text your stop ID and route number to
289-812-8202

Apps
Google Maps · transit · Maps
Download on the App Store · GET IT ON Google Play

Customer Service

Contact Us
Phone: 905-639-0550
Email: contactbt@burlington.ca
X: @BurlONTransit

Customer Service Centre
Burlington GO Station
2101 Fairview St

Appendix D
Existing Traffic Data and Signal Timing Plans

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & KING ROAD
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Turning Movement Count (3 . PLAINS ROAD EAST & KING ROAD)

Start Time	N Approach KING RD						E Approach PLAINS RD						S Approach KING RD						W Approach PLAINS RD						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2026-02-11 07:00:00	7	10	17	0	3	34	11	42	5	0	1	58	9	26	26	0	1	61	16	93	22	0	0	131	284	
2026-02-11 07:15:00	11	7	36	0	2	54	14	55	6	1	2	76	6	41	33	0	1	80	16	133	27	0	1	176	386	
2026-02-11 07:30:00	11	18	49	0	3	78	10	77	5	0	1	92	10	46	35	0	1	91	24	193	30	0	3	247	508	
2026-02-11 07:45:00	21	10	49	0	1	80	19	82	6	0	3	107	11	72	62	0	3	145	20	230	30	0	0	280	612	1790
2026-02-11 08:00:00	24	14	49	0	0	87	30	90	6	0	0	126	8	61	42	0	0	111	23	187	29	0	3	239	563	2069
2026-02-11 08:15:00	18	26	52	0	1	96	26	94	4	0	2	124	15	69	62	0	2	146	21	163	42	0	1	226	592	2275
2026-02-11 08:30:00	16	24	59	0	3	99	30	102	10	0	2	142	21	59	52	0	1	132	25	219	30	1	0	275	648	2415
2026-02-11 08:45:00	16	30	53	0	2	99	41	123	20	1	2	185	15	53	42	0	5	110	31	213	26	1	2	271	665	2468
2026-02-11 09:00:00	22	27	43	0	2	92	27	117	10	2	3	156	14	39	39	0	2	92	15	158	30	0	0	203	543	2448
2026-02-11 09:15:00	16	12	33	0	0	61	36	131	12	0	1	179	19	33	33	0	0	85	20	158	29	0	0	207	532	2388
2026-02-11 09:30:00	14	12	42	0	5	68	37	128	8	0	2	173	14	27	16	0	1	57	28	156	24	0	1	208	506	2246
2026-02-11 09:45:00	21	24	48	0	1	93	30	110	16	0	2	156	14	22	25	0	3	61	23	146	15	0	2	184	494	2075
BREAK																										
2026-02-11 16:00:00	33	46	77	0	5	156	57	258	21	0	2	336	10	26	47	0	0	83	27	166	21	0	2	214	789	
2026-02-11 16:15:00	32	41	53	0	2	126	36	279	20	0	6	335	9	34	40	0	4	83	27	175	25	0	0	227	771	
2026-02-11 16:30:00	35	40	60	0	3	135	32	275	19	0	0	326	15	26	36	0	0	77	18	165	27	0	2	210	748	
2026-02-11 16:45:00	35	48	66	0	3	149	49	292	20	0	2	361	11	22	36	0	3	69	36	162	21	0	2	219	798	3106
2026-02-11 17:00:00	40	39	58	0	2	137	56	286	16	0	3	358	18	40	38	0	2	96	28	175	18	0	0	221	812	3129
2026-02-11 17:15:00	38	56	70	0	6	164	44	303	21	2	3	370	16	30	38	0	3	84	29	144	21	0	5	194	812	3170
2026-02-11 17:30:00	29	25	55	0	2	109	39	260	22	0	2	321	9	29	42	0	1	80	29	134	23	0	2	186	696	3118
2026-02-11 17:45:00	31	29	47	0	2	107	31	268	21	1	1	321	12	18	33	0	0	63	22	153	17	0	1	192	683	3003
2026-02-11 18:00:00	28	20	35	0	2	83	29	191	17	1	5	238	13	15	27	0	3	55	23	136	18	0	1	177	553	2744
2026-02-11 18:15:00	20	16	36	0	2	72	31	158	17	1	4	207	7	18	12	0	2	37	17	139	16	0	0	172	488	2420
2026-02-11 18:30:00	13	26	36	0	3	75	23	166	20	1	3	210	7	22	20	0	1	49	19	117	23	0	2	159	493	2217
2026-02-11 18:45:00	19	19	24	0	0	62	31	131	20	0	2	182	10	15	13	0	6	38	17	97	15	0	2	129	411	1945
Grand Total	550	619	1147	0	55	2316	769	4018	342	10	54	5139	293	843	849	0	45	1985	554	3812	579	2	32	4947	**14387**	-
Approach%	23.7%	26.7%	49.5%	0%		-	15%	78.2%	6.7%	0.2%		-	14.8%	42.5%	42.8%	0%		-	11.2%	77.1%	11.7%	0%		-	-	-
Totals %	3.8%	4.3%	8%	0%		16.1%	5.3%	27.9%	2.4%	0.1%		35.7%	2%	5.9%	5.9%	0%		13.8%	3.9%	26.5%	4%	0%		34.4%	-	-
Heavy	12	7	20	0		-	21	107	4	0		-	9	5	28	0		-	16	107	12	0		-	-	-
Heavy %	2.2%	1.1%	1.7%	0%		-	2.7%	2.7%	1.2%	0%		-	3.1%	0.6%	3.3%	0%		-	2.9%	2.8%	2.1%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather:

Start Time	N Approach KING RD						E Approach PLAINS RD						S Approach KING RD						W Approach PLAINS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 08:00:00	24	14	49	0	0	87	30	90	6	0	0	126	8	61	42	0	0	111	23	187	29	0	3	239	563
2026-02-11 08:15:00	18	26	52	0	1	96	26	94	4	0	2	124	15	69	62	0	2	146	21	163	42	0	1	226	592
2026-02-11 08:30:00	16	24	59	0	3	99	30	102	10	0	2	142	21	59	52	0	1	132	25	219	30	1	0	275	648
2026-02-11 08:45:00	16	30	53	0	2	99	41	123	20	1	2	185	15	53	42	0	5	110	31	213	26	1	2	271	665
Grand Total	74	94	213	0	6	381	127	409	40	1	6	577	59	242	198	0	8	499	100	782	127	2	6	1011	**2468**
Approach%	19.4%	24.7%	55.9%	0%		-	22%	70.9%	6.9%	0.2%		-	11.8%	48.5%	39.7%	0%		-	9.9%	77.3%	12.6%	0.2%		-	**-**
Totals %	3%	3.8%	8.6%	0%		15.4%	5.1%	16.6%	1.6%	0%		23.4%	2.4%	9.8%	8%	0%		20.2%	4.1%	31.7%	5.1%	0.1%		41%	**-**
PHF	0.77	0.78	0.9	0		0.96	0.77	0.83	0.5	0.25		0.78	0.7	0.88	0.8	0		0.85	0.81	0.89	0.76	0.5		0.92	0.93
Heavy	1	3	5	0		9	5	26	1	0		32	3	0	6	0		9	3	23	5	0		31	81
Heavy %	1.4%	3.2%	2.3%	0%		2.4%	3.9%	6.4%	2.5%	0%		5.5%	5.1%	0%	3%	0%		1.8%	3%	2.9%	3.9%	0%		3.1%	3.3%
Lights	73	91	208	0		372	122	383	39	1		545	56	242	192	0		490	97	758	122	2		979	2386
Lights %	98.6%	96.8%	97.7%	0%		97.6%	96.1%	93.6%	97.5%	100%		94.5%	94.9%	100%	97%	0%		98.2%	97%	96.9%	96.1%	100%		96.8%	96.7%
Single-Unit Trucks	1	2	3	0		6	2	12	0	0		14	0	0	1	0		1	0	13	4	0		17	38
Single-Unit Trucks %	1.4%	2.1%	1.4%	0%		1.6%	1.6%	2.9%	0%	0%		2.4%	0%	0%	0.5%	0%		0.2%	0%	1.7%	3.1%	0%		1.7%	1.5%
Buses	0	1	1	0		2	2	13	1	0		16	3	0	5	0		8	3	10	1	0		14	40
Buses %	0%	1.1%	0.5%	0%		0.5%	1.6%	3.2%	2.5%	0%		2.8%	5.1%	0%	2.5%	0%		1.6%	3%	1.3%	0.8%	0%		1.4%	1.6%
Articulated Trucks	0	0	1	0		1	1	1	0	0		2	0	0	0	0		0	0	0	0	0		0	3
Articulated Trucks %	0%	0%	0.5%	0%		0.3%	0.8%	0.2%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%
Pedestrians	-	-	-	-	6	-	-	-	-	-	6	-	-	-	-	-	8	-	-	-	-	-	6	-	**-**
Pedestrians%	-	-	-	-	23.1%		-	-	-	-	23.1%		-	-	-	-	30.8%		-	-	-	-	23.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & KING ROAD
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather:**

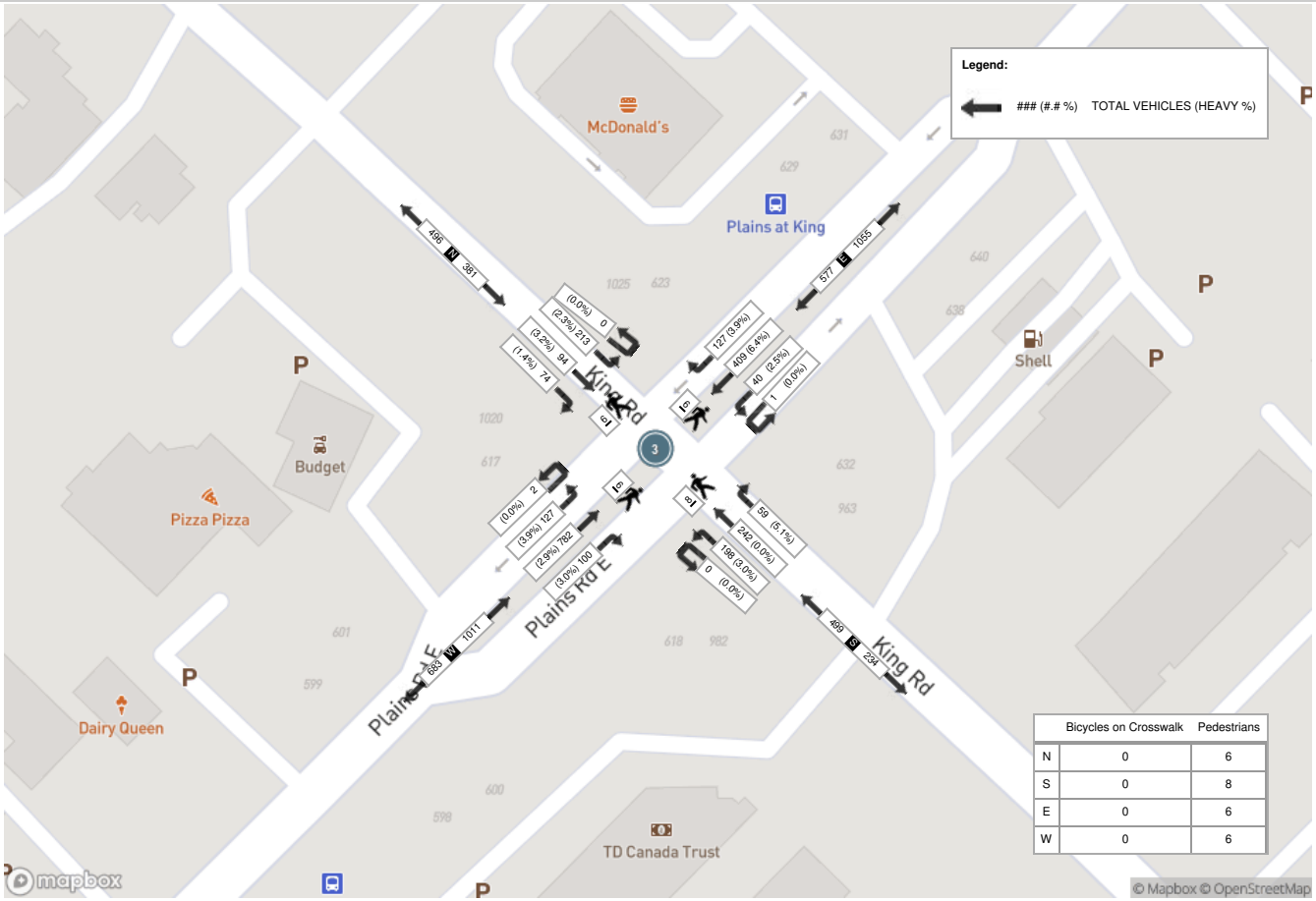
Start Time	N Approach KING RD						E Approach PLAINS RD						S Approach KING RD						W Approach PLAINS RD						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 16:30:00	35	40	60	0	3	135	32	275	19	0	0	326	15	26	36	0	0	77	18	165	27	0	2	210	748
2026-02-11 16:45:00	35	48	66	0	3	149	49	292	20	0	2	361	11	22	36	0	3	69	36	162	21	0	2	219	798
2026-02-11 17:00:00	40	39	58	0	2	137	56	286	16	0	3	358	18	40	38	0	2	96	28	175	18	0	0	221	812
2026-02-11 17:15:00	38	56	70	0	6	164	44	303	21	2	3	370	16	30	38	0	3	84	29	144	21	0	5	194	812
Grand Total	148	183	254	0	14	585	181	1156	76	2	8	1415	60	118	148	0	8	326	111	646	87	0	9	844	**3170**
Approach%	25.3%	31.3%	43.4%	0%		-	12.8%	81.7%	5.4%	0.1%		-	18.4%	36.2%	45.4%	0%		-	13.2%	76.5%	10.3%	0%		-	**-**
Totals %	4.7%	5.8%	8%	0%		18.5%	5.7%	36.5%	2.4%	0.1%		44.6%	1.9%	3.7%	4.7%	0%		10.3%	3.5%	20.4%	2.7%	0%		26.6%	**-**
PHF	0.93	0.82	0.91	0		0.89	0.81	0.95	0.9	0.25		0.96	0.83	0.74	0.97	0		0.85	0.77	0.92	0.81	0		0.95	0.98
Heavy	2	2	1	0		5	0	17	0	0		17	2	1	3	0		6	3	14	0	0		17	45
Heavy %	1.4%	1.1%	0.4%	0%		0.9%	0%	1.5%	0%	0%		1.2%	3.3%	0.8%	2%	0%		1.8%	2.7%	2.2%	0%	0%		2%	1.4%
Lights	146	181	253	0		580	181	1138	76	2		1397	58	117	145	0		320	108	632	87	0		827	3124
Lights %	98.6%	98.9%	99.6%	0%		99.1%	100%	98.4%	100%	100%		98.7%	96.7%	99.2%	98%	0%		98.2%	97.3%	97.8%	100%	0%		98%	98.5%
Single-Unit Trucks	2	1	1	0		4	0	8	0	0		8	1	0	0	0		1	1	5	0	0		6	19
Single-Unit Trucks %	1.4%	0.5%	0.4%	0%		0.7%	0%	0.7%	0%	0%		0.6%	1.7%	0%	0%	0%		0.3%	0.9%	0.8%	0%	0%		0.7%	0.6%
Buses	0	1	0	0		1	0	9	0	0		9	1	1	3	0		5	2	8	0	0		10	25
Buses %	0%	0.5%	0%	0%		0.2%	0%	0.8%	0%	0%		0.6%	1.7%	0.8%	2%	0%		1.5%	1.8%	1.2%	0%	0%		1.2%	0.8%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.1%	0%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	14	-	-	-	-	-	8	-	-	-	-	-	8	-	-	-	-	-	9	-	**-**
Pedestrians%	-	-	-	-	35.9%		-	-	-	-	20.5%		-	-	-	-	20.5%		-	-	-	-	23.1%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & KING ROAD
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather:**



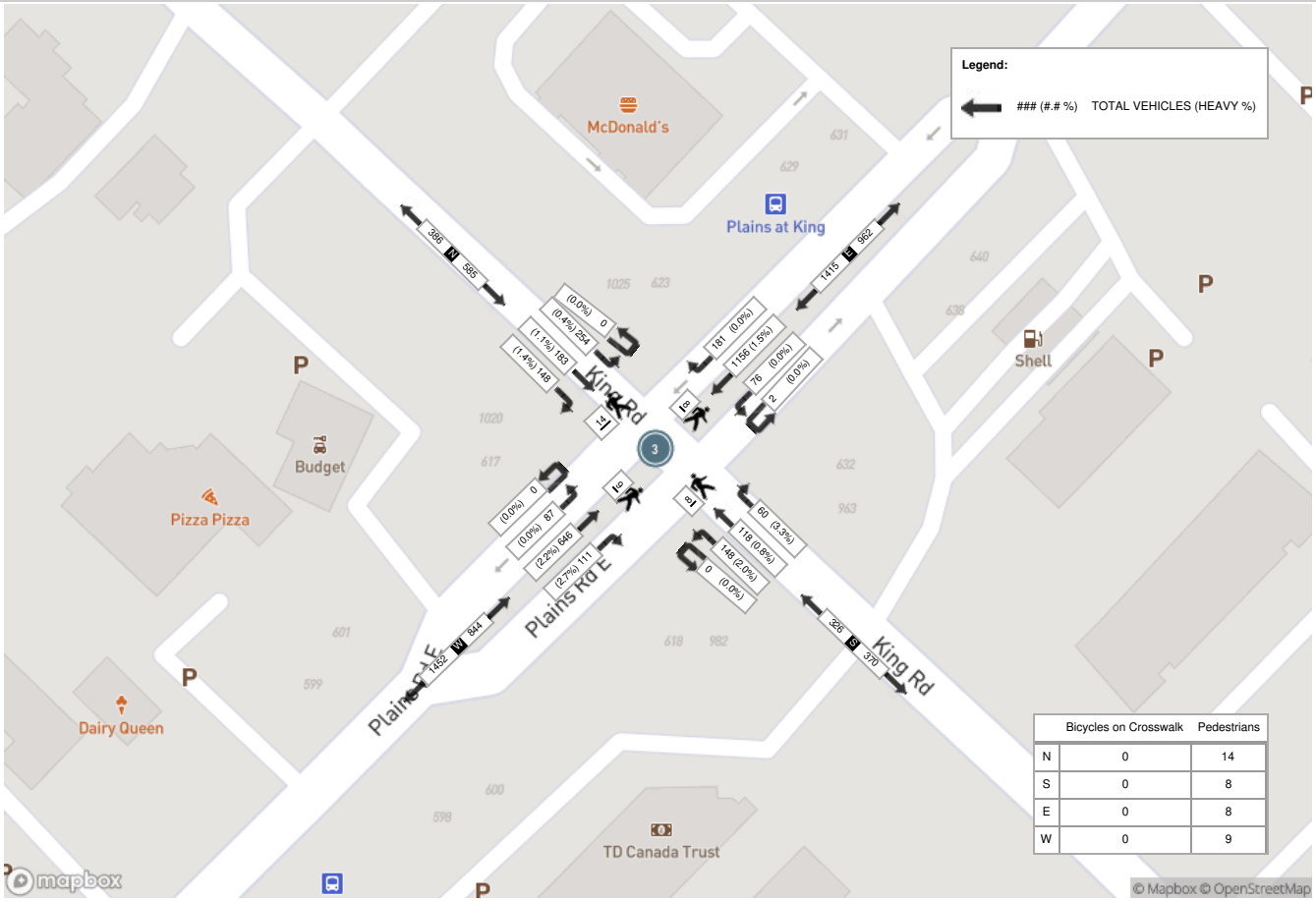
	Bicycles on Crosswalk	Pedestrians
N	0	6
S	0	8
E	0	6
W	0	6

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & KING ROAD
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather:**



	Bicycles on Crosswalk	Pedestrians
N	0	14
S	0	8
E	0	8
W	0	9

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Turning Movement Count (4 . PLAINS ROAD EAST & 484 PLAINS ROAD EAST (SIGNALIZED ACCESS))

Start Time	E Approach PLAINS RD E					S Approach 484 PLAINS RD E (MAIN ACCESS)					W Approach PLAINS RD E					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
2026-02-11 07:00:00	70	1	0	0	71	0	0	0	2	0	1	133	0	1	134	205	
2026-02-11 07:15:00	90	0	0	0	90	0	0	0	3	0	1	156	0	0	157	247	
2026-02-11 07:30:00	111	0	0	0	111	1	1	0	1	2	1	228	0	0	229	342	
2026-02-11 07:45:00	150	0	0	0	150	2	0	0	4	2	0	253	0	3	253	405	1199
2026-02-11 08:00:00	142	1	0	0	143	3	0	0	0	3	1	234	0	2	235	381	1375
2026-02-11 08:15:00	166	0	0	0	166	2	0	0	0	2	0	221	0	0	221	389	1517
2026-02-11 08:30:00	158	1	0	0	159	2	0	0	0	2	0	285	0	0	285	446	1621
2026-02-11 08:45:00	156	3	0	0	159	2	0	0	0	2	0	224	0	0	224	385	1601
2026-02-11 09:00:00	168	1	0	0	169	2	0	0	4	2	1	178	0	4	179	350	1570
2026-02-11 09:15:00	162	0	0	0	162	3	0	0	2	3	0	171	0	2	171	336	1517
2026-02-11 09:30:00	135	1	0	0	136	0	1	0	0	1	0	192	0	0	192	329	1400
2026-02-11 09:45:00	146	0	0	0	146	1	0	0	1	1	1	178	0	1	179	326	1341
BREAK																	
2026-02-11 16:00:00	281	2	0	0	283	1	1	0	1	2	2	200	0	1	202	487	
2026-02-11 16:15:00	313	0	0	0	313	3	0	0	0	3	1	198	0	4	199	515	
2026-02-11 16:30:00	298	2	0	0	300	2	0	0	0	2	0	214	0	1	214	516	
2026-02-11 16:45:00	315	2	0	0	317	1	0	0	0	1	2	207	0	0	209	527	2045
2026-02-11 17:00:00	311	1	0	0	312	0	2	0	0	2	0	195	0	0	195	509	2067
2026-02-11 17:15:00	344	3	0	0	347	1	0	0	0	1	0	163	0	0	163	511	2063
2026-02-11 17:30:00	292	2	0	0	294	3	1	0	0	4	3	200	0	0	203	501	2048
2026-02-11 17:45:00	307	4	0	0	311	3	1	0	3	4	1	179	0	0	180	495	2016
2026-02-11 18:00:00	226	3	0	0	229	1	0	0	0	1	0	166	0	1	166	396	1903
2026-02-11 18:15:00	178	1	0	0	179	1	2	0	5	3	0	148	0	1	148	330	1722
2026-02-11 18:30:00	186	3	0	0	189	1	0	0	1	1	0	141	0	1	141	331	1552
2026-02-11 18:45:00	149	4	0	0	153	2	0	0	1	2	1	122	0	1	123	278	1335
Grand Total	4854	35	0	0	4889	37	9	0	28	46	16	4586	0	23	4602	**9537**	-
Approach%	99.3%	0.7%	0%		-	80.4%	19.6%	0%		-	0.3%	99.7%	0%		-	-	-
Totals %	50.9%	0.4%	0%		51.3%	0.4%	0.1%	0%		0.5%	0.2%	48.1%	0%		48.3%	-	-
Heavy	115	0	0		-	1	0	0		-	0	107	0		-	-	-
Heavy %	2.4%	0%	0%		-	2.7%	0%	0%		-	0%	2.3%	0%		-	-	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	-	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	-	-

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather:

Start Time	E Approach PLAINS RD E					S Approach 484 PLAINS RD E (MAIN ACCESS)					W Approach PLAINS RD E					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
2026-02-11 07:45:00	150	0	0	0	150	2	0	0	4	2	0	253	0	3	253	405
2026-02-11 08:00:00	142	1	0	0	143	3	0	0	0	3	1	234	0	2	235	381
2026-02-11 08:15:00	166	0	0	0	166	2	0	0	0	2	0	221	0	0	221	389
2026-02-11 08:30:00	158	1	0	0	159	2	0	0	0	2	0	285	0	0	285	446
Grand Total	616	2	0	0	618	9	0	0	4	9	1	993	0	5	994	**1621**
Approach%	99.7%	0.3%	0%		-	100%	0%	0%		-	0.1%	99.9%	0%		-	**-**
Totals %	38%	0.1%	0%		38.1%	0.6%	0%	0%		0.6%	0.1%	61.3%	0%		61.3%	**-**
PHF	0.93	0.5	0		0.93	0.75	0	0		0.75	0.25	0.87	0		0.87	0.91
Heavy	25	0	0		25	0	0	0		0	0	28	0		28	53
Heavy %	4.1%	0%	0%		4%	0%	0%	0%		0%	0%	2.8%	0%		2.8%	3.3%
Lights	591	2	0		593	9	0	0		9	1	963	0		964	1566
Lights %	95.9%	100%	0%		96%	100%	0%	0%		100%	100%	97%	0%		97%	96.6%
Single-Unit Trucks	8	0	0		8	0	0	0		0	0	11	0		11	19
Single-Unit Trucks %	1.3%	0%	0%		1.3%	0%	0%	0%		0%	0%	1.1%	0%		1.1%	1.2%
Buses	17	0	0		17	0	0	0		0	0	17	0		17	34
Buses %	2.8%	0%	0%		2.8%	0%	0%	0%		0%	0%	1.7%	0%		1.7%	2.1%
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	0
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Bicycles on Road	0	0	0		0	0	0	0		0	0	2	0		2	2
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0.1%
Pedestrians	-	-	-	0	-	-	-	-	4	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	44.4%		-	-	-	55.6%		**-**

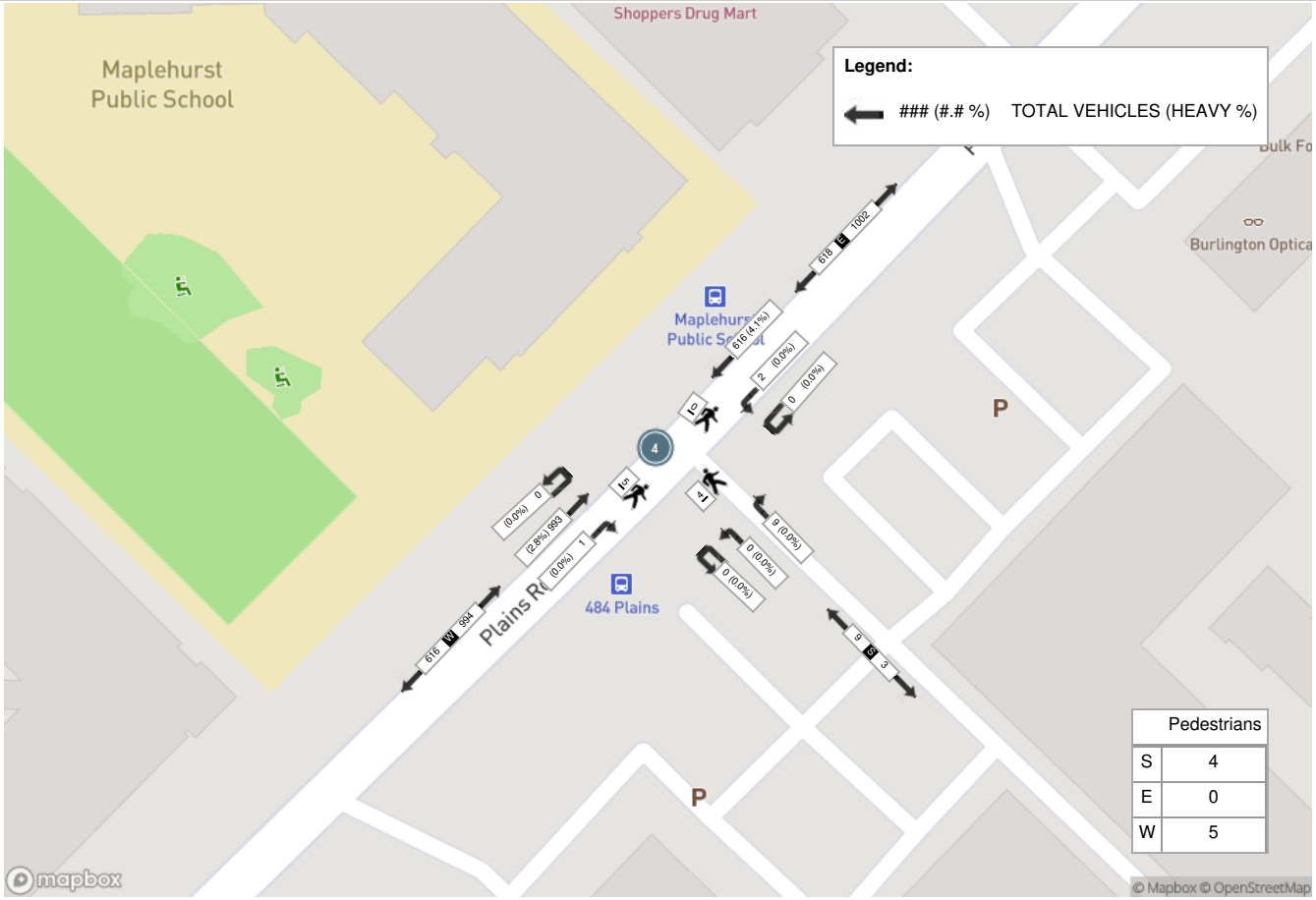
Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather:

Start Time	E Approach PLAINS RD E					S Approach 484 PLAINS RD E (MAIN ACCESS)					W Approach PLAINS RD E					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
2026-02-11 16:15:00	313	0	0	0	313	3	0	0	0	3	1	198	0	4	199	515
2026-02-11 16:30:00	298	2	0	0	300	2	0	0	0	2	0	214	0	1	214	516
2026-02-11 16:45:00	315	2	0	0	317	1	0	0	0	1	2	207	0	0	209	527
2026-02-11 17:00:00	311	1	0	0	312	0	2	0	0	2	0	195	0	0	195	509
Grand Total	1237	5	0	0	1242	6	2	0	0	8	3	814	0	5	817	**2067**
Approach%	99.6%	0.4%	0%		-	75%	25%	0%		-	0.4%	99.6%	0%		-	**-**
Totals %	59.8%	0.2%	0%		60.1%	0.3%	0.1%	0%		0.4%	0.1%	39.4%	0%		39.5%	**-**
PHF	0.98	0.63	0		0.98	0.5	0.25	0		0.67	0.38	0.95	0		0.95	0.98
Heavy	16	0	0		16	0	0	0		0	0	13	0		13	29
Heavy %	1.3%	0%	0%		1.3%	0%	0%	0%		0%	0%	1.6%	0%		1.6%	1.4%
Lights	1220	5	0		1225	6	2	0		8	3	801	0		804	2037
Lights %	98.6%	100%	0%		98.6%	100%	100%	0%		100%	100%	98.4%	0%		98.4%	98.5%
Single-Unit Trucks	4	0	0		4	0	0	0		0	0	1	0		1	5
Single-Unit Trucks %	0.3%	0%	0%		0.3%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0.2%
Buses	12	0	0		12	0	0	0		0	0	11	0		11	23
Buses %	1%	0%	0%		1%	0%	0%	0%		0%	0%	1.4%	0%		1.3%	1.1%
Articulated Trucks	0	0	0		0	0	0	0		0	0	1	0		1	1
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0%
Bicycles on Road	1	0	0		1	0	0	0		0	0	0	0		0	1
Bicycles on Road %	0.1%	0%	0%		0.1%	0%	0%	0%		0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	5	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	100%		**-**

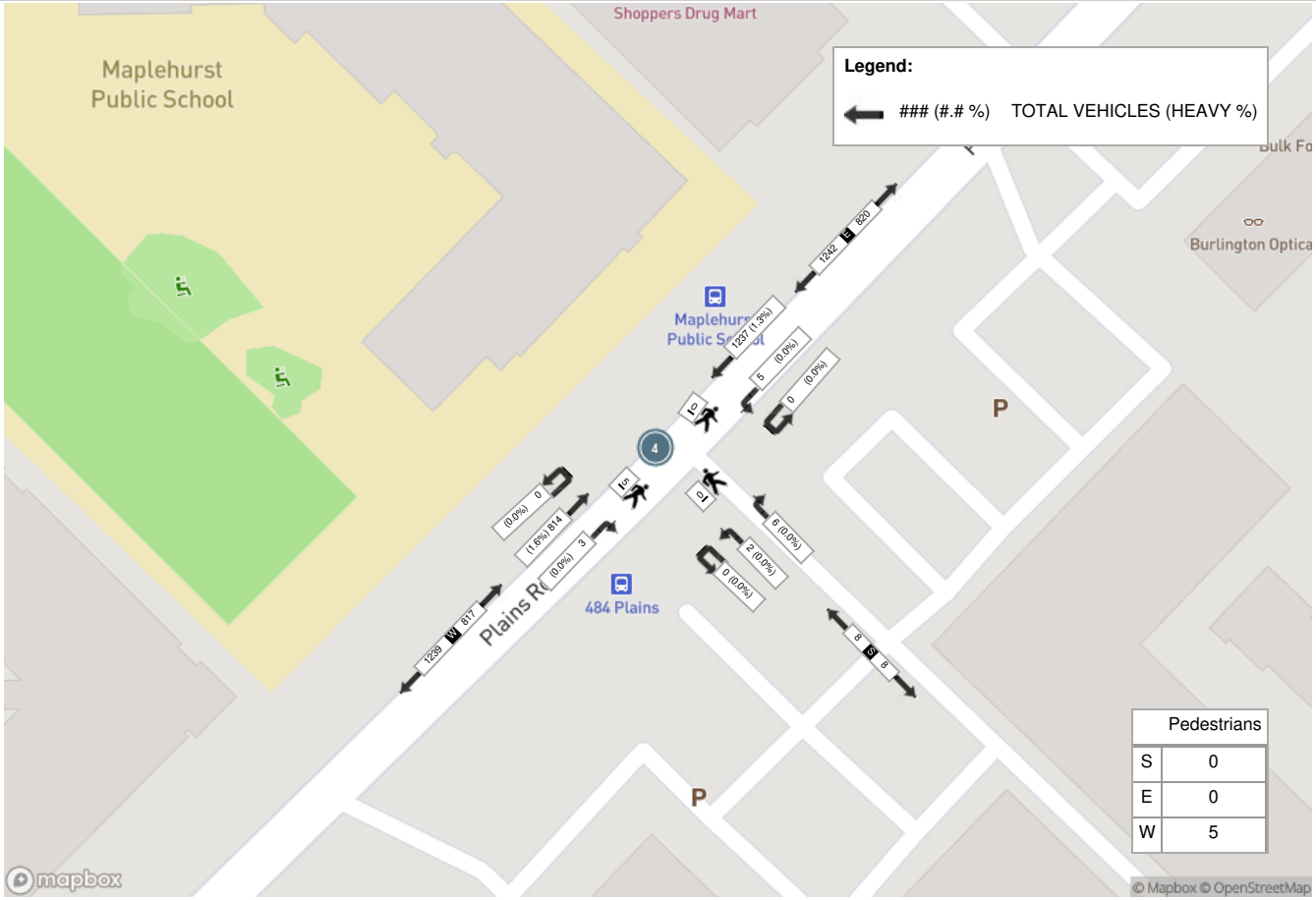
Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather:



Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather:



Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & SANFORD DRIVE
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Turning Movement Count (2 . PLAINS ROAD EAST & SANFORD DRIVE)

Start Time	N Approach 517 Plains Rd E Driveway						E Approach PLAINS RD E						S Approach SANFORD DR						W Approach PLAINS RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2026-02-11 07:00:00	0	0	0	0	2	0	0	70	0	0	0	70	5	0	1	0	0	6	1	132	0	0	0	133	209	
2026-02-11 07:15:00	0	0	1	0	6	1	1	101	1	0	0	103	8	0	2	0	2	10	1	158	0	0	0	159	273	
2026-02-11 07:30:00	0	0	1	0	4	1	0	116	4	0	0	120	1	0	1	0	1	2	1	237	0	0	0	238	361	
2026-02-11 07:45:00	0	0	0	0	0	0	0	156	1	0	0	157	5	0	0	0	1	5	0	262	0	0	0	262	424	1267
2026-02-11 08:00:00	0	0	0	0	2	0	0	142	1	0	0	143	3	0	0	0	0	3	0	240	0	0	0	240	386	1444
2026-02-11 08:15:00	0	0	0	0	3	0	0	170	1	0	0	171	6	0	2	0	0	8	1	228	0	0	0	229	408	1579
2026-02-11 08:30:00	0	0	0	0	2	0	0	159	1	0	0	160	5	0	4	0	0	9	4	278	1	0	0	283	452	1670
2026-02-11 08:45:00	0	0	1	0	0	1	0	177	1	0	2	178	3	0	1	0	1	4	1	264	0	0	0	265	448	1694
2026-02-11 09:00:00	0	0	1	0	6	1	0	184	0	0	0	184	6	0	2	0	4	8	3	179	1	0	0	183	376	1684
2026-02-11 09:15:00	0	0	0	0	3	0	0	173	2	0	0	175	0	0	0	0	1	0	1	198	0	0	0	199	374	1650
2026-02-11 09:30:00	0	0	1	0	4	1	1	150	4	0	0	155	5	0	3	0	0	8	2	196	0	0	1	198	362	1560
2026-02-11 09:45:00	0	0	0	0	1	0	1	146	4	0	0	151	5	0	0	0	4	5	1	196	0	0	0	197	353	1465
BREAK																										
2026-02-11 16:00:00	0	0	2	0	5	2	1	316	2	0	0	319	8	0	0	0	4	8	3	214	0	0	0	217	546	
2026-02-11 16:15:00	0	0	0	0	3	0	0	319	5	0	0	324	3	0	3	0	2	6	3	213	0	1	0	217	547	
2026-02-11 16:30:00	1	0	0	0	3	1	0	333	3	0	0	336	5	0	4	0	0	9	8	214	0	0	0	222	568	
2026-02-11 16:45:00	0	0	0	0	3	0	0	338	13	0	0	351	6	0	3	0	3	9	6	217	0	0	0	223	583	2244
2026-02-11 17:00:00	0	0	0	0	10	0	0	329	5	0	0	334	9	0	5	0	2	14	8	196	0	0	2	204	552	2250
2026-02-11 17:15:00	0	0	0	0	2	0	0	355	11	0	0	366	6	0	4	0	2	10	4	170	0	0	0	174	550	2253
2026-02-11 17:30:00	0	0	0	0	4	0	1	307	8	0	0	316	6	0	3	0	1	9	4	202	1	0	0	207	532	2217
2026-02-11 17:45:00	1	0	0	0	2	1	0	306	5	0	0	311	5	0	2	0	4	7	6	187	0	0	0	193	512	2146
2026-02-11 18:00:00	0	0	0	0	0	0	0	230	5	0	0	235	7	0	2	0	2	9	3	156	1	0	0	160	404	1998
2026-02-11 18:15:00	0	0	0	0	1	0	0	173	13	0	0	186	13	0	1	0	2	14	5	158	0	0	0	163	363	1811
2026-02-11 18:30:00	0	0	1	0	3	1	1	178	6	0	0	185	10	0	7	0	1	17	2	142	0	0	1	144	347	1626
2026-02-11 18:45:00	0	0	0	0	3	0	1	158	4	0	0	163	3	0	2	0	2	5	3	119	0	0	1	122	290	1404
Grand Total	2	0	8	0	72	10	7	5086	100	0	2	5193	133	0	52	0	39	185	71	4756	4	1	5	4832	**10220**	-
Approach%	20%	0%	80%	0%		-	0.1%	97.9%	1.9%	0%		-	71.9%	0%	28.1%	0%		-	1.5%	98.4%	0.1%	0%		-	-	-
Totals %	0%	0%	0.1%	0%		0.1%	0.1%	49.8%	1%	0%		50.8%	1.3%	0%	0.5%	0%		1.8%	0.7%	46.5%	0%	0%		47.3%	-	-
Heavy	0	0	0	0		-	0	128	1	0		-	4	0	0	0		-	1	115	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	2.5%	1%	0%		-	3%	0%	0%	0%		-	1.4%	2.4%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & SANFORD DRIVE
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather:**

Start Time	N Approach 517 Plains Rd E Driveway						E Approach PLAINS RD E						S Approach SANFORD DR						W Approach PLAINS RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 08:00:00	0	0	0	0	2	0	0	142	1	0	0	143	3	0	0	0	0	3	0	240	0	0	0	240	386
2026-02-11 08:15:00	0	0	0	0	3	0	0	170	1	0	0	171	6	0	2	0	0	8	1	228	0	0	0	229	408
2026-02-11 08:30:00	0	0	0	0	2	0	0	159	1	0	0	160	5	0	4	0	0	9	4	278	1	0	0	283	452
2026-02-11 08:45:00	0	0	1	0	0	1	0	177	1	0	2	178	3	0	1	0	1	4	1	264	0	0	0	265	448
Grand Total	0	0	1	0	7	1	0	648	4	0	2	652	17	0	7	0	1	24	6	1010	1	0	0	1017	**1694**
Approach%	0%	0%	100%	0%		-	0%	99.4%	0.6%	0%		-	70.8%	0%	29.2%	0%		-	0.6%	99.3%	0.1%	0%		-	**-**
Totals %	0%	0%	0.1%	0%		0.1%	0%	38.3%	0.2%	0%		38.5%	1%	0%	0.4%	0%		1.4%	0.4%	59.6%	0.1%	0%		60%	**-**
PHF	0	0	0.25	0		0.25	0	0.92	1	0		0.92	0.71	0	0.44	0		0.67	0.38	0.91	0.25	0		0.9	0.94
Heavy	0	0	0	0		0	0	33	0	0		33	1	0	0	0		1	1	27	0	0		28	62
Heavy %	0%	0%	0%	0%		0%	0%	5.1%	0%	0%		5.1%	5.9%	0%	0%	0%		4.2%	16.7%	2.7%	0%	0%		2.8%	3.7%
Lights	0	0	1	0		1	0	615	4	0		619	16	0	7	0		23	5	982	1	0		988	1631
Lights %	0%	0%	100%	0%		100%	0%	94.9%	100%	0%		94.9%	94.1%	0%	100%	0%		95.8%	83.3%	97.2%	100%	0%		97.1%	96.3%
Single-Unit Trucks	0	0	0	0		0	0	13	0	0		13	1	0	0	0		1	0	12	0	0		12	26
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	2%	0%	0%		2%	5.9%	0%	0%	0%		4.2%	0%	1.2%	0%	0%		1.2%	1.5%
Buses	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	1	15	0	0		16	35
Buses %	0%	0%	0%	0%		0%	0%	2.9%	0%	0%		2.9%	0%	0%	0%	0%		0%	16.7%	1.5%	0%	0%		1.6%	2.1%
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0.1%
Pedestrians	-	-	-	-	7	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	70%		-	-	-	-	20%		-	-	-	-	10%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather:**

Start Time	N Approach 517 Plains Rd E Driveway						E Approach PLAINS RD E						S Approach SANFORD DR						W Approach PLAINS RD E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 16:30:00	1	0	0	0	3	1	0	333	3	0	0	336	5	0	4	0	0	9	8	214	0	0	0	222	568
2026-02-11 16:45:00	0	0	0	0	3	0	0	338	13	0	0	351	6	0	3	0	3	9	6	217	0	0	0	223	583
2026-02-11 17:00:00	0	0	0	0	10	0	0	329	5	0	0	334	9	0	5	0	2	14	8	196	0	0	2	204	552
2026-02-11 17:15:00	0	0	0	0	2	0	0	355	11	0	0	366	6	0	4	0	2	10	4	170	0	0	0	174	550
Grand Total	1	0	0	0	18	1	0	1355	32	0	0	1387	26	0	16	0	7	42	26	797	0	0	2	823	**2253**
Approach%	100%	0%	0%	0%		-	0%	97.7%	2.3%	0%		-	61.9%	0%	38.1%	0%		-	3.2%	96.8%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	60.1%	1.4%	0%		61.6%	1.2%	0%	0.7%	0%		1.9%	1.2%	35.4%	0%	0%		36.5%	**-**
PHF	0.25	0	0	0		0.25	0	0.95	0.62	0		0.95	0.72	0	0.8	0		0.75	0.81	0.92	0	0		0.92	0.97
Heavy	0	0	0	0		0	0	19	0	0		19	1	0	0	0		1	0	12	0	0		12	32
Heavy %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	3.8%	0%	0%	0%		2.4%	0%	1.5%	0%	0%		1.5%	1.4%
Lights	1	0	0	0		1	0	1335	32	0		1367	25	0	16	0		41	26	785	0	0		811	2220
Lights %	100%	0%	0%	0%		100%	0%	98.5%	100%	0%		98.6%	96.2%	0%	100%	0%		97.6%	100%	98.5%	0%	0%		98.5%	98.5%
Single-Unit Trucks	0	0	0	0		0	0	7	0	0		7	1	0	0	0		1	0	1	0	0		1	9
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.5%	0%	0%		0.5%	3.8%	0%	0%	0%		2.4%	0%	0.1%	0%	0%		0.1%	0.4%
Buses	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	0	10	0	0		10	22
Buses %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.2%	1%
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	1
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	-	18	-	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	1	-	**-**
Pedestrians%	-	-	-	-	66.7%		-	-	-	-	0%		-	-	-	-	22.2%		-	-	-	-	3.7%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	3.7%		-	-	-	-	3.7%		**-**

Spectrum

Turning Movement Count
Location Name: PLAINS ROAD EAST & SANFORD DRIVE
Date: Wed, Feb 11, 2026 Deployment Lead: Constantinos Kotassidis

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather:**



	Bicycles on Crosswalk	Pedestrians
N	0	7
S	0	1
E	0	2
W	0	0

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM **Weather:**



	Bicycles on Crosswalk	Pedestrians
N	0	18
S	1	6
E	0	0
W	1	1

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Turning Movement Count (1 . PLAINS ROAD EAST & JOAN DRIVE)

Start Time	N Approach JOAN DR					E Approach PLAINS RD E					W Approach PLAINS RD E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
2026-02-11 07:00:00	0	6	0	2	6	1	70	0	0	71	137	0	0	0	137	214	
2026-02-11 07:15:00	1	1	0	6	2	4	99	0	0	103	166	1	0	1	167	272	
2026-02-11 07:30:00	3	2	0	3	5	4	116	0	0	120	239	0	0	0	239	364	
2026-02-11 07:45:00	1	6	0	0	7	5	155	0	0	160	266	0	0	0	266	433	1283
2026-02-11 08:00:00	1	5	0	2	6	8	143	0	0	151	238	0	0	0	238	395	1464
2026-02-11 08:15:00	0	2	0	3	2	8	169	0	0	177	229	3	0	0	232	411	1603
2026-02-11 08:30:00	2	3	0	2	5	12	156	0	0	168	276	2	0	0	278	451	1690
2026-02-11 08:45:00	2	6	0	0	8	5	175	0	0	180	266	2	0	0	268	456	1713
2026-02-11 09:00:00	6	7	0	5	13	1	175	0	0	176	184	0	0	0	184	373	1691
2026-02-11 09:15:00	3	7	0	3	10	4	172	0	0	176	195	1	0	0	196	382	1662
2026-02-11 09:30:00	2	4	0	4	6	1	150	0	1	151	202	0	0	0	202	359	1570
2026-02-11 09:45:00	1	6	0	1	7	2	150	0	0	152	195	2	0	0	197	356	1470
BREAK																	
2026-02-11 16:00:00	3	1	0	4	4	5	318	0	0	323	218	5	0	0	223	550	
2026-02-11 16:15:00	2	3	0	2	5	4	320	0	0	324	213	1	0	0	214	543	
2026-02-11 16:30:00	3	1	0	5	4	5	332	0	0	337	213	3	0	0	216	557	
2026-02-11 16:45:00	4	3	0	1	7	6	345	0	0	351	221	3	0	0	224	582	2232
2026-02-11 17:00:00	1	5	0	4	6	5	331	0	0	336	203	1	0	1	204	546	2228
2026-02-11 17:15:00	3	3	0	3	6	10	359	0	0	369	173	1	0	1	174	549	2234
2026-02-11 17:30:00	1	3	0	2	4	7	313	0	0	320	206	1	0	0	207	531	2208
2026-02-11 17:45:00	1	3	0	2	4	4	310	0	0	314	191	0	0	0	191	509	2135
2026-02-11 18:00:00	0	1	0	0	1	5	234	0	0	239	162	1	0	0	163	403	1992
2026-02-11 18:15:00	0	0	0	1	0	2	186	0	0	188	170	2	0	0	172	360	1803
2026-02-11 18:30:00	0	2	0	3	2	4	184	0	0	188	152	0	0	0	152	342	1614
2026-02-11 18:45:00	1	5	0	3	6	9	157	0	2	166	121	1	0	0	122	294	1399
Grand Total	41	85	0	61	126	121	5119	0	3	5240	4836	30	0	3	4866	**10232**	-
Approach%	32.5%	67.5%	0%		-	2.3%	97.7%	0%		-	99.4%	0.6%	0%		-	**-**	-
Totals %	0.4%	0.8%	0%		1.2%	1.2%	50%	0%		51.2%	47.3%	0.3%	0%		47.6%	**-**	-
Heavy	0	9	0		-	3	125	0		-	113	2	0		-	**-**	-
Heavy %	0%	10.6%	0%		-	2.5%	2.4%	0%		-	2.3%	6.7%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather:

Start Time	N Approach JOAN DR					E Approach PLAINS RD E					W Approach PLAINS RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 08:00:00	1	5	0	2	6	8	143	0	0	151	238	0	0	0	238	395
2026-02-11 08:15:00	0	2	0	3	2	8	169	0	0	177	229	3	0	0	232	411
2026-02-11 08:30:00	2	3	0	2	5	12	156	0	0	168	276	2	0	0	278	451
2026-02-11 08:45:00	2	6	0	0	8	5	175	0	0	180	266	2	0	0	268	456
Grand Total	5	16	0	7	21	33	643	0	0	676	1009	7	0	0	1016	**1713**
Approach%	23.8%	76.2%	0%		-	4.9%	95.1%	0%		-	99.3%	0.7%	0%		-	**-**
Totals %	0.3%	0.9%	0%		1.2%	1.9%	37.5%	0%		39.5%	58.9%	0.4%	0%		59.3%	**-**
PHF	0.63	0.67	0		0.66	0.69	0.92	0		0.94	0.91	0.58	0		0.91	0.94
Heavy	0	0	0		0	0	31	0		31	28	0	0		28	59
Heavy %	0%	0%	0%		0%	0%	4.8%	0%		4.6%	2.8%	0%	0%		2.8%	3.4%
Lights	5	16	0		21	33	612	0		645	980	7	0		987	1653
Lights %	100%	100%	0%		100%	100%	95.2%	0%		95.4%	97.1%	100%	0%		97.1%	96.5%
Single-Unit Trucks	0	0	0		0	0	11	0		11	13	0	0		13	24
Single-Unit Trucks %	0%	0%	0%		0%	0%	1.7%	0%		1.6%	1.3%	0%	0%		1.3%	1.4%
Buses	0	0	0		0	0	19	0		19	15	0	0		15	34
Buses %	0%	0%	0%		0%	0%	3%	0%		2.8%	1.5%	0%	0%		1.5%	2%
Articulated Trucks	0	0	0		0	0	1	0		1	0	0	0		0	1
Articulated Trucks %	0%	0%	0%		0%	0%	0.2%	0%		0.1%	0%	0%	0%		0%	0.1%
Bicycles on Road	0	0	0		0	0	0	0		0	1	0	0		1	1
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0.1%	0%	0%		0.1%	0.1%
Pedestrians	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	100%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

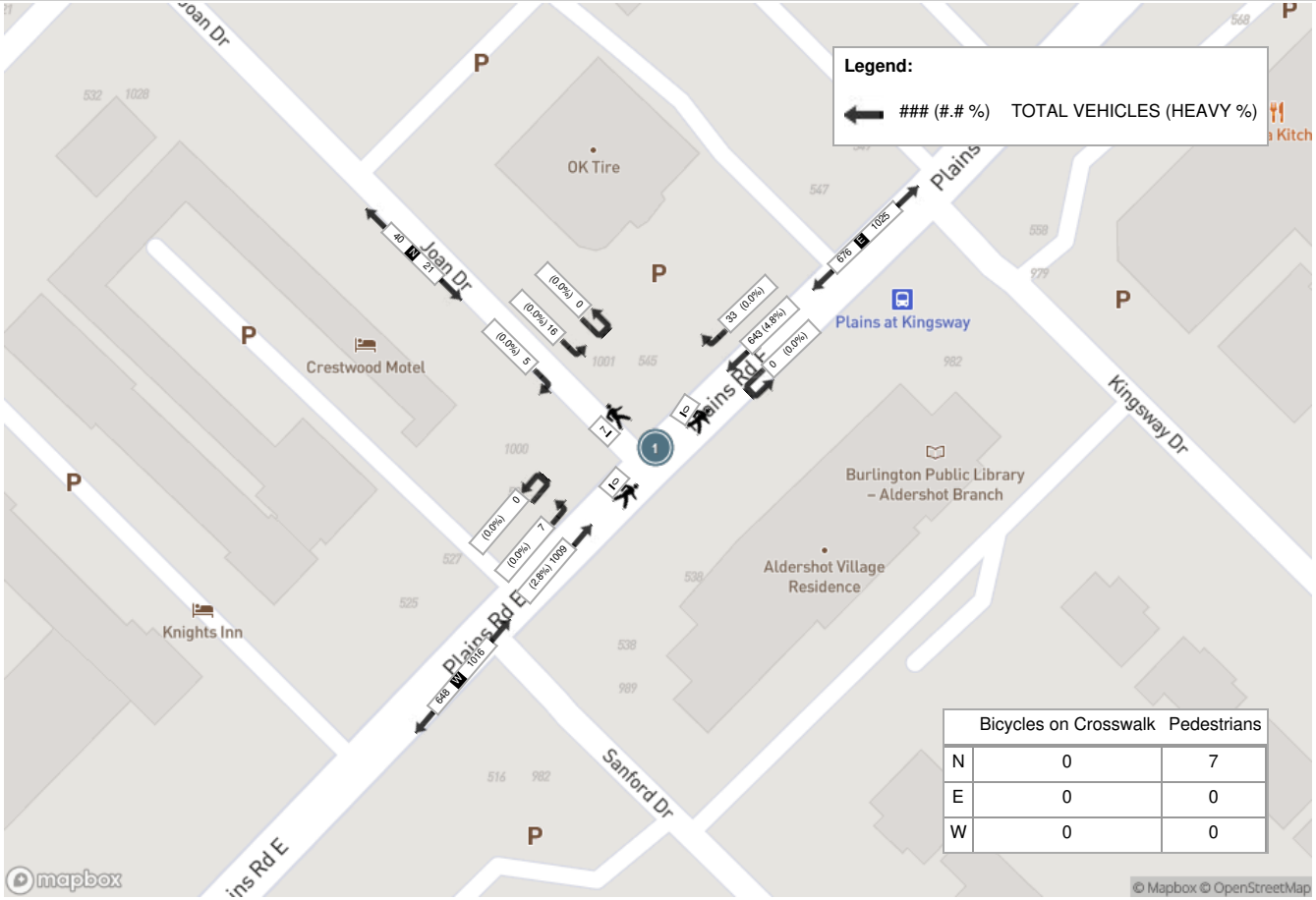
Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather:

Start Time	N Approach JOAN DR					E Approach PLAINS RD E					W Approach PLAINS RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
2026-02-11 16:30:00	3	1	0	5	4	5	332	0	0	337	213	3	0	0	216	557
2026-02-11 16:45:00	4	3	0	1	7	6	345	0	0	351	221	3	0	0	224	582
2026-02-11 17:00:00	1	5	0	4	6	5	331	0	0	336	203	1	0	1	204	546
2026-02-11 17:15:00	3	3	0	3	6	10	359	0	0	369	173	1	0	1	174	549
Grand Total	11	12	0	13	23	26	1367	0	0	1393	810	8	0	2	818	**2234**
Approach%	47.8%	52.2%	0%		-	1.9%	98.1%	0%		-	99%	1%	0%		-	**-**
Totals %	0.5%	0.5%	0%		1%	1.2%	61.2%	0%		62.4%	36.3%	0.4%	0%		36.6%	**-**
PHF	0.69	0.6	0		0.82	0.65	0.95	0		0.94	0.92	0.67	0		0.91	0.96
Heavy	0	1	0		1	1	17	0		18	12	0	0		12	31
Heavy %	0%	8.3%	0%		4.3%	3.8%	1.2%	0%		1.3%	1.5%	0%	0%		1.5%	1.4%
Lights	11	11	0		22	25	1349	0		1374	798	8	0		806	2202
Lights %	100%	91.7%	0%		95.7%	96.2%	98.7%	0%		98.6%	98.5%	100%	0%		98.5%	98.6%
Single-Unit Trucks	0	1	0		1	1	5	0		6	1	0	0		1	8
Single-Unit Trucks %	0%	8.3%	0%		4.3%	3.8%	0.4%	0%		0.4%	0.1%	0%	0%		0.1%	0.4%
Buses	0	0	0		0	0	12	0		12	10	0	0		10	22
Buses %	0%	0%	0%		0%	0%	0.9%	0%		0.9%	1.2%	0%	0%		1.2%	1%
Articulated Trucks	0	0	0		0	0	0	0		0	1	0	0		1	1
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.1%	0%	0%		0.1%	0%
Bicycles on Road	0	0	0		0	0	1	0		1	0	0	0		0	1
Bicycles on Road %	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0%	0%	0%		0%	0%
Pedestrians	-	-	-	13	-	-	-	-	0	-	-	-	-	2	-	**-**
Pedestrians%	-	-	-	86.7%		-	-	-	0%		-	-	-	13.3%		**-**
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

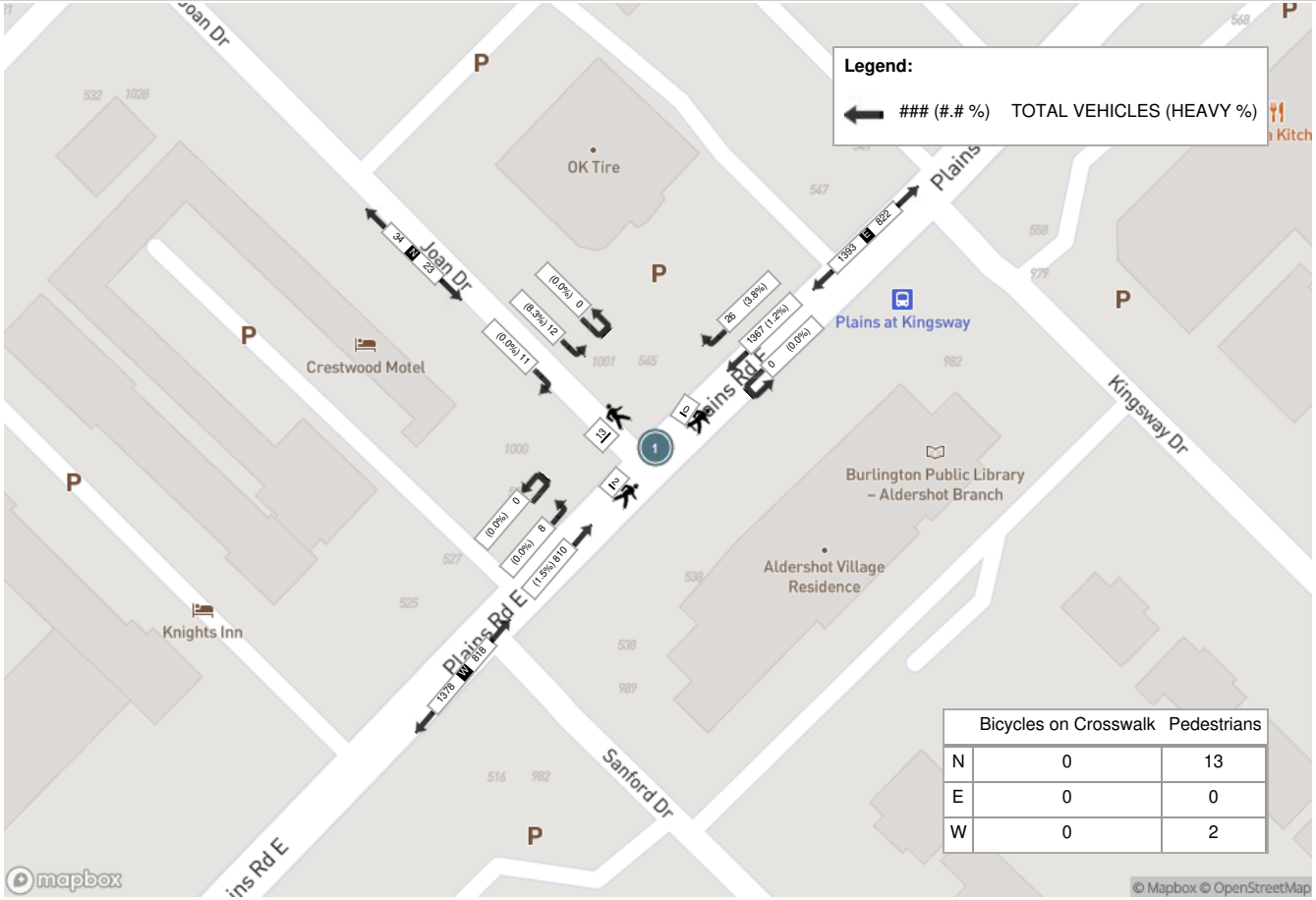
Peak Hour: 08:00 AM - 09:00 AM Weather:



	Bicycles on Crosswalk	Pedestrians
N	0	7
E	0	0
W	0	0

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather:



Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Plains Rd @ King Rd	112	4	EOS	172.24.21.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

No	Date			Description	Prepared by:
	Y	M	D		
9	2025	5	29	Reverted Back to Orignal Timings	MA

*-Start from Main Menu

PHASE DESCRIPTION

Ph1	WBLT- Plains Rd	Ph5	EBLT - Plains Rd
Ph2	EB - Plains Rd	Ph6	WB - Plains Rd
Ph3	SBLT - King Rd	Ph7	NBLT - King Rd
Ph4	NB - King Rd	Ph8	SB - King Rd

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 6

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green	6	20	6	8	6	20	6	8
Walk		16		8		16		8
Ped. Clearance		15		21		15		21
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3	3	3
MAX 1	15	35	15	25	15	35	15	25
MAX 2	15	35	15	25	15	35	15	25
Yellow Change	4	3.7	4	3.3	4	3.7	4	3.3
Red Clearance		2.3		3.1		2.3		3.1
Phase Minimum:	**10**	**37**	**10**	**35.4**	**10**	**37**	**10**	**35.4**

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 1-6

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall		X				X		
Pedestrian Recall								
MAX Recall								
Min Recall								

SCP STRATEGY PLAN

* - 4 -3

PLAN 1									
TIME TO LIVE	130 SECONDS								
SCP PHASE	1	2	3	4	5	6	7	8	
ENABLE	NO	YES	NO	YES	NO	YES	NO	YES	

PLAN 2									
TIME TO LIVE									
SCP PHASE	1	2	3	4	5	6	7	8	
ENABLE									

PLAN 3									
TIME TO LIVE									
SCP PHASE	1	2	3	4	5	6	7	8	
ENABLE									

PLAN 4									
TIME TO LIVE	130 SECONDS								
SCP PHASE	1	2	3	4	5	6	7	8	
ENABLE									

TSP/SCP SPLIT PATTERN

* 4 -4 ,

Cycle Length	Plan		Phases							
			1	2	3	4	5	6	7	8
110	1	Max Reduction		11		11		11		11
		Max Extension		11		0		11		0
110	2	Max Reduction		11		11		11		11
		Max Extension		11		0		11		0
130	3	Max Reduction		13		13		13		13
		Max Extension		13		0		13		0
100	4	Max Reduction		10		10		10		10
		Max Extension		10		0		10		0
0	10	Max Reduction		0		0		0		0
		Max Extension		20		0		20		0

EVENT PLAN

* - 5 - 2,

Event plan	Cycle Length	Offset (sec)	Phases (sec)							
			1	2	3	4	5	6	7	8
1	110	24	10	55	15	30	13	52	13	32
2	110	46	11	50	17	32	13	48	17	32
3	130	50	11	70	18	31	11	70	15	34
4	100	76	12	44	14	30	12	44	14	30
10	0	0	0	0	0	0	0	0	0	0

DAY PLAN

* - 5 - 3, -5 - 4

Day Plan	Event Plan	Time Period
1	1	06:00
1	2	09:00
1	3	15:00
1	4	19:00
1	10	22:00
2	4	08:00
2	3	11:30
2	4	19:00
2	10	22:00
3	4	09:00
3	10	20:00

Dayplan

1	Weekday
2	Saturday
3	Sunday & Holiday

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS

* - 5 - 5

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Fixed	4	18	0	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Plains @ Maplehurst	113	4	ACS/3	172.24.20.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

No	Date			Description	Prepared by:
	Y	M	D		
6	2024	10	28	NEW TSP PLAN	SE

*-Start from Main Menu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	EB - Plains Road	Ph6	WB - Plains Road
Ph3		Ph7	
Ph4	NB - Maplehurst Plaza	Ph8	SB - Maplehurst Plaza

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use		X		X		X		X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green		8		8		8		8
Walk		25		14		25		14
Ped. Clearance		8		16		8		16
Pedestrian Carry Over								
Vehicle Extension		3		3		3		3
MAX 1		35		25		35		25
MAX 2		35		25		35		25
Yellow Change		3.7		3.3		3.7		3.3
Red Clearance		1.9		2.5		1.9		2.5
Phase Minimum:	**0**	**38.6**	**0**	**35.8**	**0**	**38.6**	**0**	**35.8**

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

TSP/SCP PLAN

* 4 -3 ,

Enable Option	Active		**Delay Time**	0		**No Delay in TSP**	TRUE
Signal Type	Pulse		**Max Presence**	22		**Reservice Cycles**	5
Mode	SCP		**Free Default Patte**	10			

Phase:	1	2	3	4	5	6	7	8
Plan 1		T						
Plan 2								
Plan 3						T		
Plan 4								

TSP/SCP SPLIT PATTERN

* 4 -4 ,

Cycle Length	Plan		Phases							
			1	2	3	4	5	6	7	8
110	**1**	**Max Reduction**		**11**				**11**		
		Max Extension		**11**				**11**		
90	**2**	**Max Reduction**		**9**				**9**		
		Max Extension		**9**				**9**		
110	**3**	**Max Reduction**		**11**				**11**		
		Max Extension		**11**				**11**		
90	**4**	**Max Reduction**		**9**				**9**		
		Max Extension		**9**				**9**		
0	**10**	**Max Reduction**		**0**				**0**		
		Max Extension		**0**				**0**		

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN

* - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	**110**	**89**	**1**	**1**		**73**		**37**		**73**		**37**
2	**90**	**87**	**1**	**2**		**53**		**37**		**53**		**37**
3	**110**	**0**	**1**	**3**		**73**		**37**		**73**		**37**
4	**90**	**0**	**1**	**4**		**53**		**37**		**53**		**37**
10	**0**	**0**	**1**	**10**		**0**		**0**		**0**		**0**

TIME BASE: ACTION PLAN, DAY PLAN

* - 5 - 2, - 5 - 3, -5 - 4

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan

1	1	4	06:00	4	1	
1	1	1	07:00	1	1	Schedule 1 = Day Plan 1
1	1	2	09:00	2	1	Schedule 2 = Day Plan 2
1	1	3	15:30	3	1	Schedule 3 = Day Plan 3
1	1	4	19:00	4	1	
1	1	10	22:00	254	1	Day Plan 1 (Weekday)
2	2	4	08:00	4	1	Day Plan 2 (Saturday)
2	2	3	10:30	3	1	Day Plan 3 (Sunday, Holidays)
2	2	4	17:00	4	1	
2	2	10	21:00	254	1	Action Plan 10 = free (254)
3	3	4	09:30	4	1	
3	3	2	12:00	2	1	
3	3	4	17:00	4	1	
3	3	10	21:00	254	1	

Note:

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Appendix E

Base Year (2026) Traffic Level of Service Calculations

13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	782	100	40	409	127	198	242	59	213	94	74
Future Volume (vph)	127	782	100	40	409	127	198	242	59	213	94	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1789	3544	1617	1772	3310	0	1772	1841	0	1789	1865	1617
Flt Permitted	0.347			0.284			0.692			0.209		
Satd. Flow (perm)	651	3544	1562	528	3310	0	1283	1841	0	392	1865	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		46			10				109
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	6		8	8		6	6		6	6		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	3%	6%	4%	3%	0%	5%	2%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	137	841	108	43	577	0	213	323	0	229	101	80
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	13.0	55.0	55.0	10.0	52.0		13.0	30.0		15.0	32.0	32.0
Total Split (%)	11.8%	50.0%	50.0%	9.1%	47.3%		11.8%	27.3%		13.6%	29.1%	29.1%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	60.0	52.7	52.7	54.1	46.1		32.8	21.4		36.8	23.4	23.4
Actuated g/C Ratio	0.56	0.49	0.49	0.50	0.43		0.31	0.20		0.34	0.22	0.22
v/c Ratio	0.30	0.48	0.13	0.13	0.40		0.49	0.86		0.83	0.25	0.19
Control Delay (s/veh)	13.4	20.7	3.5	12.3	20.7		30.4	63.1		51.6	36.4	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	13.4	20.7	3.5	12.3	20.7		30.4	63.1		51.6	36.4	4.0

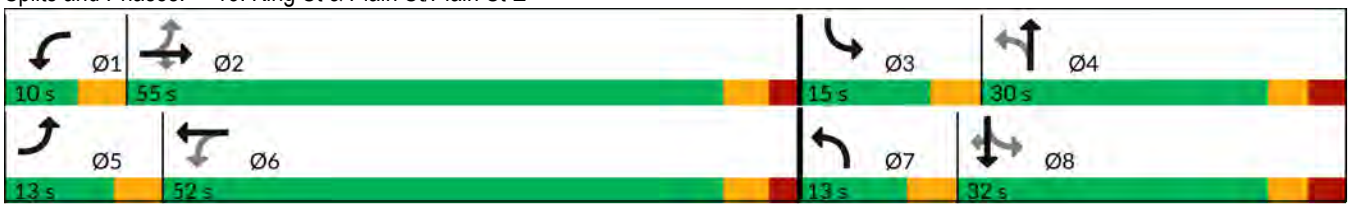
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	C	A	B	C		C	E		D	D	A
Approach Delay (s/veh)		18.0			20.2			50.1			38.6	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	13.5	67.3	0.0	4.0	41.0		32.2	64.3		34.9	17.7	0.0
Queue Length 95th (m)	23.1	85.5	8.8	9.1	55.4		51.0	#106.7		#63.9	32.2	6.6
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	459	1739	824	335	1445		433	412		277	445	461
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.30	0.48	0.13	0.13	0.40		0.49	0.78		0.83	0.23	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 107.4			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 28.2		Intersection LOS: C	
Intersection Capacity Utilization 79.5%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	646	111	76	1156	181	148	118	60	254	183	148
Future Volume (vph)	87	646	111	76	1156	181	148	118	60	254	183	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1825	3579	1585	1825	3493	0	1789	1779	0	1825	1902	1617
Flt Permitted	0.098			0.364			0.554			0.359		
Satd. Flow (perm)	188	3579	1528	695	3493	0	1034	1779	0	685	1902	1578
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		19			17				151
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	14		8	8		14	9		8	8		9
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	3%	0%	2%	0%	2%	1%	3%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	659	113	78	1365	0	151	181	0	259	187	151
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	11.0	70.0	70.0	11.0	70.0		15.0	31.0		18.0	34.0	34.0
Total Split (%)	8.5%	53.8%	53.8%	8.5%	53.8%		11.5%	23.8%		13.8%	26.2%	26.2%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	73.9	66.4	66.4	72.9	64.1		29.4	16.5		35.9	19.8	19.8
Actuated g/C Ratio	0.61	0.55	0.55	0.60	0.53		0.24	0.14		0.29	0.16	0.16
v/c Ratio	0.43	0.34	0.13	0.16	0.74		0.48	0.71		0.78	0.61	0.40
Control Delay (s/veh)	16.4	17.2	3.3	10.5	25.7		38.0	60.8		52.4	56.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	16.4	17.2	3.3	10.5	25.7		38.0	60.8		52.4	56.0	9.8

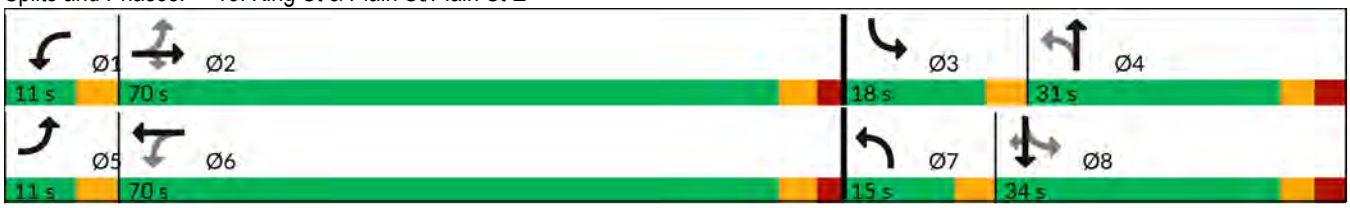
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	B	A	B	C		D	E		D	E	A
Approach Delay (s/veh)		15.3			24.9			50.4			42.8	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	7.7	46.6	0.0	6.7	127.3		27.5	38.1		50.4	42.2	0.0
Queue Length 95th (m)	16.4	67.0	9.4	14.8	173.6		44.5	61.8		#76.7	65.5	17.4
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	208	1951	884	482	1849		322	373		333	432	475
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.43	0.34	0.13	0.16	0.74		0.47	0.49		0.78	0.43	0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 121.7			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 28.3		Intersection LOS: C	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



3: Maplehurst Plaza & Plain Rd E

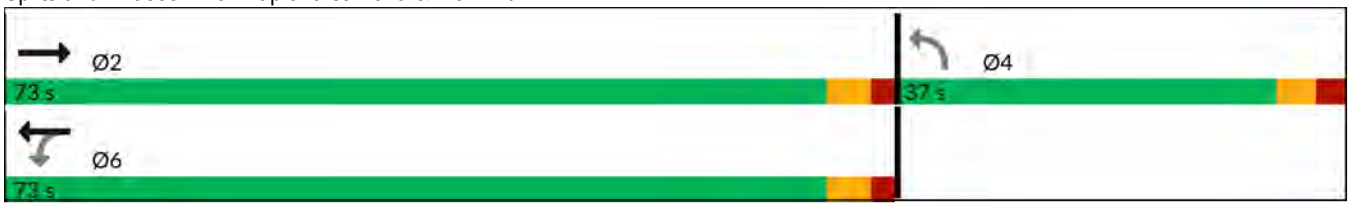
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	993	1	2	616	0	9
Future Volume (vph)	993	1	2	616	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3544	0	1825	3510	1662	0
Flt Permitted			0.260			
Satd. Flow (perm)	3544	0	499	3510	1662	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					101	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)		4	4		5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1092	0	2	677	10	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	87.3		87.3	87.3	8.0	
Actuated g/C Ratio	0.96		0.96	0.96	0.09	
v/c Ratio	0.32		0.00	0.20	0.04	
Control Delay (s/veh)	1.0		1.0	0.8	0.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	1.0		1.0	0.8	0.3	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	A	
Approach Delay (s/veh)	1.0			0.8	0.3	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0	0.0	
Queue Length 95th (m)	29.6		0.4	16.4	0.0	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	3409		480	3376	639	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.32		0.00	0.20	0.02	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 90.8			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.32			
Intersection Signal Delay (s/veh): 0.9		Intersection LOS: A	
Intersection Capacity Utilization 43.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



3: Maplehurst Plaza & Plain Rd E



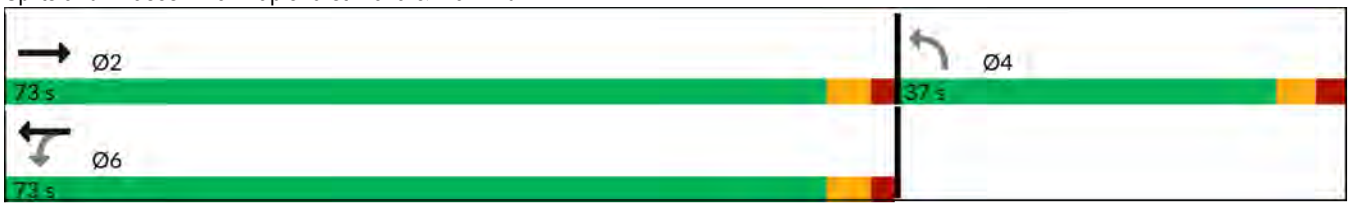
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	814	3	5	1237	2	6
Future Volume (vph)	814	3	5	1237	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3575	0	1825	3579	1706	0
Flt Permitted			0.338		0.988	
Satd. Flow (perm)	3575	0	649	3579	1704	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				6	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)					5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	834	0	5	1262	8	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	86.7		86.7	86.7	8.0	
Actuated g/C Ratio	0.96		0.96	0.96	0.09	
v/c Ratio	0.24		0.01	0.37	0.05	
Control Delay (s/veh)	0.9		1.0	1.1	27.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	0.9		1.0	1.1	27.8	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	C	
Approach Delay (s/veh)	0.9			1.1	27.8	
Approach LOS	A			A	C	
Queue Length 50th (m)	0.0		0.0	0.0	0.3	
Queue Length 95th (m)	21.0		0.7	36.4	4.7	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	3435		623	3438	595	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.24		0.01	0.37	0.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 90.2			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 1.1		Intersection LOS: A	
Intersection Capacity Utilization 50.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



5: Sanford Dr & Plain Rd E



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1011	6	4	648	7	17
Future Volume (Veh/h)	1011	6	4	648	7	17
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)	1076	6	4	689	7	18
Pedestrians				2	1	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.95		0.96	0.95
vC, conflicting volume			1083		1433	544
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			978		1227	410
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			99		96	97
cM capacity (veh/h)			676		166	548

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	717	365	4	345	345	25
Volume Left	0	0	4	0	0	7
Volume Right	0	6	0	0	0	18
cSH	1700	1700	676	1700	1700	333
Volume to Capacity	0.42	0.21	0.01	0.20	0.20	0.07
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.0	1.8
Control Delay (s/veh)	0.0	0.0	10.4	0.0	0.0	16.7
Lane LOS			B			C
Approach Delay (s/veh)	0.0		0.1			16.7
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

5: Sanford Dr & Plain Rd E

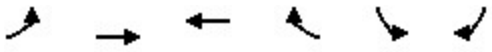


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	797	26	32	1355	16	26
Future Volume (Veh/h)	797	26	32	1355	16	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	822	27	33	1397	16	27
Pedestrians	2				7	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.97		0.69	0.97
vC, conflicting volume			856		1609	432
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			794		793	358
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		93	96
cM capacity (veh/h)			807		216	611

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	548	301	33	699	699	43
Volume Left	0	0	33	0	0	16
Volume Right	0	27	0	0	0	27
cSH	1700	1700	807	1700	1700	363
Volume to Capacity	0.32	0.18	0.04	0.41	0.41	0.12
Queue Length 95th (m)	0.0	0.0	1.0	0.0	0.0	3.0
Control Delay (s/veh)	0.0	0.0	9.7	0.0	0.0	16.2
Lane LOS			A			C
Approach Delay (s/veh)	0.0		0.2			16.2
Approach LOS						C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr

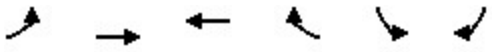


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	1009	643	33	16	5
Future Volume (Veh/h)	7	1009	643	33	16	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	1073	684	35	17	5
Pedestrians					7	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.94				0.96	0.94
vC, conflicting volume	726				1259	367
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	584				995	202
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				93	99
cM capacity (veh/h)	935				232	758

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	7	537	537	456	263	22
Volume Left	7	0	0	0	0	17
Volume Right	0	0	0	0	35	5
cSH	935	1700	1700	1700	1700	276
Volume to Capacity	0.01	0.32	0.32	0.27	0.15	0.08
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	2.0
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	19.2
Lane LOS	A					C
Approach Delay (s/veh)	0.1			0.0		19.2
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	810	1367	26	12	11
Future Volume (Veh/h)	8	810	1367	26	12	11
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)	8	844	1424	27	12	11
Pedestrians		2			13	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.66				0.66	0.66
vC, conflicting volume	1464				1889	741
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665				1258	0
tC, single (s)	4.1				7.0	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	99				88	98
cM capacity (veh/h)	606				100	707

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	8	422	422	949	502	23
Volume Left	8	0	0	0	0	12
Volume Right	0	0	0	0	27	11
cSH	606	1700	1700	1700	1700	170
Volume to Capacity	0.01	0.25	0.25	0.56	0.30	0.14
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	3.5
Control Delay (s/veh)	11.0	0.0	0.0	0.0	0.0	29.5
Lane LOS	B					D
Approach Delay (s/veh)	0.1			0.0		29.5
Approach LOS						D

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	20	20	11	0
Future Volume (Veh/h)	0	10	20	20	11	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	22	22	12	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	78	12	12			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	78	12	12			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	917	1074	1620			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	44	12
Volume Left	0	22	0
Volume Right	11	0	0
cSH	1074	1620	1700
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (m)	0.2	0.3	0.0
Control Delay (s/veh)	8.4	3.7	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	8.4	3.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	18.8%	ICU Level of Service	A
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	10	17	17	13	0
Future Volume (Veh/h)	0	10	17	17	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	11	18	18	14	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	68	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	68	14	14			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	99			
cM capacity (veh/h)	931	1072	1617			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	36	14
Volume Left	0	18	0
Volume Right	11	0	0
cSH	1072	1617	1700
Volume to Capacity	0.01	0.01	0.01
Queue Length 95th (m)	0.2	0.3	0.0
Control Delay (s/veh)	8.4	3.7	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	8.4	3.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	0	20	0	0
Future Volume (Veh/h)	10	0	0	20	0	0
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)	11	0	0	22	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			11		33	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		33	11
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)			1621		986	1076

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	22	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1621	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	0	17	0	0
Future Volume (Veh/h)	10	0	0	17	0	0
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)	11	0	0	18	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			11		29	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		29	11
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)			1621		991	1076

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	18	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1621	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F

Future (2031) Background Traffic Level of Service Calculations

13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	950	116	40	461	127	214	255	59	213	99	80
Future Volume (vph)	148	950	116	40	461	127	214	255	59	213	99	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1789	3544	1617	1772	3325	0	1772	1844	0	1789	1865	1617
Flt Permitted	0.315			0.204			0.689			0.191		
Satd. Flow (perm)	591	3544	1562	380	3325	0	1278	1844	0	359	1865	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		39			10				109
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	6		8	8		6	6		6	6		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	3%	6%	4%	3%	0%	5%	2%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	1022	125	43	633	0	230	337	0	229	106	86
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	13.0	55.0	55.0	10.0	52.0		13.0	30.0		15.0	32.0	32.0
Total Split (%)	11.8%	50.0%	50.0%	9.1%	47.3%		11.8%	27.3%		13.6%	29.1%	29.1%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	60.1	52.8	52.8	54.0	46.0		33.4	22.0		37.4	24.0	24.0
Actuated g/C Ratio	0.56	0.49	0.49	0.50	0.43		0.31	0.20		0.35	0.22	0.22
v/c Ratio	0.38	0.59	0.15	0.16	0.44		0.53	0.88		0.85	0.26	0.20
Control Delay (s/veh)	14.4	22.8	4.8	12.9	22.0		31.5	65.4		54.9	36.5	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	14.4	22.8	4.8	12.9	22.0		31.5	65.4		54.9	36.5	4.9

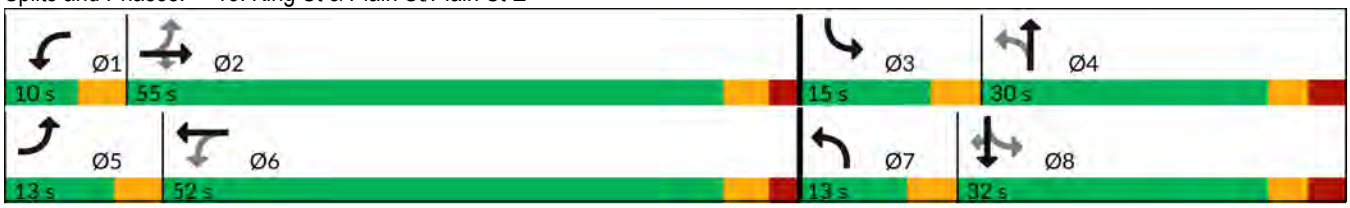
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	C	A	B	C		C	E		D	D	A
Approach Delay (s/veh)		20.0			21.4			51.7			40.0	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	15.8	87.8	1.4	4.0	47.0		35.2	67.8		34.9	18.6	0.0
Queue Length 95th (m)	26.4	109.6	11.6	9.1	62.4		55.2	#113.8		#67.6	33.6	8.0
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	428	1731	821	267	1438		436	410		269	442	459
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.37	0.59	0.15	0.16	0.44		0.53	0.82		0.85	0.24	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 108.1			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 29.2		Intersection LOS: C	
Intersection Capacity Utilization 81.2%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	750	123	76	1355	181	166	125	60	254	193	166
Future Volume (vph)	97	750	123	76	1355	181	166	125	60	254	193	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1825	3579	1585	1825	3502	0	1789	1786	0	1825	1902	1617
Flt Permitted	0.060			0.312			0.518			0.351		
Satd. Flow (perm)	115	3579	1528	597	3502	0	967	1786	0	670	1902	1578
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126		16			16				159
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	14		8	8		14	9		8	8		9
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	3%	0%	2%	0%	2%	1%	3%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	765	126	78	1568	0	169	189	0	259	197	169
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	11.0	70.0	70.0	11.0	70.0		15.0	31.0		18.0	34.0	34.0
Total Split (%)	8.5%	53.8%	53.8%	8.5%	53.8%		11.5%	23.8%		13.8%	26.2%	26.2%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	73.9	66.4	66.4	72.9	64.1		30.2	17.1		36.5	20.3	20.3
Actuated g/C Ratio	0.60	0.54	0.54	0.60	0.52		0.25	0.14		0.30	0.17	0.17
v/c Ratio	0.60	0.39	0.14	0.18	0.85		0.55	0.72		0.79	0.63	0.43
Control Delay (s/veh)	33.2	18.3	3.3	10.9	31.2		40.0	61.4		52.7	56.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	33.2	18.3	3.3	10.9	31.2		40.0	61.4		52.7	56.7	11.4

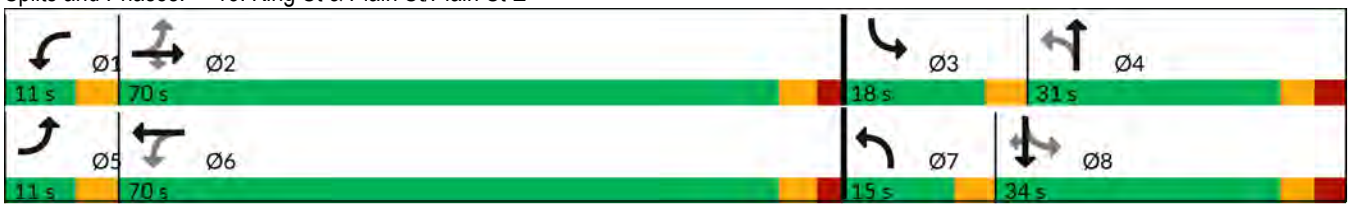
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	B	A	B	C		D	E		D	E	B
Approach Delay (s/veh)		17.9			30.3			51.3			42.8	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	8.8	56.8	0.0	6.8	163.6		31.1	40.4		50.4	44.7	2.1
Queue Length 95th (m)	#31.2	80.6	10.0	14.9	222.7		49.4	64.6		#76.5	68.8	20.7
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	167	1941	886	426	1841		315	372		332	429	479
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.59	0.39	0.14	0.18	0.85		0.54	0.51		0.78	0.46	0.35

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 122.4			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 31.1		Intersection LOS: C	
Intersection Capacity Utilization 93.5%		ICU Level of Service F	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



3: Maplehurst Plaza & Plain Rd E

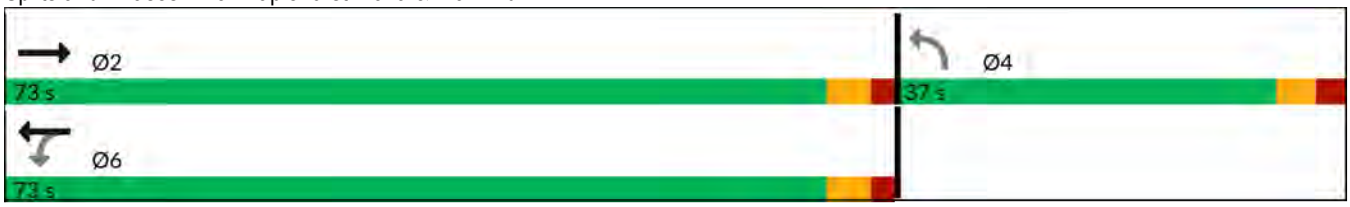
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1123	7	27	677	45	99
Future Volume (vph)	1123	7	27	677	45	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3540	0	1825	3510	1716	0
Flt Permitted			0.202		0.985	
Satd. Flow (perm)	3540	0	388	3510	1713	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				73	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)		4	4		5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1242	0	30	744	158	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	68.7		68.7	68.7	10.6	
Actuated g/C Ratio	0.76		0.76	0.76	0.12	
v/c Ratio	0.46		0.10	0.28	0.60	
Control Delay (s/veh)	5.1		4.5	3.9	30.3	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	5.1		4.5	3.9	30.3	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	C	
Approach Delay (s/veh)	5.1			4.0	30.3	
Approach LOS	A			A	C	
Queue Length 50th (m)	32.6		1.1	16.1	13.8	
Queue Length 95th (m)	55.9		4.2	28.6	32.2	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	2681		293	2658	637	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.46		0.10	0.28	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 90.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 6.5		Intersection LOS: A	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



3: Maplehurst Plaza & Plain Rd E

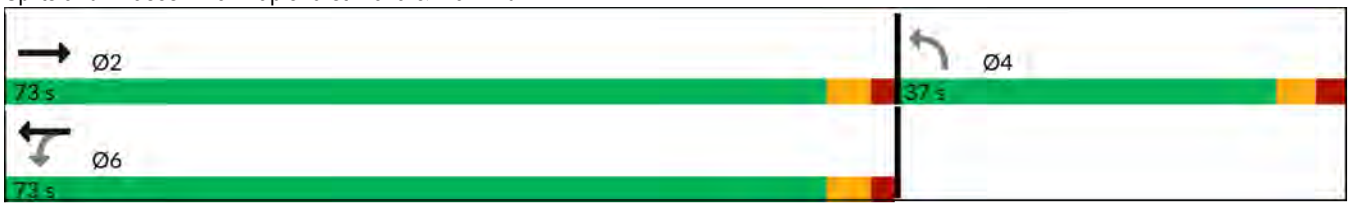
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	903	44	111	1374	18	26
Future Volume (vph)	903	44	111	1374	18	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3557	0	1825	3579	1730	0
Flt Permitted			0.293		0.980	
Satd. Flow (perm)	3557	0	563	3579	1726	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				27	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)					5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	966	0	113	1402	45	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	75.6		75.6	75.6	8.2	
Actuated g/C Ratio	0.86		0.86	0.86	0.09	
v/c Ratio	0.31		0.23	0.45	0.24	
Control Delay (s/veh)	2.4		3.7	3.1	23.8	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	2.4		3.7	3.1	23.8	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	C	
Approach Delay (s/veh)	2.4			3.1	23.8	
Approach LOS	A			A	C	
Queue Length 50th (m)	19.5		4.0	34.3	2.8	
Queue Length 95th (m)	27.0		9.5	46.6	12.4	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	3076		487	3094	633	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.31		0.23	0.45	0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 87.4			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay (s/veh): 3.2		Intersection LOS: A	
Intersection Capacity Utilization 54.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



5: Sanford Dr & Plain Rd E



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1230	8	5	735	7	17
Future Volume (Veh/h)	1230	8	5	735	7	17
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)	1309	9	5	782	7	18
Pedestrians				2	1	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.86		0.90	0.86
vC, conflicting volume			1319		1716	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1055		1237	294
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			99		95	97
cM capacity (veh/h)			577		152	595

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	873	445	5	391	391	25
Volume Left	0	0	5	0	0	7
Volume Right	0	9	0	0	0	18
cSH	1700	1700	577	1700	1700	327
Volume to Capacity	0.51	0.26	0.01	0.23	0.23	0.08
Queue Length 95th (m)	0.0	0.0	0.2	0.0	0.0	1.9
Control Delay (s/veh)	0.0	0.0	11.3	0.0	0.0	16.9
Lane LOS			B			C
Approach Delay (s/veh)	0.0		0.1			16.9
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		

5: Sanford Dr & Plain Rd E

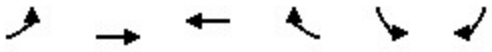


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	933	28	32	1602	18	26
Future Volume (Veh/h)	933	28	32	1602	18	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	962	29	33	1652	19	27
Pedestrians	2				7	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.93		0.64	0.93
vC, conflicting volume			998		1878	503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			846		734	312
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		91	96
cM capacity (veh/h)			738		217	625

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	641	350	33	826	826	46
Volume Left	0	0	33	0	0	19
Volume Right	0	29	0	0	0	27
cSH	1700	1700	738	1700	1700	351
Volume to Capacity	0.38	0.21	0.04	0.49	0.49	0.13
Queue Length 95th (m)	0.0	0.0	1.1	0.0	0.0	3.4
Control Delay (s/veh)	0.0	0.0	10.1	0.0	0.0	16.8
Lane LOS			B			C
Approach Delay (s/veh)	0.0		0.2			16.8
Approach LOS						C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr

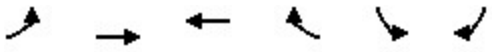


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	9	1226	729	33	16	6
Future Volume (Veh/h)	9	1226	729	33	16	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	10	1304	776	35	17	6
Pedestrians					7	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	818				1473	413
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	611				898	167
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				93	99
cM capacity (veh/h)	887				253	775

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	10	652	652	517	294	23
Volume Left	10	0	0	0	0	17
Volume Right	0	0	0	0	35	6
cSH	887	1700	1700	1700	1700	307
Volume to Capacity	0.01	0.38	0.38	0.30	0.17	0.07
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.8
Control Delay (s/veh)	9.1	0.0	0.0	0.0	0.0	17.7
Lane LOS	A					C
Approach Delay (s/veh)	0.1			0.0		17.7
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	945	1613	26	12	12
Future Volume (Veh/h)	10	945	1613	26	12	12
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)	10	984	1680	27	12	12
Pedestrians		2			13	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.59				0.62	0.59
vC, conflicting volume	1720				2219	869
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	823				1330	0
tC, single (s)	4.1				7.0	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	98				85	98
cM capacity (veh/h)	473				82	632

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	10	492	492	1120	587	24
Volume Left	10	0	0	0	0	12
Volume Right	0	0	0	0	27	12
cSH	473	1700	1700	1700	1700	146
Volume to Capacity	0.02	0.29	0.29	0.66	0.35	0.16
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	4.3
Control Delay (s/veh)	12.8	0.0	0.0	0.0	0.0	34.5
Lane LOS	B					D
Approach Delay (s/veh)	0.1			0.0		34.5
Approach LOS						D

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	20	24	0	0
Future Volume (Veh/h)	0	0	20	24	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	22	26	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	70	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	70	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	922	1085	1623			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	48	0
Volume Left	0	22	0
Volume Right	0	0	0
cSH	1700	1623	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.3	0.0
Control Delay (s/veh)	0.0	3.4	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	0.0	3.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	17	20	0	0
Future Volume (Veh/h)	0	0	17	20	0	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	18	22	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	58	0	0			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	58	0	0			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	99			
cM capacity (veh/h)	944	1091	1636			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	40	0
Volume Left	0	18	0
Volume Right	0	0	0
cSH	1700	1636	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.3	0.0
Control Delay (s/veh)	0.0	3.3	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	0.0	3.3	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	0	22	0	0
Future Volume (Veh/h)	10	0	0	22	0	0
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)	11	0	0	24	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			11		35	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		35	11
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)			1608		978	1070

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	24	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1608	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	18	0	0
Future Volume (Veh/h)	0	0	0	18	0	0
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)	0	0	0	20	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			0		20	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			0		20	0
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)			1636		1002	1091

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	0	20	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1636	1700
Volume to Capacity	0.00	0.00	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s/veh)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G
ITE Trip Generation

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now

SEARCH BY LAND USE CODE:
222

LAND USE GROUP:
(200-299) Residential

LAND USE :
222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

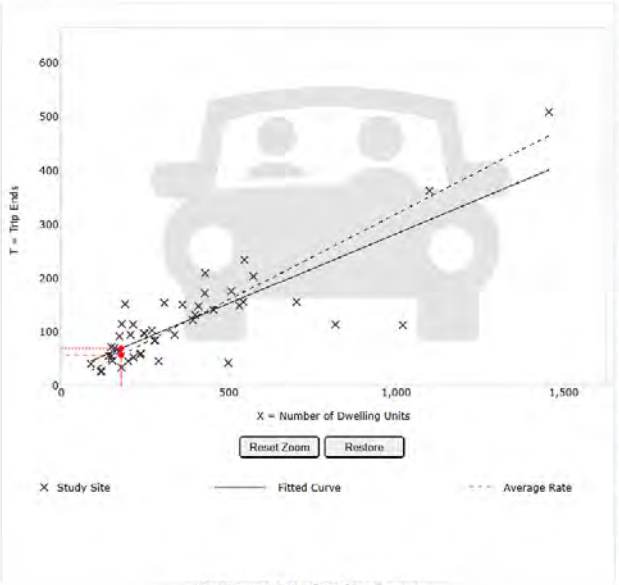
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
179 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (High-Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
45

Avg. Num. of Dwelling Units:
372

Average Rate:
0.32

Range of Rates:
0.09 - 0.80

Standard Deviation:
0.13

Fitted Curve Equation:
T = 0.26(X) + 23.12

R^2:
0.67

Directional Distribution:
62% entering, 38% exiting

Calculated Trip Ends:
Average Rate: 57 (Total), 36 (Entry), 21 (Exit)
Fitted Curve: 70 (Total), 43 (Entry), 27 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
822

LAND USE GROUP:
(800-899) Retail

LAND USE :
822 - Strip Retail Plaza (<40k)

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GLA

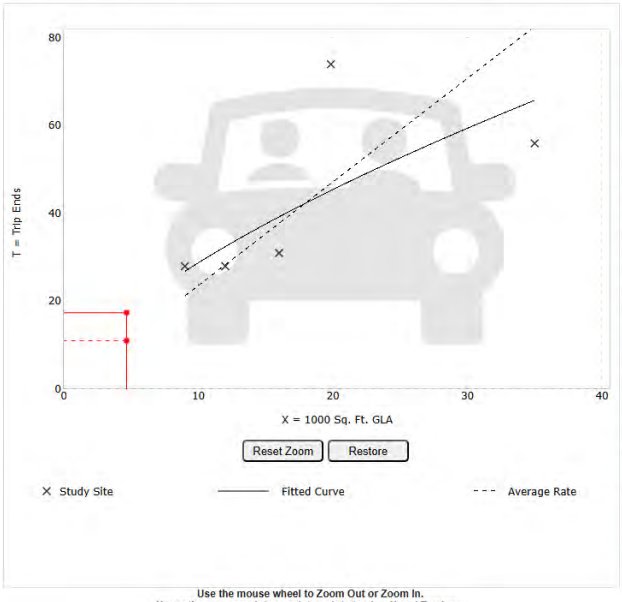
TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
4.67 Calculate

Data Plot and Equation

Caution – Small Sample Size



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Strip Retail Plaza (<40k) (822) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GLA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
5

Avg. 1000 Sq. Ft. GLA:
18

Average Rate:
2.36

Range of Rates:
1.60 - 3.73

Standard Deviation:
0.94

Fitted Curve Equation:
Ln(T) = 0.66 Ln(X) + 1.84

R^2:
0.57

Directional Distribution:
60% entering, 40% exiting

Calculated Trip Ends:
Average Rate: 11 (Total), 7 (Entry), 4 (Exit)
Fitted Curve: 17 (Total), 10 (Entry), 7 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
222

LAND USE GROUP:
(200-299) Residential

LAND USE :
222 - Multifamily Housing (High-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

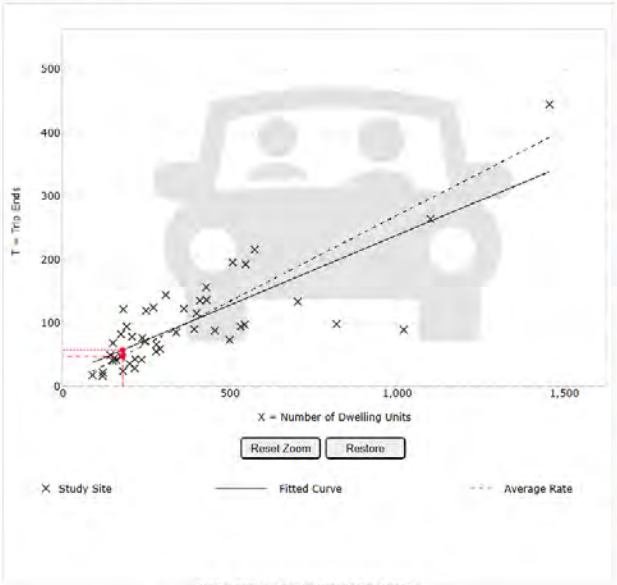
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
179 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (High Rise) - Not Close to Rail Transit (222) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
45

Avg. Num. of Dwelling Units:
372

Average Rate:
0.27

Range of Rates:
0.09 - 0.67

Standard Deviation:
0.11

Fitted Curve Equation:
T = 0.22(X) + 18.85

R^2:
0.64

Directional Distribution:
26% entering, 74% exiting

Calculated Trip Ends:
Average Rate: 48 (Total), 13 (Entry), 35 (Exit)
Fitted Curve: 58 (Total), 15 (Entry), 43 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. Upgrade now.

SEARCH BY LAND USE CODE:
822

LAND USE GROUP:
(800-899) Retail

LAND USE :
822 - Strip Retail Plaza (<40k)

LAND USE SUBCATEGORY:
All Sites

SETTING/LOCATION:
General Urban/Suburban

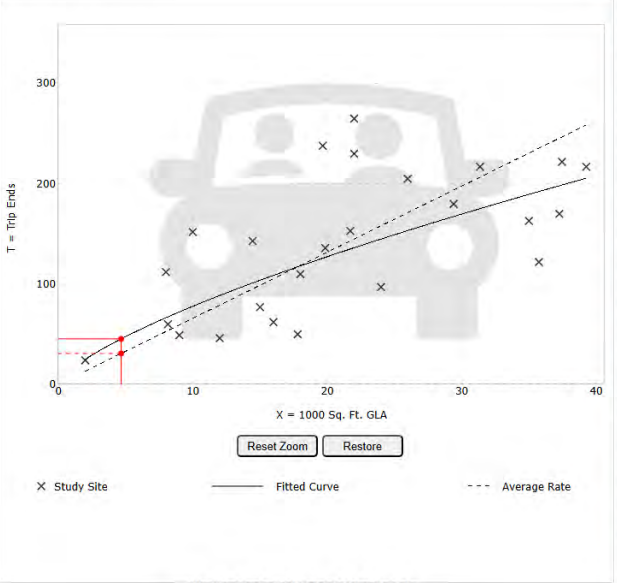
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GLA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Stre

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
4.67 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Strip Retail Plaza (<40k) (822) Click for Description and Data Plots

Independent Variable:
1000 Sq. Ft. GLA

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
25

Avg. 1000 Sq. Ft. GLA:
21

Average Rate:
6.59

Range of Rates:
2.81 - 15.20

Standard Deviation:
2.94

Fitted Curve Equation:
Ln(T) = 0.71 Ln(X) + 2.72

R^2:
0.56

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 31 (Total), 15 (Entry), 16 (Exit)
Fitted Curve: 45 (Total), 23 (Entry), 22 (Exit)

Appendix H
TTS Trip Distribution

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10
Mon Mar 02 2026 08:02:25 GMT-0500 (Eastern Standard Time) - Run Time: 2748ms									
Cross Tabulation Query Form - Trip - 2016									
Row: 2006 GTA zone of origin - gta06_orig									
Column: Planning district of destination - pd_dest									
Filters:									
(2006 GTA zone of origin - gta06_orig In 4053									
and									
Start time of trip - start_time In 600-859									
and									
Trip purpose of destination - purp_dest In W	O)								
Trip 2016									
Table:									
	PD 1 of Toronto	Mississauga	Oakville	Burlington	Flamborough	Ancaster	Hamilton	Niagara Falls	
4053	22	30	70	69	28	66	16	18	319
	E	E	E	E	W	W	W	E	

East	209	75%
West	82	25%
	291	100%

Appendix I

Future (2031) Total Traffic Level of Service Calculations

13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	973	119	40	471	127	219	255	59	213	99	81
Future Volume (vph)	152	973	119	40	471	127	219	255	59	213	99	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1789	3544	1617	1772	3325	0	1772	1844	0	1789	1865	1617
Flt Permitted	0.310			0.194			0.689			0.191		
Satd. Flow (perm)	582	3544	1562	361	3325	0	1278	1844	0	359	1865	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			113		38			10				109
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	6		8	8		6	6		6	6		6
Confl. Bikes (#/hr)												
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	3%	1%	3%	6%	4%	3%	0%	5%	2%	3%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	163	1046	128	43	643	0	235	337	0	229	106	87
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	13.0	55.0	55.0	10.0	52.0		13.0	30.0		15.0	32.0	32.0
Total Split (%)	11.8%	50.0%	50.0%	9.1%	47.3%		11.8%	27.3%		13.6%	29.1%	29.1%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	60.1	52.8	52.8	54.0	46.0		33.4	22.0		37.4	24.0	24.0
Actuated g/C Ratio	0.56	0.49	0.49	0.50	0.43		0.31	0.20		0.35	0.22	0.22
v/c Ratio	0.39	0.60	0.16	0.17	0.45		0.54	0.88		0.85	0.26	0.20
Control Delay (s/veh)	14.7	23.1	4.9	13.0	22.1		31.9	65.5		54.9	36.5	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	14.7	23.1	4.9	13.0	22.1		31.9	65.5		54.9	36.5	5.0

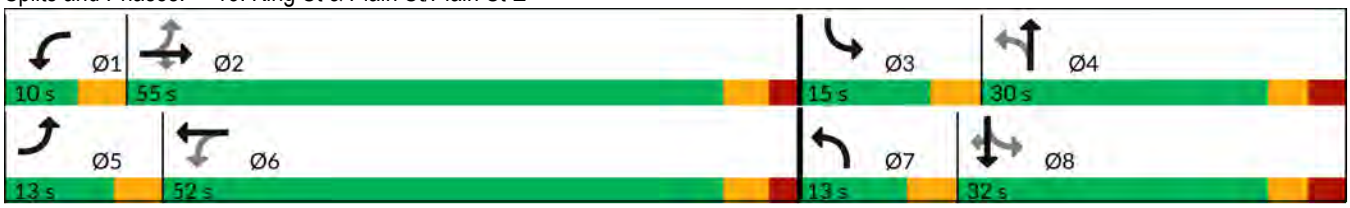
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	C	A	B	C		C	E		D	D	A
Approach Delay (s/veh)		20.3			21.6			51.7			40.0	
Approach LOS		C			C			D			D	
Queue Length 50th (m)	16.3	90.7	1.8	4.0	48.0		36.1	67.8		34.9	18.6	0.0
Queue Length 95th (m)	27.0	113.0	12.2	9.1	63.6		56.2	#113.8		#67.6	33.6	8.4
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	424	1731	821	259	1437		435	410		269	442	459
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.38	0.60	0.16	0.17	0.45		0.54	0.82		0.85	0.24	0.19

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 108.1			
Natural Cycle: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	
Intersection Capacity Utilization 81.5%		ICU Level of Service D	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	764	126	76	1387	181	170	125	60	254	193	170
Future Volume (vph)	99	764	126	76	1387	181	170	125	60	254	193	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	64.0		52.0	62.0		0.0	23.0		0.0	40.0		38.0
Storage Lanes	1		1	1		0	1		0	1		1
Taper Length (m)	7.6			7.6			7.6			7.6		
Satd. Flow (prot)	1825	3579	1585	1825	3506	0	1789	1786	0	1825	1902	1617
Flt Permitted	0.060			0.305			0.517			0.349		
Satd. Flow (perm)	115	3579	1528	583	3506	0	965	1786	0	666	1902	1578
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129		15			16				156
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		277.5			109.6			175.0			98.1	
Travel Time (s)		16.7			6.6			12.6			7.1	
Confl. Peds. (#/hr)	14		8	8		14	9		8	8		9
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	2%	3%	0%	2%	0%	2%	1%	3%	0%	1%	1%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	780	129	78	1600	0	173	189	0	259	197	173
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2		2	6			4			8		8
Detector Phase	5	2	2	1	6		7	4		3	8	8
Switch Phase												
Minimum Initial (s)	6.0	20.0	20.0	6.0	20.0		6.0	8.0		6.0	8.0	8.0
Minimum Split (s)	10.0	37.0	37.0	10.0	37.0		10.0	35.4		10.0	35.4	35.4
Total Split (s)	11.0	70.0	70.0	11.0	70.0		15.0	31.0		18.0	34.0	34.0
Total Split (%)	8.5%	53.8%	53.8%	8.5%	53.8%		11.5%	23.8%		13.8%	26.2%	26.2%
Yellow Time (s)	4.0	3.7	3.7	4.0	3.7		4.0	3.3		4.0	3.3	3.3
All-Red Time (s)	0.0	2.3	2.3	0.0	2.3		0.0	3.1		0.0	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	4.0	6.0		4.0	6.4		4.0	6.4	6.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max		None	None		None	None	None
Act Effct Green (s)	73.9	66.4	66.4	72.9	64.1		30.3	17.1		36.4	20.2	20.2
Actuated g/C Ratio	0.60	0.54	0.54	0.60	0.52		0.25	0.14		0.30	0.17	0.17
v/c Ratio	0.61	0.40	0.15	0.19	0.87		0.56	0.72		0.79	0.63	0.44
Control Delay (s/veh)	34.2	18.4	3.2	11.0	32.3		40.5	61.4		52.9	56.7	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay (s/veh)	34.2	18.4	3.2	11.0	32.3		40.5	61.4		52.9	56.7	12.6

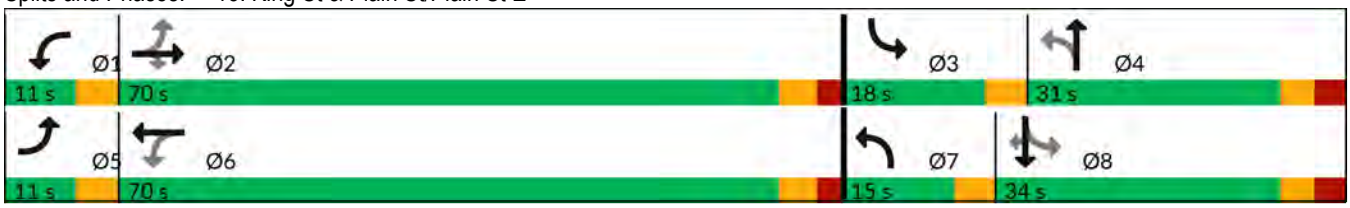
13: King St & Plain St/Plain St E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	B	A	B	C		D	E		D	E	B
Approach Delay (s/veh)		18.1			31.3			51.4			43.0	
Approach LOS		B			C			D			D	
Queue Length 50th (m)	8.9	58.3	0.0	6.8	169.9		31.9	40.4		50.4	44.7	3.5
Queue Length 95th (m)	#32.3	82.4	10.0	14.9	#235.5		50.3	64.6		#76.8	68.8	22.5
Internal Link Dist (m)		253.5			85.6			151.0			74.1	
Turn Bay Length (m)	64.0		52.0	62.0			23.0			40.0		38.0
Base Capacity (vph)	167	1941	887	419	1843		315	372		331	429	477
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.60	0.40	0.15	0.19	0.87		0.55	0.51		0.78	0.46	0.36

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 122.4			
Natural Cycle: 105			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 31.6		Intersection LOS: C	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 13: King St & Plain St/Plain St E



3: Maplehurst Plaza & Plain Rd E

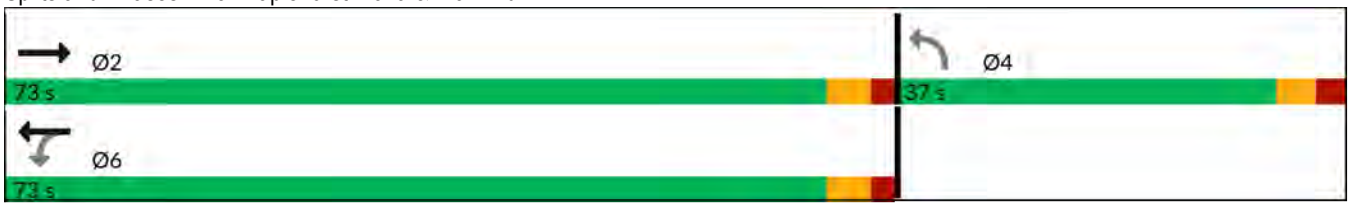
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1127	7	27	686	45	99
Future Volume (vph)	1127	7	27	686	45	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3540	0	1825	3510	1716	0
Flt Permitted			0.201		0.985	
Satd. Flow (perm)	3540	0	386	3510	1713	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1				72	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)		4	4		5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	3%	0%	0%	4%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1246	0	30	754	158	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	68.7		68.7	68.7	10.6	
Actuated g/C Ratio	0.76		0.76	0.76	0.12	
v/c Ratio	0.46		0.10	0.28	0.60	
Control Delay (s/veh)	5.1		4.5	4.0	30.5	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	5.1		4.5	4.0	30.5	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	C	
Approach Delay (s/veh)	5.1			4.0	30.5	
Approach LOS	A			A	C	
Queue Length 50th (m)	32.7		1.1	16.3	13.9	
Queue Length 95th (m)	56.2		4.2	29.2	32.4	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	2680		292	2657	636	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.46		0.10	0.28	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 90.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 6.5		Intersection LOS: A	
Intersection Capacity Utilization 49.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



3: Maplehurst Plaza & Plain Rd E



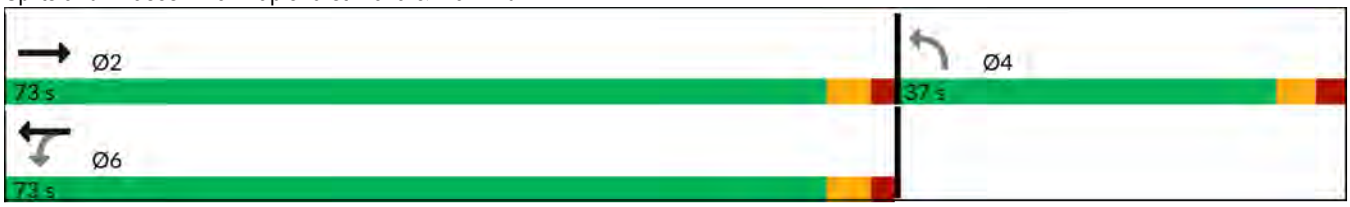
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	914	44	111	1392	32	56
Future Volume (vph)	914	44	111	1392	32	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	0
Taper Length (m)			7.6		7.6	
Satd. Flow (prot)	3557	0	1825	3579	1724	0
Flt Permitted			0.285		0.982	
Satd. Flow (perm)	3557	0	548	3579	1721	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	8				57	
Link Speed (k/h)	60			60	50	
Link Distance (m)	129.1			189.6	134.9	
Travel Time (s)	7.7			11.4	9.7	
Confl. Peds. (#/hr)					5	
Confl. Bikes (#/hr)						
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	0%	0%	2%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	978	0	113	1420	90	0
Turn Type	NA		Perm	NA	Perm	
Protected Phases	2			6		
Permitted Phases			6		4	
Detector Phase	2		6	6	4	
Switch Phase						
Minimum Initial (s)	8.0		8.0	8.0	8.0	
Minimum Split (s)	38.6		38.6	38.6	35.8	
Total Split (s)	73.0		73.0	73.0	37.0	
Total Split (%)	66.4%		66.4%	66.4%	33.6%	
Yellow Time (s)	3.7		3.7	3.7	3.3	
All-Red Time (s)	1.9		1.9	1.9	2.5	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	5.6		5.6	5.6	5.8	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max		Max	Max	None	
Act Effct Green (s)	71.5		71.5	71.5	8.6	
Actuated g/C Ratio	0.82		0.82	0.82	0.10	
v/c Ratio	0.34		0.25	0.49	0.41	
Control Delay (s/veh)	3.2		4.6	4.1	22.7	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay (s/veh)	3.2		4.6	4.1	22.7	

3: Maplehurst Plaza & Plain Rd E

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
LOS	A		A	A	C	
Approach Delay (s/veh)	3.2			4.1	22.7	
Approach LOS	A			A	C	
Queue Length 50th (m)	19.8		4.0	35.1	5.2	
Queue Length 95th (m)	31.3		11.0	54.1	18.6	
Internal Link Dist (m)	105.1			165.6	110.9	
Turn Bay Length (m)			30.0			
Base Capacity (vph)	2902		447	2918	649	
Starvation Cap Reductn	0		0	0	0	
Spillback Cap Reductn	0		0	0	0	
Storage Cap Reductn	0		0	0	0	
Reduced v/c Ratio	0.34		0.25	0.49	0.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 87.7			
Natural Cycle: 75			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay (s/veh): 4.4		Intersection LOS: A	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Maplehurst Plaza & Plain Rd E



5: Sanford Dr & Plain Rd E



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1233	8	5	744	7	17
Future Volume (Veh/h)	1233	8	5	744	7	17
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)	1312	9	5	791	7	18
Pedestrians				2	1	
Lane Width (m)				3.7	3.7	
Walking Speed (m/s)				1.1	1.1	
Percent Blockage				0	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.86		0.90	0.86
vC, conflicting volume			1322		1723	664
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1056		1249	294
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.4
p0 queue free %			99		95	97
cM capacity (veh/h)			575		149	595

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	875	446	5	396	396	25
Volume Left	0	0	5	0	0	7
Volume Right	0	9	0	0	0	18
cSH	1700	1700	575	1700	1700	323
Volume to Capacity	0.51	0.26	0.01	0.23	0.23	0.08
Queue Length 95th (m)	0.0	0.0	0.2	0.0	0.0	1.9
Control Delay (s/veh)	0.0	0.0	11.3	0.0	0.0	17.1
Lane LOS			B			C
Approach Delay (s/veh)	0.0		0.1			17.1
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

5: Sanford Dr & Plain Rd E

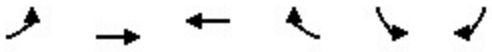


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	944	28	32	1620	18	26
Future Volume (Veh/h)	944	28	32	1620	18	26
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Hourly flow rate (vph)	973	29	33	1670	19	27
Pedestrians	2				7	
Lane Width (m)	3.7				3.7	
Walking Speed (m/s)	1.1				1.1	
Percent Blockage	0				1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	190			316		
pX, platoon unblocked			0.91		0.64	0.91
vC, conflicting volume			1009		1898	508
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			818		663	269
tC, single (s)			4.1		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		92	96
cM capacity (veh/h)			742		242	655

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	649	353	33	835	835	46
Volume Left	0	0	33	0	0	19
Volume Right	0	29	0	0	0	27
cSH	1700	1700	742	1700	1700	384
Volume to Capacity	0.38	0.21	0.04	0.49	0.49	0.12
Queue Length 95th (m)	0.0	0.0	1.1	0.0	0.0	3.1
Control Delay (s/veh)	0.0	0.0	10.1	0.0	0.0	15.6
Lane LOS			B			C
Approach Delay (s/veh)	0.0		0.2			15.6
Approach LOS						C

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr

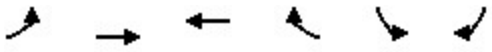


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	1226	729	49	46	15
Future Volume (Veh/h)	13	1226	729	49	46	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	1304	776	52	49	16
Pedestrians					7	
Lane Width (m)					3.7	
Walking Speed (m/s)					1.1	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	835				1489	421
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	619				900	164
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				81	98
cM capacity (veh/h)	877				252	775

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	14	652	652	517	311	65
Volume Left	14	0	0	0	0	49
Volume Right	0	0	0	0	52	16
cSH	877	1700	1700	1700	1700	302
Volume to Capacity	0.02	0.38	0.38	0.30	0.18	0.22
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	6.1
Control Delay (s/veh)	9.2	0.0	0.0	0.0	0.0	20.2
Lane LOS	A					C
Approach Delay (s/veh)	0.1			0.0		20.2
Approach LOS						C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

7: Plain Rd E/Plain St & Joan Dr



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	945	1613	66	30	31
Future Volume (Veh/h)	21	945	1613	66	30	31
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)	22	984	1680	69	31	32
Pedestrians		2			13	
Lane Width (m)		3.7			3.7	
Walking Speed (m/s)		1.1			1.1	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		228	277			
pX, platoon unblocked	0.58				0.61	0.58
vC, conflicting volume	1762				2264	890
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	863				1286	0
tC, single (s)	4.1				7.0	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	95				64	95
cM capacity (veh/h)	451				86	623

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	22	492	492	1120	629	63
Volume Left	22	0	0	0	0	31
Volume Right	0	0	0	0	69	32
cSH	451	1700	1700	1700	1700	152
Volume to Capacity	0.05	0.29	0.29	0.66	0.37	0.41
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	13.8
Control Delay (s/veh)	13.4	0.0	0.0	0.0	0.0	44.4
Lane LOS	B					E
Approach Delay (s/veh)	0.3			0.0		44.4
Approach LOS						E

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	49	40	22	11	0
Future Volume (Veh/h)	0	49	40	22	11	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	53	43	24	12	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	122	12	12			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	12	12			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	97			
cM capacity (veh/h)	850	1069	1607			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	53	67	12
Volume Left	0	43	0
Volume Right	53	0	0
cSH	1069	1607	1700
Volume to Capacity	0.05	0.03	0.01
Queue Length 95th (m)	1.2	0.6	0.0
Control Delay (s/veh)	8.5	4.8	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	8.5	4.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	20.0%	ICU Level of Service	A
Analysis Period (min)	15		

10: Joan Dr & Mary St



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	47	68	19	13	0
Future Volume (Veh/h)	0	47	68	19	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	51	74	21	14	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	183	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	183	14	14			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	95	95			
cM capacity (veh/h)	774	1072	1617			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	51	95	14
Volume Left	0	74	0
Volume Right	51	0	0
cSH	1072	1617	1700
Volume to Capacity	0.05	0.05	0.01
Queue Length 95th (m)	1.1	1.1	0.0
Control Delay (s/veh)	8.5	5.8	0.0
Lane LOS	A	A	
Approach Delay (s/veh)	8.5	5.8	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	21.4%	ICU Level of Service	A
Analysis Period (min)	15		

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	20	22	0	39
Future Volume (Veh/h)	10	0	20	22	0	39
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)	11	0	22	24	0	42
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			11		79	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		79	11
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	96
cM capacity (veh/h)			1608		911	1070

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	46	42
Volume Left	0	22	0
Volume Right	0	0	42
cSH	1700	1608	1070
Volume to Capacity	0.01	0.01	0.04
Queue Length 95th (m)	0.0	0.3	0.9
Control Delay (s/veh)	0.0	3.5	8.5
Lane LOS		A	A
Approach Delay (s/veh)	0.0	3.5	8.5
Approach LOS			A

Intersection Summary			
Average Delay		5.2	
Intersection Capacity Utilization		18.9%	ICU Level of Service
Analysis Period (min)		15	

11: 517 plain St & Mary St



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	10	0	51	17	0	37
Future Volume (Veh/h)	10	0	51	17	0	37
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)	11	0	55	18	0	40
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			11		139	11
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		139	11
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		100	96
cM capacity (veh/h)			1621		830	1076

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	73	40
Volume Left	0	55	0
Volume Right	0	0	40
cSH	1700	1621	1076
Volume to Capacity	0.01	0.03	0.04
Queue Length 95th (m)	0.0	0.8	0.9
Control Delay (s/veh)	0.0	5.6	8.5
Lane LOS		A	A
Approach Delay (s/veh)	0.0	5.6	8.5
Approach LOS			A

Intersection Summary			
Average Delay	6.0		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		